

Transportation Policy Plan


METROPOLITAN
COUNCIL

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Overview

The core purpose of transportation is providing people and businesses access to the places they need to reach, and choice in how to reach these places. People and businesses need reliable transportation choices so they can perform everyday tasks, like taking a child to daycare, going to work, attending school, or delivering goods and services. These needs and places are unique to each resident and business in the Twin Cities region, and this plan's challenge is to better meet those needs across a growing region with diverse community contexts.

Transportation Policy Plan

BY 2050, THE TWIN CITIES REGION WILL ADD 657,000 NEW RESIDENTS AND 342,000 NEW JOBS.[1]

The COVID-19 pandemic was a shock to regional transportation and land use systems, and our regional transportation system is still adapting in response. While the way some people live and work has changed, our fundamental need to travel to meet daily needs remains. Some of the lasting effects are positive, like time savings from reduced congestion during peak commute hours, while others are negative, like worsening traffic safety outcomes and revenue challenges for transit.

Investments and legislation at the state and federal level are key in addressing this growth and change. In 2023, the Minnesota Legislature provided transportation revenue increases, including the gas tax, vehicle registration tax, motor vehicle sales tax, and state general funds. They also included new transportation revenue sources, most notably a new seven-county metro regional sales tax for transit, active transportation (walking, biking, rolling), and county transportation.

In 2021 and 2022, Congress created many new programs to reduce greenhouse gas emissions and improve transportation resilience to climate change, including new sources of regionally allocated revenues for each. The Biden-Harris administration has undertaken multiple actions in pursuit of environmental justice and improved transportation equity. The Justice40 Initiative, established by Executive Order 14008, aims to direct 40% of federal investment benefits to disadvantaged communities, encompassing programs like Carbon Reduction and Safe Streets and Roads for All. The administration also updated the definition of environmental justice to include people with disabilities, functioning alongside existing orders on environmental justice.

The Imagine 2050 Transportation Policy Plan presents the region's objectives, policies, actions, and investments that guide development of the region's transportation system. It implements the core values, vision, and goals of Imagine 2050: Our Region's Plan for an Equitable and Resilient Future. Integrated with updates to regional plans guiding land use, water resources, housing, and parks policy, the Imagine 2050 family of plans will create a prosperous future for our children and grandchildren.

As the region's federally designated metropolitan planning organization, the Metropolitan Council prepares a transportation plan for all forms of travel in the region. This transportation plan and other Met Council plans are prepared with input from many sources, including the region's counties, cities, and towns, which use these plans as a guide in their own planning processes. The Met Council's planning region includes Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. As required by federal law, the Imagine 2050 Transportation Policy Plan also plans for urban portions of southeast Sherburne and Wright counties.

The regional transportation system

Highways

Each day, 86% of all trips in the region are taken in an automobile.[2] These roads also serve freight, transit, walking, biking, and rolling. Roads are a key part of a dynamic and resilient transportation system, and the regional highway system is its backbone. While only representing about 16% of centerline road miles in the region, this system carries 80% of all vehicle miles travelled. It includes:

- Principal arterial highways: interstates, other freeways, and expressways and certain major roads (for example, Cedar Avenue in Lakeville). The region has 700 miles of principal arterial highways primarily owned by the Minnesota Department of Transportation (MnDOT). These roads carry 8% of bus service in the region.
- Minor arterials: roads that aren't as fast as principal arterials but still serve many trips. These roads provide direct routes and some local access, often serving transit, walking, and biking trips, too (for example, Snelling Avenue in Ramsey County). The region has 2,300 miles of minor arterial roads owned 72% by counties, 16% by MnDOT and 12% by cities. These roads carry 51% of bus service in the region, and they also serve as the first- and last-mile connections between freight-generating businesses and principal arterial highways.

Improving safety on this system, and on collector and local streets, was strongly emphasized by technical stakeholders and policymakers during plan development. Since the onset of the COVID-19 pandemic, safety performance regressed and more people in our region died or were seriously injured while traveling on roadways. In 2022, 179 people did not make it home after a crash in the Twin Cities region. This plan seeks to eliminate these fatal and serious injuries from traffic crashes by 2050 through implementation of the Safe System Approach.

These highways are a key economic driver in our region. In 2020, delay per commuter in the Twin Cities was comparable to other similarly sized metropolitan areas across the nation.[3] In 2021, the region had the ninth-highest job accessibility by vehicle in the United States,[4] and has consistently been ranked in the top ten for several years. However, the region must continue to address excessive travel delays to retain our high standard of living and regional economic competitiveness.

See the Highway Investment Plan for more information about our existing regional highway system and planned investments.

Transit

Transit is an essential means of travel for many residents in the region. On a typical weekday in 2023, people in the Twin Cities region took more than 135,000 rides on public transit services. Transit services are, for people who cannot drive, a reducer of greenhouse gas emissions through more efficient travel and a congestion mitigator.

The region is served by six transit providers: the Met Council (Metro Transit and Metropolitan Transportation Services), the Minnesota Valley Transit Authority, SouthWest Transit, Maple Grove Transit, Plymouth MetroLink, and the University of Minnesota. Together, they operate a variety of services that include regular route buses, bus rapid transit, light rail, commuter rail, dial-a-ride and paratransit, microtransit, and vanpool.

Together these providers gave 53.3 million rides in 2023, or about 16.2 trips per person in the region.

Total ridership increased 16% in 2023 over the previous year, showing encouraging signs of ridership recovery from the impacts of the COVID-19 pandemic. To serve these riders, the six regional transit providers ran 3.7 million hours of transit service in 2023, or about 1.2 hours per person.

The total area served by transit (within a half mile of a transit stop) in the region was 492 square miles. About 55% of the region's population lived within a half mile of regular-route transit services, and 19% lived within that same distance of high-frequency transit (meaning a transit vehicle departs at least every 15 minutes from a stop). Roughly 50% of the region's jobs were located within a half mile of a transit stop as well.

See the Transit Investment Plan for more information about our existing transit system and planned investments.

Bicycles

The Twin Cities region has a well-developed bicycle network throughout much of the region, including:

- Regional trails designated in the Regional Parks Policy Plan and developed and maintained by regional park implementing agencies.
- Local bikeways and off-road multiuse trails that cities, counties, and MnDOT are responsible for planning, developing, and maintaining.

- Several state trails in the metro region developed and maintained by the Minnesota Department of Natural Resources.

In 2016, the Met Council measured the size of this system in the Regional Bicycle System Inventory, which identified 3,908 miles of existing bikeways and 2,865 miles of planned bikeways. Over time, the region's investments in bicycle-friendly infrastructure have led to Minneapolis and Saint Paul consistently ranking in the top 10 best large cities for biking, as rated by PeopleForBikes, a nonprofit bicycle policy and trade organization. Work remains to expand this option throughout the region.[5]

Local governments are the key drivers of building this system, and they face constrained resources to build connected networks for transportation. Through several regional studies, the Met Council created three planning and investment prioritization tools to guide regional investments:

- The Regional Bicycle Transportation Network (RBTN) establishes an integrated, seamless network of bikeways and trails to prioritize investments that serve daily trips, provide access to destinations, and connect local bicycle networks.
- The Regional Bicycle Barriers identifies major physical barriers to bicycling (for example, freeways, railroads) and identifies barrier-crossing opportunity areas.
- The Major River Bicycle Barrier crossings identify investment priorities for providing connections across the region's three major rivers: the Mississippi, Minnesota, and St. Croix Rivers.

See the Bicycle Investment Plan for more information about our existing bicycle system and planned investments.

Pedestrians

Walking is our most universal mode of travel – we all walk or roll (using a mobility device such as a wheelchair or walker) and walking also makes essential connections to other modes of travel. Across the region, nearly 11% of all trips were walking-only trips.[6]

Walking is an essential means of travel within the regional transportation system, but availability, type, and quality of facilities for walking vary across the region. Facilities for walking include a few state trails in the metro, regional trails (as designated in the Met Council's Regional Parks Policy Plan), local multiuse paths, sidewalks, skyways, and pedestrian or multiuse bridges or underpasses. Often the most dangerous part of walking or rolling is crossing streets, so street-crossing treatments are critical parts of infrastructure for safe travel by people walking and rolling.

See the Pedestrian Investment Plan for more information about our existing pedestrian system and planned investments.

Travel Demand Management

Travel demand management is a set of strategies and investments that the region makes to reduce the need to invest in infrastructure and to support other regional goals by encouraging travel behavior changes. Travel demand is influenced by the availability of transportation infrastructure and services, land development patterns, and personal travel needs. Many partners play a role in influencing these three factors, but the primary implementors of travel demand management strategies use engagement, incentives, and promotions to influence travel demand. Implementors like transit providers and transportation management organizations work directly with travelers or through employers to tailor programs to specific needs with the intent of shifting to modes other than driving alone or shifting travel to nonpeak times. Travel demand management strategies are often coupled with new infrastructure investments or with development practices implemented by city zoning codes.

See the Travel Demand Management Investment Plan for more information about the existing travel demand management strategies and opportunities for expansion.

Freight

The existing metropolitan freight system consists of several interconnected networks and regional freight terminals that facilitate the movement and transfer of freight within and between forms of freight transportation. These include trucks on highways, railroads, barges on rivers, air freight, and pipelines.

See the Freight Investment Plan for more information about our existing freight system and planned investments.

Aviation

The Twin Cities region boasts a well-developed and mature aviation system that does not require continued expansion, but rather requires ongoing protection, maintenance, and limited enhancements. The region is served by one major commercial air service airport, Minneapolis-Saint Paul International Airport (MSP), and its six reliever airports owned and operated by the Metropolitan Airports Commission. The region is also served by two other general aviation airports owned and operated by local governments. All MAC-owned airports are part of the National Plan of Integrated Airports (NPIAS), in addition to South St. Paul Municipal Airport. Additionally, there are two designated seaplane bases, many bodies of water that can support seaplane operations, and multiple private turf runways in the region.

Prior to the pandemic in 2020, MSP Airport reached a new record for passenger enplanements at 19.8 million with more than 36 million total passengers in 2019. These record numbers of passengers were moved in the fewest number of aircraft operations since 1992, a year which saw only 10 million passenger enplanements. In addition to passenger activity, MSP saw 239,544 metric tons of cargo moved through the airport in 2019. Unlike passenger activity, dedicated cargo activity saw a modest increase at MSP during the pandemic due in part to the shift to more online sales with retailers like Amazon. These retailers continue to show growth in air cargo and delivery operations.

The Aviation System Plan and related technical elements are currently under development.

Summary of regional transportation investments

The plan is fiscally constrained, meaning that the plan identifies all transportation revenues that can reasonably be expected and are assumed to be available within the plan's time frame, together with the proposed spending of those revenues. Those assumptions are structured around four categories:

- MnDOT metro state highway revenues and spending,
- Regional transit revenues and spending,
- Local government transportation revenues and spending, and
- Regionally allocated revenues.

In addition to describing transportation revenue and spending, this plan documents regionally significant projects, like addition of a freeway lane or building a new transitway. See the Investments section of this document for further detail on this plan's financial assumptions and listing of regionally significant projects.

Evaluation and performance

The Imagine 2050 Transportation Policy Plan uses a performance-based approach to measure success in meeting the region's transportation goals and objectives. The measures will indicate where the region is meeting its transportation-related goals and objectives and what areas require greater emphasis and resources. The Met Council and its regional partners have selected performance measures that are clear, measurable, and closely tied to the plan's goals and objectives.

The Imagine 2050 Transportation Policy Plan includes two main performance measures categories. Federal Performance Measures are federally required, shorter-term targets that the Met Council must track and report on. Federal Performance Measures includes topics like safety, reliability, bridge and pavement conditions, and system performance and reliability. Regional Performance Measures are longer-term evaluations that the Met Council will use to track how well the regional transportation system is meeting the Imagine 2050 goals.

Plan structure

The Transportation Policy Plan is a section of the Imagine 2050 plan, an integrated plan for shared regional systems. The Met Council develops regional plans for land use, housing, parks, water, and transportation systems. These plans use a shared set of values, vision, and goal statements, detailed in Imagine 2050. Underneath these goal statements, the Imagine 2050 Transportation Policy Plan contains objectives for the regional transportation system, further defined by policies that state the intent and approach to regional issues and implemented through specific actions.

Fiscal constraint

Federal regulations require the Imagine 2050 Transportation Policy Plan to demonstrate that projects identified in this plan can be implemented using reasonably available revenue sources. Projects listed in this plan's Long-Range Highway and Transit Capital Projects Lists represent the fiscally constrained elements in this plan, deliverable by existing revenue sources documented in Regional Transportation Finance. The fiscally constrained element of this plan cannot be aspirational about projects without identified revenue sources, nor can it make assumptions about discretionary grants or future legislative or congressional actions. However, this plan does illustrate potential projects that are part of a longer-term vision that the plan's policies and actions could support; these projects are not formally part of this fiscally constrained plan.

Metropolitan transportation planning cycle

Long-range planning

The Imagine 2050 Transportation Policy Plan is the region's long-range plan for the region's roadway, freight, transit, bicycle, pedestrian, and aviation systems. The plan is informed by the shared elements of Imagine 2050, state plans, system and corridor studies, and the conditions of funding programs. This plan receives a major update every 10 years, a minor update every five years, and specific amendments or modifications regularly as required by projects or policy change.

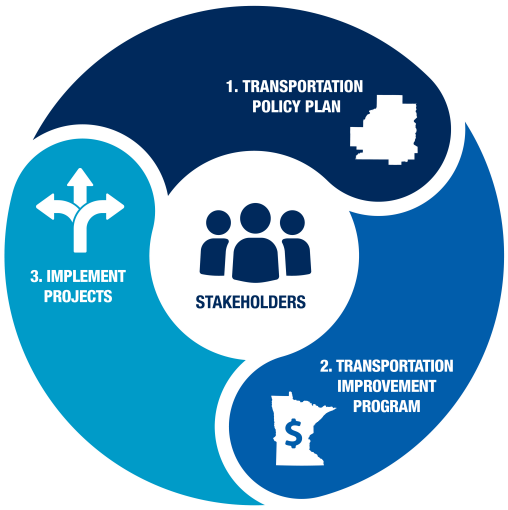
Short-range planning and programming

For investments that are federally funded or regionally significant, this plan informs the short-range planning process that develops the Transportation Improvement Program (TIP). The TIP is issued annually and includes a rolling four-year cycle of programmed projects. TIP projects include major local projects, projects awarded federal funds through the Regional Solicitation or competitive federal grant programs, and projects programmed by regional transit providers or the Minnesota Department of Transportation using their federal funding allocations. The Imagine 2050 Transportation Policy Plan provides investment direction that informs the structure, criteria, and measures in the Regional Solicitation.

Implement projects and monitor performance

Throughout these steps, the Met Council regularly seeks feedback from policymakers, technical stakeholders, residents, businesses, advocates, and community groups from throughout the region. This feedback arises through the TPP and TIP development, planning studies that provide new information and approaches, and transportation investment processes as projects are planned, designed, built, and operated. This feedback, alongside performance measurement and evaluation, informs continuous improvement of the plan and its implementing programs and investments.

Figure 1.1: Metropolitan transportation planning cycle



1. TRANSPORTATION POLICY PLAN
IMAGINE 2050
State plans
System and corridor studies
Special funding programs

2. TRANSPORTATION IMPROVEMENT PROGRAM
MnDOT
Transit providers
Local governments
Regional solicitation

3. IMPLEMENT PROJECTS
Monitor performance
Evaluate outcomes
Adjust policies, actions, and investments

Engagement and plan development process

The Met Council strategically approaches public participation to meet the needs of the region. It is important to reach out to stakeholders from all backgrounds and perspectives to have well-thought-out policies that benefit everyone. Public participation is done holistically and comprehensively with the practice of collaboration and inclusion.

The Transportation Addendum to the Public Engagement Plan establishes a framework for the region's stakeholders to influence both long-term transportation policy development and short-term transportation programming. It details the methods and strategies that the Met Council will use to engage a wide range of stakeholders, from policymakers and business interests to residents of the region. It also identifies specific ways those stakeholders can connect to the transportation decision-making process.

Partner agency engagement

Technical stakeholders

This plan was developed with the experience and perspective of implementing partners. The Met Council implements few projects itself other than transit projects, working in partnership with cities, counties, state agencies, and nonprofit organizations to deliver transportation projects. Engagement with these partners is key in developing all aspects of this plan.

The Imagine 2050 Transportation Policy Plan Technical Working Group was formed underneath the Transportation Advisory Board's Technical Advisory Committee (TAC) to assist with plan development and review. The Imagine 2050 TPP Technical Working Group consisted of 39 members, including all represented on the TAC's Planning subcommittee (see Committee members), and additional members representing city, county, state, federal, nonprofit, and academic stakeholders. This group met 24 times over the course of two years to advise Met Council staff on engagement practice, setting goals and objectives, developing policies and actions, and drafting investment and goal-related plan narrative. The TAC received regular reports on Imagine 2050 TPP Technical Working Group discussion and seven informational presentations on development of Imagine 2050 plans since 2022.

The TAC, Imagine 2050 TPP Technical Working Group, Bicycle & Pedestrian Planning Technical Working Group, and Transit Planning Technical Working Group together provided over 2,600 comments on draft plan content in addition to in-meeting discussion.

Policy stakeholders

Transportation Advisory Board

Providing a regional multimodal transportation system meeting the needs of many users requires coordinated planning among partners implementing the system. The Met Council works with its regional partners, including state agencies, cities, counties, and other stakeholders, to ensure regional transportation investments support the Imagine 2050 vision for the region, accommodate projected growth, and use public resources wisely and cost-effectively.

The Met Council serves as the federally designated metropolitan planning organization (MPO) for the Twin Cities region. Congress created MPOs to ensure that decision making for federally funded or regionally significant transportation investments are based on a continuing, cooperative, and comprehensive regional planning process.

The Met Council's 16 members and chairperson are appointed by the Governor of Minnesota, a structure that predates current requirements that MPO governing boards include local elected officials, state and regional transportation agency officials, and transit agency officials. In our region, the Transportation Advisory Board (TAB), which was created under state statute to provide advice to the Met Council on regional transportation issues, serves as the conduit for local policymaker and agency input. TAB's membership includes city and county elected officials, state and regional transportation agency leaders, and appointed citizens representing

geographic districts and transportation modes. TAB is an integral part of the region's transportation planning process and leads the solicitation, evaluation, and recommendation of projects funded with regionally allocated federal transportation funds.

Advisory Work Group

The Imagine 2050 Transportation Policy Plan Advisory Work Group was formed under the Met Council to discuss key plan issues. It was a focused group of Met Council members, Transportation Advisory Board members, and leaders representing state and transit agencies. This group met 15 times over the course of two years to provide Met Council staff with regional perspectives and local context during development of objectives, policies, and actions.

Listening sessions and development workshops

The early work to gather deeper feedback from stakeholders started in early 2023 with a series of listening sessions and interviews. The purpose of these interviews was to reflect on the 2040 Transportation Policy Plan's successes and limitations and learn about what issues were most pressing for the region's transportation system. These engagement sessions were both transportation partner stakeholders and community-based stakeholders. The engagement ultimately led to draft Imagine 2050 Transportation Policy Plan objectives that were then further discussed and refined within the broader plan development processes.

Once a working structure of goals and objectives were in place, the work began on drafting policies and actions. This was done through eight policy development teams structured around the plan's goals and objectives. These teams include technical experts that made recommendations and reviewed content that eventually led to a draft list of policies and actions. This draft list was further shared with a wider audience of technical staff through a series of virtual and in-person workshops. The feedback from these workshops was used to create updated versions of the policies and actions that were then further discussed and refined within the broader plan development processes.

Community-based public engagement

Because the region is growing and the population is changing, public participation needs to be coordinated and deliberate. Those who have not been historically engaged in policy conversations with the Met Council are a key constituency and have been intentionally included in engagement for the Imagine 2050 Transportation Policy Plan.

In 2022, the Met Council initiated a three-year contract to support engagement with Black, Indigenous, and people of color (BIPOC), Hispanic, low-income, and other traditionally underrepresented communities.

That contract has supported efforts that have directly impacted the development of the Imagine 2050 Transportation Policy Plan; including the Regional Travel Demand Management Study, the Transportation Needs in Daily Life Study, and the Imagine 2050 Transportation Policy Plan Goals, Objectives, Policies, and Actions.

Approaches

Each effort took different approaches to engaging traditionally underrepresented communities, including:

- Community events and intercept surveys
- Online surveys
- One-on-one and small group interviews
- Listening sessions
- Small group discussions

In community-based public engagement, we strive to prioritize quality over quantity. This creates deeper, more meaningful interactions that foster genuine connections and long-term commitment. The true value lies in the richness of the engagement, where individuals feel heard, valued, and actively involved. High-quality interactions build trust and collaboration. Quality-driven engagement is essential for nurturing resilient and vibrant communities.

Engagement on the Imagine 2050 TPP goals, objectives, policies, and actions

We broke this engagement into two phases, connecting with as many of the same groups and individuals as possible to create continuity across these areas that ground the Imagine 2050 Transportation Policy Plan. Phase 1 focused on the goals and objectives and phase 2 focused on the policies and actions.

Phase 1 engagement resulted in five themes to consider as we developed the goals and objectives.

1. **Equity is a top priority** for many, but it needs to be more clearly defined.
2. **Safety** is viewed by most community members as transit, rather than all modes.
3. **System maintenance** brought up tensions between investing in existing infrastructure versus transforming for the future.
4. **Elevate climate change** above and beyond naming climate in the Imagine 2050 vision.
5. **A multi-node future** where community members imagine a future of many regional nodes.

Phase 2 engagement followed up with the proposed policies and actions and asked for community groups and individuals to respond and react. These themes emerged from community-based conversations.

1. **The housing / transportation connection** is important and would benefit from explicit acknowledgement.

2. **Going deep on equity** is seen as important to making progress on achieving the Imagine 2050 goals.

3. **Balance behavior change with technology change** in the proposed policies and actions instead of relying on technology.

4. **Successful implementation relies on effective coordination** across jurisdictions and sectors.

This engagement was all done ahead of drafting the Imagine 2050 Transportation Policy Plan, so the themes could be considered when drafting the content.

Study-level engagement

This valuable community input influenced and helped shape the foundational elements of the Imagine 2050 Transportation Policy Plan, while engagement at the study level brought a community-based lens to key study areas.

In particular, the Transportation Needs in Daily Life project brought forward community voices in a unique and impactful way. Participants' willingness to share their personal stories has created a deeper understanding of the regional transportation system and, more broadly, of how to work better with our communities. We recognize that we must, in turn, share their stories in the most true and meaningful ways we can while making the feedback actionable.

Contributing plans and studies

The region uses statewide plans and regional planning studies to inform the policy direction and investment plans for the Imagine 2050 Transportation Policy Plan. This is part of the continuing planning process required under federal law. Regional planning studies typically explore a specific topic in detail and provide recommendations for consideration in the Imagine 2050 TPP development related to content like policies and actions, investment plans, performance evaluation, and project lists. These studies are regional in nature and are in addition to corridor-level or subregional planning work completed by regional implementing partners, which are not summarized here. Most of these contributing plans and studies include engagement with technical stakeholders as well as some engagement with policy stakeholders and community-based stakeholders. The following studies contributed to this plan development:

- Minnesota Statewide Multimodal Transportation Plan (Updated 2022)
- Minnesota State Highway Investment Plan (Updated 2023)
- MnPASS System Study, Phase 3
- Congestion Management Safety Plan, Phase 4
- Freeway System Interchange Study
- Twin Cities Highway Mobility Needs Analysis
- Intersection Mobility and Safety Study
- Congestion Management Process Policies and Procedures and Corridor Analysis Handbook
- Functional Classification Process Update

- Regional Safety Action Plan
- Urban Freight Distribution Study
- Transit Service Allocation Study
- Metro Transit Network Next Arterial Bus Rapid Transit Study
- Mobility Hub Planning Guide
- Regional Bicycle Transportation Network (RBTN) Bicycle Facility Guidelines and Measures
- Regional Bicycle Barriers Study
- Regional Truck Highway Corridors Study and Update
- Pedestrian Safety Action Plan
- Regional Travel Demand Management Study
- Electric Vehicles Planning Study
- Regional Transportation and Climate Change Multimodal Measures Study
- Travel Behavior Impacts of COVID-19
- Travel Behavior Inventory and On-Board Survey Programs
- Transportation Needs in Daily Life Study
- Maximum Mode Shift, a Vehicle Miles Traveled Reduction Study
- Equity Evaluation of Regional Transportation Investments

The plan also identifies new planning studies in the Work Program to start in 2024 and beyond that will inform future Transportation Policy Plan updates.

Public comment period

The Met Council released the Transportation Policy Plan for public comment on Aug. 15, 2024, and comments were accepted through Oct. 7, 2024, alongside Imagine 2050 and other system and policy plans. The Met Council held a public hearing to accept comments on the plan on Sept. 25, 2024.

We received approximately 400 comments on the Transportation Policy Plan, including comments substantively related to long-range transportation planning that were submitted about other Imagine 2050 plan sections. Met Council staff reviewed each comment, considered and made responsive changes, and provided responses. These changes were widely distributed to policy and technical stakeholders who participated in the Transportation Policy Plan development prior to considering its adoption. A summary of major themes and complete listing of comments and responses are available in the plan's public comment summary available at www.metrocouncil.org.

Amendments and updates

The Imagine 2050 Transportation Policy Plan can be amended and is required to be updated at least every five years under federal law.[7] The next interim five-year update ahead of the 2060 plan update is planned to be a minor update that maintains the general plan goals and objectives but updates any necessary policy direction, finance assumptions, actions, and work program.

Amendments and administrative modifications to the plan will be posted as separate documents that are self-contained with all the relevant information, so please check the Met Council website for any amendments or administrative modifications to this plan after its adoption. The following are examples of what is addressed in each type of plan change.

- **Update:** Inclusion of substantial policy direction modifications that will likely impact the fiscally constrained plan, including the incorporation of major revenue assumption updates and new funded project lists.
- **Amendment:** Addition or substantial change of any regionally significant project that is not selected through the Regional Solicitation process (see the Long-Range Highway and Transit Capital Project Lists for definitions).

Inclusion of new revenues that do not substantially alter the policy direction of the plan but do impact the long-range project lists.

- **Administrative modification:** Inclusion of illustrative projects that are not included in the fiscally constrained plan. Updates to maps, figures, or policy direction that do not impact the fiscally constrained plan.



Approach to Regional Goals

The following sections describe the Imagine 2050 Transportation Policy Plan approach to the regional goals. The discussion on each goal includes the following sections: objectives, performance measurement, policies, work program, major topics, recent work, and examples of supporting work by partners.

Regional goals and transportation objectives

Our region is equitable and inclusive. Racial inequities and injustices experienced by historically marginalized communities have been eliminated; and all people feel welcome, included, and empowered.

- Historically disadvantaged communities are better connected to jobs, education, and other opportunities.
- We repair and eliminate disparate and unjust impacts and harms to Black people, Indigenous people, and people of color.
- We better meet the transportation needs of people who have disabilities or limited mobility.

Our communities are healthy and safe. All our region's residents live healthy and rewarding lives with a sense of dignity and well-being.

- People do not die or face life-changing injuries when using any form of transportation.
- People feel safer, more comfortable, and more welcome when using any form of transportation.
- We mitigate and avoid harms to people caused by nearby transportation infrastructure and use (for example, air quality, noise, light).
- People are better connected to community and cultural resources that support their physical, emotional, and mental well-being.
- People can increase physical activity with more opportunities to walk, roll, or bike.

Our region is dynamic and resilient. Our region meets the opportunities and challenges faced by our communities and economy including issues of choice, access, and affordability.

- People and businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions.
- People have better travel options beyond driving alone to meet their daily needs, with a focus on improving travel times, reliability, directness, and affordability.
- People have more predictable travel times when traveling on highways, with a focus on reducing excessive delays.

- People and businesses can rely on predictable and cost-effective movement of freight and goods.

We lead on addressing climate change. We have mitigated greenhouse gas emissions and have adapted to ensure our communities and systems are resilient to climate impacts.

- The region's transportation system minimizes its greenhouse gas emissions.
- People have more reliable access to zero emissions vehicle infrastructure.
- By 2050, the region reduces vehicle miles traveled by 20% per capita below 2019 levels.

We protect and restore natural systems. We protect, integrate, and restore natural systems to protect habitat and ensure a high quality of life for the people of our region.

- The region's transportation system protects, restores, and enhances natural systems (for example, air, water, vegetation, and habitat quality).

Our region is equitable and inclusive

Equity is embedded in Imagine 2050 at different levels: as a value, as a goal, and in transportation specific objectives in the Imagine 2050 Transportation Policy Plan. Values are core beliefs or principles that guide the Met Council's work, our expectations of partnerships, and our policy and program development. The Met Council has identified equity in a core set of values that we believe are most important to the issues and opportunities that face the region, now and into the future:

> Equity means that we value the people and communities of our region. Our region is economically and culturally vibrant. However, we recognize the harm and disparities that systemic injustices, including racism, have created.
>
> We are dedicated to creating systems, policies, and programs that repair and heal past harms, foster an equitable future, and eliminate disparities. People in communities that historically and currently experience marginalization will be centered in this work in leadership roles.

Objectives

- **Historically disadvantaged communities are better connected to jobs, education, and other opportunities.**
- **We repair and eliminate disparate and unjust impacts and harms to Black people, Indigenous people, and people of color.**
- **We better meet the transportation needs of people who have disabilities or limited mobility.**

Performance measurement

Performance measures help evaluate how well the Imagine 2050 Transportation Policy Plan is addressing the region's goals and objectives, as defined in this plan and Imagine 2050. The measures used to track performance for equity and inclusion in this plan are access to destinations, exposure to pollution, exposure to noise, and exposure to extreme heat. More on these measures can be found in the Imagine 2050 TPP Evaluation and Performance section.

Improving access for all modes (including alternatives to driving) is one step towards a more equitable and inclusive region. Automobiles currently offer the highest job accessibility by a large margin. The average resident can reach 50% of all jobs in the region in 20 to 25 minutes by car during the morning commute. By contrast, less than 6% of the region's jobs can be reached by bike and transit in an hour. The transit investments in the 2050 Transportation Policy plan are expected to increase transit accessibility by 15% in 2050.

Performance measures also show that exposure to air pollution, noise, and extreme heat are often highest along heavily used roads and highways. Under existing conditions at least, these are frequently areas with higher percentages of low-income households and people of color. How policies influence the location and intensity of traffic on these facilities going forward will also influence the equity of our transportation network.

Policies

The Imagine 2050 Transportation Policy Plan sets five policies related to transportation equity and environmental justice. These policies and their supporting actions are detailed in Policies and Actions.

Policy 4. Conduct engagement activities and implement shared decision making with historically underrepresented communities throughout policy making, planning, and project development to ensure equitable distribution of the benefits and burdens of transportation investments.

Policy 5. Ensure communities and investments meet federal Americans with Disabilities Act standards and encourage partner government agencies to go above minimum standards to fully meet the needs of people who have a disability in infrastructure, services, communication, and engagement.

Policy 6. Implement strategies against gentrification and displacement caused by transportation investments.

Policy 7. Evaluate processes, policies, programs, and plans to ensure that community benefits and burdens from transportation investments are distributed equitably.

Policy 8. Implement investments that repair harms and impacts to historically underrepresented communities from past highway investments.

Additional policies or actions may be amended into the plan after the completion of work in progress from the Equity Evaluation of Regional Transportation Investments study or the upcoming Metropolitan Highway Harms study.

Work program

The Imagine 2050 Transportation Policy Plan identifies the specific work program items related to this goal area. More information on these items can be found in the work program.

The Metropolitan Highway Harms Study will identify and address the long-term harms caused by Minnesota's Metropolitan Highway System and propose mitigation investments for inclusion in the Imagine 2050 Transportation Policy Plan. Additionally, the Transportation Project Impacts to Disadvantaged Communities project aims to develop a methodology for assessing the benefits and harms of transportation projects on various demographics, addressing federal requirements such as environmental justice and Justice40, and incorporating community guidance to inform transportation policy and funding decisions. Finally, the Community Assessment and Project Public Engagement Guide, building on the Equity Evaluation of Regional Transportation Investment Processes Study and the framework and tool it produced, will provide a framework for early community engagement, ensuring equitable distribution of transportation benefits and burdens by mapping community assets, defining communities, and integrating their transportation needs into project planning, development, and decision making.

Major topics

Equity and inclusion are framed by several important concepts described below, including an equity definition for Imagine 2050, a racial equity framework, environmental justice framework, federal regulatory context, and past and ongoing transportation-related harms.

Equity definition

Imagine 2050 includes the following definition for equity:

Equity at the Met Council means that historically excluded communities – especially Black communities, Indigenous communities, and communities of color – have measurably improved outcomes through an intentional and consistent practice of adapting policies, systems, services, and spending so that they contribute to the repair of both historic and ongoing injustice.

Racial equity framework

The Center for Urban and Regional Affairs at the University of Minnesota has used a racial equity framework to guide its work with communities and other stakeholders. The Met Council supports the continued use of this framework through Imagine 2050. The framework represents the Met Council's commitment to the regional equity goal and value statement. It also provides expectations for how equity should be expressed and visible in policy language for the Met Council.

Figure 1.2: Met Council racial equity framework



Contextualized
Ensure solutions address systemic inequities.

Community centered
Work with impacted people and populations to co-create solutions.

Reparative
Seek restorative remedies commensurate with the level of negative impact.

There are three ongoing elements in the framework:

- Community-centered: The people who are most negatively affected by the inequities that will be addressed need to share in the process to co-create solutions that address their needs.
- Contextualized: The solutions that are developed as part of a project, program, or process must be related to addressing systemic inequities. Disconnected solutions will not help reduce inequities.
- Reparative: Solutions help repair the root causes of the inequities the plan addresses.

See the Our Region is Equitable and Inclusive section of Imagine 2050 for further detail.

Environmental justice framework

The Met Council's environmental justice framework, discussed in more detail in the Our Region is Equitable and Inclusive section of Imagine 2050, defines environmental justice as the right for all residents to live in a clean, safe environment that contributes to a healthy quality of life.

Environmental justice centers, but is not limited to, Black communities, Indigenous communities, communities of color, disabled communities, immigrant and refugee, and low-income communities who have and continue to experience a legacy of racism or other structural or systemic barriers that have resulted in environmental injustices, harms, and risks.

Through its regional values, the Met Council commits to conducting community-centered engagement, repairing past and ongoing harms, distributing benefits equitably, and preventing future burdens. Environmental justice at the Met Council requires necessary adaptations to Met Council services, requirements, policies, practices, processes, and decisions, starting with Imagine 2050, to support a healthy and safe region.

Federal regulatory context

The Biden-Harris administration undertook multiple equity-related actions, starting with the U.S. Department of Transportation's Equity Action Plan, which was released in January 2022 in response to Executive Order 13985. The plan focuses on expanding access to affordable transportation, supporting small, disadvantaged businesses, increasing community input in transportation decisions, and boosting federal equity investments. The Justice40 Initiative, established by Executive Order 14008, aims to direct 40% of federal investment benefits to disadvantaged communities, encompassing programs like Carbon Reduction and Safe Streets and Roads for All. Executive Order 14096 updated the definition of environmental justice to include people with disabilities; this order functions in tandem with the earlier Executive Order 12898 on environmental justice. Title VI of the Civil Rights Act ensures nondiscrimination in federally funded programs based on race, color, and national origin, and the Rehabilitation Act and the ADA protect the rights of people with disabilities. The U.S. Department of Transportation's 2022 Disability Policy Priorities emphasize multimodal accessibility, job access, vehicle accessibility, and robust enforcement of disability laws. More information on these federal initiatives can be found in the Environmental Justice section.

Past and ongoing transportation-related harms and need for action

The Met Council acknowledges the transportation system created by government decisions has excluded, unjustly harmed, and displaced some communities, and that many of these harms continue today. People who have suffered from a legacy of racism or other structural or systemic barriers include Black communities, Indigenous communities, communities of color, and people who have disabilities. Transportation should connect people to each other and meet their daily needs. Yet for some communities, transportation, or in some cases the lack of it, has created disconnection from destinations and formed barriers within communities.

This plan acknowledges these effects and pairs them with actions to address these injustices and create beneficial connections for these communities.

Race and transportation

Broader discrimination in society plays out in our transportation system along with other areas such as housing. Black people, people with disabilities, people of color, and people living in poverty have their own intersecting histories of erasure, discrimination, and disproportionate impacts related to transportation. As one example, transportation is intertwined in the history of Black Americans, beginning with the transport of enslaved Africans to this land hundreds of years ago. After slavery ended, segregation continued to restrict how Black Americans traveled and where they could live. The historic discriminatory land use patterns that affect transportation are discussed in Our Region is Equitable and Inclusive section of Imagine 2050. The

Imagine 2050 TPP Evaluation and Performance section of this plan also discusses differences in travel by race, such as the higher use of transit by Black people, Indigenous people, and people of color in the region. The University of Minnesota report Advancing Transportation Equity: Research and Practice further outlines impacts of segregation and the inequities of an auto-dominated system in Minnesota.

Transportation-related disparities

Some of the known transportation-related disparities in the region include:

- The Life and Breath report analysis done in 2022 by the Minnesota Pollution Control Agency and the Minnesota Department of Health found that "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 who live with a disability."[8] Vehicle traffic is a major source of air pollution, and Black people, Indigenous people, and people of color live in higher concentrations in closer proximity to busy roadways.
- Over 30 years after the Americans with Disabilities Act became law, people with disabilities continue to face ongoing challenges with inaccessible infrastructure and programs. While the region has made progress since 2018 in updating local ADA transition plans (discussed in the Pedestrian Investment Plan), significant work remains to transition the transportation system and public right-of-way to meeting the minimums required by the ADA.
- Black and American Indian people are disproportionately killed while walking in the region. 14% of pedestrians killed between 2016 and 2019 were Black, compared to being only 9.6% of the region's population. 2.3% of pedestrians killed were American Indian, compared to being only 0.48% of the region's population.[9]
- Historical impacts from highways such as I-94, I-35W, and Olson Highway are well documented by other local stakeholders. In addition, arterials act as barriers within communities.
- As mentioned above, the University of Minnesota report Advancing Transportation Equity: Research and Practice identifies structural inequities that affect transportation equity, such as the spatial segregation and related mismatch between housing locations and job locations, as well as an auto-dependent system, leading to disconnection and harms for some communities.

Engagement with communities

Inequitable outcomes stem from processes that have historically excluded people, devalued their needs, and denied them power in decision-making processes that affect them. While engagement alone is not equity, working with people in the community who are most affected is central to making processes and outcomes more equitable. The Our Region is Equitable and Inclusive section of Imagine 2050 includes more discussion about community-centered engagement.

Changing processes to be more equitable includes increasing the transparency of decision-making processes and who makes decisions, changing who leads the engagement, and changing who is centered in the work. Engagement work needs to be intentional and meet people where they are with communication that is approachable and understandable. Surveys and public comment periods may not be the best methods to hear from historically underrepresented groups. Those who lead the engagement ideally should be representative of the population they wish to reach.

Incentives for community members

Community members contribute their lived expertise to transportation-related engagement efforts, yet the status quo has been that they are asked to volunteer their time while agency or consultant staff are paid for their involvement. This practice has been changing. The U.S. Department of Transportation publication Promising Practices for Meaningful Public Involvement in Transportation Decision-Making identifies providing financial incentives or reimbursements as one example for building more representative engagement into transportation planning processes. This could be scaled to the level of involvement and range from gift cards for survey or focus group participation to stipends for more ongoing contributions. The eligibility of these costs for federal funds can vary and should be verified before implementing any of these types of activities.

While some agency regulations or practices or state laws may need to change to support broad implementation of this practice across the region for both ongoing advisory groups and project-specific engagement, community members have indicated it is an important and needed evolution of practice.

Recent work by the Met Council

In the Equity Evaluation of Regional Transportation Investment Processes study, the Met Council in partnership with its community-based Equity Policy Group (EPG), developed a framework and tool for evaluating equity within transportation project initiation, funding, planning, and development processes. The framework and tool are being piloted on selected investment processes and following its finalization, the Council will offer regional training sessions for technical staff and community members on evaluating processes and implementing changes through using the Transportation Equity Evaluation Framework and Tool.

The Met Council study on Transportation Needs in Daily Life, completed in 2024, emphasizes understanding transportation challenges faced by vulnerable groups such as the unhoused, people with disabilities, LGBTQIA+ individuals, and older adults, while also addressing impacts and injustices experienced by Black people, Indigenous people, and people of color.

Supporting work by partners

MnDOT's Advancing Transportation Equity Initiative

MnDOT's Statewide Multimodal Transportation Plan (2022) includes a commitment to healthy equitable communities and improving equitable outcomes. Key themes through the plan are as follows:

- Eliminate burdens and reduce structural inequities for disproportionately impacted groups.
- Reduce transportation and housing costs for the most burdened.
- Support a diverse workforce through transportation.
- Includes analysis on transportation equity, environmental justice, and Title VI.

In addition to supporting the equity elements of the Statewide Multimodal Transportation Plan, the agency's Advancing Transportation Equity initiative has conducted recent research on equity:

- Centering the Margins: The Transportation Experience of Underserved Communities (2023)
- Advancing Equity in Accessibility and Travel Experiences: The Role of Gender and Identity (2023)
- Equity in Performance Measurement (2022)
- Advancing Transportation Equity: Research and Practice (2019)

City of Minneapolis Racial Equity Framework for Transportation

The city's Transportation Action Plan called for the creation of a racial equity framework for use in a transportation context. This was supported by other city work, like the city's Strategic Racial Equity Action Plan, and other city plans.

City of Saint Paul Rondo Inheritance Fund

The city's Inheritance Fund program provides downpayment assistance or homeowner rehabilitation funds for low-income residents from the Rondo neighborhood to help build wealth through homeownership in the city for direct descendants of people who owned property that was taken for the construction of I-94.

Human Toll: A Public History of 35W

This community collaboration with researchers at the University of Minnesota, the Hennepin History Museum, and the Sabathani Community Center collected oral histories on the impacts I-35W had on people living in south Minneapolis along the corridor.

ReConnect Rondo

This Saint Paul nonprofit organization has been working since 2016 with the community and government agencies on restorative investments for the Rondo neighborhood including a land bridge over I-94 and cultural district.

Our communities are healthy and safe

Transportation safety is part of public health. Traffic crashes have direct impacts when they result in death or serious injuries. Beyond those effects, people feeling safe and comfortable while traveling can improve mental health and social connection. As such, transportation can be considered a key social determinant of health. Social determinants of health are nonmedical factors – including economic stability, education, health care access and quality, social and community context (including discrimination), affordable and stable housing, and neighborhood and built environments – that influence health outcomes. Transportation uniquely crosses over all these areas since it offers access to these important needs.

Elevating health and safety as a regional goal comes at a time when life expectancy in the U.S. has decreased compared to the early 2000s and lags behind other countries,[10] and fatalities and serious injuries from traffic crashes have increased since the COVID-19 pandemic began. Coordinating with partners across areas such as land use, housing, and other services is crucial for improving how transportation can support public health and safety.

Objectives

- **People do not die or face life-changing injuries when using any form of transportation.**
- **People feel safer, more comfortable, and more welcome when using any form of transportation.**
- **We mitigate and avoid harms to people caused by nearby transportation infrastructure and use (for example, air quality, noise, light).**
- **People are better connected to community and cultural resources that support their physical, emotional, and mental well-being.**
- **People can increase physical activity with more opportunities to walk, roll, or bike.**

Performance measurement

Performance measures help evaluate how well the Imagine 2050 Transportation Policy Plan is addressing the region's goals and objectives, as defined in this plan and Imagine 2050. Transportation safety is a measure which is required to be tracked by the federal government, while public health measures are tracked regionally for the purposes of this plan. The measures used to track performance for safety and public health in this plan are: fatalities and serious injury rate on roadways; transit safety performance; travel share by mode; and air pollutant emission levels. More on these measures can be found in the Imagine 2050 TPP Evaluation and Performance section.

Since 2020, fatalities and injuries along the region's transportation system have been increasing. Policies will need to reverse this trend to achieve the objective that people do not die or experience life-changing injuries when using the transportation system.

The Met Council forecasts that regional air pollutant levels will significantly decrease between 2025 and 2050, largely due to increased fuel efficiency and cleaner burning combustion engines over the next 30 years. The Met Council also projects that a combination of improvements to the transit system and demographic changes will create some shifts from automobile travel to transit usage and more active forms of transportation such as biking and walking.

Policies

The Imagine 2050 Transportation Policy Plan sets six policies related to safety and public health. These policies and their supporting actions are detailed in Policies and Actions.

Policy 9. Plan for and invest in transportation facilities that complement existing and planned land use and are dignified and comfortable for all users.

Policy 10. Work to eliminate fatalities and serious injuries from traffic crashes on the transportation system by 2050 through implementation of the Safe System Approach.

Policy 11. Emphasize and prioritize the safety of people outside of vehicles in the transportation right-of-way.

Policy 12. Provide safe, secure, and welcoming transit facilities for all users.

Policy 13. Use transportation investments and priorities to reduce negative health impacts influenced by the transportation system.

Policy 14. Incorporate culturally appropriate placekeeping and placemaking into transportation projects, infrastructure, and right-of-way.

Some of the safety-related actions may be further influenced by work done as part of the Regional Safety Action Plan that is scheduled to be completed in mid-2024. This could include connections to high-injury streets identified in the region through crash data analysis and systemic risk factors.

Work program

Health is a new focus area for the Met Council in planning considerations. We have partnered with the University of Minnesota's Center for Transportation Studies on a series of workshops related to the Imagine 2050 Transportation Policy Plan goals. The aim is to help identify needed future research and planning-related work. Public health is one workshop focus that will identify needs that the Met Council and partners can address.

One challenge with addressing health connections with transportation is more clearly identifying critical destinations that contribute to public health, such as grocery stores, healthcare facilities, parks, and other everyday destinations. The work program includes a project to define, inventory, and map essential destinations to aid local and regional partners to connect populations to these destinations and improve public health outcomes. The work could also include expanding accessibility analysis to include these essential destinations. This work may be done in partnership with other agencies, such as MnDOT.

On safety, Met Council is planning to develop a Safer Connections to Transit program to ensure safe year-round access to transit for people who are walking, rolling, or biking. Additional work program items may emerge from programmatic recommendations that have not yet been completed as part of the Regional Safety Action Plan.

Major topics

Traffic safety

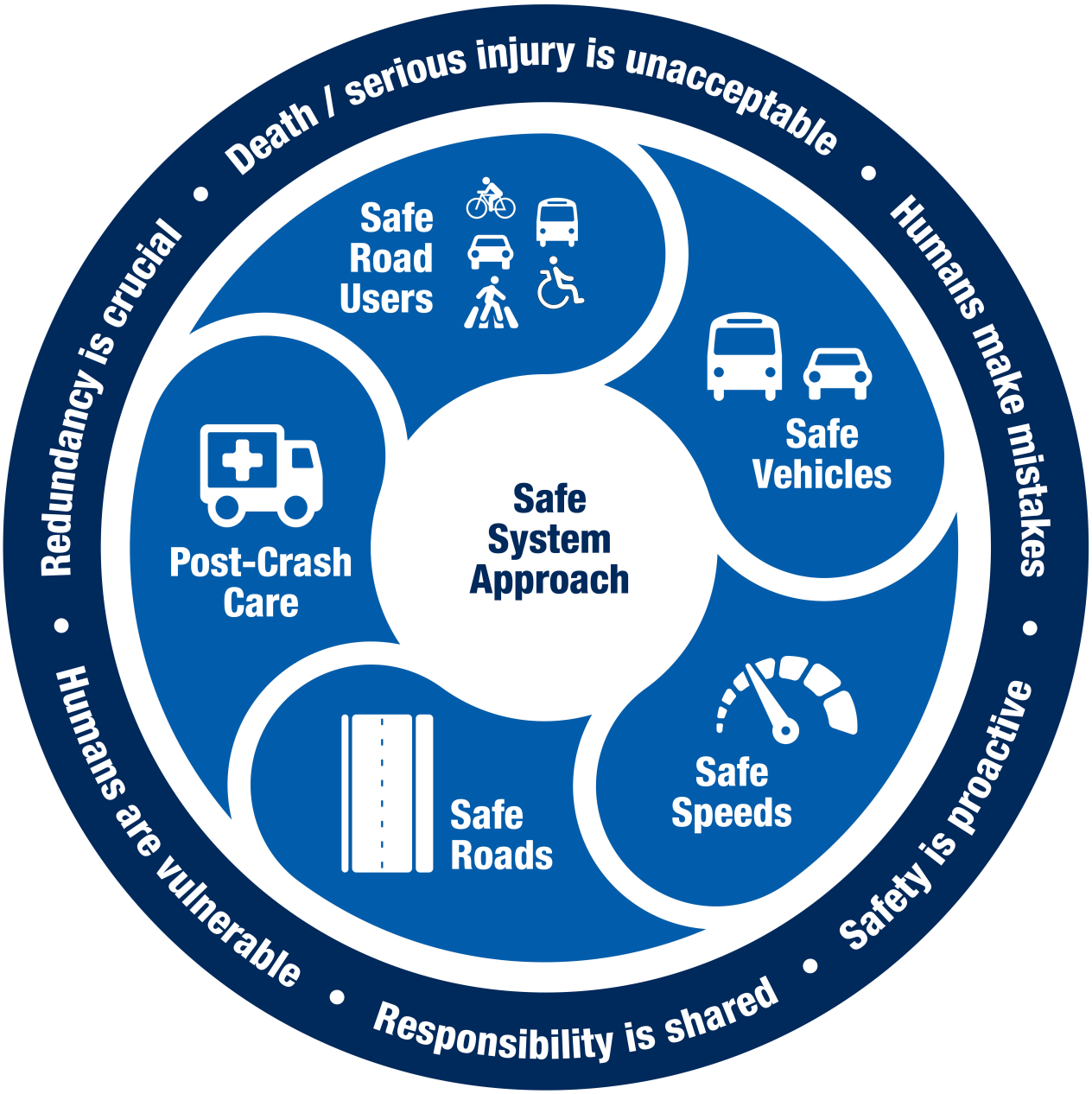
Arriving safely at destinations or home should be an expectation of a reliable, safe transportation system. Yet every year, too many people die or are seriously injured in traffic crashes involving vehicles. Over the 2018-2022 period, an annual average of 152 people died and 786 people were seriously injured while travelling on roadways in the Twin Cities.[11] In addition to these immediate impacts, crashes create other potential effects such as medical and other bills or changes in employment.

Minnesota has supported a goal of zero deaths from traffic crashes for a long time with work through the Minnesota Toward Zero Deaths program, which is a partnership between the Minnesota Departments of Transportation, Health, and Public Safety with participation from local agencies. At the national level, the work toward reaching zero deaths from traffic crashes is now being framed in a Safe System Approach, and work to implement this approach is growing in Minnesota and the region.

Safe System Approach

The Safe System Approach, promoted by the U.S. Department of Transportation, is an important shift in safety planning and implementation. It provides a more holistic approach to addressing traffic safety as a system rather than as individual problems or solutions.

Figure 1.3: Safe System Approach principles and elements [12]



The Safe System Approach reframes how to address traffic safety with core principles and elements that incorporate these areas. The Federal Highway Administration highlights that “the Safe System Approach requires a culture that places safety first and foremost in road system investment decisions.”

Safe System Approach principles

As outlined in Figure 1.3, the Safe System Approach has six principles:

- **Death/serious injury is unacceptable.** This approach prioritizes crashes that result in death or serious injuries. The goal is to eliminate these impacts, not eliminate every crash.
- **Humans make mistakes.** We can't educate and enforce our way to reliably perfect human behavior. The transportation system needs to be designed and operated so that mistakes don't result in death or serious injury.
- **Humans are vulnerable.** Whether traveling outside or inside vehicles, people can take only so much physical impact from a crash with a vehicle. The transportation system needs to be centered on these human limits that cannot withstand the dangers a vehicle-dominant system presents.
- **Responsibility is shared.** Everyone responsible for the transportation system needs to work to prevent crashes that cause death or serious injury. This includes system designers and operators as well as vehicle manufacturers.
- **Safety is proactive.** Rather than belatedly fixing issues related to fatalities or serious injuries after they happen, a proactive system uses tools to identify risks and take mitigation steps to prevent these from happening.
- **Redundancy is critical.** Redundancy in the transportation system means that if one thing goes wrong, other elements are in place to provide proactive protection against death and serious injury.

The Federal Highway Administration provides a summary of the shifts from more traditional safety work to using a Safe System Approach, as illustrated in Figure 1.4.

Figure 1.4: Safe System Approach vs. traditional safety practices [13]



Safe System elements

The Safe System Approach includes five elements in a holistic context.

Safe speeds

As speeds of vehicles increase the likelihood of crashes becoming fatal rises considerably, at 25 MPH, 90% of pedestrians are likely to survive a crash, while at 50 MPH less than 50% are likely to survive. Reducing speeds helps in three important ways:

1. Reduces the impact forces in a crash
2. Provides additional time for drivers to stop
3. Improves visibility

Managing speeds is a key aspect of the Safe System Approach.[14] Part of managing speed is ensuring that target speeds are appropriate for the roadway type and context. This is a big difference from more traditional approaches that focused more on exceeding speed limits.

Recent developments have helped restrict high-speed driving, including:

- **City speed limits.** Since 2019, cities can voluntarily set speed limits on city streets based on a safety, engineering, and traffic analysis. The Cities of Minneapolis and Saint Paul worked jointly to lower their speed limits in 2020, and some other cities in the region have followed, including St. Louis Park. The two cities provided common promotional materials to residents in each city to build awareness of the changes.
- **Speed safety cameras.** Cameras that can document speeding drivers are considered a proven safety countermeasure by the Federal Highway Administration. In 2024, the Minnesota Legislature authorized the cities of Minneapolis and Mendota Heights to pilot speed safety camera systems and directed MnDOT and the Minnesota Department of Public Safety to pilot these systems in construction work zones.
- **Advanced vehicle technology.** The National Transportation Safety Board has called for intelligent speed assistance to be implemented in all new vehicles. It also recommends research and guidelines for implementing this technology as an interlock on vehicles for drivers who repeatedly speed. Passive intelligent speed assistance technology alerts speeding drivers, while active forms of it either make it more difficult to exceed speed limits or prevent drivers from exceeding the limit.

Lowering and enforcing speed limits are not the only tools; other changes are needed to roads and the surrounding environment to provide appropriate guidance to drivers.

Figure 1.5: Depiction of a "20 is plenty" ad sign from cities of Minneapolis and Saint Paul [15]



Safe roads

The design and operation of roadways can help reduce the severity of crashes and influence behavior, especially drivers.[16] The Collaborative Sciences Center for Road Safety, a National University Transportation Center with several university partners including the University of North Carolina and the University of California, notes that road design should consider current and planned land use contexts so that the most likely travelers are safely accommodated.[17] The center also cautions against assuming design manuals will automatically help address needed safety treatments since all included practices are not based on evidence of actual safety impacts; it recommends focusing on reducing risks to road users based on vulnerabilities.[18]

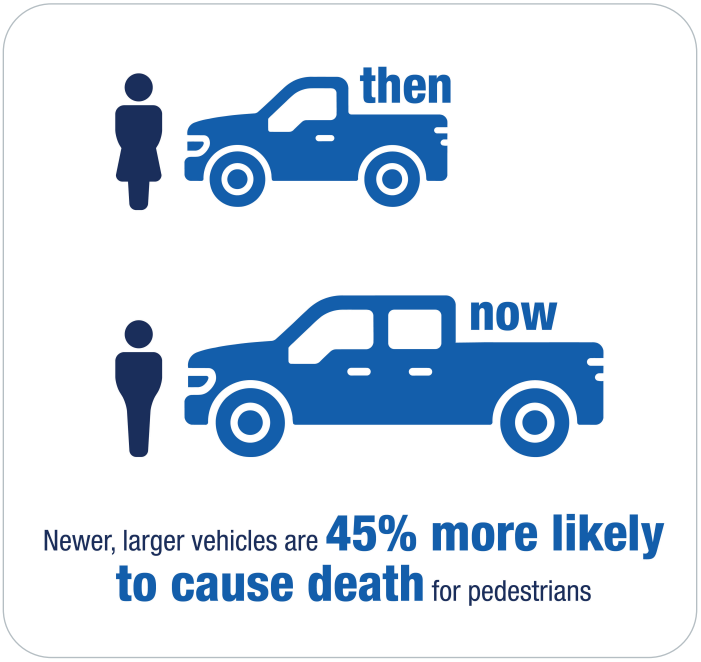
In January 2024, the Federal Highway Administration released its Safe System Roadway Design Hierarchy, which covers infrastructure countermeasures that can effectively reduce deaths and serious injuries from traffic crashes. The report is intended to be a tool to align the countermeasures and strategies used to apply the Safe System Approach of not accepting deaths and serious injuries. The report frames the existing Proven Safety Countermeasures in terms of how each one addresses this design hierarchy.

Safe vehicles

Safety applies not only to the occupants in vehicles, but also those traveling outside vehicles. Unfortunately, current vehicle safety ratings do not address safety for people outside of the vehicle. The regulation and design of vehicles can be used to reduce the severity and frequency of crashes to improve safety for everyone.

Technology can assist with safety, but it should not be relied on as the only solution, for example, thinking autonomous vehicles will solve safety issues. The Collaborative Sciences Center for Road Safety cautions against assuming that technology alone will solve the problem. The center encourages focusing on the basic principles, which apply at the local level: "Work with communities to manage travel speeds and reduce the number of vehicles on our roads through changes to built environments, policies, social norms, message framing, and incentives.[17]

Figure 1.6: Larger vehicles are more likely to cause pedestrian deaths



While this element of the approach may feel out of the realm of state and local agencies, there are opportunities at times to comment to the National Highway Traffic Safety Administration on vehicle regulations. Using influence as safety stakeholders can be a strategy in addition to focusing on areas where agencies have more control and responsibility over implementation.

The increasing size and weight of vehicles sold in the U.S. have led to concerns about safety impacts, especially for people walking and bicycling.[19] Some local communities in the U.S., such as Washington D.C., are considering addressing larger and heavier passenger vehicles, such as increasing taxes on those vehicles. Newer vehicles often have blunter and higher front ends. These impact pedestrians more severely than smaller cars and trucks do because the point of impact is higher on the human body. The Insurance Institute for Highway Safety published research in 2023 that showed larger vehicles were 45% more likely to cause death in crashes with pedestrians.[20]

Safe road users

The Collaborative Sciences Center for Road Safety notes in their list of the top Safe System implementation pitfalls that all too often, shared responsibility is equated with equal responsibility. Yet the power to change the transportation system is unequal, as is the role in physical impacts in a crash. Drivers and pedestrians and bicyclists do not share equal responsibility since drivers of vehicles cause the impact. Users of the transportation system do not share the same power to change the system that engineers and elected officials may have. Some road users, such as pedestrians and bicyclists, are also operating within a system that has, for a long time, often not been designed to adequately meet their needs. The transportation system needs to focus on reducing impacts to the most vulnerable users in settings where vehicles present dangers.

Post-crash care

Emergency first responders are critical for people involved in crashes to ensure they get the medical care they need promptly, and this is more of a challenge in rural areas. This element also encompasses any needed traffic incident management, the forensic analysis done at crash sites, and other work.

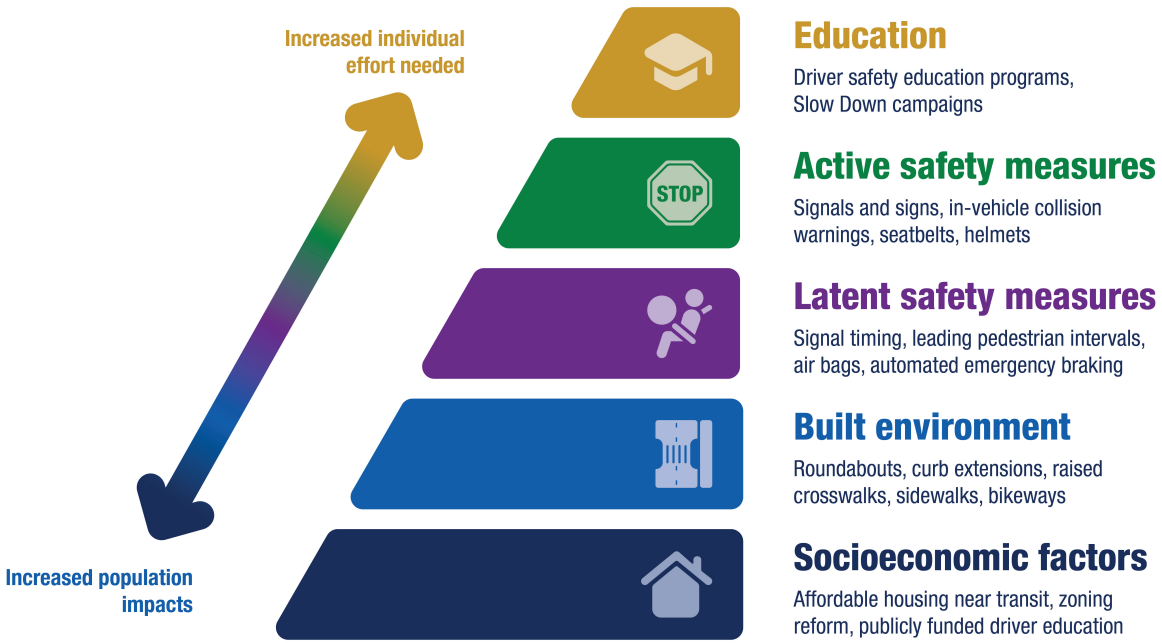
Use of Safe System Approach

Regional studies should incorporate the Safe System Approach and understanding in their work, including prioritizing crashes that would result in death or serious injury and addressing all modes. In November 2023, the Federal Highway Administration released a report on the Safe System Approach for the Urban Core that includes checklists for application at the policy, program, and project levels along with case studies.

Integration of public health with Safe System Approach

Incorporating a public health framework in transportation safety could be helpful in addition to using a Safe System Approach. Recent research proposed a Safe System pyramid to better connect public health principles with transportation safety work.[21] Five tiers build this pyramid approach, beginning with socioeconomic factors that are addressed by approaches such as better connecting housing with transit, reforming policies to support reducing vehicle miles traveled, and incorporating safety features in commercial vehicle fleets to more broadly affect health of the population. Changes to the built environment and built-in safety measures such as automated speed enforcement and vehicle standards form the middle tiers. The remaining two tiers focus more on individual effort such as following signals and signs and education campaigns; these are less effective at population-wide levels from a public health perspective. This approach recognizes that impacts from vehicle speeds are the primary cause of injury in traffic crashes that need to be prevented for health outcomes.

Figure 1.7: Safe System Approach pyramid



Safety, comfort, and belonging while traveling

Feeling safe, comfortable, and welcome while traveling means a wide range of things to different people – varying widely depending on intersections of race and ethnicity, gender, age, and disability, and other aspects of people's identities. Facilities beyond traditional transportation infrastructure can be crucial for safety and comfort, especially for people walking, rolling, biking, and riding transit. (Facility design for these modes is discussed more in each modal investment plan.) These facilities include shade, places to sit and rest, public restrooms, drinking fountains, and eyes on the street from people who may be of assistance when needed.

Race and ethnicity

One of the most challenging areas for addressing safety, comfort, and belonging while traveling in the U.S. and the Twin Cities region is disparities across race and ethnicity. As an example, in the early years of the COVID-19 pandemic, harassment of and hate crimes against Asian Americans increased dramatically in the U.S. In Saint Paul in 2021, a community group volunteered to patrol the Frogtown neighborhood near light rail stations and provide escorts for Asian American people to and from the light rail to help provide more of a sense of safety for them.[22] The fear felt by many Asian Americans during this time and its effects on travel was brought up by participants in the Met Council's Transportation Needs in Daily Life study. One focus group participant among caretakers in Anoka County said:

Analyses of enforcement data show that people of color experience a disproportionately higher likelihood to experience traffic stops on roads or enforcement on transit. At the request of the Minnesota Legislature, the University of Minnesota Law School conducted the 2003 Minnesota Statewide Racial Profiling Study[23] It found that "drivers of color are overrepresented among those stopped; overrepresented among those searched; and underrepresented among those found to have contraband on their person or in their vehicle as a result of being searched."

> *There were a lot of Asian people that were targeted during COVID. My parents were stuck in the house and totally didn't want to go anywhere. I would have to encourage [my parents] and say we're going to the park we always go to. There's not that many people, but my dad is always very alert. He wants to go where people can see us. It's sad that they felt they couldn't go and enjoy their walk. That's where I come in as a caregiver and say ok let's go, I'm here.*
>
> *- Anoka County focus group participant*

Unfortunately, the 2003 report is the most recent analysis available at a statewide or regional level. Minnesota does not require local police departments to collect traffic stop data including race, so there is not a consistent database to use for routine analysis on potential racial disparities across jurisdictions. Current federal funding promotes the development of statewide data collection and programs to reduce racial disparities in traffic stops. In 2021, the Bipartisan Infrastructure Law increased funding to the National Highway Traffic Safety Administration and flexibility for grants under the federal Section 1906 program to prohibit racial profiling and reduce disparate impacts from traffic stops. This federal funding is an opportunity to address the issue across both the region and the state.

While regional or statewide analysis is hampered by the lack of consistent data, analysis has been done of some local agencies individually. In 2015, Metro Transit analyzed its police incident data by race and found disparities in its treatment of people of color. In 2023, the U.S. Department of Justice and the U.S. Attorney's Office released an investigative report of the Minneapolis Police Department. As part of this report, they reviewed traffic and pedestrian stop data for the City of Minneapolis for potential racial disparities. This analysis found that Black and Native American people were stopped disproportionately to their population. The analysis also found that traffic stops differed by the predominant racial demographics of neighborhoods; mostly white neighborhoods had fewer minor traffic stops when compared to neighborhoods with more people of color.[24]

In 2021, Ramsey County changed its traffic stop policies and practices to decrease nonpublic-safety traffic stops such as expired tags or minor equipment violations to reduce racial disparities and focus on public safety issues. The county's analysis found that Black drivers were four times more likely to be stopped than white drivers for these types of violations. After the changes were implemented in some local police departments within the county, the county found that Black drivers experienced a 66% decrease in nonpublic-safety traffic stops, and the changes did not have an effect on crime in the county.[25]

The Met Council's Transportation Needs in Daily Life study highlighted disparities in experiences. The study policy recommendations included repairing and eliminating harms and injustices toward Black people, Indigenous people, and people of color. The study noted these groups "face more safety issues while traveling because of historically discriminatory attitudes and policies embedded in society" and in transportation-adjacent areas like policing, regardless of if they are walking, riding transit, biking, or driving.

Gender and Sexual Orientation

Experiences while traveling and choices made for traveling can be very different based on gender and sexual orientation. The Met Council's Transportation Needs in Daily Life study heard from women who shared stories of harassment, abuse, or violence when they traveled. People who are part of the LGBTQ+ community can also experience verbal or physical harassment or violence while traveling. Personal safety and security concerns lead some of them to restrict travel, especially at night. As part of the daily needs study, one focus group participant among Asian youth in Ramsey County said:

> *I guess just being a woman and visibly queer makes it much harder to travel on the bus or train. Because you can be subject to lots of harassment. At night you should not be on the train because of creepy people. Particularly this one night on the train I was in the back, against the wall, these two guys got on. The older guy was beating the younger guy up. I looked around for the number to call or text, but I couldn't see it.*
>
> *- Ramsey County focus group participant*

Men can also have personal security concerns, but they tend to be significantly lower than those experienced by women. MnDOT released a study in 2023, "Advancing Equity in Accessibility and Travel Experiences: The Role of Gender and Identity," that found that intersectionality is key when considering gender. Other characteristics such as race, age, and family role intersect with gender with different outcomes and needs. The study also found that nonbinary people "have worse subjective well-being outcomes" than either women or men.

Disability

In addition to considerations outlined in the Pedestrian Investment Plan, people with disabilities may have greater needs for supportive facilities such as public restrooms and places to rest. The Twin Cities Public Transit and Human Services Transportation Coordinated Plan from 2020 identified the lack of accessible public restrooms, shelters, and benches along transit routes as a challenge for people with a wide range of medical conditions or disabilities. The plan identified the need for coordination on access or provision of these services as a strategy to address the needs of people with disabilities. As with many other considerations for people with disabilities, such as curb ramps, the broader public would also benefit from these supportive services along transportation routes. For people with cognitive disabilities, clear wayfinding and communication can be especially important for travel.


IMAGINE 2050

Transportation benefits for public health

Transportation provides access to places and services that support physical and mental health.



Access to destinations and people

Transportation fundamentally is a means to the end of connecting us to the places and people we want and need to reach to live our lives. It enables us to do what matters the most in our lives. Transportation supports health by providing access to a wide range of needs and services, including:

- Affordable, fresh, and culturally appropriate food
- Health care services such as doctors, therapists, and pharmacies
- Supportive services such as religious or spiritual services and places
- Community support groups such as sobriety or grief meetings
- Education and employment
- Social and recreational activities such entertainment, parks, and connections with family, friends, and community members.



Physical activity

Moving supports both physical and mental health.

In 2015, the U.S. Surgeon General released a call to action to promote walking and walkable communities in recognition of the important role walking plays in public health. Walking provides numerous health benefits, including:

- Decreased risk of cardiovascular disease
- Lower blood pressure
- Maintenance of mobility for those with arthritis
- Improved happiness and relief from anxiety and depression

Bicycling also provides many of the same benefits. With the increase of electric-assist bicycles, more people have access to bicycling than before. Electric-assist bicycles support people with chronic health conditions who may not have been able to reliably or comfortably bicycle without them. Many transit riders can reach the recommended levels of physical activity through their regular walking or biking to connect to transit service and destinations.

Mental health

Communities that are more walkable support social connectedness where it can be easier to talk with neighbors and others.[26] In 2023, the U.S. Surgeon General highlighted the impact that increases in loneliness are having on Americans' mental and physical health and called for, among other things, communities designed to promote social connections.

These social connections don't always have to be close. Research has shown that weaker ties to people, such as someone a person might frequently chat with at the grocery store in their neighborhood, are also important in maintaining a sense of social connectedness.[27] Having more of a mix of types of daily interactions is associated with increased happiness.

Dr. Yingling Fan at the University of Minnesota mapped emotions associated with trips people made in the Twin Cities region. Her research discovered that people who biked or walked reported feeling happier more often. Considering how the spaces we move through make us feel can help create better conditions for well-being.

Transportation impacts to public health

Negative impacts from transportation affect our health in many ways, through air and noise pollution, traffic crashes, and creating barriers for communities. In addition, transportation intersects with public health in situations where the core causes are outside of the transportation system, but they play out on the transportation system, such as for people who are unhoused and seek shelter on transportation right-of-way or transit. In all cases, impacts can be disproportionate for people of color, and/or who live in poverty or are disabled.

Lack of access to destinations

Many people experience a lack of access to the destinations for primary needs in daily life. This can result in isolation (especially during winter), delays in receiving health care and other needed services, insufficient amounts of nutritious and fresh food, and underemployment or unemployment.[28] [29] [30]

Air pollution

Exposure to traffic-related particulates in air pollution is associated with increased risks for dementia, asthma, cardiovascular and heart disease, chronic obstructive pulmonary disease (COPD) and other respiratory diseases, and breast and lung cancer.[31]

Recent research has acknowledged that air pollution impacts from transportation are not just from exhaust emissions. Tire and brake particles, which are currently unregulated, are contributing to heart and lung disease.[32] A shift to electric vehicles may help address emissions from exhaust but will not address the unregulated health impacts from these pollutants, and the increased weight for electric vehicles accelerates tire wear and, consequently, particle pollution.[33]

In 2022, the Minnesota Pollution Control Agency and the Minnesota Department of Health released the updated report Life and Breath: Twin Cities Metro Area. It estimated annual health impacts of air pollution

by ZIP code for the seven-county region. The analysis found that although overall air quality has improved, the region continues to have health impacts from fine particles (PM2.5) and ozone pollution. These impacts continue to be disproportionate for neighborhoods with larger percentages of residents who are Black, Indigenous, people of color, people who have low incomes, people who do not have health insurance, and people with disabilities.

All of the metro region is within an Environmental Protection Agency-designated attainment area for carbon monoxide (CO), for coarse particulate matter (PM10) and for all other transportation-related air pollutants regulated by the Clean Air Act. Until September 24, 2022, parts of the region had been in nonattainment or in maintenance areas for one of the above pollutants, and analysis was performed under the Federal Transportation Conformity Rule to determine conformity of the Imagine 2050 TPP and TIP to the Clean Air Act. While conformity analysis is no longer required, the Minnesota Pollution Control Agency continues to monitor air pollution throughout the region and compare it to federal standards.

People are also exposed to harmful air pollution from other sources than transportation, and this can make it more challenging to be outdoors, especially to walk, roll, and bike and for people who are unhoused.

Minnesota set records for poor air quality in 2023, according to the Minnesota Pollution Control Agency (MPCA), which issues air pollution alerts for the state. The state had 52 days with air quality alerts in 2023. Of these, 13 were orange level alerts, and 9 were red level alerts. Orange and red levels are considered unhealthy, and recommendations include limiting time spent outdoors. Smoke from Canadian wildfires contributed to 16 alerts in 2023.

With the climate crisis, wildfire smoke is likely to continue as a potential health hazard from the increased frequency and length of wildfires due to changes in the climate. Reducing trips during these events is a recommended mitigation to lessen the combined impact with traffic pollution and reduce exposure to smoke. However, people who have fewer transportation and economic choices are less likely to be able to work from home or make other modifications, so they are more vulnerable to health risks from exposure to the smoke.

The region could think differently about the interaction with public health and the transportation system by considering transit facilities as locations for efficient distributions of needed supplies to higher-risk people. As an example, when smoke from the 2023 Canadian wildfires reached New York City, the State of New York distributed free high-quality N95 masks to the public in high-traffic areas such as transit stations and state parks to help people protect themselves from negative health impacts caused by breathing in the wildfire smoke.



Heat impacts

Our built and natural environments affect heat. As heat waves are expected to increase, our built environments need to be more resilient to extreme heat to support the increased impact the heat has on health. One example highlighted in the Met Council's work on extreme heat is that asthma attacks can be triggered by extreme heat, and more severe asthma attacks can be related to heart attacks. Residents of neighborhoods that are hotter due to more pavement and buildings that hold heat with less green space

to help cool can be subject to increased health conditions from extreme heat. Increasing tree canopy is one strategy to help counter impacts from heat.

Noise

Noise exposure from traffic increases risks for heart attacks, cardiovascular disease, strokes, sleep disturbances, and cognitive issues.[34] While noise walls related to highways are one potential mitigation, busier arterials may still have higher levels of noise that can't be addressed with noise walls. In many communities, significant portions of multifamily housing are sited on these busier arterial roads, subjecting their residents to increased noise.

Mental health and community connections

Traveling by any mode can be associated with stress and anxiety for some people. When walking, rolling, or bicycling, people can feel more exposed to the dangers of vehicle traffic, weather, or fearful for personal security. Drivers can feel stress in different contexts, including some from traveling at increased speeds on highways, in congestion during rush hours, in interactions with aggressive drivers, or after crashes. As part of the Met Council's Transportation Needs in Daily Life study, one participant in a focus group for Latino caregivers in Ramsey County talked about the stress associated with driving:

> *Previously, I didn't drive. I had panic attacks, okay? I would [get stressed] in my shoulders and my head. After three years, I started driving but I wouldn't drive far because I crashed on the freeway. But after five years, I took a course in Maplewood Mall. I would think to myself 'How am I going to get to work? How am I going to get to work?' This was an enormous stress for me. Truly. The truth is that I was losing sleep [over it].*
>
> *- Ramsey County focus group participant*

Transportation infrastructure has been responsible for disruption of social and community connections at different scales. The commonly cited example from the Twin Cities is the construction of I-94, which destroyed the predominately African American Rondo neighborhood in Saint Paul. The community in Saint Paul has been working to try to get the damage repaired in some forms, including a possible lid over the interstate in the Rondo area. This is far from the only highway that disrupted communities in this region. In 2024, the Met Council will begin a study on the harm done in the region by freeways.

Traffic crashes

Deaths and serious injuries from traffic crashes are the most direct impact of the transportation system on health. Impacts from serious injuries can lead to lifelong consequences for some people. Traffic safety was previously discussed in more detail.

Lack of affordable housing

One of the core requirements for overall health and well-being includes shelter. While providing shelter is not a primary purpose for transportation, vehicles are often used as places of shelter for people experiencing insufficient affordable housing options.

The region currently lacks a coordinated strategy for affordable housing, including shorter-term shelter, across local jurisdictions. As a result, people may either seek shelter on transit vehicles or camp in public right of way along highways and streets. The Minnesota Homeless Mortality Report 2017-2021 from the Minnesota Department of Health found that residents who are unhoused have a death rate that is three time higher than the general population.

Metro Transit's Homeless Action Team has been working for several years to help connect people who are seeking shelter on transit with needed services. In 2023, funding from the state legislature supported the creation of the Transit Service Intervention Project for Metro Transit. In this project, Metro Transit contracted with 10 community-based organizations to expand the outreach to better connect people to needed services, like those related to housing or addiction.

Learning from COVID-19 to support public health

The onset of the COVID-19 pandemic in early 2020 highlighted many of the known issues at the intersections of transportation and public health. Fundamentally, transportation enables the spread of illnesses through connecting people across space, especially with airborne viruses such as COVID-19.

The COVID-19 pandemic highlights that transportation needs to be better designed to help minimize the spread of infectious diseases while supporting our connectedness and health. The climate crisis is also associated with increased risks of future pandemics, so learning from COVID-19 can prepare the region for future possibilities. Potential implications for the transportation system include:

- Better ventilation and filtration are key for indoor spaces, including transportation facilities, to reduce transmission of airborne infectious diseases. Far-UVC light technology can help disinfect air in spaces, both indoor and concentrated outdoor ones. Applications of these technologies can improve health for people using transportation facilities and at sites of transportation-related employment. In addition, improving indoor air quality for all buildings can also help mitigate health effects of outdoor air pollution from transportation since the majority of our exposure to outdoor air pollution happens while we are indoors.[35] Air pollution also needs to be reduced at the source rather than solely relying on indoor air quality mitigation.
- The significant shift to telework, flexible work, and holding remote or combined in-person and online events increased opportunities for some people with disabilities who had previously been excluded. Maintaining remote participation options for work, recreation, social interactions, and government participation provides a venue for protecting public health while expanding opportunities for participation for a wider range of people. Reducing the need to travel also helps address the need to reduce vehicle miles traveled.

Recent work by the Met Council

Public Health

The connection between public health and transportation is a new area of focus for Imagine 2050. As a result, previous work on this topic has been limited but is expected to increase.

Safety

The Met Council has completed multiple safety-focused plans and studies since the last update to the Transportation Policy Plan. The Pedestrian Safety Action Plan aimed to enhance pedestrian safety by identifying high-risk roadway characteristics and locations, regardless of recent crash history, and targeting improvements in these areas to reduce injuries and fatalities. Key findings indicate that pedestrian crashes are more likely on roadways with specific features: lower speed limits and two-lane undivided roads in rural areas; moderate speed limits and traffic volumes with transit presence in suburban areas; and lower speed limits with higher traffic volumes and transit presence in urban areas. More details are available in the Pedestrian Investment Plan.

The Intersection Mobility and Safety Study looked to investigate ways to improve the efficiency and safety of principal arterial intersections in the Twin Cities metro by identifying high-need intersections and providing local agencies with implementation strategies. The study's analysis showed significant benefits from previous intersection improvements, with annual delay and safety benefits of $1 million and $7 million respectively. The study highlighted the effectiveness of both at-grade and grade-separated projects in addressing high-need intersections based on mobility, safety, multimodal elements, and equity performance measures. More details are available in the Highway Investment Plan.

The Met Council will complete a Regional Safety Action Plan by the end of 2024. The goal is to build a foundational safety plan for the region to aid local partners. The work of this plan will include the following major elements.

- Identify high-injury streets with concentrations of fatal or serious crashes.
- Proactively analyze systemic risk factors for crashes involving bicyclists or motorists.
- Include information on countermeasures and programmatic recommendations.
- Identify higher-priority corridors for safety.
- Help communities create safety action plans to apply for federal Safe Streets and Roads for All grants.
- Amend recommendations into the Imagine 2050 Transportation Policy Plan as appropriate.

Supporting work by partners

Public health

Minnesota state agencies have played a supportive role in connecting transportation and public health.

- **MnDOT's** Statewide Multimodal Transportation Plan (2022) includes a commitment to healthy, equitable communities and improving health with transportation using a Health in All Policies approach throughout planning, programming, inventory, and project delivery. The plan also includes other actions like supporting options for walking, biking, rolling, improving air quality and reducing noise related to transportation, and measuring elements like air quality, the proportion of people who walk or bike, and multimodal access to destinations.
- The Met Council worked with the **Minnesota Department of Health** and the **Public Health Law Center** on a Healthy Community Planning project that was designed to elevate public health challenges in the region.
- The **Minnesota Department of Health** works with transportation through its Statewide Health Improvement Partnership that supports active living, along with other planning and program work to encourage walking and bicycling to support healthy communities. This partnership funds work done by many city and county public health departments to support walking and biking. The department has hosted Walkable and Bikeable Communities workshops across the state and provides technical support for local agencies and communities working to improve conditions for walking and biking.
- The **Minnesota Pollution Control Agency** works to help reduce transportation-related emissions from greenhouse gas emissions, along with working to address air, water, and land pollution and climate.

Safety

Improving traffic safety requires work from many partners in different disciplines and at all levels of government.

- The National Roadway Safety Strategy was released in January 2022 by the U.S Department of Transportation and sets a vision of zero roadway fatalities, adopts the Safe System Approach, and identifies priority actions to reduce fatalities and serious injuries.
- The cornerstone of the state's traffic safety work centers in a partnership with the Minnesota Departments of Health, Public Safety, and Transportation for the Toward Zero Deaths program. In 2023, the state legislature created the statewide Advisory Council on Traffic Safety to advise the commissioners of these three state agencies and the governor on policies, programs, and services related to traffic safety, encourage research on safety topics, and review grants related to traffic safety. Local agencies participate in both of these partnerships.
- The Minnesota Department of Transportation has multiple plans and programs which directly touch on traffic safety.

    - The Statewide Multimodal Transportation Plan includes strategies, actions, and performance measures for transportation safety.
    - The Strategic Highway Safety Plan guides the state's safety programs and policies. It identifies the key, data-driven focus areas and strategies to help reduce deaths and serious injuries from crashes on the transportation system. This plan sets the long-term state goal of zero deaths and serious injuries from traffic crashes.
    - The Vulnerable Road Safety User Assessment includes data analysis and strategies for pedestrian and bicyclist safety and is considered an addendum to the Strategic Highway Safety Plan. This work identifies a high injury network and systemic analysis for MnDOT-owned facilities to identify higher risk areas.
    - District Safety Plans within MnDOT will look at regions within the state. In addition, other planning work such as corridor plans and system plans include safety elements.
- County-level road safety plans are currently funded by MnDOT and implemented by the counties' public works departments. Initially the plans were done between 2008 and 2013 with plan updates beginning in 2016. These plans develop prioritized lists of safety projects for county roadways with systemic analysis.
- Some cities have also already completed safety plans as well. Minneapolis developed the 2023-2025 Vision Zero Action Plan to guide its work, and the city received a $20 million implementation grant for systemic infrastructure improvements through the federal Safe Streets and Roads for All discretionary program. Saint Paul also completed a Safety Action Plan for the city in 2023 and was awarded a nearly $16 million implementation grant from the same federal program in 2024. MnDOT is also funding pilots for city road safety action plans.
- Through the federal Safe Streets and Roads for All discretionary program, other cities and counties in the region have received funding to develop city safety action plans. Recent recipients of these planning grants include Apple Valley, Bloomington, Brooklyn Park, Columbia Heights, Cottage Grove, Eagan, Edina, Elk River, Fridley, Hastings, Hennepin County, Hopkins, Monticello, New Brighton, Shakopee, St. Louis Park, West St. Paul, and Woodbury.


metrotransit.org
LRT
JAY X2
SmartDrive

Our region is dynamic and resilient

Transportation needs to be dynamic, so we can adapt to changing needs and provide people with more choices and access. We need to create and maintain transportation resilience, so we can withstand and recover from disruptions to how people and goods move throughout the region. And we need those transportation choices to be reliable and affordable.

Objectives

- **People and businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions.**
- **People have better travel options beyond driving alone to meet their daily needs, with a focus on improving travel times, reliability, directness, and affordability.**
- **People have more predictable travel times when traveling on highways, with a focus on reducing excessive delays.**
- **People and businesses can rely on predictable and cost-effective movement of freight and goods.**

Performance measurement

Performance measures help evaluate how well the Imagine 2050 Transportation Policy Plan is addressing the region's goals and objectives, as defined in this plan and Imagine 2050. The Dynamic and Resilient goal area includes measures that are required to be tracked by the federal government, with additional measures to be tracked regionally for the purposes of this plan. The measures used to track performance for a dynamic and resilient system in this plan are bridge and pavement condition, system reliability, congestion mitigation, transit asset management, infrastructure vulnerability to extreme heat and flooding, and critical bridges. More on these measures can be found in the Imagine 2050 TPP Evaluation and Performance section.

According to recent measures, travel time reliability has increased since the COVID-19 pandemic. Travel time reliability measures the proportion of auto travel that incurs typical travel times. It indicates how predicable auto trip times are. A higher percentage means more consistent travel times and a lower percentage means more inconsistent travel times. Before COVID, travel time reliability was around 75%. Since the pandemic, travel time reliability has risen above 90%, but has been slowly dropping in 2022 and 2023. It is important to continue monitoring this measure to see the longer-term post-COVID-19 travel trends.

Another measure of reliability is the average weekday delay per capita. The Met Council's travel model estimates that the median auto delay per traveler is just under 9:45 minutes per day. That means that over the course of an entire day, congestion adds about 9:45 minutes of extra travel time for automobile travel. This delay stays relatively constant in 2050, even with forecasted population gains. The Met Council forecasts that median weekday delay per capita will be just over 10 minutes in 2050.

Policies

The Imagine 2050 Transportation Policy Plan sets 17 policies related to transportation choice, reliability, and resilience. These policies and their supporting actions are detailed in Policies and Actions.

Policy 1. Maintain a robust and current set of data, maps, plans, processes, and applications to support regional transportation planning.

Policy 2. Ensure the region has funding to achieve our goals.

Policy 3. Asset management activities and investments must also seek to advance regional goals and objectives.

Policy 15. Plan and implement a complete bicycle network including local networks that connect to the Regional Bicycle Transportation Network alignments to provide connections between regional destinations and local bicycle networks.

Policy 16. Identify, prioritize, and improve locations where network gaps or physical barriers (like rivers, freeways, and rail corridors) may impede nonmotorized travel.

Policy 17. Provide regional funding and tools to support planning and implementation for pedestrian travel at the local level.

Policy 18. Use a variety of transit service types to match transit service delivery to meet residents' daily needs based on transit markets.

Policy 19. Plan for, invest in, and implement a network of transitways to expand access to reliable, frequent, high-capacity transit services.

Policy 20. Coordinate transit service delivery and operations to create a high-quality rider experience.

Policy 21. Use travel demand management to plan, fund, and promote multimodal travel options and alternatives to driving alone.

Policy 22. Provide high-quality connections within and between modes of transportation.

Policy 23. Implement a Complete Streets approach in policy, planning, operations, and maintenance of roads.

Policy 24. Plan for and invest in first/last-mile freight connections between major freight generators and the regional highway system.

Policy 25. Provide transportation options and transit advantages on roadway corridors with delay and travel time reliability issues.

Policy 26. Focus highway mobility investments on corridors with high levels of existing delay and travel time reliability issues.

Policy 27. Identify and implement activities and investments that will mitigate current or anticipated climate or weather-related impacts.

Policy 28. Pursue opportunities to minimize disruption and nonrecurring delay from weather, security, and traffic incidents.

Work program

The Imagine 2050 Transportation Policy Plan identifies the specific work program items related to this goal area.

Choice

Expanding travel choices is already a strong, existing theme in previous work programs, including a regional sidewalk inventory study. In this plan, this work is expanded include identification of pedestrian and bicycle overpass and underpass improvements, creation of a microtransit policy framework, updating the arterial rapid transit network, and developing a typology of Complete Streets sensitive to land use context to support functional classification.

Resilience

In response to increased need and focus on resilience, the work program includes completing and maintaining a Resilience Improvement Plan tailored to the needs of the region, and an analysis of the regional roadway network to identify where system redundancies are needed to improve resilience to disruptions.

Reliability

The work program will build on existing studies related to system reliability with new work, including travel demand management implementation guidance and frameworks, study of urban pavements, an update to the regional freight study, identification and prioritization of transit advantages investments, and investment in traffic management technologies to mitigate congestion.

Major topics

The goal of a dynamic and resilient region has context centered around three focus areas: providing transportation choices, being resilient to disruptions in transportation, and building a system that is reliable to users.

Choice

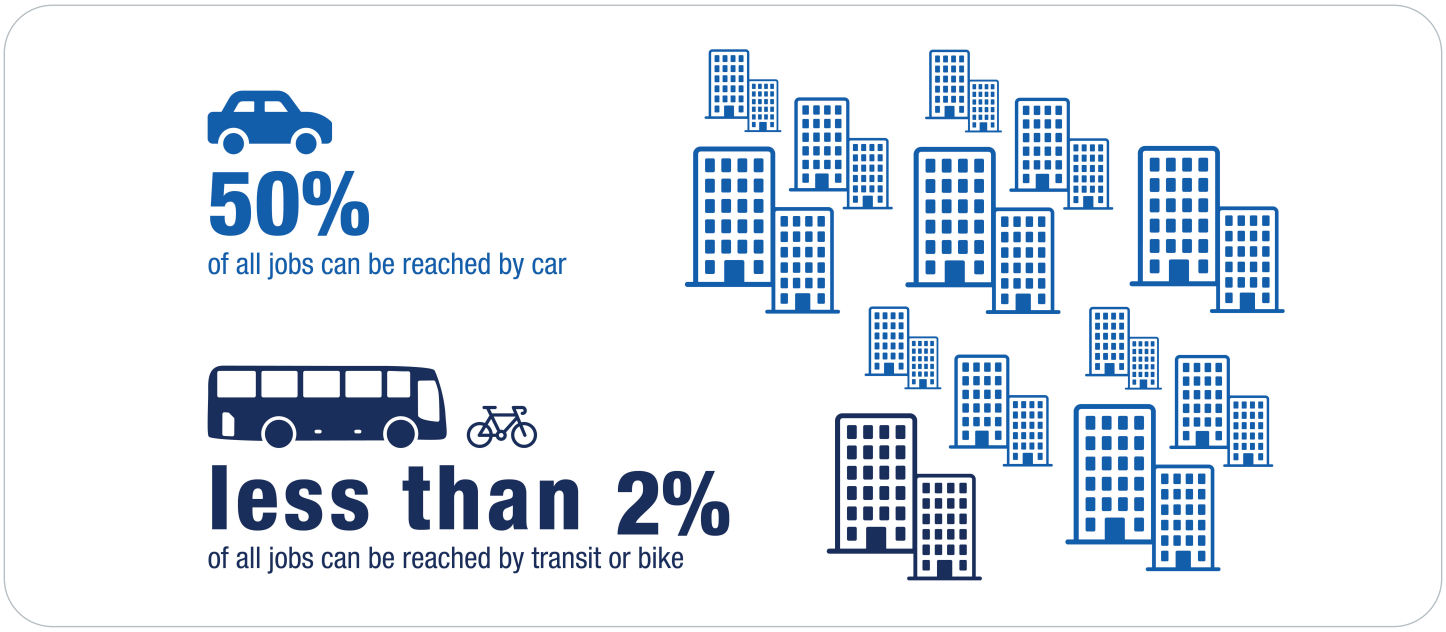
The core purpose of transportation is to provide access to the places people and goods need to reach. These needs vary by geography and a person's circumstances, for example, whether they have a car available, are traveling with passengers, or have limited mobility. The region needs to provide travel choices that recognize people's dynamic needs.

We are still learning from the lasting changes brought on by the COVID-19 pandemic, which highlighted how dynamic our travel needs are. The onset of the pandemic caused a significant part of the workforce to transition to telework. Years later, many workers continue to work in hybrid or remote environments. Fewer office trips have changed the operational characteristics of highways and transit.

Limited access without a vehicle

Many people in the Twin Cities region lack choices to meet their evolving travel needs. According to the University of Minnesota Accessibility Observatory, the average Twin Cities resident had access to 1,265,953 jobs within 30 minutes by auto[36] in 2021, ranking ninth in the nation. This contrasts with only having access to 20,370 jobs by transit[37] within 30 minutes (13th in the nation) and 22,460 jobs by low-stress biking within 30 minutes (10th in the nation).[38]

Figure 1.8: Jobs within a 30-minute commute, Twin Cities region



As a result, people who do not have a car, or people who want options other than driving, have fewer opportunities to participate in the region's economy. Improving the variety of travel choices should improve our region's ability to attract and retain talent and businesses.

The disparate access between people who drive and people who ride transit negatively impacts transportation equity in the Twin Cities. About 55% of transit riders in the region are Black, Indigenous, or people of color,[39] compared to these racial identities being 30% of the regional population.[40] Less access to destinations by transit relative to driving means Black people, Indigenous people, and people of color have lower access to destinations, as a higher percentage of people with these racial identities use transit.

Access to nonwork destinations also matters. Only about 21% of total trips in the region are for work commutes. The majority of trips are for a variety of other purposes (see Figure 1.9). Only 19% of transit trips are for peak-hour work commutes, and only 33% are for commutes at all (see Figure 1.10).[41] People use transit for a wide range of other needs, including for errands, education, socializing, and health care.

Figure 1.9: Trip purpose from the 2021 Travel Behavior Inventory household survey, all forms of transportation

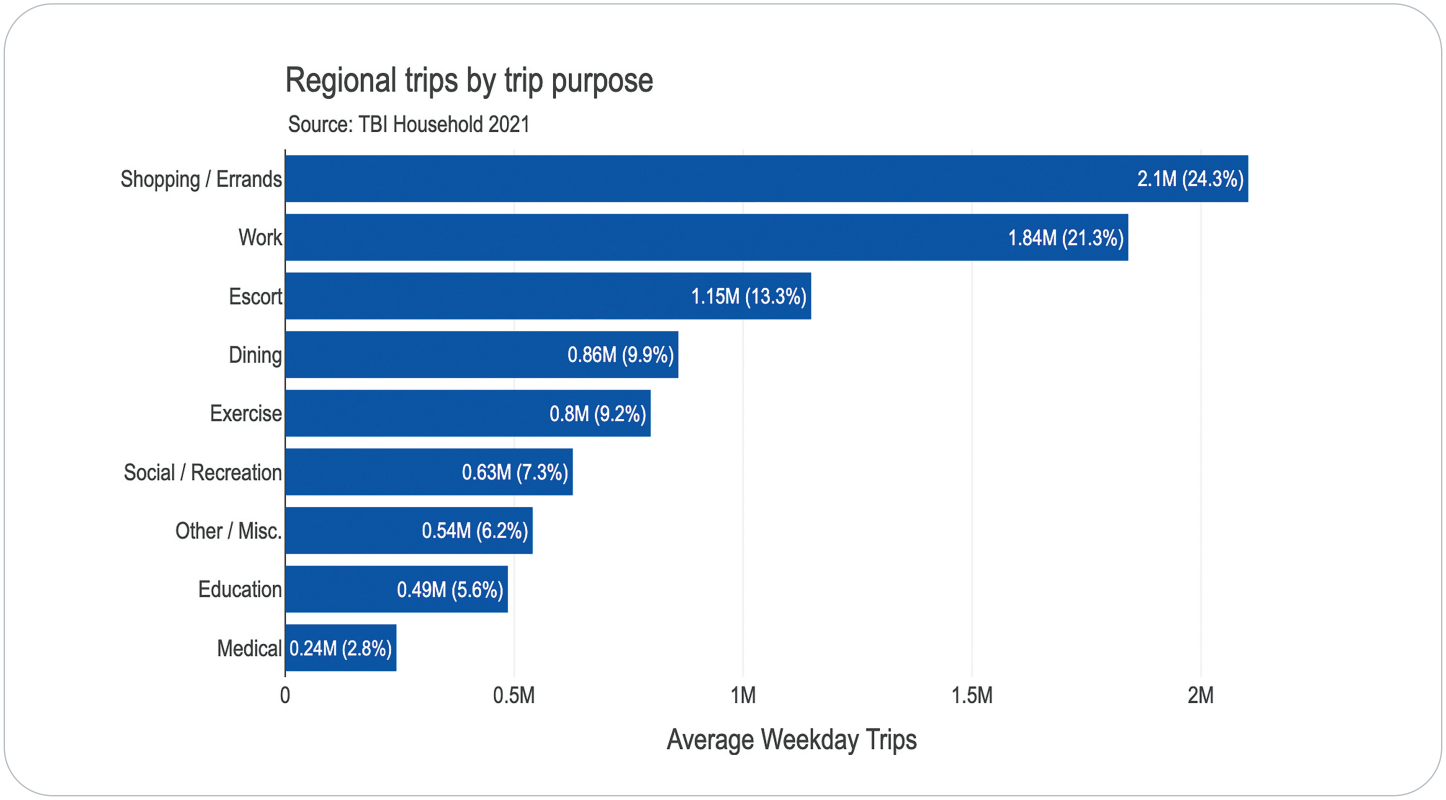
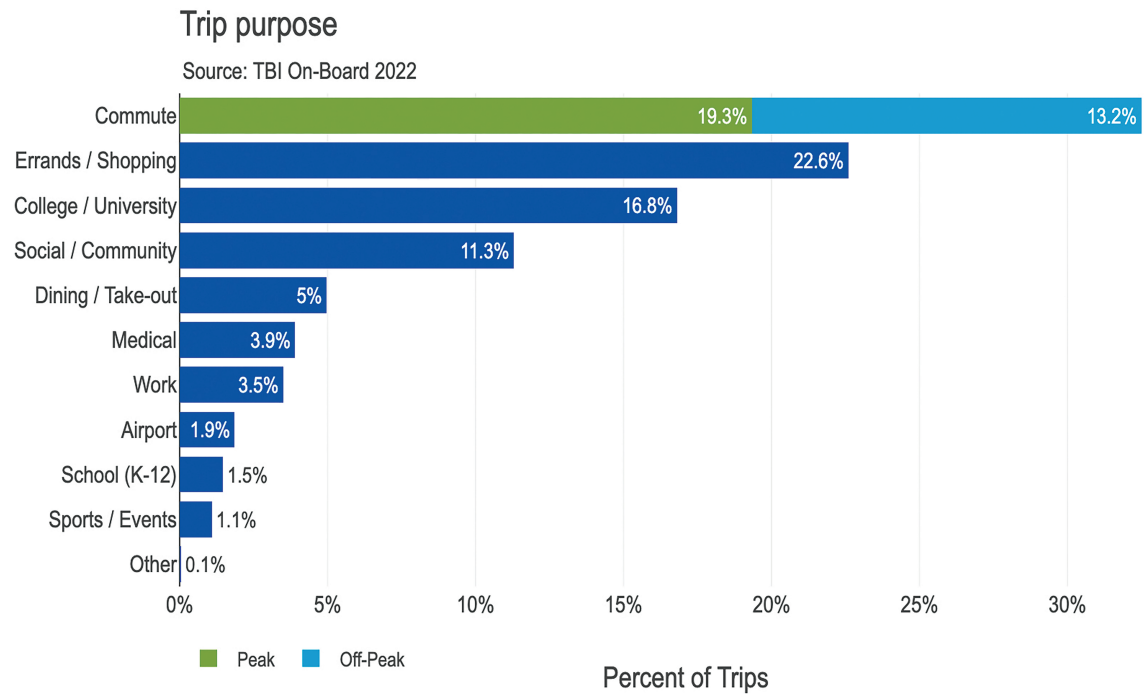


Figure 1.10: Trip purposes from the 2022 transit on-board survey



Improving the menu of travel choices

The region's current transportation and land use are largely oriented around private automobiles, but there are substantial opportunities for growth in other modes. A large portion of auto travel throughout the region consists of trips that are relatively short. In 2023, the Met Council studied mode shift potential of existing travel demand. The study found that about 25% of current auto trips in the region could feasibly shift to walking, biking, or transit with competitive travel times.[42] People will not consider these modes unless they are timely, reliable, direct, safe, and affordable.

Transit

In the decades prior to the COVID-19 pandemic, transit use saw substantial growth as the system underwent expansions, primarily in transitways and suburban express markets. The region's transit ridership grew from about 65 million in 1995 to over 98 million in 2015, a 50% increase in 20 years.

Regional transit ridership was down over 50% during the first few years of the pandemic, but ridership is growing again as service is being restored to pre-pandemic levels. Over 35% of the region's transit ridership takes place on the growing network of transitways that are being implemented, an indication of the impact of significant investments in improving the system. As of early 2024, Metro Transit's high-frequency and bus rapid transit routes have recovered a combined 78% of their pre-pandemic ridership, while other Metro Transit local routes have recovered 51% of pre-pandemic ridership.



What are transit advantages?

Transit advantages are features or equipment that allow transit to travel faster than general traffic including:

Transit-only street segments

Bus-only shoulders and lanes

High-occupancy vehicle (HOV) lanes and managed lanes

Ramp-meter bypasses

Traffic signal queue jumps

Transit signal priority

Curb extensions

The region's development patterns are also changing in response to this demand. Since 2009, 34% of regional development has been permitted along high-frequency transit. This includes 53,200 multifamily units that represent 40% of the region's total. As of 2023, an additional 36,900 units of multifamily housing are planned to be near high-frequency transit, with 47% of all planned developments located near high-frequency transit. [43]

Regional investment in fast and frequent service on transitways, paired with transit advantages, will make transit more timely, direct, and reliable for more people. See the Transit Investment Plan for descriptions of the opportunities to invest in improved transit.

Bicycling, walking, and rolling

Safe, direct, and reliable infrastructure for bicycling, walking, and rolling provides people in our region another choice for short-distance trips. The Twin Cities region is nationally renowned for its bicycling infrastructure. PeopleForBikes, a nonprofit bicycle policy and trade organization, consistently ranks Minneapolis and Saint Paul as two of the best large cities for biking. In 2023, Minneapolis topped the chart as the best large city to bike in, and Saint Paul ranked seventh.[44]

While our region can celebrate these successes, it comes with recognition that bicycling, walking, and rolling remain challenging in most of the region. There are many barriers to traveling these ways and continued improvement can reduce these barriers for potential users.

This plan sets policies that will guide those infrastructure investments through the Regional Solicitation, active transportation sales taxes, and other funding programs. How our region approaches land use policy, described in Imagine 2050, is also a

key part of creating and improving places to support more walking, rolling, and biking trips.

The Met Council maintains two major planning tools for improving bicycling in the Twin Cities:

- The Regional Bicycle Transportation Network sets investment priorities for a seamless network of regional bikeways. The network advances a variety of principles to make biking a more attractive and realistic transportation choice for people in the Twin Cities.
- The Regional Bicycle Barriers identifies physical barriers to bicycling in the region, such as waterways, railroads, and certain highways. Identifying these areas helps transportation partners discover opportunities to remove barriers and prioritize investments.

This plan supports improved access and safety while bicycling, walking, and rolling through updates to planning tools, direction to invest in All Ages & Abilities and Complete Streets infrastructure, and direction to coordinate across project and jurisdiction boundaries.

The Imagine 2050 Transportation Policy Plan also makes a key commitment to improving bicycling, walking, and rolling in the region through adoption of the Safe System Approach, a framework for prioritizing safety investments and identifying shared responsibilities. Primarily described in the Our Region is Healthy and Safe goal, an important part of improving the attractiveness of this choice is making sure people feel safer, more comfortable, and more welcome when bicycling, walking, and rolling.

See the Bicycle Investment Plan for more information on major issues related to bicycling. See the Pedestrian Investment Plan for further description of major issues related to walking and rolling.



What do All Ages & Abilities and Complete Streets mean?

All Ages & Abilities is an approach to bicycle infrastructure design that meets the needs of a broad range of users. Instead of designing primarily for confident bicyclists, this approach seeks to accommodate users across age, race, and income groups travelling for a variety of reasons.[45] Complete Streets is an approach to designing and operating streets to improve safety for all users, sensitive to surrounding land use and a street's function. These projects include elements that reduce crash risks and make streets more comfortable for use by all forms of transportation.

Travel demand management

Travel Demand Management is strategies, programs, and incentives that inform and encourage the use of sustainable transportation options. These initiatives inspire new travel habits and support the most efficient use of the transportation system. Travel demand management has proven benefits as well:

- A detailed study, Travel Demand Management: An Analysis of the Effectiveness of TDM Plans in Reducing Traffic and Parking, measured trip generation at nine typical office buildings in the Minneapolis-St. Paul region. It found that office buildings that implemented travel demand management plans generate, on average, 34% to 37% less traffic and need 17% to 24% fewer on-site parking spaces than Institute of Transportation Engineers' predicted rates.[46]
- The Atlanta Clean Air Campaign's Cash for Commuters offered drive-alone commuters a daily cash incentive ($3/day) for using an alternative mode (carpool, vanpool, transit, bike, walk) for up to 90 days. An independent evaluation showed that the incentive caused 1,800 commuters to switch modes, resulting in 1,300 fewer vehicle trips and 30,000 less VMT on the region's highways. More importantly, over 70% of incentive recipients continued their new commute mode after the subsidy lapsed, and half were still using a nondrive-alone mode one year later.[47]

These examples, among many others, demonstrate that people want and are willing to make different travel choices if they are supported with resources to feel confident.

See the Travel Demand Management Investment Plan for a description of related investment opportunities.

Resilience

The Imagine 2050 Transportation Policy Plan frames transportation resilience as withstanding natural and human-caused disruptions. The regional approach to building resilience in responses to these disruptions is detailed in Policies and Actions.

Natural disruptions are forces of nature that occur without human input, including:

- Seasonal flooding
- Typical winter storms
- Wildlife migration

Human-caused disruptions are a result of human action, regardless of scale of time, including:

- Security (for example, criminal activity or terrorism)
- Negligence (for example, failure to maintain bridge safety)
- Extreme weather events and heat resulting from human-caused climate change
- Nonrecurring congestion when related to major incidents.

During natural and human-caused disruptions, transportation infrastructure and services should continue operating continuously so long as safety and health are not impaired. After disruptions, transportation infrastructure and services should recover quickly with minimal repair needed.

Changing precipitation

The Fifth National Climate Assessment includes a summary of anticipated risks and impacts to transportation in Midwest states like Minnesota. It says that Midwest states will experience extreme rainfall events that can disrupt roadways, sidewalks, trails, railroads, and waterways.[48] In addition, changes in salt use may lead to earlier bridge corrosion and widening cracks.[49]

Extreme heat

Extreme heat poses many threats to transportation, from physical infrastructure disruptions to direct impacts on people. The Fifth National Climate Assessment summarizes extreme temperature impacts across forms of transportation:[50]

- Walking, biking, and rolling: Heat exposure can adversely impact health and encourage people to shift trips to vehicles and transit to avoid heat.
- Aviation: Extreme heat can cause runway damage, flight disruptions, and increased bird strikes.
- Roadways: Extreme heat can increase pavement buckling, create unsafe heat conditions for roadway workers, and demand more frequent maintenance.
- Rail: Extreme heat can cause rail buckling, prompt speed restrictions, and sag power lines.

The Met Council's Climate Vulnerability Assessment (2018) summarized climate-related impacts in Minnesota, including a likely increase in the number of heat waves in future summers. Additionally, the Met Council maintains a dataset estimating land surface temperature across the region.

Infrastructure renewal, repair, and replacement

Resiliency includes ensuring that infrastructure and systems do not deteriorate or become obsolete, so infrastructure remains safe and reliable. For example:

- A road with a lot of potholes will be difficult for drivers to navigate, cause vehicle damage such as flat tires or broken axles, and pose injury risk to bicyclists, which can negatively affect reliability.
- A bridge that is due for replacement may have a travel restriction for certain vehicle types and force freight vehicles to divert miles out of the way to find an alternate route.
- A bus that is older and past its useful life is more prone to breaking down.
- A road that was built 50 years ago may not meet minimum accessibility standards for people who have disabilities, requiring them to navigate an unreliable crossing or make a significant detour.

The Imagine 2050 Transportation Policy Plan supports projects that renew, repair, and replace transportation infrastructure to allow for effective travel. These projects are an opportunity, and expected, to advance Imagine 2050 goals, including the Our Region is Dynamic and Resilient goal:

- **Pavement and rail maintenance** keeps or improves travel time reliability for drivers, transit riders, bicyclists, and freight users.
- **Bridge reconstruction** can prevent disruption to travel due to restriction, collapse, or flooding, and remove crossing barriers to improve travel choice.
- **Roadway reconstruction** can improve reliability for all forms of transportation using that roadway, such as accessibility improvements for people with disabilities, transit advantages like floating bus stops, and intersection features that reduce crashes and related traffic disruptions.
- **Transit fleet replacement** can maintain or improve transit service reliability and expand the range of affordable travel choices.

See the Highway Investment Plan and Transit Investment Plan for specific approaches to infrastructure renewal, repair, and replacement activities.

Highway reliability

When travel times are unpredictable, people and businesses in the region pay additional costs in lost time to participate in our regional economy. The Imagine 2050 Transportation Policy Plan recognizes the need for all forms of transportation to be reliable so people and businesses can perform everyday tasks without worrying that transportation infrastructure and services will fail them. This plan identifies a few ways that travel reliability potentially impacts the region's outcomes.

Roadway congestion and delay

Most people in the Twin Cities region will likely still drive for most of their trips. In 2020, delay per commuter in the Twin Cities was comparable to other similarly sized metropolitan areas across the nation.[51] In 2021, the region had the ninth-highest job accessibility by vehicle in the United States,[52] and has consistently been ranked in the top ten for several years.

However, the region must continue to address excessive travel delays to retain our high standard of living and regional, economic competitiveness. That's why the Met Council, Minnesota Department of Transportation, counties, and cities are partnering to address the worst areas of excessive delays and unpredictable highway travel, alongside access improvements for all forms of transportation.

The Twin Cities Highway Mobility Needs Analysis found that delay per person would increase by 33% by 2040 if highway mobility funding ceased to continue. The analysis found that increased investment in highway mobility could decrease delay per person, increase job accessibility, deliver travel-time cost- savings, minimize freight bottlenecks, and reduce transit delays for transit users using these same highways.

The Highway Investment Plan defines when investments are needed to address congestion, and it describes the region's layered approach to prioritizing the most cost-effective, lowest-impact investments first.

Freight reliability

Our regional economic competitiveness relies on a transportation system that supports the needs of both businesses and consumers.

This plan seeks to help businesses transport freight and goods more reliably and cost effectively through roadway, bridge, and system management investments, including:

- Focused investments to address excessive highway delays.
- Managed capacity improvements, such as managed lanes that allow access for certain vehicles during congested times for a fee.
- Resilience investments that ensure transportation infrastructure and services will withstand and recover quickly from disruptions.
- Parallel, redundant options so deliveries are not disrupted by detours.

Recent work by the Met Council

Choice

The Transit Service Allocation Study looks to guide regional investments for transit service by facilitating discussions, understanding mobility needs, and evaluating expansion scenarios in the region to meet expected population and job growth in the Twin Cities to 2040. The Metro Transit Network Next Arterial Bus Rapid Transit Study focused on the nearer term expansion of the arterial bus rapid transit network. The study identified three new arterial bus rapid transit routes that are now being planned and implemented.

The Mobility Hub Planning Guide created a document to aid in the planning and implementation of mobility hubs to support better connections between transit and other modes of travel in the region.

The Regional Bicycle Transportation Network (RBTN) Bicycle Facility Guidelines and Measures and Regional Bicycle Barriers Study further refines and aids the identification and expansion of the RBTN established by the Met Council in 2014 to better build out the regional bicycle system to connect residents to regional jobs, recreation, and commercial areas.

The Regional Travel Demand Management (TDM) Study reviewed ways to increase travel options, reduce single-occupant vehicle use, and improve regional livability by identifying and implementing effective TDM strategies. The study refined approximately 100 potential strategies down to six key recommendations,

each with detailed action steps, emphasizing equity and leveraging a variety of funding sources to support implementation.

Resilience

Addressing transportation resilience will be more important as risks rise with the increasing impacts from climate change and deferred maintenance. The Met Council's 2018 Climate Vulnerability Assessment identified localized flooding risks, including transportation assets vulnerable to flooding. Future efforts on this topic will focus on implementing a resilience improvement plan and identifying needed system redundancies to better withstand unforeseen incidents. More on these future efforts can be found in the Imagine 2050 TPP Work Program.

Highway Reliability

The Freeway System Interchange Study, Twin Cities Highway Mobility Needs Analysis, and Intersection Mobility and Safety Study all further refine highway mobility and reliability needs in the region and build on previous studies to ensure the system remains reliable for regional travel.

The Regional Truck Highway Corridors Study and Update and Urban Freight Distribution Study updated freight corridors in the region, and expand the Met Council's understanding of future freight trends and needs to ensure the regional freight system remains efficient and able to prepare for changes in regional and local freight patterns.

Supporting work by partners

State work

The Minnesota Department of Transportation is a key partner for improving multimodal choices, transportation system resilience, and highway reliability in the Twin Cities. Supporting work includes:

- The Congestion Management Safety Plan, Phase 4
- Research projects such as:
    - Enhancing Managed Lanes Equity Analysis
    - The Tipping Point: What COVID Travel Reductions Tell Us About Effective Congestion Relief
- An ongoing update to the Metro District Freight Plan
- The draft state Resilience Improvement Plan for transportation

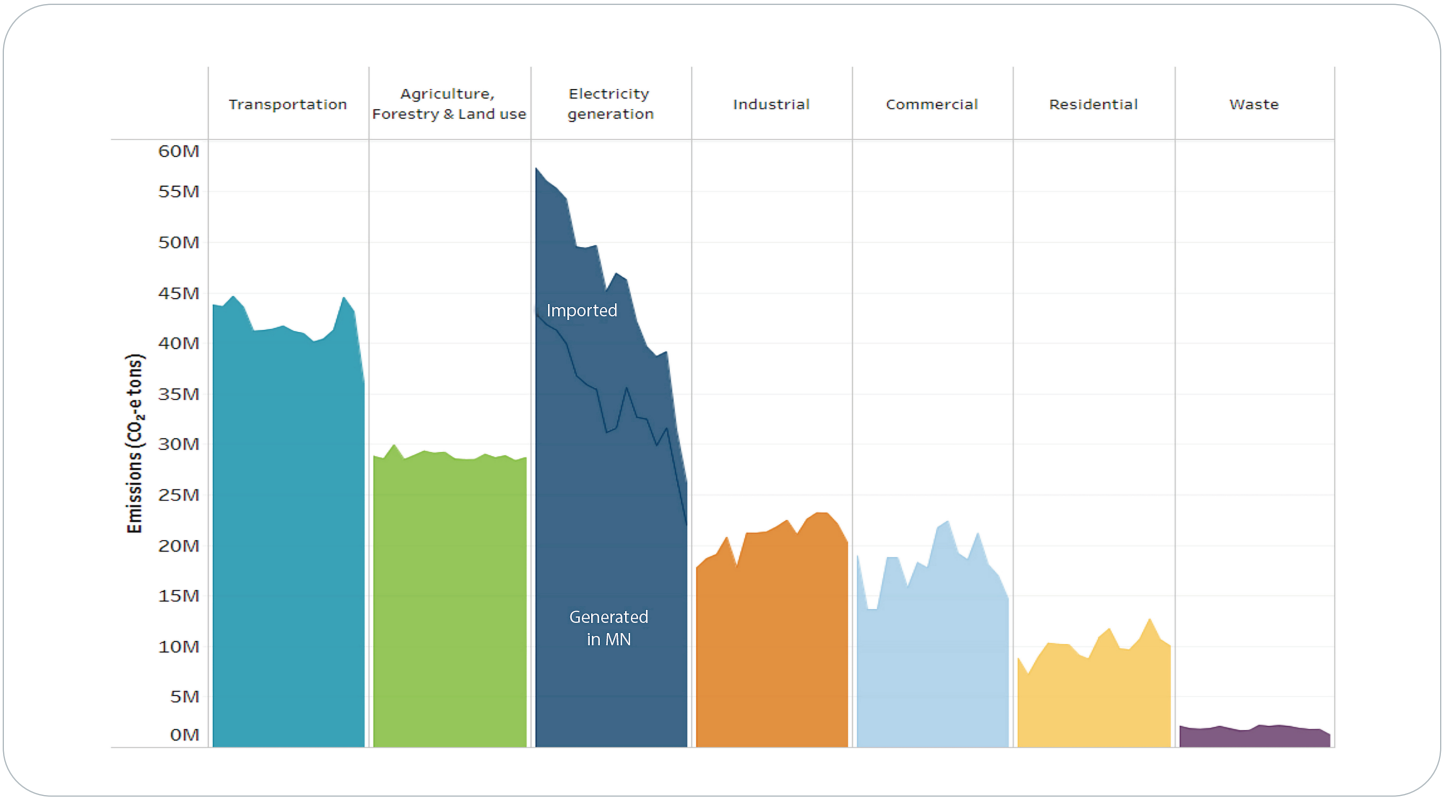

IMAGINE 2050

We lead on addressing climate change

The transportation sector is the leading emitter of greenhouse gases in the U.S and in Minnesota. Transportation contributed 25% of all greenhouse gas emissions in Minnesota in 2020 (Figure 1.11).[53] The electricity generation sector had been the leading contributor to greenhouse gas emissions; however, this sector has reduced greenhouse gas emissions faster than the transportation sector.

Greenhouse gas emissions from travel come from a fundamental relationship between two factors: the amount of travel and the type and efficiency of fuel used. The region's response in the Imagine 2050 Transportation Policy Plan is organized around objectives that address transportation greenhouse gas emissions, access to lower emission fuel sources, and how much we travel.

Figure 1.11: Greenhouse gas emissions by economic sector, Minnesota, 2005-2020



Objectives

These objectives will guide how transportation can help the region lead on addressing climate change impacts:

- The region's transportation system minimizes its greenhouse gas emissions.
- People have more reliable access to zero emissions vehicle infrastructure.
- By 2050, the region reduces vehicle miles traveled by 20% per capita below 2019 levels.

This goal addresses mitigation (reduction) of greenhouse gas emissions. The Our Region is Dynamic and Resilient goal addresses how we adapt to ensure our communities and systems are resilient to climate impacts.

Performance measurement

Within the Twin Cites metro area, we forecast declining greenhouse gas emissions from on-road emissions between 2025 and 2050. These are expected to decline 27% due to continued improvements in fuel efficiency and a growing share of electric vehicles. This plan's modeled investments are estimated to add to greenhouse gas emission 0.2% over this time period. The modeled investments include larger-scale transit and highway investments. Smaller investments in these categories and for electrification, bicycling, walking, and rolling reflected in this plan are not captured in our regional model and their impact is not reflected in these estimates of the plan's contributing or mitigating effect to climate change.

Vehicle miles traveled per capita between 2025 and 2050 are forecasted to decrease by 3% absent the investments evaluated in the regional model. These investments are estimated to increase vehicle miles per capita by 0.4%.

Policies

The Imagine 2050 Transportation Policy Plan sets three policies related to transportation climate mitigation. These policies and their supporting actions are detailed in Policies and Actions.

Policy 29. Ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure.

Policy 30. Evaluate and mitigate the greenhouse gas impacts of transportation plans and projects.

Policy 31. Prioritize projects that reduce vehicle miles traveled (VMT) through sustainable transportation options.

Work program

The Imagine 2050 Transportation Policy Plan work program identifies specific tasks to implement this goal, such as:

- Planning for a public electric vehicle charging system that serve all users
- Better understanding the co-benefits of achieving vehicle miles travelled reduction
- Improved methods for estimating the change in greenhouse gas emissions from various transportation investments
- Evaluating and sharing best practices across agencies.

These work program items may also lead to additional work that will support the implementation of new tools and methods for implementing the Policies and Actions.

Major topics

The context for transportation and climate change is focused on three topics: transportation's contributions to greenhouse gas emissions, zero-emission vehicle access, and vehicle miles traveled. Other less significant considerations are also addressed in this section.

Transportation's contributions to greenhouse gas emissions

Greenhouse gas emissions from the transportation sector are largely the result of burning fossil fuels to propel vehicles, but also include emissions that result from the manufacturing and disposal of vehicles, and the construction and operation of roads and other transportation facilities.

A decline in emissions of 18% was seen in Minnesota since 2005, largely through increased fuel efficiency and reduced travel during the early years of the COVID-19 pandemic. In 2020, the transportation sector in Minnesota contributed approximately 36 million CO2-equivalent tons of greenhouse gas emissions, or 25% of all greenhouse gas emissions in Minnesota.

Light-duty trucks, which includes many sport-utility vehicles (SUVs) and minivans, and passenger cars comprise 55% of transportation emissions (Figure 1.12). Along with heavy-duty trucks and other smaller contributors, surface transportation represents 76% of transportation's emissions. As a result, the most effective tactics for addressing greenhouse gas emissions are to target these travel modes.

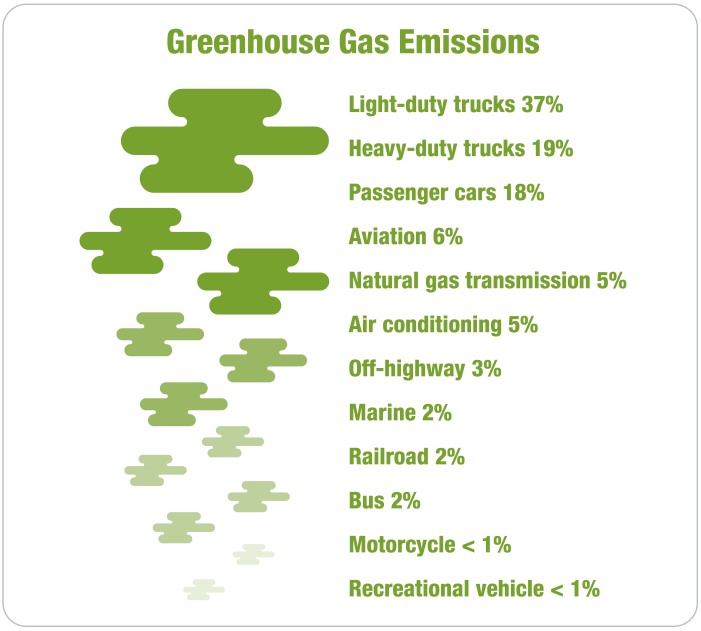
Zero emission vehicle access

MnDOT's State Multimodal Transportation Plan includes a commitment to ensure that all new light-duty vehicles registered in Minnesota are zero-emission vehicles by 2035. This could lead to approximately 45% of all light-duty vehicles in Minnesota being zero-emission vehicles by 2035 and 65% by 2040. This plan builds on that commitment at the regional level. There are some external challenges to zero emission vehicle expansion including:

- Affordability and equitable access
- Global supply chain and implications for fair labor and environmental practices
- Implications for the sustainability of transportation system funding currently from fuel taxes

The region cannot directly address these challenges. However, the following describes key trends and opportunities for regional investment in zero emission vehicle access.

Figure 1.12: Transportation sector greenhouse gas emissions, Minnesota, 2020



Note: Greenhouse gas emissions from the transportation sector are mostly from burning fossil fuels resulting in, most importantly, carbon dioxide. Relatively smaller amounts of methane and nitrous oxide also result from air conditioning hydrofluorocarbons. These smaller contributors are converted to carbon-dioxide equivalents based on their impact on the climate so that all of these can be reported together as carbon-monoxide equivalents, CO2e.

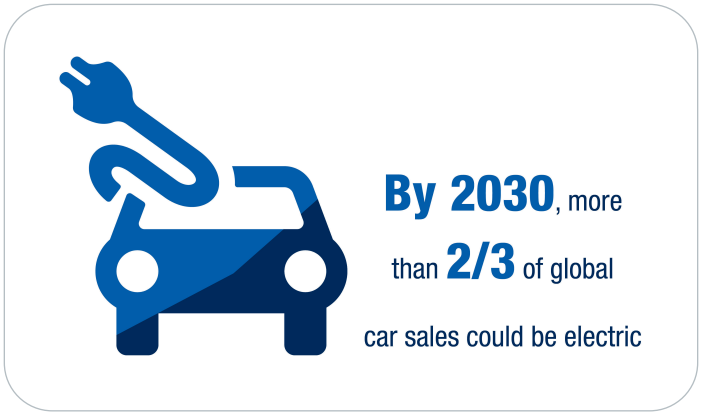
Trends

While population and vehicle miles traveled have grown in Minnesota, the greenhouse gas emissions from transportation declined 18% from 2005 to 2020, according to GHG data produced by the Minnesota Pollution Control Agency.[54] This is largely due to reduced vehicle miles traveled and air travel during the COVID-19 pandemic, but longer-term improvements are due to improvement in vehicle fuel efficiency including through improved internal combustion engines, and hybrid, plug-in hybrid electric vehicles (PHEV), and battery electric vehicle (BEV) technologies. While each of these has and will continue to contribute greatly to reducing greenhouse gas emissions, BEVs are uniquely capable of approaching zero tailpipe emissions within the light-duty passenger cars and light-duty trucks categories.

Sales of plug-in hybrid and battery electric vehicles have grown from 200,000 vehicles in the U.S. in 2016 to an estimated 1.6 million in 2023, an eight-fold increase in seven years[55] . Automakers are making large investments in the production of battery electric vehicles and their batteries, and some even committing to phasing out internal combustion engine vehicles. Estimates are that, by 2030, greater than two-thirds of global car sales could be electric vehicles as purchase prices fall below that of internal combustion engine vehicles as early as 2026. [56]

Greenhouse gas emissions from Minnesota's power sector have dropped 40% over the last 10 years. Currently carbon-free sources (for example, solar, wind, nuclear, hydropower) produce 52% of Minnesota's electricity.[57] Given this mix of electricity generation, battery electric vehicles have 78% less life-cycle greenhouse gas emissions than gasoline vehicles.[58] With Minnesota's commitment to 100% clean energy by 2040, electric vehicles present an even greater opportunity to reduce greenhouse gas emissions over internal combustion-based fuel sources.

Figure 1.13: More electric cars by 2030



Opportunities

The public sector needs to support electrification with public charging infrastructure, public information, technical support to local agencies, and vehicle-purchase support. The region's most important role lies in planning for a more reliable, equitable, and complete public charging system.

Although 80% of charging is currently done at home, lack of reliable public charging is one of the biggest barriers for most people considering the purchase of a BEV. Many people do not have easy access to charging at home (for example, multifamily homes, homes with limited off-street parking). People who do have easy access for charging at home need to know they can charge in public when traveling or when otherwise needed. The Met Council's Electric Vehicle Planning Study found that, to reach 100% decarbonization in the transportation sector by 2050, 200,000 additional public charging plugs could be necessary, depending on several factors including the amount of fast charging.

The private sector and other nongovernment actors have invested in public charging across Minnesota. Currently the Twin Cities metro region has 1,176 charging ports available. Often more than one exists at an individual location and 174 of these are fast-charging ports.[59] We can expect to see continued growth in public chargers; however, it will not meet the needs to accelerate BEV adoption.

This objective focuses on passenger cars and light-duty trucks due to potential scale to reduce greenhouse gas emissions, availability, and near cost parity. However, other sectors are making improvements as well, including efforts to electrify buses and heavy-duty trucks. Aviation, long-haul heavy-duty trucks, and marine applications are most likely to require other decarbonization technologies such as hydrogen and renewable liquid fuels.

Vehicle miles traveled

MnDOT's State Multimodal Transportation Plan includes a target to reduce vehicle-miles-traveled per capita (per person) 14% by 2040 (since 2019). This is equivalent to a 20% reduction by 2050. This target is a measure of how well our society is providing options other than driving alone (for example, carpooling, telework, riding transit, biking, walking, and rolling). The target is intended to encourage people to use a more sustainable mode of travel for some of the trips they normally take throughout the year or accomplish some of the same trips through online activities. The target is not intended to ask people to forgo trips they want to take. Several cities and counties in our region have also committed to reducing the number of vehicle miles traveled.



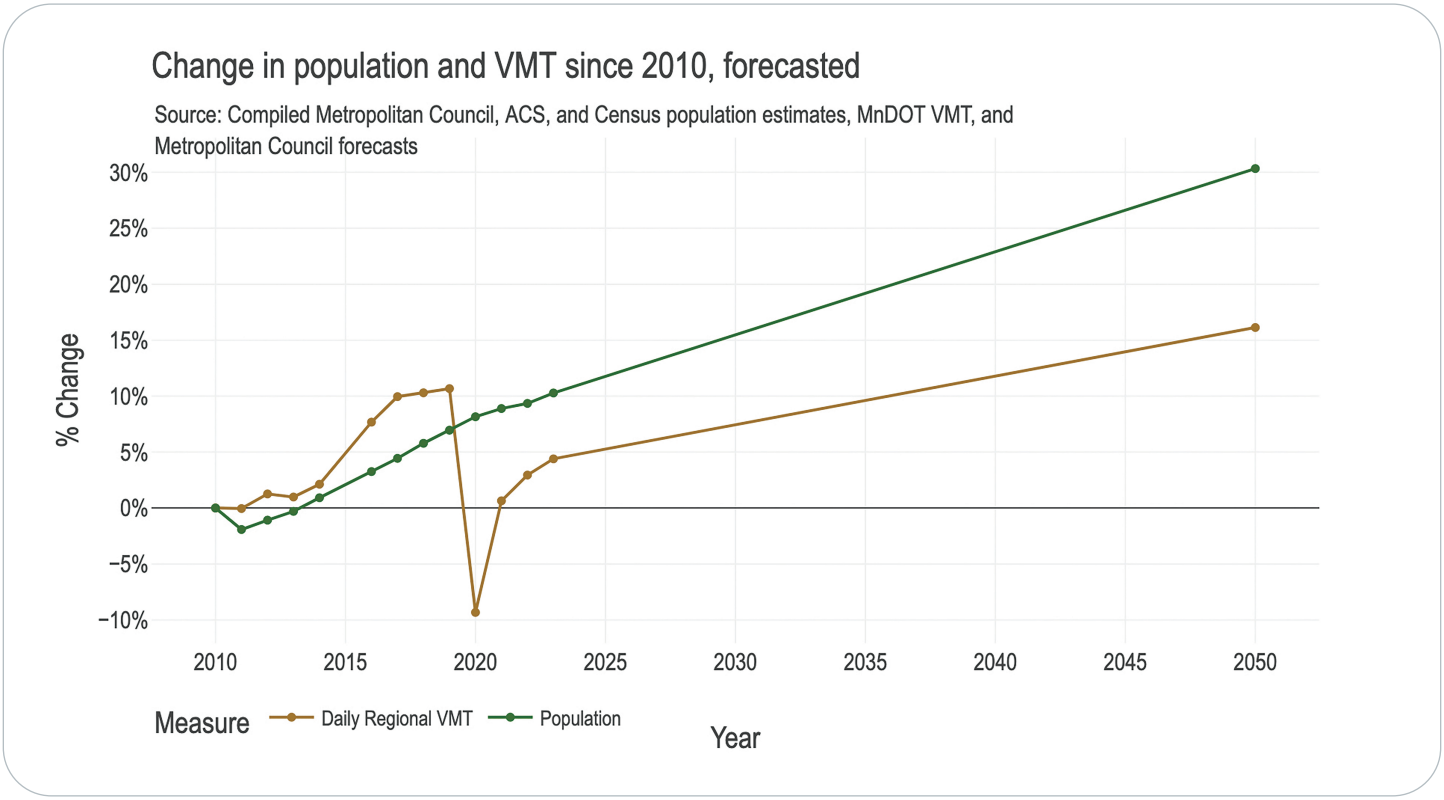
Metro Transit has put eight battery electric buses into operation and in 2023 was awarded a Low or No Emission grant for procurement of 12 new battery electric buses and the chargers to support them. Metro Transit Zero-Emission Bus Transition Plan is available at metrotransit.org. Metro Transit has set a target that at least 20% of 40-foot bus replacements purchased between 2022 and 2027 will be electric. About 33.3% of all transit rides in 2023 were taken on electrically powered transit vehicles including the METRO Green Line and Blue Line.

This plan builds on state planning to apply a regional perspective on vehicle miles traveled reduction that fits the context and approach the region is planning for. The Imagine 2050 Transportation Policy Plan is focused on how we travel and what mode of transportation we use. How far we travel on a typical day is governed by the distance between where we are and where we want to go. Land use planning has a large impact on these distances and relevant policy is described in detail in the Land Use Policy Plan.

Trends

Vehicle miles traveled typically grows with the population. More people often means more vehicle miles traveled; however, the amount of vehicle miles also depends upon the travel behavior of those people. Vehicles miles traveled is influenced by individual decisions such as what modes people take (for example, single occupancy vehicles, buses, carpools), how far they travel, and how many daily trips they make. Figure 1.14 compares the growth rate of the population since 2010 with the growth rate of vehicles miles traveled. The graph shows that the percent growth of vehicles miles traveled closely followed population growth until 2020, when travel dropped during the pandemic. The Met Council forecasts that by year 2050, vehicle miles traveled will continue to grow with population, but at a lower rate due to things like demographic changes (for example aging population, smaller household sizes).

Figure 1.14: Change in population and vehicle miles traveled since 2010 with 2050 forecast (MPO area total)



Transit ridership has recovered gradually since the COVID-19 pandemic began in 2020. A total of 53.2 million rides were taken on public transit in the Twin Cities metro region in 2023. This is a 16% increase in total ridership over 2022, which itself was a 23% increase over 2021 numbers. Ridership increases were

seen on every service in the region. Growth was also seen on every mode in the regional system. This trend continues to show encouraging and consistent signs of recovery for the system. As service restoration and improvements continue, this number is expected to continue to improve.

This gradual recovery has varied by service type. Bus rapid transit and local bus routes have recovered more robustly than express bus service, which has been heavily impacted by ongoing telework trends. In general, the region plans to return to pre-COVID levels of transit service by 2025 with further expansion beyond the major projects identified as resources allow.

The region has invested in growing the network of transitways over the past two decades and will continue to plan, design, and build them throughout the region. While these transitways serve existing centers of housing, jobs, goods, and services, there is often an opportunity for additional economic development near the transit stations. From 2009 to 2022, the region saw $16.4 billion in development along high frequency transit routes.

Additional opportunities for expanding transit services, particularly bus rapid transit, are described in the Transit Investment Plan.

Opportunities

Reducing vehicle miles traveled is the most direct path to reducing greenhouse gas emissions. Each mile of vehicle travel reduced directly reduces fossil fuel consumption and the resulting greenhouse gases. It complements electrification and supports further and faster decarbonization of the transportation sector. The Met Council's Maximum Mode Shift Study estimated that 25% of current private vehicle trips could feasibly and competitively switch to these more efficient modes, but because these were the shortest trips in the region, they represent only about 4.5% of VMT. The study also found that significant infrastructure improvements have the potential to increase feasible and competitive mode shift opportunities to 50% of trips and 16.5% of VMT.

This plan includes investments and specific plans that address transit, biking, and pedestrians. Improving these modes of travel, and their relative advantage compared with driving alone, reduces the need to drive alone and reduces the resulting VMT and greenhouse gas emissions.

Travel demand management describes a wide range of strategies that support the most efficient use of the transportation system by making personal travel options more flexible, understood, or convenient. The Imagine 2050 Transportation Policy Plan includes a new travel demand management plan; one of the goals of travel demand management is to reduce vehicle miles traveled. These strategies can include promoting travel options like transit, biking, walking, and ridesharing. They can also help reduce trips altogether through strategies like telework. This new plan was largely informed by the Regional Travel Demand Management Study.

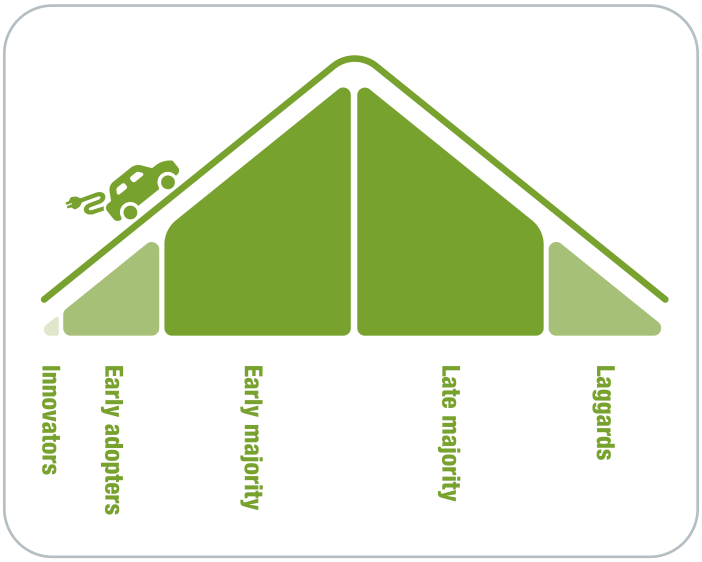
Large highway expansion projects can lead to added driving by making driving trips relatively more attractive or by encouraging development that is auto dependent. But highways also serve less GHG-intensive modes of travel, and expansion projects often include infrastructure investments in these other modes as part of

the larger project. Less GHG-intensive modes include transit, biking, walking, and rolling and are especially important in highways with more direct land access. So this plan prioritizes mobility investments by measures of excessive delay and reliability to focus expansion only where it is most needed. Highway investments are pointed toward shifting the relative advantages toward less carbon-intensive modes of travel by investing in transit advantages (for example, managed lanes that give an advantage to transit riders and carpoolers), complementary changes to highways where bus rapid transit routes are being developed, and safer and more efficient intersections and roads for those biking, rolling, and walking.

Other opportunities

Electrification and reduction of VMT noted above present the most immediate and largest opportunities to reduce greenhouse gas emissions. These strategies are especially well suited to address 55% of transportation's greenhouse gas emissions that come from passenger cars and light-duty trucks. However, international, national, and state goals call for an economy-wide reduction of greenhouse gas emissions to net zero. These goals do allow for small amounts of greenhouse gas emissions to continue to be generated. These remaining greenhouse gas emissions must be only the most difficult to address and offset with technology and land management practices that remove carbon from the atmosphere. Other strategies are necessary to drive deeper and faster reduction of greenhouse gas emissions.

Figure 1.15: EV owners of today are not the EV owners of tomorrow



Heavy-duty freight and aviation produce 19% and 6% of greenhouse gases within the transportation sector, respectively. Some of these needs can be filled with BEVs. Hydrogen vehicles and distribution systems are being developed, which may fill needs that are more difficult to electrify. Biofuels are also being developed. However, questions remain about their ability to reduce greenhouse gas emissions, land and water use, and how they compete with food production needs.

E-commerce as a share of retail purchases has grown 11% per year nationally since 2010 and is expected to continue growing at a similar pace. E-commerce's share of overall retail sales was 15% in 2023. By 2050, e-commerce may account for nearly 35% of total retail activity, according to the Urban Freight Distribution Study. The study also found that e-commerce deliveries create less than one percent of VMT, and only about 1.4% of greenhouse gas emissions, as compared with personal shopping trips, resulting in a net reduction in VMT and greenhouse gas emissions. Major investments in electrification will lead to even greater efficiency and further reductions in greenhouse gas emissions. Opportunities to take further advantage of e-commerce in replacing personal shopping trips and related climate mitigation strategies are addressed in the Imagine 2050 TPP Freight Investment Plan.

Smaller contributors to greenhouse gas emissions such as off-highway, railroad, marine, buses, motorcycle, and recreational vehicles will benefit from a mix of strategies mentioned earlier, as well as others. These add up to 10% of transportation's greenhouse gas emissions. Greenhouse gas emissions from natural gas transmission and air conditioning are also estimated to sum to 10% of greenhouse gas emissions within the transportation sector. However, these emissions are not within the scope of a metropolitan planning organization to address.

Transportation does have influence over greenhouse gas emissions captured in other sectors of the economy, including the embedded greenhouse gas emissions in steel and concrete used to build and rebuild our transportation infrastructure. Encouraging lower GHG-embedded materials is within the purview of the transportation sector. Encouraging the use of electric, and maybe someday hydrogen, construction equipment can also reduce transportation's contribution to climate change. At what times of day and at what rates electric vehicles are charged can influence the greenhouse gas emissions that result from the electricity generation sector and are influenced by transportation planning and investments.



The U.S. Department of Energy has selected the Heartland Hydrogen Hub, including multiple clean hydrogen projects from Xcel Energy, for award negotiations to receive up to $925 million. The award will serve as a catalyst for a future hydrogen ecosystem in the Upper Midwest.[60]

Other work to support decarbonization strategies includes planning within each area of work, considering climate impacts in decision-making processes, and coordination and technical support among different levels of government, nonprofit organizations, and the private sector.

Recent work by the Met Council

The Electric Vehicles Planning Study lays the groundwork for the electrification of the region's passenger vehicle fleet by studying the technical background and supportive actions regional partners can take, the investment needed to build and run a charging system, the positive impacts on climate change and public health, and the hurdles we face in adopting the technology.

The Maximum Mode Shift, a Vehicle Miles Traveled Reduction Study estimates the maximum amount of mode shift possible given existing transportation infrastructure, land use, and travel patterns. The outcomes of the study can then help guide infrastructure and services investment to support that behavioral change, while filling the gaps in the transportation system to make even greater shifts possible.

Other studies that discuss the expansion of travel choices that support a reduction in VMT were previously discussed under Our Region is Dynamic and Resilient.

Supporting work by partners

Our efforts to reduce greenhouse gas emissions are supported by our partners at the national and state level.

National work

In 2023, the U.S. Departments of Energy, Transportation, Housing and Urban Development, and the Environmental Protection Agency released the U.S. National Blueprint for Transportation Decarbonization. This framework of strategies and actions to remove all emissions from the transportation sector by 2050 recognized the need for coordinated action within the areas of improving community design and land-use planning, increasing options to travel more efficiently, and transitioning to zero-emission vehicles and fuels.

Infrastructure Investment and Jobs Act and Inflation Reduction Act

These laws created significant new federal funding programs that are implemented at the state, regional, local, and even household levels.

In 2021, Congress passed the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law. This legislation included traditional transportation funding and created several new formula programs and competitive opportunities for GHG reduction by state and local agencies.

- Carbon Reduction Program: To reduce greenhouse gas emissions Minnesota will receive approximately $20.9 million with an annual increase of approximately 1.9%. Approximately $6M-$8M of these funds are allocated to the Twin Cities metro region and are discussed under the investment plan.
- Charging and Fueling Infrastructure Grant: Provides competitive funds to states, metropolitan planning organizations, Indian Tribes, counties, and cities to implement public EV charging in communities and along Alternative Fuel Corridors. This program is further discussed under the investment plan.
- National Electric Vehicle Infrastructure: This formula program provided MnDOT with $68 million over five years to install EV fast chargers across Minnesota along corridors that specifically serve longer trips including designated Alternative Fuel Corridors. This program includes many specific requirements and MnDOT is actively implementing this program. The Twin Cities metro region can expect to see five charger locations, each with at least four fast charger ports.

In 2022, Congress passed the Inflation Reduction Act, which included incentives for businesses and individuals to invest in a wide range of clean energy strategies including within transportation. This legislation also created the Climate Pollution Reduction Grants Program. Through this grant program, the U.S. Environmental Protection Agency has provided Minnesota and the Twin Cities metropolitan statistical area (including 11 counties within and surrounding the Metropolitan Planning Organization area covered by this plan) with $4 million and $1 million, respectively, to develop and implement ambitious plans for reducing greenhouse gas emissions and other harmful air pollution. These plans make those entities covered by each plan eligible for nationally competitive implementation funds of $4.6 billion.

State work

In 2007, Minnesota's Next Generation Energy Act set its first GHG reduction goals to reduce economy-wide greenhouse gas emissions by 80% from 2005 to 2050.

In 2019, MnDOT released the Pathways to Decarbonizing Transportation Report. This report included action items MnDOT would pursue and showed how a mix of strategies could reach GHG reduction goals of 80% and 100% by 2050.

In 2020, MnDOT established a Sustainable Transportation Advisory Council of general public experts to make recommendations to the MnDOT Commissioner on strategies that help the agency reduce internal and general carbon pollution from transportation. This advisory council makes annual recommendations and includes work groups in the areas of Fueling and Powering and Reducing VMT and Improving Transportation Options.

MnDOT published the 2021 Minnesota EV Assessment to document BEV market trends, strategies to increase BEVs, and actions the state can take to meet its BEV adoption and carbon reduction goals.

The 2022 Minnesota's Climate Action Framework set a vision that includes economywide carbon neutrality across the state by 2050, as well as resiliency and equity. Measures of progress for transportation included reducing GHG from the transportation sector 80% by 2040, decreasing vehicle miles traveled 20% per capita by 2050, and reaching 20% electric vehicles on the road by 2030.

Chapter 5 of MnDOT's 2022 Statewide Multimodal Transportation Plan includes commitments to decrease annual greenhouse gas emissions from the transportation sector by 80% by 2040, ensure that all new light duty vehicles registered in Minnesota are zero emission vehicles by 2035, and reducing the number of vehicle miles traveled across Minnesota per capita 14% by 2040 (analogous to Minnesota's Climate Action Framework). This statewide plan guides MnDOT's work and is the policy plan that guides all transportation planning in Minnesota.

MnDOT is working to implement 2023 state legislation to evaluate major highway-lane-expansion projects and intersection-to-interchange grade-separation projects on state highways (Transportation GHG Emissions Impact Assessment). These projects must include sufficient mitigation to meet state goals for greenhouse gas emissions and the VMT reduction. Minnesota Statute 161.175 states that projects must comply with this requirement effective February 1, 2025, before entering the Transportation Improvement Program.

Local work

Many local governments have developed or are developing climate action plans, including:

- The City of Edina
- The City of Minneapolis
- The City of Eagan

We protect and restore natural systems

Historically, regional planning viewed land, water, air, and other elements as resources and materials to be managed for human use. The Imagine 2050 plans seek to shift our region's approach to natural systems by recognizing the intrinsic value of natural resources and ecosystems.

"Natural systems" includes the physical and chemical properties that comprise land, air, and water and their associated natural cycles, as well as ecosystems and the connections among various physical features, natural cycles, and human society.

Transportation uses land throughout the region in ways that impact natural systems, including:

- Pollution from transportation reduces environmental quality, and transportation infrastructure can collect pollutants on impervious surfaces.
- Transportation infrastructure disrupts wildlife through habitat loss, degradation, and fragmentation, disruption of natural topography and migration routes, and noise and light pollution.

Objective

This objective will guide how transportation can help protect and restore natural systems:

- **The region's transportation system protects, restores, and enhances natural systems (for example, air, water, vegetation, and habitat quality).**

Performance measurement

Performance measures help evaluate how well the Imagine 2050 Transportation Policy Plan is addressing the region's goals and objectives, as defined in this plan and Imagine 2050. Because protecting and restoring natural systems is a new goal area for the region, performance measures will continue to be developed in the future as there are no federally required measures for this goal area. The measure used to track performance for protecting and restoring natural systems in this plan is tracking the proportion of the region covered in impervious surfaces for roadways. Another measure, transportation stormwater conveyance systems in the region, is identified to be studied in the future. More on this measure can be found in the Imagine 2050 TPP Evaluation and Performance section.

Policies

The Imagine 2050 Transportation Policy Plan sets two policies related to transportation and natural systems. These policies and their supporting actions are detailed in Policies and Actions.

Policy 32. Prioritize projects that reduce total impervious surface coverage or minimize right-of-way needs.

Policy 33. Use existing transportation rights-of-way and transportation project development to protect and restore natural systems.

Work program

The Imagine 2050 Transportation Policy Plan does not identify work program items specific to this goal area; however, several work program items related to Complete Streets, air quality, and climate mitigation have inherent relationships to this goal area.

Major topics

Environmental quality

Air quality

Poor air quality can have detrimental effects on people and wildlife. This plan primarily addresses air quality impacts of transportation through the Our Communities are Healthy and Safe goal, which describes the impact on people of air pollution from all sources, including transportation.

Water quality

Pollution from transportation can reduce water quality. As such, there is a substantive existing regulatory framework to address this issue.[61] Transportation infrastructure, such as roads, paths, and transitways, are large networks of impervious pavement. As a result, water cannot filter through to the ground when it collects on pavement. When water collects, such as during snow melt or rain events, it picks up oils, debris, and other pollutants on its way to stormwater infrastructure.[62]

Research supporting the Imagine 2050 Water Policy Plan identifies four contaminants of concern in our region: chloride, nutrients, PFAS, and volatile organic compounds.[63] Transportation can be a source or concentrator of chloride and nutrients, primarily phosphorus. Salt and other solutions that help address snow and ice run off into water bodies and lead to higher chloride levels in water across the region,[64] which cannot be effectively removed.[65] Falling leaves, organic debris, and fertilizers that collect on roadways concentrate phosphorus in stormwater discharge into lakes, streams, and rivers.[66]

The Imagine 2050 Transportation Policy Plan advances water quality improvement through capital and operations actions identified in the Policies and Actions section. Some related actions include:

- Encouraging green stormwater infrastructure.
- Prioritizing projects that minimize impervious surfaces.
- Related research, training, and technical assistance.

Wildlife disruption

Transportation infrastructure has a wide range of disruptive impacts on wildlife:

- Transportation infrastructure fragments natural habitats, which can increase vehicle-animal conflicts.[67] There are opportunities to incorporate native planting practices, roadway landscaping and vegetation, and other avoidance and mitigation measures.
- Tree removal for construction projects reduces shade for both people and animals and reduces habitat. Restoration of the tree canopy carries a regrowth lag.
- Noise[68] and lighting[69] from major roads as well as other forms of transportation (for example, air travel, railroads) can disrupt animal behavior patterns.

The Imagine 2050 Transportation Policy Plan seeks to improve transportation-wildlife interaction through actions identified in the Policies and Actions section. Some related actions include:

- Encouragement of varied plantings within transportation rights-of-way when appropriate.
- Priority for projects that avoid impacts or mitigate above and beyond project impacts.
- Support for related research.

Restoration

Transportation investments present opportunities for improvements beyond travel needs. For example, many implementing partners have considered or implemented road diets, reducing a four-lane roadway to a three-lane roadway primarily for related safety benefits. The remaining right-of-way can be repurposed for other uses, like adding trees, pollinator gardens, green stormwater infrastructure, or a variety of other enhancements.

This plan identifies related restoration activities for implementing partners to consider, such as:

- Maintaining or expanding plantings within transportation rights-of-way, like trees, bushes, grasses, and planted buffers.
- Incorporating habitat and natural features in stormwater management.
- Increasing use of native plantings and pollinators in project landscaping.

These actions are further detailed in Policies and Actions. Some related actions, particularly related to tree cover, appear with actions related to climate resiliency and Complete Streets.

Recent work by the Met Council

The Met Council has created multiple tools to track natural systems in the region to aid in regional and local planning work. The Met Council's Community Development division has led mapping initiatives to track urban heat impacts, tree canopy, and flood risk in the region as parts of the 2018 Climate Vulnerability Assessment. The Met Council is also implementing the findings found in the Climate Action Work Plan, which guides internal actions in the Met Council and supportive actions for external regional partners.

Supporting work by partners

State work

State agency partners have existing technical assistance on natural systems restoration available for implementing partners. Examples include:

- The Minnesota Department of Natural Resources' Guidelines for Managing and Restoring Natural Plant Communities along Trails and Waterways
- The Minnesota Board of Water and Soil Resources' Wetland Restoration Guide
- The Minnesota Pollution Control Agency's Smart Salting training program
- The Minnesota Pollution Control Agency's Minnesota Stormwater Manual

Where goals meet

Imagine 2050's goals intersect with each other in many ways. The following section will detail how each goal area interacts and intersects with each other in the context of transportation.

Our region is equitable and inclusive

Our communities are healthy and safe

All our region's residents live healthy and rewarding lives with a sense of dignity and well-being. Many health and safety issues identified with transportation intersect with equity. The impacts often disproportionately affect people of color, people with disabilities, and people with lower incomes.

Our region is dynamic and resilient

In Imagine 2050, our region meets the opportunities and challenges of choice, access, and affordability faced by our communities. Choice, access, and affordability of transportation modes can make big differences in the lives of people who have been excluded in many ways.

We lead on addressing climate change

We are mitigating transportation greenhouse gas emissions and have adapted to ensure our communities and systems are resilient to climate impact. Climate change will most impact those who already bear the brunt of inequities, so their needs should be a starting point.

We protect and restore natural systems

We protect, integrate, and restore natural systems through transportation projects to protect habitat and ensure a high quality of life for the people of our region. An Indigenous worldview sees everything as connected rather than people being separate from nature. Minnesota's non-Indigenous people are increasingly learning from the traditional ecological knowledge of the Indigenous people and Tribal Nations that share the state's geography.

Our communities and healthy and safe

Our region is equitable and inclusive

Imagine 2050 calls for racial inequities and injustices experienced by historically marginalized communities to be eliminated and all residents to feel welcome, included, and empowered. This goal directly intersects with ensuring communities are healthy and safe, since transportation impacts or access barriers can contribute to many of these inequities and injustices.

Our region is dynamic and resilient

In Imagine 2050, our region meets the opportunities and challenges faced by our communities and economy relating to issues of choice, access, and affordability. Having choices for how to travel supports health by ensuring walking, rolling, and biking can be easily done across different types of communities. Having choices also supports people being able to choose the travel mode that feels safest to them.

We lead on addressing climate change

Imagine 2050 has a goal that we have mitigated greenhouse gas emissions and have adapted to ensure our communities and systems are resilient to climate impact. Climate change, including impacts from transportation greenhouse gas emissions, relates to health impacts from increased heat effects, flooding, and other extreme weather impacts, among other effects.

We protect and restore natural systems

In Imagine 2050, we protect, integrate, and restore natural systems to protect habitat and ensure a high quality of life for the people of our region. The health of natural systems is connected to people holistically. One example is how transportation impacts water quality, while people rely on clean water for drinking water and recreation.

Our region is dynamic and resilient

Our region is equitable and inclusive

Improving access to jobs, healthcare, groceries, and other daily needs – especially for people in disadvantaged communities – can help us achieve this equity goal.

Our communities are healthy and safe

Projects that repair, replace, and renew infrastructure to improve system resilience and reliability are an opportunity to upgrade infrastructure safety features and mitigate health impacts to advance this health and safety goal.

We lead on addressing climate change

Transportation resilience contributes to the climate goal by adapting to anticipated climate and weather-related impacts and expanding multimodal choices to encourage low-carbon transportation that mitigates climate impacts.

We protect and restore natural systems

Improvements to stormwater and ice management can advance the natural systems goal through reduced discharge impacts on waterways.

We lead on addressing climate change

Our region is equitable and inclusive

Climate change mitigation actions may have reparative benefits for those who have historically been disproportionately harmed by the placement of highways and other transportation decisions. Many climate mitigation actions in the transportation sector can reduce negative public health impacts, reduce costs of transportation, and provide greater access to transportation. There are also opportunities to target co-benefits and fully engage communities historically left out of decision making with climate actions.

Our communities are healthy and safe

Climate change mitigation actions have large benefits for public health, especially in reducing pollution and encouraging walking, rolling, and bicycling. More people using transit has direct safety benefits (for example, fewer crashes and injuries), and more people walking, rolling, and biking can normalize interactions with drivers.

Our region is dynamic and resilient

Our transportation systems have historically relied too heavily on burning fossil fuels to move people and goods. New technologies and greater use of more efficient travel modes (for example, transit, walking, rolling, and biking) can reduce our contribution to climate change. Reducing transportation emissions is an important part of the global effort to mitigate climate change. Without collective action to reduce the severity of climate change, the region's needs for climate adaptation and resilience will be larger and costlier.

We protect and restore natural systems

Our natural systems benefit from many of the actions we take to reduce our contribution to climate change. Benefits of these actions to natural systems can include fewer pollutants in water runoff from roads, less impervious surface areas devoted to transportation, and opportunities for land uses that absorb less new land for development.

We protect and restore natural systems

Our region is equitable and inclusive

Air quality is a primary concern for equity, with transportation pollution disproportionately impacting Black, Indigenous, and people of color and low-income populations. Our goal is to improve air and water quality for all creatures that breathe in our environment and rely on water for life.

Our communities are healthy and safe

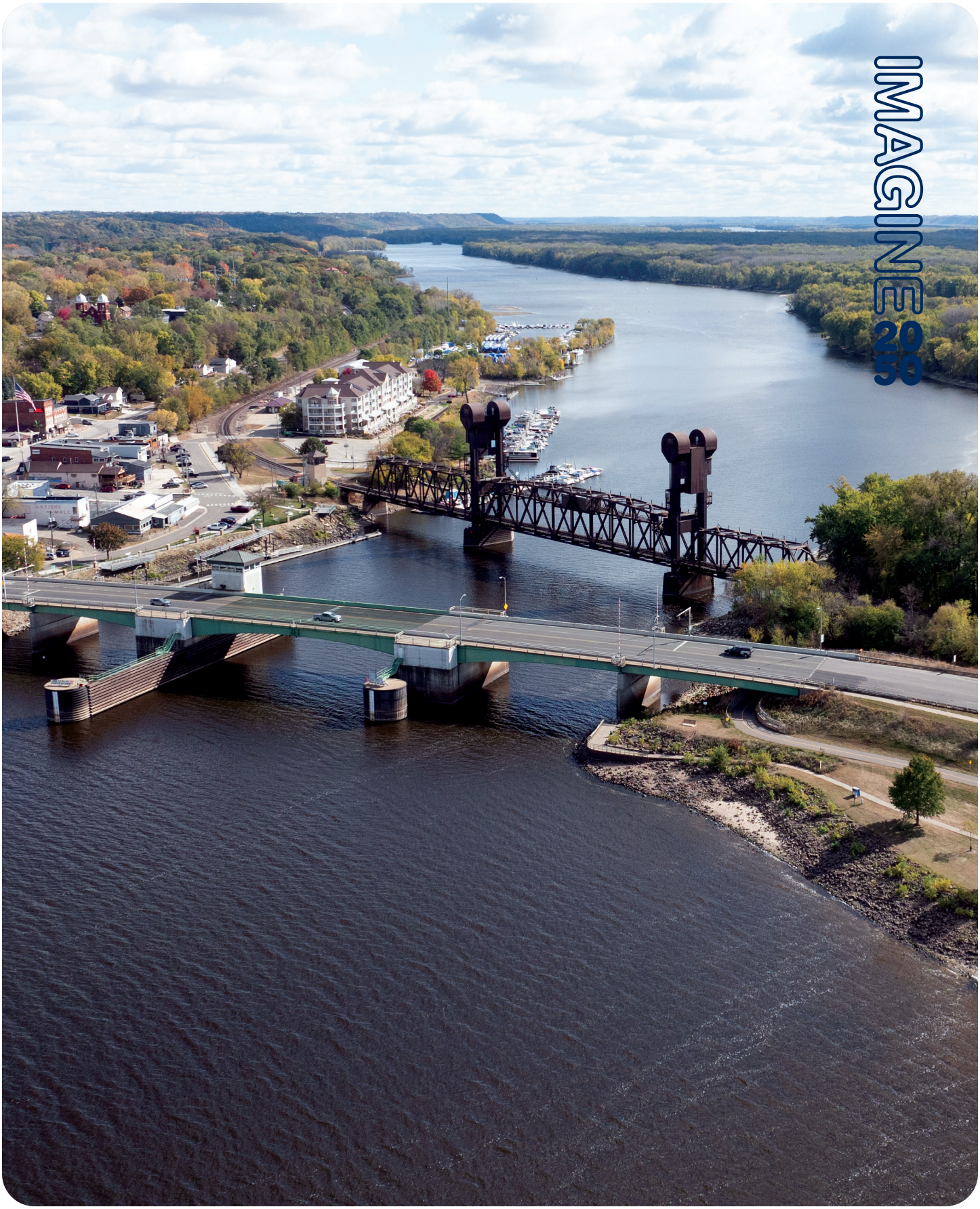
Improvements to support natural systems — such as green stormwater infrastructure, plantings within the transportation right-of-way, and maintenance of tree canopy — can additionally benefit livability, reduce heat exposure, and provide access to green space.

We lead on addressing climate change

Actions that affect natural systems are inherently linked to the impacts of climate change. Actions that can mitigate the impacts of transportation on air quality have co-benefits of greenhouse gas mitigation.

Our region is dynamic and resilient

Stormwater and ice management strategies can have dual benefits in reducing waterway impacts described here and also advancing system reliability and resilience.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Investments

The investments in this plan can be described through the funding assumptions for revenues and spending, the investment plans and their associated content, and the major projects.

Funding

The plan is fiscally constrained, meaning that the plan identifies all transportation revenues that can reasonably be expected and are assumed to be available within the plan's time frame, together with the proposed spending of those revenues. Recent actions taken by both the State of Minnesota and the federal government have increased the availability of and access to transportation revenues, presenting a significantly different financial outlook than anticipated in past plans. The region's current financial outlook and plan offer a level of revenue availability, investment, and financial stability – particularly for transit, bicycle, and pedestrian investment – that was not available under past transportation finance plans.

In 2023, the Minnesota Legislature provided increases in traditional sources of regional transportation funding including the gas tax, vehicle registration tax, motor vehicle sales tax, and state general funds dedicated to transportation. They also included new transportation revenue sources, most notably a new regional sales tax for transit, active transportation (walking, biking, rolling), and county transportation. In addition, local governments received the proceeds from a new statewide delivery fee, along with dedicated taxes from the sales of auto repair parts for transportation investment purposes.

The 2021 federal Infrastructure Investment and Jobs Act (IIJA), also referred to as the Bipartisan Infrastructure Law (BIL), increased the traditional federal formula funding programs for highways and transit along with creating new competitive funding programs. Many of the new federal competitive programs address goals such as safety, community connectivity, climate change, resiliency, and multimodal investments that lacked specific funding programs under previous federal acts.

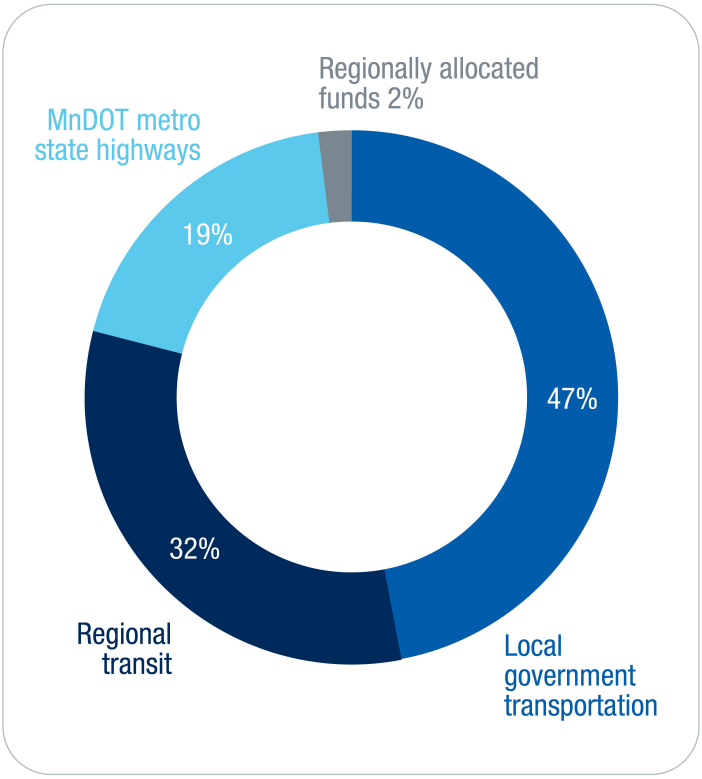
These new federal programs offer opportunities for increased transportation investment addressing these goals. The plan does not estimate or predict how much federal competitive funding the region will receive under these new programs but identifies them as significant opportunities for receiving additional funding. Increases to federal formula funding programs due to the IIJA are included in the plan revenue estimates.

The plan's finance assumptions are structured around four categories:

- MnDOT metro state highway revenues and spending
- Regional transit revenues and spending
- Local government transportation revenues and spending
- Regionally allocated revenues

Additional opportunities for state and federal funding exist that are not assumed in the plan; they are described later. The share of these revenue sources across the Imagine 2050 planning horizon is shown in Figure 1.16. More details are available in Regional Transportation Finance.

Figure 1.16: Twin Cities transportation revenue by purpose, 2025-2050



MnDOT metro state highway revenues and spending

This funding category includes all revenues allocated to MnDOT's metro district for capital and operating spending on the state highway system owned and operated by MnDOT in the metro area. The MnDOT metro district's estimated state highway revenues are about $807 million in 2025 and almost $33 billion from 2025 to 2050. MnDOT's primary sources of revenue for state highways are state highway user taxes and federal revenues designated from the Highway Trust Fund, which is funded primarily by federal fuel taxes.

MnDOT's metro district uses metro state highway revenues to build, maintain, and operate the state highway system in the metropolitan region. MnDOT metro's spending on these highways can also include some spending for transit, bicycle, and pedestrian improvements that happen within the highway corridor. MnDOT's spending is broken into two broad categories: highway capital spending, and planning, operations, and maintenance spending. After accounting for debt service costs, MnDOT generally has determined to allocate its remaining available statewide revenues approximately 74% to highway capital spending and 26% to planning, operations, and maintenance spending. By 2028, MnDOT Metro District will have about $600 million available for state highway capital spending, growing to almost $1.4 billion annually by 2050. Around $24 billion in total metro highway capital funding is available from 2025 to 2050.

Regional transit revenues and spending

Regional transit revenues include all revenues used by regional transit providers – Metro Transit, Met Council contracted services, Metro Mobility, and the suburban transit providers – to operate, maintain, and build the region's bus and transitway systems. The estimated total regional transit revenues are about $1.7 billion in 2025 and around $54 billion from 2025 to 2050. Transit receives revenues through a variety of sources, with over 50% of the funding provided through two major taxes – the new regional transportation sales and use tax and the state motor vehicles sales tax. Other sources include state general fund and bonds, passenger fares, federal funds (both formula and discretionary), county sales tax and regional rail authority property taxes, and regional transit capital property tax.

Regional transit spending is generally broken into operations and capital spending for both the regional bus and transitway systems. The regional transit spending from 2025 to 2050is anticipated to be 65% on bus operations and capital, 16% on existing transitway operations and capital, and 15% on expansion transitway operations and capital. After accounting for those planned costs, about 4% of the total 2025-2050 revenues, or $2.3 billion, are remaining for opportunities for additional investment.

Local government transportation revenues and spending

Federal transportation planning regulations require the region's long-range plan to account for all transportation revenues and spending expected in the region over the period of the plan. That includes federal revenues used by local units of government – counties, cities, townships – on local roads, bicycle, and pedestrian systems. The regional plan must also account for revenue and spending on regionally significant projects on the metropolitan highway system (such as projects that add capacity and interchange projects on minor and principal arterials). Local governments own and operate a variety of roadways including local streets collectors, minor arterials, and a very few principal arterials. Because the majority of local transportation spending does not involve federal funding or regionally significant projects, it generally is not covered in detail in the regional plan.

Local transportation revenues come from a variety of sources including county and city state-aid allocations from the state highway user tax revenues; federal revenues distributed through the Regional Solicitation and other competitive federal funding programs; county transportation sales tax; county wheelage tax revenues; or property taxes, special assessments, or fees allocated to transportation purposes by the local government. Beginning in 2024, local governments receive funds from a new Transportation Advancement Account created by the 2023 legislature. This account receives the proceeds from a phased-in dedication of the state sales tax on auto parts and a new state retail delivery fee. Metro area counties will also receive 17% of the new regional transportation sales and use tax. Local government transportation revenues will total more than $2 billion annually in 2025 and $80 billion 2025 to 2050.

Local government transportation spending is the largest area of transportation spending within the region, accounting for almost half of all regional transportation spending. Local transportation spending includes spending by the metro counties, cities, and townships. Local governments identify their investment goals and priorities in their local comprehensive plans and transportation plans, and they often vary greatly based on local context and need.

Local government transportation spending is somewhat unique in that it has typically been more flexible than other sources to cover a wide variety of transportation improvements, including roads, active transportation, and transit.

Local government transportation spending decisions are made at the local level, and spending and projects are identified through local comprehensive plans, capital improvement programs, and annual budgeting processes. Details on local government transportation spending are not included in this plan, though the regional goals, objectives, policies, and actions are meant to guide local transportation planning and decision

making. Local projects are an important investment component to helping the region achieve its long-range goals and objectives.

Regionally allocated revenues

Under federal law, large metropolitan areas receive a share of the state's federal formula funds for project selection through the designated metropolitan planning organization. The Met Council, in partnership with the Transportation Advisory Board, administers the project selection process for these funds. The project selection process for the region's federal funds is known as the Regional Solicitation.

Including recent federal law changes, the regionally allocated revenues are made up of four primary sources: the Surface Transportation Block Grant program (including transportation alternatives); Congestion Mitigation and Air Quality improvement program; Carbon Reduction program; and the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program. Together, these funds total about $125 million annually and $3.1 billion 2025 to 2050.

The recent state law changes also authorized that 5% of the new regional sales tax be provided to TAB for allocation to active transportation purposes. This allocation will provide about $25 million in 2025 and $910 million from 2025 to 2050, meaning there are about $4 billion in regionally allocated revenues available from 2025 to 2050.

The regionally allocated revenues have a spending structure that is largely determined by the Regional Solicitation. Over the past decade, the Met Council and TAB have distributed the available regional federal funds approximately 55.5% to roadway projects, 30% to transit and travel demand management projects, and 14.5% to bicycle and pedestrian projects. Any individual two-year solicitation distribution can vary from this based upon the funding priorities as determined by TAB. In recent years, "unique projects" that do not clearly align within the modal categories have also received $4 million every two years.

The Regional Solicitation typically awards funds three to four years in advance of the expected project construction to allow time for detailed project development after the funding award. Following the 2024 solicitation, the region's federal funds will have been awarded through calendar year 2029. The funding assumptions in this plan for 2025 to 2029 include these awarded projects in the revenue assumptions for transit and local government revenues. State highways typically have not received federal funding awards. A portion of the new federal revenues available from the Carbon Reduction program, PROTECT program, and the regional transportation sales and use tax for active transportation from 2025 to 2029 have not yet been awarded. These funds along with the federal funds available after 2029 will be allocated in future solicitations.

The project selection process for future federal and regional active transportation funds will be determined by a Work Program item called the Regional Solicitation Evaluation. The Regional Solicitation evaluation will happen over two years (2024-2025) and will develop a new solicitation design to be in place for a 2026 Regional Solicitation. The intent of this evaluation is to assure that the structure and design is closely tied to and meant to achieve the goals and objectives identified in the regional plans, including the Imagine 2050 Transportation Policy Plan.

Other revenues

There are other opportunities for funding that are not directly addressed in the assumptions of this plan but may impact the region's transportation spending.

- Discretionary state funding programs like Corridors of Commerce, bonding programs such as the local bridge improvement program, or specific project earmarks are often authorized every two years by the Legislature, but the funding amounts and projects are not known in advance. The metro area has historically received funding from these sources.
- Discretionary federal funding programs like Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program and Safe Streets and Roads for All (SS4A) are awarded to projects through nationally competitive programs. Many of these federal discretionary programs directly address the goals and objectives of this plan and the metro area has a strong history of receiving grants through these types of competitive funding programs.

Investment plans

The Imagine 2050 Transportation Policy Plans uses investment plans to identify the investment approach that puts goals, objectives, policies, and actions into implementation for each type of transportation investment. These investment plans are included as separate documents, sometimes with additional supporting documents. Table 1.1 summarizes the investment discussions included in each plan.

Table 1.1: Imagine 2050 Transportation Policy Plan investment plans and their investment discussions

Investment Plan	Investment Discussion

Highway Investment Plan	• Operations and maintenance
	• Preservation of existing highway assets
	• Safety
	• Regional mobility (subcategories listed in priority order):
	  • Travel demand management
	  • Traffic management systems
	  • Spot mobility
	  • Interchanges
	  • Managed lanes
	  • Targeted regional capacity

Transit Investment Plan	• Regular-route bus service • Transitways • Nonregular-route services • Transit fleet • Transit support facilities • Customer facilities • Transit advantages • Fare equipment and supporting systems • Safety and security
Freight Investment Plan	• E-commerce and last-mile distribution • Regional truck freight corridors • Other highway funding priorities that benefit freight
Bicycle Investment Plan	• Regional bicycle transportation network • Regional bicycle barriers • Major river bicycle barriers • Other key bicycle system investment factors
Pedestrian Investment Plan	• Planning for pedestrians • Pedestrian project selection – guidance and key factors
Travel Demand Management (TDM) Investment Plan	• Regional TDM structure • Employer-based trip mode shift incentives • Land development-based mode shift initiatives • Travel pricing and incentives • Customer experience and sense of place • Reduce capital highway expansion needs

The plan also includes an Aviation System Plan that is required under state law. The Aviation System Plan includes its own objectives, policies, and actions and serves a different role than the investment plans listed above.

Major projects

One of the purposes of the Imagine 2050 Transportation Policy Plan is to document capital projects that the region plans to invest in through the life of the plan (included as part of the fiscally constrained plan). Under federal law, this must include, at a minimum, projects that are deemed "regionally significant." The Federal Highway Administration defines regionally significant projects as those that serve regional transportation needs that would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

The Imagine 2050 Transportation Policy Plan defines regionally significant projects as follows.

For highways, regionally significant projects include the following project types on principal arterials:

- Adding or removing a lane (for example general-purpose lane, managed lane, an entirely new roadway, or continuous auxiliary lane that extends more than one interchange or intersection).
- Constructing a new interchange on an existing or developing freeway, adding or removing a new ramp movement at an existing interchange.

For transit projects, regionally significant projects include:

- Adding a new transitway including arterial bus rapid transit, highway bus rapid transit, dedicated bus rapid transit, light rail, commuter rail, or modern streetcar.
- Adding or removing one or more transitway stations, including extending existing transitways (does not include minor station relocations that are part normal planning and engineering).
- The addition of a permanent park-and-ride facility (not leased) with a capacity of 250 or more stalls.

Projects that do not meet these criteria will generally not be deemed regionally significant, but exceptions will be assessed on a case-by-case basis by an interagency consultation group. Bicycle, pedestrian, and travel demand management projects are generally not considered regionally significant. In addition, projects selected through the Regional Solicitation that are regionally significant are programmed directly into the four-year Transportation Improvement Program.

Highway projects

Table 1.2 represents all planned regionally significant highway projects in the region. Programmed projects are in the Transportation Improvement Program and non-regionally significant highway projects are mapped in the Highway Investment Plan. Each of these is fiscally constrained. The Highway Investment Plan shows

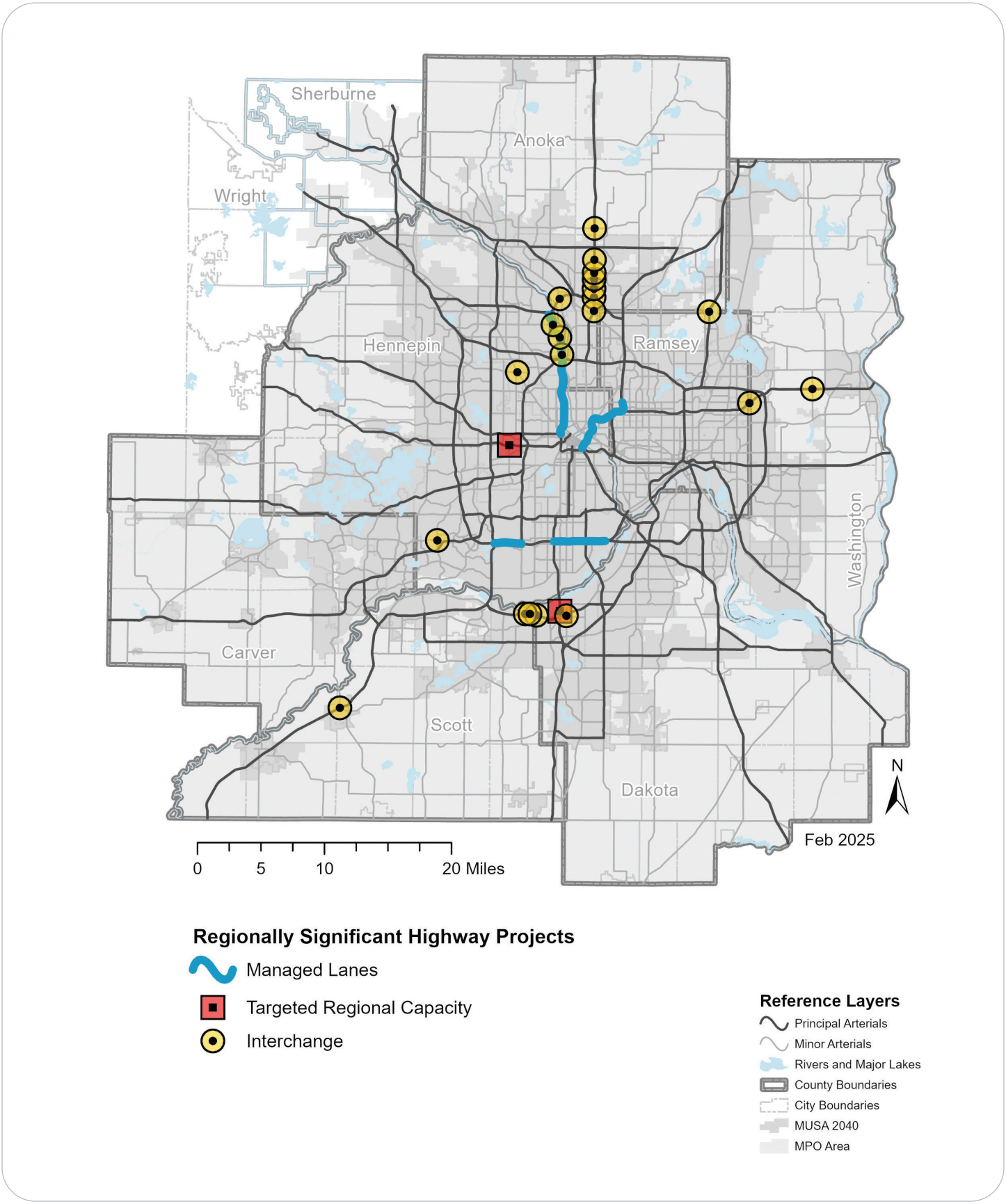
additional projects that are part of a longer-term vision and not formally part of this fiscally constrained plan. This list only includes those projects that meet the definition of regionally significant and fall into mobility categories of interchanges, managed lanes, and targeted regional capacity. The projects can be seen on a map in Figure 1.17.

Table 1.2: Long-range regionally significant highway projects, 2025-2050

Category	Route	Project Description	Estimated Cost [70]	Timeframe
Interchange	US 169 at MN 282/ Scott CSAH 9	In Jordan, construct interchange, rehabilitate bridge.	$49,000,000	2025
Targeted Regional Capacity	I-35W at Cliff Rd.	In Burnsville, northbound only, fill gap in fourth lane to connect upstream and downstream fourth lanes.	$80,000,000	2025
Targeted Regional Capacity	I-394 at Louisiana Ave.	In St. Louis Park, eastbound only, fill gap in third general purpose lane to connect upstream and downstream third general purpose lanes.	$5,000,000	2025
Interchange	I-35E at Ramsey/ Anoka CR J	In Lino Lakes, add access to and from the north to complete access here.	$11,000,000	2025
Interchange	MN 65 from 99th Ave. to 117th Ave.	In Blaine, construct interchanges at 99th Ave., 105th Ave., 109th Ave., and 117th Ave.	$195,500,000	2026
Interchange	MN 36 at Washington CSAH 17 (Lake Elmo Ave.)	In Grant and Lake Elmo construct an interchange.	$40,000,000	2026
Interchanges, Managed Lanes	MN 252 from MN 610 to I-94 and I-94 from MN 252 to 4th St. N.	In Minneapolis, Brooklyn Center, and Brooklyn Park construct interchanges at 66th Ave. N., Hennepin CSAH 109 (85th Ave. N), and Brookdale Dr., improve safety and mobility on/across MN 252 and I-94.	To be determined	2028
Interchange	MN 610 at East River Rd.	In Coon Rapids, add interchange access ramps.	$35,000,000	2027
Interchange	MN 13 from W of Quentin Av to east of Nicollet Av	In Savage and Burnsville, construct grade separation and reconstruction.	$140,408,000	2027
Interchange	MN 65 at Anoka CSAH 116 (Bunker Lake Blvd)	In Ham Lake and Blaine, construct an interchange.	$36,625,500	2028

Category	Route	Project Description	Estimated Cost [70]	Timeframe
Interchange	Hennepin CR 81 at Bass Lake Rd.	In Crystal, construct an interchange in coordination with Blue Line LRT extension.	To be determined	2025-2035
Interchange	MN 36 at MN 120	In North St. Paul and Oakdale, construct an interchange.	To be determined	2029-2050
Interchange	MN 5 at Hennepin CR 4 (Eden Prairie Rd.)	In Eden Prairie, construct an interchange.	To be determined	2029-2050
Interchange	MN 65 from 85th Ave. to 93rd Ave.	In Spring Lake Park and Blaine, construct two interchanges.	To be determined	2029-2050
Managed Lanes	I-494 from US 169 to east of MN 77/24th Av	In Bloomington and Richfield, complete managed lanes addition.	$350,000,000	2026
Managed Lanes	I-35W from Mississippi River to Ramsey County Rd C	In Minneapolis and Roseville, add managed lanes.	To be determined	2029-2050

Figure 1.17: Map of long-range regionally significant highway projects, 2025-2050



Transit Projects

The Metropolitan Council (including Metro Transit), local governments including cities and counties, and suburban transit providers worked together to develop the list of transit projects included in the fiscally constrained plan (Table 1.3). The list includes only those projects for which potential funding sources, transit mode, and route alignment are identified in the plan. The region will add transitway projects to this list through future plan updates and amendments as needed. For multi-year projects with expenditures prior to or across multiple time frames, this list includes the total estimated project cost, including already spent funds. Transitway projects may include park-and-ride investments that would otherwise be separately considered regionally significant, but no other new regionally significant park-and-ride projects are planned. The projects can be seen on a map in Figure 1.18.

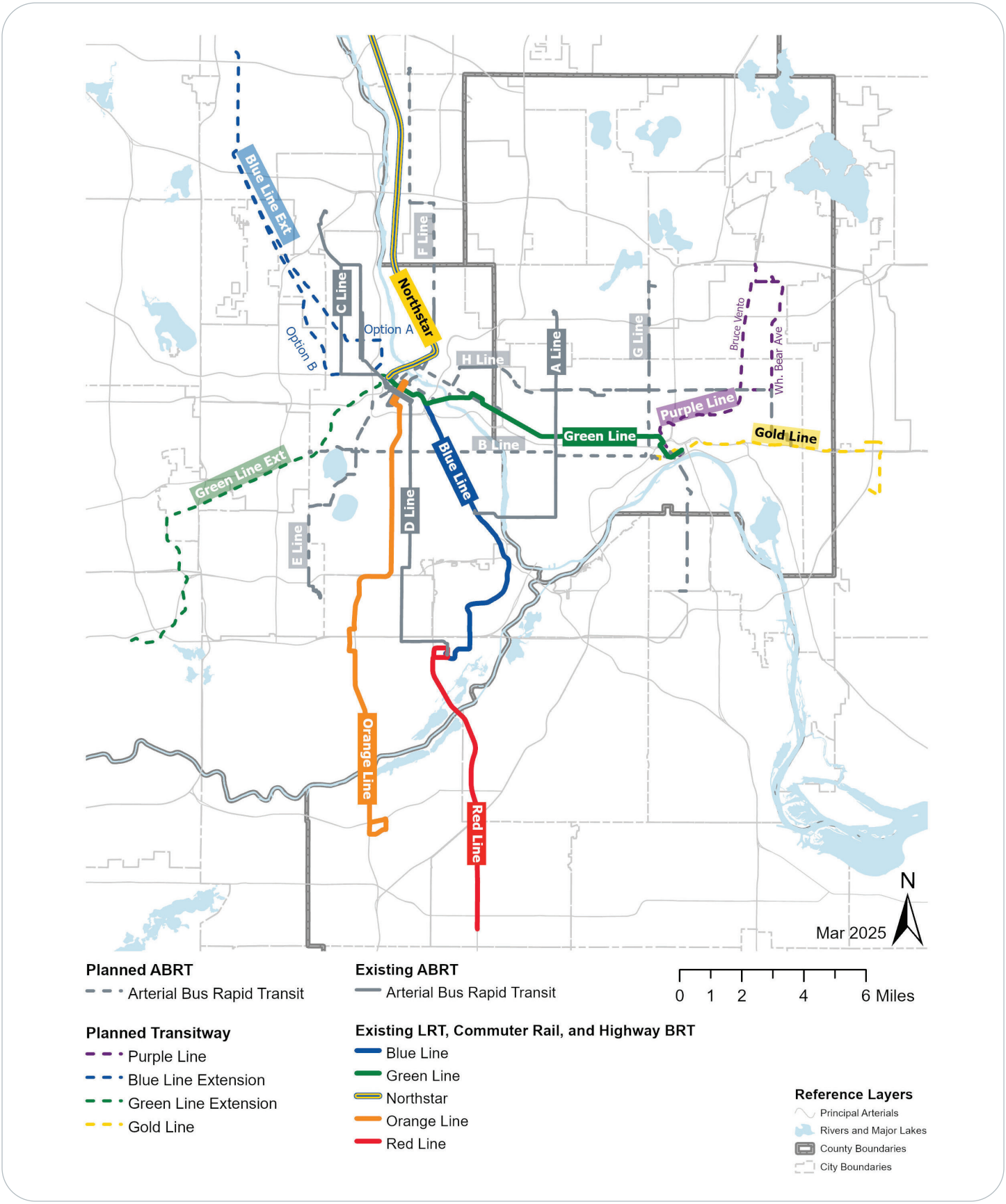
Table 1.3: Long-Range Transit Capital Projects, 2025-2050

Category	Route	Project Description	Estimated Cost	Timeframe
Transitway System	METRO Green Line Extension	15-mile light rail extension of the Green Line with plans to include 15 new stations between Minneapolis and Eden Prairie.	$2,860,000,000	2025-2035
Transitway System	METRO Blue Line Extension	13-mile light rail extension of the Blue Line with plans to include 11 new stations between Minneapolis and Brooklyn Park.	$1,539,900,000[71]	2025-2035
Transitway System	METRO Gold Line	10-mile dedicated bus rapid transit line with plans to include 21 new stations between Saint Paul and Woodbury.	$505,000,000	2025-2035
Transitway System	METRO Purple Line	10- to 12-mile dedicated bus rapid transit line with plans to include 12 new stations between Saint Paul and Maplewood.	$400,000,000[71]	2025-2035
Transitway System	METRO B Line Arterial Bus Rapid Transit	12-mile arterial bus rapid transit line with 33 planned stations between St. Louis Park and downtown Saint Paul.	$65,000,000	2025-2035
Transitway System	METRO E Line Arterial Bus Rapid Transit	9-mile arterial bus rapid transit line with 34 planned stations along University Ave./4th St., Hennepin Ave., and France Ave. between the University of Minnesota and Southdale.	$68,000,000	2025-2035

Category	Route	Project Description	Estimated Cost	Timeframe
Transitway System	METRO F Line Arterial Bus Rapid Transit	15-mile arterial bus rapid transit line with 32 planned stations between downtown Minneapolis and Northtown Transit Center along Nicollet Mall, Central Avenue, 53rd Ave., and University Ave.	$98,000,000	2025-2035
Transitway System	METRO G Line Arterial Bus Rapid Transit	13-mile arterial bus rapid transit line with 32 planned stations between Little Canada and the Dakota County Northern Service Center through downtown Saint Paul to mainly along Rice Street and Robert Street.	$82,000,000	2025-2035
Transitway System	METRO H Line Arterial Bus Rapid Transit	16-mile arterial bus rapid transit line along the Como/Maryland corridor between downtown Minneapolis and Sun Ray Transit Center on the east side of Saint Paul.	$118,000,000	2025-2035

Note: Amendments related to the Blue Line Extension, Gold Line Extension, and Purple Line are likely in 2025.

Figure 1.18: Map of long-range transit capital projects, 2025-2050

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transportation policy plan



Plan Requirements

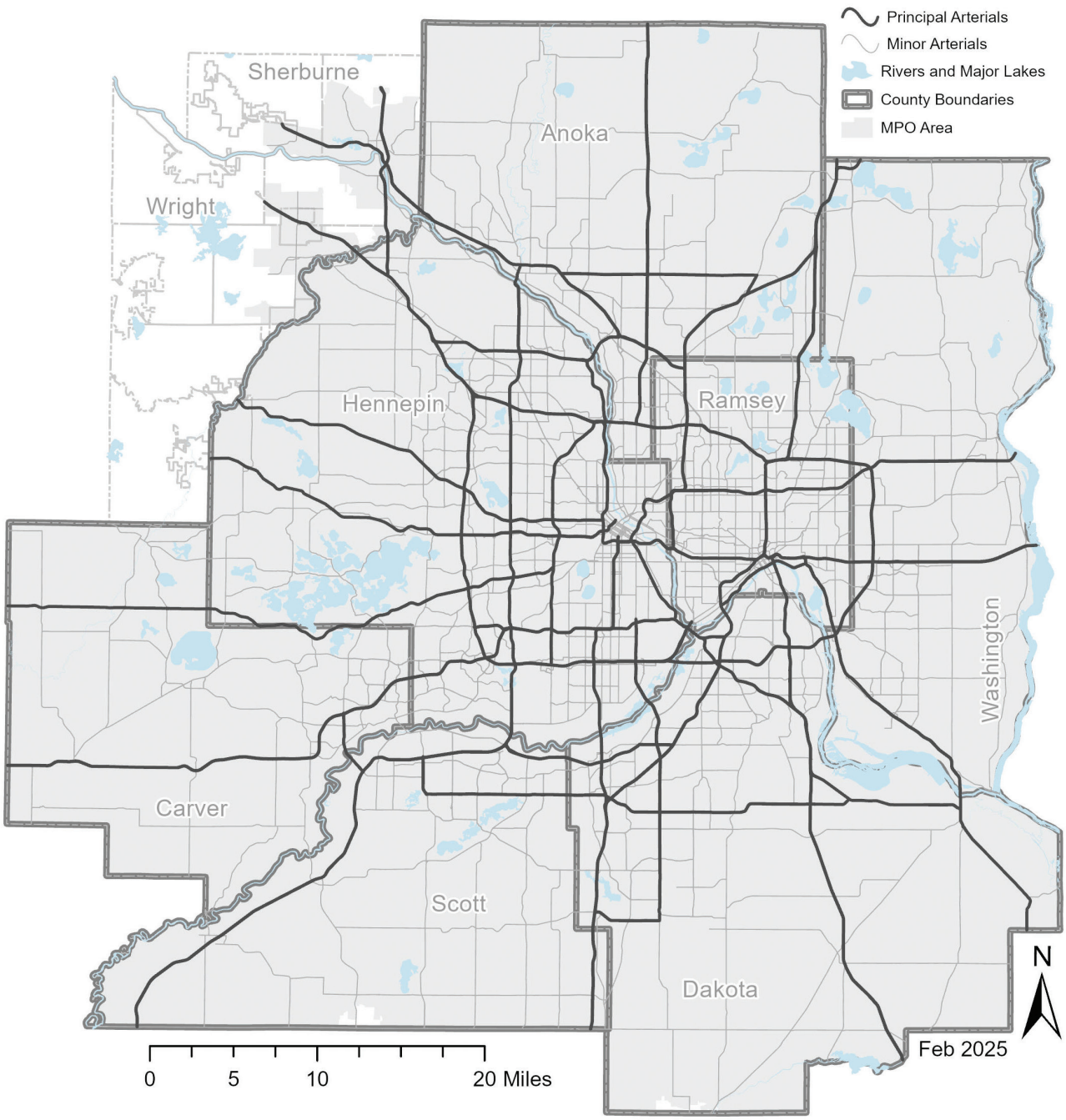
State-required transportation system plan

The Met Council is required by state law (Minn. Stat. 473.145-146) to prepare a comprehensive development guide for the seven-county metropolitan area, including Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. This Imagine 2050 Transportation Policy Plan fulfills state requirements for land and air transportation in that plan, as well as transportation-related state requirements to plan for climate change mitigation and adaptation (Minn. Stat. 216H.02).

Federally required metropolitan transportation plan

The Imagine 2050 Transportation Policy Plan fulfills federal requirements for a long-range metropolitan transportation plan (23 USC § 134 and 49 USC § 5303) for a region in air quality attainment. In addition to the seven-county metro region, this plan addresses federal requirements for areas of Wright and Sherburne counties identified by the U.S. Census as part of the Minneapolis-Saint Paul urban area. Figure 1.19 describes the Met Council's transportation planning areas.

Figure 1.19: Met Council transportation planning areas



The preparation of this plan has been funded in part by the U.S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration. The contents of this document reflect the views of the authors who are responsible for the facts or accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the U.S. Department of Transportation. The report does not constitute a standard, specification, or regulation.

Federal planning factors

This plan was developed through a continuous, cooperative, and comprehensive planning process that addresses factors required by federal regulation (23 CFR § 450.306). Table 1.4 indicates the goal area generally associated with each planning factor, with the detail of work under these goal areas described in Policies and Actions.

Table 1.4: Goal area connections to federal planning factors

	Our region is equitable and inclusive	Our communities are healthy and safe	Our region is dynamic and resilient	We lead on addressing climate change	We protect and restore natural systems
Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.	✓	✓	✓	✓	✓
Increase the safety of the transportation system for motorized and nonmotorized users.	✓	✓	✓	✓	✓
Increase the security of the transportation system for motorized and nonmotorized users.	✓	✓	✓	✓	✓
Increase accessibility and mobility of people and freight.	✓	✓	✓	✓	✓

✓ indicate primary ✓ indicate secondary ✓ indicate limited or no connections to each planning factor

	Our region is equitable and inclusive	Our communities are healthy and safe	Our region is dynamic and resilient	We lead on addressing climate change	We protect and restore natural systems
Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	✓	✓	✓	✓	✓
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	✓	✓	✓	✓	✓
Promote efficient system management and operation.	✓	✓	✓	✓	✓
Emphasize the preservation of the existing transportation system.	✓	✓	✓	✓	✓
Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.	✓	✓	✓	✓	✓
Enhance travel and tourism.	✓	✓	✓	✓	✓

✓ indicate primary ✓ indicate secondary ✓ indicate limited or no connections to each planning factor

SECTION 2: POLICIES AND ACTIONS

Imagine 2050, the regional development guide, has developed a consistent definition of goals, objectives, policies, and actions:

- **Goals** are broad directional statements that more specifically describe the desired end states for the region.
- **Objectives** are the achievable results that advance each goal.
- **Policies** are the statement of intent and approach to regional issues or topics, independently and with partners.
- **Actions** are the specific activities to implement policies and achieve the goals and objectives.

Imagine 2050 establishes five regional goals:

Our region is equitable and inclusive.

Our communities are healthy and safe.

Our region is dynamic and resilient.

We lead on addressing climate change.

We protect and restore natural systems.

Each policy plan in Imagine 2050 (housing, land use, water resources, regional parks and trails, and transportation) must develop plan-specific objectives, policies, and actions that support these regional goals. This plan's approach to supporting these regional goals is summarized in the Imagine 2050 Transportation Overview.

Using this document

The first set of policies listed (Policies that Guide All Work) apply to and support all Imagine 2050 goals and transportation objectives. While many of the remaining policies and related actions support multiple goals and objectives, each one is nested under the primary goal it is intended to support. Many of the policies and related actions support multiple goals and objectives. All five goals are important; they are not listed in order of priority.

Actions are shown in the tables listed under each policy. Not all actions apply to all actors or all projects. The Imagine 2050 Transportation Policy Plan differentiates actors and activity types. Transportation implementing partners will need to consider the actions to determine if, when, and how to incorporate them into their transportation planning and project processes. Please note:

- Each action included is assigned to an agency actor that will lead or support the implementation. For this document, Met Council exclusively represents the metropolitan planning organization role, whereas the Met Council's role as a transit operator is represented as Transit.
    - ✓ Lead role. The lead agency will be responsible for delivering the activities identified in the actions.
    - + Support role. Support agencies will support the work through technical feedback, participating in technical work groups, or incorporating it into their planning work.
- Each action is also tagged by the type of action from the list below. Actions may have multiple tags. These will be used to allow plan users to filter the actions by type when navigating an interactive version.
    - **Investment Priority (IP):** Actions tagged with (IP) provide direction to regional investment processes directed by the plan. This includes the Regional Solicitation, which will complete an evaluation to determine the appropriate framework and application of these actions to the Regional Solicitation. Actions could be applied in the Regional Solicitation in a variety of ways including qualifying requirements, application categories, or scoring measures. These actions can also apply to other regional highway and transit funding programs. Investment priorities targeted exclusively at local governments are tagged as local planning (see below).
    - **Local Planning (LP):** Actions tagged with (LP) are requirements or guidance for agencies to incorporate into the transportation element of their Comprehensive Plans, corridor plans, transit provider plans, and other plans that are not regional or statewide. Major items are noted but this is not intended to be a comprehensive list. Local planning tag may also indicate actions with potential local investment priorities that would help support regional goals and objectives that are not tied to regional or statewide investment programs.
    - **Technical Capacity Building (CB):** Actions tagged with (CB) are technical assistance and support activities to provide guidance and best practices to agencies that builds regional technical capacity.

- **Partner (P):** Actions tagged with (P) are activities that support the regional goals and transportation objectives where the plan is directing partners to take a direct lead. This tag applies primarily to regional or state partners; the local planning tag provides direction to local partners.
- **Work Program (WP):** Actions tagged with (WP) are work program activities, including staff time and consultant studies, to be worked on until the next scheduled update of the plan in five years. These items are necessary to further research and policy guidance to support the region in achieving its goals and transportation objectives. Work program items are listed at the end of each policy. More complete descriptions of work program items are provided in the Imagine 2050 TPP Work Program.

Please note that land use objectives, policies, and actions are discussed in Imagine 2050 Land Use Policy.

Connection to performance measures

The Imagine 2050 Transportation Policy Plan is a performance-based plan. The plan has performance measures that align with the regional goals and transportation objectives and meet the federal performance reporting requirements. Additional details on performance measures are available in Evaluation and Performance section of this plan.

Policies that guide all work

Policies that guide all work are foundational elements of the region's 2050 Transportation Policy Plan. These policies and actions cut across all functional areas of the plan and can apply to all goals and objectives. These policies include the maintenance and updating of databases, applications, studies, and built infrastructure. They are intended to support a robust planning process and deliver a transportation system that meets the region's goals.

Policy contents

1. Maintain a robust and current set of data, maps, plans, processes, and applications to support regional transportation planning.

2. Ensure the region has funding to achieve our goals.

3. Asset management activities and investments should advance regional goals and objectives.

Policies and actions

1. Maintain a robust and current set of data, maps, plans, processes, and applications to support regional transportation planning.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
1A. Regularly update prioritization studies and quantitative and qualitative datasets that inform funding prioritization processes, including functional classification designation, regional bicycle transportation network, freight system maps, and others to reflect the most current representation of needs. Use data analysis procedures that allow for reproduction and updates. Regional datasets and mapping should be incorporated into local comprehensive planning. **(CB) (IP) (LP)**	✓	✓	+	+	+	
1B. Explore new quantitative and qualitative datasets and sources to further define and understand transportation issues and needs. **(CB) (LP)**	✓	✓	+	+	+	+ (UMN)
1C. Expand data collection efforts to better understand transportation system use for every mode. Regularly collect regional pedestrian and bicycling activity data. **(CB) (LP)**	✓	✓	✓	✓	✓	+ (UMN)
1D. Evaluate the uses of the four minor arterial sub-classifications and whether the current system or a different system is most appropriate moving forward. Implement findings as necessary **(IP) (LP)**	✓	✓	+	+		
1E. Document a transportation need or priority for the project area as part of a local planning document or study completed within the last 10 years. Appropriate plans may include a comprehensive plan, regional or statewide plan, system plan (like bicycle or pedestrian facilities), Safe Routes to School plan, or corridor study. **(IP) (LP) (P)**	✓	✓	✓	✓	✓	✓

1F. Maintain, review, and update, as needed, access management guidelines for Principal Arterial and Minor Arterial corridors to preserve and enhance their safety and capacity, as measured by person throughput. Identify opportunities to manage, consolidate, and limit access or repair street grids, as appropriate, when implementing roadway improvement projects. Coordinate with MnDOT and regional partners on access guidelines. **(LP) (P)**	+	✓	✓	+		
1G. Maintain, review, and update as needed, the Preliminary Interchange Approval Process (Appendix F), the Metro Freeway Project Approval, and congestion management processes for the regional highway system to ensure proposed interchange and freeway investments are consistent with regional policy. **(IP) (LP)**	✓	✓				

2. Ensure the region has funding to achieve our goals.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
2A. Consider equity and geographic balance principles when allocating federal funds. Ensure all community types have adequate opportunity to access regional transportation funding. **(IP)**	✓	✓			✓	
2B. Identify and conduct needed prioritization studies to help the region be competitive in discretionary grant programs. **(CB) (IP)**	✓	+	+	+	+	+ (UMN)
2C. Develop and provide technical support programs for state and federal discretionary grant programs. Work with partners to best align projects with funding opportunities. **(CB) (P)**	✓	✓	+	+	+	+ (UMN)
2D. Continue to share Regional Solicitation-funded project lists with Tribal Nations to encourage early coordination around cultural resources. **(IP)**	✓	+	+	+	+	+
2E. Develop resources, data, and guidance for local agencies to support their federal discretionary grant pursuits, focusing on workforce development, equity, and climate and sustainability. (See 6B for related action.) **(CB) (WP)**	✓	✓	+	+	✓	+ (UMN, MPCA)

UMN is the University of Minnesota. MPCA is the Minnesota Pollution Control Agency.

3. Asset management activities and investments should advance regional goals and objectives.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
3A. Implement systems that track and prioritize conditions of pavement, bridges, transit, pedestrian and bicycle infrastructure, and other assets. **(CB) (IP) (P)**	+	✓	✓	✓	✓	
3B. Use asset management investments to include additional elements that help achieve regional goals and objectives. Use additional criteria, like equity, safety, resilience, or others to prioritize asset management projects. **(IP)**	✓	✓	✓	✓	✓	
3C. Complete an Existing Interchange Modernization Study to prioritize improvements on existing interchanges based on infrastructure condition, presence/absence of multimodal elements, mobility, equity, safety, and other factors. **(IP) (WP)**	✓	✓	+	+		



IMAGINE 2050

Goal: Our region is equitable and inclusive

Objectives

- Historically disadvantaged communities are better connected to jobs, education, and other opportunities.
- We repair and eliminate disparate and unjust impacts and harms to Black people, Indigenous people, and people of color.
- We better meet the transportation needs of people who have disabilities or limited mobility.

Many of the policies and actions to advance transportation equity and inclusion have a basis in federal law and executive orders, like the Americans with Disabilities Act (ADA), Executive Order 12898 on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad. Executive Order 14008 includes the Justice40 directive to ensure 40% of the benefits of certain federal investments flow to disadvantaged communities. Other policies and actions reflect ongoing studies and agencywide Met Council work in equity and anti-displacement. Learn more about how transportation relates to this goal here.

Policy contents

4. Conduct engagement activities and implement shared decision making with historically underrepresented communities throughout policy making, planning, and project development to ensure equitable distribution of the benefits and burdens of transportation investments.

5. Ensure communities and investments meet federal Americans with Disabilities Act (ADA) standards and encourage partner government agencies to go above minimum standards to fully meet the needs of people who have a disability in infrastructure, services, communication, and engagement.

6. Implement strategies against gentrification and displacement caused by transportation investments.

7. Evaluate processes, policies, programs, and plans to ensure that community benefits and burdens from transportation investments are distributed equitably.

8. Implement investments that repair harms and impacts to historically disadvantaged communities from past highway investments.

Policies and actions

4. Conduct engagement activities and implement shared decision making with historically underrepresented communities throughout policy making, planning, and project development to ensure equitable distribution of the benefits and burdens of transportation investments.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
4A. Eliminate barriers to public participation. Compensate community members for their time and expertise. Engage members of historically underrepresented communities, including communities of color, low-income communities, youth, and people who have a disability. Use a variety of communication and engagement methods that are culturally appropriate for the community. Increase the availability of language services for those who do not speak English as a first language. **(IP) (CB) (P)**	✓	✓	✓	✓	✓	
4B. Provide best practices and training opportunities for culturally responsive and inclusive engagement, including language services, ADA services, community assessments, and other activities as identified. **(CB) (P)**	✓	✓	+	+	+	
4C. Implement changes to planning and project development processes to ensure impacted communities can provide meaningful feedback, be involved in decision making, and influence outcomes. **(LP) (P)**	✓	✓	✓	✓	✓	
4D. Provide guidance on best practices for Tribal engagement in transportation projects. Identify opportunities to document the full, equal, and effective participation from Tribal Nations.	✓	✓	+	+	+	+
4E. Incorporate community assessments into regional transportation planning and project prioritization processes. Create processes and guidelines and implement training for a community assessments process. Document project processes and decision making for future reporting. **(WP)** Use community assessments to understand the community including demographics, history, and needs. **(LP) (IP)**	✓	✓	✓	✓	✓	

5. Ensure communities and investments meet federal Americans with Disabilities Act (ADA) standards and encourage partner government agencies to go above minimum standards to fully meet the needs of people who have a disability in infrastructure, services, communication, and engagement.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
5A. Support and fund efforts across the region to be compliant with the federal Americans with Disabilities Act minimum requirements by 2050. Track and report progress. **(P) (See 5B for related action.)**	✓	✓	✓	✓	✓	
5B. Identify methodologies and enforcement options to ensure ADA transition plans meet all requirements and best practices. Agencies should demonstrate they are making progress towards compliance. **(CB) (P)**	✓	+				+ (TBD)
5C. Review and update self-evaluations and transition plans for the public rights-of-way regularly. Local agencies should ensure their self-evaluations and transition plans address all requirements included in federal Public Right of Way Accessibility Guidelines once adopted by the U.S. Departments of Transportation and Justice. **(LP) (P)**	✓	✓	✓	✓	✓	
5D. Maintain publicly accessible fleet and transportation facilities to meet or exceed all ADA requirements. Programs including ride-hailing companies, carshare, and microtransit fleets must include enough accessible vehicles to equitably serve all customers, regardless of mobility device needs. **(P)**	✓	✓	✓	✓	✓	
5E. Provide training, technical assistance, and best practice guidance to expand universal design elements in transportation projects to ensure facilities can be accessed, understood, and used to the greatest extent by all people. **(CB) (P)**	✓	+				

TBD is to be determined. Agencies have not yet been identified.

6. Implement strategies against gentrification and displacement caused by transportation investments.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
6A. Minimize right-of-way takings, particularly in environmental justice communities. Consider and engage communities on potential right-of-way needs and uses throughout the transportation planning process**. (LP) (P)**	+	✓	✓	✓	✓	
6B. Explore opportunities for long-term residents to benefit from transportation investments, including tools and programs like community benefits agreements, workforce development, and anti-displacement strategies. (See 2D for additional component of this work.) **(CB) (P)**	✓	✓	+	+	+	✓ (TBD)

TBD is to be determined. Agencies have not yet been identified.

7. Evaluate processes, policies, programs, and plans to ensure that community benefits and burdens from transportation investments are distributed equitably.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
7A. Evaluate local area benefits and impacts for environmental justice communities, in addition to corridor travel, when planning transportation projects. **(LP)**	+	✓	✓	✓	✓	
7B. Evaluate and report on program level impacts (Transportation Policy Plan and Transportation Improvement Program) and benefits to environmental justice communities to ensure regional planning processes result in equitable outcomes for the region. **(IP)**	✓	✓				
7C. Implement Justice40 considerations for relevant funding programs to ensure at least 40% of the benefits of those investments will be directed to disadvantaged communities as defined by USDOT's Justice40 guidance**. (IP)**	✓	✓	+	+	+	
7D. Review and revise, as findings recommend, MnDOT's process to ensure noise walls and other noise mitigation efforts are equally distributed for the people experiencing noise pollution. Evaluate the noise wall decision process, including how residents and property owners vote on that decision, to ensure all residents experiencing noise impacts are heard and properly protected. **(See 13E for related action.) (P)**	+	✓	+	+	+	
7E. Develop and provide tools, training, and best practices on equitable process development and project development. **(CB) (P)**	✓	✓	+	+	+	
7F. Develop an analysis methodology and environmental justice framework to evaluate how projects benefit or harm different communities and demographics. **(CB) (WP)**	✓	+	+	+	+	+ (TBD)

FHWA is the Federal Highway Administration.

8. Implement investments that repair harms and impacts to historically disadvantaged communities from past highway investments.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
8A. Complete and implement the Metropolitan Highway Harms Study. **(CB) (IP) (WP)**		✓				

Goal: Our communities are healthy and safe

Objectives

- People do not die or face life-changing injuries when using any form of transportation.
- People feel safer, more comfortable, and more welcome when using any form of transportation.
- We mitigate and avoid harm to people caused by nearby transportation infrastructure and use (for example, air quality, noise, light).
- People are better connected to community and cultural resources that support their physical, emotional, and mental well-being.
- People can increase physical activity with more opportunities to walk, roll, or bike.
  Transportation is a key social determinant of health. Social determinants of health are the factors in the environment where people live that impact their health and quality of life. Safe and affordable access to housing, food, education, job opportunities, and community and cultural resources can contribute to and support a region where our residents live healthy and rewarding lives with a sense of dignity and well-being. Safe transportation that provides travel options for residents is key to reaching these resources and improving quality of life.

Policy contents

9. Plan for and invest in transportation facilities that are context-sensitive and are high quality and comfortable for all users.

10. Work to eliminate fatalities and serious injuries from traffic crashes on the transportation system by 2050 using the Safe System Approach.

11. Emphasize and prioritize the safety of people outside of vehicles in transportation rights-of-way.

12. Provide safe, secure, and welcoming transit facilities for all users.

13. Use transportation investments and priorities to reduce negative health impacts influenced by the transportation system.

14. Incorporate culturally appropriate placekeeping and placemaking into transportation projects, infrastructure, and right-of-way.

Policies and actions

9. Plan for and invest in transportation facilities that are context-sensitive and are high quality and comfortable for all users.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
9A. Reference the National Association of City Transportation Officials Design Guides, MnDOT Bicycle Facility Design Manual, or Small Town and Rural Multimodal Networks when designing corridor improvements to provide safe and connected walking and biking facilities for all ages and abilities. Prioritize projects that meet or exceed guidance in these or other references. **(IP) (LP)**	✓	✓	✓	✓	✓	✓ (ROW)
9B. Continue to evaluate the impacts of regional safety investments. Connect with residents, businesses, and other users to understand if investments are meeting the expected results and needs of the community. If expected results are not being met or the investments result in unintended negative transportation safety outcomes, project sponsors should identify follow-up actions needed. **(CB) (P)**	✓	✓	+	+	+	
9C. Provide technical assistance on the benefits and impacts of proven and emerging transportation safety strategies. Encourage local agencies to include them in their transportation planning work. **(CB) (LP)**	✓	✓	+	+		

ROW Indicates all other agencies with right-of-way jurisdiction.

10. Work to eliminate fatalities and serious injuries from traffic crashes on the transportation system by 2050 using the Safe System Approach.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
10A. Prioritize projects that improve safety for all modes of travel and have the potential to reduce deaths and serious injuries from crashes. When evaluating projects, consider regional and local safety action plans, high-injury streets, and systemic risk factors. **(IP)**	✓	✓	✓	✓	✓	✓ (ROW)
10B. Form a regional traffic safety technical working group. Facilitate regional coordination and reporting on the impacts and results of local safety projects. **(CB)**	✓	+	+	+		
10C. Continue to maintain, track, and analyze crash data by transportation mode and severity to identify priorities for investments. Coordinate this data with local, regional, and state planning efforts. Include a safety analysis of crash trends, data, and needs by mode and crash severity in comprehensive plans, including at least the five most recent years of data. Identify high priority transportation corridors and locations to reduce fatalities and serious injuries. **(LP) (IP)**	+	✓	✓	✓		
10D. Update state aid standards to allow for more flexible designs that could enhance safety along roadways and manage speed in urban and suburban contexts. Allow state aid roads to use alternative design guidelines. **(P)**	+	✓	+	+		
10E. Continually study and evaluate advancements in safety technology. Identify opportunities to implement safety technology on the regional transportation system. Provide technical guidance on best practices as they arise. **(CB) (P)**	✓	✓				+ (UMN)

10F. Build agency skills and understanding of transportation safety and the Safe System Approach. Continue research, presentations, training, and technical assistance to expand the Safe System Approach in planning and project development. **(CB)**	✓	✓				
10G. Ensure the region is distributing competitive regional Highway Safety Improvement Program funds for pedestrian and bicyclist safety-focused transportation projects at least in proportion to the percent of all pedestrian and bicyclist fatalities and serious injuries. **(IP)**	✓	✓				
10H. Work with transportation partners to study the benefits and impacts of speed safety enforcement including equitable enforcement strategies. Implement all recommendations and required legislative changes. **(CB) (P)**	✓	✓	+	+		+ (UMN, DPS)
10I. Encourage the state to participate in the National Highway Traffic Safety Administration Section 1906 Grant Program to prohibit racial profiling in traffic stops, acknowledge harms caused by racial profiling in traffic enforcement, and help reduce negative impacts of racial profiling and policing throughout communities. **(P)**	+	+	+	+		✓ (OPS)

ROW Indicates all agencies with right-of-way jurisdiction. UMN is the University of Minnesota. DPS is the Department of Public Safety.

11. Emphasize and prioritize the safety of people outside of vehicles in transportation rights-of-way.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
11A. Support local planning efforts with safety-focused programs for pedestrians and bicyclists like Safe Routes to School and Safe Streets and Roads for All**. (LP) (IP)**	+	+	✓	✓		✓ (ISD)
11B. Prioritize projects that improve safety, comfort, and ease of use for pedestrians and bicyclists, with a focus on areas that are overrepresented in negative safety outcomes. This may include intersection designs that reduce pedestrian crossing exposure or adding bicycle safety elements like protected intersections. **(IP)**	✓	✓	✓	✓	✓	✓ (ROW)
11C. Research local or regional measures that could address increased vehicle weights and sizes that negatively impact safety outcomes and maintenance needs. **(P) (CB)**	+	✓	+	+		✓ (UMN)
11D. Develop and implement a Safer Connections to Transit program to ensure safe and year-round access to transit for people walking, rolling, and biking. **(IP) (LP) (WP)**	✓	+	+	+	+	

ROW Indicates all agencies with right-of-way jurisdiction. ISD are Independent School Districts. UMN is the University of Minnesota.

12. Provide safe, secure, and welcoming transit facilities for all users.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
12A. Plan and design transit corridors and transit facilities to reduce conflicts with bicycles and pedestrians. Provide adequate space for transit users and other modes of travel that move through and access the facilities (bike facilities, pedestrian space, and crossings). Balance corridor safety and transit improvements. **(LP)**	+	✓	✓	✓	✓	
12B. Coordinate with public safety agencies to provide a collaborative approach to safety and security. Expand resources for additional security services, other staffing to support police, and health and human services. Work with communities to identify other ways to meet safety needs. Ensure staff and operator safety during transit operations. **(P)**	+	+	✓	✓	✓	
12C. Design for maintenance and operations needs at new or reconstructed transit facilities. Evaluate new investments to ensure misuse of facilities does not affect positive customer experiences. When designing transit facilities, review designs and material choices for ease of maintenance, durability, and reducing vandalism. **(LP)**	+				✓	
12D. Fund transit safety and security activities that are not tied to ridership growth. **(IP)**	✓				+	

13. Use transportation investments and priorities to reduce negative health impacts influenced by the transportation system.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
13A. Promote investment in active transportation modes with a focus on disadvantaged communities and places where access to healthy transportation options is less developed, such as suburban and rural communities. **(IP) (See policies 15 and 17 for related actions.)**	✓	+	+	+		+ (PARKS)
13B. Prioritize and implement transportation projects that reduce the six common air pollutants to meet the Environmental Protection Agency's primary air quality standards. When the region does not meet these standards, prioritize investments that help reach the standards for any of the six common air pollutants. **(IP)**	✓	+	+	+		
13C. Emphasize travel demand management strategies on unhealthy air quality days to reduce emissions from single-occupant vehicle travel that contribute to poor air quality and health impacts. **(See policy 21 for related actions.) (IP) (P)**	✓	✓	✓	✓	✓	
13D. Preserve or install additional natural features like shade trees and native plants and grasses at, along, or near pedestrian, bicycle, and transit facilities. Ensure proper maintenance of landscaping. (**See 33C and 33E for related actions.) (LP) (P)**	✓	✓	✓	✓	✓	
13E. Prioritize and invest in noise walls, natural buffers like berms, and other noise mitigation measures. **(See 7D for related action.) (P)**		✓	✓			
13F. Prioritize projects that include green assets and shade cover in the transportation right-of-way with an emphasis in environmental justice areas. Use extreme heat analysis tools to evaluate needs. **(IP) (See 33C and 33E for related actions.)**	✓					
13G. Convene and support internal and external groups to evaluate and address health and safety issues related to transportation facilities, with an emphasis on communities overburdened by transportation infrastructure. **(CB) (P)**	✓	✓	+	+	+	+ (MDH)

13H. Work with partners to find assistance for those displaced from transportation rights-of-way. Work to create more housing options to ensure appropriate housing is available. **(P)**	✓	✓	✓	✓	✓	
13I. Provide multimodal connections to essential destinations, including cultural and social community gathering places and grocery stores. **(IP) (LP) (See 13K for related action.)**	+	✓	✓	✓	✓	
13J. Coordinate with regional partners in health, human services, and transportation, to provide and administer public services and information at regional transportation centers, such as (but not limited to) public health supplies and information, and connections to public services. **(P)**	+	✓	✓	✓	✓	
13K. Continually study and evaluate advancements in public health where it intersects with transportation considering transportation's role as a social determinant of health. Identify opportunities to study or implement improvements for public health related to the regional transportation system. Provide technical assistance on best practices. **(CB)**	✓	✓	+	+	+	+ (MDH)
13L. Identify opportunities to better serve and support access to Dakota, Ojibwe, and Ho-Chunk cultural resources.	✓	+	+	+	+	+ (AIAC)
13M. Define, inventory, and map essential destinations to aid local and regional partners to connect communities to these destinations and improve public health outcomes. Expand accessibility analyses to include essential destinations when defined and inventoried. **(CB) (WP)**	✓	✓	+	+	+	✓ (UMN)

MDH is the Minnesota Department of Health. UMN is the University of Minnesota. AIAC is the American Indian Advisory Council.

14. Incorporate culturally appropriate placekeeping and placemaking into transportation projects, infrastructure, and right-of-way.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
14A. Include elements in transportation projects that support community connections and identity. Prioritize projects that elevate the role in defining transportation within a community's context and the project's ability to enhance or highlight that identity**. (IP) (P)**	+	✓	✓	✓	✓	
14B. Identify opportunities and funding to incorporate public art or other livability efforts in or on transportation facilities, including transit stations and stops, transit vehicles, highway over/underpasses, noise walls, and other large structures. **(LP) (P)**	+	✓	✓	✓	✓	+ (UMN)
14C. Activate underutilized transportation infrastructure and transportation rights-of-way in urban service areas as defined by Imagine 2050 Community Designations. Consider amenities, lighting, alternative uses, and community collaboration opportunities. **(LP) (P)**	+	✓	✓	✓	✓	
14D. Consider and incorporate local neighborhood context, identities, and goals into project design and transportation infrastructure. Consider local partnerships with community groups to enhance context sensitive design and foster community identity. **(See 4D for additional component of this work.) (LP) (P)**	+	✓	✓	✓	✓	

UMN is the University of Minnesota.



Goal: Our region is dynamic and resilient

Objectives

- People and businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions.
- People have better travel options beyond driving alone to meet their daily needs, with a focus on improving travel times, reliability, directness, and affordability.
- People have more predictable travel times when traveling on highways, with a focus on reducing excessive delays.
- People and businesses can rely on predictable and cost-effective movement of freight and goods.

People, businesses, and institutions in our region depend on transportation to meet their daily needs. A transportation system that is resilient and reliable provides robust and affordable access to destinations by any mode of travel people may choose. This plan will support a reliable transportation system with predictable travel times; transportation choices that provide access to jobs, services, and community destinations; a resilient transportation system that withstands natural and human-caused disruptions. Learn more about how transportation relates to this goal here.

Policy contents

Plan and implement a complete bicycle system including local networks that connect to the Regional Bicycle Transportation Network alignments to provide connections between regional destinations and local bicycle networks.

16. Identify, prioritize, and improve locations where network gaps or physical barriers (like rivers, freeways, and rail corridors) may impede nonmotorized travel.

17. Provide regional resources to support local planning and implementation for pedestrian travel.

18. Use a variety of transit service types to match transit service delivery to residents' daily needs based on transit markets.

19. Plan for, invest in, and implement a network of transitways to expand access to reliable, frequent, high-capacity, all-day transit services.

20. Coordinate transit service delivery and operations to create a high-quality rider experience.

21. Use travel demand management (TDM) to plan, fund, and promote multimodal travel options and alternatives to driving alone.

22. Provide high-quality connections within and between modes of transportation.

23. Implement a Complete Streets approach in policy, planning, operations, and maintenance of roads.

24. Plan for and invest in first/last-mile freight connections between major freight generators and the regional highway system.

25. Provide transportation options and transit advantages on roadway corridors with delay and travel time reliability issues.

26. Focus highway mobility investments on corridors with high levels of existing delay and travel time reliability issues.

27. Identify and implement activities and investments that will mitigate current or anticipated climate or weather-related impacts.

28. Pursue opportunities to minimize disruption and nonrecurring delay from weather, security, and traffic incidents.

Policies and actions

15. Plan and implement a complete bicycle system including local networks that connect to the Regional Bicycle Transportation Network alignments to provide connections between regional destinations and local bicycle networks.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
15A. Plan, implement, and prioritize projects that connect to, improve, or complete segments of the Regional Bicycle Transportation Network. Update network corridors and alignments in coordination with regional partners and in response to local or corridor planning efforts. **(LP) (IP)**	✓	✓	✓	✓		✓ (PARKS)
15B. Plan, implement, and prioritize bikeway connections between the Regional Bicycle Transportation Network and transit facilities. Prioritize local bikeway projects that connect the local network to an existing or planned regional transitway. Consider network alignments along, near, and parallel to transit corridors when planning transit routes and facilities. **(IP) (LP)**	✓	✓	✓	✓	✓	✓ (PARKS)
15C. Include a bicycle system element in local comprehensive plans. Local agencies should identify their local bicycle network in addition to the Regional Bicycle Transportation Network corridors and alignments within their city or county. Coordinate networks across jurisdictional boundaries. **(LP)**	+	+	✓	✓		✓ (PARKS)
15D. Explore options to connect Regional Bicycle Transportation Network corridors and alignments to rural communities. **(IP) (LP) (CB)**	✓	+	+	+		+ (PARKS)
15E. Invest in and implement All Ages and Abilities bicycle networks to complete the regional and local bicycle systems so all people have improved cycling opportunity, safety, and mobility. Evaluate existing tools that identify potential bicycle demand (for example, MnDOT's Suitability for the Pedestrian and Cycling Environment) for use in funding prioritization or develop a new tool that is tailored to the region. **(IP)**	✓	✓	✓	✓		✓ (PARKS)

Parks are regional parks agencies.

16. Identify, prioritize, and improve locations where network gaps or physical barriers (like rivers, freeways, and rail corridors) may impede nonmotorized travel.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
16A. Plan and implement new or improved regional bicycle barrier crossings identified in this plan's bicycle investment plan. Prioritize Tier 1 and Tier 2 regional bicycle barrier locations for regional funding. Update regional bicycle barriers and crossing locations as new ones are identified through planning efforts. **(See 16C for related action.) (IP) (LP)**	✓	✓	✓	✓		
16B. Determine the needs of bicycles and pedestrians on freeway construction and reconstruction projects. Construct new bicycle and pedestrian facilities where gaps exist, and study additional solutions to reconnecting communities. **(LP) (P)**	+	✓	+	+		
16C. Identify and prioritize gaps or barriers in bicycle and pedestrian systems in local, regional, and state plans. Include locally identified barriers in local plans. **(IP) (LP)**	✓	✓	✓	✓		

17. Provide regional resources to support local planning and implementation for pedestrian travel.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
17A. Include a pedestrian element as part of local comprehensive plans. Within the plan, identify local pedestrian priority networks or areas, pedestrian travel barriers, and strategies that will be used to improve pedestrian travel. Prioritize projects that include sidewalks, crossings, or other appropriate pedestrian facilities as part of the larger project. **(IP) (LP)**	✓	+	✓	✓		
17B. Prioritize sidewalk projects that close gaps, remove barriers, and/or improve pedestrian safety. Evaluate existing tools that identify potential pedestrian demand (e.g., MnDOT's Priority Areas for Walking) for use in funding prioritization or develop a new tool that is tailored to the region, if needed. **(See 13A for related action.) (IP)**	✓	+	+	+		
17C. Provide education on best practices and safety countermeasures for pedestrian crossings in all contexts. **(CB)**	✓	✓				
17D. Complete the Regional Sidewalk Phase 1 Study. Implement findings, as necessary. **(CB)**	✓	+	+	+		

18. Use a variety of transit service types to match transit service delivery to residents' daily needs based on transit markets.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
18A. Designate transit market areas and maintain transit service design and performance guidelines to inform general transit system design. Local communities should identify transit facilities and improvement needs associated with their land use plans. **(LP) (IP)**	✓		✓	✓	✓	
18B. Use new service delivery models to fill gaps in fixed-route transit service, including microtransit**. (IP) (LP)**	+				✓	
18C. Complete ongoing route performance analysis and service performance monitoring to inform service changes that can adapt to changing land use, demographics, travel trends, or other influences on transit service performance. **(IP) (LP)**	+				✓	
18D. Update service improvement plans regularly to identify opportunities for transit service expansion and major restructuring. Recommended to be updated every five years but local conditions may dictate different needs. Service improvement planning should include substantial engagement with transit riders and potential transit riders. **(IP) (LP)**	+				✓	
18E. Create a microtransit policy framework to establish an understanding of the opportunities to deliver local microtransit services in a consistent manner across regional providers and service models. **(CB) (WP)**	✓				✓	

19. Plan for, invest in, and implement a network of transitways to expand access to reliable, frequent, high-capacity, all-day transit services.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
19A. Identify corridors for potential transitway investment and conduct corridors studies to determine appropriate investment, including transitway mode, alignment, and stations. **(LP)**	✓	+	✓	+	✓	
19B. Coordinate local supporting elements for transitway projects including required resolutions, land use planning commitments, improvements to local connecting infrastructure, and timing of connected or related projects. **(See Land Use discussion in Imagine 2050 for local requirements.) (LP) (P)**	+	+	✓	+	✓	
19C. Create a project funding plan and commitments for capital, operating, and maintenance costs for the life of the plan. Obtain necessary grants and agreements for project funding**. (IP)**	+	+	+	+	✓	
19D. Build, operate, and maintain transitways. Work with partners to identify needed improvements, as necessary. **(IP) (P)**	+	+	+	+	✓	
19E. Update the network of arterial rapid transit corridors. Identity, evaluate, and prioritize future lines for investment. **(IP) (LP) (WP)**	✓	+	+	+	+	

20. Coordinate transit service delivery and operations to create a high-quality rider experience.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
20A. Provide and maintain accurate information on transit services. Improve the accuracy of real-time transit information for riders. **(IP) (P)**	+	+			✓	
20B. Coordinate and connect fares across transit agencies for all service types to provide easier use of multiple services. Regional transportation service providers should coordinate the use of technology solutions to allow for easier booking of transit passenger trips between various modes and providers. (for example, connecting fare payment platforms across transit agencies.) **(See 22A for related action.) (P)**	✓		+	+	+	
20C. Provide fare products that balance attracting new riders, retaining existing riders, providing equitable service to disadvantaged communities, and sustainable funding**. (IP) (P)**	+		+	+	✓	
20D. Improve service coordination between regional transit providers. Establish guidelines for services being provided across transit provider service areas. Maintain guidelines on connections between fixed-route services and other service types like microtransit, dial-a-ride, and vanpool. **(CB) (LP) (P)**	✓	+	+	+	✓	
20E. Coordinate roadway and transit projects to ensure all users' needs are considered and projects are not more disruptive than necessary for transit users. **(LP) (P)**	+	✓	✓	✓	✓	

21. Use travel demand management (TDM) to plan, fund, and promote multimodal travel options and alternatives to driving alone.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
21A. Provide incentives for trip reductions by single-occupancy vehicle travel. Work directly with employers to establish travel demand management programs, performance targets, and technical support, as needed. Create and implement a framework for other incentive and pricing strategies. **(CB) (IP) (P)**	✓	✓	✓	✓	✓	+ (TMO)
21B. Create a regional travel demand management program structure and technical working group to improve transparency and awareness of the regional travel demand management program. **(CB) (P)**	✓	+	+	+	+	+ (TMO)
21C. Implement development-based trip reduction programs and ordinances. Use regional funding to prioritize developments that address travel demand management. Provide technical support to cities and developers on travel demand management ordinance development and implementation. **(LP) (IP) (P)**	✓	+	✓	✓	✓	+ (TMO)
21D. Prioritize investments in travel demand management that improve highway reliability. Use travel demand management strategies to spread highway travel demand across less congested hours of the day**. (IP)**	✓	✓	✓	+	+	
21E. Prioritize transportation projects that include travel demand management elements or serve communities with travel demand management ordinances, strategies, and programs. **(IP) (P)**	✓	✓	✓	✓	+	

TMO is Transportation Management Organizations.

21F. Conduct outreach and promotion activities for alternatives to driving alone that increase awareness about options and promote new travel demand management programs. Provide support for people trying new travel modes with trip training and guides. **(IP) (CB) (P)**	+	+	✓	✓	✓	+ (TMO)
21G. Continue to explore and support shared mobility options across different modes and platforms to allow for more flexible and affordable travel and reduce the need for vehicles in a household. Prioritize investments in shared mobility that support regional goals and objectives. Explore providing regional shared e-bike and e-scooter services to provide first- and last-mile options for users to connect to their origins and destinations. **(IP) (P)**	✓	✓	+	+	✓	+ (TMO)
21H. Create methodologies and guidance to integrate travel demand management activities into highway planning and project development processes. **(LP) (WP) (P)**	✓	✓	+	+	+	
21I. Create frameworks for travel demand management incentives, pricing, and development review programs to support implementation of actions. **(IP) (CB) (WP)**	✓	+	+	+	+	+ (TMO)

22. Provide high-quality connections within and between modes of transportation.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
22A. Improve planning, booking, and paying for transportation services across modes and platforms. Require transportation services that receive public funds to share their data in easily understandable, accessible, and coordinated formats. **(See 20B for related action.) (IP) (P)**	+	+	✓	✓	✓	+ (TNC)
22B. Improve wayfinding at key locations where multiple transportation modes come together like transit centers/stations, activity generators, important trails, large parking facilities, mobility hubs, and any others. **(IP) (LP) (P)**	+	✓	✓	✓	✓	
22C. Implement mobility hubs that facilitate connections between multiple modes to increase first- and last-mile services in high-activity locations using the Mobility Hub Planning Guide. **(IP) (LP) (P)**	+	+	✓	✓	✓	
22D. Incorporate amenities at bus stops, transit stations, park-and-rides, transit centers, and mobility hubs as described in Transit Service Design and Performance Guidelines. **(IP) (P)**	+	+	+	+	✓	
22E. Consider curb management plans in the transportation section of comprehensive plans, where appropriate. Identify opportunities to address and balance multimodal needs (including those of urban freight delivery, shared mobility options, and electric vehicle charging infrastructure). **(LP) (P)**	+	+	+	✓	+	
22F. Establish plans or processes to provide year-round maintenance on all transportation infrastructure. Provide technical assistance to support local maintenance efforts. **(IP) (CB) (LP) (P)**	+	✓	✓	✓	✓	✓ (PARKS)

TNC is a transportation network company (for example, Uber and Lyft). Parks is regional parks agencies.

23. Implement a Complete Streets approach in policy, planning, operations, and maintenance of roads.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
23A. Use a Complete Streets approach to transportation planning and project development. Prioritize roadway projects that include transit, bicycle, and/or pedestrian improvements for funding. **(IP) (LP)**	✓	✓	✓	✓	+	
23B. Include All Ages and Abilities multimodal improvements for traveling along and across roadways. Consider the safety and mobility of all users in the project area. **(IP) (LP)**	✓	✓	✓	+		
23C. Implement speed management and traffic calming measures on roadways that have excessive lane capacity or in areas where there is high demand for nonmotorized travel. **(IP) (LP)**	✓	✓	✓	✓		
23D. Create a regional Complete Streets typology that is sensitive to land use context and supplements functional classification. Provide local assistance and workshops to aid in the implementation of Complete Streets policies and processes. **(CB) (LP) (IP) (WP)**	✓	+	+	+		
23E. Identify regional priorities for MnDOT's new main streets/urban pavement funding program. **(IP) (WP)**	✓	✓	+	+		

24. Plan for and invest in first/last-mile freight connections between major freight generators and the regional highway system.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
24A. Update the Statewide Freight Bottlenecks Report every other year to identify impacts of highway congestion on freight movements, including congestion at MnDOT-identified truck freight bottlenecks, and identify cost-effective mitigation. **(IP) (CB) (P)**	+	✓	+	+		
24B. Improve real-time safety information on major freight corridors to inform drivers of routing disruptions. **(See 28A for related action.) (CB) (P)**		✓				
24C. Plan for and improve first- and last-mile highway connections between major freight terminals and important freight nodes that may generate significant freight traffic, and the Met Council designated Regional Truck Freight Corridors. **(LP) (IP) (P)**	+	✓	✓	✓		
24D. Prioritize freight reliability and safety in transportation investments. Incorporate findings from MnDOT's Metro District Freight Plan when completed. **(IP) (P)**	✓	✓	+	+		
24E. Develop a framework for a Complete Streets planning process that considers the safe movement and delivery of freight and goods in addition to other goals. **(See policy 23 for related actions.) (LP) (CB)**	✓	+	+	+		
24F. Facilitate discussions between the trucking industry and local and state transportation partners to identify regional truck parking issues, conflicts, and solution opportunities. **(CB) (P)**	✓	✓	+	+		

24G. Partner with private industry and universities in pilot studies and projects that promote and facilitate last-mile distribution through parcel consolidation (through urban / suburban center parcel distribution microhubs), zero-emission vehicles (like cargo e-bikes), and emerging technologies (such as air and land-based drones). **(CB) (P)**	✓	✓	✓	✓	+	✓
24H. Encourage major urban freight delivery providers to provide summary data related to delivery vehicle miles traveled and develop aggregated data metrics for tracking progress in meeting regional and state goals. **(CB) (P)**	+	✓	+	+		
24I. Explore methods to account for the influences of online shopping on regional freight and household shopping trips in planned updates to the Council's freight and activity-based travel forecasts. **(CB)**	✓	+				+ (TBD)
24J. Perform an update to the Twin Cities Metropolitan Regional Freight Study. **(IP) (CB) (LP) (WP)**	✓	✓	+	+		

TBD is to be determined. Agencies have not yet been identified.

25. Provide transportation options and transit advantages on roadway corridors with delay and travel time reliability issues.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
25A. Use the Congestion Management Process Handbook during project planning and development to evaluate lower-cost mobility solutions that can provide options and more reliable travel. Provide technical assistance and training on congestion management process analysis processes. Incorporate requirements or scoring measures in funding processes that prioritize use of the handbook for roadway expansion projects. **(IP) (LP)**	✓	✓	✓	✓		
25B. Prioritize transit, carpool, biking, and walking options on or parallel to congested corridors. Roadway authorities should work with implementers of transit during planning and project development to identify opportunities. **(IP) (LP)**	✓	✓	✓	✓	+	
25C. Implement a managed lane system to provide reliable travel for transit, carpool travel, and those willing to pay. **(IP) (LP) (P)**	+	✓	+	+		
25D. Consider using MnDOT highway mobility funding on roadway improvements that also support bus rapid transit, transit advantages, and managed lane improvements on corridors that have transit travel time reliability issues. **(IP) (P)**	+	✓			+	
25E. Provide an interconnected network of transit advantages on roadways between regional destinations. Identify opportunities to implement transit advantages on roadways and prioritize them based on travel time benefits and number of affected users. **(See 25G for related action.) (LP) (IP)**	✓	✓	✓	✓	✓	
25F. Research congestion pricing options, including travel demand management incentives and general pricing, and their impact on travel patterns. **(CB)**	✓	+				+ (PARKS)
25G. Identify and prioritize investments for dedicated transit lanes and transit advantages. **(IP) (WP)**	✓	+	+	+	✓	

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26. Focus highway mobility investments on corridors with high levels of existing delay and travel time reliability issues.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
26A. Follow the mobility solution hierarchy when identifying investments to address highway delay and reliability issues: • Travel demand management and increased transit • Traffic management systems • Spot mobility • Interchanges • Managed lanes • Targeted regional capacity **(IP) (LP)**	✓	✓	✓	✓		
26B. Target corridor-level regional highway system mobility investments only where there is poor reliability caused by excessive delay. Excessive delay is defined by a travel time index greater than 1.25 for more than 2 hours. Projects should follow the mobility hierarchy to identify investment opportunities. Target regionally significant intersection to interchange conversion projects based on high priorities in the Intersection Mobility and Safety Study. **(See 26A for related action.) (IP) (LP)**	✓	✓	✓	✓		
26C. Identify planning opportunities to complete or update corridor studies on high-priority locations identified in the Intersection Mobility and Safety Study. **(LP) (P)**	+	✓	✓	✓	+	
26D. Use regional prioritization studies and plans, like the Statewide Freight Bottlenecks, Regional Truck Freight Corridors, Congestion Management Safety Plan, and Intersection Mobility and Safety in project selection criteria in competitive funding programs**. (IP)**	✓					
26E. Identify, prioritize, and fund corridors for traffic technologies that would most effectively mitigate impacts from recurring and nonrecurring congestion. **(WP) (IP)**	✓	✓	+	+	+	
26F. Update the Congestion Management Safety Plan to identify congestion- and safety-related problem locations and potential solutions on state highways. **(WP) (IP)**	+	✓	+	+	+	
26G. Update the Managed Lane System Study to establish a managed lane system vision and a prioritized list of corridors. **(WP) (IP)**	+	✓				

27. Identify and implement activities and investments that will mitigate current or anticipated climate or weather-related impacts.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
27A. Identify areas prone to weather- and climate-related issues to mitigate climate and weather-related impacts. Preserve or expand tree cover within transportation rights-of-way. Use tools like the localized flooding map, extreme heat map, and the Growing Shade tool to understand areas of need. **(LP)**	✓	✓	✓	✓	✓	
27B. Design public transportation facilities to maintain user comfort as climate impacts increase (for example, shade, cooling, shelters). When retrofitting facilities, prioritize those in historically disadvantaged communities. **(IP) (P)**	✓	✓	✓	✓	✓	
27C. Explore plans, programs, and policies that will reduce overall impervious surface, like concrete or asphalt in parking lots, to limit the impacts of extreme heat, urban heat island effects, and stormwater runoff. **(See 32B and 32D for related actions.) (LP)**	+	✓	✓	✓	✓	
27D. Prioritize and invest in elevation and stormwater systems that reduce the frequency and duration of flooding of transportation assets due to major storm events. Determine an acceptable level of interruption due to flood events. **(LP) (IP)**	✓	✓	+	+	+	
27E. Evaluate pavement materials and techniques to support resilience and minimize impacts from more frequent freeze-thaw cycles and flooding events. **(CB) (P)**		✓				+ (UMN)
27F. Develop and provide drainage manual guidance and technical assistance to transportation partners, including green stormwater infrastructure. **(CB) (P)**		✓				+ (MPCA)

27G. Prioritize projects that include sustainable and resilient designs or harden infrastructure against extreme weather events. **(IP)**	✓	+	+	+	+	
27H. Identify resilience needs and activities for the most common system issues, share best practices, convene partners, and provide technical assistance. **(CB) (P)**	+	✓				
27I. Complete and maintain a resilience improvement plan and associated mapping applications. Consider ways to customize to the metro area's needs**. (IP) (P) (CB) (WP)**	+	✓	+	+	+	

UMN is the University of Minnesota. MPCA is the Minnesota Pollution Control Agency.

28. Pursue opportunities to minimize disruption and nonrecurring delay from weather, security, and traffic incidents.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
28A. Coordinate regional transportation technology systems (signals, message boards, cameras, or others) across jurisdictions in response to nonrecurring events to ensure system resiliency. **(P)**	+	✓	✓	✓	+	
28B. Convene technical experts and share information to expand regional understanding of transportation technology needs and opportunities. **(CB) (P)**	+	✓			+	
28C. Coordinate planned transportation infrastructure construction impacts to minimize the overall disruption to people and businesses. **(P)**	+	✓	✓	✓	✓	
28D. Analyze the regional roadway network to identify where system redundancy is needed or where a missing connection would improve the overall system (interchanges, over/underpasses, river crossings, frontage roads, grid connections, or other similar elements). **(IP) (CB) (LP) (WP)**	✓	+	+	+	+	

Goal: We lead on addressing climate change

Objectives

- The region's transportation system minimizes its greenhouse gas emissions.
- People have more reliable access to zero emissions vehicle infrastructure.
- By 2050, the region reduces vehicle miles traveled by 20% per capita below 2019 levels.

At 25% of total greenhouse gas emissions, the transportation sector generates the largest share of emissions in Minnesota. Most emissions in the transportation sector come from gas- and diesel-powered vehicles. The region's goal to lead on addressing climate change envisions a region where we have mitigated greenhouse gas emissions and support the state's goal of a net-zero economy by 2050. Meeting this goal requires a comprehensive approach that includes supporting the transition to electric vehicles, reducing vehicle miles traveled, and other greenhouse gas mitigation efforts, such as increased transit use, travel demand management and active transportation (walking, biking, and rolling). Learn more about how transportation relates to this goal here.

Policy contents

29. Ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure.

30. Evaluate and mitigate the greenhouse gas (GHG) impacts of transportation plans and projects.

31. Prioritize projects that reduce vehicle miles traveled through sustainable transportation options.

Policies and actions

29. Ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
29A. Plan for regional private and shared electric vehicle charging needs. Establish an approach to define charging infrastructure priorities, including installation in multi-unit housing, historically disadvantaged communities, and rural areas. **(IP) (LP)**	✓	✓	+	+	+	+ (MPCA)
29B. Support the expansion of private and shared electric vehicle charging systems. Coordinate and partner with public and private entities to construct electric vehicle charging infrastructure that meets the needs of private and shared vehicles, e-scooters, e-bikes, and commercial delivery vehicles. Consider charger placement opportunities in transportation right-of-way, public facilities, and publicly accessible private businesses (for example, parking lots, convenience and gas stations). **(IP) (LP)**	+	✓	✓	✓	✓	+ (MPCA)
29C. Fund, research, develop, and share resources with local agencies to engage and educate residents on vehicle electrification and charging. **(LP) (CB)**	✓	✓	+	+	+	+ (MPCA)
29D. Develop and implement low/no-emission fleet transition plans, including service and support vehicles. Provide technical support as necessary. **(LP) (CB) (IP)**	✓	✓	✓	✓	✓	+ (MPCA)
29E. Evaluate strategies to expand zero emission transitions in medium- and heavy-duty vehicles and fleets, like delivery vehicles, school buses, and freight trucks. **(CB) (P)**	+	✓				✓ (MPCA)
29F. Identify methods and processes to prioritize targeted charging and fueling infrastructure funding with a focus on historically disadvantaged and rural communities. **(CB) (WP)**	✓	✓				+ (MPCA)

MPCA is the Minnesota Pollution Control Agency.

30. Evaluate and mitigate the greenhouse gas (GHG) impacts of transportation plans and projects.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
30A. Evaluate project's impacts on greenhouse gas emissions. Implement the requirements from Minnesota Statute 161.178 Transportation Greenhouse Gas Emissions Impact Assessment **(IP) (LP) (P)**	✓	✓	+	+	+	
30B. Maintain a greenhouse gas inventory, forecast, and GHG reduction scenario planning tools that can evaluate reduction strategies and support planning efforts. Provide support for transportation greenhouse gas reduction efforts with best practices, technical assistance, and guidance. **(CB) (LP)**	✓	✓	+	+	+	
30C. Support the inclusion of low-carbon construction methods and materials into transportation projects (steel, concrete, recycle in place, or others). Continue to research best practices and provide regular training. **(CB) (P)**	+	✓	+	+	+	✓ (UMN)
30D. Develop, evaluate, and implement other transportation strategies to reduce greenhouse gas emissions. **(CB) (IP) (LP) (WP)**	✓	✓	+	+	+	

UMN is the University of Minnesota.

31. Prioritize projects that reduce vehicle miles traveled through sustainable transportation options.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
31A. Develop a methodology that can evaluate projects for their impacts on vehicle miles traveled. Collaborate with transit providers to understand and identify potential vehicle miles traveled reduction from transit investments. **(CB)**	✓	✓	+	+	✓	+ (FHWA)
31B. Use existing funding programs (for example, Carbon Reduction Program) or create new funding programs to target investments that reduce vehicle miles traveled per capita, including investments in transportation options beyond driving alone. **(IP)**	✓	✓	+	+	+	
31C. Create information and personalized stories about trip reduction that demonstrate the feasibility of the state and regional vehicle miles traveled goals, objectives, and targets. **(CB)**	✓	+	+	+	+	
31D. Develop educational materials that inform the public and promote actions that residents and businesses can take to minimize vehicle miles traveled and greenhouse gas emissions from delivery and shopping-related trips. **(CB) (P)**	✓	✓	+	+		✓ (TBD)
31E. Support the expansion of access to bicycle systems, including incentives for individual bike purchases for electric or traditional bikes, secured bike parking, bike charging infrastructure, and shared bicycle program**s. (IP) (LP) (P)**	✓	✓	+	+	+	
31F. Examine ways in which regional transportation investments can better support more efficient land use patterns. Consider land use context and policies as a prioritization factor for regional funding. **(CB) (LP) (IP)**	✓	+	+	+	+	
31G. Build better understanding of the shared benefits of vehicle miles traveled reduction on climate mitigation, congestion, and safety. **(CB)**	✓	✓	+	+	+	

TBD is to be determined. Agencies have not yet been identified.

Goal: We protect and restore natural systems

Objectives

- The region's transportation system protects, restores, and enhances natural systems (for example, air, water, soil, vegetation, and habitat quality).

Natural systems include land, air, and water and their ecosystems. Transportation uses interact with these natural systems in a variety of ways: fragmenting natural habitats; noise, water, and air pollution; impacts from paved surfaces; and more. Typically, environmental analysis processes that are required by the state and federal governments address the impacts to natural systems caused by transportation projects. The policies that support the region's goal to protect and restore natural systems will promote and encourage protection, mitigation, and restoration efforts. Learn more about how transportation relates to this goal here.

Policy contents

32. Prioritize projects that reduce total impervious surface coverage or minimize right-of-way needs.

33. Use existing transportation rights-of-way and transportation project development to protect and restore natural systems.

Policies and actions

32. Prioritize projects that reduce total impervious surface coverage or minimize right-of-way needs.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
32A. Evaluate publicly owned parking systems for facility greening, downsizing, or closing. This would include opportunities at facilities such as park and rides, rest areas, or other publicly owned parking facilities. **(LP) (P)**	+	✓	✓	✓	✓	
32B. Prioritize projects that minimize roadway surface or impervious surface. **(See 27C and 32D for related actions.) (LP) (IP)**	+	✓	✓	✓	✓	
32C. Provide technical assistance and share research on permeable pavement construction, operations, and maintenance. **(CB) (P)**	+	✓	+	+	+	
32D. Explore opportunities and encourage the reduction of impervious surface in comprehensive planning, land development, and transportation project development. **(See 27C and 32B for related actions.) (LP) (CB)**	✓	✓	✓	✓	✓	
32E. Provide training to local agencies and consultants on best practices in traffic forecasting, transportation impact studies, and parking generation to better understand how to right-size facilities and requirements to minimize paved surfaces. **(CB)**	✓	✓	+	+	+	
32F. Explore updating stormwater management requirements to increase opportunities to treat and discharge stormwater outside of the right-of-way (ROW) to limit excessive ROW needs, where possible. **(CB) (P)**	+	✓	+	+		✓ (MPCA)

MPCA is the Minnesota Pollution Control Agency.

33. Use existing transportation rights-of-way and transportation project development to protect and restore natural systems.

✓ = lead agency + = support agency	Met Council	MNDOT	Counties	Cities	Transit	Others
33A. When planning and designing transportation projects, explore and prioritize green stormwater infrastructure before expanding gray stormwater infrastructure. This could include incorporating natural features into projects, stream or riverbank stabilization, tree cover, permeable pavements, native plantings, onsite stormwater infiltration, or others. **(IP) (LP)**	+	✓	✓	✓	✓	
33B. Incorporate habitat and natural areas into stormwater management strategies or implement stormwater prevention or treatment elements that mitigate pollution beyond municipal separate storm sewer system (MS4) permit requirements. **(LP) (P)**	+	✓	✓	✓	✓	
33C. Maintain or expand plantings within the right-of-way including trees, bushes, grasses, and planted buffers. When selecting plantings, consider the variety of plant species, health and suitability in the right-of-way, and potential impacts to infrastructure. **(See 13D and 13F for related actions.) (IP)**	+	✓	✓	✓	✓	
33D. Reduce negative environmental impacts from operations and maintenance activities. Provide research on environmentally responsible and best management practices for activities. Track agencies that are implementing best practices. **(CB) (P)**	+	✓	✓	✓	✓	
33E. Increase native plantings and pollinators in landscaping as part of transportation projects. **(See 13D for related action.) (LP)**	+	✓	✓	✓	✓	

33F. Consider opportunities for retrofitting projects to add or improve stormwater infrastructure within the right-of-way, even if they do not have corresponding transportation elements. **(LP)**	+	✓	✓	✓	✓	
33G. Avoid or minimize negative impacts to natural systems before considering mitigation (in other words, compensating for the loss of wetlands or other ecological features) or provide mitigation above and beyond project impacts. **(LP)**	+	✓	+	+	+	
33H. Identify and coordinate a better understanding of transportation system impacts on wildlife and opportunities to mitigate those impacts. Incorporate ongoing and future research and findings to aid planning efforts in the region. **(LP) (CB) (P)**	+	✓	+	+		✓ (DNR)

DNR is the Department of Natural Resources.

SECTION 3: REGIONAL TRANSPORTATION FINANCE

Introduction

This chapter examines and describes the region's revenue sources and funding expected to be available to complete the 2050 Transportation Policy Plan projects and programs to achieve the region's transportation vision. Recent actions taken by both the State of Minnesota and the federal government have increased the availability of and access to transportation revenues, presenting a significantly different financial outlook than anticipated in past plans. The region's current financial outlook and plan offer a level of revenue availability, investment, and financial stability – particularly for transit, bicycle, and pedestrian investment – that was not available under past transportation finance plans.

In 2023, the Minnesota Legislature provided increases in traditional sources of regional transportation funding including the gas tax, vehicle registration tax, motor vehicle sales tax, and state general funds dedicated to transportation. They also included new transportation revenue sources, most notably a new regional sales tax for transit, active transportation (walking, biking, rolling), and county transportation. In addition, local governments received a new statewide delivery fee, along with dedicated taxes from the sales of auto repair parts for transportation investment.

The 2021 federal Infrastructure Investment and Jobs Act (IIJA), also referred to as the Bipartisan Infrastructure Law (BIL), increased the traditional federal formula funding programs for highways and transit along with creating new competitive funding programs. Many of the new federal competitive programs address goals such as safety, community connectivity, climate change, resiliency, and multimodal investments that lacked specific funding programs under previous federal acts.

Given how recently these significant changes occurred, it is essential to continue leveraging regional partnerships, planning, and coordination to assure that these funds are best directed to benefit communities throughout the region and move the region toward accomplishing our shared vision and goals.

Fiscal outlook

Fiscal constraint

Under federal law, long-range transportation plans must be *fiscally constrained*. Fiscal constraint means that the plan identifies all transportation revenues that can reasonably be expected and are assumed to be available within the plan's time frame, together with the proposed spending of those revenues. Past regional plans also included transportation spending needs beyond what could be accomplished within fiscal constraint. In the 2040 Transportation Policy Plan, this unfunded need was called the increased revenue scenario. Transportation programs and projects identified in the increased revenue scenario helped demonstrate what could be accomplished with higher levels of transportation revenue and spending. It also helped urge policymakers to identify and approve new funding for transportation to achieve those outcomes.

The recent state and federal funding increases do not fund or meet all regional transportation needs, but these increases will go a long way toward accomplishing previously identified unfunded needs and project funding gaps. As agencies implement new sources of revenue, and as officials make related shorter-term policy and spending decisions, the region will gain a better understanding of where overall funding needs persist.

Because of the many recent increases and changes in transportation funding, this plan assumes that no additional significant policy or law changes will take place to increase state and federal transportation funding to the region over the next few years. This plan describes one fiscally constrained revenue and spending scenario and no longer contains an increased revenue scenario. However, many new and increased competitive funding opportunities are available at both the federal and state levels that may result in additional regional transportation revenues and projects. As competitive funding is secured for regionally significant projects (such as transit capital investment grants for transitways), the projects and funding will be amended into the fiscally constrained plan. The plan also identifies the level of increased, but as yet unallocated, funding now available and opportunities provided for new transportation investment, particularly for those investments and projects that align with the regional goals of addressing climate change, safety, and equity.

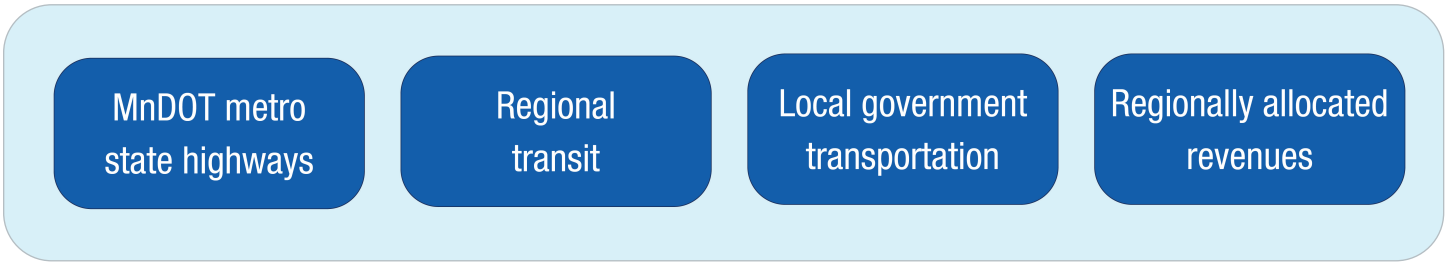
These investment opportunities could receive funding as decisions are made about distributing the new and increased revenues from 2023 legislation or may remain as unfunded needs. This plan will be updated in five years and will show a clearer vision as to how the new revenues are being distributed and used, progress towards outcomes, and remaining areas of transportation investment need. In addition, as policymakers make decisions about new funding allocation and investing in regionally significant projects, these will be amended into the regional plan.

Revenue and spending structure

The revenue and spending sections of this chapter describe revenue sources, current generation rates, inflationary assumptions, and financial risks with each transportation funding source expected to be available to the region. The revenues and spending within this plan are described in four distinct revenue and spending categories:

- **MnDOT metro state highway revenues and spending** include all revenues allocated to MnDOT's metro district for capital and operating spending on the state highway system owned and operated by MnDOT in the metropolitan area.
- **Regional transit revenues and spending** include all revenues and spending on the regional transit system by all regional transit providers, counties, and other local governments for regional bus and transitway capital and operations.
- **Local government transportation revenues and spending** include all revenues and spending by metropolitan area counties, cities, and townships on their local transportation system including roadways owned by the local entities and the local bicycle and pedestrian system.
- **Regionally allocated revenues** include all funds allocated to the Metropolitan Council as the region's metropolitan planning organization (MPO) and its Transportation Advisory Board (TAB). These revenues are allocated by the Met Council and TAB for expenditure on metro-area state highways, regional transit, and for local transportation purposes.

Figure 3.1: Revenue and spending categories



Federal formula funds designated to the Met Council as the Twin Cities region's designated MPO are one regional source of "flexible" funding that can be used across transportation types and purposes. The Met Council, in strong partnership with TAB, allocates these federally designated funds through the Regional Solicitation across the full scope of transportation types and purposes. In addition, 2023 state transportation legislation provided new regional sales tax funds for TAB to distribute for active transportation (walking, biking, and rolling). The focus and distribution methods for both these sources of funding will be determined through the Regional Solicitation evaluation being conducted throughout 2024-2025. The results of the solicitation evaluation will be amended into this plan upon its completion.

The high-level summary of revenue and spending for each of the categories is contained within this chapter, while the specific investment direction and projects for the highways, transit, bicycle, and pedestrian systems are shown in the specific investment chapters. Local transportation projects that can be accomplished with existing revenues are identified by each county, city, and township within their individual decision-making processes, and are documented in adopted local plans and budgets. Regionally significant local projects that are identified for implementation by local governments are noted in the project list in the plan's appendices.

Transportation Revenues 2025-2050

Table 3.1 shows the total regional transportation revenues, estimated at $4.7 billion in calendar year 2025, and $171 billion expected to be available over the 26-year period of this plan, 2025-2050. This amount compares to the $93 billion expected over the 26-year period of the region's previously adopted plan for 2015-2040. This significant increase can be attributed to new transportation revenue sources and general funds, to state and local tax rate increases, and also the inflationary growth impacts of extending the regional plan a decade into the future.

Table 3.1: Allocation of regional transportation revenues (in millions)

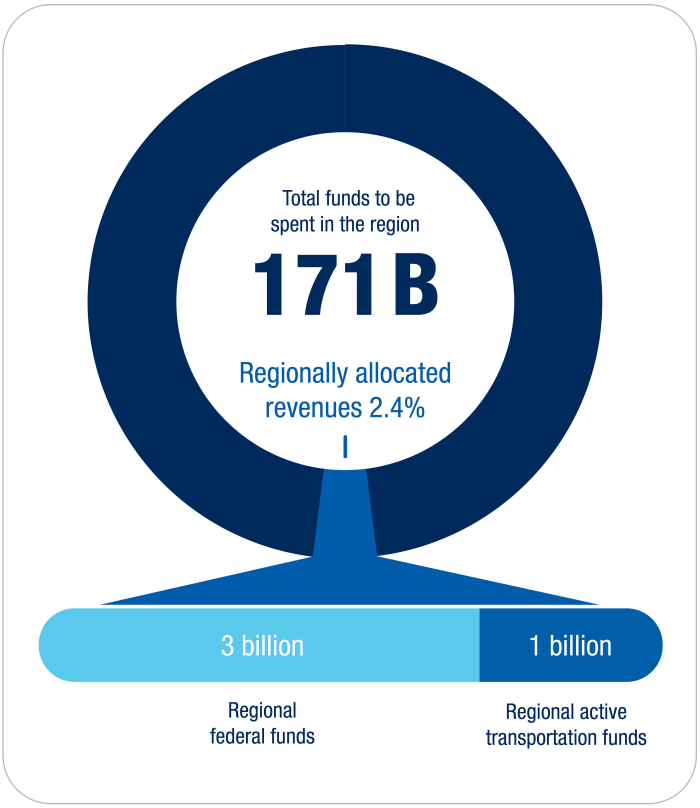
Category	CY 2025	2025 % of total	2025-2050 total	% of total
MnDOT metro state highways	$800	17%	$32,700	19%
Regional transit	$1,650	36%	$53,950	32%
Local government transportation	$2,050	44%	$80,150	47%
Regionally allocated revenues	$150	3%	$4,050	2%
Total regional transportation revenue	**$4.7 billion**	**100%**	**$171 billion**	**100%**

Across the life of this plan, about $3.1 billion of flexible federal funding is expected to be allocated through the Regional Solicitation, representing around 2% of the transportation funds that will be spent within the region. In addition, the 5% of the regional transportation sales and use tax provided by the 2023 legislature offers significant new revenue for the Transportation Advisory Board to spend on regional support for walking, biking, and rolling. From 2025 to 2050 the regional active transportation (walking, biking, and rolling) funds will total almost $1 billion.

Together, the regional federal funds and regional active transportation funds total $4 billion, or 2.4% of the region's total transportation funds.

It is important to note that due to constitutional dedications, and specific federal and state allocation formulas, the vast majority of the transportation revenues expected to be available to the region

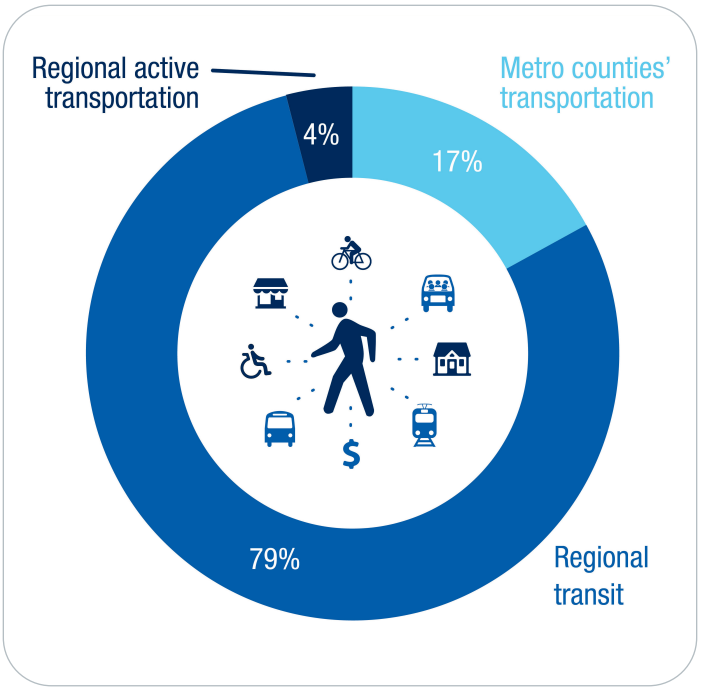
Figure 3.2: Regionally allocated revenues



are dedicated funds that cannot be moved from one transportation spending category to another. For instance, state highway revenues cannot be spent on transit, and transit sales tax revenues are not available for use on the state highway system. Revenues received by local governments are also primarily limited to spending on one type of transportation or another. For example, local government state transportation aid is limited to roadway capital and operations. The existing county transportation sales tax and local property tax revenues offer local governments some flexibility in spending across modes.

The funding increases and changes provided by the 2023 legislature largely continue the practice of identifying in law the funding for specific purposes and transportation types. For instance, 83% of the new regional transportation sales and use tax goes to the Met Council, of which 95% is for transit and 5% is to support walking, biking, and rolling (active transportation). The new regional sales tax funding provided to metro area counties and to all local governments through the delivery fee and dedication of auto parts sales tax revenue does offer some flexibility for local transportation spending, though the legislation requires a specific distribution among various high-level spending purposes. Transit operators and county governments are the primary beneficiaries of the new transportation revenues. Funding needs remain particularly at the city and township levels as these local governments received relatively small revenue increases as part of the 2023 legislation. This plan provides guidance for, but does not direct, local government transportation spending priorities.

Figure 3.3: Regional sales and use tax revenue allocations



Walking, biking, and rolling (active transportation) in the region, in particular, will benefit from the county share of the newly created Transportation Advancement Account, which directed that 41.5% of the newly available county funds must be spent on active transportation (walking, biking, and rolling) and corridor safety studies. This represents a significant increase for bicycle and pedestrian transportation spending – transportation types that previously relied heavily on local general funds, spending as part of roadway projects, and federal Regional Solicitation funds. Now for county investments, these modes have a source of dedicated funding similar to roadways and transit.

The revenue assumptions for this plan include participation and input from staff at MnDOT, Metro Transit, other transit providers, and local governments. Where possible, they are based on existing financial resources, reports, and documents. MnDOT provided revenue estimates for state transportation revenue sources, expected metro

district allocation assumptions, and expected transportation state-aid revenues for local governments. The Met Council and Metro Transit provided long-range transit revenue and spending estimates, and we used state auditor reports and data to estimate local transportation revenues and spending.

MnDOT metro state highway revenues

The MnDOT metro district's estimated state highway revenues are shown in Table 3.2, below. MnDOT estimated the metro district's total revenues at about $807 million in 2025 and almost $33 billion from 2025 to 2050.

Table 3.2: MnDOT metro state highway revenues (in millions)

Revenue	CY 2025	2025 % of total	2025-2050 total	% of total
Highway user taxes	$589	73%	$23,900	73%
Federal	$218	27%	$8,800	27%
Subtotal	**$807 million**	**100%**	**$32.7 billion**	**100%**

MnDOT's metro district uses metro state highway revenues to build, maintain, and operate the state highway system in the metropolitan region. These highways, often called trunk highways, include most of the region's highways classified as principal arterials, typically four- to six-lane freeways and expressways, and around 20% of roadways that are classified as minor arterials, typically busy, two-and four-lane, signalized roadway corridors. MnDOT metro's spending on these highways can also include some spending for transit, bicycle, and pedestrian improvements that happen within the highway corridor.

MnDOT's primary sources of revenue for state highways are state highway user taxes and federal revenues designated from the Highway Trust Fund, primarily funded by federal fuel taxes. About every five years, MnDOT develops and updates its 20-year highway revenue and spending plan, the Minnesota State Highway Investment Plan (MnSHIP). In 2023, MnDOT led a large-scale effort to update the plan (previously updated in 2017) and MnDOT leadership adopted the new version in January 2024. The MnDOT metro state highway revenues and spending described in this plan are based on the draft 2024 MnSHIP revenues and spending estimates that were available in fall 2023.



State highway user tax revenues

Minnesota's highway revenues come from the state fuel tax, vehicle registration tax, and up to 60% of the motor vehicle sales tax. These sources are constitutionally dedicated to highway projects and are collectively referred to as highway user tax revenues. The Minnesota Constitution provides that 5% of highway revenues can be determined by the legislature for spending on the state or nonstate-aid highway network, and the remaining highway user tax revenues are then divided 62% to state highways, 29% to county state-aid roads, and 9% to city state-aid streets. MnDOT

is responsible for tracking the highway user tax revenues and forecasting revenue into the future. In predicting future highway user tax revenues, MnDOT considers factors that could affect tax collections. These include factors such as improvements to vehicle fuel efficiency, increases in the purchase of and cost of electric and hybrid vehicles, leveling of per capita vehicle miles traveled, and national forecasts and expectations of vehicle costs and purchases.

The 2023 state legislative tax changes to the state's highway user revenues result in a forecasted average 3.4% year-over-year increase in highway revenues and represent a 17% increase in estimated state highway revenues from previous revenue estimates over the life of the plan. In 2025, MnDOT forecasts total state highway revenues of $1.8 billion, of which 9% is for the Minnesota State Patrol and public safety, and 17% is allocated to debt service for previous state highway bonds. The forecasts estimate that more than $1.5 billion will be available for state highway capital and operating purposes in 2025, and this amount is expected to grow to more than $3.8 billion annually by 2050.

In its previous MnSHIP update, MnDOT anticipated that fuel tax collections would slightly decrease, averaging -0.7% annually. However, 2023 legislation increased the state fuel tax annually by the rate of inflation for construction costs while limiting the maximum annual increase of the fuel tax to 3%. This new provision will provide for year-over-year growth in the state's fuel tax collections estimated at 3% annually over the life of this plan.

The 2023 transportation legislation also provided for an increase in vehicle registration tax revenues by increasing the vehicle registration tax rate, making changes in the vehicle depreciation schedule, and implementing a $75 annual registration tax for electric vehicles. These changes will result in increased revenues, and MnDOT now assumes a year-over-year increase in registration tax revenues of 4.5% annually.

Two other changes in the 2023 legislation also resulted in increased highway user tax revenues. The highway users fund receives 60% of the state's motor vehicle sales tax (MVST) revenues. The sales tax rate applied to vehicle purchases was increased from 6.5% to 6.875%, providing for an almost 6% baseline increase in the MVST revenues. In addition, MnDOT assumes a 4.5% annual year-over-year increase in MVST revenue collections.

Under state statute, the highway user funds received a 43.5% share of the sales tax on auto parts, which would otherwise have been deposited in the general fund. The 2023 transportation legislation continues this dedication to the highway user fund, while dedicating the remaining 56.5% of the auto parts sales tax revenues to other local government transportation purposes phased in over a 10-year period, as described under the local government transportation section.



Federal revenues

The other major source of revenue for state highways are federal transportation revenues generated through a federal fuel tax and primarily distributed through formula distributions to state departments of transportation, transit providers, and metropolitan regions. The federal transportation law that governs the distribution of the federal transportation revenues is typically updated and passed every five years. In November 2021, Congress and President Biden agreed to a new federal transportation law, the Infrastructure Investment and Jobs Act or IIJA, also referred to as the Bipartisan Infrastructure Law or BIL. The $1.2 trillion IIJA will be the governing law over all federal transportation policy and funding through 2026.

The amount allocated under the IIJA for highways represents a 90% increase over highway funding available under the previous federal bill, the FAST Act. The IIJA provided significant increases to highway funds available to states through established federal distribution formulas and created many new competitive grant programs for all surface transportation with billions of dollars available through these opportunities.

Federal formula funds

In 2025, MnDOT will receive around $715 million through federal formula programs, growing to almost $1 billion annually by 2050. MnDOT receives federal formula funds for state highways through five primary formula programs, as follows:

- **National Highway Performance Program** provides 53% of the state's federal formula funds. This is the primary funding source for pavement and bridge repair and maintenance on the national highway system, which represents a majority of the principal arterial highways in the metro area. National highway performance funds can be flexed to transportation purposes off the National Highway System provided state performance targets for National Highway System pavement and bridge condition set annually by MnDOT are being met. National Highway Performance Program funds increased by 26% under IIJA.
- **Surface Transportation Block Grant Program** is a block grant program that can be used flexibly across transportation modes. About 10% of the surface transportation program funds must be distributed to transportation alternatives programs, like bicycle and pedestrian, that promote alternatives to driving. Surface transportation program funding is shared 45% to MnDOT districts and 55% to metropolitan planning organizations and local governments (see Regional Solicitation section). IIJA increased surface transportation program funding by 35% over the previous federal FAST act.
- **Highway Safety Improvement Program** is a formula program available for a variety of projects that address roadway safety problems. MnDOT shares these funds with local governments and the region typically receives about $30 million for distribution every two years. In the metro area the local, competitive highway safety improvement projects are approved by the Met Council's Transportation Advisory Board and allocated through the Regional Solicitation process along with the region's federal funds.

- **National Highway Freight Program** accounts for about 3% of the formula funds received by the state. This program is aimed at addressing safety and mobility issues for freight movement. MnDOT chooses to distribute these funds through a competitive state program. The metro region has been successful in receiving between 70% and 80% of these competitive funds.
- **A new bridge program** was created under IIJA designed to repair bridges both on the National Highway System and for off-system bridges owned by counties, cities, and townships. MnDOT shares these new bridge funds 50% with local governments for distribution. The metro area distributes these funds along with its share of surface transportation and highway safety improvement and funds through the Regional Solicitation.

Federal competitive funds

Over the six-year life of the IIJA, the federal government will award about $200 billion (31%) of the $643 billion available to states, metropolitan planning organizations, local governments, and Tribal governments through competitive grant programs. Some of these grant programs existed under previous federal bills, such as the RAISE grant program, while many others are newly created funding opportunities like the Reconnecting Communities grant program. Unlike formula funds, which are allocated using factors like population and miles of highways, grant program funds are allocated using program criteria established by the U.S. Department of Transportation that focus on how projects will perform in priority areas including safety, climate resilience, vehicle and infrastructure electrification, or equity.

Of the $200 billion available through competitive programs, about $100 billion is for allocation through the Federal Highway Administration. Some of the larger competitive programs available for state highway projects include the Bridge Investment Program and the Safe Streets for All program that focuses on making roadways safe for people.

These competitive funding programs offer many opportunities for the region to address topics and issues identified in this plan as regional priorities. MnDOT has developed a matrix for state highway projects to identify the important features of the proposed project and match it up against federal programs where it could most successfully compete.

For the purposes of developing long-range financial estimates, only competitive funding that has been awarded is assumed to be available and is shown for projects that are, or soon will be, under construction. For example, the I-494 E-ZPass project described in the Highway Investment chapter received a $60 million grant through the Nationally Significant Multimodal Freight and Highway Projects program in 2021 and a further $138 million grant through the Infrastructure for Rebuilding America (INFRA) program in 2024. However, these competitive federal funds offer significant opportunities to increase available metro area funding and specifically address our region's goals. The Met Council and MnDOT will work closely together to identify new funding opportunities for state highways and compete in these important funding programs.



MnDOT metro district share of state and federal funds

A new funding share of 43.5% of capital funds to the metro district goes into effect for MnDOT's capital funds distribution in calendar year 2028 and forward. This is a significant increase over the metro district's past share of statewide revenues, which ranged from 35% to 42% over the past decade. In 2028, the metro district estimates its share of state and federal highway funding will be about $600 million for roadway capital and is forecasted to grow to almost $1.4 billion annually by 2050.

The metro district also receives 26% of the state highway funding available for planning, operations, and maintenance. These funds are distributed primarily based on system size, such as number of highway miles. In 2028, $897 million will be available statewide for operations and the metro district estimates its share of these funds at $233 million, growing to about $450 million annually by 2050.

As shown in Table 3.2, the state and federal funds available for MnDOT's state highway capital and operations in the metro area total about $807 million in 2025 and will grow to over $1.8 billion annually by 2050 when including expected inflationary increases. For the entire plan period of 2025-2050, almost $33 billion will be available for investment in the region's state highway system.

Over the past decade, MnDOT metro district received its share of state and federal funding through both a district target formula and through pavement and bridge preservation allocations. This allocation method focused funds on maintaining system performance, and primarily used system size and usage factors to distribute the funding statewide. System needs more heavily represented in the metro area like mobility and safety, and roadside infrastructure preservation like water management, culverts, traffic management technology, and noise walls were not included in this fund allocation. Because of this focus on pavement preservation, the metro district's share of state highway funds decreased over time, from around 44% of statewide funds in the early 2000s to allocations of 35% to 39% of the statewide highway funding in the more recent years.

In 2023, MnDOT convened a statewide committee to review the state funding allocations and made recommendations to MnDOT leadership about how to allocate available state and federal highway funding to the eight MnDOT districts. This group concluded its work in the summer of 2023 and forwarded a recommendation that included allocating both the statewide bridge and pavement performance funding and the district funding through one formula. They also recommended that the metro district share of statewide funding be established at 43.5% of the available capital funds given that the metro district has 56% of the state's population, 61% of the state's employment, and 67% of the state's gross domestic product (GDP), including the vast majority of the state's projected growth in these areas. Some smaller specialized funding sources like the state share of highway safety improvement funding will be set aside and distributed through different funding formulas. MnDOT leadership is still considering the committee recommendations and may determine to set aside additional funding for major pavement and bridge projects before distributing funding to the districts.

Regional transit revenues

Regional transit revenues are shown in Table 3.3. The estimated total regional transit revenues are about $1.7 billion in 2025 and around $54 billion from 2025 to 2050.

Table 3.3: Regional transit revenues (in millions)

Revenue	CY 2025	2025 % of total	2025-2050 total	% of total
Regional sales tax	$449	27%	$17,300	32%
Motor vehicle sales tax	$368	22%	$14,300	27%
State general fund and bonds	$163	10%	$7,050	13%
Fares	$82	5%	$4,100	8%
Federal formula and Regional Solicitation through 2029	$198	12%	$5,500	10%
Federal capital investment grants (New Starts)	$100	6%	$1,300	2%
County sales tax and regional rail authorities (for capital investment grant projects)	$244	15%	$1,050	2%
Regional transit capital property tax and other	$63	4%	$2,450	4%
Fund balance and interest earned	-	-	$850	2%
Subtotal	**$1.67 billion**	**100%**	**$53.9 billion**	**100%**

Regional transit revenues include all revenues used by regional transit providers – Metro Transit, Met Council contracted services, Metro Mobility, and the suburban transit providers – to operate, maintain and build the region's bus and transitway systems. Transit receives revenues through a variety of sources, with about 50% of the funding provided through two major taxes – the new regional transportation sales and use tax and the state motor vehicles sales tax.

In the past, bus operations have been funded primarily using motor vehicle sales tax revenues, fares, and other small amounts of available revenues. Light rail transitway operations, as required under previous state law, were funded using fares and the net remaining costs were shared equally by county transportation sales tax funds and state revenues. The new regional sales tax described below will provide an important new source of funding for bus and transitway operations and fill previously identified operating funding shortfalls. In addition, the 2023 state legislation now requires the Met Council to pay all transitway operating costs (after accounting for fares, federal, and any state revenues) using the new regional sales tax revenues. This requirement will shift over $3.5 billion of transitway operating costs from the metro counties to the Met Council using the new sales tax funds.

For transit capital, two revenue sources provide the majority of the revenues. The sources are federal formula funds received through the Federal Transit Administration and Met Council bonds known as regional transit capital, where the debt service is paid by property taxes levied in the statutorily defined transit capital levy district. Additional capital funding sources for specific projects include state general obligation bond proceeds allocated for arterial bus rapid transit construction, and federal capital investment grants and county transportation sales tax revenues used for dedicated light rail and bus rapid transit transitway construction purposes. Additional federal revenues have been included from the regionally allocated revenues for future arterial bus rapid transit projects based on funding allocation decisions through 2029.

New regional transportation sales and use tax

The 2023 legislature and Gov. Tim Walz took a very significant action by creating a new ¾-cent regional transportation sales and use tax. These revenues are shared 83% to the Met Council and 17% to metro area counties for transportation (see Local Government Transportation Revenues). The Met Council's share is further divided 95% to regional transit and 5% to be allocated by the Transportation Advisory Board for active transportation purposes (walking, biking, and rolling). This new revenue will fill a significant funding gap previously forecasted in the region's transit operating and capital budgets and will provide significant new revenues to fund new opportunities like bus electrification, increased transit services, safety initiatives, and micro transit. The funding available for new opportunities is discussed more in Regional Transportation Spending.

In 2025, the new sales tax revenues are forecasted at almost $450 million, accounting for 27% of total revenues, the largest revenue source for regional transit. These revenues are conservatively forecasted to grow at 3% annually and this inflation rate will be revisited once there is a stronger history of collections. At the 3% inflationary rate, total sales tax revenues for transit over the 26-year period of the plan are more than $17 billion.

Transit motor vehicle sales tax revenue

The state constitution dedicates the state's motor vehicles sales tax revenues to transportation and requires at least 40% of these revenues to be allocated to transit. Prior to 2023, state statute dedicated 36% of the motor vehicle sales tax to metro region transit and 4% to transit in greater Minnesota (80 nonmetro counties in the state). As part of the 2023 transportation funding legislation, this proportion was changed to a new split of 34.3% of the revenues to the metro region's transit and 5.7% to MnDOT for greater Minnesota transit. This changed distribution recognizes that the sales tax rate for motor vehicles had increased from the past 6.5% rate to a new rate of 6.875% and was meant to provide a similar level of revenue to the metro region as in the past, while also providing increased revenue for greater Minnesota transit needs. The change also recognized, in part, that the metro region's transit would receive significant new revenues through the new regional transportation sales and use tax.

This plan uses the state's February 2023 forecast as the basis for estimating transit revenues from the motor vehicle sales tax and uses an inflationary rate of 3% to grow these revenues over the period of the plan. Transit revenues from the motor vehicle sales tax are used primarily for transit operations but can also be

used for transit capital. Reliance on motor vehicle sales tax revenues can provide some financial risk as major purchases, such as for motor vehicles, fluctuate with economic conditions. More vehicles and more expensive vehicles are purchased in good economic times, while fewer are purchased in less favorable economic circumstances. This annual fluctuation in expected revenues has caused some budgeting problems for transit over the past decades in years where motor vehicle sales tax did not perform as forecasted.

In the past, motor vehicle sales tax revenues comprised more than 65% of regional bus operating revenues and 27% of total capital and operating revenues available for transit. During the COVID-19 pandemic, as fare revenues fell dramatically, the reliance on motor vehicle sales tax revenues for transit operations increased even further. However, with the implementation of the new regional transportation sales and use tax, the motor vehicle sales tax will no longer represent transit's major revenue source. In 2025, motor vehicle sales tax revenues for transit are estimated at $368 million or about 22% of the total transit revenues. Over the life of the plan, 2025-2050, motor vehicle sales tax revenues for transit are estimated to grow at 3% annually and provide $14.3 billion or about 27% of total transit revenues.

State general fund and bond revenues for transit

The state has historically provided a general fund appropriation for transit operations. The general fund revenues have historically been allocated to fund 50% of the after-fare costs of operating light rail transit and to fund Metro Mobility operating costs. Over time, the general fund appropriations have not kept pace with the growing costs for these two funding needs, and for most of the past decade the Minnesota Legislature has provided a flat appropriation of around $89 million annually.

In 2021, in recognition of the growing costs of Metro Mobility, the legislature passed a law specifying that Metro Mobility costs would be covered by the state through what is known as a forecasted program. As a forecasted program, the costs of Metro Mobility will be fully supported by the state's general fund based on actual ridership and related capital and operating funding needs. This forecasted program funding will begin in state fiscal year 2026 (July of calendar year 2025). In addition, the 2023 transportation legislation removed the requirement that the state provide 50% of the operating costs for light rail.

As a result of these two legislative actions, this plan assumes the state will continue to provide the existing base general fund appropriation for light rail operations of about $33 million annually, but that this appropriation will not grow. For Metro Mobility, the general fund revenue will cover the capital and operating costs and will be required to grow at about the same rate of Metro Mobility ridership growth. The general fund revenues necessary for Metro Mobility total $115 million in 2026, the first year of the state forecasted program, and under an approximate 4.7% growth rate, increase to just over $400 million annually by 2050.

The state has also historically received state bond revenues for arterial bus rapid transit capital costs. Past state bond appropriations have varied with the specific cost of the arterial bus rapid transit line's cost, typically ranging from about $50 million to $100 million for each line. This plan assumes the state bonds will continue to be available for five additional arterial bus rapid transit lines (METRO G, H, J, K, and L) that Metro Transit will implement in the first decade of the plan (2025-2034), totaling $320 million in state bond revenues.

Transit fare revenue

Transit fare revenues are the user fees received from riders using the transit system and are typically budgeted for transit operating purposes. Prior to the COVID-19 pandemic, fare revenues provided around 22% of systemwide operating costs. However, ridership and fare revenues during the COVID-19 pandemic dropped to historically low levels, falling in 2020 to under 50% of pre-pandemic ridership numbers. Ridership and fare revenues have been recovering and at the end of 2023, Metro Transit's regular-route services were at approximately 60% of 2019 pre-pandemic levels.

This plan assumes ridership and fare revenues will continue to recover over time, and it forecasts that by 2034, ridership and the associated fare revenue will again reach 2019 levels. After 2034, ridership and fare revenue for existing services are forecast to grow about 1% annually. In addition, the region periodically implements fare increases so that the system-wide fare recovery remains stable over time as a percent of the total system costs. This plan includes fare increases roughly every five years. Total transit fare revenues come in around $82 million in 2025 and are estimated at around $153 million in 2034, when the system is forecast to reach pre-pandemic ridership levels. Total fare revenues over the period of the plan 2025–2050 are estimated at $4.1 billion.

Federal transit revenues

Similar to state highway funding, regional transit receives both federal formula funds and competitive, or discretionary, federal grants under the IIJA federal transportation bill. The federal formula funds are distributed through the Federal Transit Administration, and in the metro area, the Met Council serves as the designated recipient of all Federal Transit Administration grants. Federal funds awarded to other transit providers or to local governments are passed through the Met Council as subrecipient grants.

There are three primary federal formula funding programs for transit: the Urbanized Area Formula Grants, also referred to as section 5307 funds; the State of Good Repair Grants or section 5337 funds; and the Bus and Bus Facilities Program or 5339 funds. These programs provide formula funds for the region to use for transit capital asset management and improvement, including fleet replacement. In 2025 the region's federal transit formula funds are estimated at around $146 million, totaling $5.3 billion from 2025-2050.

Regional transit receives competitive funding through the federal Capital Investment Grants (section 5309) program for transitway capital. These awards are on a project-by-project basis as the projects are approved. Consistent with the projects identified in the Transit Investment Plan and with the region's history and experience in receiving full funding grant agreements for major transitway projects, the transit financial plan includes capital investment grant funding for the remaining costs of the METRO Green Line extension and METRO Gold Line, and the full costs of the METRO Blue Line extension, METRO Purple Line, and the Riverview modern streetcar.

Transit also receives federal competitive funding through the Regional Solicitation. This financial plan assumes that through 2029, 30% of the solicitation funds are available for transit projects. This share has been approved by the Transportation Advisory Board through 2029. As described in the Regional Solicitation section, a major project to evaluate the solicitation structure and method of scoring, and awarding funds will

take place in 2024-2025. This plan does not assume any distribution of the Regional Solicitation funding beyond 2029. When the Regional Solicitation policy decisions and design have been approved by the board for the 2026 solicitation, this plan will be amended to include an updated description of the solicitation and any financial adjustments needed.

Transit providers may also receive competitive grants through the many IIJA programs. This financial plan does not assume any federal competitive funding that is not yet awarded. These federal programs offer a significant opportunity to bring additional funding and new transit service and capital projects to the region. If funding is received for additional regionally significant transit projects, it will be amended into the plan as necessary.

Property tax, county sales tax, and other transit revenues

The Met Council levies a property tax to pay for the debt service on transit bonds known as regional transit capital. The Met Council can issue transit capital bonds only when authorized by the state legislature to do so. Typically, these bonds are authorized on an annual or biannual basis. The regional transit capital funds are used to pay the capital expenses of maintaining the existing system and to provide the 20% required match to federal formula and other competitive federal funds. The revenue forecasts in this plan assume bonding funds will continue to be authorized at the existing level (about $55 million in 2025) and will grow at a rate of 3% annually. Regional transit capital revenues are estimated at $2.1 billion from 2025 to 2050.

County regional railroad authorities are authorized to levy a property tax for the purpose of developing regional transitways. Counties also may implement up to a half cent sales tax for transportation purposes and these funds can be used for transitway development costs. Typically, counties pay the remaining capital costs of dedicated transitways after applying the federal New Starts program funding, around 50% of the costs. Counties use both regional railroad funds and county sales tax for the transitway capital costs. This plan assumes that these county funds will provide the amount needed to complete the METRO Green Line extension and METRO Gold Line, and to fund about 50% of the capital costs of the METRO Blue Line extension and METRO Purple Line. This revenue is estimated at $1.1 billion.

The Met Council also receives other revenue used for transit operations from sources including advertising, investment income, as well as revenue from Sherburne County and MnDOT to pay the Greater Minnesota share of operating the Northstar commuter rail. Other revenues are estimated at approximately $8 million annually and $350 million from 2025 to 2050.

Local government transportation revenues

Federal transportation planning regulations require the region's long-range plan to account for all transportation revenues and spending expected in the region over the period of the plan. That includes federal revenues used by local units of government – counties, cities, townships – on local roads, bicycle, and pedestrian systems. The regional plan must also account for revenue and spending on regionally significant projects on the metropolitan highway system (such as projects that add capacity and interchange projects on minor and principal arterials).

Local governments own and operate a variety of roadways including local streets collectors, minor arterials, and a very few principal arterials. Because most local transportation spending does not involve federal funding or regionally significant projects, it generally is not covered in detail in the regional plan. Only total local revenues and spending estimates are

included along with those local projects using federal funds or that are regionally significant projects, which are specifically listed in the Long-range Project List.

Local transportation revenues come from a variety of sources, including: county and city state-aid allocations from the state highway user tax revenues; federal revenues distributed through the Regional Solicitation and other competitive federal funding programs; county transportation sales tax; county wheelage tax revenues; or property taxes, special assessments, or fees allocated to transportation purposes by the local government. Beginning in 2024, a new Transportation Advancement Account created by the 2023 legislature will receive funds from 17% of the new regional transportation sales and use tax, revenues dedicated from the state sales tax on auto parts, and a new retail delivery fee. As shown in Table 3.4, local government transportation revenues will total more than $2 billion annually in 2025 and $80 billion from 2025 to 2050. These various revenue sources are further described below.

Table 3.4: Local government transportation revenues (in millions)

Revenue	CY 2025	2025 % of total	2025-2050 total	% of total
State aid (county and municipal)	$482	23%	$18,600	23%
Federal (including awarded Regional Solicitation through 2029)	$106	5%	$1,600	2%
County transportation sales tax	$336	16%	$13,000	16%
County wheelage tax	$42	2%	$1,250	2%
Property tax and other	$951	46%	$37,600	47%
Metropolitan Local Governments Transportation Advancement Account	$40	2%	$4,450	6%
Metropolitan Counties Regional Sales Tax	$97	5%	$3,750	5%
Subtotal	**$2.05 billion**	**100%**	**$80.1 billion**	**100%**

County and city state-aid revenues

Both cities and counties receive highway user tax revenues based on a statutory formula that accounts for factors like lane mileage, construction needs, vehicle registrations, and population. State highway user taxes must be used on the designated county and municipal state-aid systems for capital or operating purposes. The local highway user tax revenue estimates in this plan are calculated from historical MnDOT state-aid allocation data, inflated annually at a rate of 3%, similar to the inflation rate used in MnSHIP for state highway user tax revenues. In addition, metro counties receive a special, legislatively designated, state-aid allocation from motor vehicle lease sales tax revenues, and from a portion of the 5% highway user revenues that can be legislatively allocated.

Similar to state highway revenues, state-aid revenues received a significant increase, estimated at 17%, from the fuel tax and registration tax increases implemented as part of the 2023 transportation law. Including these increases, 2025 highway user tax revenues estimated to be available for the metropolitan area county and municipal state-aid systems will be almost $500 million annually and will total almost $19 billion for local governments from 2025 to 2050. As shown in Table 3.4, state-aid revenues provide around 23% of the total transportation revenues for local governments.

Local government federal transportation revenue

The primary source of federal transportation revenue for local governments is through the Regional Solicitation, described later under the regional revenues section. Historically the majority (about 70%) of Regional Solicitation revenues have been allocated to local governments for spending on their local roadways, and bicycle and pedestrian systems, or on state highways within their jurisdictions that are priority projects for the local government. The local government federal revenues include allocation of federal Regional Solicitation funds to local governments through 2029 (after the conclusion of the 2024 solicitation). The solicitation will be undergoing an evaluation during 2024-2025 that will result in a restructuring and potentially different allocation of federal funds among spending categories. When the Regional Solicitation evaluation is complete, the new policies and assumptions regarding funding distribution will be amended into this plan.

Local governments also receive competitive transportation funds through other programs like the Highway Safety Improvement Program and the new federal bridge program. Local governments may also receive competitive federal funds for projects that are local priorities for completion and are part of MnDOT's state highway system. Federal transportation revenues total only about 2% of the spending by local governments on their transportation system.

County transportation sales tax

In 2017, the metro region's counties were allowed to begin levying up to a ½-cent sales tax for transportation – this tax replaced the sales tax previously levied by the joint metro Counties Transit Improvement Board for transitways. Currently Carver, Hennepin, Ramsey, Scott, and Washington counties levy a ½-cent sales tax, and Anoka and Dakota counties levy a ¼-cent sales tax.

These local sales tax revenues provide significant flexible transportation funding for the local roadway, transitway, and if the counties so choose, MnDOT's state highway system, and bicycle and pedestrian projects. Projects must be identified for funding through resolutions passed by the county boards. This plan estimates that from 2025-2050 around $13 billion in county sales tax revenues will be available for transportation.

The 2023 transportation legislation removed a requirement that 50% of the net operating costs for light rail be paid using nonstate sources. These costs had historically been paid by counties using their transportation

sales tax revenues. In addition, the Met Council had existing agreements with counties to pay 50% of the operating costs of other dedicated transitways. The 2023 legislation now requires that the Met Council, after accounting for fares and any available federal and state revenues, use new regional sales tax revenues to pay the costs of operating dedicated transitways. This legislative policy change resulted in a shift of the transitway operating expenses from counties using their transportation sales tax revenues to the Met Council. This shift in funding responsibilities provided metro counties with about an additional $110 million annually in 2030 (after the opening of the Green Line extension), and more than $3.5 billion over the period of this plan, allowing these transportation sales tax revenues to be used on different county transportation purposes.



County wheelage tax revenues

Under state law, counties can levy a wheelage tax of up to $20 per vehicle for roadways. This tax is collected by the state along with the vehicle registration taxes. Dakota, Scott, and Sherburne counties currently collect a $10 per vehicle fee and Carver, Hennepin, Ramsey, and Washington collect a $20 per vehicle fee. Anoka County does not collect a wheelage tax. The county wheelage tax revenues total around $43 million annually and $1.3 billion from 2025-2040, about 1.6% of local transportation spending.

Local property taxes and other revenues

Most local transportation revenue is provided through local property taxes, local assessments, fees, or other special revenues allocated by local governments for transportation. As shown in Table 3.4, about $38 billion, or about 47%, of the approximately $80 billion estimated to be available over the life of this plan for local transportation will come from local property taxes and other fees. The property tax data was calculated from information submitted by the local units of government to the state auditor and published annually. These reports include the annual reporting of designated transportation revenues, along with transportation operating and capital expenditures for each local unit of government.

Recognizing that these local transportation expenditures can vary significantly from year to year, a base-year for revenues and expenditures was established by averaging calendar years 2019 through 2021 and inflating the average at a rate of 3% annually over the plan period. The local property tax revenue amounts were calculated by subtracting the known revenue contributions from the transportation sales tax, wheelage tax, state-aid, and federal revenue from the known total local transportation spending.

New transportation advancement account revenues

The 2023 state transportation bill created new revenue sources for local governments that were particularly significant for metropolitan area county funding. The bill created a new Transportation Advancement Account that includes allocations specifically for metropolitan area counties, along with new distributions for all counties, large and small cities, and townships statewide that will be included with the state-aid allocations.

The Transportation Advancement Account receives revenues from two sources – a new retail delivery fee of 50 cents per retail delivery exceeding a value of $100, and a phased-in dedication over 10 years of revenues from the state sales tax on auto parts. The revenues from the retail delivery fee are estimated at approximately $62 million statewide in 2025 and grow at about 3% annually, totaling $2.4 billion from 2025-2050.

The revenues from the sales tax on auto parts are phased in beginning with 3.5% of the revenues dedicated to the Transportation Advancement Account in 2024 and growing to 56.5% of the revenues in the account by 2033. This phase-in provides growing revenues for local government transportation with total revenues starting at $17 million statewide in 2025 and growing to $241 million annually in total statewide revenues from the auto parts dedication at full phase-in in 2033.

The Transportation Advancement Account is allocated in statute as follows:

- 36% to the seven metro area counties
- 10% added to county state-aid distributions
- 15% added to city state-aid distributions
- 27% for small (under 5,000 population) cities that do not receive state-aid funds
- 11% added to township state-aid distributions
- 1% for grants to nonprofit entities supporting food delivery services

Based on the amounts for metro-area counties and existing state-aid formulas, the metro area will receive an estimated 51% of the new Transportation Advancement Account revenues. The metro area revenues from the Transportation Advancement Account to all metro area local governments total almost $4.5 billion from 2025 to 2050, or about 5.6% of total local government transportation revenue.

In addition to the statewide revenues allocated to the Transportation Advancement Account, the seven metro counties will receive 17% of the regional transportation sales tax revenues, with the remaining 83% allocated to the Met Council for transit and active transportation purposes. The new metro counties' share of sales tax revenues total about $97 million in 2025 and are estimated at $3.7 billion from 2025 to 2050.

When these two sources are combined, metro counties will be receiving an estimated $245 million annually in new revenues in 2034, at full phase-in of the revenues. The sales tax revenues will be distributed among the counties – 50% each based on each county's share of regional population and the state-aid needs formula. The 2023 legislation requires the metro counties to use this new revenue – 41.5% for active transportation ($102 million annually in 2034) and safety studies; 41.5% for roadway preservation ($102 million annually) without adding capacity; and 17% ($42 million annually) for transit, complete streets, or greenhouse gas mitigation activities.

Regionally allocated revenues

Under federal law, large metropolitan areas receive a share of the state's federal formula funds for project selection through the designated metropolitan planning organization. In the Twin Cities region, the Met Council has served as the designated metropolitan planning organization since 1973. For decades, the Met Council has been aided in the distribution of its federal funds by the region's Transportation Advisory Board (TAB). The board brings together representatives and perspectives from local governments, residents, and transportation interests to select projects for the region's federal funds. Under a long-established agreement between the Met Council and TAB, TAB is responsible for designing the project selection process and recommending projects for funding to the Met Council. The Met Council can fully accept TAB's recommendations or return them to TAB, asking for reconsideration of elements or aspects of the project selection recommendations.

The project selection process for the region's federal funds is known as the Regional Solicitation. The Regional Solicitation funds are intended to help the region achieve the goals and objectives envisioned in this transportation plan, and to address transportation problems identified in local plans. The Regional Solicitation makes the connection to the regional plan by designing an application process and scoring system meant to emphasize and connect to the regional goals, objectives, policies, and actions in this plan to the application categories, policies, and scoring criteria in the Regional Solicitation.

The past six solicitations used application categories based on project type (such as strategic capacity and modernization) within overall categories including roadways, transit and travel demand management, and bicycle and pedestrian facilities. A unique projects category was added in 2020 to allow for projects that do not fit well into the other categories. The TAB also funds one-third of the Regional Travel Demand Model and Travel Behavior Inventory work because this is a regional program with benefits to many partners. Over the past decade, TAB has distributed the available regional federal funds approximately 55.5% to roadway projects, 30% to transit and travel demand management projects, and 14.5% to bicycle and pedestrian projects. Any individual solicitation distribution can vary from this based upon the funding priorities as determined by TAB. Unique projects have received $4 million.

The Regional Solicitation typically awards funds three to four years in advance of the expected project construction to allow time for detailed project development after the funding award. Following the 2024 solicitation, the region's federal funds will have been awarded through calendar year 2029. The funding assumptions in this plan for 2025-2029 include these awarded projects in the revenue assumptions for transit and local government revenues. State highways typically have not received federal funding awards.

There are additional funds that have not yet been incorporated into the Regional Solicitation, including federal sources for Carbon Reduction Program and Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program, and the regional transportation sales and use active transportation (walking, biking, and rolling) funding. These funding sources and the project selection processes will be developed through the Regional Solicitation evaluation.

The sources of federal and regional funding for the solicitation are estimated at $150 million annually in 2030, and over $4 billion from 2025 to 2050, as shown in Table 3.5.

Table 3.5: Regionally allocated revenues (in millions)

Revenue	2030	2030 % of total	2025-2050 total	% of total
Federal (surface transportation and congestion mitigation)	$112	75%	$2,850	71%
Federal carbon reduction	$7	5%	$170	4%
Federal (planning, resilience, efficiency, and cost-saving program)	$4	2%	$90	2%
Regional sales tax for active transportation	$27	18%	$910	23%
Subtotal	**$150 million**	**100%**	**$4 billion**	**100%**

Regional Solicitation evaluation

In 2012-2014, the Regional Solicitation underwent a large evaluation process and was significantly changed and redesigned to reflect the outcomes and goals in the newly adopted Thrive MSP 2040 and the 2040 Transportation Policy Plan. Over the years the Transportation Advisory Board (TAB) has also implemented additional changes, but the overall structure has essentially been in place for six solicitation rounds for federal funding. With the expected adoption of the regional 2050 plans, the region is again undertaking a major evaluation of the Regional Solicitation process.

The intent of this evaluation is to assure that the structure and design is closely tied to and meant to achieve the goals and objectives identified in the regional plans. The new regional plans specifically identify regional goals of safety, climate, equity and inclusion, natural system preservation, and a dynamic and resilient region as the priority goals for 2050. In addition, this policy plan identifies specific transportation objectives, policies, and actions to contribute towards achieving those regional goals.

The Regional Solicitation evaluation will happen over two years (2024-2025) and will develop a new solicitation design to be in place for a 2026 Regional Solicitation. That solicitation will award approximately $250 million for a two-year period using federal surface transportation, congestion management and air quality, carbon reduction, and promoting resilient operations program funds. In addition, the evaluation will determine how to distribute the approximately $25 million annually in new active transportation (walking, biking, and rolling) revenues and whether those regional funds should be distributed on the same application timeline as the federal funds, or potentially in an off-year solicitation that includes only the regional active transportation (walking, biking, and rolling) funds.

Regional federal revenue

The primary source of federal formula funds for the region are Surface Transportation Block Grant program funds. The state is required to distribute 55% of the Surface Transportation Block Grant funds it receives based upon population. The funding attributed to large metropolitan areas, those with populations of more than 200,000, must be allocated directly to the region's metropolitan planning organization to determine its distribution. The amount of transportation block grant funding, including amounts set aside for transportation alternatives and bridge spending, estimated to be available to the Twin Cities region is about $78 million annually. Surface Transportation Block Grant funds are one of the most flexible sources of highway formula funding, and these funds can be spent on many modes and activities including transit, bicycle, and pedestrian projects.

MnDOT also provides the metro region with the state's Congestion Mitigation and Air Quality funding. Congestion Management and Air Quality funding is allocated to the states and must be spent in areas that do not meet federal air quality performance standards. The metro region went into air quality attainment in 2022 (meaning the region meets federal air quality performance standards) and continues to receive the federal congestion mitigation funds. Congestion Mitigation and Air Quality funds must be spent on projects that can help the region maintain its air quality conformance status, typically traffic signal retiming, transit, bicycle, pedestrian, and travel demand management projects. The region is projected to receive an estimated $34 million annually from this source.

Together the Surface Transportation Block Grant and Congestion Mitigation and Air Quality funds total around $112 million annually for the region and are estimated at $2.9 billion from 2025-2050.

The IIJA created two new programs that distribute funds to the region, the Carbon Reduction Program and the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program (promoting resilient operations). Carbon Reduction Program funds are directed to spending on activities that will reduce transportation's contribution to climate change, including travel demand management activities, and vehicle electrification and public charging projects. The promoting resilient operations funds are for elements of projects that contribute to making transportation more resilient to the impacts of climate and natural hazards like extreme heat and flood events. The region is set to receive an estimated $7 million annually in carbon reduction funds and $4 million annually in promoting resilient operations funds.

In addition, while not directed under federal law, MnDOT has chosen to provide the region with a portion of the state's Highway Safety Improvement Program funding. Highway safety program funding totals about $15 million annually. These funds are typically allocated to local governments at the same time as the region's federal funds are distributed, though the program uses a separate application process administered by MnDOT's metro district with scoring measures specific to safety projects.

Regional active transportation revenue

As mentioned previously, the 2023 transportation funding bill created a new ¾-cent regional transportation sales and use tax that is distributed 83% to the Met Council and 17% to the region's seven counties. The Met Council share is then to be used 95% for transit and 5% is for the Transportation Advisory Board to fund active transportation (walking, biking, and rolling) projects. The 5% active transportation share of the sales tax is set to provide an estimated $24 million annually beginning in 2024. At a 3% annual growth rate, the sales tax revenues will provide nearly $1 billion for supporting walking, biking, and rolling from 2024 to 2050.

The Transportation Advisory Board determined that one of the first tasks of the Regional Solicitation evaluation will be to focus on regional active transportation (walking, biking, and rolling) funding and determine how these funds will be distributed. The evaluation will determine whether the two funding sources and application processes will follow the same timeline and happen at the same time (along with the Highway Safety Improvement Program application process) or will follow a separate timeline.

Table 3.6: Transportation revenue sources received, by government agency

Revenue Source			
	**Federal Taxes**	Fuel Tax	
		General Fund	
	**State Taxes**	Fuel Tax	
		Registration Tax	
		Motor Vehicle Sales Tax	
		Sales Tax on Auto Parts	
		Retail Delivery Fee	
		General Fund	
		Bonds	
	**Regional Taxes**	Transportation Sales Tax	
		Transit Capital Levy	
	**Local Taxes**	Property Taxes	
		Sales Taxes	
		Wheelage Tax	
		Special Assessments and Fees	
	**Transit Income**	Fares	
		Other Transit Revenues (ads, investments, Northstar)	

	MnDOT	Met Council (MPO)	Metro Transit & Suburban Transit Agencies	Counties	Cities
	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓
	✓			✓	✓
	✓			✓	✓
	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓
				✓	✓
	✓	✓	✓	✓	✓
	✓		✓	✓	✓
		✓	✓	✓	✓
			✓		
				✓	✓
				✓	✓
				✓	
				✓	✓
			✓		
			✓		

Regional Transportation Spending

The following sections describe the high-level areas of spending for MnDOT metro state highways, regional transit, and local government transportation under the region's fiscally constrained investment plan and reflect the estimated level of revenues previously described. Because the Regional Solicitation evaluation is ongoing and will determine the spending of the regional revenues among modes and activities, these amounts are not currently included in this spending description.

The total estimated spending, at over $171 billion, is shown in Table 3.7. The table summarizes the fiscally constrained spending for MnDOT metro state highways, regional transit, and local government transportation, broken into the general categories of transportation capital and operations spending, along with new transportation investment opportunities where the spending for revenues newly allocated by the 2023 legislation is not yet determined and there is opportunity to invest the revenue in new ways.

Table 3.7: Total regional transportation spending 2025-2050 (in millions)

Category	CY 2025	2025 % of total	2025-2050 total	% of total
MnDOT metro state highways	$800	17%	$32,700	19%
Regional transit	$1,650	36%	$53,950	32%
Local government transportation	$2,050	44%	$80,150	47%
Regionally allocated funds	$150	3%	$4,050	2%
Total regional spending	**$4.7 billion**	**100%**	**$171 billion**	**100%**

MnDOT metro state highways spending

MnDOT's spending is broken into two broad categories: 1) highway capital spending and 2) planning, operations, and maintenance spending. After accounting for debt service costs, MnDOT generally has decided to allocate its remaining available statewide revenues approximately 62% to highway capital spending and 38% to planning, operations, and maintenance spending.

Highway capital spending generally includes construction activities or projects identified in a capital improvement program. MnDOT has both a four-year funded capital program, shown in the region's adopted Transportation Improvement Program, and a 10-year capital highway investment program, which identifies planned capital projects for projects 5 to 10 years out. In 2025, MnDOT metro district has almost $600 million available for state highway capital spending, growing to almost $1.4 billion annually by 2050. Around $24 billion in total metro highway capital funding is available from 2025 to 2050.

MnDOT's metro district's capital spending is directed by the investment policies in the Minnesota State Highway Investment Plan (MnSHIP). MnSHIP establishes investment categories including pavement preservation, bridge preservation, roadside infrastructure preservation, transportation safety and advancing

technology, highway mobility, freight, bicycle and pedestrian projects, local partnerships, main streets and urban pavements, and climate resilience. Funds are also identified for project delivery to invest the amount necessary to deliver the projects in the other categories. The detail on MnDOT metro district's planned spending under these investment categories can be found in Regional Highway Investment Plan.

Table 3.8: MnDOT metro state highways spending (in millions)

Spending	CY 2025	2025 % of total	2025-2050 total	% of total
State road construction	$594	74%	$24,500	75%
State road operations	$213	26%	$8,200	25%
Subtotal metro state highways	**$807 million**	**100%**	**$32.7 billion**	**100%**

The high-level expectations for MnDOT's spending over the period of MnSHIP and this plan are highlighted below. The metro district outcomes are expected in large part to follow MnSHIP's expected outcomes except as noted below.

- MnDOT will meet all state and federal performance targets for pavement preservation, but overall, the condition of pavements will worsen with the statewide percentage of pavements in poor condition increasing.
- MnDOT will meet the federal performance target for bridge condition on National Highway System highways, but the condition of bridges on roadways not on the National Highway System will worsen.
- The condition of roadside infrastructure that currently does not meet performance targets will continue to worsen. This is particularly pronounced in the metro area, which has most of the state's roadside infrastructure, including noise walls, culverts, lighting, and traffic signals. A higher percentage of the metro district's spending is required for roadside infrastructure than is needed in the more rural districts.
- Spending on climate resilience will increase particularly due to new dedicated revenues through the federal program promoting resilient operations. New emphasis is being placed on addressing flooding risks and increasing green assets along state highways.
- Spending on safety will increase to address fatalities and serious injuries, which spiked during and after the COVID-19 pandemic.
- Spending on highway technology such as changeable message signs and other information technology will expand. Technology spending is particularly concentrated in the metro area, which continues to expand its regional technology infrastructure.

- Highway and freight mobility projects – like E-ZPass, interchanges, and targeted capacity expansions – will receive limited funding, about $85 million annually through 2033 in the metro area, at which time mobility project funding will be reduced to approximately $30 million annually. The vast majority of the state's mobility project spending is in the metro area.
- Spending on pedestrian and bicycle improvements as part of state highway projects will increase, but still represents only about 3% of state highway capital spending. The region's highway infrastructure will be compliant with current Americans with Disabilities Act (ADA) standards by 2037.
- MnDOT will continue its partnerships with local governments and provide some funding for local priorities on the state highway system. In addition, aging state highways that serve as main streets for local communities will be prioritized for pavement preservation projects and will include investments for projects with transportation choices. MnDOT funding for local governments' state highway project priorities is limited. In the metro area, Regional Solicitation federal funds can provide funding for these priorities on the state highway system.

MnDOT's other primary area of highway spending is for planning, operations, and maintenance, including ongoing highway pavement and bridge maintenance, snowplowing, mowing and landscaping, and maintenance of roadside infrastructure, like traffic signals and other technology. The metro district receives 26% of the total revenues MnDOT has available for planning, operations, and maintenance activities. In 2025, the metro district's spending on these activities will be $213 million, growing to about $450 million annually by 2050 and totaling $8.2 billion over this plan. For the metro district, planning, operations, and maintenance spending is approximately 25% of its total spending and highway capital spending comprises the remaining 75%.

Regional transit spending

The detail for planned regional transit spending under the fiscally constrained revenues can be found in Regional Transit Investment Plan. Regional transit spending is generally broken into operations and capital spending for both the regional bus and transitway systems. Table 3.9 shows the anticipated spending in each of these categories, along with the transitway spending showing a further breakdown of expected capital and operating spending on current transitways and new or expanded transitways. The high-level expectations for regional transit spending over the period of the plan are highlighted below.

Table 3.9: Regional transit spending (in millions)

Spending	CY 2025	2025 % of total	2025-2050 total	% of total
Bus operating	$684	41%	$28,650	53%
Bus capital	$250	15%	$6,250	12%
Current transitways operating	$143	9%	$5,200	10%
Current transitways capital	$468	28%	$3,400	6%
Expansion transitways operating	-	-	$5,550	10%
Expansion transitways capital	-	-	$2,650	5%
Remaining transit opportunity funds	$122	7%	$2,300	4%
Subtotal regional transit	**$1.67 billion**	**100%**	**$53.9 billion**	**100%**

Bus operating and capital

- Prior to the 2023 legislative session, the regional transit system was facing significant operating and capital funding shortfalls. The new regional sales tax authorized by the 2023 legislature will allow the region to maintain its current operating levels for the bus and transitway systems, along with funding the system's capital support needs, over the period of the plan.
- Bus operating expenses include spending on all existing bus operations including for Metro Transit, Metro Mobility, Transit Link, contracted services, and the suburban transit providers. Bus operations and capital spending represent the majority of current and future transit spending, accounting for about 56% of all costs in 2025 and increasing to 65% of all costs as new transitways are added over the period of the plan.
- This plan does not identify any significant expansion of existing bus services other than new arterial and dedicated bus rapid transit lines, which are included within the transitway expansion spending.
- The bus capital spending includes replacement of existing fleet under the regional fleet replacement policy and also maintaining and replacing other bus capital such as transit centers and bus stops. The funding does not include spending on bus electrification as identified under the Met Council's zero-emission bus plans. It is estimated that about $1.3 billion in additional capital spending would be required to electrify the existing bus fleet.
- The remaining transit opportunity (sales tax) funds could provide funding for bus service expansion or bus electrification if identified as priorities for the region.

Transitway operating and capital

- The current transitways operating and capital spending includes spending for the METRO Blue and Green lines and Northstar commuter rail and comprises approximately 37% of total transit spending in 2025. (Operating and capital costs for the existing METRO Orange and Red lines and METRO A, C, and D arterial bus rapid transit lines are included within current bus operations.)
- Over the coming decades, about 6% of total spending will be required to maintain the current light rail system. Capital costs for the existing light rail lines will grow very significantly as the aging rail vehicles become due for replacement. About $1.1 billion of the total $3.4 billion of transitway capital spending will be for new rail vehicles, with an additional $600 million required for rail vehicle overhauls over the period of this plan.
- This plan identifies $8.2 billion in spending, about 15% of total spending, on transitway expansion operating and capital. The expansion transitways include the METRO Green Line extension, METRO Gold Line, METRO Blue Line extension, and METRO Purple Line dedicated transitways, along with the METRO B, E, F, G, and H arterial bus rapid transit lines.

New transit spending opportunities

There is around $2.3 billion in unallocated transit opportunity (regional sales tax) funding available over the 26-year period of this plan. This new revenue offers a significant opportunity to invest in new transit services and in the transit system's capital assets. Because this new funding has just recently been made available through the 2023 transportation policy discussions, decisions and a process to allocate this new revenue to specific services and projects is just getting underway.

The 2023 legislation does require spending a portion of the sales tax funds in specifically identified areas including:

- Improvements to the regular-route bus system
- Improvements to transit safety
- Improvements to accessibility at transit stops and centers
- Transit shelter replacement
- Planning and development of arterial BRT
- Operations and maintenance of arterial BRT
- Planning and development of highway and dedicated guideway BRT
- Implementation of the zero-emission bus plan
- Implementation of on-demand microtransit service by the Met Council and suburban transit providers
- Providing financial assistant for active transportation (walking, biking, and rolling)
- Providing wage adjustments for transit operators

Spending in most of these required areas is already included in the planned bus and transitway operating and capital spending identified above, and using the unallocated transit opportunity funding will allow some of these planned expenditure areas to be increased. However, the available opportunity funding identified at $2.3 billion over the 26 years of this plan will not fully meet all of these funding needs. Over the coming years, a regional discussion and prioritization of transit opportunity spending will occur to identify the expenditure of these remaining transit funds.

Local government transportation spending

Local planning and decision making

Local government transportation spending is the largest area of transportation spending within the region, accounting for almost half of all regional transportation spending. Local transportation spending includes spending by the metro counties, cities, and townships. These entities spend transportation revenues differently depending on the geographic location and land use context of the community, which can significantly impact the type of transportation investment needed and made by each local government. Local governments identify their investment goals and priorities in their local comprehensive plans and transportation plans.

Local government transportation spending is somewhat unique in that it has typically been more flexible to cover a wider variety of transportation improvements, including for active transportation (walking, biking, and rolling), than does MnDOT metro highway spending, which primarily focuses on state highway improvement, and regional transit spending, which focuses specifically on the provision of transit. Local governments primarily spend their transportation revenues on the local roadway system, which also includes significant expenditure on pedestrian and bicycle elements. In addition, local governments invest in standalone bicycle and pedestrian projects and are the major source of investment in these systems. Counties also use their transportation sales tax revenues to contribute to transitway development and to help fund state trunk highway projects that are priorities for the local jurisdiction.

Local government transportation spending decisions are made at the local level, and spending and projects are identified through local comprehensive plans, capital improvement programs, and annual budgeting processes. Details on local government transportation spending are not included in this plan, though the regional goals, objectives, policies, and actions are meant to guide local transportation planning and decision making. Local projects are an important investment component to helping the region achieve its long-range goals and objectives.

Local capital and operations spending

Similar to metro state highway and regional transit spending, local transportation spending is also broadly broken into transportation capital and operations spending. The spending information in this plan is based upon data reported by each local government and compiled by the state auditor. The auditor's report shows that in the past, local governments were spending available transportation revenues 65% on transportation capital and 35% on transportation operations, after excluding local funds set aside for major transitway development costs and funds transferred for transitway operations.

The local government transportation spending amounts shown in Table 3.10 assume that local governments will use the 2023 increases to their state-aid allocations (due to the fuel tax and registration tax increases) in this same manner, but do not make this assumption for the new funds received from the Transportation Advancement Account and new regional sales tax, which have different spending requirements.

Table 3.10: Local government transportation spending (in millions)

Spending	CY 2025	2025 % of total	2025-2050 total	% of total
Local transportation capital	$1,186	58%	$43,800	55%
Local transportation operating	$639	32%	$23,600	29%
Transfer from counties for regional transitway capital	$49	2%	$1,050	1%
New county spending opportunity funds *(from Transportation Advancement, new regional sales tax, and transportation sales tax returned from transit operations)*	$172	8%	$10,550	13%
New city and township spending opportunity funds *(from new Transportation Advancement Account)*	$10	1%	$1,150	1%
Subtotal local government transportation	**$2.05 billion**	**100%**	**$80.1 billion**	**100%**

Local transportation spending opportunity funds

As described under the local government transportation revenues section, the newly created Transportation Advancement Account and new regional sales tax share for counties offer significant new revenues for metro-area local transportation investment and particularly opportunities for counties to invest this new funding differently from past investment patterns.

As noted previously, the 2023 legislation requires metro counties to use their portion of the Transportation Advancement Account and the new regional sales tax funds as follows: 41.5% for active transportation (walking, biking, and rolling) and safety; 41.5% for roadway repair without adding capacity; and 17% for transit, complete streets, or greenhouse gas mitigation activities. An estimated $7.1 billion in new transportation revenue and spending on these purposes will be available to the seven metro counties.

In addition, because the 2023 legislation removed the requirement for counties to contribute to transitway operations, an additional $3.5 billion of the previously existing county transportation sales tax funding will be available for metro counties to also invest in a new manner on county transportation improvement. This more than $10 billion in additional county spending over the next decades will improve our local transportation systems by significantly increasing the investment in nonmotorized modes, increasing safety for all, and supporting the regional transit system.

The metropolitan area cities and townships received much smaller transportation revenue increases through the new Transportation Advancement Account with their new revenues totaling approximately $1.1 billion. These new funds also offer opportunity for new investment in the local transportation system but on a much lesser scale than the new investment in the county system.

Regionally allocated funds for transportation spending

As noted in the transportation revenues section, the region receives federal formula funds to allocate and invest as it chooses in the regional transportation system. The method for selecting investments, known as the Regional Solicitation, is undergoing an evaluation in 2024-2025. Goals of the evaluation are to determine the overall philosophy for how these funds should be invested and also to develop a redesigned application and scoring process to select projects that align with the new investment philosophy.

Some of the new federal monies, such as the carbon reduction and promoting resilient operations funds, must be used for transportation investments that are aimed at climate mitigation or climate resiliency respectively, under federal requirements. The largest source of the region's federal funds, the Surface Transportation Block Grant formula funds, however, have great flexibility across modes and purposes. In total, more than $3 billion of federal funds will be available for the Met Council and Transportation Advisory Board to determine how to invest in our transportation system in a manner that will best help the region achieve our goals of safe and welcoming, climate leadership, equitable and inclusive, dynamic and resilient, and protecting our natural systems.

In addition, as part of the 2023 state transportation legislation, more than $900 million in sales tax funds will be available to the Transportation Advisory Board to determine how to best invest in regional active transportation (walking, biking, and rolling). The focus and allocation of these funds will also be decided as part of the Regional Solicitation evaluation process. Altogether more than $4 billion in regionally allocated funds will be available for transportation investment. There will be important decisions made regarding both of these funding sources over the next two years, and it is anticipated that at the conclusion of the evaluation effort, this plan will be amended to more specifically indicate the decisions made and how the $4 billion in regionally allocated funds are expected to be invested across our transportation system.

Table 3.11: Regionally allocated funds (in millions)

Funds	CY 2025	2025 % of Total	2025-2050 Total	% of Total
Federal (all modes)	$123	82%	$3,119	77%
Regional Active Transportation	$27	18%	$910	23%
Subtotal regional transportation	**$150 million**	**100%**	**$4 billion**	**100%**

Total regional transportation spending

Table 3.12 shows the regional spending across all categories in one table. The region is anticipated to spend more than $171 billion for transportation purposes over the coming decades. Much of this spending is already determined across mode and purpose, but a significant amount of funding provided through the 2023 state transportation legislation is available to allocate to new priorities and spending opportunities. Work in the next few years will provide more clarity around continued funding gaps and transportation priorities and this plan will be amended as necessary to incorporate this decision making.

Table 3.12: Summary of MnDOT metro state highways, regional transit, local government transportation and regionally allocated funds spending (in millions)

Category	Spending	CY 2025	2025 % of Total	2025-2050 Total	% of Total
MnDOT metro state highways spending	State road construction	$594	74%	$24,450	75%
	State road operations	$213	26%	$8,200	25%
	Subtotal	**$807 million**	**100%**	**$32.7 billion**	**100%**
Regional transit spending	Bus operating	$684	41%	$28,650	53%
	Bus capital	$250	15%	$6,250	12%
	Current transitways operating	$143	9%	$5,200	10%
	Current transitways capital	$468	28%	$3,400	6%
	Expansion transitways operating	-	-	$5,550	10%
	Expansion transitways capital	-	-	$2,650	5%
	Remaining transit opportunity funds	$122	7%	$2,300	4%
	Subtotal	**$1.67 billion**	**100%**	**$53.9 billion**	**100%**

Category	Spending	CY 2025	2025 % of Total	2025-2050 Total	% of Total
Local government transportation spending	Local transportation capital	$1,186	58%	$43,800	55%
	Local transportation operating	$639	31%	$23,600	29%
	Transfer for regional transitway capital	$49	2%	$1,050	1%
	New county opportunity funds (from Transportation Advancement Account, new regional sales tax, and transportation sales tax returned from transitway operations)	$172	8%	$10,550	13%
	New city and township spending opportunity funds (from new Transportation Advancement Account)	$10	1%	$1,150	1%
	Subtotal	**$2.05 billion**	**100%**	**$80.1 billion**	**100%**
Regionally allocated funds	Federal (all modes)	$123	82%	$3,100	77%
	Regional active transportation	$27	18%	$910	23%
	Subtotal	**$150**	**100%**	**$4 billion**	**100%**
	Grand total	**$4.7 billion**		**$171 billion**	

SECTION 4: HIGHWAY INVESTMENT PLAN

Introduction

Residents and businesses depend on safe and efficient roads, including a well-functioning highway system, as part of our region's transportation system. Each day, 86% of all trips in our region are taken in an automobile.[72] Transit, walking, biking, and rolling trips depend on roads. 75% of freight, weighted by value, beginning or ending in MnDOT's metro district is carried on trucks and 18% use multiple modes, which often includes trucks.[73]

The term *roads* is used here to refer to all public roads, and the term *highways* is used to refer to those roads that carry the greatest number of people and goods the greatest distances

Although trips by personal vehicle may be faster and more convenient for most people, trips taken by transit, walking, biking, and rolling are more affordable for many trips, and better for the climate and public health. With about 660,000 more people expected in the region by 2050, this plan further develops a flexible transportation system to give travelers more viable choices for how they travel. Even with substantial investment in other modes, including transitways, and regional work to reduce vehicle miles traveled and shift people away from driving alone, trends indicate and this plan forecasts that automobiles will remain the primary way people will travel in the region in 2050.

Furthermore, more rural parts of our region are only well served by personal vehicle travel and many residents rely on roadways to meet their travel needs. Rural areas are especially difficult to serve with modes such as transit, biking, walking, and rolling. As such, our roadways must be maintained, modernized, and improved to support all modes of travel, including walking, biking, rolling, transit, personal vehicle, and freight.

Roadways play a vital current and future role in providing residents and businesses with flexible and efficient access to opportunities that can improve economic and social well-being, and overall quality of life. Improved roads that serve all modes of travel will increase the number of people moving per vehicle and without vehicles. This will lead to increased mobility beyond the direct investments in highway capacity presented here.

This section presents our region's approach to maintaining and improving highways, primarily the principal and minor arterial highways that make up the regional highway system. The introductory section of this chapter describes the regional highway system, presents how this chapter relates to plan goals, and introduces various processes and approaches to highway planning. In the existing highway system section, we present the most important needs and funding categories. In the highway investment plan, we present investment principles, specific investments within categories, and direction for funding that has not yet been allocated.

This section highlights infrastructure investment in the highway system. Additional context identifying the importance of highway infrastructure for other modes is included in the pedestrian, bicycle, transit, and freight sections.

The regional highway system

The functional classification system identifies the role a roadway plays in the transportation system and includes principal arterials, minor arterials, collectors, and local streets. The functional classification system is applied nationwide and guided by the Federal Highway Administration. For the purposes of regional transportation planning, this section focuses on the two highest-level roadways – principal and minor arterial highways – that form the regional highway system (Figure 4.2). Together the principal and minor arterials, comprise only 3,000 of the region's 18,300 roadway centerline miles (16%), but carry 80% of the region's motor vehicle traffic. Principal arterials like I-94 carry about 8% of bus service and minor arterials such as University Avenue carry about 51% of bus service.

Figure 4.1: Bus service by road functional classification

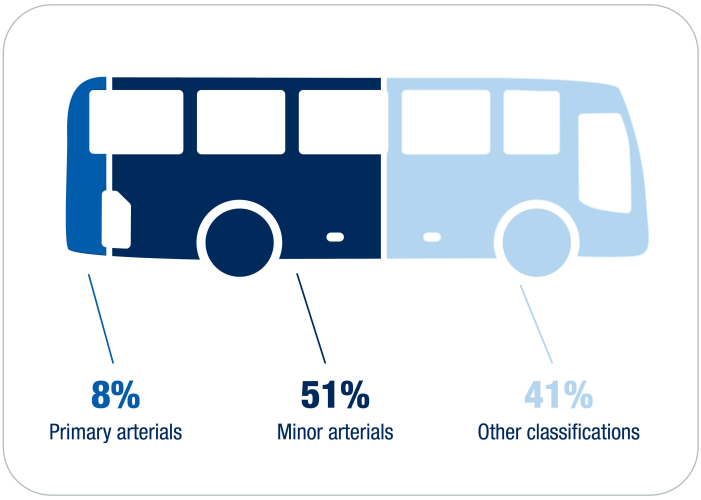
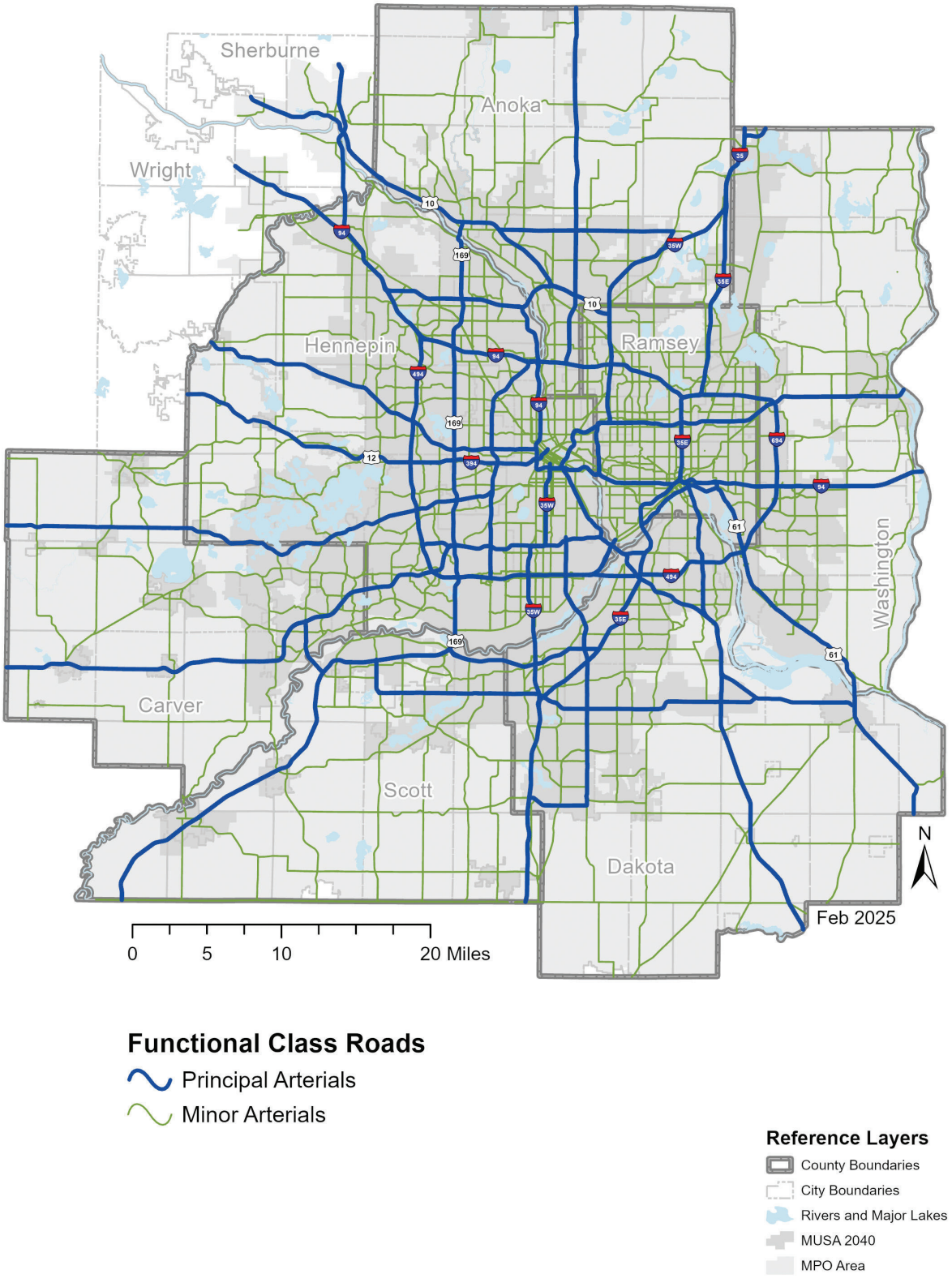


Table 4.1: Regional highway system mileage and usage [74]

Measure	Center line miles	% of center line miles	Vehicle miles traveled (VMT) (in billions)	% of VMT	VMT per center line mile (in millions)
Regional highway system	3,000	16%	22	80%	7.3
Principal arterials	700	4%	14.7	54%	21.1
Minor arterials	2,300	12%	7.3	26%	3.2
Collector roads and local streets	15,300	84%	5.4	20%	0.36
Total	**18,300**	**100%**	**27.4**	**100%**	**1.5**

Figure 4.2: Principal and minor arterial highways



Principal arterial highways

The federally designated National Highway System forms the highest-level functional classification within the regional highway system, called principal arterial highways. Collectively, the system is also known in Minnesota statute as the Metropolitan Highway System. This roadway classification includes interstates (for example, Interstate 94), other freeways and expressways (for example, Minnesota State Highway 62), and other principal arterials (for example, Cedar Avenue in Lakeville). The principal arterial classification represents roadways that prioritize mobility, serving the longest trips at the fastest travel times while providing the least direct access to specific locations. This mobility-access tradeoff is presented in Figure 4.3. MnDOT owns and operates 92% of the principal arterials, while various counties and the City of Saint Paul own the remaining seven roadways with this classification (Table 4.2).

Figure 4.3: Roadway access and mobility

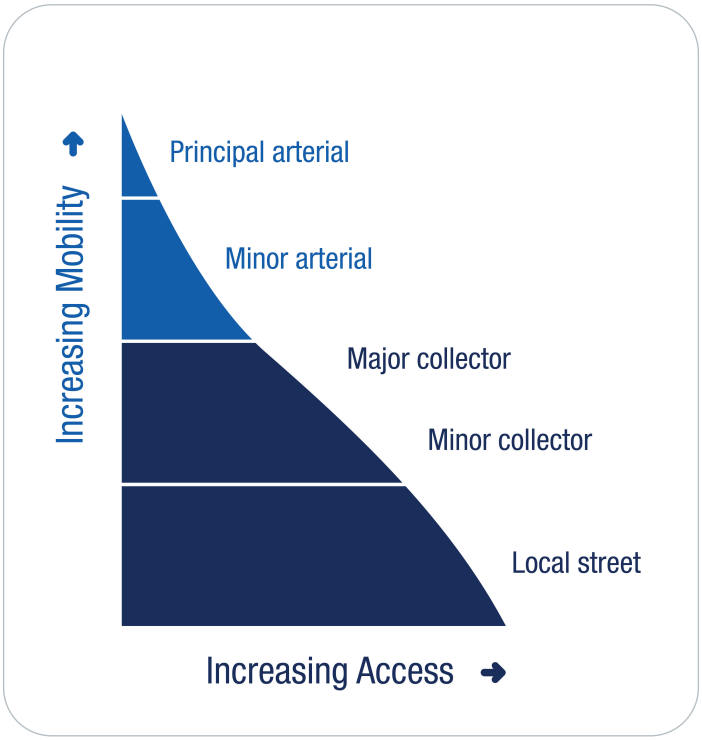


Table 4.2: Regional highway system and ownership mileage [75]

	Principal arterial miles	Principal arterials %	Minor arterial miles	Minor arterials %	Regional highway system miles total	Regional highway system %
State	658	92%	365	16%	1,023	34%
County	58	8%	1,692	72%	1,749	57%
Municipal	2	< 1%	284	12%	286	9%
Total	718	100%	2,341	100%	3,058	100%

Minor arterial

Designed to support and supplement principal arterials, minor arterials provide a high degree of mobility, but balance that mobility against needs for direct access to other roads and destinations (for example, employers, shopping, and schools). Minor arterials generally begin to balance needs of nonmotorized users as well. Due to their direct connections to major destinations, minor arterials often act as key transit routes and serve bicycling and walking trips with sidewalks and pedestrian crossings, multi-use trails, or on-street bicycle facilities in the roadway right-of-way.

Minor arterials also form the first-last mile freight connections between freight-generating businesses and the principal arterial system, and minor arterials provide network redundancy to the principal arterials when an incident or construction closes a highway or bridge. Examples of minor arterials include Minnesota Highway 51/Snelling Avenue in Ramsey County and Minnesota Highway 95 in Washington County.

This region has established four sub-types of minor arterials (augmentors, connectors, expanders, and relievers) that are based largely on the land use context of the roadway and its location within the metro area. These sub-types are used for allocating funding through the Regional Solicitation.

Other roads in our region are classified as major collectors, minor collectors, and local streets. These provide for shorter trips but connect people from the higher classified roads that make up the regional highway system to the places people and businesses need and want to go. Collector and local streets total approximately 15,300 centerline miles. They make up 84% of road mileage in the region and are the responsibility of local governments.

The Functional Classification section of the Imagine 2050 Transportation Policy Plan includes definitions and a further discussion of roadway functional classification and the process to request a change to this designation.

Relationship to transportation plan goals

Planning for the regional highway system supports each of the five goals in this plan and their related objectives. Each goal's relationship to transportation is covered in more detail in the Imagine 2050 Transportation Overview chapter; however, a summary of how highways relate to each goal is presented here.

Goal: Our region is equitable and inclusive

At times, highway construction has harmed the people and communities whether through disconnection, displacement, excessive noise, poor air quality, or visual impacts. Members of underserved communities – including people who identify as Black, Indigenous, and people of color; people experiencing low incomes and low wealth; and people otherwise impacted by persistent poverty and inequity – are disproportionately affected. Construction of I-94 between 1956 and 1968 in Saint Paul disproportionately affected the city's African American community in the Rondo neighborhood. According to the Minnesota Historical Society, "One in every eight African Americans in Saint Paul lost a home to I-94."[76] In Minneapolis in 1960, more than 80% of the city's African American residents lived where highways were planned to be built, including I-35W.[77] The city's comprehensive plan notes that in 1960, the locations where I-35W, I-94, and State Highway 55 "were built were home to approximately 27% of the city's white population, but 82% of its Black population."[78] The city's plan also provides the context that beginning in 1910, African Americans were restricted to portions of the city by racial covenants on property, and these areas were later subject to disinvestment by discrimination in lending.

Communities near highways bear the impacts and consequences from both the original construction and the continued operation and presence of these facilities. As a result, the Met Council will conduct a study

to identify the long-term and continuing harms and impacts of the regional highway system on adjacent communities and populations and propose mitigation investments to help resolve them.

This plan includes objectives to promote equity and inclusivity related to highways and to minimize negative impacts. It includes policies, programs, and plans to ensure community impacts and benefits are distributed equitably, better connecting historically underserved and under-resourced communities to jobs, education, and other opportunities. The plan also includes policies and programs to repair and eliminate disparate and unjust impacts and harms to Black people, Indigenous people, and people of color, and mitigate and minimize impacts and displacement of long-term residents and communities caused by transportation infrastructure and use.

This plan also elevates investments that support investments in transportation choices as part of highway projects that improve safety, access, and mobility for people using all modes.



Black, American Indian, and Alaskan Native people are at least 50% more likely to live near principal arterial highways than their overall proportion in the Twin Cities region would indicate. Income is a less determinant factor, but any relationship may be hidden in the analysis done here due to large census block groups in more rural parts of the region.

Goal: Our communities are healthy and safe

This plan works to minimize the negative impacts of highways to health and safety while encouraging their potential for benefits.

Crashes on highways can cause death and life-altering injuries for those within and outside of motor vehicles. Highways can also act as barriers for people who are walking, rolling, and biking, which also impacts health. Air and noise pollution caused by highway use also impact public health, especially for burdened communities who live near highways.

This plan includes policies and programs to minimize these impacts through more targeted investments and planning. These policies and programs also support highway investments that improve safety for all users, with an emphasis on reducing crashes that result in deaths or serious injuries using a Safe System Approach. More information about this approach is included in the Imagine 2050 Transportation Overview chapter. Highways provide foundational access to destinations including places of employment, health care, education, recreation, and opportunities for active travel.

Goal: Our region is dynamic and resilient

The regional highway system supports this goal by supporting transportation options, addressing excessive highway delay, improving travel time reliability, and building resilience into the transportation system.

Highway projects should include safe and comfortable facilities for walking, biking, rolling, and for transit vehicles, and efficient connections between modes. Highway improvements address excessive delay and improve travel-time reliability (especially important for freight), and safe crossings for all modes. Highways serve a flexible and fundamental role in moving freight into and out of the region to support our businesses and jobs. Highway improvements include managed lanes that provide efficient and reliable travel for transit, high-occupancy vehicles, and for those willing to pay.

People and businesses need to trust that transportation infrastructure and services will withstand and recover quickly from natural- and human-caused disruptions. This plan invests to mitigate the most significant current and anticipated climate- and weather-related impacts (for example, roadway flooding), and to minimize the impacts of nonrecurring delay and disruption (for example, special events and traffic incidents).

Goal: We lead on addressing climate change

Highway travel, especially using a vehicle with an internal combustion engine, contributes to global climate change. This plan works to ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure; to enhance transportation options (walking, biking, rolling, transit, travel demand management strategies) that reduce climate impacts compared to those of driving alone using an internal combustion engine; and evaluates and mitigates climate impacts of transportation plans and projects. This plan recognizes that not all congestion can be addressed and that larger-scale highway mobility investments should focus on corridors with excessive delay or that are high regional priorities in the Intersection Mobility and Safety Study (2024). The region's highway mobility improvement hierarchy begins with consideration of the least costly but most impactful investments before considering more expensive investments. In addition, this plan prioritizes managed lanes over general purpose lanes for the advantages they provide to transit and high-occupancy vehicles.

MnDOT, Met Council, and local partners are working to implement state legislation to evaluate the impacts larger projects and portfolios of projects have on greenhouse gases and vehicle miles traveled. The specific processes for assessment and mitigation of greenhouse gas emissions and VMT are being developed by MnDOT with advice from the State Transportation Impact Assessment Technical Committee. When those methods and processes are complete, the plan may need to be amended to incorporate them (Transportation Greenhouse Gas Emissions Impact Assessment).

The Met Council will assess major projects for greenhouse gas and vehicle-miles-traveled impacts before adding them to the Transportation Improvement Program consistent with state law beginning on February 1, 2025. The impact to highway projects and the amount of mitigation that may be required is unclear.

Electric vehicles and their role in decarbonizing auto travel is discussed in the Imagine 2050 Transportation Overview.

Changes to highway planning due to the region's new climate goal

To recognize the induced-demand effects of highway mobility investments (in other words, as improvements make travel easier, people do more of it) and potential increases in greenhouse gases, this plan makes only limited investments in highway mobility. This limited amount of investment does not keep pace with population and employment growth and focuses on targeted needs (in other words, where current congestion exists for at least two hours per day instead of one hour per day as shown in the 2040 Transportation Policy Plan).

Highway mobility investments, in addition to past investments in transit travel time advantages, now also emphasize transit supportive investments such as roadway reconstruction that will support improvements for multiple modes, including the METRO F Line arterial bus rapid transit route planned Minnesota Highways 65 and 47 in 2028. Other climate mitigation activities of this plan are described in the climate, transit, bike, pedestrian, and travel demand management investment plans, which have all received substantial increases in funding.

Goal: We protect and restore natural systems

The regional highway system fragments natural habitats, which can increase vehicle-animal conflicts. Transportation pollution — including oil, debris, and other pollutants in stormwater — reduces air and water quality. In addition, falling leaves that collect on impervious surfaces can concentrate phosphorus in stormwater discharge if not swept, and salt and de-icing solutions raise chloride levels in natural systems. This plan uses existing rights-of-way to protect and restore natural systems and reduces total impervious surface coverage where practical.

Highway planning

This plan sets transportation policy in the Twin Cities metro area and identifies regionally significant projects (described below). This plan establishes the review and approval process for regionally significant highway projects by the metropolitan planning organization and provides guidance to MnDOT and other agencies on how to invest in highways across the region. This plan addresses highways, their multimodal users, and each of the goals described above. Transit, bicyclists, pedestrians, travel demand management, and freight are important aspects of highways but are more thoroughly addressed in those specific plans.

The Transportation Policy Plan is influenced by a series of other highway planning efforts such as MnDOT's Statewide Multimodal Transportation Plan and State Highway Investment Plan (MnSHIP). The Statewide Multimodal Transportation Plan is the state's policy plan for transportation, while MnSHIP directs MnDOT capital resources into general investment areas. This plan builds on the state's work, tailors it to serve the Twin Cities metro area, and identifies specific investments that the region can expect and plan for by 2050. Upon completion of the Imagine 2050 Transportation Policy Plan, local agencies in the seven-county metro area will be asked to update their own transportation plans to reflect changes in this plan that will impact their communities. Local transportation planning will then generate additional data, needs, and potential project lists for consideration in future updates of this plan and potentially pursue funding in the Regional Solicitation.

Highway system studies and project prioritization

Met Council staff regularly undertake studies to inform difficult issues the region faces and to aid in the prioritization of investments within a project type. These studies inform this plan. Past results and active work are described here and throughout this plan within the relevant sections. Planned future studies are included in the Imagine 2050 Transportation Policy Plan Work Program.

Regionally significant highway projects

The Federal Highway Administration requires that prior to construction, regionally significant projects must be approved in the Imagine 2050 Transportation Policy Plan and then subsequently approved for inclusion in the Transportation Improvement Program. The type of funding (for example, local, regional, state, or federal) being used on the project does not impact whether a project is regionally significant (in other words, locally funded projects may still be determined to be regionally significant). The Federal Highway Administration defines regionally significant projects as those that serve regional transportation needs that would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. This region has added further specificity to this definition by focusing on the following project types on principal arterials:

- Adding and removing a lane (for example, general-purpose lane, managed lane, an entirely new roadway, or continuous auxiliary lane that extends more than one interchange/intersection).
- Constructing a new interchange on an existing or developing freeway, adding or removing a new ramp movement at an existing interchange.

The Met Council is also responsible for approving major projects on freeways within the seven-county Twin Cities metro area. The Metro Freeway Approvals study implements Minnesota Statute 473.166 so that freeways in the metro area are developed consistently with this plan. The formal approval process occurs toward the end of the project development process when a final environmental document is available.

Congestion management process

The Congestion Management Process is a federally required process developed by the Met Council, MnDOT, counties, and cities within the metro area. It is an integral part of the highway planning process. The Congestion Management Process outlines the regional objectives, network, and key performance metrics to identify and implement strategies that assist in mitigating congestion. Congestion management strategies consider travel demand management, lower cost and spot mobility investments, and operational improvements before larger-scale investment.

The Congestion Management Process is an ongoing process that is regularly updated to reflect the goals and needs of the region. It serves as a guide to transportation investments and strategies for the Met Council and its partners. The Congestion Management Process Policy and Procedures Handbook, initially developed in 2020, is available here. The Congestion Management Process section of the Imagine 2050 Transportation Policy Plan of this plan includes an overview of the process and its role in regional transportation planning and programming processes.

Highway interchange approval process

This process is defined in the Imagine 2050 Transportation Policy Plan's Preliminary Interchange Approval Process section. This process describes interchange project types that must be approved and evaluation standards that must be met before a project sponsor applies for Regional Solicitation funds and several other competitive MnDOT funding programs. This is an initial planning-level review by MnDOT and Met Council staff of a proposal's consistency with local and regional plans, the transportation need being addressed, functional class of connecting roads, supporting local roadway network and access management, and interchange spacing along a freeway.

This process does not evaluate if an interchange is the best solution at a location; only that an interchange is suitable, based on the evaluation criteria above, to be considered further. This approval does not promise other future approvals, funding, or inclusion in this plan or the list of Metro Freeway Approvals (described above). This initial, high-level approval is the first of many that are needed in the project development process.

Highway planning coordination

Staff from the Met Council regularly serve on corridor study advisory committees. Their role is to bring the regional perspective to these projects and work toward implementation of the goals, objectives, policies, and actions of this plan on each corridor and each project. Through this role, they also bring back the local perspective and issues to be considered in regional transportation planning. Another goal is to ensure that regional prioritization study results are incorporated into the study documentation.

This plan also helps inform local comprehensive planning efforts in the seven-county metro area. With an update or amendment to this plan, system statements are sent to impacted communities and they are required to include major projects in their local plans along with other required elements.

Right of Way Acquisition Loan Fund

The Met Council is responsible for implementing the Right of Way Acquisition Loan Fund. This program is described in Minnesota Statute 473.167, subd. 2 and generally provides local agencies with loaned funds to purchase property that is needed for future highway improvements and may otherwise be improved or appreciate over time.


IMAGINE 2050

Existing Highway System

Highways provide important travel options for the residents and businesses of our region. Maintaining and modernizing the regional highway system is important for the safety of people and goods in reliably meeting daily needs. Given the size and age of our highways, it is important to pair preservation investments with improvements that address all the goals of this plan and serve all modes of travel. It is also important to consider tradeoffs across travel modes, advantaged and negatively impacted populations, and even a balancing of goals (for example, a highway mobility project can enhance safety and create a more dynamic and resilient region, but may induce more vehicle travel leading to added climate and public health impacts).

Preservation of a large and aging system

The regional highway system covers 3,000 centerline miles of roadways and has developed significantly since the 1950s. Many of these highways are between 50 and 70 years old and are well beyond their functional life. Our highways require significant ongoing maintenance and reconstruction. However, the region maintains and replaces aging infrastructure to not only preserve what is there, but to modernize the system for current needs, achieve regional goals, and improve the user experience. A well maintained, high-quality system offers many benefits to people in the region, including:

- Smooth pavement on high- and medium-speed highways protects people, goods, and vehicles.
- Smooth pavement on low-speed highways provides a more comfortable ride and improves safety for drivers, passengers, and bicyclists.
- Well-maintained roads and bridges can minimize lifecycle costs and provide reliable infrastructure that people and businesses all depend on throughout the year.
- Updated and upgraded transportation assets are more aesthetically pleasing for residents and visitors.
- Preservation work enables the adoption of modern design treatments to improve traveler safety, mobility, ADA accessibility, bicycle and pedestrian facilities, stormwater management, and comfort of all travelers.
- Well-maintained water treatment and drainage infrastructure protects our natural systems.
- Mobility improvements paired with preservation work can be accomplished with less cost and fewer construction impacts to travelers.

In 2015, pavement and bridge replacement work was coordinated with the addition of managed lanes to address multiple goals in Saint Paul, Maplewood, and Little Canada with less overall cost and impacts than would have occurred had these needs been addressed separately.

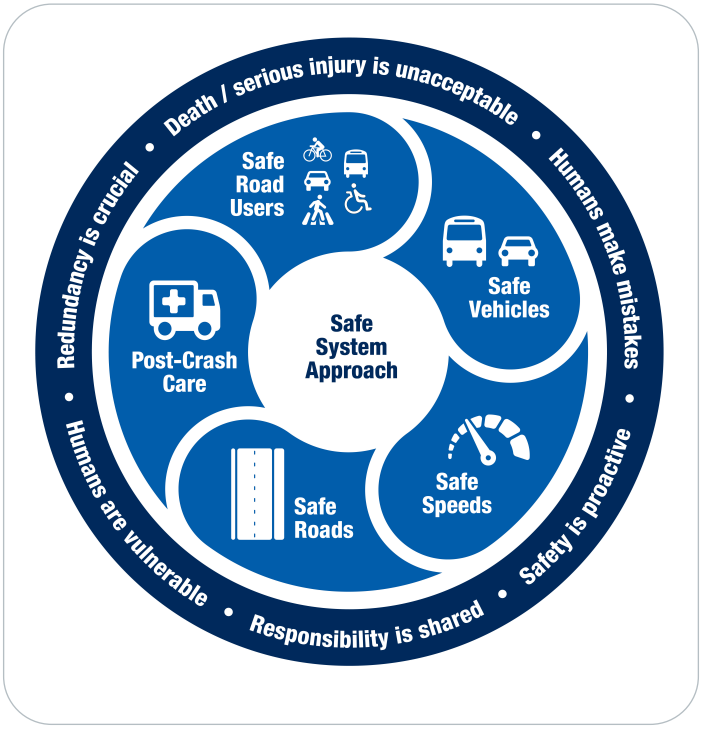
New techniques and technologies are key to extending the life of highways and decreasing both costs and environmental impacts. For example, MnDOT often places a new concrete road on top of the old road using it as a new base (unbonded concrete overlays) with similar or better results than reconstruction at a fraction of its cost. In addition, local agencies often recycle old road materials onsite, using techniques such as cold in-place recycling, to reduce costs and impacts.

Preservation work is an opportunity to achieve regional goals, but it comes with substantial financial costs. Given the general age and size of the system, the region has entered a phase of highway development where more highways will require significant investments to preserve assets while improving functionality and comfort for all users. The 20-year Minnesota State Highway Investment Plan (2023-2042) anticipates that pavement condition, bridge condition, roadside infrastructure, and rest areas will continue to degrade in the metro area and statewide compared to current conditions as construction costs grow faster than available revenue. While new state revenue will improve the anticipated preservation condition outcomes, even more revenue is still needed to maintain current conditions.

Safety

The region and the state share goals of eliminating deaths and serious injuries on the transportation system. However, deaths and serious injuries from traffic crashes have increased in the region since 2020. Highway investment, planning, and design are instrumental in reducing deaths and serious injuries from crashes on the system. Highway planning must include design for many modes and choices to protect people walking, biking, and rolling. The Imagine 2050 Transportation Chapter discusses the Safe System Approach, crash data, and other safety developments. Crash risks are addressed through the five elements of the Safe System Approach. This approach, promoted by the U.S. Department of Transportation, is an important shift in safety planning and implementation. It provides a more holistic approach to addressing safety in systems rather than as individual problems or solutions.

Figure 4.4: Safe System Approach principles and elements



The U.S. Department of Transportation describes the Safe System Approach as “building and reinforcing multiple layers of protection to both prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur.” Roadway design and operations help reduce potential consequences of human mistakes to eliminate fatalities and serious injuries.

The Met Council is working on a Regional Safety Action Plan focused on vehicle crashes and bicycle-vehicle crashes that will be released in 2024. It

includes crash data trend analysis, identifies high-injury streets in the region, and offers systemic analysis. The high-injury streets identification includes pedestrian crashes and builds on work done in the Regional Pedestrian Safety Action Plan that was completed in 2022.

Supporting transportation mode choices along and across highways

The regional highway system must serve people walking, biking, rolling, and using transit in addition to those driving or carrying freight. The most vulnerable road users — those walking, biking, and rolling — often face the most dangers from drivers of vehicles. An efficient transportation system that serves people and provides more sustainable options must prioritize the mode choice needs that exist along and across highways to sufficiently serve people and deliver more sustainable travel options.

The potential for connected and autonomous vehicles to impact safety is discussed in the Imagine 2050 Transportation Overview chapter and a discussion of the uncertainty with respect to congestion is included below.

Through its scoring process, the Regional Solicitation prioritizes safety and elements for multiple modes within roadway projects (points are awarded for pedestrian safety, as well as included mode-choice elements). As such, nearly all strategic capacity, spot mobility and safety, and roadway reconstruction projects include a trail, sidewalk, or a pedestrian underpass or overpass as part of the design. These Regional Solicitation roadway projects have also been instrumental in building out missing sections of the Regional Bicycle Transportation Network.

Modern design treatments also must improve intersections for people outside of vehicles to cross roads safely. Because most pedestrian fatalities and serious injuries in the region happen when a person is trying to cross a street, rather than walking along a street, roadway designs need to prioritize safety for people outside of vehicles to help the region reduce the numbers of people who are seriously injured or killed while walking or rolling. Roadway projects must also meet Americans with Disabilities Act (ADA) requirements removing barriers for people with disabilities.

Applicants must have ADA self-evaluations and, if applicable, transition plans to be eligible to apply for the Regional Solicitation. This requirement applies to all sponsoring agencies for projects entering the Transportation Improvement Program. Projects selected through the Regional Solicitation are required to construct their project to be ADA compliant. Agencies are encouraged to address the full needs of people with disabilities in their projects rather than just meeting the minimum of ADA requirements. More information about the needs of people with disabilities is included in the Pedestrian Investment Plan.

Recurring congestion and reliability

Compared to other modes of travel, highways provide the largest range of access to destinations such as jobs and medical facilities within 30 minutes. Eighty-five percent of trips within the region use automobiles daily. The Imagine 2050 Transportation Policy Plan Evaluation Performance Measures section tracks job accessibility both by automobile and other modes. Highways also serve freight and people on transit. Congestion causes delays and difficulty for users planning trips on the regional highway system. Excessive delays caused by recurring congestion and unpredictable travel times compromise people's ability to access important destinations and reduce quality of life, negatively affect business costs, and hamper competitiveness in regional and global markets.

Another of the established performance measures in the Imagine 2050 Transportation Policy Plan and MnDOT's Statewide Multimodal Transportation Plan (2022) is annual hours of delay per person. The purpose of this target is not to try to eliminate congestion, but to limit the amount of delay people experience to a reasonable level.

During the height of the COVID-19 pandemic, our region saw a precipitous fall in all travel including highway travel. In 2020, the region experienced an 18% drop in total vehicle miles as compared to 2019, and congestion did not regularly occur, except on a few corridors such as I-494 in Bloomington and I-35W in New Brighton. Since then, vehicle miles traveled have returned to pre-pandemic levels; 2022 total vehicle miles traveled in our region were only 7% below 2019 levels. Data collected in October 2023 shows congestion levels very nearly those in 2019 before the COVID-19 pandemic.[79]

This plan estimates that the region's population will grow by 20% from 2025 to 2050, which represents approximately 660,000 new people using the transportation system, as shown in Table 4.3. This population growth is an input to the transportation model that then estimates future results absent changes in the transportation system (2050 No Build Scenario) and another scenario that additionally reflects the investments in this plan (2050 Build Scenario). The increase in regional population is estimated to result in a 16% increase in trips and 15% increase in total vehicle miles traveled.

This plan invests in numerous strategies to shift trips away from driving alone highlighted in the travel demand management, pedestrian, bicycle, and transit investment plans. Highways support this mode shift by creating safe and efficient space for all modes, and through transit advantages and managed lanes described below in the highway investment plan. Land use is also an important driver of vehicle miles traveled per capita and is addressed elsewhere in Imagine 2050. However, vehicle miles traveled per capita is anticipated to decrease 5% in the No Build Scenario and increase from that in the Build Scenario by 0.3%.

Table 4.3: Population, daily vehicle trips, miles traveled, and delay in 2025 and 2050 scenarios [80]

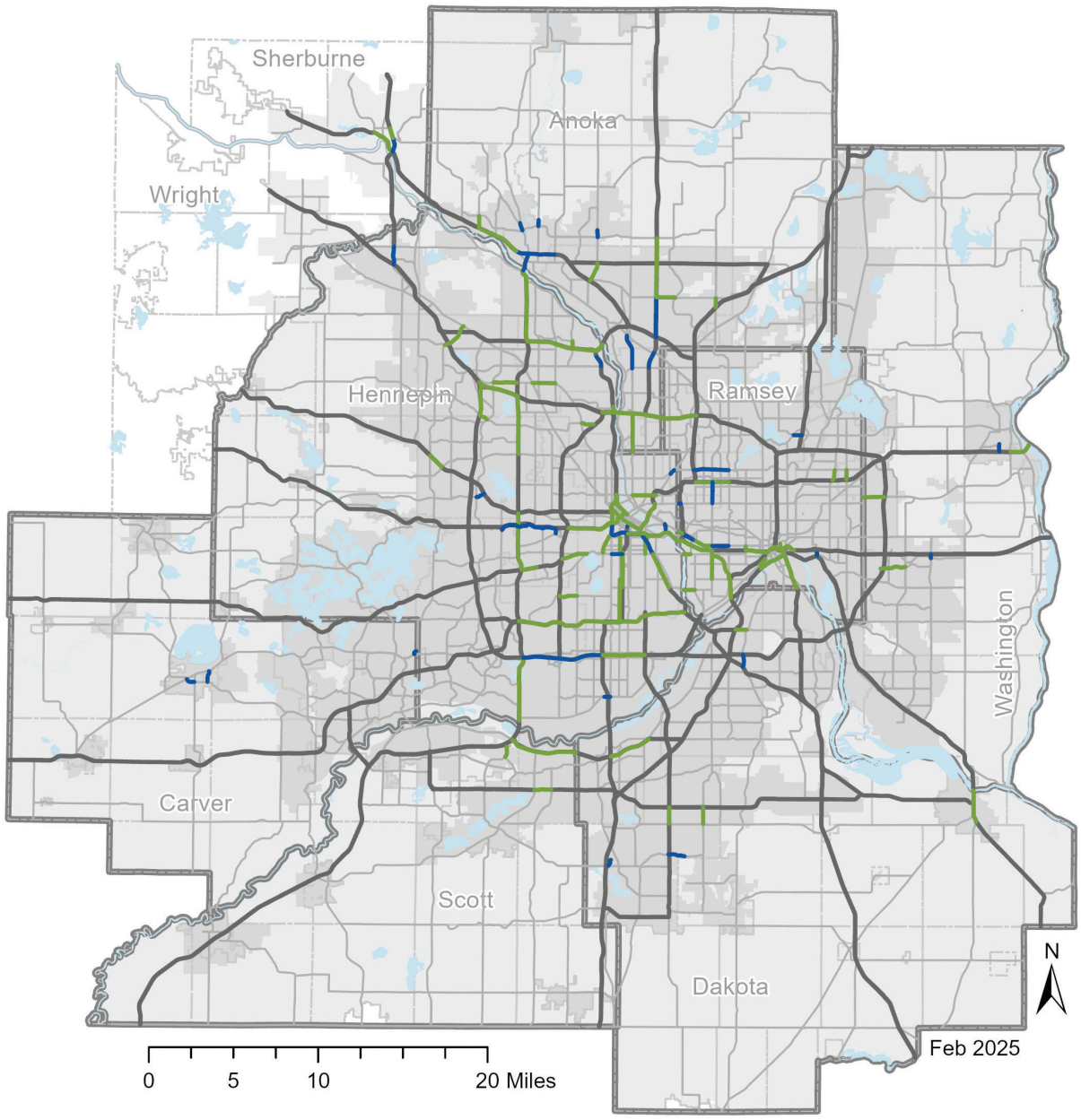
	2025 existing conditions	2050 No Build Scenario	2050 Build Scenario	Percent change 2025 to No Build	Percent change No Build to Build
Population	3,280,000	3,940,000	3,940,000	20%	NA
Daily vehicle trips	10,690,000	12,360,000	12,380,000	16%	0.2%
Daily vehicle trips per capita	3.3	3.1	3.1	-4%	0.2%
Daily vehicle miles traveled	72,670,000	84,590,000	84,900,000	14%	0.4%
Daily vehicle miles traveled per capita [81]	22.6	21.9	22.0	-3%	0.4%
Modeled lane miles	28,127	28,127	28,241	0%	0.4%
Total delay (in hours)	452,000	600,000	580,000	33%	-3%
Daily delay per traveler (in minutes)	9:43	10:51	10:34	6%	-1%

Changes in technology, particularly in connected and autonomous vehicles (vehicles where technology replaces the driver for some or all driving tasks) create greater uncertainty than in the past regarding future congestion levels. High-level forecasting of various scenarios of connected and autonomous vehicle adoption rates and ownership models (to what extent these vehicles are personally owned) was done by Met Council staff. The analysis found that the total number of automobiles in the region will decrease with adoption of connected and autonomous vehicles even considering population growth. However, there will likely be a substantial increase in vehicle miles of travel, primarily from unoccupied vehicles. The resulting impact on congestion is difficult to fully predict given the platooning of connected and autonomous vehicles and their ability to travel with less space between each vehicle. It is also not clear the degree to which connected and autonomous vehicles will begin impacting the region's transportation system within this plan's planning horizon.

Excessive delay

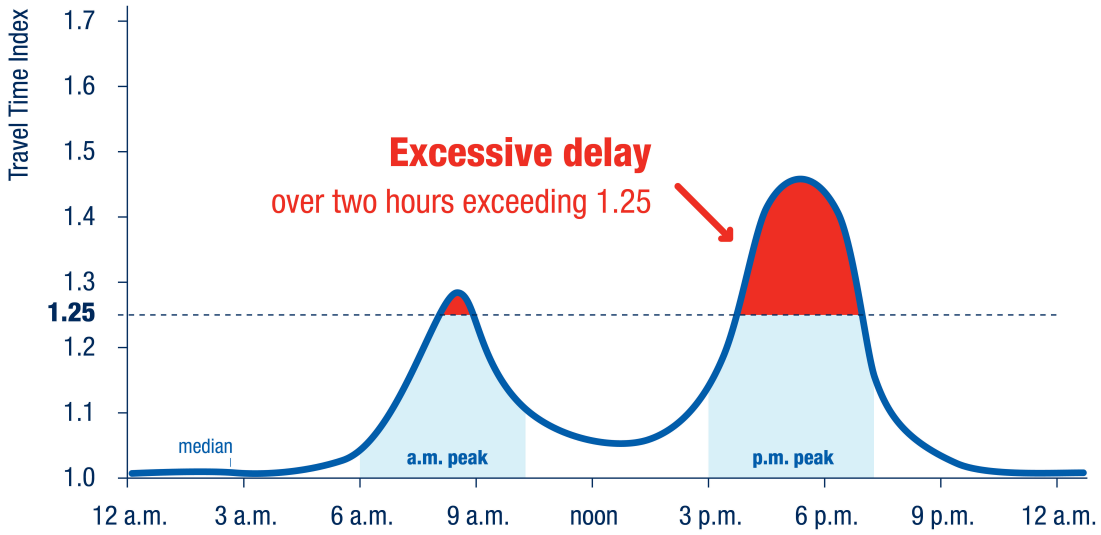
Recurring congestion (in other words, regularly occurring congestion) can be impactful on travelers. Not all congestion can or should be addressed due to capital costs, ongoing maintenance costs, and negative environmental, social, and economic impacts. This plan uses a two-hour threshold of recurring congestion to show excessive delay. Figure 4.5 shows principal and minor arterials where excessive delay is estimated to have occurred from June 2022 to May 2023 using StreetLight data. The measurement of congestion uses the travel time index, a ratio of the 50th percentile travel times during daytime hours, to an estimate of travel time during overnights (average from midnight to 6:00 a.m.), representing a time with no congestion. Excessive

Figure 4.5: Excessive highway delay



delay is shown where the travel time index exceeds 1.25 over at least two total hours in sum during the morning (6:00 a.m. to 10:00 a.m.) and evening peak periods (3:00 p.m. to 7:00 p.m.). A travel time index of 1.25 are conditions where you can expect your typical travel time to be 125% of what it would be overnight.

Figure 4.6: Examples of excessive delay



StreetLight data is a sample of trips with known bias including that the data primarily come from new vehicles. Segments and times with lower traffic volumes have a greater margin of error and the data processing may produce incorrect trips.

Nonrecurring congestion

Nonrecurring (unanticipated) delays cause great uncertainty for individuals and those moving freight. Due to its variability, this congestion cannot be fully planned for in decision making. Even with some degree of accounting for extra travel time due to uncertainty, disruptions to planned personal and business activities do occur. The buffer time index is a measure of the 95th percentile travel time minus the median travel time, all divided by the median travel time. This results in the ratio of the additional travel time you need to plan for to be on time 19 of 20 weekdays in a month to the typical travel times. A value of zero represents conditions that may be congested, but if so, they are consistently congested. A value of one says that to be on time 19 of 20 days, a driver must plan for double the time of their normal trip. Figure 4.7 is a map of principal and minor arterials where the buffer time index exceeds 0.5 and 1. This map also utilizes StreetLight data.

Figure 4.7: Highway reliability

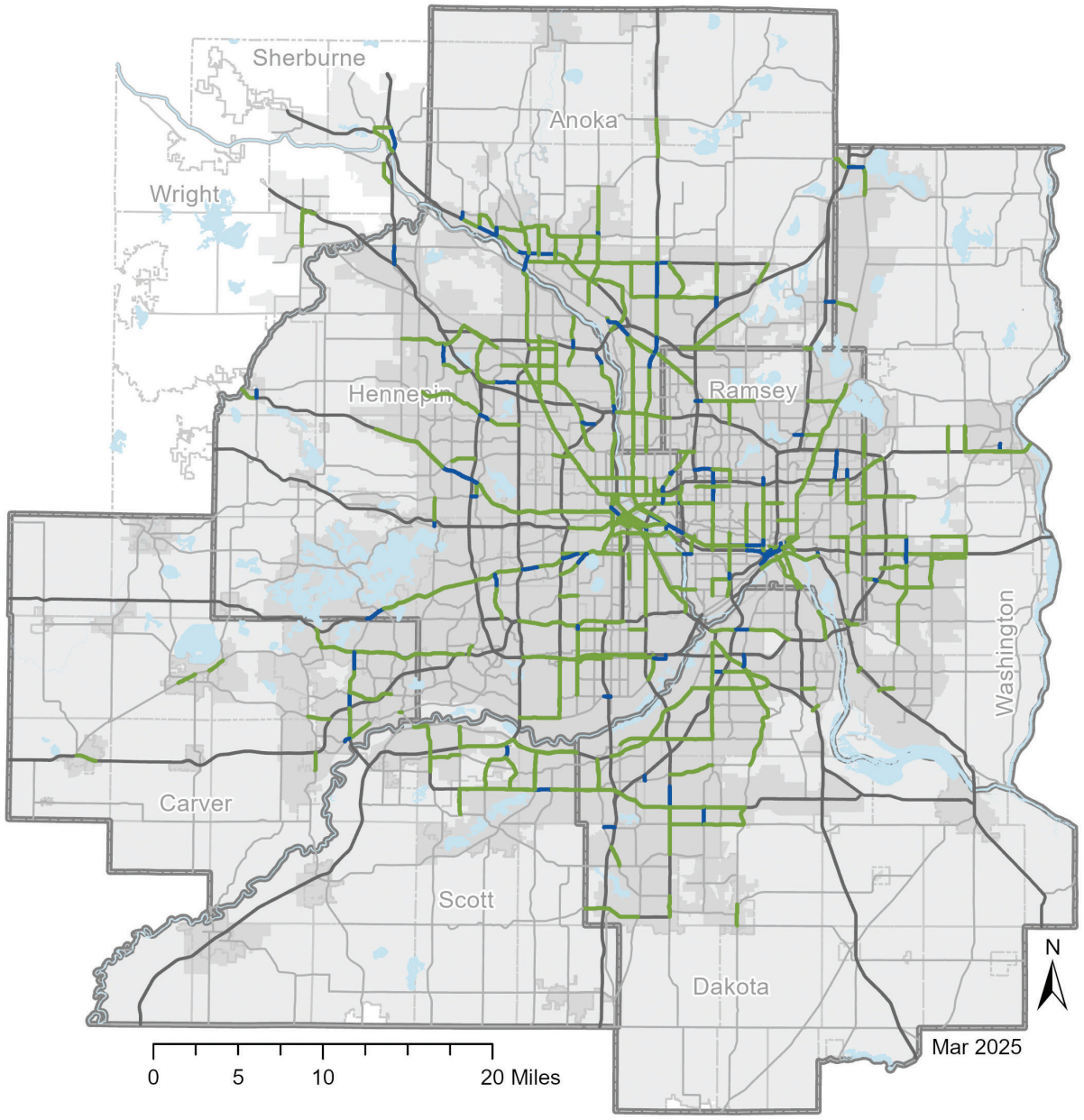
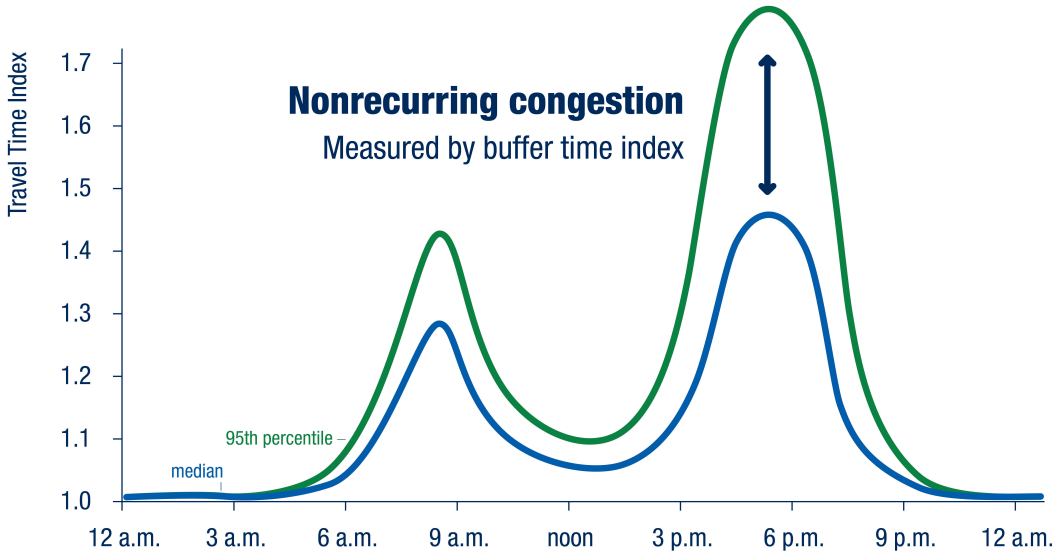


Figure 4.8: Nonrecurring congestion



Funding

Highway funding is a complex topic and is detailed in the Imagine 2050 Transportation Policy Plan Regional Transportation Finance section. Revenue generally includes the gas tax (state and federal), motor vehicles sales tax, vehicle registration fees, and local taxes and fees. Inflation in construction costs have long outstripped increases in funding; however, recent federal legislation and Minnesota's 2023 legislative session did provide significant additional funding for transportation, including highways.

MnDOT receives substantial federal funds to support highways. The 2021 Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), increased these investments. Although the bill ends in 2026, MnDOT anticipates most federal formula program funding for highways will continue and makes this assumption in MnSHIP.

In both near-term and long-term contexts, electric vehicles will reduce state and federal revenue generated by the gas tax, an important source of highway funding. This is a result of less gasoline and diesel being purchased and more energy for vehicles coming from the electric grid. This must be planned for, but it is not a near-term concern while the total number of electric vehicles is limited. The combination of the annual fee electric vehicle owners pay, along with the purchase cost premium leading to additional motor vehicle sales taxes, currently offsets reductions in fuel tax revenue generally.[82]

State highways

The Statewide Multimodal Transportation Plan sets the overall vision and objectives for our state's transportation system. Last updated in 2022, the state transportation plan establishes six transportation system objectives including transportation system stewardship, safety, healthy equitable communities, critical

connections, climate action, and open decision-making. The Minnesota State Highway Investment Plan (MnSHIP) then sets and communicates the capital investment priorities for the state highway system aligned with the state transportation plan objectives and within expected funding over the 20-year period of the plan 2023-2043.

The 20-year investment direction in MnSHIP focuses the expected highway capital investments as follows:

- **System stewardship** strategically builds, maintains, operates, and adapts the transportation system based on data, performance, and community needs. MnSHIP's primary investment emphasis is on maintaining the existing system, and this is where 61% of the state's highway funding will be spent. The largest investments in this category are in pavement and bridge condition. It also includes smaller investments in roadside infrastructure and rest areas. MnDOT strives to achieve multiple objectives through coordinating its stewardship investments with the other investment categories.
- **Transportation safety** will allow MnDOT to continue its comprehensive approach to improving safety on state highways for all users. Because traffic fatalities and serious injuries have spiked in recent years, investment in traffic safety improvements have increased substantially.
- **Healthy and equitable communities** identifies two categories for collaboration with local agencies to help meet local needs: local partnerships and main streets/urban pavements. These categories aim to reduce disparities, enhance livability, and emphasize partnership with local communities. The local partnerships investments support local priorities on the state highway system. Investment in main streets/urban pavements provides a new funding category for projects in cities and townships to deliver more improvements along state highways. This includes segments of the state highway system that are not freeways and function both as a state highway and as a city street in an urban context. The main streets/urban pavements funding covers additional pavement costs related to adding a project in an urban area or changing the scope of a planned pavement resurfacing project to allow more substantial work in conjunction with the project.
- **Critical connections** identifies mobility investments for many types of highway users, including those driving motor vehicles, freight carriers, bicyclists, and pedestrians, recognizing the importance of choices and connections. MnDOT's critical connections investment strategies seek to increase options, improve travel time reliability, and reduce excessive delay, while reducing the average amount of driving Minnesotans need to access the goods, services, and opportunities important to their quality of life. Investment categories in the critical connections objective area received substantial increases in investment from the previous plan to allow MnDOT to improve mobility for state highway users, particularly people walking, biking, and rolling. Funding for bicycling and pedestrian improvements doubled in size compared to the last plan.
- **Climate action** includes capital investments in climate resilience. These are categorized as flood mitigation projects, proactive resilient infrastructures, snow fence projects, and planting and implementing green assets. Reducing transportation's contribution to climate change shows up in other MnDOT programs outside of MnSHIP. Climate mitigation and resiliency are described in the Imagine 2050 Transportation Overview chapter.

- **Other** investment priorities include project delivery and small programs. Project delivery includes components of projects that are critical to ensure the timely and efficient completion of highway projects. These components include right-of-way costs, consultant services, supplemental agreements, and construction incentives. These costs are higher in the Twin Cities metro area. Historically, MnDOT has spent an average of 20% of total capital revenues on project delivery. Small programs projects fund short-term, unforeseen issues and one-time priorities or needs as they arise. Small programs in MnSHIP include funds for historic properties, flood and slope slide repair, and cleaning up contaminated materials.

Over the next 20 years, MnDOT estimates there will be $36.7 billion in available revenues statewide to address $52 billion to $57 billion in identified state highway needs, resulting in an estimated funding gap of between $15 billion and $20 billion. While the recent increases in state revenues were substantial, they only covered about 20% of the unmet highway improvement needs identified in MnSHIP.

Greater Minnesota has most of the state's highway miles, and preserving pavement condition and bridges throughout the state needs to be a high investment priority. However, the metro area has most of the state's population, jobs, economic activity, congestion, truck freight movements, mode choice needs, highway technologies (traffic signals, ramp meters, overhead signs), and urban stormwater needs. The metro area is forecasted to receive the vast majority of the state's population and job growth through 2050.

MnDOT shares its available capital and operating funding with its eight districts through a distribution formula that considers these factors. Over the past decade, due to a shift of funding more heavily towards system preservation, the metro district's share of statewide capital funding has been decreasing. The metro district share has varied from a high of about 42% of available statewide revenues to more recent lower shares of statewide funding in the 35% range. The metro district typically receives about 26% of the revenues for state highway operations and maintenance purposes.

Each district is somewhat unique in its transportation needs, which do not necessarily consistently align with the average statewide highway investment direction provided by MnSHIP. In particular, the metro district has greater needs related to addressing excessive delay and mobility for multiple modes, noise walls, and stormwater management. The metro district also has the majority of the state's underserved and overburdened populations and must both engage these populations and include community and livability concerns within project planning and design.

During 2023, MnDOT reviewed its district distribution formula and agreed that the metro district should receive a higher share. The new distribution formula targets no less than 43.5% of the state's capital transportation investment revenues to the metro district starting in 2028. Table 4.4 summarizes the expected MnDOT statewide revenue, planned allocations across highway investment categories, and planned spending in the metro district during 2029-2034 in its draft Capital Highway Investment Program. This is a general indication of how needs are different in the metro district but note that highway mobility funding is concentrated in the earlier years of MnSHIP and therefore exaggerated in the capital investment program years presented here. As indicated in the Imagine 2050 Transportation Policy Plan Regional Transportation

Finance section, the metro district can expect almost $33 billion over the time period of this plan, about $25 billion of which will be available for construction and project implementation purposes and more than $8 billion for operations and maintenance purposes.

Table 4.4: MnDOT state highway investment summary (year of expenditure dollars). [83]

MnSHIP objective	MnSHIP investment categories	Statewide allocation (in billions)	%	Metro 2029-2034 draft capital plan (in millions)	%
System stewardship	Pavement condition	$20.6	36.7%	$1,254.6	33.3%
System stewardship	Bridge condition	$9.2	16.3%	$538.0	14.3%
System stewardship	Roadside infrastructure	$4.4	7.9%	$275.0	7.3%
System stewardship	Program delivery	$11.3	20.1%	$800.6	21.3%
Transportation safety	Advancing technology	$0.2	0.3%	$0.0	0.0%
Transportation safety	Transportation safety	$2.0	3.5%	$175.8	4.7%
Healthy equitable communities	Local partnerships	$1.5	2.7%	$37.3	1.0%
Healthy equitable communities	Main streets/ urban pavements	$1.4	2.4%	$102.5	2.7%
Critical connections	Freight	$1.1	1.9%	$0.0	0.0%
Critical connections	Highway mobility	$1.8	3.3%	$449.0	11.9%
Critical connections	Bike and pedestrian	$1.8	3.3%	$120.6	3.2%
Climate action	Climate resilience	$0.9	1.6%	$13.8	0.4%
Total		**$56.2 billion**	**100.0%**	**$3.767 billion**	**100.0%**

Regional allocated revenues

Federal transportation funds can be used on a variety of roadway types, which includes the highest functional class of roadways (principal arterials), down to the minor collector functional classification level in urban areas and major collector level in rural areas. The Transportation Advisory Board (TAB) has chosen to focus the federal funds that come to the metropolitan planning organization through the Regional Solicitation on specific roadway types, with only minor arterials and nonfreeway principal arterial classifications being eligible for roadway funding through the Regional Solicitation. These funds are invested in projects that help the region

achieve its transportation goals and objectives as identified in this plan.

In the past decade, approximately 56% of the Regional Solicitation funds available to the metropolitan planning organization were awarded to roadway projects. On an annual basis this equates to approximately $70 million and potentially $1.7 billion over the period of this plan. Roadway project applicants are typically counties and cities, with very limited applications from MnDOT metro district. This is partially due to MnDOT's freeway principal arterials being ineligible for solicitation funds and also to longstanding tradition that because MnDOT has a range of funding sources available, Regional Solicitation funds are dedicated primarily to local government roadway priorities.

In recent years, as MnDOT's funding has become limited – with fewer funds spent on the nonfreeway principal arterials and MnDOT-owned minor arterials – counties have been increasingly applying for solicitation funds for projects on MnDOT's state highway system that are priorities for the local entity. The Regional Solicitation funding is often the first funds in on larger, regional projects, so this early, partial funding is critical for local partners to secure other competitive funding sources and deliver larger projects with multiple funding sources. Current Regional Solicitation roadways application categories include traffic management technologies, spot mobility and safety, strategic capacity, roadway reconstruction and/or modernization, and bridge replacement and/or rehabilitation. The locally led trunk highway applications are typically for projects in the strategic capacity and roadway reconstruction and/or modernization categories.

Local investments

This plan acknowledges that a large percentage of MnDOT metro district's funds go toward preservation and project delivery (76%), and that cities and counties have made, and expect to continue to make, significant mobility investments in the state-owned highways. The region supports local units of government investing in state-owned highways. Furthermore, many of the strategic capacity (primarily new interchanges) and roadway reconstruction and/or modernization projects (either urban reconstruction projects or interchange modernization projects) selected in recent Regional Solicitations were for projects led by counties or cities but located on MnDOT's system within the local jurisdiction.

A portion of the new Regional Transportation Sales Tax and Transportation Advancement Account revenues allocated to metro region counties (41.5%), along with the existing county transportation sales tax and wheelage tax, are anticipated to be used on county-owned minor arterials. With limited funds and a focus on the National Highway System (in other words, principal arterial highways), MnDOT minor arterials do not receive the necessary investment of such an important part of the regional highway system. MnDOT programs for local partnerships and main streets/urban pavement support cooperation with local agencies where priorities overlap.

It should be noted that cities saw only small increases in the amount of funding available to them, but more of their revenue will be needed to cover cost participation on anticipated county or state highway projects in their cities.

Counties and cities also own and operate a small part of the principal arterial system and most of the minor arterial system. Most of these projects, particularly on the minor arterial system, are identified in city and county comprehensive and transportation plans. These projects are informed by regional goals and regional prioritization studies.

Competitive opportunities

More and more federal and state funds are provided to agencies through various competitive solicitation processes that require applications, scoring, and a commitment of nonfederal matching funds. Each competitive solicitation has a different approach and set of evaluation criteria. The selection of these projects is unknown through the time frame of this plan, but announced awards are reflected in this plan.

The Infrastructure Investment and Jobs Act includes an unprecedented amount of competitive grant funding (more than $100 billion) to states that strive to improve outcomes in areas of safety, asset preservation, carbon reduction, climate resiliency, restorative justice, technology, and more. Minnesota is well positioned to add new programs, plans, and funding for carbon reduction, climate resiliency, restorative justice, broadband, and electric vehicle infrastructure into the transportation system. It is likely that MnDOT and local agencies will receive grants from these federal discretionary programs for state highway and local road projects, as well as funding from community project funding requests.

The Corridors of Commerce program was created in 2013 when the Minnesota Legislature passed Minnesota Statute 161.088. The goal of the Corridors of Commerce program was to focus additional transportation investments in state highway projects that directly and indirectly foster economic growth for the state through construction jobs, efficient goods transport, and additional mobility options to its residents. The program is not part of MnDOT's regular state road construction program and has specific requirements regarding eligibility, scoring, and prioritization of the projects that are contained within the statute.

Established in 2010, the Transportation Economic Development Program provides competitive grants to construction projects on state highways that provide measurable economic benefits. The Minnesota Department of Transportation, in partnership with the Minnesota Department of Employment and Economic Development, administers the program. The Minnesota Department of Employment and Economic Development administers a parallel Transportation Economic Development Infrastructure program that funds projects on local roads and for other types of transportation. Projects may combine funding from both programs.

The Minnesota Highway Freight Program is responsible for allocating approximately $20 million per year that the State of Minnesota receives from federal funding sources through the National Highway Freight Program, of which approximately 60% or $12 million per year comes to the metro area. Up to $300 million is available to the metro region in competitive freight funding through 2050. The Minnesota Highway Freight Program includes selection criteria such as crash-rate reduction, equity, heavy commercial annual average daily traffic, cost-effectiveness, and truck travel time reliability. Freight projects were selected out of one of three primary application categories: freight safety, freight congestion/freight efficiency improvement, and first-last mile connections. Being located on one of the regionally defined truck highway corridors was a qualifying requirement for projects within the metro area to pursue the funds. More discussion about this Met Council-led study that produced these truck highway corridors is in the Freight Investment Plan.

Highway Investment Plan

Principles

This highway investment plan works toward the five goals in Imagine 2050 (equitable and inclusive, health and safety, dynamic and resilient, addressing climate change, and protect and restore natural systems), and the objectives, policies, and actions in this plan.

Federal law requires that this long-range transportation plan be fiscally constrained, where estimated revenues and proposed investments are balanced. This plan is fiscally constrained and, while new revenues have recently become available, there are insufficient funds to meet all needs. Prioritizing investments is necessary. MnDOT, in cooperation with the Met Council, identified and estimated the revenues and costs for the state highway operations and maintenance and capital investments in this plan.

The following highway investment principles address the forecasted increased highway travel demand with past and future population and job growth, reduced transportation purchasing power resulting from inflation, and increased preservation needs. This plan continues its support of highway mobility projects that follow the investment principles laid out below. The investment principles include the following:

To be good stewards of public investments, the region must invest in highways strategically, focusing on affordable, effective, multimodal, and flexible solutions. Implementing these solutions requires strong collaboration among the region's transportation partners.

- Safety is the first principle and a part of all investment categories with an emphasis on reducing fatal and serious injury crashes rather than all crashes. Highway safety considers all users including drivers and riders in vehicles, freight, and transit, as well as those walking, biking, and rolling.
- Highways serve multiple modes along and across the facilities. Driving, transit, freight, biking, walking, and rolling needs must always be considered, including actions that build out current network gaps.
- Funding should focus on addressing today's congestion issues, as opposed to forecasted congestion issues, given the limited funding and the backlog of existing, unresolved transportation needs. Future highway demand must be anticipated, but projects should be prioritized to address existing problems before problems that are forecasted to occur.

- The largest percentage of the highway investments in the region are to maintain and preserve the existing system. These preservation projects are used as the catalyst to achieve multiple plan objectives. This minimizes cost and reduces inconvenience to the traveling public by coordinating separate objectives into one construction project.
- Given the projected population and job growth of the region, mobility projects must also be planned and constructed to ensure that people and freight can efficiently move throughout the region without excess delay, and be able to anticipate delay when it does occur (in other words, reliability). This work requires coordination of many agencies including highway authorities, transit operators, and regulators. This work should emphasize the Congestion Management Process and follow the mobility hierarchy:

    1. Where mobility needs are identified, agencies should first explore lower-cost solutions such as travel demand management and increased transit service in the corridor.

    2. Traffic management systems (for example, technology that supports coordinated signal timing) should be considered as another low-cost strategy that does not have much potential for negative impacts.

    3. Next, agencies should explore the lowest-cost roadway improvements even if these projects do not completely resolve the existing problem (for example, spot mobility improvements such as turn lanes, alternative intersection designs, auxiliary lanes, frontage roads, or better managing access).

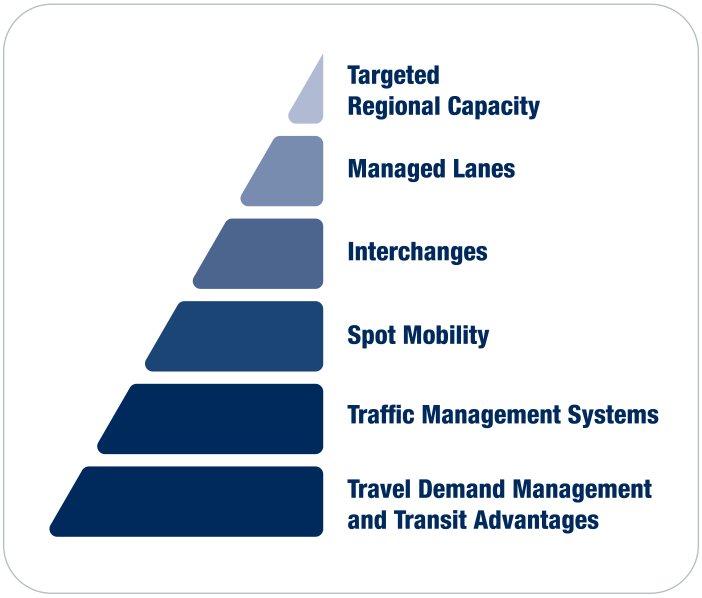
    4. If at-grade spot mobility projects are not viable solutions, then grade-separated interchanges should be explored to help deliver the safety and mobility benefits that accompany this project type.

    5. If none of these options are sufficient for the level of the problem, then managed lanes on the corridor or increasing capacity on the adjacent local system should be evaluated.

    6. If these cannot sufficiently address the problem, then other types of targeted regional capacity additions should be considered (for example, larger general-purpose capacity projects or larger freeway system-to-system interchange projects). Targeted regional capacity enhancements should not eliminate existing or planned transit advantages or managed lanes.

- The existing infrastructure (for example, pavement surface and bridge clearances) and right-of-way should be used to the maximum extent possible when projects are designed and implemented. Significant right-of-way purchases for transportation projects are costly and can negatively affect local businesses and residents and should therefore be minimized.
- The timing of regional projects should be coordinated with local projects (including utility projects and private sector developments when possible) to combine multiple projects where appropriate, and in other cases to avoid having multiple projects along nearby parallel corridors at the same time.

Figure 4.9: Mobility hierarchy



This approach recognizes the diminishing returns to higher levels of investments. Cost savings can then be used to address other needs on the system, thereby stretching the region's transportation funds further and allowing for greater return on investment and a regional balance of investments.

Investments

While the investment direction in this plan applies to all the regional highway system, the Highway Investment Plan most directly reflects investments on the state highway system, those principal and minor arterials owned and operated by the Minnesota Department of Transportation, which is made up of the interstate, U.S., and state trunk highways. It also includes competitively selected Regional Solicitation highway projects, Highway Safety improvement Program projects, and Minnesota Highway Freight Program projects. Regionally significant projects on city and county roads are also listed in this plan and shown on several maps in this plan. These are primarily minor arterial lane expansion projects or those that use federal funds.

The Highway Investments section is divided into four primary highway investment categories:

- Operations and maintenance
- Preservation of existing highway assets
- Safety
- Regional mobility

Regional mobility is described in six categories:

- Travel demand management
- Traffic management systems
- Spot mobility
- Interchanges
- Managed lanes
- Targeted regional capacity

The state highway investments planned for between 2025 and 2050 are described in this section for each of the four investment categories. Safety and regional mobility projects are mapped here and include local projects that use federal funds or meet the threshold for being regionally significant. These and other major state and local highway projects are listed in Appendices B and C.

The Long-range Highway and Transit Capital Project lists cover known regionally significant projects from 2025-2050. MnDOT's planning for preservation is documented in its 10-year Capital Highway Investment Plan and, in addition to projects in the region's Transportation Improvement Program, identifies projects from 2028-2033. The specific characteristics of projects identified in these later years are less certain and will be refined as project

development progresses. This also includes announced projects from competitive opportunities (described previously) that are not yet included in the region's Transportation Improvement Program.

The region is committed to providing facilities for all people to safely walk, bike, and roll. Bicycle and accessible pedestrian highway investments will often be made in conjunction with pavement and bridge projects, or as part of larger mobility projects, but specific projects are not identified here.

The following pages detail the investments in the four primary highway investment categories. After operations and maintenance, the three capital areas include project delivery funding, which accounts for approximately 20% of total capital costs. Project delivery activities include planning, technical, and project management staff; right-of-way (land) acquisition; consultant services to supplement agency staff and provide special expertise; supplemental agreements to address unanticipated construction-related issues; and construction incentives to encourage early completion. These are all included within MnDOT's capital investment categories.

Specific capital investments are mapped in safety and regional mobility. These investments are described as funded when specific funding has been identified and planned, and where the investments will fit within the anticipated revenues over the life of this plan, however specific funds have not yet been identified. In a few cases groups of projects beyond this fiscally constrained plan have been identified and are described as part of this plan's vision.



Operations and maintenance

Highway operations and maintenance is a high investment priority for the principal and minor arterial system. Primary operation and maintenance activities include:

- **Freeway and arterial traffic management**
- **Freeway incident response**
- **Pavement patching and restriping**
- **Traffic signal, sign, management system, and lighting maintenance**
- **Guardrail and cable median barrier repair**
- **Snow and debris removal and roadway salting**
- **Drainage system maintenance (culverts, inlets, and underground pipes)**
- **Bridge inspection and maintenance**
- **Maintenance vehicle fleet management**

Operations and maintenance costs have increased as traffic management systems have become more sophisticated, the highway infrastructure has aged, and the system has become more complex (for example,

new intersection and interchange designs, as well as new safety treatments such as cable median barriers). MnDOT metro district anticipates spending approximately $8.2 billion on state highway operations and maintenance during this planning timeframe.

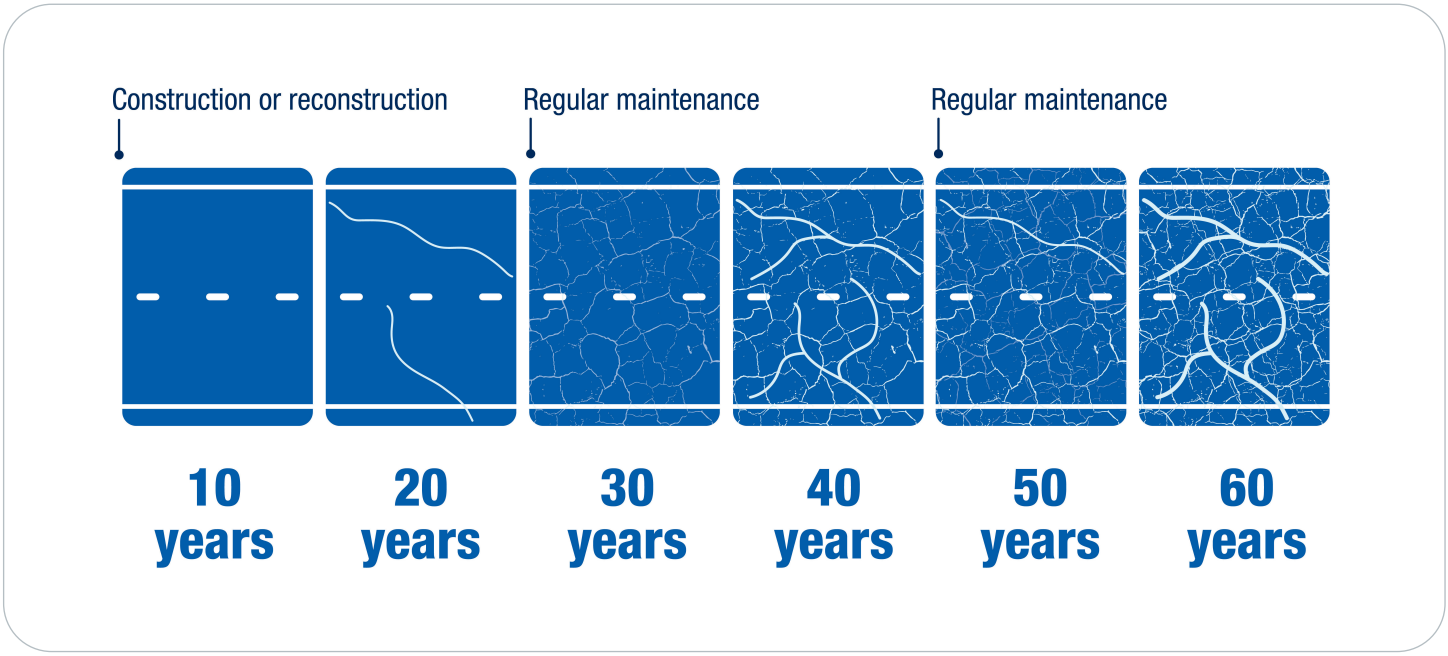
Preservation of existing highway assets

A high capital investment priority is to rebuild or replace the existing principal and minor arterial system. Like operations and maintenance, these investments are essential for highway safety, access, and mobility for the traveling public and freight. These kinds of activities are often called preservation, resurfacing, asset management, or modernization investments. Primary highway asset management activities include:

- **Pavement rehabilitation and replacement**
- **Bridge rehabilitation and replacement**
- **Roadside infrastructure rehabilitation and replacement**

Rebuilding and replacement projects are also needed to preserve components beyond pavement and bridges, known as roadside infrastructure, and include drainage systems, signs, lighting, and traffic signals. Highway preservation efforts also create opportunities to include safety, multimodal, and congestion mitigation improvements in a cost-effective manner. MnDOT metro district is anticipated to invest up to $15 billion towards rebuilding and replacing pavement, bridge, and roadside infrastructure between 2025 and 2050. This is approximately 76% of the capital highway funding anticipated to be available during the time frame of this plan.

Figure 4.10: Example of roadway lifespan



Through 2033, pavement conditions on interstate, national highway, and non-national highway systems will decline but through 2042 conditions on the highways are anticipated to see more mixed results. Bridge deck area in poor condition is also expected to improve in overall condition toward 2033 with more mixed results through 2042. Some decline is inevitable because conditions are currently very good, particularly for pavements. The system also continues to age, and construction costs continue to grow faster than MnDOT's revenue. Some of these outcomes are improved from past plans due to recent additional funding.

Preservation projects include many needed ADA improvements, and those costs are included within preservation of existing highway assets.

Table 4.5: MnDOT pavements and bridges in poor condition 2022 actual and projected toward 2042 [84]

Measure	2022	2027	2033	2042	MnDOT targets
% of pavements in poor condition - interstate	1.5	4.1	5.0	2	<2%
% of pavements in poor condition – national highway system	0.3	0.9	4.8	6	<4%
% of pavements in poor condition – non-national highway system	5.8	9.9	13.2	10	<8%
% of bridge deck area in poor condition – national highway system	5.2	3.9	6.5	5.0	<5%
% of bridge deck area in poor condition – non-national highway system	4.1	7.3	13.8	10	<8%

Safety

Highway safety is a high priority for all improvements made to the highway system. All highway projects should identify and integrate cost-effective safety improvements. Minnesota has adopted highway safety plans and implemented collaborative interagency strategies for public education, enforcement, improved emergency medical and trauma services, and engineering solutions to reduce statewide traffic fatalities. Significant safety work remains, including building a culture of traffic safety and implementing a Safe System Approach, and because limited dedicated funding is available, all funding and projects should be identifying ways to implement strategies to reduce fatalities and serious injuries. In the metropolitan area, specific highway safety investments will include proactive and reactive strategies. Examples of highway safety investments include:

- **Constructing roundabouts**
- **Reconfiguring roadways when possible, such as converting existing four-lane undivided roadways to three-lane roadways with two through lanes and a center two-way left-turn lane**

- **Installing cable median barriers**
- **Incorporating speed control, including setting appropriate speed limits, especially on roads where pedestrians and bicyclists are expected**
- **Managing access on nonfreeways**
- **Constructing reduced conflict intersections (restricting to and from minor streets)**
- **Providing separated bicycle facilities and treatments for pedestrians beyond just sidewalks that address crossing risks, such as crosswalk visibility enhancements and medians, and pedestrian refuge islands in urban and suburban areas**
- **Installing edge-line rumble strips**

The Federal Highway Administration has identified a collection of countermeasures and strategies that are proven safety countermeasures that should be implemented as broadly as possible throughout the region to assist with reducing fatalities and serious injuries on the system.[85]

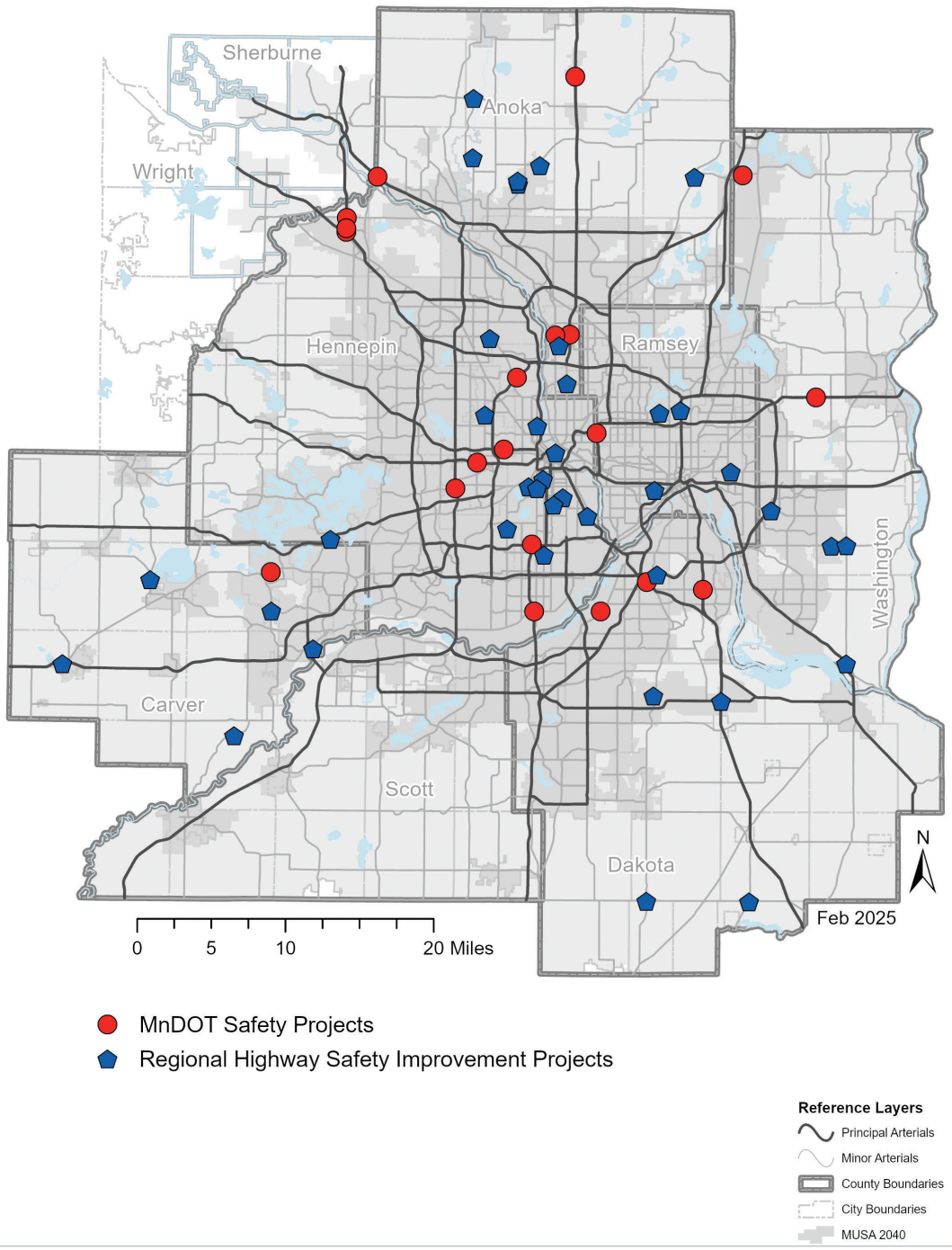
The Met Council has adopted, in accordance with federal regulation and consistent with the safety goal of this plan, safety performance measures and specific short-term targets for the metro area. These measures and the most recently adopted targets are included in the Imagine 2050 TPP Evaluation and Performance section.

MnDOT metro district is anticipated to invest approximately $900 million in specific highway safety investments between 2025 and 2050. These funds will be supplemented by other safety investments funded through competitive programs like the federal Highway Safety Improvement Program and through safety improvements that are included in many pavement and bridge preservation and mobility improvement projects.

The Highway Safety Improvement program is a core federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including nonstate-owned roads and roads on Tribal land. The safety improvement program requires a data-driven, strategic approach to improving highway safety with a focus on performance. Most of the projects are roadway improvements, while others target other modes such as the installation of pedestrian countdown timers.

The location of the projects selected for competitive Highway Safety Investment Program funding from 2025-2027 are shown in Figure 4.11. Some of these mapped, federally funded safety program projects are located on MnDOT's system, while others are on the local system. It should be noted that there are likely many more locally funded safety projects that are being planned and programmed in the region. Given the importance of safety to the region, the Regional Solicitation criteria for selecting projects includes a measure of crashes reduced by the project, as well as one specific to pedestrian safety. Collectively, safety was given the highest weight of all measures in the categories of spot mobility and safety, strategic capacity, roadway reconstruction/modernization, and traffic management technologies application for the 2024 Regional Solicitation. Figure 4.11 also shows MnDOT's planned standalone safety projects.

Figure 4.11: Funded safety projects



Regional mobility

This region can improve our access to destinations through shorter travel times by any travel mode, and by development patterns that generally result in those destinations being closer to people. Travel time and land use patterns are captured in the concept of accessibility, the number of places a traveler can reach within a given period of time, using a given mode of transportation. Excessive travel delay and unreliable travel times on highways can have significant costs on people and business. Therefore, this plan continues its support of highway mobility projects for their quality of life and regional economic importance benefits, as well as their ability to provide critical safety improvements at the same time. As the region makes highway mobility investments following the investment principles, it also needs to understand the tradeoffs created with induced demand.

Induced demand

The concept of highway mobility improvements encouraging more travel is often referred to as induced demand. Induced demand needs to be considered differently based on the size of the investment, location in the region, and a range of other factors. Induced demand can have both positive and negative consequences. While vehicle miles traveled per person has been stagnant since 2010, there is not an unending desire for people to travel more and more miles. In addition, most mobility projects in the Twin Cities are smaller in scale than those constructed in other states or comparable metropolitan areas. Finally, the largest recent mobility projects in our region have been managed-lane projects (for example, I-35W northbound MnPASS and I-35W downtown to the crosstown) where one managed lane is added in each direction and where there is still congestion in the rest of the general purpose lanes after construction (as opposed to adding two or three or more lanes in each direction to try to eliminate congestion). The combination of these factors likely dampens any impact of induced demand compared to past decades. However, induced demand still should be considered for its potential negative consequences, especially for large, general-purpose lane expansion projects on the freeway system.

Induced demand has several different components. Improved highway travel times can draw new trips to that corridor, especially in peak periods. Trips that come from different routes and times do not represent additional vehicle miles traveled and can be beneficial if those other routes better serve people walking, biking, rolling, and using transit. While limited in occurrence (especially given the reduced demand for express transit service to the two downtowns with increased telework post-COVID-19), trips that shift to driving from more sustainable travel modes represent benefits to individuals, as demonstrated by their new personal choices. However, they may result in other negative consequences in terms of climate and the public health impacts of pollution.

New and longer trips that are chosen after highway improvements also represent these personal benefits (for example, ability for someone to get to better health care, reach a new employment location, go to different store with a better selection, or a business able to reach a wider market area) and some disadvantages. Significant investments to reduce highway travel times can also make places at a greater distance more accessible and encourage lower development densities further from other destinations, causing added vehicle miles traveled.

The conclusion that added vehicle miles traveled will increase pollution must be tempered with how improvements in vehicle fuel efficiency and growing electrification are reducing criteria air pollutants and greenhouse gas emissions at a much faster rate than highways are being improved or that travel is growing.

While this plan works to reduce greenhouse gases by shifting the relative advantage of travel options toward the most sustainable and affordable modes, a growing region requires targeted investments in highway mobility. This plan includes the addition of approximately 27 lane miles (all part of managed-lane projects) and 14 intersection-to-interchange conversions on the principal arterial highways (a system of 700 center line miles). Overall, the addition of approximately 0.4% to the lane miles of the region's modeled network (all principal and minor arterials, most collector roads and the most significant local streets) does not keep up with the anticipated 20% population growth during this plan. Additional projects are expected to be planned during this time frame and amended into this plan but are not expected to keep pace with population growth.

The regional mobility investment approach includes six sub-areas in the form of an ordered hierarchy that starts with the least costly and impactful project types and when necessary, moves to consideration of more expensive and impactful project types.

As outlined in the Highway Investment Plan Principles, these categories of investment are included in the sections below.

Travel demand management and transit advantages

The region's first consideration when addressing mobility issues is travel demand management. Travel demand management strategies include a wide variety of approaches to reducing single-occupant vehicle travel and shifting trips outside of peak periods, such as implementing carpools and vanpools, staggered work hours, telework, compressed work weeks; and transit, bicycle and pedestrian investments, and land use changes.

Transit, bicycle, and pedestrian investments – including new transitways, expanded and enhanced transit service, park-and-rides, and enhanced bicycle facilities – are not always included in specific definitions of travel demand management, but for the purpose of this hierarchy of mobility investments, they are included with travel demand management. Other sections of the Imagine 2050 Transportation Policy Plan specifically address travel demand management, transit, walking, biking, and rolling.

Transit advantages are facilities or equipment that allow transit to travel faster than general traffic or bypass it in some cases. These advantages include but are not limited to transit-only street segments, bus-only shoulders and lanes, high-occupancy vehicle lanes and managed lanes, ramp-meter bypasses, traffic signal queue jumps, transit signal priority, and curb extensions at transit stops.

These features help transit be a more competitive and attractive option than driving alone, especially on roads with congestion or many traffic lights. Speed and reliability are consistently cited as top priorities for transit riders in the region. In addition to providing benefits to riders, transit advantages also make transit service more efficient to operate. In some cases, improvements to travel time on a route can reduce the number of

buses and drivers needed to operate it, meaning the same service can be provided with fewer resources. These savings can then be allocated to other routes or used to increase frequency on the improved route. Transit advantages can also help manage vehicle demand on roadways by making transit flow smoother and attracting additional riders, which also improves its people-moving efficiency.

Traffic management systems

The region's next consideration to address mobility issues is an evaluation of potential traffic management systems. Examples of traffic management systems include traffic signals and coordination (including advanced walk signal, countdown timers, and queue warning), traveler information systems, incident response programs, dynamic signing and re-routing, and ramp meters with high-occupancy-vehicle bypass lanes. On freeways, traffic management systems may be done in conjunction with other corridor-wide improvements such as the construction of a new or extended managed lane. In some cases, however, more limited traffic management system strategies can be implemented in an effective manner, on a case-by-case basis, to improve freeway and nonfreeway highways. Past investments in this area have increased the capacity, reliability, and safety of the existing highway system. Before pursuing larger cost capital projects, an agency should be assured that traffic management systems have been implemented to the most cost-effective extent possible.

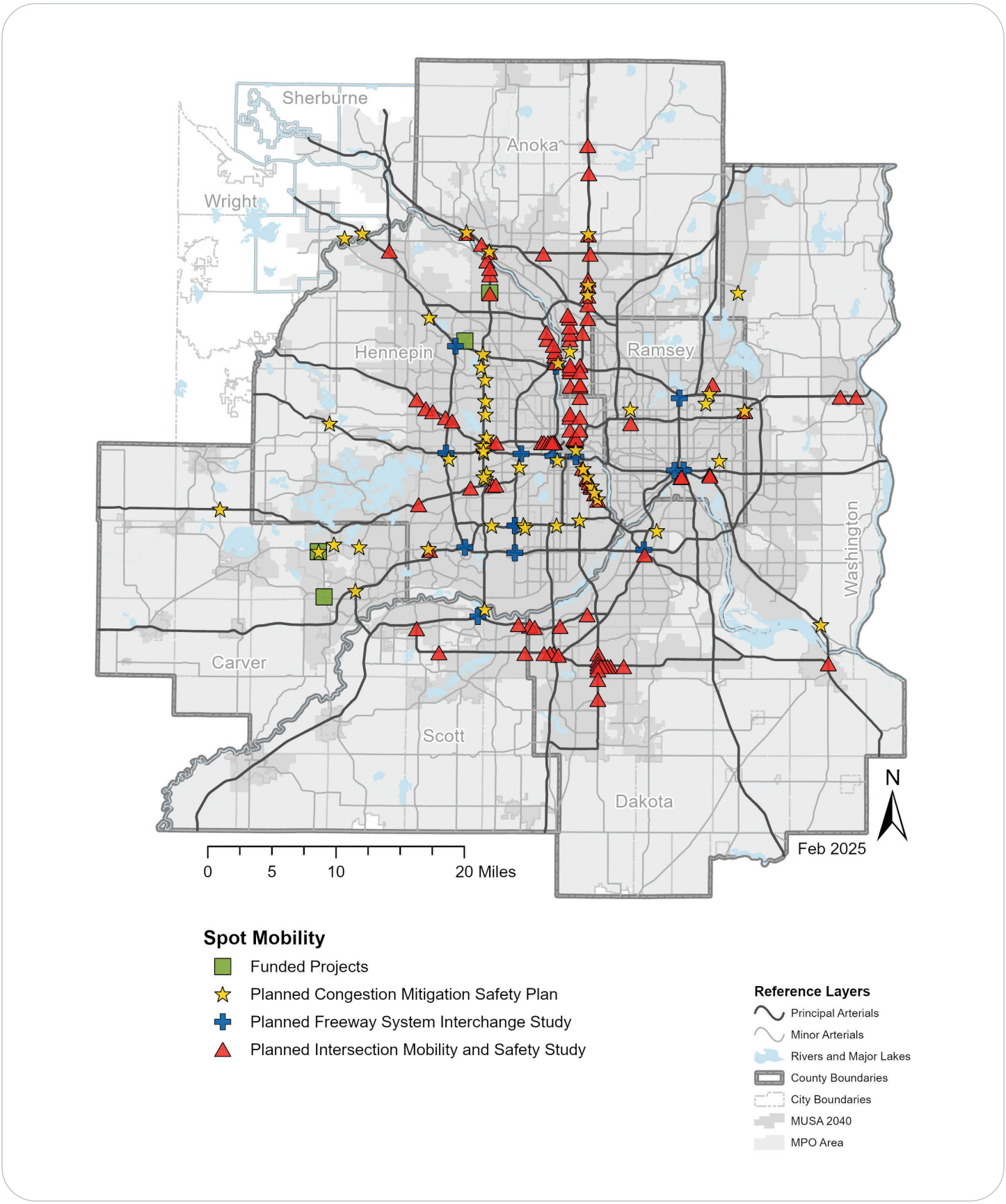
Spot mobility

The third category to be considered for mobility investment is to implement lower-cost spot mobility improvements at targeted locations designed to maximize the return on investment. These improvements are smaller in scope than traditional highway investments with the intent to allow quicker and simpler delivery and recognize the diminishing returns of many larger projects. The region's goals and highway investment principles are put into practice through the technical criteria used in regional studies. The region will continue to identify these spot mobility projects through a variety of investment studies. The study results are used to help make informed investment decisions. Three such investment prioritization studies have influenced the projects included in this plan within spot mobility and each is described here.

MnDOT metro district, whose borders generally align with the Twin Cities metro area covered by this plan, last completed a Congestion Mitigation Safety Plan study in 2018. This was the fourth iteration of the congestion plan that our region has used to evaluate safety and mobility deficiencies on MnDOT's highways, including freeways and arterials. This study focused on developing smaller, more targeted solutions that might be implemented on a wider basis than large, traditional, expansion projects. These improvements are either spot improvements, such as at an intersection, or short auxiliary lanes. Study results are used to select projects for MnDOT's approximately $15 million per year spot mobility set-aside, which continues through 2050. The Regional Solicitation also includes an application category called spot mobility and safety to fund these types of projects, primarily on the county-owned systems.

The spot mobility projects presented in Figure 4.12 are shown as opportunity areas. The funded projects are those programmed by MnDOT for near-term construction and those funded by the Regional Solicitation. The planned Congestion Mitigation Safety Plan opportunity areas were evaluated in the most recent Congestion Management Safety Plan and determined to result in a return on investment of less than 10 years. These

Figure 4.12: Regional mobility investments: spot mobility



planned opportunity areas appear promising upon initial evaluation but require additional project development work with local partners and more detailed evaluation. A project to update this work will begin in 2025 or 2026 and results will be considered in future updates to this plan.

The Freeway System Interchange Study was a joint study of MnDOT and the Met Council, completed in 2020, and was a thorough mobility and safety review of system interchanges (where at least two freeways meet) in the Twin Cities metro area. It used measures of congestion, reliability, crashes, freight, and transit to screen locations. At most locations with the greatest need, a range of potential solutions were developed. This study documented, at a planning level, the anticipated costs and return periods of improvements, and overlapping preservation plans to inform future investment decisions. The freeway interchange study reported several possible lower-cost, quick-return-on-investment projects that are opportunities included in spot mobility. These projects do not include grade-separated solutions, are narrowly targeted, cost less than $10 million, and have return-on-investment periods of less than four years. These projects are mapped in Figure 4.13.

The Intersection Mobility and Safety Study was completed in 2024. The Met Council and MnDOT jointly led the study and worked with local agencies to analyze and prioritize at-grade intersections on the principal arterial system within the Twin Cities metro area. This study serves as an update of the 2017 Principal Arterial Intersection Conversion Study. The study results included a before-and-after analysis of recently completed interchange and intersection projects that showed they were highly effective in improving mobility and safety, as well as provided co-benefits in building out roadway facilities that support mode choice and meeting ADA compliance. It identified approximately 80 intersections as high regional need locations based on the analysis. Four of these locations are planned for grade-separated solutions and shown within this regional mobility section under interchanges; the rest are shown here as opportunities for spot mobility improvements.

Interchanges

When at-grade solutions are evaluated to be insufficiently effective, then grade separation should be explored at an intersection. This project type is more expensive than an at-grade option and care must be taken in evaluations that interchange benefits justify this higher cost.

An evaluation of completed interchange projects in the metro area indicates that many positive co-benefits have been documented including reduced delay, increased safety, better travel time reliability, improved stormwater management, as well as addressing gaps in the bicycle and pedestrian networks and improved ADA-accessibility in the project areas. Given the larger scale of the projects, deliberate effort should be made to minimize any potential negative impacts. In many cases, locations desired for interchanges have critical safety issues and this can be the primary rationale for the project. The interchange solution dramatically reduces the crash risk for serious injury and fatal crashes by limiting right-angle crashes through grade-separating the directions of travel.

The 2024 Intersection Mobility and Safety Study (described above) resulted in four high priority areas for grade separation that are listed in the plan. Out of more than 500 intersections studied in this effort, only these locations demonstrated a high regional priority through the study results, a high local priority as identified by local partners, and completion of a corridor study or other planning effort that pointed to a grade-separated solution. These are included in Figure 4.12.

In addition to the potential benefits of converting existing at-grade intersections to grade-separated interchanges, many existing interchanges are aging and can benefit from improvements for safety, vehicle mobility, pedestrians, and bicyclists. This topic will be subject of a future prioritization effort that is detailed in the Imagine 2050 TPP Work Program.

Two of the funded interchanges shown in Figure 4.13 exist today but include only partial access. Projects at I-35E at Ramsey/Anoka County Road J and MN Highway 610 at East River Road will construct the missing access ramps at these existing interchange locations.

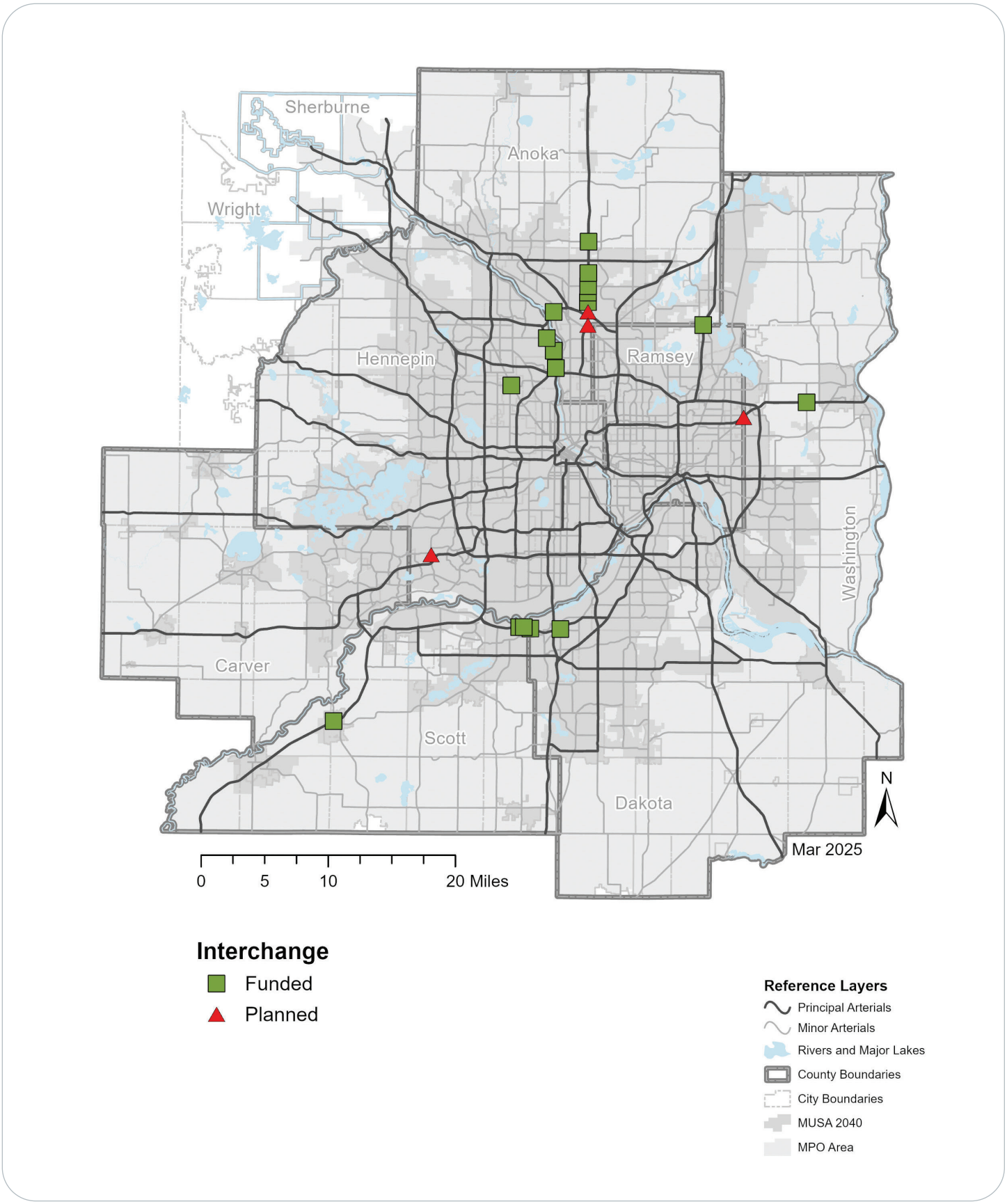
Interchange projects are often led by local cities and counties in partnership with MnDOT and require multiple funding sources. Some of these sources include the Regional Solicitation, Corridors of Commerce, and other competitive state and federal grants.

Managed lanes

If previous categories of investment within this mobility hierarchy will not adequately solve the mobility problem, then the fifth priority of investment is managed lanes. Priced managed lanes manage demand to provide a less-congested, more reliable travel option during peak travel periods for transit riders, carpools, and those willing and able to pay.

During 2019 and through the first half of 2020, Scott County led the construction of an interchange at U.S. Highway 169 and Minnesota Highway 41 to replace an at-grade intersection west of Shakopee. This project serves an important north-south connection for the region and a Minnesota River Crossing to the west. North and southbound reliability deficiencies as measured with the buffer time index were eliminated and east-west deficiencies were reduced by 33% and 27%, respectively. In the 10 years before the project, one fatal and one serious injury crash occurred, rates of 1.28 per 100 million entering vehicles for each. In almost three years since the project, no fatal or serious injury crashes have occurred here.

Figure 4.13: Regional mobility investments: interchanges



Managed lanes can improve highway efficiency and effectiveness by prioritizing the number of people moving through the corridor over the number of vehicles moving through and providing long-term travel time reliability that is not possible with general purpose lanes. A system of managed lanes can improve highway efficiency by moving more people through congested highway corridors during peak time periods.

In this plan and in most large project environmental processes, a variety of managed lanes are considered. The region has built several priced managed lanes that are high-occupancy toll lanes. These are part of the national E-ZPass network that currently provides toll facility interoperability throughout the eastern half of the United States and soon throughout the entire country. During peak periods, E-ZPass lanes in the Twin Cities are free to transit and high-occupancy vehicles but charge a price that varies with usage to single-occupant vehicles, including trucks weighing less than 26,000 pounds. The variable price allows these lanes to be managed toward a less congested and more reliable travel option. Any vehicle can use the E-ZPass lanes during nonpeak time periods. Figure 10 shows existing E-ZPass lanes and one new corridor under construction on I-494.

Completed in 2017, the MnPASS System Study 3 was conducted to assist in updating the vision for managed lanes in the Twin Cities and prioritize corridors. Since previous studies of managed lanes were completed, many changes had occurred to corridors, as well as to other regional highways. This study revisited the managed lane corridor priorities and considered new corridors for prioritization.

The MnPASS System Study 3 utilized several criteria to evaluate potential managed-lane corridors against prioritization factors representing the goals in the region's transportation policy plan at the time. These criteria included proximity to employment centers, severity of congestion, connections to other managed-lane corridors or major destinations, express commuter bus demand and a ratio of 2040 mobility benefits to estimated construction costs. Study results were used to develop the managed-lane vision in the 2040 Transportation Policy Plan and that vision generally carries over into this plan. A study to update this work and reevaluate potential managed-lane corridors based on the goals in this plan is listed in the Imagine 2050 TPP Work Program.

The region has three planned managed-lane corridors shown on Figure 4.14. In each corridor, a preferred alternative will be selected based on the solution that best meets the project's stated purpose and need. Adequate funds are either available now



MnPASS is the historical name for the Twin Cities system of priced managed lanes. The ones currently in operation are part of the nationally interoperable E-ZPass network.

or are anticipated to be made available to allow construction. It is anticipated that some of the projects will receive other outside competitive funding. This will free up future funds where future projects could either be amended into the plan or allow a great level of investment to be made in these corridors.

On I-494, phase I of the planned managed-lanes project is under construction between East Bush Lake Road and I-35W. The planned improvements here will extend these lanes at either end to cover the segment of I-494 from west of U.S. Highway 169 to east of Minnesota Highway 77/24th Ave.

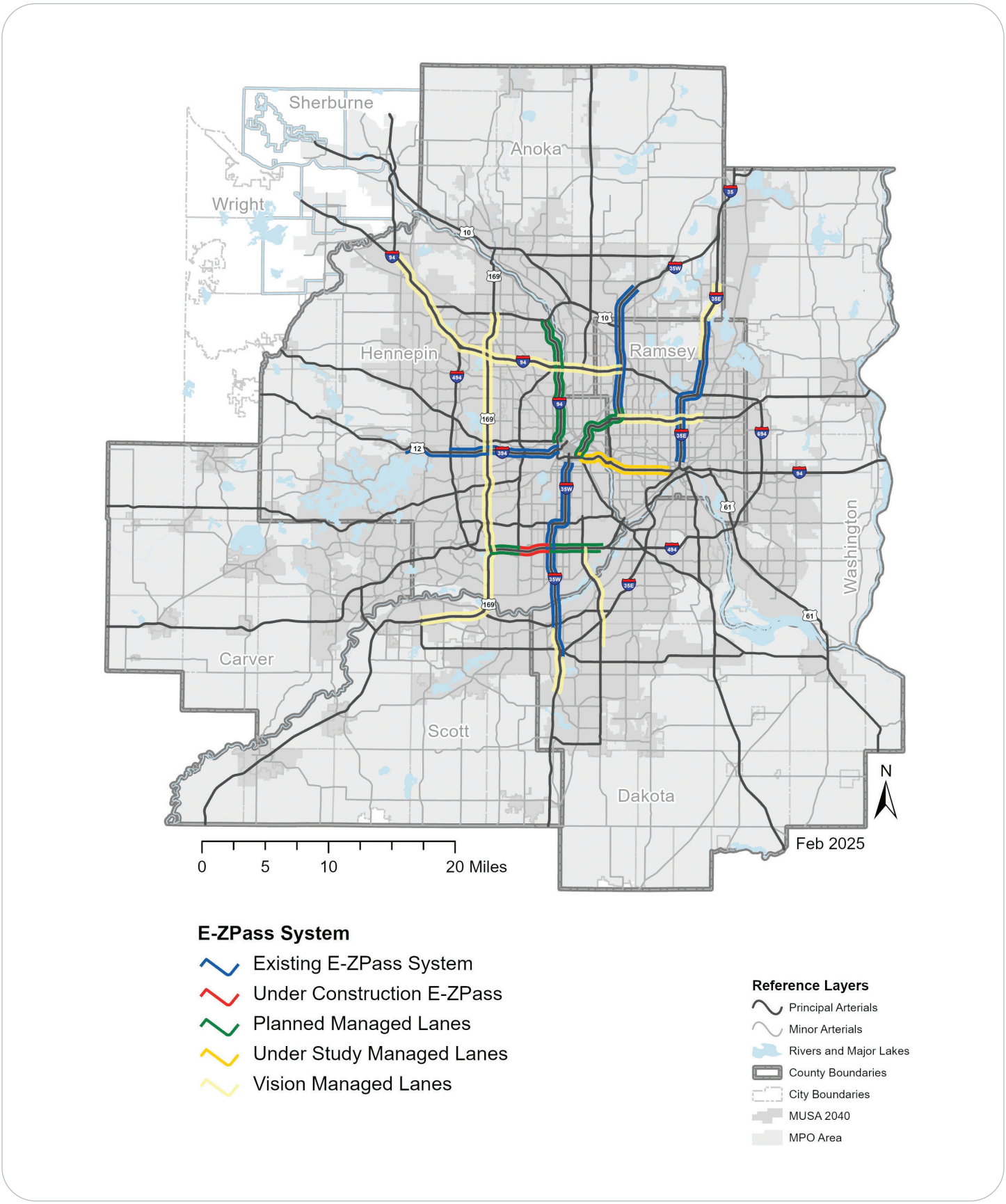
Along Minnesota Highway 252 and I-94 from Minnesota Highway 610 to 4th Street, an environmental impact statement is underway considering a range of mobility alternatives and other investments. Although a managed lane is included in this plan, the region remains committed to the outcome of a fair and transparent process in the ongoing environmental process. The Minnesota Highway 252 and I-94 corridor has in the past been awarded competitive funding for improvements, including $10 million from the Minnesota Highway Freight Program, $26 million from the Regional Solicitation, and $119 million from the Corridors of Commerce program to grade separate Minnesota Highway 252 and construct managed lanes from Minnesota Highway 610 to Dowling Avenue.

The third managed lane that is planned in this fiscally constrained plan is along I-35W between Ramsey County Road C and downtown Minneapolis. A detailed study of the corridor was underway when COVID-19 disrupted travel patterns and left the mobility needs here uncertain. Large pavement and bridge preservation investments anticipated for the corridor in the early 2030s will lead to further evaluation of managed lanes as part of a future environmental process.

Although managed lanes have often been implemented as additional lanes, conversion of a general-purpose lane may be considered in some corridors. This conversion was completed for a short segment of I-35E E-ZPass at I-694. Conversion was also examined as part of a recent I-35W gateway study for northbound I-35W between Ramsey County Road C and downtown Minneapolis. Given the region's goal of reducing greenhouse gases, conversion of general-purpose lanes to managed lanes should be studied as part of all future managed lane projects.

Outside of the three corridors discussed above, other parts of the managed-lane vision for our region are beyond the anticipated revenues in this plan. No funds have been allocated to these projects and as such they are shown in Figure 4.14 as managed-lane vision (these projects are not in the plan and will need to be amended into the plan when funding is identified). If additional funds become available or if long-term preservation work is planned for these corridors, managed lanes should be considered. All these corridors have been recently studied except I-694 in the north metro. This corridor should be prioritized for future study efforts.

Figure 4.14: Regional mobility investments: managed lanes



The MnPASS System Study 3 also identified supporting investments and strategies that may be necessary to continue to assure a less congested, more reliable trip. The first strategies considered will generally include lower cost options such as pricing algorithm adjustments, access modifications, increased enforcement, and lower-cost/high-benefit improvements included in this plan.

If the above strategies have been exhausted or will be ineffective, or if other operational challenges emerge, other strategies will need to be considered:

- Raising the maximum rate
- Changing the high-occupancy vehicle policy to only allow vehicles with three or more occupants to use the lanes for free
- Requiring high-occupancy vehicle users to have E-ZPass accounts and tags
- Implementing camera-based license plate tolling
- Adding E-ZPass lanes

These strategies will be reevaluated in the next system study identified above and in the Imagine 2050 TPP Work Program. Two areas of the E-ZPass system are at risk of failing to meet travel time reliability goals and may need physical capacity improvements. These improvements are included in this plan:

- I-394 eastbound exit lane addition at 12th Street into downtown Minneapolis
- I-394 slip ramp from the collector-distributor road for northbound U.S. Highway 169 traffic merging onto westbound I-394

Targeted regional capacity

In some cases, travel demand management, traffic management systems, spot mobility improvements, intrchanges, or managed lanes do not sufficiently resolve the specific highway deficiencies necessary to alleviate excessive delay for people and freight. The sixth priority of mobility investments, targeted regional capacity, may be implemented when other previously described investments cannot adequately improve travel conditions for people and freight.

These types of improvements are described below and the specific projects to be implemented within this plan are then identified. The region has established principles (described above) that these improvements must be consistent with this highway investment plan.

Examples of targeted regional capacity enhancements on freeways include:

- Freeway system-to-system interchange improvements including new grade-separated movements and added through lanes
- Truck climbing lanes
- New general-purpose lanes or continuous auxiliary lanes that extend beyond one interchange

Examples of targeted regional capacity enhancements on other principal arterials include:

- Projects developed with the Congestion Management System Plan study that are too large to fit into the spot mobility category
- New general-purpose lanes

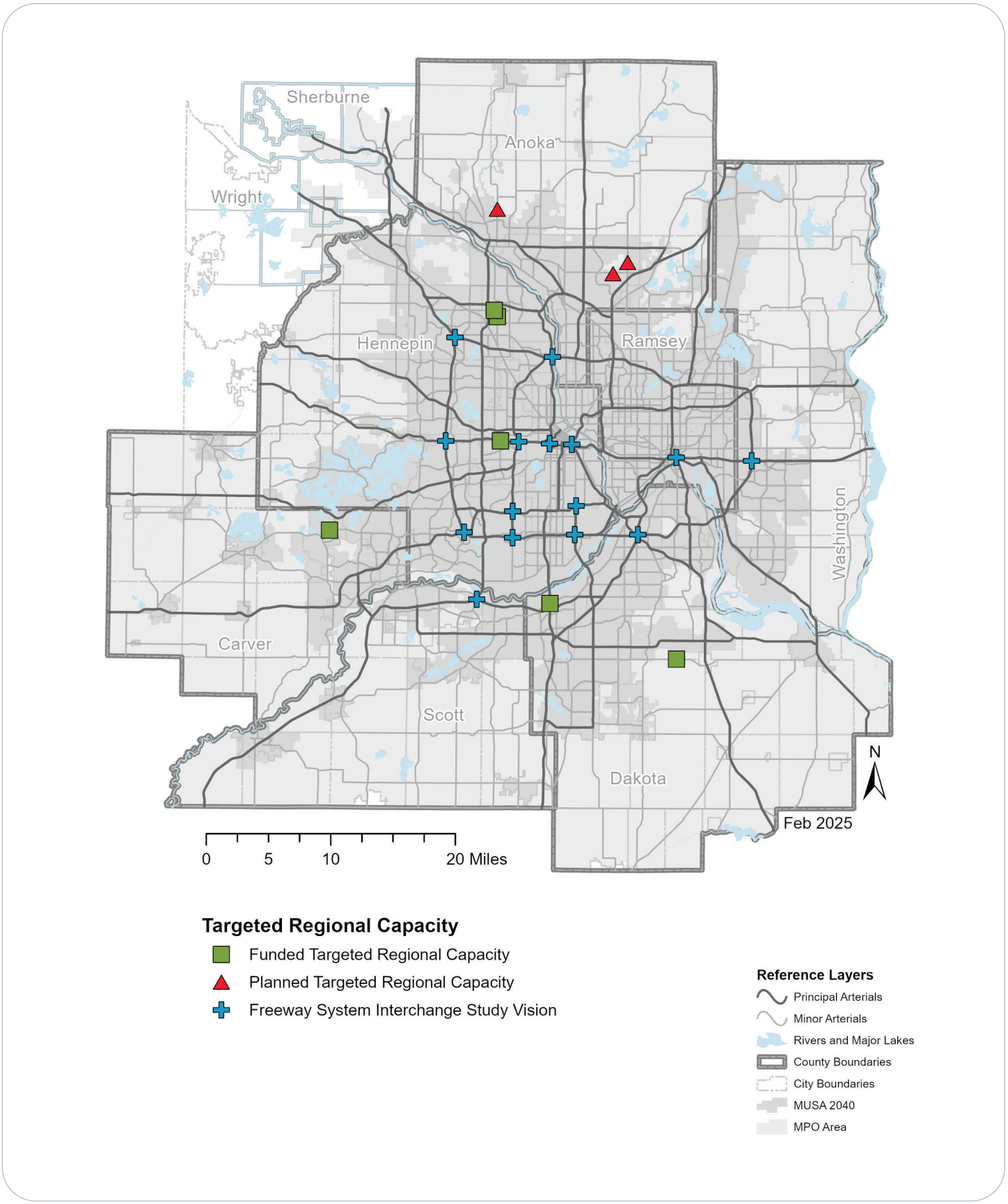
The region will only have revenue to complete a limited number of targeted regional capacity projects as illustrated in Figure 4.15 and listed in the Long-Range Highway and Transit Capital Project Lists document. Programmed projects include two short lane expansions in Brooklyn Park partially funded through the Regional Solicitation. Special funding programs, such as the state's Corridors of Commerce program, may fund future targeted regional capacity enhancements. The Freeway System Interchange Study resulted in ideas for improvements that may be cost effective, and while they are beyond the fiscal constraints of this plan they are included here as part of the vision to be considered in the future.

Direction for unallocated funding and competitive opportunities

The investments identified in this plan above can be funded through anticipated revenue and are the region's highest highway investment priorities. These, however, do not represent all the highway investments needed to achieve the goals and objectives in Imagine 2050, this plan, Minnesota's Statewide Multimodal Transportation Plan, or the Minnesota State Highway Investment Plan. This section identifies a higher level of spending for highway investments that will come closer to advancing the visions set forth in these planning documents.

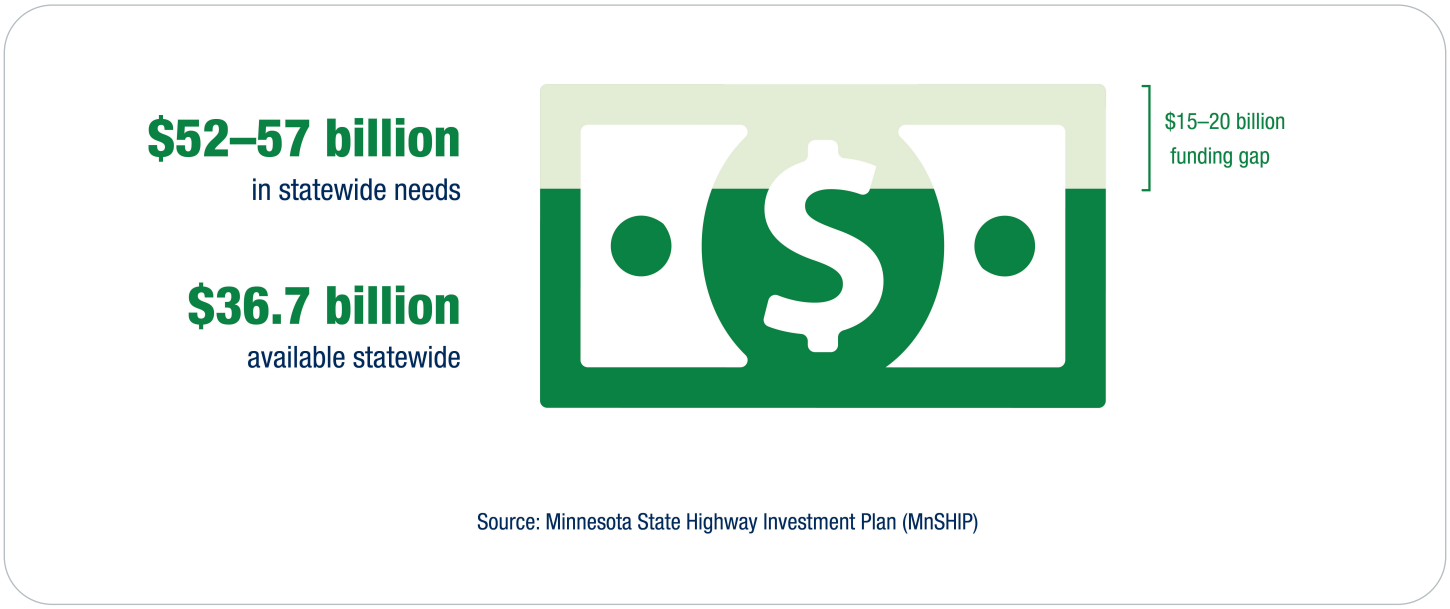
During the 20-year Minnesota State Highway Investment Plan (MnSHIP), MnDOT estimates there will be $36.7 billion in available revenues to address between $52 billion and $57 billion in identified transportation needs. Recent increases in revenue have reduced 20% of the unmet need for MnSHIP, but a funding gap of approximately $15 billion to $20 billion remains. Revenues are not expected to keep pace with forecasted inflation for the construction-related sector over the planning period. Additional capital improvements are needed to maintain aging infrastructure and meet Minnesotans' growing transportation needs. MnSHIP recognizes unmet needs in all six investment categories: system stewardship, transportation safety, healthy equitable communities, critical connections, climate action, and other areas.

Figure 4.15: Regional mobility investments: targeted regional capacity.



Most of the existing funding is going to operations, maintenance, and preservation activities in this plan, and this level of funding allows the region to largely meet performance targets for asset preservation in the near future. Therefore, new revenues coming to the region should first be considered for other identified needs before going back to these core functions. All new capital investments will also need to include an additional 20% for program delivery and may require increased operations funds depending on the type of investment.

Figure 4.16: Estimated Minnesota state highway funding gap, 2023 to 2042



Source: Minnesota State Highway Investment Plan (MnSHIP)

Unallocated revenues should be considered first for three primary areas before being used to better meet identified needs in other investment areas:

- **Safety –** Identified in this plan as the region's highest priority and incorporated into all investment categories, this category of funding represents stand-alone, targeted safety improvements. MnSHIP identifies a statewide unfunded safety need of approximately $1.2 billion over 20 years.
- **Main streets/urban pavement –** A new category in MnSHIP, this presents an opportunity to address a variety of unmet needs on state highways that serve people where many transportation and other needs meet.
- **Regional mobility –** Identified in MnSHIP as the largest unfunded investment need. In addition, funds allocated to highway mobility in this plan will be greatly reduced starting in 2034. New revenues should be used on the mobility priorities identified in this plan and to relieve local cities and counties from leading projects on the state system. Some of this unmet need may be realized through competitive funding sources such as Corridors of Commerce and the Nationally Significant Multimodal Freight and Highway Projects program, which are geared toward regional mobility improvements. As regionally significant projects become fully funded, the specific projects will need to be amended into the plan.

- **Multimodal –** Construct missing links in bicycle and pedestrian systems, with a focus on safety for the nonmotorized modes. In addition, move up planned ADA improvements (for example sidewalks, curb ramps, and intersection crossing improvements) to earlier years so that MnDOT can be fully ADA compliant sooner than 2037 as detailed in MnSHIP. This type of investment ties directly back to the equitable and inclusive, and healthy and safe goals of Imagine 2050.

The Intersection Mobility and Safety Study, Congestion Mitigation Safety Plan, and the Freeway System Interchange Study (described previously) resulted in many promising highway improvements. Some of these study priorities are in the plan, while others are beyond the fiscal constraints of this plan and require further project development and evaluation. These opportunity areas should be considered when major preservation projects are being developed in overlapping locations.

There are now, and will continue to be, highway needs in the region that are not addressed under this fiscally constrained plan. Regional transportation partners have identified many potential long-term highway improvement projects, often through the local comprehensive planning and capital improvement planning processes. When conducting studies of these potential improvements, regional transportation partners must use the population, household, and employment forecasts, and corresponding urban and rural land use plans adopted by the Met Council and local communities, so all potential projects can be comparably prioritized for investment. To increase the likelihood of being able to fund these projects, studies should work to develop innovative and affordable projects that address reasonably anticipated needs based on these forecasts and plans.

Rethinking I-94

Interstate 94 between the central business districts of Minneapolis and Saint Paul is one of the most utilized highways in Minnesota and serves many interstate, regional, and local trips for our region. It also connects many major regional destinations including the Minneapolis and Saint Paul downtowns, the University of Minnesota, Minnesota State Capitol, along with other educational institutions and several major sporting facilities. While serving many important regional travel purposes, this corridor also has inflicted significant past and ongoing harms to the adjacent communities including disconnection, displacement, and negative noise, air quality, and visual impacts, among other harms. This history of past and ongoing harms must be considered, prioritized, and addressed, and as a future vision for the corridor must be done in partnership with the impacted communities.

Today the highway is showing its age with significant deferred maintenance needs, especially in terms of road pavement and bridges. It is anticipated that in the coming years these assets will need to be significantly maintained and replaced, offering an opportunity to explore and determine a long-term vision for the Interstate 94 corridor between the downtowns.

In 2016, MnDOT undertook the Rethinking I-94 process to develop a corridor vision and a program of projects to address the various corridor needs. I-94 between I-35W/Hiawatha Avenue in Minneapolis and Marion Street in Saint Paul is currently in a Tier I environmental impact assessment under the National Environmental Policy Act (NEPA). The project team is developing a range of corridor alternatives, receiving community input

and feedback on the alternatives, and will identify a preferred alternative and program of projects for the corridor. While identified as a strong candidate for a future managed high-occupancy toll lane in the MnPASS System Study 3 (2017), this system study focused primarily on regional mobility needs and did not address the other needs within the corridor, which are now being considered as part of the Rethinking I-94 process. No specific corridor projects are identified in this plan as these will be identified as an outcome to Rethinking I-94.

Once Rethinking I-94 has a selected alternative, an amendment to this plan will be required to specifically identify the selected corridor alternative, projects, and sources of funding to complete the projects. Like the 2040 Transportation Policy Plan, $100 million of regional mobility funding is currently unallocated in the plan and is set aside for this project. This is likely only be a small portion and one category of what will be required to fulfill the preferred alternative that will be selected in the coming years.

System planning for additional principal arterials

Population is anticipated to grow by 660,000 people through 2050, and parts of that growth and land development are anticipated in future suburban edge and emerging suburban edge areas where the arterial grid is not adequately developed. Therefore, there will be needs for new principal and minor arterials. Often new principal arterials will be highways that are upgraded from existing minor arterials. There is active planning for future principal arterials and the needs are described (see functional classification criteria and characteristics in the Functional Classification section of the Imagine 2050 Transportation Policy Plan):

- Anoka County has identified Anoka County Highway 22/Viking Boulevard from Sherburne to Chisago counties as the anticipated location for its potential future east-west principal arterial.
- Scott County has identified Scott County Highway 17/Minnesota Highway 13 from U.S. Highway 169 to Minnesota Highway 19 as the route for its potential future north-south principal arterial. Scott County has also expressed interest in the long-term development of Scott County Highway 76 and Scott County Highway 8 from U.S. Highway 169 to I-35. In addition, Scott County Highway 78 from U.S. Highway 169 to Scott County Highway 17 is another future principal arterial connection that is being actively planned for upgrade.
- Dakota County undertook a principal arterial study in 2017-2018 to evaluate its system. The study recommended several segments be further considered in the next several years for principal arterial designation. These include Dakota County Highway 63 between Minnesota Highway 55 and I-494, which includes a new, planned interchange at I-494 and Argenta Trail; the southerly extension of the existing principal arterial designation of Dakota County Highway 23 from Dakota County Highway 42 to Dakota County Highway 70; and Dakota County Highway 70 from I-35 east to Dakota County Highway 23.

- Scott and Dakota counties have jointly identified an east-west route across the south metro for a potential principal arterial from U.S. Highway 169 to Minnesota Highway 52 that follows Minnesota Highway 19, Scott County Road 86, and Dakota County Road 86.
- Carver County has identified Carver County Highway 33 from the southern to northern boundary of the county as a long-term future principal arterial. It has also expressed interest in converting Minnesota Highway 5 into a principal arterial from U.S. Highway 212 east and extending into Hennepin County to the connection with I-494.

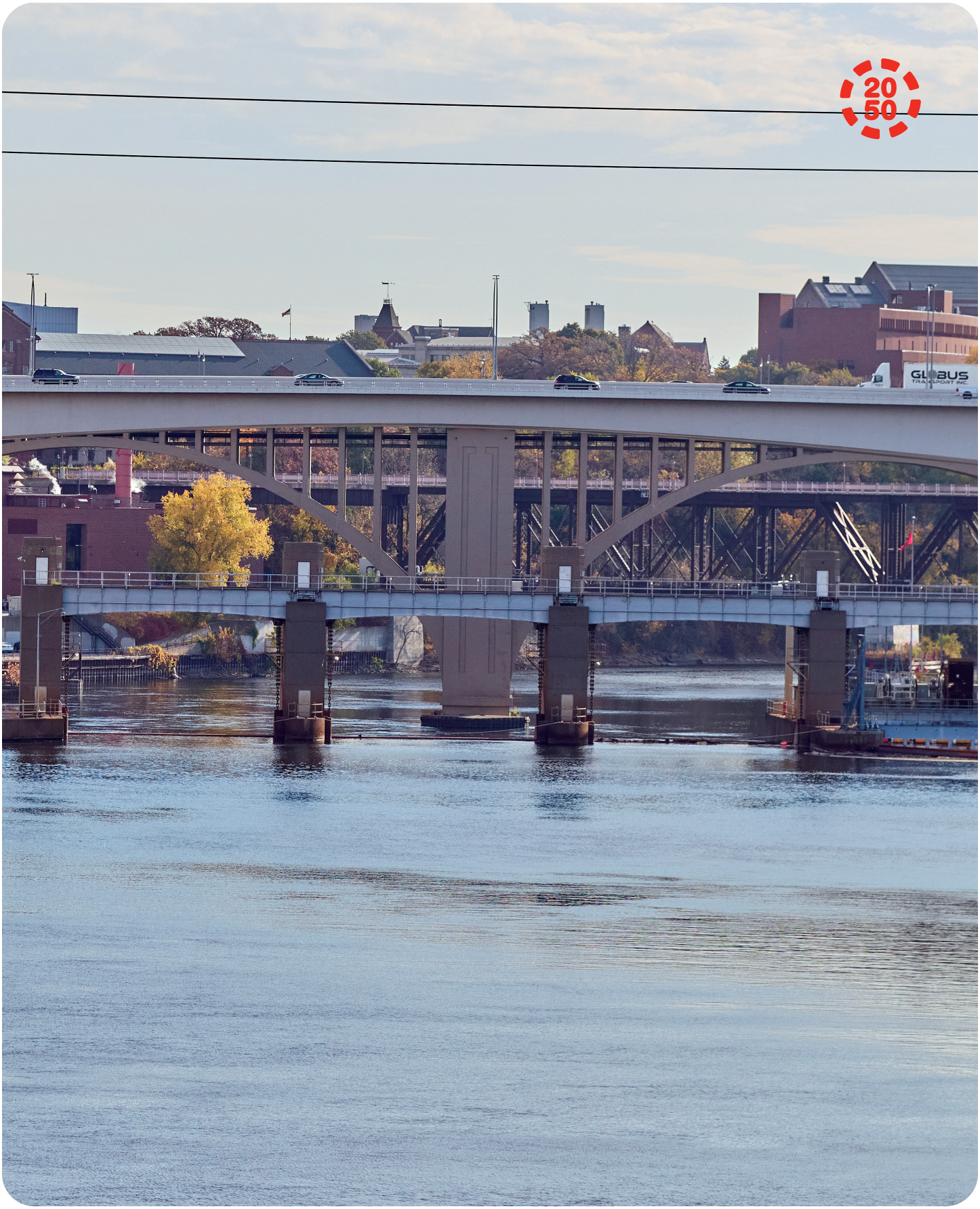
Since principal arterials should end with a connection to another principal arterial, actual endpoints can be finalized in the future.

New and upgraded river crossings to improve resiliency and quality of life

Regional transportation partners should continue to work together on studying the need for and feasibility of new or upgraded major river crossings.

Scott County is pursuing planning funds to study the Minnesota River crossings in the county to improve the resiliency of the system given the long distances between crossings. The Minnesota Highway 101 Bridge connecting downtown Shakopee and Chanhassen was recently improved, but the Minnesota Highway 41 bridge and its approaches over the Minnesota River remain vulnerable during major flood events. In 2019, the Minnesota Highway 41 bridge was closed for nearly six weeks. When this happens, people and goods are forced into long detours and additional pressure is put on the remaining crossings including the U.S. Highway 169 river bridge. Extended bridge closures negatively impact quality of life, the movement of goods, and the entire regional highway system. Given the high cost of a new river bridge in this general area, upgrades to existing bridges, including U.S. Highway 169, should also be explored.

Studies also are occurring for potential new Mississippi River bridges in the northwest metro. MnDOT recently studied a new minor arterial bridge over the Mississippi River potentially connecting the cities of Dayton and Ramsey. Local partners are also studying improvements to the existing Minnesota Highway 25 bridge or a new crossing over the Mississippi River near Monticello. While just outside of the planning area for the region, any potential improvements will also benefit the resiliency of the regional transportation system within the metro area.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SUBSECTION 5: FUNCTIONAL CLASSIFICATION

SUBSECTIONS 5-7 SUPPORT SECTION 4: HIGHWAY INVESTMENT PLAN.

Background

Functional classification identifies the role a highway or street plays in the transportation system. Some highways are intended to emphasize mobility for longer-distance trips, while other roads are intended to primarily provide access to land. Planners and engineers have developed functional classification categories based on access and mobility, the types and lengths of trips that are accommodated, and surrounding development intensity – rural or urban.

Functional classification informs roadway design decisions that affect the road's function like roadway speed, width, and intersection spacing and control. Functional classification can also be considered when identifying the multimodal role of a road, including truck, bus transit, bicycle, and pedestrian use and accommodation. Highway and street projects should implement designs (including multimodal accommodations) that are compatible with a road's functional classification and surrounding land uses.

The main functional classes used in the metropolitan area are used nationwide and described in the Federal Highway Administration's (FHWA) Highway Functional Classification Concepts, Criteria and Procedures, 2023 Edition. They consist of urban and rural designations for four main classes of roads: principal arterials, minor arterials, collector roads, and local roads. Although the FHWA designations are officially used at the state and federal level, the Met Council also applies sub-designations to minor arterials within the seven-county metropolitan planning area based primarily on land use type. The regionally identified sub-designations for the minor arterial network further refine the role the route makes within the Twin Cities region.

Federal guidance allows use of federal funds on roads classified down to minor collectors in urban areas and major collectors in urban areas, but our region has chosen to use these scarce funds on the most important regional highways, which include the principal and minor arterials.

This section of the Transportation Policy Plan identifies criteria and characteristics for use in assigning roadway functional classification. Criteria are the primary tool for identifying roadway function. Characteristics are intended to be guidelines if a roadway does not clearly fall into a single category. They are also useful when plans are being developed for constructing a new roadway or reconstructing a classified route.

This section also includes a summary of Minnesota Department of Transportation (MnDOT) intersection spacing and control guidelines for federal, state, and interstate highways in the metropolitan area. The MnDOT access management guidelines were developed for the entire state; MnDOT's functional classification category for the metropolitan area is summarized in Table 5.8 (page 258) and on MnDOT's Access Management web page.

Functional Classifications

Principal arterials

The emphasis of principal arterials is on moving large volumes of traffic over long distances rather than providing direct access to land. They connect the region with other areas in the state, the nation, and North America. Principal arterials connect regional job concentrations and freight terminals within the metropolitan area. Principal arterials should support the longest trips in the region, including intercity bus, express bus, and highway bus rapid transit services.

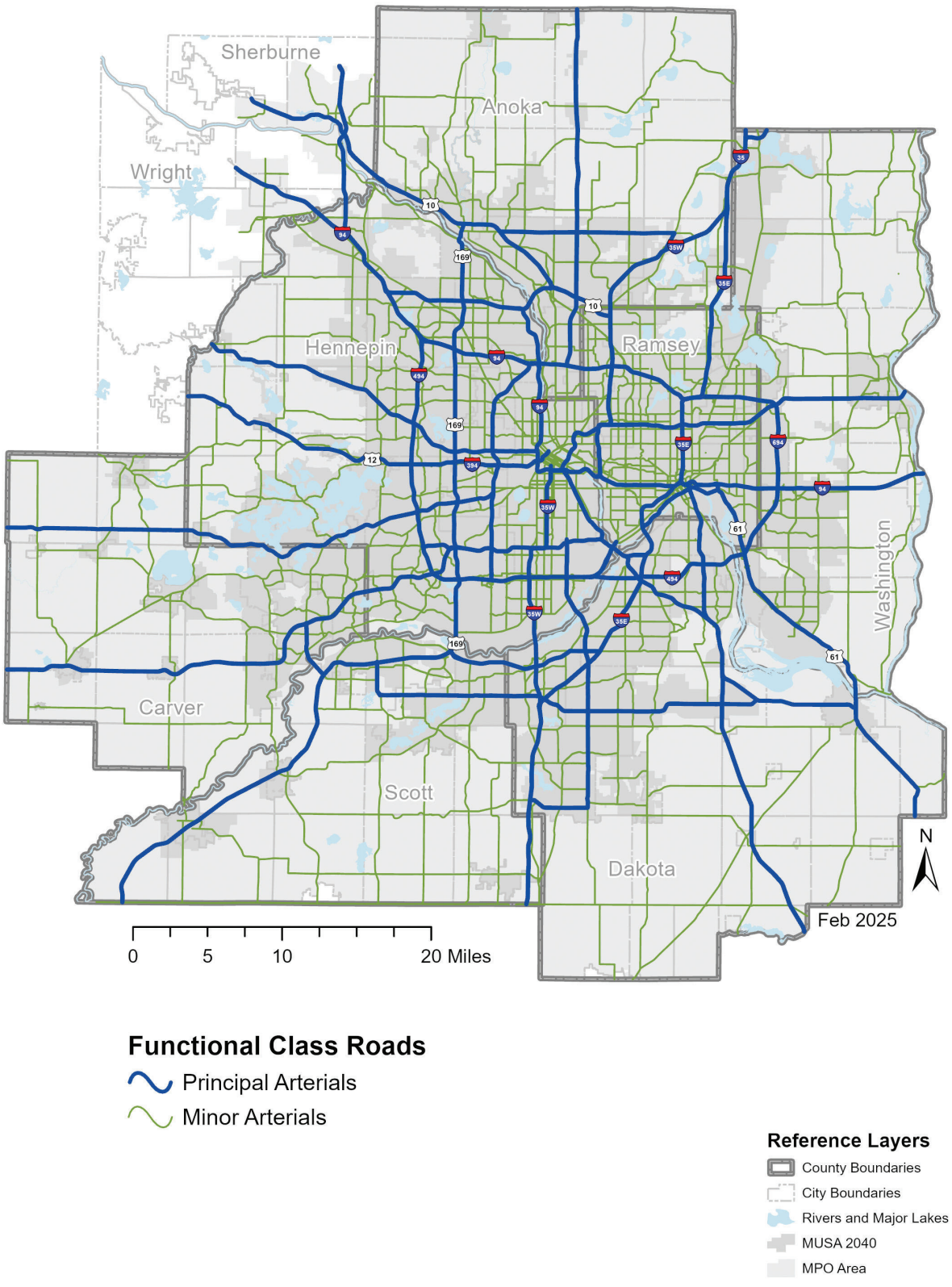
Principal arterials consist primarily of interstate freeways, other freeways, and highways. Most principal arterials are owned and operated by MnDOT, but some are under the jurisdiction of Anoka, Dakota, Ramsey, and Scott counties or the City of Saint Paul. The Metropolitan Highway System, as defined in the Imagine 2050 Transportation Policy Plan, comprises all principal arterials in Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties.

Principal arterial spacing and access spacing vary based on the density of surrounding development. Table 5.1 (page 244) shows principal arterial spacing varies from 2 to 3 miles in the most densely developed parts of the region, to 6 to 12 miles in rural areas. Where an urban or suburban level of development is planned, spacing of principal arterials or future principal arterials may be two to three miles. Table 5.1 also shows access spacing to principal arterials; non-interstate freeways provide land access somewhat more frequently than interstate freeways. Principal arterials primarily connect to other principal and minor arterials. In the future, new connections to principal arterials should be limited to other principal and minor arterials.

Principal arterials are not intended to provide on-road facilities for pedestrian and bicycle travel. However, in cases where principal arterials are built through wide rights-of-way, shared-use paths separated from the roadway can be designed to safely accommodate pedestrian/bicycle travel along the principal arterial. Such parallel facilities can provide more efficient connections between major destinations for these modes. Where long, continuous rights-of-way are not available, even short trail segments can help to close system gaps.

Principal arterials often act as barriers to bicycle and pedestrian travel in the centers and neighborhoods through which they pass. For nonfreeway principal arterials where bridge or underpass crossings are not

Figure 5.1: Map of functionally classified roadways



feasible, roadway at-grade crossings must be carefully designed to safely accommodate pedestrians and bicyclists of all ages and abilities.

Minor arterials

The minor arterial system supplements the principal arterial system and provides connections to the principal arterial system. Minor arterials support access to major traffic generators, including regional job concentrations and freight terminals, and between rural centers within and just outside the region. Minor arterials should serve medium-to-short trips, including arterial bus rapid transit, limited-stop bus, and local bus service.

In the urban area the emphasis of minor arterials is on supplementing principal arterial mobility as opposed to providing direct access to land, and only concentrations of commercial, industrial, or residential land uses should have direct access to them. Minor arterials should connect to principal arterials, other minor arterials and collectors, although connections to some local streets are acceptable.

The spacing of minor arterials and access along them vary based on the density of surrounding development. Table 5.3 (page 250) shows minor arterial spacing varies from one-fourth mile to three-fourths mile in the most densely developed parts of the region, to every one to two miles in the emerging suburban areas. Where an urban or suburban level of development is planned, minor arterials should be spaced every one-half mile to two miles. The criteria and characteristics in Table 5.3 (page 250) and Table 5.5 (page 252) apply to all minor arterials. The minor arterials are further assigned a sub-designation into one of the following four categories: Augmentor, Reliever, Expander, and Connector, and are described in Table 5.4 (page 251).

Minor arterials are designed to carry higher volumes of general traffic than other local roads and these design characteristics can create a barrier for bicycle and pedestrian travel. Priority should be placed on addressing these barriers in areas with pedestrian traffic, such as within regional job concentrations, within local centers, and along major transit routes.

Collector roads

Mobility and land access are equally important on the collector road system. The collector system provides connections between neighborhoods and from neighborhoods to regional job concentrations and local centers. Collector roads also provide supplementary connections between major traffic generators within regional job concentrations. Direct land access should primarily be to development concentrations. Connectors typically serve short trips of one to four miles. Collectors connect primarily to minor arterials, other collectors, and local streets.

Major and minor collectors should be identified. Major collectors offer more mobility and minor collectors offer more access. Major collectors serve higher-density residential areas (often penetrating residential neighborhoods for significant distances), job and activity centers and freight terminals that are not on the arterial system, and they serve longer local trips, including local bus service. Minor collectors serve shorter local trips and lower-density land uses (often penetrating residential neighborhoods only for a short distance).



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Spacing of collectors in regional job concentrations and local centers may vary from one-eighth to one-half mile. In urban and urban edge communities, collectors are generally needed one-fourth to three-fourths a mile apart. In communities with suburban designations, spacing may range from one-half to one mile and may service existing development, but one-fourth to three-fourths mile spacing may be required in the future. Major collectors should be spaced farther apart than minor collectors.

Collector roads can be good candidates for bicycle routes because they serve shorter trips that bicyclists make and generally have more compatible traffic speeds and volumes as compared to arterials. Collectors in the urban area should include pedestrian accommodations and may be candidates for traffic calming, especially where pedestrian traffic is greatest, such as within regional job concentrations and local centers and along transit routes.

Local roads

Local roads connect blocks and land parcels, and the primary emphasis is on land access. In most cases, local roads connect to other local roads and collectors. In some cases, they connect to minor arterials. Local roads serve short trips at low speeds. In the urban center, local roads could be spaced as close as 300 feet, while in the rural area, one-mile spacing may be adequate.

Local roads also serve travel for pedestrians and bicyclists. Transit is occasionally a consideration for local roads, depending on the surrounding land uses.

Functional classification system criteria and characteristics

Table 5.1: Functional Classification System criteria for principal arterials

Criterion	Interstate		Other Freeways and Expressways	
	Urban Area	Rural	Urban Area	
Place Connections	Connect regional job concentrations, freight terminals, and other major activity centers within the urban area. Serve demand for intra-area travel between the central business district and outlying residential areas.	Connect the urban area with urban areas and major cities in Minnesota and other states. Serve a large percentage of travel between cities and other activity centers.	Connect regional job concentrations, freight terminals, and other major activity centers within the urban area. Serve demand for intra-area travel between the central business district and outlying residential areas.	
Spacing	Within urban community designations: 2-3 miles. Within suburban community designations: Spacing should vary in relation to development density of land uses served, 2-6 miles.	6-12 miles. Closer spacing may be required to connect portions of the urban area to each other or to Rural Centers.	Within urban community designations: 2-3 miles. Within suburban community designations: Spacing should vary in relation to development density of land uses served, 2-6 miles.	

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transportation policy plan



		Other Principal Arterials	
	Rural	Urban Area	Rural
	Connect the urban area with urban areas and major cities in Minnesota and other states. Serve a large percentage of travel between cities and other activity centers.	Connect regional job concentrations, freight terminals, and other major activity centers within the urban area. Serve demand for intra-area travel between the central business district and outlying residential areas.	Connect the urban area with urban areas and major cities in Minnesota and other states. Serve a large percentage of travel between cities and other activity centers.
	6-12 miles. Closer spacing may be required to connect portions of the urban area to each other or to Rural Centers.	Urban community designations: 2-3 miles. Suburban community designations: Spacing should vary in relation to development density of land uses served, 2-6 miles.	6-12 miles. Closer spacing may be required to connect portions of Rural community designations to each other or to Rural Centers.

Criterion	Interstate		Other Freeways and Expressways	
Operations	Higher posted speed limits (45 miles per hour or more)	Higher posted speed limits (45 miles per hour or more)	Higher posted speed limits (45 miles per hour or more)	
System Connections and Access Spacing	Connect to other interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area. Connections between principal arterials should be of a design type that does not require vehicles to stop. Interchanges at distances of 1-2 miles.	Connect to other interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Provide an integrated network of continuous routes without stub connections (dead ends). Interchanges at distances of 2-6 miles or more.	Connect to interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area. Connections between principal arterials should be of a design type that does not require vehicles to stop. Interchanges at distances of 1-2 miles.	
Trip-Making Service	Carry high proportion of total urban travel on minimum of mileage. Longest trip demands (trips greater than 8 miles with at least 5 continuous miles on principal arterials). Express and highway bus rapid transit trips.	Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.	Carry high proportion of total urban travel on minimum of mileage. Longest trip demands (trips greater than 8 miles with at least 5 continuous miles on principal arterials). Express and highway bus rapid transit trips.	
Mobility vs. Land Access	Emphasis is on mobility for longer trips rather than direct land access. No direct land access should be allowed. Full access control.	Emphasis is on mobility for longer trips rather than direct land access. No direct land access should be allowed. Full access control.	Emphasis is on mobility for longer trips rather than direct land access. No direct land access should be allowed. Access via on- and off-ramp locations or limited number of at-grade intersections.	

Table 5.2: Functional Classification System typical characteristics for principal arterials

Characteristic	Interstate		Other Freeways and Expressways	
	Urban Area	Rural	Urban Area	
System Mileage	FHWA suggests statewide mileage for interstates at 1-3% of system.	FHWA suggests statewide mileage for interstates at 1-3% of system.	FHWA suggests statewide mileage for other freeways and expressways at 0-2% of system.	
Percent of Vehicle Miles Traveled	FHWA suggests 17-31% of statewide VMT.	FHWA suggests 18-38% of statewide VMT.	FHWA suggests 0-12% of statewide VMT.	

		Other Principal Arterials	
	Higher posted speed limits (45 miles per hour or more)	Higher posted speed limits (45 miles per hour or more)	Higher posted speed limits (45 miles per hour or more)
	Connect to interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Provide an integrated network of continuous routes without stub connections (dead ends). Interchanges at distances of 2-6 miles or more.	Connect to interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area. Connections between principal arterials should be of a design type that does not require vehicles to stop. Access should be limited to 1-2 miles.	Connect to interstates, other freeways and expressways, other principal arterials, and selected minor arterials. Provide an integrated network of continuous routes without stub connections (dead ends). Access should be limited to 2 miles or more.
	Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.	Carry high proportion of total urban travel on minimum of mileage. Longest trip demands (trips greater than 8 miles with at least 5 continuous miles on principal arterials). Express and highway bus rapid transit trips.	Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
	Emphasis is on mobility for longer trips rather than direct land access. No direct land access should be allowed. Access via on- and off-ramp locations or limited number of at-grade intersections.	Emphasis is on mobility for longer trips rather than direct land access. Little or no direct land access. Access can include driveways to specific parcels and at-grade intersections with other roadways.	Emphasis is on mobility for longer trips rather than direct land access. Little or no direct land access. Access can include driveways to specific parcels and at-grade intersections with other roadways.

		Other Principal Arterials	
	Rural	Urban Area	Rural
	FHWA suggests statewide mileage for other freeways and expressways at 0-2% of system.	FHWA suggests statewide mileage for other principal arterials at 4-9% of system.	FHWA suggests statewide mileage for other principal arterials at 2-6% of system.
	FHWA suggests 0-7% of statewide VMT.	FHWA suggests 16-33% of statewide VMT.	FHWA suggests 15-31% of statewide VMT.

Characteristic	Interstate		Other Freeways and Expressways	
Intersections	Grade separated	Grade separated	Limited number of at-grade intersections.	
Parking	None	None	None	
Large Trucks	No restrictions. Route of choice for intercity trucks.	No restrictions. Route of choice for intercity trucks.	No restrictions. Route of choice for intercity trucks.	
Management Tools	Ramp metering, preferential treatment for transit, interchange spacing.	Interchange spacing	Ramp metering, preferential treatment for transit, interchange spacing.	
Typical Average Daily Traffic Volumes	25,000-185,000+	40,000-75,000+	15,000-125,000+	
Posted Speed Limit	45-70 mph	55-70 mph	45-70 mph	
Right-of-Way (ROW) and Roadway Footprint	ROW: 300 ft Lane Width: 12 ft Inside shoulder width: 4-12 ft Outside shoulder width: 10-12 ft	ROW: 300 ft Lane width: 12 ft Inside shoulder width: 4-12 ft Outside shoulder width: 10-12 ft	ROW: 300 ft Lane width: 11-12 ft Inside shoulder width: 0-6 ft Outside shoulder width: 8-12 ft	
Transit Accommodations	Transit advantages that provide priority access and reliable movement for transit in peak periods where needed.	Route of choice for intercity buses.	Transit advantages that provide priority access and reliable movement for transit in peak periods where needed.	
Bicycle and Pedestrian Accommodations	On facilities that cross or are parallel to the principal arterial, with greater emphasis along transit routes and in activity centers. Crossings should be spaced to allow for adequate crossing opportunities.	On facilities that cross or are parallel to the principal arterial.	On facilities that cross or are parallel to the principal arterial, with greater emphasis along transit routes and in activity centers. Crossings should be spaced to allow for adequate crossing opportunities.	

		Other Principal Arterials	
	Limited number of at-grade intersections.	Grade separated desirable where appropriate. At a minimum, high-capacity controlled at-grade intersections.	High-capacity controlled at-grade intersections
	None	None	None
	No restrictions. Route of choice for intercity trucks.	No restrictions. Route of choice for intercity trucks.	No restrictions. Route of choice for intercity trucks.
	Interchange spacing	Ramp metering, preferential treatment for transit, access control, median barriers, traffic signal progression, staging of reconstruction, intersection spacing, driveway consolidation.	Access control, intersection spacing, driveway consolidation.
	15,000-125,000+	5,000-60,000+	5,000 - 45,000+
	55-70 mph	40-65 mph	Legal limit
	ROW: 300 ft Lane width: 11-12 ft Inside shoulder width: 0-6 ft Outside shoulder width: 8-12 ft	ROW: 100-300 ft Lane width: 11-12 ft Inside shoulder width: 0 ft Outside shoulder width: 8-12 ft	ROW: 100-300 ft Lane width: 11-12 ft Inside shoulder width: 0 ft Outside shoulder width: 8-12 ft
	Route of choice for intercity buses.	Transit advantages that provide priority access and reliable movement for transit in peak periods where possible and needed.	Route of choice for intercity buses.
	On facilities that cross or are parallel to the principal arterial.	On facilities that cross or are parallel to the principal arterial, with greater emphasis along transit routes and in activity centers. Crossings should be spaced to allow for adequate crossing opportunities.	On facilities that cross or are parallel to the principal arterial.

Table 5.3: Functional Classification System criteria for minor arterials

Criterion	Urban	Rural
Place Connections	Provide connections between regional job, educational, manufacturing, and industrial concentrations and local centers within the urban area. Distribute traffic to smaller geographic areas than those served by principal arterials.	Connect the urban area with cities and towns in Minnesota outside the Twin Cites region. Connect rural growth centers inside the Twin Cities region and comparable places near the Twin Cities region.
Spacing	Spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of an arterial roadway. Regional job concentrations: 1/4-3/4 mile Urban community designations: 1/2-1 mile Suburban community designations: 1-2 miles	Spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of an arterial roadway. As needed, in conjunction with the major collectors, provide adequate interconnection of places identified in "Place Connections" criterion.
System Connections	Connect to interstates, other freeways and expressways, other principal arterials, other minor arterials, collectors, and some local streets.	Connect to interstates, other freeways and expressways, other principal arterials, other minor arterials, collectors, and some local streets.
Trip-Making Service	Serve trips of moderate length at a somewhat lower level of travel mobility than principal arterials. Medium-to-short trips (2-6 miles depending on development density) at moderate speeds. Longer trips accessing the principal arterial network. Local, limited-stop, and arterial bus rapid transit trips.	Serve trips of moderate length at a somewhat lower level of travel mobility than principal arterials. Medium-to-short trips (2-6 miles depending on development density) at moderate speeds. Longer trips accessing the principal arterial network.
Operations	Lower posted speed limits than principal arterials (less than 45 mph).	Lower posted speed limits than principal arterials (45-55 mph).
Mobility vs. Land Access	Emphasis on mobility for longer trips rather than on direct land access. Provide more land access than principal arterials without penetrating identifiable neighborhoods. Direct land access limited to concentrations of activity including regional job concentrations, local centers, freight terminals, and neighborhoods.	Emphasis on mobility for longer trips rather than on direct land access. Provide more land access than principal arterials without penetrating identifiable neighborhoods.

Table 5.4: Minor arterial sub-designation characteristics

Characteristic	Relievers	Augmentors	Expanders	Connectors	Other Principal Arterials
Purpose	Provide supplementary capacity for congested, parallel principal arterials.	Supplement the principal arterial system in more densely developed or redeveloping areas.	Supplement the principal arterial system in less densely developed or redeveloping areas.	Provide safe, direct connections between rural centers and to principal arterials in rural areas without adding continuous general purpose lane capacity.	Urban Area
Location in Met Council Community Designations	Urban area: Consists of Urban, Urban Edge, Suburban, and Suburban Edge community designations as defined in Imagine 2050.	Urban and Urban Edge community designations.	Urban Edge, Suburban, and Suburban Edge community designations.	Rural community designations. One end may be outside the seven-county area or may be in the urban area.	FHWA suggests statewide mileage for other principal arterials at 4-9% of system.
Existing System Mileage	754 Miles	394 miles	1,026 miles	722 miles	FHWA suggests 16-33% of statewide VMT.

Table 5.5: Functional Classification System typical characteristics for minor arterials

Characteristic	Urban	Rural
System Mileage	FHWA suggests statewide mileage for minor arterials in urbanized areas at 7-14% of system.	FHWA suggests statewide mileage for minor arterials in rural areas at 2-6% of system.
Percent of Vehicle Miles Traveled	FHWA suggests 14-27% of statewide VMT.	FHWA suggests 9-20% of statewide VMT.
Intersections	Traffic signals, roundabouts, and cross-street stops	Roundabouts and cross-street stops.
Parking	Restricted as necessary.	Restricted as necessary.
Large Trucks	Candidates for local truck network, large trucks restricted as necessary.	Candidates for local truck network, large trucks restricted as necessary.
Management Tools	Traffic signal progression and spacing, land access management/control, preferential treatment for transit.	Land access management/control.
Typical Average Daily Traffic Volumes	100-60,000+	500-25,000+
Posted Speed Limit	30-45 mph	Legal limit
Right-of-Way and Roadway Footprint	ROW: 60-150 ft Lane width: 10-12 ft Inside shoulder width: 0 ft Outside shoulder width: 4-8 ft	ROW: 60-150 ft Lane width: 10-12 ft Inside shoulder width: 0 ft Outside shoulder width: 4-8 ft
Transit Accommodations	Transit advantages for reliable movement where needed.	
Bicycle and Pedestrian Accommodations	On, along, or parallel to the minor arterial, with greater emphasis in activity centers. Special emphasis on improving safety of crossings at intersections and along bikeways. Crossings should be spaced to allow for adequate crossing opportunities.	On facilities that cross the minor arterial.


SPEED
LIMIT
35
DURING
STATE FAIR
STOP
SUPER DUTY
BUCKLE UP!

Table 5.6: Functional Classification System criteria for collectors and local streets

Criterion	Major Collectors		Minor Collectors	
	Urban Area	Rural	Urban Area	
Place Connections	Connect neighborhoods and centers within the urban area. Provide supplementary connections of major traffic generators within job and activity centers. Penetrate residential neighborhoods, often for significant distances.	Provide supplementary connection between rural centers inside the Twin Cities region and comparable places near the Twin Cities region. Provide to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks, important mining and agricultural areas. Link these places with nearby larger towns and cities or with arterial routes.	Connect neighborhoods and centers within the urban area. Penetrate residential neighborhoods, often only for a short distance.	
Spacing	Job concentrations: 1/8-1/2 mile Urban community designations: 1/4-3/4 mile Suburban community designations: 1/2-1 mile Spaced at greater intervals than a minor collector.	As needed in conjunction with minor arterials, to provide adequate connections for places identified in "Place Connections" criterion. Spaced at greater intervals than a minor collector..	Job concentrations: 1/8-1/2 mile Urban community designations: 1/4-3/4 mile Suburban community designations: 1/2-1 mile Minor collectors should be spaced more closely than major collectors	
System Connections	Connect to minor arterials, other collectors, and local streets. Major collectors may connect to principal arterials under exceptional circumstances.	Connect to minor arterials, other collectors, and local streets. Serve the most important intra-county travel corridors.	Connect to minor arterials, other collectors, and local streets.	
Trip-making Service	Distribute and channel short trips between local streets and arterials (1-4 miles depending on development density) at low-to-moderate speeds. Major collectors may support longer trips accessing the arterial network including local bus transit and bicycle trips.	Distribute and channel short trips between local streets and arterials at low-to-moderate speeds.	Distribute and channel short trips between local streets and arterials (usually over a distance of less than three-quarters of a mile) at low-to-moderate speeds.	

		Local	
	Rural	Urban Area	Rural
	Provide supplementary connection between rural centers inside the Twin Cities region and comparable places near the Twin Cities region. Provide service to smaller communities not served by a higher class facility. Link locally important traffic generators with their rural hinterlands.	Connect blocks and land parcels within neighborhoods and within commercial or industrial developments.	Serve primarily to provide access to adjacent land.
	Spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within reasonable distance of a minor collector. As needed in conjunction with minor arterials, to provide adequate connections for places identified in “Place Connections” criterion. Minor collectors should be spaced more closely than major collectors (average spacing of not less than 4 miles)..	As needed to access land uses.	As needed to access land uses..
	Connect to minor arterials, other collectors, and local streets.	Provide access to higher systems. Connect to collectors, other local streets, and a few minor arterials.	Provide access to higher systems. Connect to collectors, other local streets, and a few minor arterials.
	Distribute and channel short trips between local streets and arterials at low-to-moderate speeds.	Short trips compared to higher classification categories (under 2 miles) at low speeds, including bicycle and pedestrian trips. Longer trips accessing the collector or collector and arterial network. Carry no through traffic movement.	Short trips compared to higher classification categories at low speeds. Longer trips accessing the collector or collector and arterial network.

Criterion	Major Collectors		Minor Collectors	
Mobility vs. Land Access	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations. Serve both land access and traffic circulation in higher density residential and commercial/industrial areas.	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations.	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations. Serve both land access and traffic circulation in higher density residential and commercial/industrial areas.	

Table 5.7: Functional Classification System typical characteristics for collectors and local streets

Characteristic	Major Collectors		Min
	Urban Area	Rural	Urban Area
System Mileage	FHWA suggests statewide mileage for major collectors at 3-16% of system.	FHWA suggests statewide mileage for major collectors at 8-19% of system.	FHWA suggests statewide mileage for minor collectors at 3-16% of system.
Percent of Vehicle Miles Traveled	FHWA suggests 2-13% of statewide VMT.	FHWA suggests 10-23% of statewide VMT.	FHWA suggests 2-12% of statewide VMT.
Intersections	Four-way stops and some traffic signals.	Local street traffic should be required to stop.	Four-way stops and some traffic signals.
Parking	Restricted as necessary	Unrestricted	Restricted as necessary
Large Trucks	May be candidates for local truck network, large trucks restricted as necessary.	May be candidates for local truck network, large trucks restricted as necessary.	May be candidates for local truck network, large trucks restricted as necessary.
Management Tools	Number of lanes, traffic signal timing, land access management. May have more signalized intersections than minor collectors.	Land access management.	Number of lanes, traffic signal timing, land access management. May have fewer signalized intersections than major collectors.
Typical Average Daily Traffic Volumes	200-20,000+ Higher annual average traffic volumes than minor collectors.	100-5,000+ Higher annual average traffic volumes than minor collectors.	50-10,000+ Lower annual average traffic volumes than major collectors.
Posted Speed Limit	30-40 mph May have higher operating speeds than minor collectors.	35-45 mph	30-40 mph May have lower operating speeds than major collectors.
Right-of-Way and Roadway Footprint	ROW: 60-100 ft Lane width: 10-12 ft Inside shoulder width: 0 ft Outside shoulder width: 1-6 ft	ROW: 60-100 ft Lane width: 10-12 ft Inside shoulder width: 0 ft Outside shoulder width: 1-6 ft	ROW: 60-100 ft Lane width: 10-11 ft Inside shoulder width: 0 ft Outside shoulder width: 1-4 ft

		Local	
	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations.	Emphasis on land access, not on mobility. Direct land access predominantly to residential land uses.	Emphasis on land access, not on mobility. Direct land access predominantly to agricultural land uses.

or Collectors		Local	
	Rural	Urban Area	Rural
	FHWA suggests statewide mileage for minor collectors at 3-15% of system.	FHWA suggests statewide mileage for local roads at 62-74% of system.	FHWA suggests statewide mileage for local roads at 62-74% of system.
	FHWA suggests 1-8% of statewide VMT.	FHWA suggests 9-25% of statewide VMT.	FHWA suggests 8-23% of statewide VMT.
	Local street traffic should be required to stop.	As required.	As required.
	Unrestricted	Permitted as necessary.	Permitted as necessary.
	May be candidates for local truck network, large trucks restricted as necessary.	Permitted as necessary.	Permitted as necessary.
	Land access management.	Intersection control, cul-de-sacs, diverters.	
	10-3,000+ Lower annual average traffic volumes than major collectors.	Less than 1,000	Less than 1,000
	10-3,000+ Lower annual average traffic volumes than major collectors.	Maximum 30 mph	Maximum 30 mph
	ROW: 60-100 ft Lane width: 10-11 ft Inside shoulder width: 0 ft Outside shoulder width: 1-4 ft	ROW: 50-80 ft Lane width: 8-10 ft Inside shoulder width: 0 ft Outside shoulder width: 0-2 ft	ROW: 50-80 ft Lane width: 8-10 ft Inside shoulder width: 0 ft Outside shoulder width: 0-2 ft

Characteristic	Major Collectors			Min
Transit Accommodations	Cross-sections and geometrics designed for use by regular-route buses, transit advantages for reliable movement, where needed.	None.	Cross-sections and geometrics designed for use by regular-route buses, transit advantages for reliable movement, where needed.	
Bicycle and Pedestrian Accommodations	On, along, or crossing the collector with higher emphasis along transit routes and in activity centers. Crossings should be spaced to allow for adequate crossing opportunities.	On, along, or crossing the collector.	On, along, or crossing the collector with higher emphasis along transit routes and in activity centers. Crossings should be spaced to allow for adequate crossing opportunities.	

MnDOT Access Guidance

Table 5.8: Summary of MnDOT public street spacing access guidelines for interstate, U.S., and state highways in the Twin Cities metropolitan area

Functional Classification	Facility Type or Community Designation	Primary Full- Movement Intersection	
Principal Arterial	Interstate freeway	Interchange access only	
	Non-interstate freeway	Interchange access only	
	Rural	1 mile	
	Suburban	1/2 mile	
	Urban	300-600 feet, dependent on block length	
Minor Arterial	Rural	1/2 mile	
	Suburban	1/4 mile	
	Urban	300-600 feet, dependent on block length	
Collector	Rural	1/2 mile	
	Suburban	1/8 mile	
	Urban	300-600 feet, dependent on block length	

This table summarizes characteristics for existing roadways to be used in evaluating functional classification and should not be used as design guidelines. This table summarizes MnDOT Access Guidance for the metropolitan area and does not reflect all MnDOT guidance. Agencies should work with MnDOT, the appropriate county highway authority, and the local land use authority when planning new or modified access. Community designations are from Imagine 2050; they are not MnDOT designations.

or Collectors		Local	
	None.	Normally used as bus routes only in nonresidential areas.	Lane width: 8-10 ft
	On, along, or crossing the collector.	On, along, or crossing the local road.	Inside shoulder width: 0 ft

	Secondary Intersection	Signal Spacing
	None	
	None	
	1/2 mile	Only at primary intersections
	1/4 mile	Only at primary intersections
	1/4 mile	
	1/4 mile	Only at primary intersections
	1/8 mile	Only at primary intersections
	1/4 mile	Only at primary intersections
	Not applicable	1/4 mile
	1/8 mile	

SUBSECTION 6: PRELIMINARY INTERCHANGE APPROVAL PROCESS

SUBSECTIONS 5-7 SUPPORT SECTION 4: HIGHWAY INVESTMENT PLAN.

Background

The preliminary interchange approval process is the first of several required approvals that may be needed as part of the project development process. This process is intended to be a planning-level assessment completed several years prior to construction. Its purpose is to demonstrate that the proposed project is consistent with the region's long-range plans and that its location is generally suitable for an interchange based on general transportation planning principles.

This approval process examines if the proposed location is suitable for an interchange based on consistency with local and regional plans, high-level needs, functional classification of the cross-street, proposed local roadway network and associated access management changes, and interchange spacing. It is not a direct test of benefits and costs, regional priority, or a determination that an interchange is the best solution. Years later, once the environmental process is complete, projects must demonstrate that they continue to show consistency with regional policy by completing a Metro Freeway Project Approval to the Metropolitan Council per MN Statute 473.166.

Preliminary interchange approval is needed before applying for several competitive funding programs including the Regional Solicitation, MnDOT's Transportation Economic Development Program (TED), and MnDOT's Highway Freight Program.

This approval process is based on work originally done in 1979 by a joint committee of the Transportation Advisory Board and the Met Council. It has been revised and simplified over time to reflect policy changes, revised state and federal laws and regulations, and experience with applying

the criteria. The Met Council is committed to a future review of this approval process that includes regional stakeholders. The rationale for requiring this approval comes from the following Imagine 2050 Transportation Policy Plan (TPP) action:

- Action 1F. Maintain, review, and update, as needed, access management guidelines for principal arterial and minor arterial corridors to preserve and enhance their safety and capacity, as measured by person throughput. **Identify opportunities to manage, consolidate, and limit access or repair street grids, as appropriate, when implementing roadway improvement projects.** Coordinate with MnDOT and regional partners on access guidelines.

For this approval process, the term interchange will include traditional interchanges along with any other location with grade-separated crossing roadways and one or more adjacent access connections between the two roadways.

It is important to note that some types of interchange improvement projects must go through this approval process and other types do not.

Types of interchange projects that need approval through this process:

- Addition (or removal) of an interchange on a principal or minor arterial

Types of interchanges projects that do not need approval through this process:

- Preservation, safety, or mobility investments not described above (for example new turn lanes or added through lanes)
- Modifications to the existing ramp(s), interchange design, or configuration not described above
- New local roadway connections to an interchange ramp or ramp terminal

Evaluation Criteria

A proposer begins this review process by submitting materials addressing each of the evaluation criteria described below to the Interchange Planning Review Committee. The committee is comprised of staff from the Met Council and MnDOT Metro District. If proposed projects include the Interstate System, Federal Highway Administration staff will also participate. In cases where MnDOT Metro District is not the road authority, the relevant road authority is substituted (for example MnDOT District 3 in the urban part of Wright and Sherburne counties, and in some cases Anoka, Dakota, Ramsey or Scott counties or St. Paul). The relevant boundary is the federally recognized, designated planning boundary for the Metropolitan Planning Organization, which includes the counties of Anoka, Hennepin, Ramsey, Carver, Scott, Dakota and Washington, and the urban portion of Wright and Sherburne counties.

The committee will review the proposal for consistency with these criteria. In many cases a conversation

between the proposer and the committee will be needed to reach a common understanding of how the proposal is or is not consistent with the region's long-term plans. The review process is completed when the committee provides a letter of findings to the proposer. The approval process is intended to be a planning-level assessment and detailed traffic modeling and analysis is not required.

1. Consistency with local and regional planning

Interchange access should be considered only when it supports local comprehensive plans approved by the Met Council, as well as Minnesota Go, Imagine 2050, and the Imagine 2050 Transportation Policy Plan.

Imagine 2050 is the long-term development guide for the Twin Cities region. The shared goals for the region as well as the transportation specific objectives include:

- **Our region is equitable and inclusive.**
    - Historically disadvantaged communities are better connected to jobs, education, and other opportunities.
    - We repair and eliminate disparate and unjust impacts and harms to Black people, Indigenous people, and people of color.
    - We better meet the transportation needs of people who have disabilities or limited mobility.
- **Our communities are healthy and safe.**
    - People do not die or face life-changing injuries when using any form of transportation.
    - People feel safer, more comfortable, and more welcome when using any form of transportation.
    - We mitigate and avoid harm to people caused by nearby transportation infrastructure and use (for example air quality, noise, light).
    - People are better connected to community and cultural resources that support their physical, emotional, and mental well-being.
    - People can increase physical activity with more opportunities to walk, roll, or bike.
- **Our region is dynamic and resilient.**
    - People and businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions.
    - People can better meet their daily needs with timely, reliable, direct, and affordable options beyond driving alone.
    - People experience more predictable travel times without experiencing excessive delays when traveling on highways.
    - People and businesses can rely on predictable and cost-effective movement of freight and goods.

- **We lead on addressing climate change.**
    - The region's transportation system minimizes its greenhouse gas emissions.
    - People have more reliable access to zero emissions vehicle infrastructure.
    - By 2050, the region reduces vehicle miles traveled by 20% per capita below 2019 levels.
- **We protect and restore to natural systems.**
    - The region's transportation system protects, restores, and enhances natural systems (for example, air, water, vegetation, and habitat quality).

Questions

- How is this proposal consistent with the Imagine 2050 regional goals and Transportation Policy Plan objectives?
- Is the project or project area specifically identified in the Imagine 2050 Transportation Policy Plan?
- How are negative impacts to any of these goals or objectives balanced against the others?
- What opportunities for public input on the project have occurred at this early stage?
- Is the land use in local comprehensive plans consistent with this proposal (comprehensive plans are required to coordinate local land uses and regional systems such as transportation) or are any amendments to local comprehensive plans anticipated?

2. Project need

The need for an additional interchange or access at an existing location must be demonstrated and documented before consistency with the long-range plans can be found. The Intersection Mobility and Safety Study was completed in 2024 and prioritized at-grade intersections into three tiers (High Priority, Medium Priority, and Low Priority) by the magnitude of the problem at each intersection. The results of this regional study can help build a case for the project. Projects classified as High Priority have larger documented problems and a larger investment, such as an interchange, may be needed.

In most cases, new interchanges should be built in a logical sequence when they are a part of a conversion of an arterial to a freeway. If the long-term goal is not a freeway, then nontraditional designs should be considered to match the scale of the solution to the scale of the problem and to be consistent with plans for the corridor. With few exceptions, a new interchange should be within the Metropolitan Urban Service Area.


Klein

Questions

- Is the need for this project documented in any past plans or studies?
- If the location was studied as part of the Intersection Mobility and Safety Study, how is this proposal consistent with the general level of priority and investment need described in the study? Please demonstrate how the proposed solution follows the mobility hierarchy and the Congestion Management Analysis process.
- Please attach a figure showing the existing and future (2050) traffic volumes for the interchange area, along with any congestion, safety, or other data that demonstrates the basic need for the project.
- Is the project a logical extension of an existing freeway (for arterial projects only)? If not, please explain how the proposal fits in the context of the corridor.
- Is the project located within the Metropolitan Urban Service Area? If not, please explain any anticipated timeline for this or extenuating circumstances that support this level of interchange access.

3. Local roadway network and access management

Interchange access is not to be provided if the need is justified only for any of these reasons:

- As a convenience for short trips
- To compensate for lack of a planned adequate complementary minor arterial or collector system
- To compensate for deficient minor arterial or frontage road capacity
- To correct collector or minor arterial capacity deficiencies caused by poor design or excessive access to adjacent parcels

Regional travel demand for the principal arterial system will take precedence over local or land parcel development and related access needs.

When an interchange is proposed on an arterial, the project should, at a minimum, include the removal of all access within one-half a mile of the center of the proposed interchange and any at-grade full-access intersections within one mile along the free flow side of the interchange. It is recommended that access needs should be evaluated as part of an overall corridor plan or sub-area plan.

Questions

- Please describe the existing and planned local road network.
- Could improvements be made to this local system to better serve local trips instead of constructing the proposed project?
- Will the project remove all access within one-half mile of the center of the proposed interchange and any median openings within one mile of the center of the proposed interchange? If the project includes accesses within these areas, please provide documentation or analysis to justify maintaining the access points.
- Describe any frontage road or other access changes that will be needed along with the project.

4. Interchange spacing

Interchanges should be spaced at a minimum of one mile apart (center to center) along a freeway. Interchanges spaced less than one mile apart will require justification and may require special design features such as auxiliary lanes to maintain safety and efficiency. If it is determined that it is appropriate to locate an interchange at less than one mile spacing or to modify an existing interchange with this deficiency, the safe operation of the main roadway must be maintained. Outside of the Metropolitan Urban Service Area, interchanges are typically not needed within two miles of each other along a freeway due to the lack of intense development.

Questions

- Is the project at least one mile from an existing interchange within the Metropolitan Urban Service Area or two miles from an existing interchange in rural areas?
- How is the proposed project consistent with the future vision for the corridor?
- From a planning-level perspective, what are the upstream and downstream impacts of the project?

SUBSECTION 7: CONGESTION MANAGEMENT PROCESS

SUBSECTIONS 5-7 SUPPORT SECTION 4: HIGHWAY INVESTMENT PLAN.

Introduction

The Congestion Management Process is a systematic, data-driven, and regionally accepted approach that aims to improve the performance of the transportation network by mitigating congestion and ensuring the reliable movement of people and goods. The Congestion Management Process evaluates transportation system congestion and includes identification, application, and evaluation of many strategies used to achieve regional congestion management objectives. This process is a valuable tool to maximize transportation system performance through cost-effective and easy-to-implement solutions. The solutions and strategies identified in this process are implemented by the Metropolitan Council, the Minnesota Department of Transportation (MnDOT), transit providers, transportation management organizations, cities, and counties as they fund and implement projects and as they operate their systems.

A congestion management process is required for all transportation management areas, which are metropolitan areas with a population exceeding 200,000. These are continuous processes that include coordination and data sharing between regional transportation partners, including the Met Council, MnDOT, transit providers, transportation management organizations, cities, and counties. This process provides a framework that guides collective decision-making among these partners to increase transportation system efficiency and reduce vehicle use by providing options beyond driving alone. This process helps ensure that congestion impacts are

mitigated while balancing quality of life and promoting travel demand management strategies. This process is continuously monitored and evaluated, which allows adjustment, elimination, or new adoption of strategies based on effectiveness.

Given the plan's focus on excessive highway delay and the need to consider other plan objectives, the existing highway system must be managed and optimized to the greatest extent possible rather than expanded. Thus, the Congestion Management Process prioritizes strategies that manage system demand, improve the operation of the existing system, and provide multimodal travel options.

This section summarizes the region's Congestion Management Process. It includes an overview of links between the Imagine 2050 Transportation Policy Plan and Congestion Management Process, a summary of recent process-related activities, and an outline of future activities and areas that need further refinement.

Overview of the Congestion Management Process

The Congestion Management Process (CMP) is an ongoing process consisting of the following eight action steps that are described in more detail in the CMP Policies and Procedures Handbook and Corridor Analysis Handbook:

1. Develop regional objectives for congestion management
2. Define the Congestion Management Process network
3. Develop multimodal performance measures
4. Collect data and monitor system performance
5. Analyze congestion problems and needs
6. Identify and assess strategies
7. Program and implement strategies
8. Evaluate strategy effectiveness

Framework for the Congestion Management Process

The Imagine 2050 Transportation Policy Plan policies and actions state the intent and approach to regional issues and define the specific activities to implement regional goals and transportation objectives. Many of these policies are linked to actions related to congestion mitigation and are eflected in the strategies outlined in the CMP Policies and Procedures Handbook. These policies and actions serve as the framework for defining the direction of the Congestion Management Process and form the basis for the implementation of a coordinated regional approach to mitigating congestion.

The CMP handbook defines the goals and objectives identified by the Congestion Management Process Advisory Committee in more detail, and specifically structured congestion management process objectives using SMART (specific, measurable, achievable, realistic, and time-bound) performance-based planning approaches. The handbook was finalized in 2020, prior to adoption of the Imagine 2050 Transportation Policy Plan, and identifies the following goals for the region:

- **Goal 1: Increase access to destinations**
- **Goal 2: Support a competitive economy**
- **Goal 3: Promote safety and security**

CMP objectives are organized into six major topical areas. The objectives are as follows:

- Safety
    - Manage annual number of fatalities
    - Manage annual number of serious injuries
- Travel time reliability
    - Manage travel-time reliability
    - Limit annual number of peak-hour excessive delay
    - Manage delay associated with traffic incidents
    - Manage peak-period congestion
    - Manage recurring congestion
    - Maintain a signal retiming program
- Goods movement
    - Maintain truck travel-time reliability
    - Manage over-capacity roadway miles on truck routes
    - Manage freight bottlenecks
- Roadway capacity
    - Limit congested roadway miles
- Public transit (only performance indicators identified in current handbook)
- Travel demand management (only performance indicators identified in current handbook)

Met Council staff, along with the CMP Advisory Committee, will review the current goals and objectives of the Policies and Procedures Handbook and assess the degree to which they match CMP-related actions included in the Imagine 2050 Transportation Policy Plan. The handbook will then be updated to ensure the Imagine 2050 TPP goals, objectives, policies, and actions are reflected and consistency between the two documents is maintained. The goals and objectives of the CMP were a reflection of the 2040 Transportation Policy Plan; the region's approach to congestion has changed since that plan was completed. As such, the Policies and Procedures Handbook's objectives and associated performance measures are not fully consistent with the 2050 TPP and will need to be updated to ensure consistency.

Many Imagine 2050 Transportation Policy Plan policies and actions impact the region's Congestion Management Process. The following actions will be integrated into and inform the updated CMP goals and objectives:

- Action 1G. Maintain, review, and update as needed, the preliminary interchange approval (Appendix F), metro freeway project approval, and congestion management processes for the regional highway system to ensure proposed interchange and freeway investments are consistent with regional policy.
- Action 13C. Emphasize travel demand management strategies on unhealthy air quality days to reduce emissions from single-occupant-vehicle travel that contribute to poor air quality and health impacts.
- Action 21A. Provide incentives for trip reductions by single-occupancy-vehicle travel. Work directly with employers to establish travel demand management programs, performance targets, and technical support, as needed. Create and implement a framework for other incentive and pricing strategies.
- Action 21C. Implement development-based trip reduction programs and ordinances. Use regional funding to prioritize developments that address travel demand management. Provide technical support to cities and developers on travel demand management ordinance development and implementation.
- Action 21D. Prioritize investments in travel demand management that improve highway reliability. Use travel demand management strategies to spread highway travel demand across less congested hours of the day.
- Action 24A. Update the Freight Bottleneck Report every other year to identify impacts of highway congestion on freight movements, including congestion at MnDOT-identified truck freight bottlenecks, and identify cost-effective mitigation.
- Action 25A. Use the Congestion Management Process Handbook during project planning and development to evaluate lower-cost mobility solutions that can provide options and more reliable travel. Provide technical assistance and training on Congestion Management Process analysis processes. Incorporate requirements or scoring measures in funding processes that prioritize use of the Congestion Management Process Handbook for roadway expansion projects.
- Action 25C. Implement a managed-lane system to provide reliable travel for transit, carpool travel, and those willing to pay.

- Action 25D. Consider using MnDOT highway mobility funding on roadway improvements that also support bus rapid transit, transit advantages, and managed-lane improvements on corridors that have transit travel-time reliability issues.
- Action 25E. Provide an interconnected network of transit advantages on roadways between regional destinations. Identify opportunities to implement transit advantages on roadways and prioritize them based on travel time benefits and number of affected users.
- Action 25F. Research congestion-pricing options, including travel demand management incentives and general pricing, and their impact on travel patterns.
- Action 26B. Target corridor-level regional highway system mobility investments only where there is poor reliability caused by excessive delay. Excessive delay is defined by a travel time index greater than 1.25 for more than 2 hours. Projects should follow the mobility hierarchy to identify investment opportunities. Target regionally significant intersection to interchange conversion projects based on high priorities in the Intersection Mobility and Safety Study.
- Action 26E. Identify, prioritize, and fund corridors for traffic technologies that would most effectively mitigate impacts from recurring and nonrecurring congestion.
- Action 26F. Update the Congestion Management Safety Plan to identify congestion- and safety-related problem locations and potential solutions on state highways.
- Action 31G. Build better understanding of the shared benefits of vehicle-miles-traveled reduction on climate mitigation, congestion, and safety.

Met Council activities that support the process

This section highlights some of the recent and ongoing efforts undertaken by the Met Council that directly support the Congestion Management Process.

Continued review of peer agencies' congestion management processes

Since updating our region's Congestion Management Process in 2017, Met Council staff has continued to participate in national technical working groups to learn from peer regions' congestion management processes, mostly facilitated by the Association of Metropolitan Planning Organizations. These discussions include:

- Performance measures used to identify congested corridors and measure effectiveness of implemented congestion management projects
- Investment strategies and programs used to mitigate congestion on key corridors
- Datasets and data collection processes

- Methods for implementing congestion management strategies and prioritizing projects for funding
- Visualization techniques

Congestion Management Process Advisory Committee

The Met Council established a Congestion Management Process Advisory Committee in 2017. This committee is comprised of technical experts and other stakeholders representing the entire metropolitan planning area. The committee ensures the Met Council is meeting the Congestion Management Process objectives and serves as a critical resource for:

- Identifying corridors of concern.
- Refining the regional Congestion Management Process network.
- Steering the direction of regional performance measures.
- Coordinating a regional data collection and sharing program.
- Assessing and refining specific Congestion Management Process strategies.

The Congestion Management Process Advisory Committee was instrumental in the development of the CMP Policies and Procedures Handbook and continues to meet on a quarterly basis. In addition, and consistent with regional transportation objectives and federal requirements, the Congestion Management Process Advisory Committee serves as the body that guides the region's Congestion Management Process long-term. The committee directs the Congestion Management Process and carries out various roles in order to implement and adjust objectives and strategies.

Creation of the Congestion Management Process Corridor Assessment Handbook

After the completion of the Congestion Management Process Policies and Procedures Handbook, the Met Council wanted to provide the region with specific, step-by-step guidance on how to conduct a corridor analysis. This document, the Corridor Assessment Handbook, was completed in 2022 and uses strategies in the policies and procedures document to guide users to appropriate Congestion Management Process corridor solutions. The handbook promotes collaboration between stakeholder agencies and the Met Council, and it simplifies and standardizes the corridor assessment process.

The handbook emphasizes multimodal, travel demand management, and traffic management technology strategies, with capacity expansion only considered as a last resort. It also guides users to consider the corridor context and the people who live in and around the corridor. It was validated with three test corridors, which provide examples and help ensure that the guidance applies to corridors of different length,

geographic, and land use contexts. It includes a strategy review matrix that guides the practitioner to assess the effectiveness of various strategies along a corridor. As a living document, it will be updated to reflect any changes in the Congestion Management Process and its policies and procedures document.

Performance-based planning program efforts

The Imagine 2050 Transportation Policy Plan includes a number of policies and actions aimed at reducing vehicle miles travelled during peak periods and improving accessibility to areas with a high concentration of jobs. The Congestion Management Process Policies and Procedures Handbook clarifies how these Imagine 2050 Transportation Policy Plan policies and actions reflected in the planning and programming process, through the following work:

- Develop performance measures to define the three major dimensions of congestion: intensity, duration, and extent. Variability of congestion is developed only for the National Highway System roadways.
- Further refine regional strategies to reduce vehicle miles traveled during peak commuting hours, and improve connections between areas with high concentrations of jobs and low-income households.
- Identify programs and services that support access to jobs within the region.
- Identify projects and programs that mitigate congestion to the greatest extent feasible and increase accessibility to jobs.

These efforts will be formalized through development of multimodal performance measures and targets, as well as a data collection and sharing plan. These performance measures will be used to:

- Track progress towards meeting regional congestion-related objectives.
- Identify specific corridors which require additional data collection and analytical efforts.
- Assess congestion mitigation strategies, programs, and projects.
- Better communicate system performance using visualization techniques that are understandable to policymakers, the public, and partner agencies.

All of the performance measures under development will meet federal requirements, local priorities, and use a SMART. (specific, measurable, achievable, relevant, and time-bound) approach to performance-based planning. These measures will be used to evaluate the performance of investment strategies towards achieving regional objectives. These strategies will be integrated into the Congestion Management Process, and the connection between these strategies and the planning and programming processes will be made more transparent.

The Met Council has historically tracked several performance measures that are related to system congestion and reliability. These were reported, in part, in previous iterations of the Transportation Policy Plan and the Transportation System Performance Evaluation. While the Met Council intends to continue to track many of these measures, all previous performance measures will be evaluated and vetted through the Congestion

Management Process Advisory Committee, and, if selected, evolve into Congestion Management Process objectives using a SMART approach. The Congestion Management Process Policies and Procedures Handbook outlined these new performance measures, which will continue to be tracked, monitored, and reported upon on a regular basis.

Recent supporting studies and ongoing strategies

Intersection Mobility and Safety Study

The Met Council and MnDOT worked with local agencies to analyze and prioritize at-grade intersections on the principal arterial system within the Minneapolis-St. Paul Metropolitan Planning Area. This study serves as an update to the 2017 Principal Arterial Intersection Conversion Study. There are 89 intersections across the region that exhibit needs in the high tier, indicating that investments on the scale of grade separation may be justified ($22 million and over). Nine of these locations already have projects that are under construction or fully funded. There are an additional 117 locations in the medium tier where needs suggest substantial investment ($11 million to $22 million) could be cost effective. The remaining 312 locations in the low tier are candidates for at-grade projects, several warranting considerable attention and potential investment based on their degree of needs ($1 million to $11 million).

Travel Demand Management Action Plan

The Travel Demand Management (TDM) Action Plan identified areas of expansion opportunity for TDM. The Imagine 2050 Transportation Policy Plan has several related policies and actions and the expansion opportunities are described in more detail in the Travel Demand Management Investment Plan. The Travel Demand Management Action Plan identified a specific objective and actions specific to "…reduce the need for investments in additional roadway capacity" with a reference to also review and update the Congestion Management Process accordingly. While some actions were identified, the action plan was not intended to create the detailed guidance necessary for implementation. As a result, the Transportation Policy Plan includes a work program item to create methodologies and guidance on how to integrate Travel Demand Management activities into highway planning and project development processes. Once complete, this will inform future updates of the Congestion Management Process.

Travel Behavior Inventory

The Travel Behavior Inventory is a program of travel behavior research and transportation model improvement. The program includes a biennial regional household travel survey, which will enable tracking of person-based performance measures, including mode share. Future improvements to the regional model will be targeted to improve the ability to forecast key Congestion Management Process performance measures.

Highway systems management

Highway systems management describes the infrastructure and traffic operation technologies used to improve mobility and reduce congestion. This includes a freeway management system and an arterial traffic management system, which are important to maximize safety and mobility benefits from large capital highway investments.



A freeway management system can include monitoring traffic conditions, relaying real-time information to travelers, and more direct action on highway efficiency. Traffic monitoring often uses cameras and various automated measurement tools. Real-time information can be provided to travelers through dynamic signs, websites, and in-vehicle alerts. Direct actions to improve the efficiency of highways can include tools such as ramp meters, emergency response capabilities, coordinating information and activities with various emergency responders, and planning work zone activities with traffic demands in mind.

An arterial traffic management system might use similar traffic monitoring and relaying of real-time information to travelers. However, direct actions that aid efficiency differ in some ways. Similarly work zone planning, emergency response, and coordinating with first responders can be effective, but coordinating traffic signals is fundamental on arterials. The newest technologies support constant monitoring and almost constant updates to signal timing for maximum efficiency at all times.

Next steps and future Met Council-led activities

While much of this document is informed by cooperative work with regional partners through the Congestion Management Process Advisory Committee, other improvements were developed within the Met Council and communicated with greater transparency and detail in the Congestion Management Process Policies and Procedures document and other future documents. This section outlines specific steps the Met Council will take in the near-term to develop a more comprehensive and robust Congestion Management Process.

Congestion Management Process pilot corridor analysis

This study, set to begin in 2024, will have a consultant team work directly with both Met Council staff and regional stakeholders to pilot a number of corridor studies and assist in demonstrating how the guidance from the Corridor Analysis Handbook applies to the variety of corridors that are present within the metro area. The corridors will be of varying lengths, have different surrounding land use, and be used for different purposes. The consultant and Met Council staff will work closely with regional partners to assess the handbook's effectiveness in achieving the desired Congestion Management Process outcomes.

This effort will also directly tie into the MnDOT Corridor Planning and Prioritization Handbook to ensure that the Congestion Management Process performance measures are used to assess and prioritize MnDOT corridors. It will also provide recommendations for improvement to the handbook and explore how to integrate Complete Streets concepts into the Congestion Management Process.

Assess Congestion Management Process strategies

In order to more effectively manage congestion and optimize solutions, the Met Council needs to more thoroughly evaluate whether the region's Congestion Management Process strategies have had the intended congestion management effect. This includes an analysis of not only project-level impacts of strategies, but also an evaluation of whether alternative strategies could have had a greater impact and/or a better benefit-to-cost ratio. The Met Council, via the Congestion Management Process and its Policies and Procedures

handbook, developed a data-driven mechanism to quantify and better assess strategy effectiveness. The Met Council also recognizes that the Congestion Management Process strategies need to be more effectively communicated with regional stakeholders and the public, which will be accomplished via the Congestion Management Process Advisory Committee and Congestion Management Process documents.

Incorporate Travel Demand Management practices into highway planning and programming

The Met Council has committed to developing a plan to incorporate Travel Demand Management strategies into the highway planning and corridor planning processes. The plan will investigate and provide detailed guidance on how the lead implementing agency should consider and prioritize Travel Demand Management when assessing congestion strategies in problem areas. This plan will be built off of existing Congestion Management Process guidance and developed in conjunction with the MnDOT and county corridor-planning processes.

Integrating Congestion Management Process activities into project prioritization and selection processes

While the Met Council has traditionally integrated congestion management into the project selection process, more transparency is needed to show how the Congestion Management Process factors into project selection, in particular through Regional Solicitation projects. The Met Council recently included a number of criteria that will specifically prioritize projects with process elements within the Regional Solicitation, but more work is required to fully incorporate the Congestion Management Process into the Regional Solicitation. The specific link between projects that directly support congestion mitigation and how these projects are programmed is not currently clearly defined. This will be a key topic of the Regional Solicitation evaluation and will be addressed in detail in future Congestion Management Process documentation.



SECTION 8: TRANSIT INVESTMENT PLAN

Introduction

The Transit Investment Plan lays out the types of transit investments the region will make to achieve its transportation policy goals over the coming decade, including specific projects that are funded within plan assumptions in the near future. To be good stewards of public funds and trust, the Met Council and its partners must invest in transit solutions that efficiently support the region's strategic goals and objectives. Transit providers[86] and the Met Council must also collaborate with cities and counties to integrate transit with development and land use planning, other transportation systems such as roadways, and other public services.

Transit is an essential means of travel for many residents in the region. On a typical weekday in 2023, people in the Twin Cities region took more than 135,000 rides on public transit services. The Met Council's 2021-2022 Travel Behavior Inventory, which tracks changes in regional travel patterns, found that roughly 26% of respondents said they use transit. When applied to the region's population, this translates to nearly 800,000 people who use transit at any point throughout the year. Of that, the study estimated that roughly 160,000 people, or about 5.1% of the region's population, use transit two days a week or more. An additional 24,000 (0.8%) use transit weekly, another 85,000 (2.7%) use it a few times a month, and over 524,000 (16.9%) use it a few times a year.

The purposes of riders' trips include the full range of needs from commuting to work or school, to running errands, to accessing medical care, to visiting friends and family, or going out to eat or see entertainment. Riders using transit for these different purposes need service at various times of day and have different things that make transit a useful option for them. The region's transit providers work diligently to put services and facilities where people are most likely to use transit. In 2022, roughly 55% of the region's residents lived within a 10-minute walk (about a half mile) of any transit service and 19% lived within that distance of frequent transit service (departing every 15 minutes or better).

Public transit is an essential part of our regional transportation system. It helps provide equitable access to mobility and opportunities. Transit is one of the only options that supports travel across the region for those who cannot drive for any number of reasons. According to data from the 2021 American Community Survey, roughly 57,000 residents of the region lived in a household without a private vehicle. This figure does not include households with fewer vehicles than drivers, which also often rely on transit for mobility.

The transit system also reduces greenhouse gas emissions and pollutants by moving more people where they need to go with fewer vehicle miles traveled. This also helps reduce wear on the region's

roads and helps manage congestion, particularly where demand is highest. In this way, transit benefits residents throughout the entire region, including places with limited or no transit service, and helps make the region an attractive place to live, visit, and do business.

Connection to regional transportation goals

Investing in and implementing a robust public transit system will play a key role in achieving the region's five strategic planning goals and their supporting transportation objectives:

Goal: Our region is equitable and inclusive

Transit can be used to improve how equitable and inclusive the region's transportation system is, particularly for those who cannot afford their own car, who cannot drive, or who wish to live without owning their own vehicle. Furthermore, thoughtful implementation of transit services and projects can contribute to addressing past harms to various communities in our region such as Black people, Indigenous people, and other people of color. However, the reverse can also be true with major infrastructure investments, raising concerns about displacement of residents and businesses. The Met Council is committed to working together with communities to ensure those who already live near a project benefit from it along with the rest of the region.

To that end, this plan incorporates findings from recently completed studies on equity into policy and investments such as its Transit Service Allocation Study, which investigated how well bus service is matched to different communities' needs. This plan will incorporate findings from other ongoing studies as they are completed. This plan also details how transit projects and planning in the region will implement equity and inclusion policies and actions identified in the overall transportation plan.

Goal: Our communities are healthy and safe

Public transit is one of the safest modes of transportation to use in terms of risk of injury or death,[87] particularly when compared to driving a private vehicle. Getting more people to ride transit is a key strategy to reduce transportation-related injuries and deaths and supporting the region's Toward Zero Deaths goals. Having a well-used system can also aid in transit feeling more secure and welcoming for all users. The region is making investments in rider security like the new Transit Rider Investment Program (TRIP)[88] personnel, who check fares and assist riders, and recruiting additional transit police officers to support the region's objective of making people feel safe and welcome when using any mode of transportation.

Using transit also generally encourages more walking, rolling, and biking, which contributes to better individual health outcomes. Furthermore, harmful pollution from the transportation sector is reduced as more people use transit instead of driving their own vehicles. The transit system can also contribute to a sense of community by being a place where people regularly interact with other members of their community, much like a public library or park.

Goal: Our region is dynamic and resilient

Transit provides an affordable and convenient option that helps people in the region meet their daily needs and connects them to opportunities, whether economic, social, or cultural. Implementing the region's vision of fast, frequent, and reliable transit service on key regional corridors will make transit more convenient, accessible, and reliable for more of the region. Providing this expanded system will also improve transit's competitiveness with cars, helping reduce the region's overreliance on personal vehicles and contributing to a more balanced and resilient transportation system that provides freedom of movement for all residents.

Goal: We lead on addressing climate change

Investing in transit supports all the region's objectives for leading on climate change. Shifting more trips to transit reduces both greenhouse gas emissions and pollutants, as well as vehicle-miles-traveled per person in the region. A robust transit system provides people more options, like choosing public transit instead of car ownership. Other investments such as transitioning the transit fleet to zero-emissions vehicles reduce emissions and tailpipe pollutants from transit vehicles themselves.

Goal: We protect and restore natural systems

While transit does not often impact natural systems as directly as other transportation infrastructure like roads, it is key to supporting strategies to protect natural systems like the region's land use goals. For example, one regional land use objective in the Imagine 2050 plan is to minimize the amount of land used to accommodate growth in order to keep more land in conservation or agricultural uses. This will mean denser development in the region's urbanized area and transit service will be key to maintaining people's mobility, access to opportunities, and quality of life while managing congestion and emissions. Furthermore, transit projects can and should incorporate green infrastructure to provide benefits to natural systems such as by improving water quality.

Met Council and Transportation Policy Plan roles in regional transit planning

As the metropolitan planning organization for the Twin Cities region, the Metropolitan Council is responsible for coordinating transportation planning and policy - including for public transit - in a continuous, cooperative, and comprehensive process. The Met Council works with cities, counties, transit providers, and other partners like Tribal governments and the state of Minnesota to plan and implement projects, strategies, and services. The Met Council takes on multiple roles to fulfill this responsibility based on requirements in state and federal laws.

Long-range transportation plan

The Met Council is the lead agency for preparing the Transportation Policy Plan, which serves as the region's long-range transportation plan for all modes including transit. The plan provides an overarching direction of how the region will manage and improve its transit services and infrastructure. This plan is required by federal law and ensures access to federal transportation funding and the ability to compete for federal discretionary grants.

Metro Transit governance and operation

Metro Transit, the region's largest transit provider, is a service of the Met Council and is governed by it. Met Council members vote to approve Metro Transit contracts, agreements, and plans, and generally set policy for the agency.

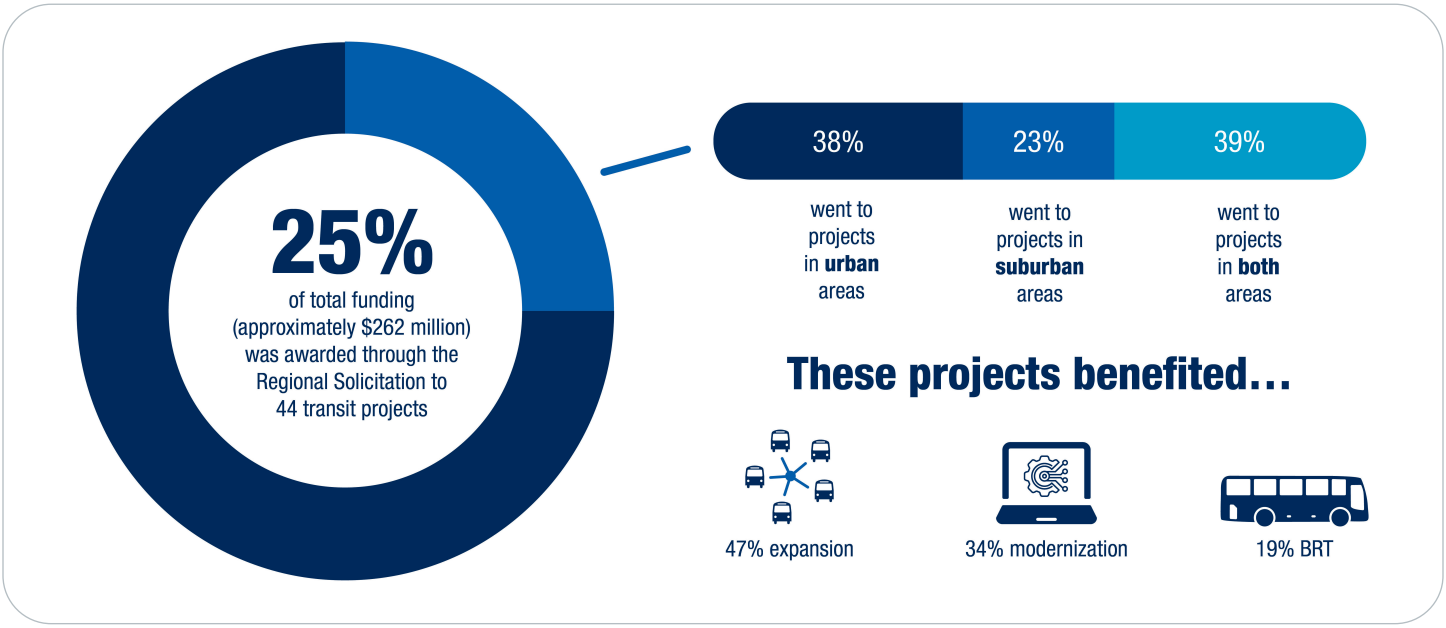
Regional Solicitation

The Regional Solicitation is the region's competitive process to award federal transportation funds that come to the metropolitan planning organization to projects that meet regional transportation needs and goals. Between 2014 and 2024, approximately $321 million, or about 22% of the total funds awarded through the Regional Solicitation, were awarded to 54 transit projects. Of that funding, roughly 41% was awarded to projects in urban areas, 27% to projects in suburban areas, and 32% to projects that served both urban and suburban areas. With regards to project type, of the Regional Solicitation transit funding about 44% went to transit expansion, 33% to transit modernization, and 23% to arterial bus rapid transit.

From 2018 to 2022, the Transportation Advisory Board focused these federal funds on modernizing parts of the transit system, expanding new services like microtransit and high-frequency services like bus rapid transit, and expanding existing routes of all types. The region has historically had a limited amount of local funds for transit modernization and expansion. As such, Regional Solicitation funding has historically covered 80% of regional transit project costs.

In 2020, the Regional Solicitation created a special category to provide a stable funding source to build out the arterial bus rapid transit system discussed later in the Transit Investment Plan. However, this special category also allowed other transit projects to be more competitive for transit funding in the solicitation. Furthermore, a guarantee that a portion of transit funding in the Regional Solicitation would go to "new markets" in Transit Market Areas 3, 4, or 5 was implemented at the same time.

Figure 8.1: Regional Solicitation funding to transit, by geography



Regionally significant transit projects

A regionally significant transportation project is on a facility which serves regional transportation needs like access to and from the area outside of the region, major activity centers in the region, or major transportation terminals. This includes, at a minimum, all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

Prior to construction, regionally significant projects must be approved in the 2050 Transportation Policy Plan and then approved for inclusion in the Transportation Improvement Program (TIP). The type of funding (for example, local, state, or federal) being used on the project does not impact whether a project is regionally significant (in other words, locally funded projects may still be determined to be regionally significant). For transit projects, regionally significant projects include the following:

- The addition of a new transitway, including arterial bus rapid transit, highway bus rapid transit, dedicated bus rapid transit, light rail, commuter rail, and modern streetcar
- The addition or removal of a transit station or stations on a transitway, including extensions of existing transitways (does not include minor station relocations that are part of the normal planning and engineering process)
- The addition of a permanent park-and-ride facility (for example, not leased) with a capacity of 250 or more stalls

Studies and prioritizing projects

Met Council staff regularly undertake studies to inform decision making on difficult issues the region faces and to aid in the prioritization of investments within a project type. An example of a recently completed study is the Bus Service Allocation Study, which was finalized in January 2021. Past results and active work are described in the relevant sections of this chapter. Planned future studies are in the Work Program chapter. The 2050 Transportation Policy Plan's Work Program includes the following transit studies:

- Regional Microtransit Policy Framework
- Metro Transit Service Improvement Planning
- Arterial BRT System Update

Additional information on these planned future studies is in the Work Program chapter.

Coordinating regional transit service and policy development

The Met Council promotes transit service coordination by developing and maintaining regional transit policies and procedures. The intent of this work is to create a high-quality, seamless regional transit system while respecting local transit provider autonomy. Examples include fleet management, procurement, and facilities

management policies and procedures. This work includes coordinating with services that connect to areas outside the seven-county region. The Met Council also facilitates communication and coordination among transit providers to ensure well-coordinated services and project delivery.

Transit Service Design and Performance Guidelines help steer investment decisions

The Met Council developed guidelines for designing transit service and route performance for service productivity and efficiency that provide a baseline for all transit providers in the region. These guidelines are in the Transit Service Design and Performance Guidelines document of the Transportation Policy Plan. Topics covered include transit market areas, transit planning basics, service design (stop spacing, minimum frequency, customer facilities, etc.), and route performance.

The Met Council reports transit route performance each year to the Minnesota Legislature

The Metropolitan Council prepares an annual Regional Route Performance Analysis that reports the performance of each route as compared to the performance standards defined in this plan.

Coordinating federal formula transit funding distribution

The Urbanized Area Formula Funding program (49 U.S.C. 5307) makes federal resources available for transit capital and operating assistance in urbanized areas and for transportation-related planning. An urbanized area is an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Census Bureau. The Met Council adopted principles to distribute Federal Transit Administration (FTA) urbanized area formula funds in March 2001 through Business Item 2001-49. Those principles remain in use today.

MnDOT roles in passenger travel beyond the region

The Twin Cities region is also served by Amtrak passenger rail service and several intercity bus companies. MnDOT is responsible for planning intercity passenger rail and coordinating with local agencies such as Ramsey County Regional Rail Authority, which owns Union Depot in Saint Paul. MnDOT also coordinates with intercity bus companies in Minnesota. MnDOT maintains a Comprehensive Statewide Freight and Passenger Rail Plan and typically leads or partners as a lead on corridor studies for passenger rail. Amtrak is the likely operator of intercity passenger rail, though this is not a requirement. The following projects are currently in place or under consideration:

- Amtrak's Empire Builder provides passenger rail service to Seattle, Portland, and Chicago. Trains arrive and depart once a day in each direction at Union Depot in downtown Saint Paul.
- MnDOT partnered with Wisconsin to add a second daily trip between Saint Paul and Milwaukee/Chicago. The Borealis Line officially announced began service in May 2024. Capital improvements and operating costs will be partially funded through two federal grants, state funds from Minnesota, Wisconsin, and Illinois, plus Amtrak funding.
- MnDOT is also leading a corridor development process for a higher speed passenger rail service called Northern Lights Express between Minneapolis and Duluth. The project received an appropriation from

the Minnesota Legislature in 2023 for $194.7 million to provide the match for an anticipated federal grant that would cover 80% of the project capital costs. Project development is ongoing.

- MnDOT is collaborating with Met Council to study scenarios for the Northstar Commuter Rail corridor after the COVID-19 pandemic, as required by the 2023 Minnesota Legislature. This includes looking at extension to St. Cloud and communities in northwestern Minnesota.

Intercity bus service connects the Twin Cities with many destinations in the Upper Midwest, including Minneapolis-Saint Paul International Airport and intermodal stations in downtown Minneapolis and Saint Paul. Intercity bus service in Minnesota is operated by private companies like Megabus, Greyhound, Jefferson Lines, and Land-to-Air Express.

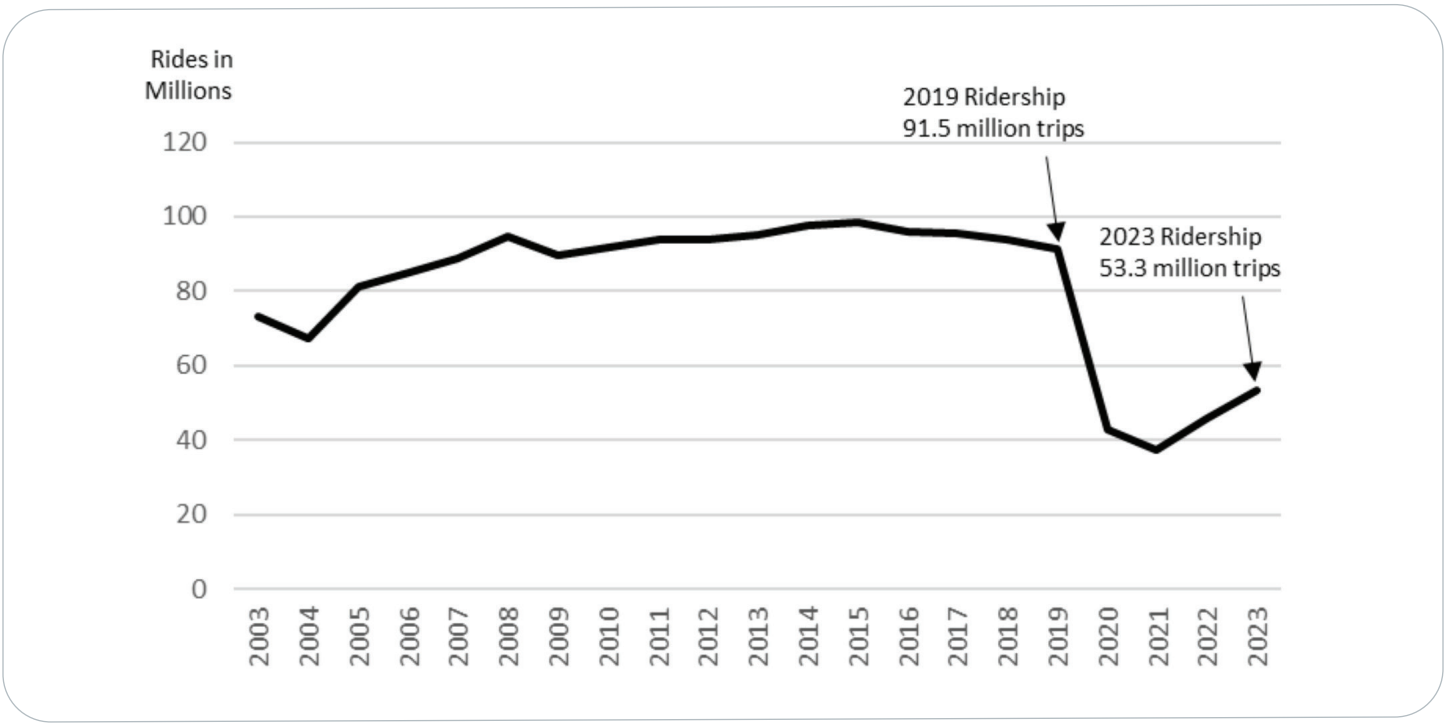


Existing Transit System

A total of 53.3 million rides were taken on public transit in the Twin Cities region in 2023, or about 16.2 trips per capita. This is a 16% increase in total ridership from 2022, showing encouraging signs of ridership recovery from the impacts of the COVID-19 pandemic. This includes roughly 2.1 million rides on special transportation service (Metro Mobility), within 13% of 2019 ridership of 2.4 million, and 186,000 on general public dial-a-ride, which was roughly 109% of pre-pandemic levels. To serve these riders, six regional transit providers ran 3.7 million hours of transit service in 2023, or about 1.2 hours per capita. The number of rides per in-service hour in 2023, called productivity, was 14.3 across all types of service regionwide, up 19% from 2022.

The total area served by transit (within a half mile of a transit stop) in the region was 492 square miles. About 55% of the region's population lived within a half mile of regular-route transit services, and 19% lived within that same distance of high-frequency transit (meaning a transit vehicle departs at least every 15 minutes from a stop). Roughly 50% of the region's jobs were located within a half mile of a transit stop.

Figure 8.2: Annual transit ridership in the Twin Cities region



Transit service providers

There are six main transit providers operating transit service in the region. Their fleet size, geographic service area, and service types vary, but the Met Council works with each of them to ensure transit service is integrated and cohesive in addressing the region's needs. Providers include:

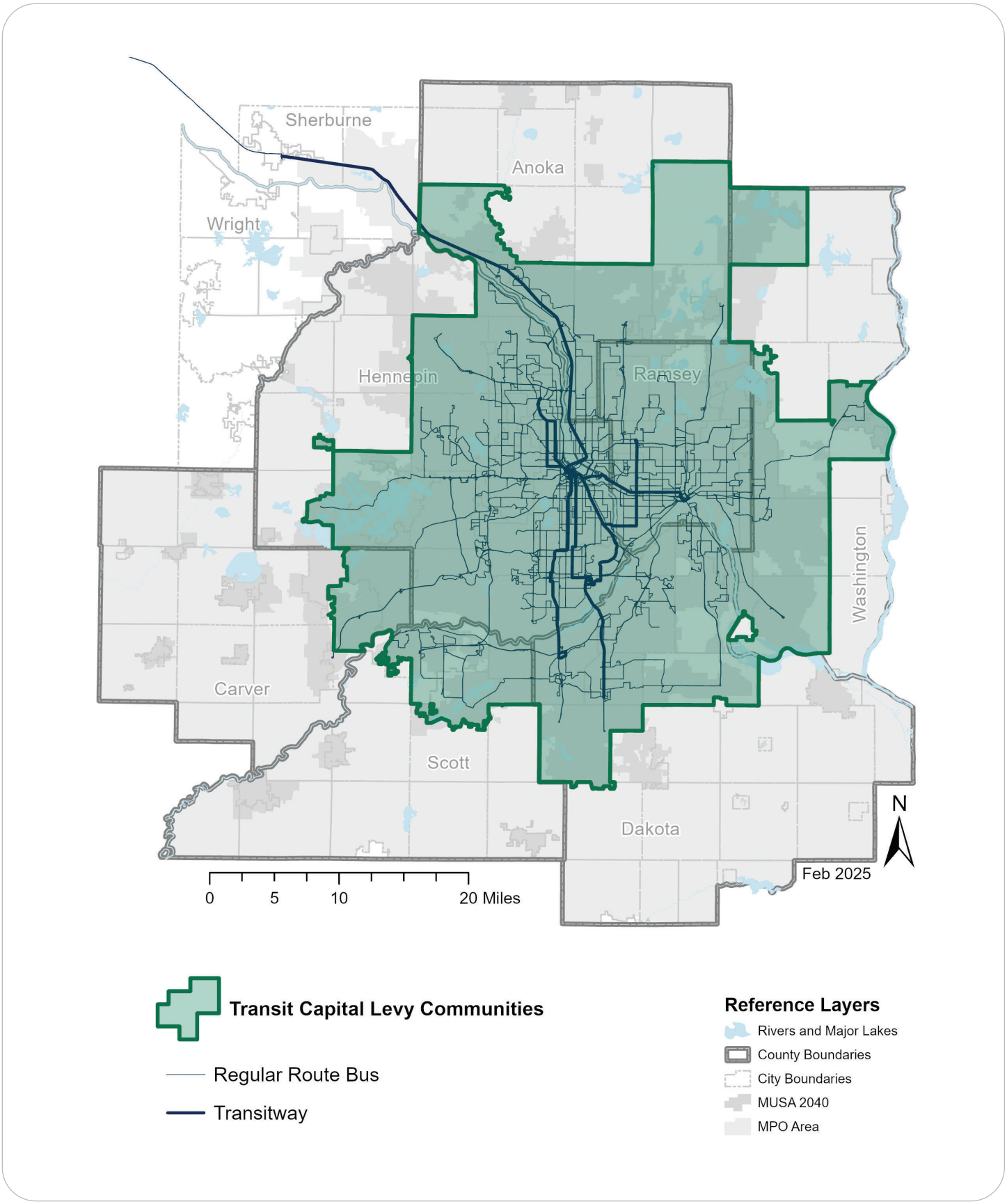
- Metropolitan Council has two transit service providers within its organization:
    - Metro Transit is the largest transit provider in the region and operates most of the region's regular-route bus service, and all light rail and commuter rail lines.
    - Metropolitan Transportation Services manages a variety of contracted services including regular-route bus, Metro Mobility paratransit service, Transit Link general public dial-a-ride, the Metro Vanpool service, and micro, its pilot microtransit service.
- Minnesota Valley Transit Authority (MVTA) serves seven communities south of the Minnesota River including Eagan, Apple Valley, Burnsville, Prior Lake, Shakopee, Rosemount, and Savage with regular-route bus, including express service, providing transit connections within their service area and to major regional destinations like the Mall of America, MSP International Airport, the VA Medical Center, downtown Minneapolis and Saint Paul, and the University of Minnesota. It also operates a microtransit service called MVTA Connect in Eagan, Apple Valley, Burnsville, Savage, and Rosemount.
- SouthWest Transit serves Chaska, Eden Prairie, and Chanhassen primarily with its microtransit service, Prime, and also operates regular-route bus service including express connections between those communities and downtown Minneapolis, MSP International Airport, and the University of Minnesota.
- Maple Grove Transit is operated by the City of Maple Grove and provides express regular-route service to major regional destinations like downtown Minneapolis and the University of Minnesota and My Ride, a microtransit service.
- Plymouth MetroLink is a service of the City of Plymouth and provides express regular-route service to major regional destinations like downtown Minneapolis and the University of Minnesota, and microtransit service.
- University of Minnesota provides regular-route bus service and paratransit service around and between its Minneapolis and Saint Paul campuses.

There are also transit services in the Twin Cities urbanized portions of Wright and Sherburne counties. Tri-CAP currently provides weekday dial-a-ride and deviated rural-route service within the City of Elk River, and Trailblazer provides similar services within St. Michael and Albertville. More information on these services can be found in MnDOT's Annual Transit Report. Small transit services or individual routes are occasionally operated by other local communities as unique or demonstration services.

Transit capital levy communities and provider service areas

Minnesota state law created the transit capital levy communities in 2001 to fund regular-route transit services in the region. These are the communities within the seven-county region where a property tax is levied to pay for transit capital needs (see Figure 8.4). The original boundaries, established in state law, have expanded over time as communities have joined the levy district in response to the growing region. The most recent cities to join the levy district passed resolutions to do so around 2010 including Lakeville (2009), Forest Lake (2010), Columbus (2010), Maple Plain (2011), and Ramsey (2013).

Figure 8.3: Map of Transit Capital Levy District



The Met Council provides dial-a-ride for the general public in areas of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties where demand cannot be served on regular-route transit. Dial-a-ride service is also available in the contiguous urbanized portions of Sherburne and Wright counties.

The Americans with Disabilities Act paratransit service area

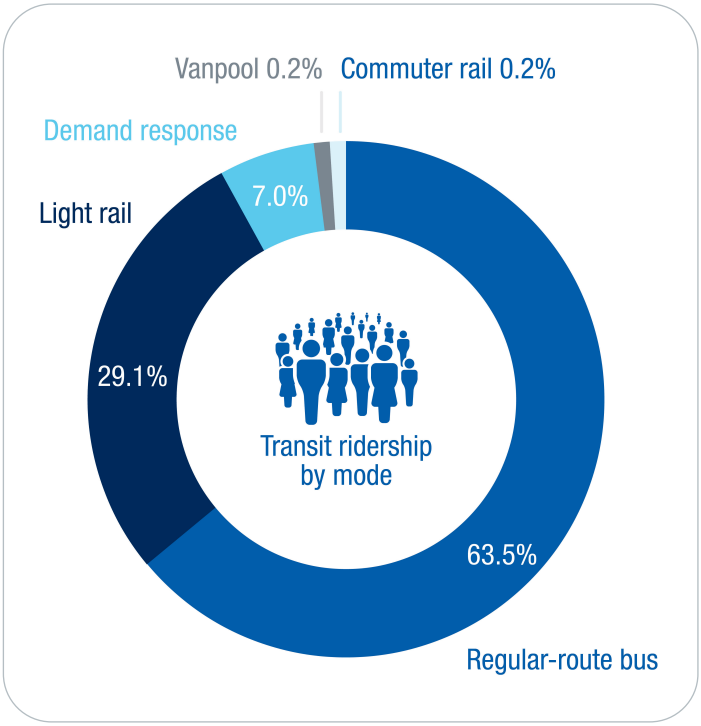
The Americans with Disabilities Act (ADA) requires complementary service for certified riders who travel where regular-route transit service is available but are unable to use it due to a disability. The state has established additional service areas beyond that through law.

Types of transit service

The primary type of transit operated in the region is regular-route bus, of which there were 130 individual routes operating as of December 2023 – 77 local and 53 express. Metro Transit also operates two light rail lines (METRO Blue Line and METRO Green Line), five bus rapid transit lines (METRO A, C, and D, Orange, and Red lines), and one commuter rail line (Northstar Line). In 2023, transit providers operated six different modes of transit service in the Twin Cities region including:

- **Regular-route bus** service is provided on a fixed, published schedule along specific routes, with riders getting on and off at designated bus stops. Regular-route service is provided using a variety of bus types that operate local services like core local routes, or suburb-to-suburb local routes, and commuter and express service. Some providers also operate a deviated regular-route, or flex service. Regular-route bus carried 67.1% of transit ridership in 2023 while using 53.6% of total service hours. The 14 bus routes in the high-frequency network,[89] which provide 15-minute or better service throughout the day on weekdays and Saturdays, carried about 39.6% of transit rides in 2023 (Figure 8.6 shows high-frequency routes).
    - **Bus rapid transit (BRT)** service has similar characteristics to regular-route bus but is provided at high frequencies with stops spaced farther apart to provide a faster trip. It also uses unique buses and specially designed facilities and amenities similar to light rail. The region sorts BRT services into three categories based on the kind of roadway it primarily operates on. Arterial BRT operates on arterial streets, highway BRT runs on highways for most of their length, and dedicated BRT has its own runningway, such as a bus-only roadway or separated lanes.

Figure 8.4: Transit ridership by mode



- **Light rail** transit service is provided on electric-powered trains with frequent trips and runs primarily on an exclusive right-of-way. Light rail uses specially designed transit stations and amenities. The region's two light rail lines carried about 28% of rides taken on transit in the region in 2023 while using 8% of the region's total service hours.
- **Commuter rail** service is typically provided on diesel-powered trains that operate on traditional railroad tracks with limited stops. Commuter rail typically serves commute trips at peak times. The region's one commuter rail line, Northstar, provided 0.1% of regional ridership while using 0.1% of total service hours.
- **Demand response** transit provides shared-ride service that allows customers to schedule pickup. These services fulfill different roles based on the size of their service area, how far in advance rides must be reserved, and who is eligible to use the service. Demand response modes provided 4.7% of rides in 2023 while using 39.4% of service hours. This is due to the types of trips demand response serves, which cannot benefit as much from economies of scale like fixed-route services. There are three types of demand response service in the region:
  - **General public dial-a-ride** provides access to transit services where regular route transit is not available. The Met Council's dial-a-ride service is Transit Link.[90]
  - **Special transportation service** is public transportation for certified riders who are unable to use the regular fixed-route bus due to a disability or health condition and is mandated by state and federal law. Met Council provides ADA paratransit service via Metro Mobility. The Met Council also rolled out a new service called Metro Move starting May 2024. Metro Move serves people who have a disability and are served by a brain injury waiver, Community Access for Disability Inclusion waiver, or a developmental disability waiver. The service links waiver participants to day support programs, work, and other community destinations.
  - **Microtransit** is on-demand, shared-ride transit service provided within a defined service zone. The zone is usually small enough to keep wait times for a pickup under a set number of minutes. All the regional transit providers currently operate some type of microtransit service ranging from small pilots (Metro Transit micro) to service zones encompassing their whole operating area (SouthWest

Figure 8.5: Service hours by mode

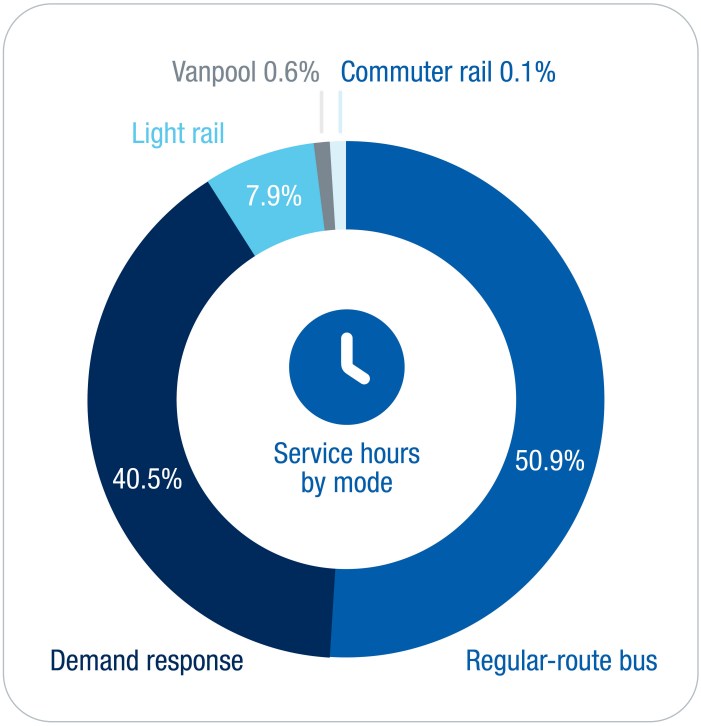
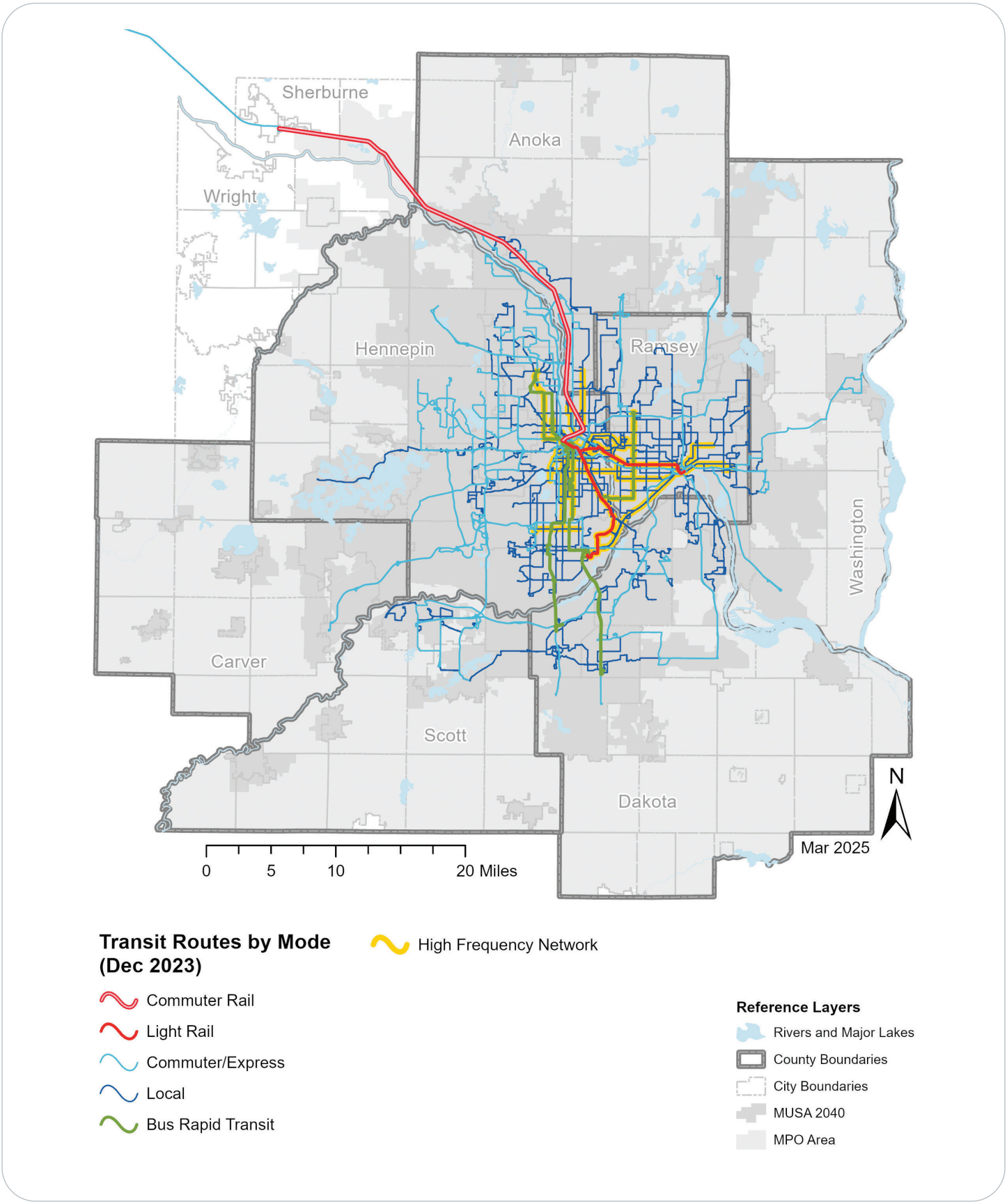


Figure 8.6: Map of current transit system, by mode



Transit Prime). The Met Council will be working with its partners to develop regional guidance for designing, implementing, and operating microtransit services.

- **Public vanpools** are made up of five to 15 people, including a volunteer driver, commuting to and from work destinations throughout the region on a regular basis in a subsidized van. Vanpools typically serve origins and destinations not served by regular-route bus service. Vanpools provided 0.2% of rides in 2023 while using 0.5% of service hours.

Transitways

The region uses the term transitway[91] as a general designation for transit lines that meet one of the following criteria:

1. Providing frequent all-day service, high-capacity or uniquely branded vehicles, and high amenity stations that include off-board fare payment

2. High-capacity service operating on a fixed-guideway such as rail or a bus-only facility

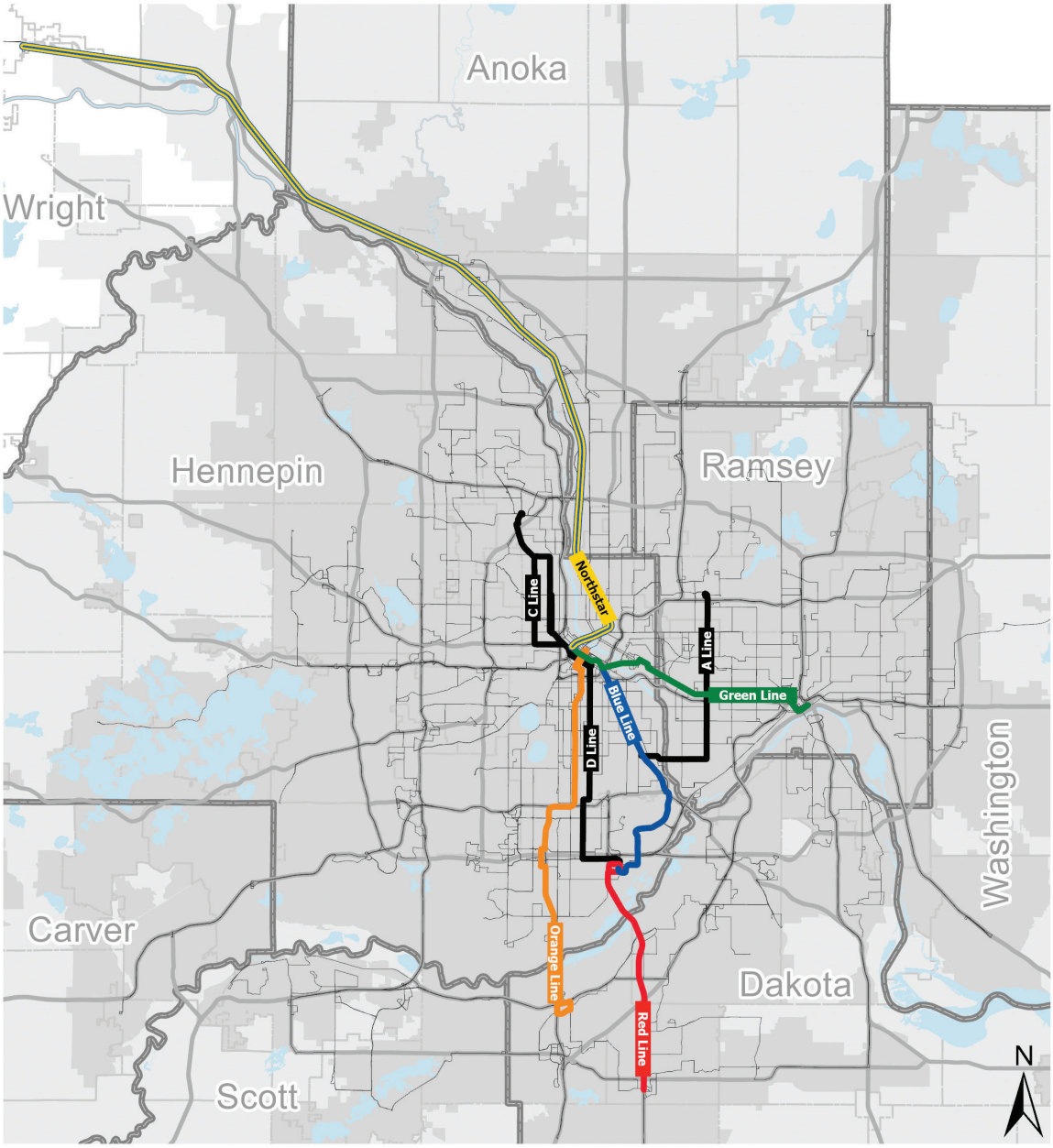
Transitways are built on high-demand corridors where the most riders will benefit from enhanced services and amenities. Transitways also make the transit system more useful for riders by providing faster trips that allow them to reach more destinations and/or allowing easier connections from local routes resulting from higher frequency of service. The Met Council, through Metro Transit, currently operates all eight of the existing transitways in the region including:

- **METRO Blue Line light rail**
- **METRO Green Line light rail**
- **Northstar commuter rail**
- **METRO Orange Line highway bus rapid transit (BRT)**
- **METRO Red Line highway BRT**
- **METRO A Line arterial BRT**
- **METRO C Line arterial BRT**
- **METRO D Line arterial BRT**



All of these routes, except Northstar commuter rail, are also part of the METRO system and designated with a color for light rail and highway or dedicated BRT, or a letter for arterial BRT. METRO routes typically run at least every 15 minutes during most of the day, with the exception of METRO Red Line. METRO lines serve stations with enhanced amenities like heating, added lighting, real-time information, off-board payment, and improved security features.

Figure 8.7: Map of current transitway system



Mar 2025

Light Rail and Commuter Rail Lines

- Blue Line LRT
- Green Line LRT
- Northstar Commuter Rail

0 3 6 12 Miles

Bus Rapid Transit

- Arterial Bus Rapid Transit (A, C, D Lines)
- Red Line
- Orange Line

Regular Route Bus (Dec 2023)

Reference Layers

- Principal Arterials
- Rivers and Major Lakes
- County Boundaries
- City Boundaries
- MUSA 2040
- MPO Area

While the University of Minnesota's campus circulator service fits some of the criteria, such as using a fixed-guideway and providing frequent service, the region does not consider it a transitway. Campus Connector Routes do not operate on weekends during the summer or other school breaks or meet other transitway guidelines such as customer facilities or weekend frequency.

Transit advantages

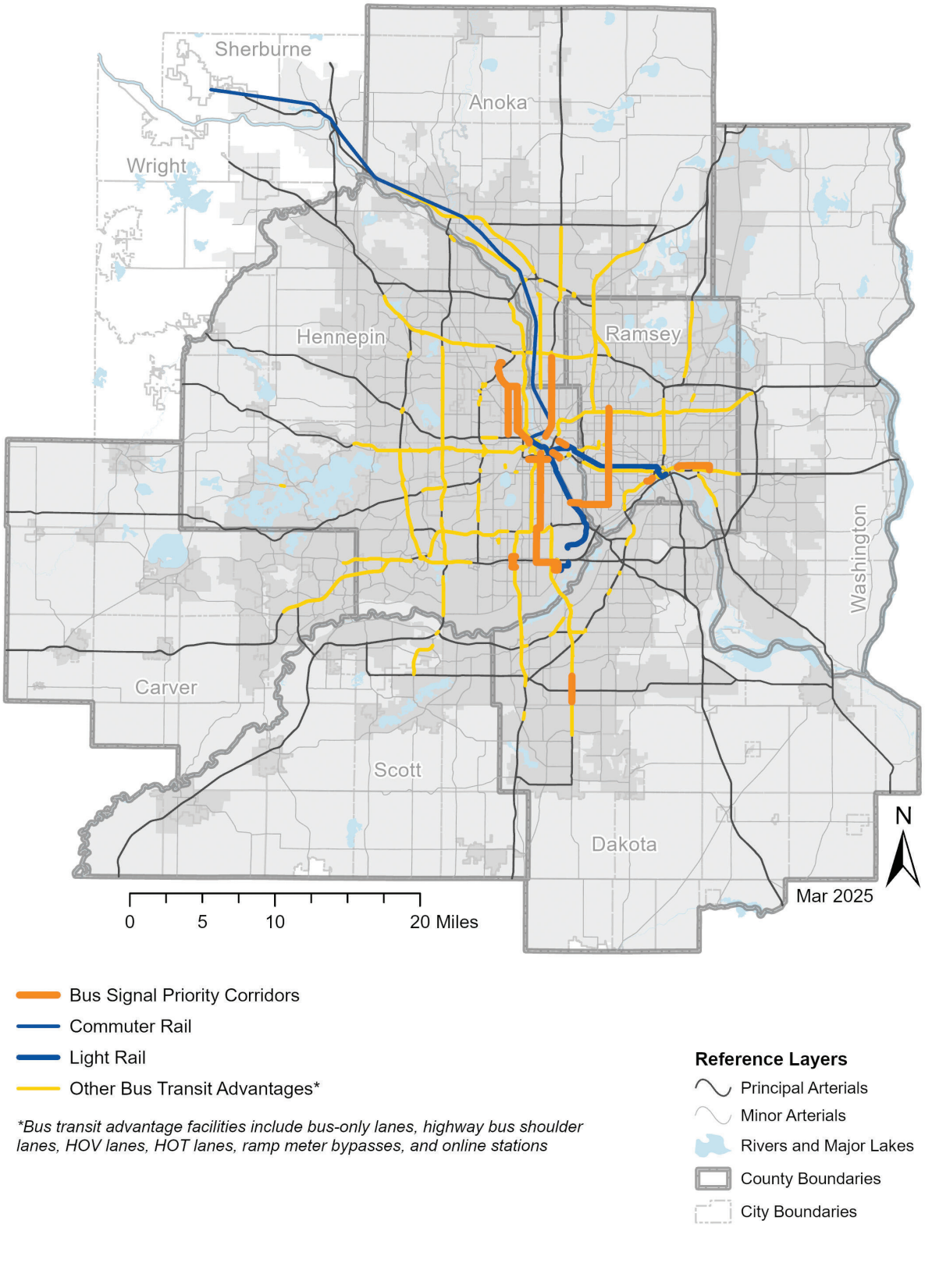
Transit advantages are facilities that improve transit travel times and reliability primarily for bus service. Light rail and commuter rail operate on separate right-of-way from automobile traffic but still use some transit advantage improvements like transit signal priority or preemption on some sections of the METRO Blue Line and METRO Green Line where tracks cross roadways at grade. As of 2023, the region has built a network of facilities to give transit advantages over general traffic including:

- **336 miles of bus-only shoulders**
- **6 miles of bus-only lanes on city streets**
- **98 highway ramp meter bypasses**
- **71 miles of managed lanes (for example, high-occupancy lanes, express-pass lanes)**
- **7 miles of exclusive busways**
- **161 intersections with transit signal priority**

For more information see the region's 2024 Transit Advantages and Transit Signal Priority Report.[92]



Figure 8.8: Map of transit advantage facilities



Transit infrastructure and assets

The transit system needs multiple kinds of infrastructure to operate. The region's transit fleet includes nearly 2,100 vehicles that provide revenue service. In addition to vehicles, other infrastructure including customer facilities, support facilities, and transit advantages are all crucial to providing the services that riders rely on every day of the year.

All regional transit providers have support facilities, such as MVTA's bus garages in Burnsville and Eagan, either through direct ownership or through agreements with private operators. Currently, Metro Transit uses five bus garages and three rail vehicle maintenance facilities to provide daily maintenance and storage of vehicles, with two additional facilities serving needs for more intensive vehicle repair and vehicle storage. These facilities support bus rapid transit vehicles as well as regular-route vehicles.

Customer facilities include bus stops, transit centers, transit stations, multimodal hubs, and park-and-ride facilities. The region also has 30 transit centers with facilities that improve waiting conditions and the transfer experience between buses and trains. With the opening of the METRO D Line in 2022, the region has 130 transit stations serving existing light rail, bus rapid transit, and commuter rail lines. The region had 71 active park-and-rides with nearly 28,000 spaces served by bus and rail transit in 2023 (not including park-and-ride facilities with suspended service).

There are also currently two regional multimodal hubs in the transit network. The Union Depot in downtown Saint Paul serves as a regional multimodal hub that connects local bus service, light rail transit, intercity bus services, Amtrak passenger rail, and potential future transitways. In 2014, the region opened a second regional multimodal hub in downtown Minneapolis at Target Field Station, where two light rail lines, multiple bus lines, and Northstar commuter rail come together.

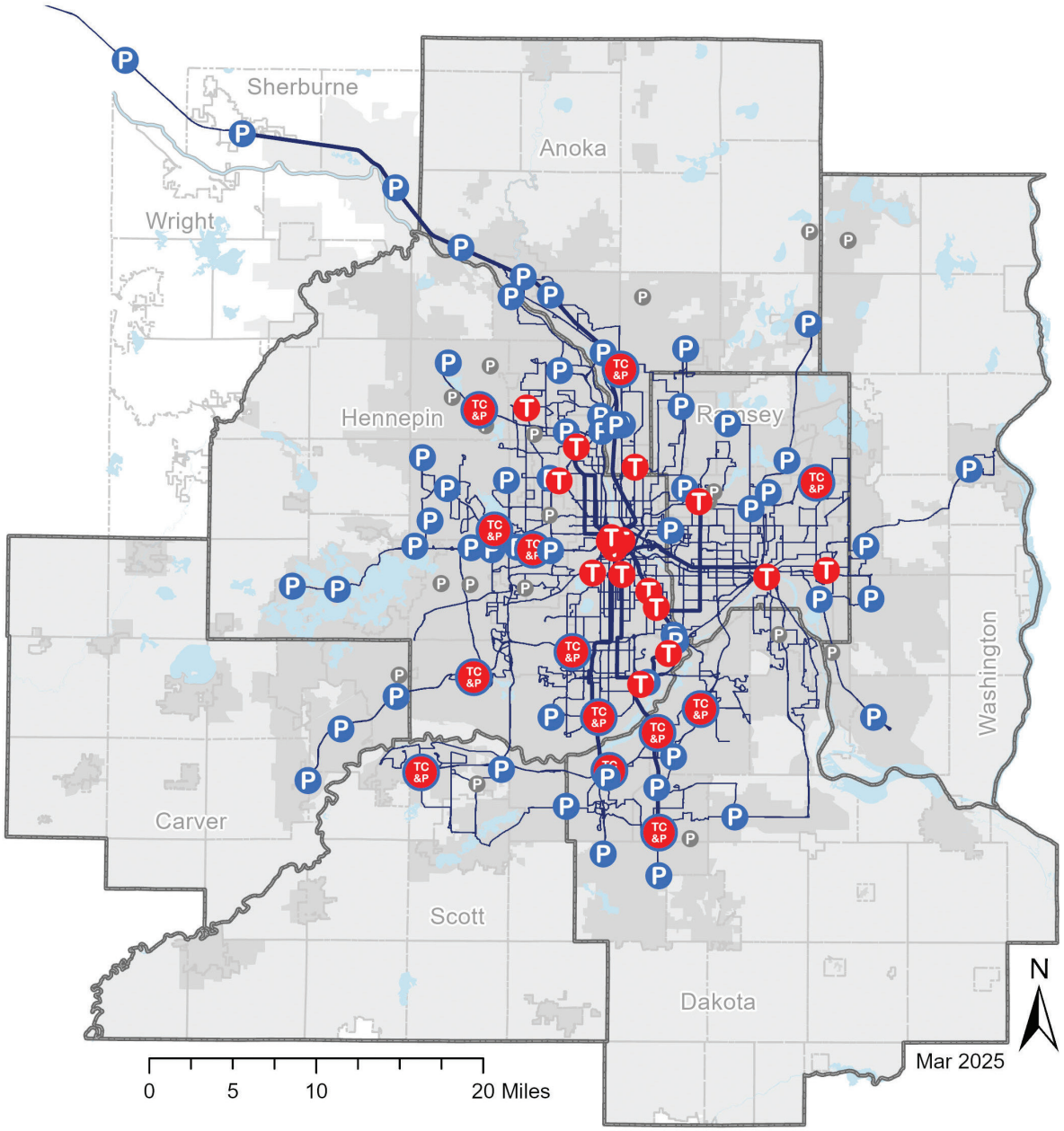
Other transportation system assets and transit service

Most transit rides in the region are taken on buses, which mostly operate on roadways, bridges, and other facilities owned by cities, counties, or MnDOT. Disruptions to these assets such as vehicle collisions, construction, or poor conditions from deferred maintenance have impacts on transit riders, assets, and service. Likewise, major transit projects can disrupt other roadway users.

Similarly, all transit riders at some point in their trip are walking or rolling on sidewalks and other pedestrian or bicycle infrastructure, usually to get to transit services or their destinations after exiting the transit vehicle. A well designed and connected system of pedestrian and bicycle facilities that works for all ages and abilities is fundamentally important to an accessible and useful transit system.

Transit providers and agencies that own and operate these other transportation system assets should collaborate and coordinate planning and programming of transit and roadway improvements to ensure efficient and effective use of public funds and reduce disruptions to all transportation system users.

Figure 8.9: Park-and-rides, transit centers, and hubs



Transit system trends and uncertainties

Ridership recovering after pandemic, travel patterns continue to change

In the first months of 2020, travel patterns in the region began dramatically changing in response to the COVID-19 pandemic. With social distancing and other tactics like the shift to remote work for those who could being encouraged by the Centers for Disease Control, regional transit ridership experienced a dramatic decline, dropping to 42.9 million rides in 2020 or roughly 47% of 2019 annual totals. Transit providers also initially cut service on many routes and focused on providing service to essential destinations and essential workers, but they have been gradually reinstating service. For example, Met Council transit service hours, through Metro Transit and contracted services, were at 79% of October 2019 levels as of December 2023.

Transit ridership has also been recovering gradually since 2020. Ridership in the region in 2023 grew by 16% compared to 2022, with growth for individual transit providers ranging from 13% to 36%. While this recovery is encouraging, there is still uncertainty about what a “new normal” for transit ridership will be as travel behaviors and rider needs continue to evolve, although patterns are beginning to emerge.

Ridership recovery for regular-route services has varied by service type and location in the region. Ridership on bus rapid transit and local bus routes in urban areas recovering more robustly than on express bus and suburban services, which have been heavily impacted by ongoing telework trends. Demand response ridership in 2023 was just 9% under 2019 levels, with some services such as SW Prime, a microtransit service, showing growth compared to 2019. According to Metro Transit’s Network Now report, most bus trips on their services are now for purposes other than commuting for jobs during traditional business hours. Prior to 2020, commute trips made up 34% of trips on Metro Transit’s network and as of September 2023 accounted for 20% of trips.[93] More ridership is also occurring throughout the day and into the evening, rather than concentrating around peak commute times.[94]



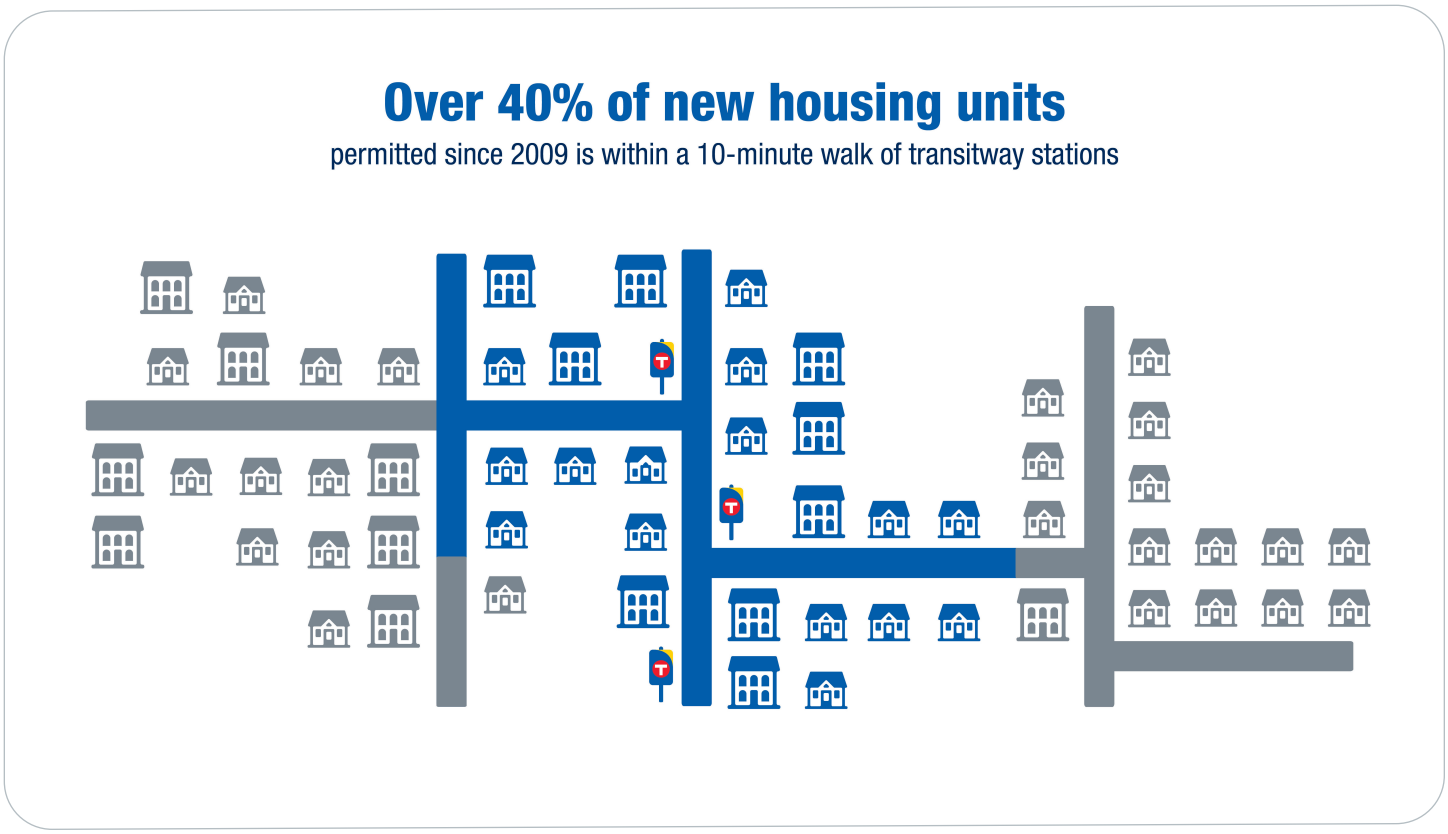
Transit providers and their partners will continue to thoroughly analyze how travel patterns are changing in the pandemic's aftermath through products like the Travel Behavior Inventory, the Regional Route Performance Analysis, and regular monitoring of key transit performance indicators. The Met Council will incorporate the results of this work in future Transportation Policy Plan updates.

A high proportion of regional development occurs around high-frequency transit routes

The region has invested in growing its network of transitways over the past two decades and will continue to plan, design, and build them throughout the region. While these transitways serve centers of housing, jobs, goods, and services, there is often opportunity for additional economic development near the transit stations. The existing network of transitways serves only 3.4% of the region's land area. Yet 38% of all multifamily, commercial, public and institutional, and industrial development since 2009 has been permitted within a 10-minute walk (roughly a half mile) of these transitway stations.[95] That includes nearly 60,000 new housing units, which is 41% of the multifamily housing built in the region. Furthermore, this figure includes 10,710 new units of multifamily housing affordable at 60% area median income since 2014, which is 51% of affordable multifamily units built in that period.

The impacts of this transit-oriented development are significant. It means that more people can access housing opportunities near transit. It means that people already living near transit will have better access to job opportunities, services, and retail. It also means that more people will have access to an affordable and climate-friendly transportation option.

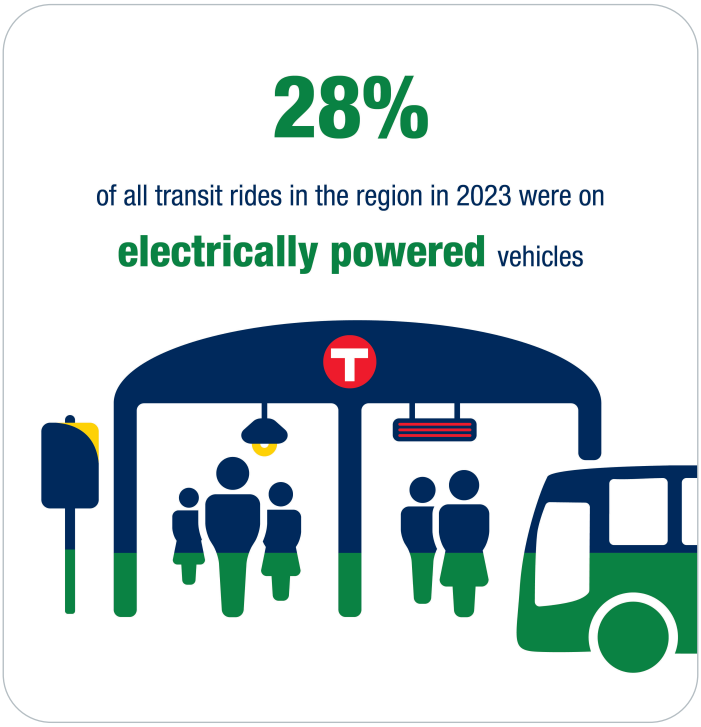
Figure 8.10: Housing within in a 10-minute walk of transitway stations



Almost one-third of ridership is on electrically powered vehicles – light rail and METRO C Line

A significant portion of the region's transit rides happen on electrically powered vehicles. All of the region's light rail vehicles are powered by electricity through overhead wires. Metro Transit operates eight battery-electric buses on METRO C Line which began service in 2019. Transit providers have also implemented other lower-emission options such as diesel hybrids operated by MVTA. Roughly 15 million rides, or about 28% of all transit rides in the region in 2023, were on electrically powered transit vehicles. The METRO Green Line and Blue Line extension projects will double the size of the region's light rail system and are expected to significantly grow the number of trips on electrically powered transit vehicles.

Figure 8.11: Share of electrically powered transit rides.



In general, the region plans to continue adding battery-electric buses to the fleet. These technologies help reduce emissions from transit service, which contributes to achieving greenhouse gas reduction targets. Battery-electric buses also have no tailpipe emissions and so reduce local pollution in the neighborhoods they serve. Overall, shifting more travel from personal vehicles, especially driving alone, to transit means reducing the region's emissions per person-mile-traveled.

More transit agencies in the region are providing microtransit service

SouthWest Transit was the first agency to operate microtransit service in the region. SouthWest Prime began operating in 2015 and in 2023 the service provided roughly 142,600 rides.[96] As of 2023, all the regional transit providers offer microtransit service to varying extents including MVTA Connect, Metro Transit micro, Plymouth Click-and-Ride, and Maple Grove My Ride. In 2022, Metro Transit implemented a 24-month pilot microtransit service in north Minneapolis[97] and is exploring further pilot projects to test microtransit in different contexts (urban, suburban, etc.). The Met Council will be working with partners starting in 2024 to develop a regional policy framework for designing, implementing, and operating microtransit service to help guide growing interest in microtransit service.

Recruiting and retaining transit workforce a challenge for expanding service

During the pandemic, transit providers reduced services in part due to reduced demand but also due to a reduction in the number of drivers and supporting workforce available to operate transit services. Hiring has been a nationwide challenge for transit and similar industries. Hiring efforts and incentives by regional transit providers have improved employee retention and new workforce growth. As a result, transit agencies have been able to reinstate more service. For example, Metro Transit and Met Council increased their fixed-route transit service by 10% in 2023. The Met Council increased contract rates for Metro Mobility and other fixed-route services in 2022 to increase driver wages and reduce vacancies in contractor workforces. These efforts have helped stabilize workforce levels and maintain availability of critical services like Metro Mobility.

Transit and transitway investments planned by 2030 will require an estimated 30% increase in workforce including operators, mechanics, support systems, public facilities maintenance, and police.


metrotransit.org

Regional Transit System Policies and Procedures

The Met Council coordinates regional policies and procedures that apply to all transit providers. The intent of these policies and procedures is to provide a high-quality rider experience on a seamless and coordinated regional transit system while respecting the local autonomy of individual providers. These policies and procedures also ensure that shared transit resources are distributed equitably and transparently and facilitate an efficient system. A list of the key operating policies for transit providers is included in Table 8.1. Copies of any of these materials are available through the Met Council or directly from transit providers.

Table 8.1: Transit provider operating policies

Policy	Description
Regional Route Performance Analysis	All regional transit providers will submit route performance information to the Met Council every year for review and inclusion in the Regional Route Performance Analysis.
Transit Fare Structure[98]	All regional transit providers will adhere to the regional fare structure and prices established by the Met Council unless otherwise exceptions are specifically justified and granted.
Fleet Management Procedures	The Met Council's fleet management procedure guides fleet decisions, including vehicle type and configuration, acquisition, use, maintenance, replacement schedule, ancillary equipment, and disposal. The policy also reflects fleet modernization, including alternative fuels such as low-sulfur diesel, biodiesel and ethanol, and alternative vehicles such as hybrid electric. All regional providers will adhere to the procedures and policies for regional transit vehicles.
Facilities Ownership Procedures	The facilities ownership procedure establishes the requirements for owning and maintaining a regional transit facility. All public regional transit facilities will be available for use by any regional transit provider.
Procurement Procedures	All regional transit providers will follow procurement procedures that are consistent with state and federal laws and guidance, as appropriate.
State Transit Funding Allocation Policy and Procedures	The region will distribute state transit revenues using procedures that allocate resources to state and federal mandated transit services and the region's priorities, including the preservation of existing transit services and documented expansion priorities.
FTA Fund Distribution Policy	The Met Council adopted principles to distribute Federal Transit Administration (FTA) urban area formula funds for transit in 2001 that are still in use today. [99] The Met Council is the primary recipient of these funds and distributes them to transit providers based on these principles.
Title VI Policy	Title VI of the Civil Rights Act of 1964 outlaws discrimination based on race, color, religion, sex, and national origin. The FTA requires evaluating public investments in transit for disproportionate impacts to and discrimination of protected classes based on the law.
Comprehensive Transit Financial Report	The Met Council is required by state law to prepare a report every two years that assesses the financial capacity and performance of the transit system and provides status updates on major transitway projects.

New sales and use tax from 2023 legislature

The 2023 state legislative session significantly reshaped transportation finance in the region, particularly for regional transit services. The state legislature passed a transportation finance bill that revises existing funding sources and provides new funding for transit in the region. The new law required the Met Council to implement a three-quarter-cent sales tax effective Oct. 1, 2023, with 17% of revenues disbursed to metro counties and 83% to the Met Council. Of the Met Council share, 5% is for active transportation uses to be determined by the Transportation Advisory Board, with 95% for transit purposes.

Of the new sales and use tax funds distributed to counties, 17% may be used for transit purposes, complete streets, or mitigation action requirements.[100] The 2023 transportation bill also revised the rate and distribution of state motor vehicle sales tax funds, increasing the rate and reducing the portion of these funds that come to the region for transit purposes. The net effect of these changes was mostly neutral to transit finance.

The new funding in the 2023 transportation bill addresses a structural deficit in transit operating funding in the region. It also relieves past county financial obligations for some transitway lines' operations and maintenance. These local funds may now be used for other county transportation priorities. The new law also places full responsibility on the Met Council for operations, maintenance, and long-term capital repair and replacement of existing and new transitway lines in the region. Nearly all sales tax proceeds are committed through this combination of expenditures.

A portion of the new funding remains available for transit initiatives, expected to total approximately $2.3 billion by 2050. The Met Council will work with its regional partners to determine uses for these funds and will consider adopting a policy for the new funding source.

Additional information on the sales tax can be found in the Regional Transportation Finance Chapter and in the financial summary section later in this chapter.

Fares

The Met Council and its partners designed regional transit fare policies[101] to achieve a variety of goals. According to the policies, fares should:

- Be simple and easy to understand to improve customer service and fare compliance.
- Reflect the costs of providing service while limiting the negative impacts to riders who have low household incomes or rely on transit as their only way to travel.
- Provide a seamless travel experience for riders when using multiple transit provider services and/or modes.
- Promote ridership growth while maintaining or increasing the proportion of operating costs covered by fare revenues.

The most recent fare increase occurred in October 2017, the first increase since 2008. The Transit Assistance Program was created in 2017 to help make transit more affordable for riders with low-incomes. Several transit providers have fare payment applications that customers can use on their smartphones such as the Metro Transit App or the RideMVTA App. Metro Transit also began testing two fare-free routes in 2022 as required by the state legislature. Route 32, a crosstown route mainly along Lowry Avenue, and Route 62, which serves Rice Street, were chosen to serve people in the east and west metros and to include a mix of core local and supporting local service. The routes also serve corridors where many residents identify as Black, Indigenous, and people of color, have low incomes, or who do not have access to a vehicle. The pilot is planned to continue through the end of 2024.

Federal performance targets

Performance monitoring and target setting for both transit safety and transit asset management is a requirement under federal law. The National Public Transportation Safety Plan outlines the safety performance measures and other expectations for the nation's public transit providers. Safety performance targets are developed by transit providers, in coordination with the Met Council as the metropolitan planning organization and adopted as needed by the Met Council annually in accordance with federal law. The targets are allowed to remain the same from year-to-year without Met Council action. The four FTA-required transit safety performance measures are:

- **Fatalities:** total reportable fatalities and rate per total vehicle revenue miles, by mode
- **Injuries:** total reportable injuries and rate per total vehicle revenue miles by mode
- **Safety events:** total reportable safety events reported to the National Transit Database and rate per total vehicle revenue miles by mode
- **System reliability:** mean distance between major mechanical failures by mode

Transit asset management performance measures aim to manage transit capital assets most effectively through their entire life cycle. The following four performance measures and targets are federally required to be adopted by transit providers and metropolitan planning organizations:

- **Rolling stock:** percent of revenue vehicles that have met or exceeded their useful life
- **Equipment:** percent of nonrevenue service vehicles that have met or exceed their useful life
- **Facilities:** percent of facilities that are rated less than 3.0 on the Transit Economic Requirements Model Scale.
- **Infrastructure:** percent of track segments (by mode) that have a performance restriction

Competitively procured services

Contracting out transit services operation can be an appropriate and cost-effective way to meet new service demand, demonstrate new routes or service types, provide efficiencies on certain routes, properly align service expertise with providers, or maintain service in response to fiscal pressures. Decisions about which routes should be contracted to a private provider will be based on service demand, operator availability, and funding levels. Service contracts should be structured in a manner that promotes healthy competition and supports regional goals.

Metro Transit will continue to be the primary provider of regular-route transit services in its service area. The Met Council will review the amount of contracted service every two years. The target for private contract operations is 20% of regular-route bus service, measured in National Transit Database revenue hours.

Transit Investment Plan

The Transit Investment Plan lays out the types of investments that the region will make to achieve its goals and objectives outlined in the Transportation Policy Plan over the coming decades. All transit investments should support the five regional goals and transportation objectives. In practical terms, this means prioritizing investments that are safe and encourage healthy communities, emphasize equity, and allow people to better meet their daily needs on transit. The Transportation Policy Plan has nine types of transit investment categories:

- **Regular-route bus service**
- **Transitways**
- **Non-regular-route bus service**
- **Transit fleet**
- **Transit support facilities**
- **Customer facilities**
- **Transit advantages**
- **Fare equipment and supporting systems**
- **Safety and security**

Each subsection of the investment plan describes 1) the scope and decision-making process for the investment category, 2) the investments included in the plan, and 3) what investment opportunities there are for the region beyond what is in the plan.

Transit investment planning and decision-making tools

The region uses multiple tools and guidance for transit investment planning and decision making to deliver cohesive transit services that support regional goals and provide a high-quality customer experience. These tools help coordinate planning regionally but allow for local flexibility to match investments to local needs. These regional tools also help other transit stakeholders understand transit planning considerations.

Public engagement and surveys

All decision making on transit service design should be informed by robust public engagement efforts. While there may not be an engagement event or effort for every transit investment decision made, transit providers should base their decisions on stakeholder input, including input from customers and potential customers. Regular input from operators and customers is reviewed as part of the planning process. The region also conducts regular surveys, such as the Travel Behavior Inventory and its Transit On-board Survey, that provides valuable data on how people use the transportation system.

More robust public engagement is expected for major capital projects like transitways, as well as for major service changes as defined in each provider's Title VI Plan. Public engagement and surveying should consider the unique needs of all demographics in the project area and the region to ensure that the engagement is comprehensive and a fair representation, with a particular emphasis on reaching historically underrepresented populations.

Transit market areas

The Twin Cities region uses transit market areas to describe how much demand for transit service there is in each neighborhood or community and what kinds of transit service can be expected to meet that demand successfully and efficiently. Transit market areas are defined by the demographic and urban design factors that are most associated with successful local, regular-route transit service. The Met Council updated its methodology for identifying transit market areas as part of the 2050 Transportation Policy Plan process to reflect the most recent changes to transit ridership and development in the region. The updated methodology is described in more detail in Regional Transit Service Design and Performance Guidelines. The region is categorized into five main transit market areas (see Figure 8.12) as well as other supporting features. The transit market areas are generally associated with community designations in Imagine 2050. The list below describes the general characteristics of communities in transit market areas and typical transit services. Not included are transitways, which are generally designed around specific corridors rather than market areas, and microtransit, because a regional framework will be developed in the next year for this mode.

- Transit Market Areas I and II are primarily Urban and Urban Edge communities where walkability and density of population and jobs can support higher transit service levels. These areas also have the largest concentrations of residents who rely on transit as their primary means of transportation. Transit in these areas provides a dense network of routes with frequent, all-day service that serves a wide variety of trip purposes. Market Area II typically has a similar route structure to Market Area I, but lower levels of service, as demand warrants.

- Transit Market Area III contains mainly lower-density Urban Edge and Suburban communities. It is characterized by lower density and less transit-supportive street networks and land use but with some pockets of denser development. Transit service in this market area includes suburban local routes, express and commuter service, and non-regular-route transit services, usually dial-a-ride, providing basic transportation access.
- Transit Market Area IV is mostly Suburban Edge communities along with portions of Suburban communities. It is characterized by low population and job densities that do not support frequent local transit service, and a spread-out, often circuitous, street network that hinders efficient routing. Transit service in Market Area IV is mainly peak-period express and commuter service at park-and-rides, which can effectively gather the lower density transit demand into one spot. There are some suburban local routes, including suburb-to-suburb connectors, although service is typically very infrequent. Non-regular-route transit, usually dial-a-ride, is generally available.
- Transit Market Area V is generally Rural communities including Rural Centers but also some Suburban Edge communities as well as freestanding town centers Stillwater, Waconia, Forest Lake, and Hastings. Market Area V is characterized by very low-density development or undeveloped land not well suited for regular-route transit service outside of limited peak-period express and commuter service.

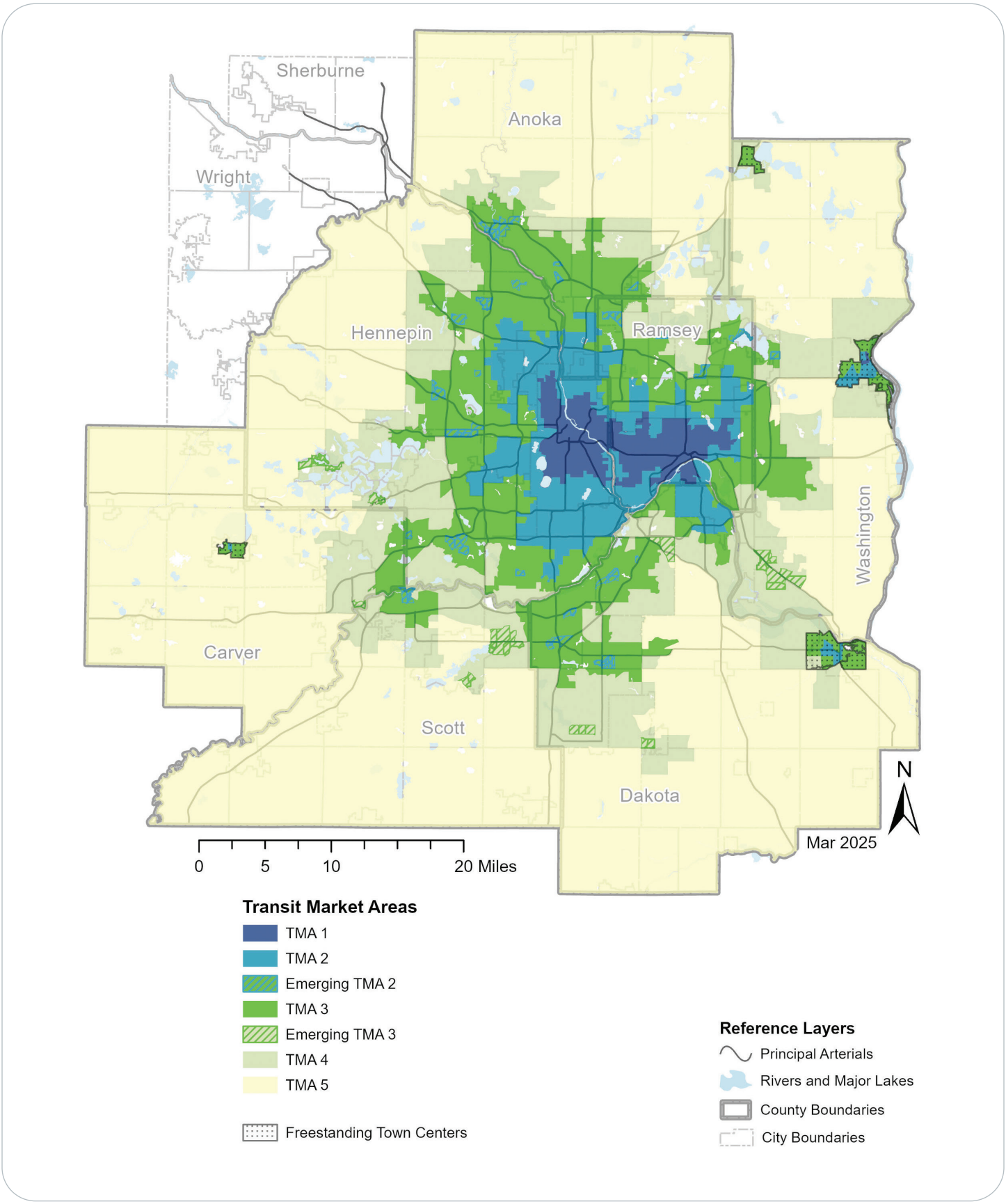
Emerging market areas are unique areas of Transit Market Areas III and IV where there are significant pockets of higher density, but conditions in the surrounding area still limit the success of local transit. These areas should be a focus for future development that will connect them with areas of higher transit intensity, specifically looking at extensions of existing routes or connections.

Freestanding town centers are cities in the metropolitan planning organization region that grew independently of Minneapolis and Saint Paul but are still separated from the urban and suburban areas by rural land. These communities typically have small downtowns of their own but many of their residents commute to work in other regional centers. Local transit services that connect to the region would not be as effective at serving these areas given their location in the region, despite their relatively dense development. However, these areas may still have express service demand and possible demand for small circulator services.

Transit Design and Performance Guidelines

The Regional Transit Design and Performance Guidelines appendix covers the fundamental elements of service planning to ensure consistency across the region on basic aspects of transit service. In addition to

Figure 8.12: Map of transit market areas



the service design guidelines, the document defines two performance measures the region uses to evaluate individual transit routes. These performance measures are subsidy per passenger and passengers per in-service hour. A state statute also requires the Met Council to document route performance for farebox recovery ratio in the Comprehensive Transit Financial Report.

These measures may differ from those developed to inform the Transportation Policy Plan on the performance of the overall transit system, which are discussed in the Performance Outcomes chapter. Individual transit providers also apply their own system and route performance measures to manage outcomes based on their service performance goals.

The document also provides guidance on land use and urban design practices that support transit operations and ridership. This section of the guidelines is intended to assist local agencies when they are conducting planning from community comprehensive plans and zoning to corridor studies to individual facility design.

The Met Council and regional transit providers also coordinate with MnDOT and transit services that connect beyond the seven-county metropolitan region on a case-by-case basis. The transit market areas do not address these kinds of services.

The following topics are covered in the Regional Transit Design and Performance Guidelines:

- **Transit market areas**
  - Transit market index methodology
  - Transit market area characteristics
  - Transit market areas typical service and key prioritization factors
  - Access to destinations
  - Equity
- **Network design**
  - Stop spacing – the distance between bus stops on a route
  - Route spacing – the distance between bus routes
- **Service levels**
  - Service span – the number of hours per day and days per week a transit service operates
  - Service frequency – the average time between transit trips on a route
- **Facility site selection and design**
  - Customer facility features – features at customer facilities that improve the customer experience

- **Performance**
    - Productivity – passengers per in-service hour
    - Cost effectiveness – the subsidy required to operate a route, per passenger

Transit provider service planning

Individual transit providers periodically conduct analysis and planning to identify where changes are needed in their transit services. This can range in scale from monitoring route performance and making minor adjustments, to conducting system-wide planning efforts with the intent of major strategic service restructuring. Each service provider uses their own strategic goals and metrics to inform this decision making, in addition to the regional goals in the Transportation Policy Plan and Regional Design and Performance Guidelines.

Regional transit providers should update their service improvement plans at least every five years. The plans can take a variety of forms, ranging from a lengthy list of service improvement concepts to a set of focused changes to meet near-term needs. Ideally, the plans will identify priorities for service expansion in each provider's service area for at least the next two to five years. Providers should also consult with local governments, businesses, the public, including historically underrepresented groups, and other stakeholders in their service area to get a variety of inputs into transit service planning.

Transit service providers should also coordinate with each other particularly for routes or services that cross operating territories or provide connections to other transit provider services. Customer experience around transfer timing, wayfinding, and information should feel seamless when using services from multiple transit providers. Providers should also coordinate with local agencies for service planning, capital planning, and project construction.

Providers are also encouraged to explore new service delivery models and markets, as funding allows, and share feedback and best practices with all providers in the region.

Transit asset management plans

Transit asset management is a federally mandated methodology used to inform financial planning and maintenance decisions surrounding all transit assets. The transit asset management rule (49 CFR part 625) is a set of federal regulations that sets out minimum asset management practices for transit providers in accordance with MAP-21. The purpose of the FTA rulemaking is to help achieve and maintain a state of good repair for the nation's public transportation assets.

Local agency plans

Cities and counties also conduct planning relating to transit. The primary example is the comprehensive plans that cities update every 10 years, and those plans must align with the Met Council's regional development

guide, including the Transportation Policy Plan, per state law. City comprehensive plans cover many factors that affect how successful transit will be such as land use, urban design, and local transportation networks (for example streets, and sidewalks). Cities and counties should refer to the Regional Transit Design and Performance Guidelines and the Met Council's Local Planning Assistance team for guidance on planning for transit supportive communities.

Local agencies also work on planning and implementation for particular transit projects or corridors. Counties are often the lead planning agencies in the early stages of transitway development. Cities also conduct planning for transit projects. For example, the City of Saint Paul conducted a Streetcar Feasibility Study and the City of Minneapolis is working with Metro Transit on planning and implementing bus-only lanes at key locations within the community.

Cities and counties should collaborate with transit providers and the Met Council on their planning efforts around transit investments and service. The Met Council and regional transit providers should consider local plans and coordinate with local agencies when conducting transit planning.

State agency plans

The Minnesota Department of Transportation is responsible for managing state-level transportation systems such as the interstate highway system and produces multiple plans that affect the region. Minnesota GO, the State Multimodal Transportation Plan, is MnDOT's highest level plan. The objectives, performance measures, strategies, and actions in the State Multimodal Transportation Plan set policy direction for MnDOT's modal and system plans. This set of plans includes aviation, bicycle, freight, highway, pedestrian, ports and waterways, rail and transit. These plans direct state investments, maintenance, operations, modal programs, and services for all types of transportation throughout the state. Met Council participates in the planning processes and coordinates with MnDOT on all state plans that affect the region. MnDOT also conducts corridor studies affecting transit within region with the involvement of Met Council such as the Rethinking I-94 study.

Regular-route bus service

Regular-route bus service will continue to be a fundamental part of the regional transit system. Regular-route bus service provides access to the transit system for a large proportion of the urbanized area and essential connections to the region's growing network of transitways. Regular-route bus investments service includes the following route types:

- **Local bus routes**
    - Core local bus – Core local bus routes provide frequent transit service throughout the peak period (15- to 30-minute headways) and operate during peak periods as well as into the midday and evenings. These routes typically serve the denser urban areas of Transit Market Areas I and II and provide access to downtown or major activity centers along important commercial corridors. They are some of the highest ridership routes in the system. The most productive core local routes are often future arterial BRT candidates.

    - Supporting local bus – Supporting local bus routes are designed to provide crosstown connections within Transit Market Areas I and II. Typically, these routes do not serve a downtown area but provide important connections between core local routes and more direct access between urban neighborhoods than core local bus service would provide alone.
    - Suburban local bus – Suburban local routes typically operate in Transit Market Areas II and III and serve an important role in providing basic transit coverage throughout the region. This includes suburb-to-suburb connections and linking urban and suburban communities. Provider-specific variations on suburban local bus service include community routes and feeder routes.
- **Commuter and express bus routes**
    - Commuter and express bus routes mostly operate during peak periods, serving commuters going to either downtown, the University of Minnesota campus, or to a major employment center. These routes typically operate on highways for portions of the route between picking up passengers at a few stops in residential areas or park-and-ride facilities. They perform best when they serve compact areas without free and/or plentiful parking, and when transit travel times are competitive with driving alone (and parking and walking to your destination). As of 2023, fewer riders are taking commuter transit, especially on Mondays and Fridays, due to expanded teleworking by office workers after the pandemic.

What guides decision making for regular-route bus service?

Decision making in regular-route bus service is primarily done by the region's transit service providers. However, their planning is guided regionally by policies developed collaboratively with the Met Council. The Regional Transit Service Design and Performance Guidelines is the main document used to provide a baseline for regular-route bus service levels and typical design elements across the region. Other key inputs transit providers should use to guide decision making include current route performance, feedback from stakeholder and public engagement, and coordination with other service providers.

Understanding an area's travel patterns and transit needs and how they are changing over time is also important. Regular-route bus service planning typically considers the underlying factors that are the basis for Transit Market Areas as well as market-specific factors such as equity, community feedback, the location of unique transit demand generators like education centers or job or activity centers, roadway congestion, parking availability and cost, and geographic balance. Transit providers may value these factors differently, depending on their local needs and priorities.

The region has been investing in regular-route bus service expansion for decades through Regional Solicitation grants. From the early 1990s through the late 2000s, most of these expansion grants were oriented to suburban markets and express bus services. In recent years, these expansions have been less focused on reducing vehicles miles traveled on long-distance, single-occupant vehicle trips and instead oriented toward shorter trips on local services and new service types like microtransit or bus rapid transit. The Regional Solicitation has had a transit expansion investment category for the last 10 years that has placed a high evaluation weight on attracting new transit riders to the system.

As the region conducts the Regional Solicitation evaluation work program item, an emphasis should be placed on evaluation criterion that are developed collaboratively with regional transit providers to reflect the needs of all providers but also best address the 2050 Transportation Policy Plan goals and objectives. A similar emphasis should be placed on any other funding programs that distribute regionally (or state) shared resources to regular-route bus service expansion.

Regular-route bus service investments included in the plan

Investments in regular-route bus service funded in the plan include:

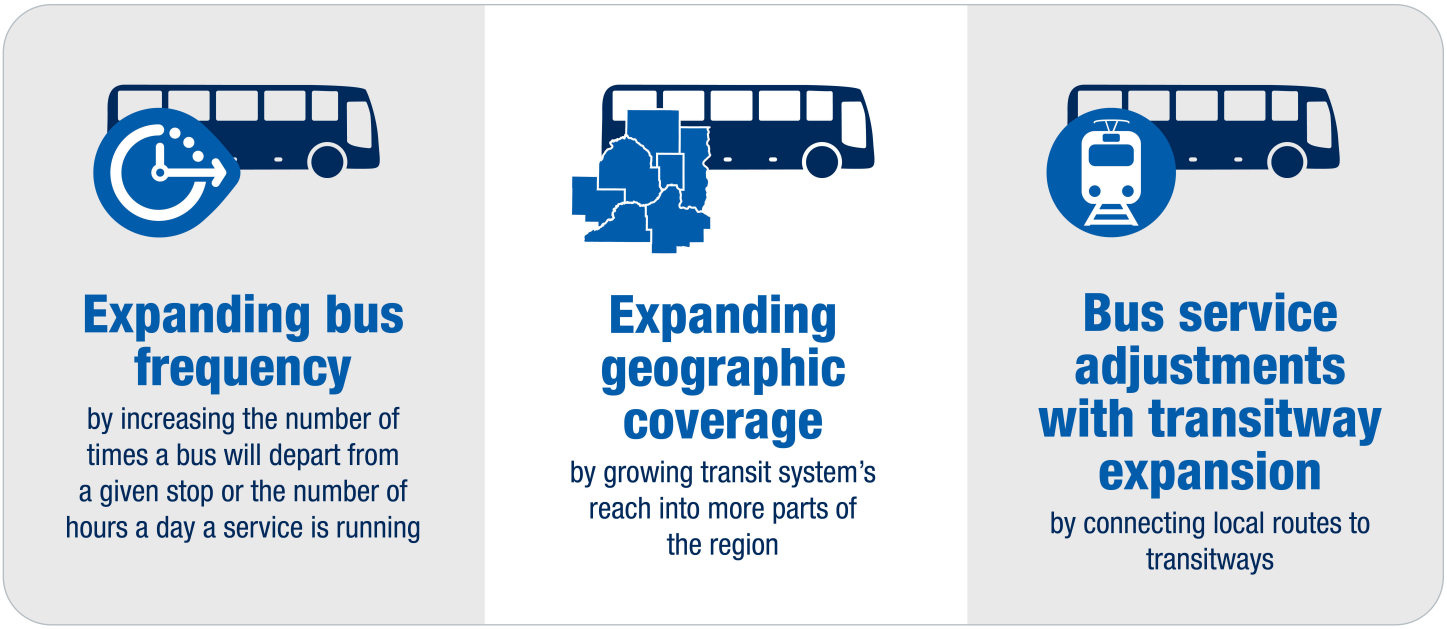
- Continued operation, monitoring, and adjustment of regular-route bus services at the level of service in October 2023
- Investments in regular-route bus service that bring total service hours in the region to pre-COVID-19 pandemic levels by 2025
- Additional regular-route bus service expansion

The Met Council expects the Regional Solicitation and expanded local transit revenues will create enough capacity to expand the regular-route bus system, based on transit provider and regional planning. The exact amount of expansion is yet to be determined as the need must be weighed against other investment opportunities.

The COVID-19 pandemic and unprecedented workforce shortages have resulted in significant changes and reductions to the regional transit network since 2020. A number of efforts have identified where travel markets and transit demand has changed and where the most promising near-term opportunities are for service restructuring, restoration, and expansion. For example, Metro Transit's Network Now work has identified and prioritized how service changes will be implemented as workforce and other resources allow. Guiding principles, such as preparing for new METRO system services planned to open by 2027, building on previous ridership success by adding service where people use transit the most, adapting service to reflect market changes, and focusing on advancing regional equity by providing improved access to opportunities and services, have helped evaluate options and prioritize service changes.

Similarly, MVTA and SouthWest Transit conducted a joint review of unmet needs and service change scenarios, resulting in a strategic vision for their service areas that is responsive to local needs and the shift in transit demands resulting from the pandemic. Transitway corridor planning has also been a substantial source of regular-route bus service planning to identify important connecting bus service improvements that are coordinated with transitway expansions.

Figure 8.13: Regular-route bus service investments



Regardless of the source of funding or investment purpose, regular-route bus service expansion typically will come in one or a combination of the following forms:

- **Expanding frequency and span of service –** Transit providers may improve existing routes by operating more trips, meaning a bus will depart from a given stop more often, and/or increasing the number of hours a day that service is running, for example, later into the night or earlier in the morning. Either of these will increase the total number of service hours needed to operate a route. These improvements are often in response to growing demand on a route, which can result in crowded buses or delays during the busiest times. They also provide new opportunities that otherwise wouldn't be possible, like access to late shift jobs or weekend destinations.

The region has invested in a high-frequency transit network over the past few decades that provides more routes that people can easily use without needing to rely on a schedule. High-frequency bus routes are good locations to target high-density urban development. Local governments are encouraged to work with regional transit providers to identify potential high-frequency corridors. A local example is the work Minneapolis has undertaken in their Transportation Action Plan, which identifies transit priority projects in the city.

- **Expanding geographic coverage –** Expanding geographic coverage means growing the transit system's reach into more parts of the region. This is done with either new transit routes or extending existing routes. Transit providers often test expanded coverage with a basic level of service first, meaning 30- to 60- minute frequency. Once the new area demonstrates enough demand, service frequency and span can be added. Expanded coverage is often done to serve an emerging activity center of jobs and destinations or an area experiencing several high-density residential developments. Geographic coverage expansion also has cost implications for operating ADA paratransit, which must provide guaranteed service within three-quarters of a mile of regular-route service according to federal requirements.

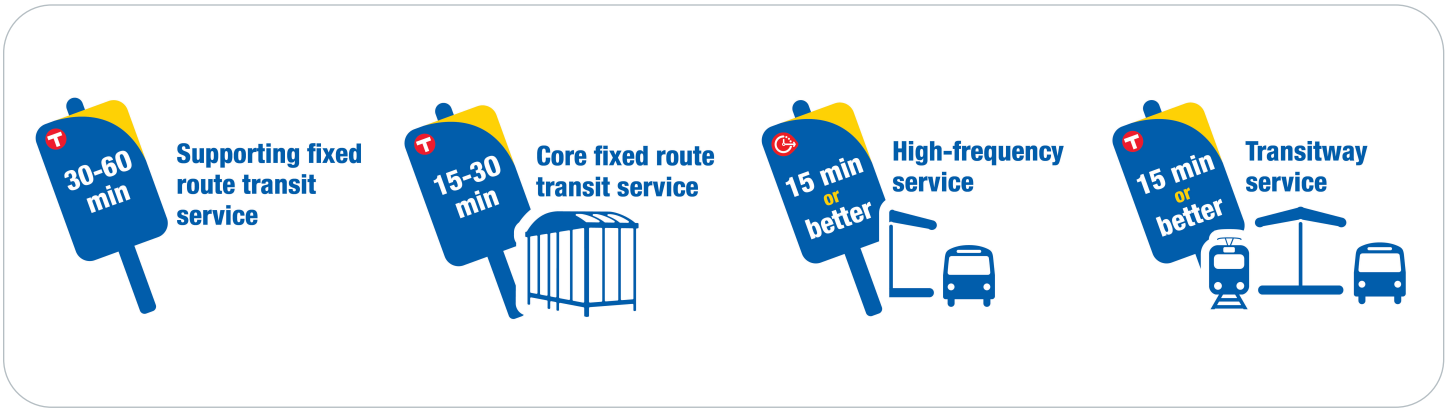
The state also requires the Met Council to provide paratransit service within the Transit Capital Levy District, but these requirements are less stringent than federal requirements and so do not have the same cost implications.[102] Transit providers should consult with Metro Mobility when considering geographic coverage expansions. While regular-route bus is one tool to provide expanded coverage, the region also uses other options for this purpose, such as microtransit. As local governments plan for land use, they should identify areas where there may be viable opportunities for expanded coverage and explore them with regional transit providers.

- **Bus service adjustments with transitway expansion –** Transitways provide valuable fast, high-capacity connections in the transit system. Connecting local routes to these services extends riders' overall reach via transit and thus increases the places they can access. When transitway projects are being planned, connecting bus routes or parallel/overlapping routes are reviewed and potentially modified or replaced. Factors such as station spacing, where people get on and off transit currently, and sociodemographic needs inform this decision-making process. Transitway development processes will engage the public in planning for the entire corridor, including the related bus system, but transit providers may also do their own specific engagement as the transitway project gets closer to opening.

Regular-route bus service planning is an ongoing process for regional transit providers and the details of this work are left up to them. Because high-frequency transit service is an essential tool for planning high-density development, this plan includes a map of potential high-frequency corridors to aid cities in land use planning. These corridors are neither a commitment to a future service level nor the only corridors that could warrant such an investment, especially as the region grows and changes over time.

Identifying opportunities for bus service improvements is a collaborative process that should involve transit providers, local governments, riders, members of historically underserved and disadvantaged communities, residents, and businesses. Regular-route bus service is a continuum that progresses up in frequency and span as demand warrants, as shown in Figure 8.14. It is not recommended nor good practice to implement a high level of service to test a new market.

Figure 8.14: Transit route progression



Regular-route bus service investment opportunities beyond the current plan

Additional specific regular-route bus service improvements are not identified in the plan, including which applications to make to the Regional Solicitation, because this is a process left to regional transit providers. Investments in service improvements are scalable and it is important for transit providers to plan for additional improvements beyond what is currently forecastable in revenue.

Transitways

A robust and interconnected network of transitways is and will be the foundational element of the regional transit system, both in terms of use and investments. Transitway investments are permanent and long-range. They require diligent planning to best serve the existing developed region and help guide future development in the region. This permanence also plays a strong role in the ability of transitways to focus future growth and act as a catalyst for development in the region. Transitways present opportunities to advance community visions for investment and economic development, using strategies that support equitable development, community wealth-building, and address market pressures that can lead to displacement.

The region will consider the following modes while developing a network of transitways:

- **Bus rapid transit**
- **Light rail**
- **Modern streetcar**
- **Commuter rail**

Each mode has unique characteristics that must be matched to an appropriate purpose and need to provide cost-effective service. Transitways are also supported by the regular-route bus service as described in the previous section, and nonfixed-route transit services like microtransit. It is important for the region to include connecting services in transitway planning and investment scenarios.

No other modes are currently being explored for transitway development in the region. However, if other modes are recommended for investment through detailed studies, like local corridor planning studies, their inclusion in the plan would require an amendment.

The priority for investing in the region's transitway system is continuing to operate and maintain the existing transitways, shown in Figure 8.7. Beyond ongoing operations and maintenance, these corridors may require modernization or modest expansion improvements that address operational issues, unmet demand, or other unique challenges. This may include additional stations that will be identified through Transportation Policy Plan amendments, as needed. The region has also identified several new transitways for investment within this plan.

Transitway modes

Bus rapid transit

Bus rapid transit (BRT) provides frequent transit service throughout the day[103] that uses buses while incorporating many of the attractive characteristics of rail transitways. All bus rapid transit types are part of the METRO system. Highway and dedicated BRT lines receive color designations while arterial BRT lines are identified by letters. METRO bus rapid transit ridership stayed strong during the pandemic and is recovering faster than other service types, reflecting a rising demand for all-day, all-purpose service. BRT ridership increased 120% (4 million rides) in 2023 compared to 2022. Metro Transit began operating METRO D Line arterial BRT, which replaced Route 5 and is now the busiest bus route in the state, and accounts for much of this growth. Ridership on other BRT routes grew solidly in 2023, increasing 11% compared to 2022.

Bus rapid transit is generally more adaptable than rail to the unique conditions of a corridor. BRT facilities can more easily be added or expanded, as needed, over time. Since BRT is flexible, corridors may be implemented in a way that is a combination of BRT types.

The region is planning for three types of bus rapid transit that are flexible to adapt to different corridor contexts:

- **Arterial bus rapid transit** is focused on providing fast, frequent, and more reliable service with a better customer experience on corridors with strong demand for existing local bus service. These corridors are in highly developed areas of the region where available right-of-way limits the ability to implement facilities for light rail or dedicated BRT. Arterial BRT generally operates in mixed traffic on local streets with stations spaced half a mile apart. Arterial BRT can also use transit advantages such as on-street bus lanes and transit signal priority. Customer amenities include improved stations and customer information, unique vehicles and branding, and off-board fare collection that reduces vehicle stopping time. The METRO A Line and C Line were the first two arterial BRT lines in the region.
- **Highway bus rapid transit** connects regional centers near highways and facilitates longer-distance travel with fewer stops. Highway BRT stations are spaced about one to two miles apart and lines generally operate where buses can use transit advantages like bus-only shoulders, managed lanes, and ramp meter bypasses. Highway BRT service is often complemented with express bus service that uses the same facilities and coordinates with local bus connections. Otherwise, highway BRT is similar to other types of bus rapid transit and light rail in terms of frequency, fare collection, technology, and customer information. The METRO Red Line on Cedar Avenue and Minnesota Highway 77 and the METRO Orange Line on I-35W south are currently in operation.
- **Dedicated bus rapid transit** uses special roadways or lanes used exclusively by the buses for most of the route. Dedicated BRT is often considered the most like light rail based on how it operates and the level of investment. Dedicated BRT has more flexibility than light rail because the dedicated guideway and stations can be shared with other services, such as express or local bus. Buses can also operate in short segments of mixed traffic where space is too limited to build a dedicated guideway. The METRO Gold Line will be the first dedicated BRT transitway in operation in the region.

In many cases, elements of these projects can be implemented prior to the complete bus rapid transit investment (for example, limited stop bus service or enhanced bus shelters). Bus rapid transit projects require substantial coordination with a local or the state roadway authority, sometimes even combining roadway investments with the transitway investment.

Light rail transit

Light rail transit is all-day, frequent service that connects dense employment and population centers with each other and operates on rail tracks primarily in exclusive runningway. The vehicles are powered by overhead electrical wires. Stations are typically spaced about a half to one mile apart. Typical light rail lines in this region extend 10 to 15 miles out from the urban core and primarily serve the most densely developed areas of the region. Light rail service operates in both directions at a high frequency. All light rail lines are part of the METRO system and given color designations for customer information purposes. The initial segments of the METRO Blue Line and Green Line are operating, with the Green Line extension under construction and the Blue Line extension in planning.

Modern streetcars

Modern streetcar is an all-day service that emphasizes high frequency and high accessibility in urban areas with high transit demand. Modern streetcars typically operate in mixed traffic, similar to a local bus route or some bus rapid transit routes but may have an exclusive runningway for part or all of the route. They typically stop every few blocks (1/4-1/2 mile), travel at slower speeds, and their overall route length is usually shorter than light rail lines.

Modern streetcars may attract new transit riders similar to, though not to the same extent, as light rail, and offer some advantages over local buses such as faster boarding, faster fare collection, and intersection signal priority – similar to the transportation benefits bus rapid transit can offer. Many streetcar lines are also constructed with the intent of spurring economic development along the line conferred from the visibility and permanence of streetcar infrastructure. Modern streetcar service is particularly suitable for high-density, mixed-use areas with limited right-of-way and short average passenger trip lengths like downtowns or dense urban corridors. These are typically areas where improved transit will benefit a high number of existing riders and the streetcar may serve as an attraction for new or infrequent transit users like shoppers or visitors.

Commuter rail

Commuter rail is an express service that connects downtown employment centers to distant population centers or ridership aggregators such as park-and-ride facilities and transit centers. Commuter rail typically operates on existing freight railroad tracks to reduce infrastructure costs. Commuter rail vehicles used in the region are either diesel multiple-unit vehicles or conventional diesel locomotives pulling passenger coaches.[104]In many cases, commuter rail operates on tracks that also carry intercity passenger rail traffic operated by Amtrak or other passenger rail services, potentially sharing common stations. Lines are typically 20 miles in length or more, with stations spaced much further apart than other modes, usually about five miles apart or more. This spacing results in faster travel times that are competitive with auto travel. Station areas are primarily oriented to park-and-ride uses or dense housing and mixed-use development. The Northstar

Line is the only commuter rail line in the transitway system and is not considered part of the METRO system of all-day, frequent transitway service.

Transitway Design Guidelines

The region previously developed Regional Transitway Guidelines that helped create a consistent definition for transitways across the various modes. These guidelines ultimately led to the creation of the METRO brand and basic assumptions for transitway characteristics to carry through from planning to operation. While the guidelines have not been substantially revisited since 2016, the essential elements have been carried through to this Transportation Policy Plan in the Regional Transit Design and Performance Guidelines.

The assumptions for dedicated bus rapid transit were brought into the guidelines as the region is actively building the METRO Gold Line and pursuing the METRO Purple Line. At this time, there are no specific design guidelines for modern streetcar. Table 8.2 summarizes key design characteristics for the different transitway modes. There can be exceptions to the design guidelines based on discussions with funding partners and performance.

Table 8.2: Design guidelines for transitways

Characteristic	Design Guideline: Guidelines apply to all modes unless listed individually
Frequency	15-minute all-day
Span	18 hours per day on weekdays
Typical station spacing	Arterial BRT: 1/4 to 1/2 mile Light rail and dedicated BRT: 1/2 to 1 mile Highway BRT: 1 to 2 miles
Runningway	Arterial BRT: Full-sized, mixed-traffic travel lanes that provide transit advantages under congested conditions or in congested segments. Highway BRT: Full-sized, managed lanes or bus shoulders that provide travel time advantages under congested roadway conditions. Light rail and dedicated BRT: Dedicated runningway that can ensure safe and reliable operation for the majority of the line
Vehicles	Bus rapid transit: Sleek, modern, appropriately sized and configured to service characteristics and rider comfort. Light rail: Rail vehicles compatible with existing rail and infrastructure systems.
Fare collection	Off-board fare collection with proof-of-payment enforcement that integrates with the regional fare system.
Identity and branding	Arterial BRT: METRO branding with letter names for lines. Light rail, dedicated BRT, and highway BRT: METRO branding with color names for lines.

Other modes

No other modes are currently being explored for transitway development in the region. However, if other modes were to be explored through further detailed studies, like local corridor planning studies, their inclusion in the plan would require an amendment.

What guides decision making for transitways

There are several different processes that guide decision making in transitways:

- System planning
- Corridor planning
- Transitway Advancement Policy
- Project development and implementation
- Capital preservation and maintenance

Each process has its own considerations described below, but there are some overarching principles of transitway investment that have and will continue to guide all processes. Those principles are:

- Transitway investments should seek to maximize competitive federal funds and their associated prioritization criteria (for example, FTA Capital Investment Grants). This should be balanced with the project implementation timeline – using more local funding strategically may be warranted in some cases.
- Transitways are long-term investments that should consider current needs as well as future needs and the potential for investments to help guide land use plans.
- Transitways are implemented as regional partnerships between the transit provider, funding partners, local governments, and the communities they serve. All partners should be at the table during the development process.

It is expected that no matter who leads a transitway development process, these principles will apply.

Transitway system planning

In recent decades, the Met Council has taken the lead on system planning that considers the merits of multiple corridors across the region. System planning is an important step in identifying future corridors that show potential for transitway investment for more in-depth corridor analysis. System planning is usually done with high-level analysis of basic factors of cost, risk, and contributions to regional goals and objectives. The most common evaluation metrics during this stage are transit market (ridership or similar), land use potential and plans, and equity. Corridors are compared to each other in relative terms and not with the precision required to evaluate merits against funding programs like FTA Capital Investment Grants. Stakeholder engagement in system planning includes transit providers, local governments, MnDOT, and corridor coalition,

as applicable. There may be some engagement with regional businesses and residents, but the high-level nature of this process is not intended for extensive corridor-level engagement.

System planning typically includes corridors that have been decided on with the relevant stakeholders, depending on the nature of the study. For example, arterial bus rapid transit system studies start with corridors that already have high-performing local bus routes. Highway bus rapid transit studies start with corridors that are high-performing express bus corridors and have planned highway improvements.

The region has undergone a number of system studies in the last 30 years that have provided the background and direction to the transitway investment plan that is reflected here, including:

- Transit Master Study (2008)
- Arterial Transitway Corridors Study (2012)
- Highway Transitway Corridors Study (2014)
- Network Next Arterial Bus Rapid Transit Plan (2021)

This plan includes an updated evaluation of the long-range vision for arterial BRT as part Metro Transit's service improvement planning efforts, which are described in more detail in the Work Program. The Met Council also intends to update the regional transit vision by working with partners to consider if and how new corridors, modes, or other major transitway system investments might serve the region's needs and goals. System planning can be incorporated into the Transportation Policy Plan through amendments or as part of major plan updates every five years.

Transitway corridor planning

Local governments or transit agencies carry out transitway planning focused on a single corridor to determine if a transitway is viable on the corridor and what type of service is preferred. Agencies analyze multiple alternatives in detail to determine viability, the type of transit service, and a preferred alignment and stations. Lead agencies analyze each alternative's costs and merits against the project purpose and need statement and a set of goals and objectives agreed upon by corridor stakeholders that participate in a policy advisory committee (or a similar group).

Lead agencies should engage, coordinate, and cooperate with partner agencies along the corridor being studied starting early in the process to ensure local support and alignment with other upcoming transportation infrastructure projects. This should include coordinating the timing of transit and non-transit projects. Corridor plans should align with the Transportation Policy Plan goals and objectives, though some flexibility to address local needs and concerns is expected.

Counties, transit agencies have historically been lead local agencies for transitway planning

Counties have historically played a lead role in corridor planning for dedicated and highway BRT, modern streetcar, light rail, and commuter rail transitway projects within the region. Building on prior regional system planning, counties identify their transit investment priorities for two to four years through regular budgeting processes resulting in their operating budgets and capital improvement programs. Longer-term priorities and visions for transit investment are outlined in county comprehensive plans. Counties fund this early route and mode planning and environmental review work and provide the local match funding to federal grants for engineering and construction.

Transit agencies, on the other hand, have funded and led planning for arterial bus rapid transit projects. To date Metro Transit has been the lead agency for corridor planning on all arterial BRT routes that have been implemented.

Other agencies are not precluded from leading transitway corridor planning. Minneapolis, Saint Paul, MVTA, MnDOT, and Bloomington have or will lead corridor planning.

Transitway planning requires robust public engagement involving affected communities

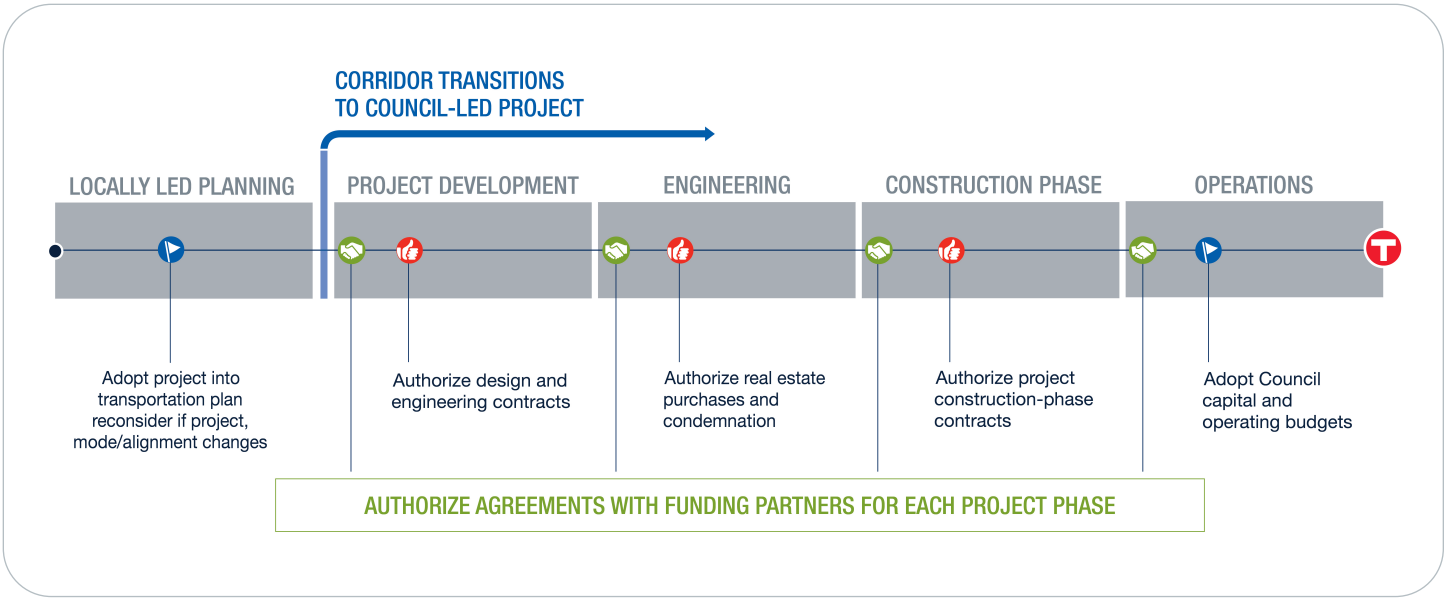
The project stakeholder and community engagement efforts during corridor planning are more robust than system planning because of the localized nature of the process. All potential affected federal, state, local, and Tribal governments should participate in the process along with residents, businesses, and other unique perspectives specific to the corridor. The corridor-planning process considers land use plans from local governments as both an important input as well as an opportunity analysis for future potential. These studies may even evaluate transit-oriented development potential through scenarios beyond what is assumed in plans.

Transitway corridor-planning processes must include a corridor policy advisory committee made up of local officials from affected communities and partner agencies. This group provides input to project staff and ultimately votes on whether to recommend a locally preferred alternative.

The approval process for transitway corridor plans has multiple steps

The result of corridor planning is the identification of a locally preferred alternative that includes the type of transitway, alignment, and station locations, unless no alternatives are believed to meet the project purpose, need, goals, and objectives. The corridor policy advisory committee makes a recommendation for final approval to the originating local planning agency that initiated the corridor plan. Corridor recommendations are then considered for inclusion in the Transportation Policy Plan based on the Transitway Advancement Policy, usually through a Transportation Policy Plan amendment. In some cases, corridor planning has resulted in no specific transitway recommendation, but rather interim steps to build corridor demand over time and a commitment to revisit the analysis later. This approach is usually best for corridors that do not have much established transit service to evaluate yet. Under federal law, a corridor does not have a locally preferred alternative until it is adopted into the Transportation Policy Plan.

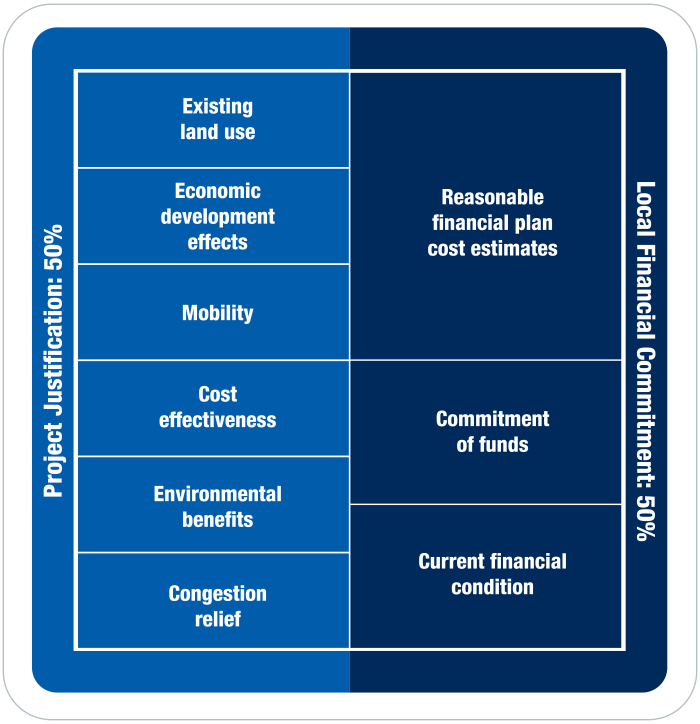
Figure 8.15: Transitway development process



Capital investment grant competitiveness is a key factor for transitway viability

This is also the stage where competitiveness for FTA Capital Investment Grants or other competitive grant criteria are weighed during the selection process. The Capital Investment Grant criteria are often a major driving factor in decision making at the corridor level because of the large competitive grant funds associated with the program. Capital Investment Grant criteria are split into two categories – project justification and local financial commitment – as shown in Figure 8.16. For corridors where Capital Investment Grant funding is not being sought, similar criteria may be applied as determined by the corridor-planning process.

Figure 8.16: FTA Capital Investment Grants evaluation criteria



Transitway Advancement Policy

To aid the Met Council's consideration to adopt or amend a project in the Transportation Policy Plan, it is the region's policy that the following information is required from each transitway's originating local planning agency:

- **Documentation of transitway type, alignment and station locations and the selection process.** Originating local planning agencies will have to provide the preferred transitway type, alignments, station locations, and documentation of the process for selecting them. The documentation should

include an evaluation of project alignment with the Transportation Policy Plan goals and objectives, usually based on the project's purpose and need, and goals and objectives. Documentation of these evaluations and the project's processes is typically found in locally preferred alternative reports, corridor plans, and/or station area plans. Station locations can shift some without amending the Transportation Policy Plan, but adding or removing any planned stations requires a plan amendment and proper documentation.

- **Resolutions of support from relevant government bodies and agencies.** Originating local planning agencies must obtain resolutions of support for the locally preferred alternative from cities, counties, and government agencies that are directly impacted by the proposed transitway and provide them to the Met Council before a transitway can be adopted into or amended in the Transportation Policy Plan. *Directly impacted* includes stations or alignments passing through a community or using or altering another entity's infrastructure. This is similar to, but not the same as, municipal consent, which has an approval process required under Minnesota State Statute 473.3994[105] for light rail projects specifically.
- **Documentation of fiscal constraint.** Originating local planning agencies will provide documentation of planned capital, operating, and lifecycle costs, as well as revenues for the transitway and assumptions of funding commitments for the construction, maintenance, and operation for the proposed project through the horizon of this plan (2050).
- **Documentation of public engagement and feedback.** Originating local planning agencies are required to provide documentation of the public engagement efforts involved in each phase of the transitway project development process and provide the feedback that resulted from those efforts. Documentation of public engagement can be provided in the form of a public engagement report or excerpts from alignment and/or station location selection reports. This summary is typically included in a locally preferred alternative report.

This information is necessary for the Met Council to assist in evaluating the project against the Transportation Policy Plan goals, objectives, policies, and actions and to ensure the plan maintains fiscal constraint through the lifecycle of existing and new transitway assets. Met Council staff will work with originating local planning agencies to obtain and summarize project information for the purposes of this review. This review will occur when new or amended projects are considered for adoption into the Transportation Policy Plan.

Metro Transit typically partners with originating local planning agencies in developing, implementing, operating and maintaining transitways within the region. For projects initiated by local sponsors, if Metro Transit is the intended project developer and operator, Metro Transit will lead coordination with local project sponsors during the planning phase to inform sponsor-led activities. If another transit agency is the planned operator of a transitway, early coordination and ongoing planning are expected to ensure operations and maintenance for the project's lifecycle are considered through the project's planning.

Project development and implementation

After a locally preferred alternative is identified, the project begins development including environmental review, and design and engineering. During these phases, additional changes to the project may occur as designs become more detailed or environmental

work identifies concerns. Any substantial changes during these phases, such as adding or removing stations or substantial alignment changes, will require a Transportation Policy Plan amendment. The Met Council is currently the lead agency for light rail development under state law, but bus rapid transit can and has had different lead agencies for project development.

Project construction should consider the impacts on travel, local businesses and residents, and the environment to ensure that the project is least disruptive as possible. Transitway projects typically have a system testing phase before beginning operations. Construction timelines should also be coordinated with partner agency projects including cities, counties, and MnDOT.

Capital preservation and maintenance

Once transitways are in operation, those assets must be maintained in a state of good repair to provide safe, reliable, and comfortable service. Investments can include vehicle overhauls and replacements, customer facility investments and refurbishments, and modernization of infrastructure like track, guideway, structures, and signals. Transit providers are responsible for these costs and identify capital needs through condition assessments, inspections, operational experience, and policy guidance. These needs are vetted and prioritized as they move through agency capital budgeting processes.

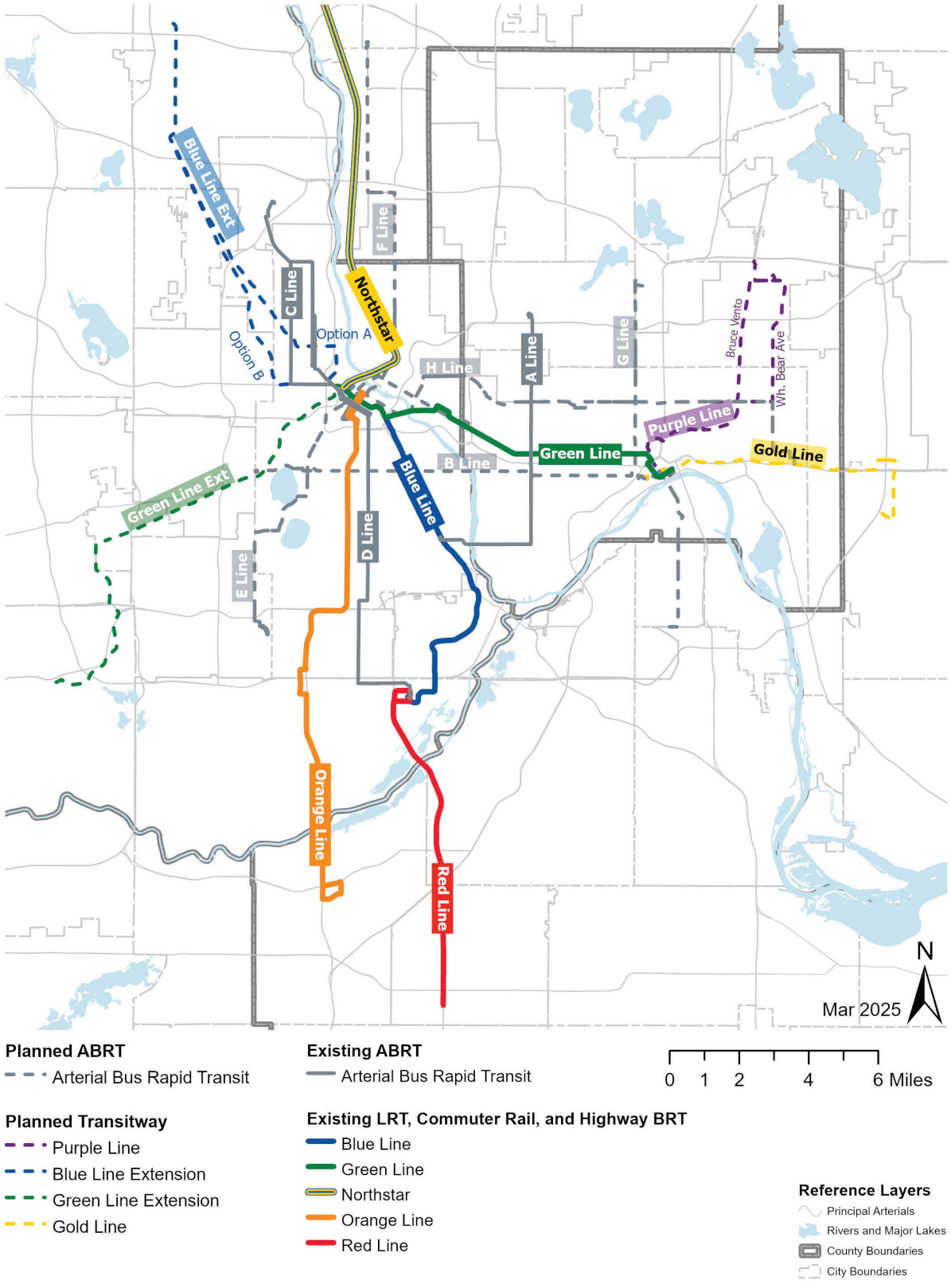
Transitway investments included in the current plan

This plan includes major investments in transitways that are described in more detail below. Transitways are regionally significant projects in which any expansion of the system must be included in the Transportation Policy Plan, regardless of the source of funding. At a high level, the major investments in this plan include:

- An extension of each light rail line – the METRO Green Line and METRO Blue Line
- Two dedicated bus rapid transit expansions – the METRO Gold Line and METRO Purple Line
- Five arterial bus rapid transit expansions – the B Line, E Line, F Line, G Line, and H Line

All projects included in the plan have a locally preferred alternative and an accepted funding plan. These projects are advancing through project development phases, such as environmental clearances, design and engineering, or construction, with a tentative opening date planned. Two of the projects, METRO Blue Line extension and METRO Purple Line, are considering major revisions to their adopted locally preferred alternative (details in status updates below). Updated recommendations from these projects are expected to be amended into the Transportation Policy Plan in 2025. The expansion investments are shown on Figure 8.17.

Figure 8.17: Map of transitway expansion investments



Project status updates

METRO Green Line Extension – This 14.5-mile extension of the METRO Green Line will connect Eden Prairie, Minnetonka, Hopkins, and St. Louis Park with Minneapolis and Saint Paul along the existing Green Line. The Met Council adopted the project's locally preferred alternative in May 2010, which is the Kenilworth-Opus-Golden Triangle (3A) light rail alignment.[106] During the project development phase, the terminus was revised to SouthWest Station, eliminating the Mitchell Road Station from the project. The project started heavy construction in 2019 and received a full funding grant agreement in September 2020. As of early 2024, the project is under construction with an anticipated opening date in 2027.

METRO Blue Line Extension – This 13.5-mile extension of the METRO Blue Line will connect Brooklyn Park, Crystal, Robbinsdale, and Golden Valley with Minneapolis and the other existing Blue Line communities. The project's locally preferred alternative was adopted as the West Broadway– Burlington Northern Santa Fe Corridor – Olson Memorial Highway (B-C-D1) light rail alignment in May 2013. The project is in engineering and anticipates requesting a full-funding grant agreement when this phase is complete. As of early 2024, due to the inability to secure colocation rights on the Burlington Northern Santa Fe right-of-way, Hennepin County and the Met Council have identified an alternative alignment for an updated locally preferred alternative that is expected to be addressed through a Transportation Policy Plan amendment in 2025.

METRO Gold Line Dedicated BRT – This project will connect Saint Paul, Maplewood, Landfall, Oakdale, and Woodbury. This project's locally preferred alternative was adopted as dedicated BRT generally on Hudson Road – described as Hudson Boulevard (A-B-C-D3) alignment in the locally preferred alternative report – that crosses to the south side of I-94 at approximately Bielenberg Drive terminating along Guider Drive between Queens Drive and Woodlane Drive. The project received a full funding grant agreement in early 2023 with a planned opening date in March 2025.

METRO Purple Line Dedicated BRT – This project will connect Saint Paul and Maplewood to the rest of the METRO system. The project's locally preferred alternative is dedicated BRT generally from Union Depot along Phalen Boulevard, Ramsey County Regional Railroad Authority property (adjacent to Bruce Vento Trail) to Beam Avenue and the Maplewood Mall Transit Center. As initially envisioned, the METRO Purple Line BRT was a 15-mile line between Union Depot in downtown Saint Paul and downtown White Bear Lake generally along Robert Street, Jackson Street, Phalen Boulevard, Ramsey County rail right of way co-located with the Bruce Vento Regional Trail and Highway 61.

In spring 2022, the Purple Line began a Route Modification Study to evaluate a new northern terminus north of Beam Avenue to either end the line at Maplewood Mall Transit Center, I-35E & County Rd. E park-and-ride in Vadnais Heights, or Century College on the border of White Bear Lake and Mahtomedi. An ending at Maplewood Mall Transit Center proved to be the only option that would qualify for federal funds. The project is in project development and is exploring options that do not utilize the Ramsey County Regional Railroad Authority property and instead route onto Maryland and White Bear Avenue. An updated locally preferred alternative is expected to be addressed through a Transportation Policy Plan amendment in 2025.

METRO B Line Arterial BRT – The METRO B Line is a planned arterial BRT line that will provide faster and more reliable transit service in the Route 21 corridor along Lake Street, Marshall Avenue, and Selby Avenue. The B Line is currently under construction and anticipated to open for service in June 2025. The B Line Corridor Plan was adopted by the Met Council in October 2021.

METRO E Line Arterial BRT – The METRO E Line is a planned BRT line that will provide faster and more reliable transit service in the Route 6 corridor along University Avenue/4th Street, Hennepin Avenue, and France Avenue from the University of Minnesota to Southdale. E Line design was finalized in 2023, with service expected to begin in December 2025. The Met Council adopted the E Line Corridor Plan in June 2022.

METRO F Line Arterial BRT – The METRO F Line is a planned arterial BRT line that will provide faster and more reliable transit service in the Route 10 corridor between downtown Minneapolis and Northtown Transit Center along Nicollet Mall, Central Avenue, and University Avenue. F Line design is currently underway. The F Line Corridor Plan was adopted in August 2023.

METRO G Line Arterial BRT – The METRO G Line is a planned arterial BRT line that will provide faster and more reliable service in the Route 62 and Route 68 corridor from Little Canada to the Dakota County Northern Service Center via Rice Street, downtown Saint Paul, and Robert Street. G Line planning is currently underway, the corridor plan was anticipated to be adopted in summer 2024.

METRO H Line Arterial BRT – The METRO H Line is a planned arterial BRT line that will provide faster and more reliable transit service in the Como/Maryland corridor partially served by Route 3. It will travel between downtown Minneapolis and Sun Ray Transit Center on the east side of St. Paul. Preliminary planning for the H Line is currently underway, the corridor plan is anticipated to be adopted in 2026.

Transitway system investment opportunities beyond the current plan

There are opportunities for transitway investments beyond the projects included in this plan. These corridors have undergone or will undergo a corridor study to determine the type of investment and identify what is needed to begin moving the project through the Transitway Advancement Policy process. In most cases, the project funding plan is not yet complete. At a high level, the region has identified the following transitway investments opportunities beyond the current plan:

- Seven additional arterial bus rapid transit candidate corridors were identified through Network Next in 2021. These corridors will be evaluated in a Work Program item in 2025.
- Six corridors, considering various modes, are currently under study or soon to be under study.
- Six corridors were studied previously but follow-up work is anticipated in the next five years.

Local governments along these corridors should conduct land use studies and planning to maximize transitway potential while recognizing they are still in the planning phases. These projects still provide an opportunity to align transportation decisions with the land use visions of local communities.

Project status updates

Arterial bus rapid transit – Metro Transit's Network Next project identified priority arterial bus rapid transit corridors through the METRO H Line, as well as seven future candidate corridors. These candidate corridors will be evaluated along with other potential candidates during the arterial bus rapid transit plan update in 2025. That process will identify at least the next three programmed corridors and any revised candidate corridors for future consideration. The recommendations from this process will be included in a future amendment or update of the Transportation Policy Plan. The seven 2040 candidate corridors previously adopted by the Met Council include:

- 63rd / Zane
- Grand Ave
- Johnson Ave / Lyndale Ave
- Lowry Ave
- Nicollet Ave
- Randolph St / East 7th St
- West Broadway Ave / Cedar Ave

West 7th Corridor – This project will connect downtown and the West 7th Street neighborhood in Saint Paul with the Minneapolis-Saint Paul International Airport and the Mall of America/South Loop in Bloomington. The locally preferred alternative was initially approved as a modern streetcar alignment in a mix of dedicated and shared-use guideway from Union Depot to the Mall of America generally along West 7th Street and crossing the river at Highway 5. In September 2024 the lead agency announced they would be stopping work on the project based on feedback gained during a comprehensive public engagement process.

The region is committed to planning for a transitway investment of some type on this well-used transit corridor within the timeline of this plan, specifics of which will be identified by future planning work. Bus frequency improvements implemented late 2024 may serve as a basis for further bus improvements in the future including potential bus rapid transit.

Highway 169 Highway BRT – This project would connect communities in northern Scott County to cities along Highway 169 in Hennepin County and along Highway 55 into downtown Minneapolis. The Highway 169 Mobility Study evaluated options for improving transit and reducing congestion on Highway 169 in the southwest metro, with a focus on highway bus rapid transit, a managed lane, and spot mobility improvements. In addition to the study of BRT, potential interim service improvements were identified, and highway improvements could provide improved transit advantages in the corridor for existing and planned transit. In 2023, the state provided a $3 million appropriation for additional work on this corridor and Highway 55 bus rapid transit.

Highway 55 Highway BRT – This project would connect Plymouth and Golden Valley with Minneapolis along Highway 55 in the west metro. This project was evaluated as a supplement to the Highway Transitway Corridor Study in 2015. Subsequently, additional funding has been provided by the state to explore this corridor further, though the initial kick-off of the study was put on hold due to the COVID-19 pandemic. In 2023, the state provided an additional $3 million appropriation for work on this corridor and Highway 169 bus rapid transit. An expanded limited-stop bus service is planned for this corridor in 2026 funded with a Regional Solicitation award.

METRO Orange Line Extension – The first stage of METRO Orange Line opened in 2021 as highway BRT service from Minneapolis to Burnsville on I-35W. The Metro Orange Line Extension Study (2018) defined the key components of a potential future extension of service south further to Burnsville Center. The study identified preferred station locations, route alignments, runningway operations and operating technologies needed for an extension. The recommendations are contingent on performance of the first stage of the METRO Orange Line and land use changes in the Burnsville Center Mall area. Dakota County will evaluate the need and timing of the extension prior to the next TPP update.

METRO Red Line Highway BRT future stages – The first stage of this project opened in mid-2013 and capital improvements in the second stage were largely completed by 2020. A Red Line Implementation Plan Update (2015) has identified additional future stages that will add stations, park-and-ride capacity, and service to the line, including an extension to a number of planned stations in Lakeville. The near-term priorities are infill stations at Palomino Drive and Cliff Road, with each station undergoing some planning activity recently or in the near future. Extension of the line further south is staged according to forecasted station boardings and cost effectiveness in the implementation plan update, but this will be examined in future updates as well. Future stages would also continue to address bicycle and pedestrian improvements and station area planning, continuing a theme from stage two of the implementation plan update.

Midtown Rail – This project would connect the existing METRO Blue Line Lake Street Station and planned METRO Green Line West Lake Station with neighborhoods in south Minneapolis. The transit study was completed in 2012 with a locally preferred alternative recommendation of rail in the Midtown Greenway combined with arterial BRT on Lake Street. The B Line arterial BRT is included in the plan and Hennepin County will take steps to further analyze rail in this corridor before the next Transportation Policy Plan update.

Red Rock Highway BRT – This project would connect Saint Paul to Newport, Saint Paul Park, Cottage Grove, and Hastings. An implementation plan was completed in 2016 that defined a long-term vision of highway BRT recommendations in the Highway 61 corridor. Initial stages include improved express bus service and all-day bus service introduction with ongoing monitoring of its performance. The Red Rock Corridor Commission gathered insights from employers, residents, and other stakeholders in 2023 to refresh the vision for this corridor, which was adopted in January 2024.

West Broadway Modern Streetcar – This project would connect the Minneapolis neighborhoods along West Broadway to downtown Minneapolis and Robbinsdale. The corridor study was completed in 2017 and recommended modern streetcar to North Memorial along with additional improvements to bus service in the

corridor. In the City of Minneapolis' Transportation Action Plan, the city is committed to partnering with Metro Transit and other agencies to plan, design, and construct high-capacity, neighborhood-based transit along the West Broadway corridor. This project may be impacted by ongoing planning for the Blue Line Extension, which is looking at West Broadway as a possible updated alignment. The future of this transitway study will be incorporated with an amendment that addresses Blue Line Extension.

I-35W north – This corridor links downtown Minneapolis with communities along I-35W north of downtown to Blaine. The corridor was studied in the 2013 I-35W North Managed Lanes Corridor Study. The study focused primarily on the highway managed-lane vision, but also included an analysis of highway BRT to the 95th Avenue park-and-ride in Blaine that could potentially be coordinated with the managed vision. Portions of the managed-lane vision have been implemented and additional work was conducted on the I-35W North Gateway Study. However, no recommendations were advanced because of the impacts of the COVID-19 pandemic on travel patterns.

Highway 36 – Washington County, in collaboration with partners at Ramsey County, Hennepin County, MnDOT, cities adjacent to the corridor, and the Met Council completed the Highway 36 Transit Feasibility Study in 2021. The study identifies transit service needs and recommendations that are reflective of the Highway 36 corridor's existing and anticipated future travel demands and patterns. The report includes short- and long-term implementation recommendations that include monitoring and exploring transit service improvements in the corridor and coordinating highway projects with potential multimodal improvements.

Rethinking I-94 – MnDOT led a transit feasibility study in coordination with Met Council as part of the Rethinking I-94 project. The study explored bus rapid transit options on I-94 between downtown Minneapolis and downtown Saint Paul. These transit alternatives will inform more detailed analysis of roadway alternatives in the broader project that will likely result in an identified program of projects in 2028. The Met Council will likely lead the next steps of transitway development concurrent with or after the Tier 1 Environmental Impact Statement is complete for the Rethinking I-94 program of projects recommendations.

County Road 42 – MVTA is leading a study of bus rapid transit options along County Road 42 between Shakopee and Rosemount in the south metro. Study recommendations are anticipated in spring 2024 and will be incorporated into the 2050 Transportation Policy Plan once available.

American Boulevard – The City of Bloomington is leading a study to examine transitway alternatives along American Boulevard to build on previous work exploring arterial bus rapid transit in the corridor. The corridor would connect multiple METRO lines including Blue Line, Orange Line, and Green Line Extension, as well as connect to several planned arterial bus rapid transit lines. In addition, the American Boulevard corridor has significant development plans and development activity, but existing service has not yet demonstrated a proven market for high-frequency service.

Non-regular-route services

Non-regular-route service is a broad category that includes transit services that do not operate on a published route or stop schedule. These types of transit can more effectively provide service for people living in areas

that cannot be cost-effectively served with regular-route transit or for people with disabilities that prevent them using regular-route transit. As such, non-regular-route services play an important role in achieving the region's equity goals. For the purposes of this plan, the types of transit service in this category include:

- Special transportation services (Metro Mobility)
- General public dial-a-ride like Transit Link
- Metro Vanpool
- On-demand, app-based services like microtransit

Because these services are used to complement the regular-route transit system, they continually adapt to the service levels provided on the rest of the system.

What guides decision making for investments in non-regular-route services

Non-regular-route transit services have similar investment needs as regular route when it comes to maintaining an adequate and reliable vehicle fleet or updating equipment. For service expansion, investment decision-making for non-regular-route transit services depends on the type of service:

Metro Mobility meets the requirements of the Americans with Disabilities Act (ADA) by providing transit service to people with disabilities certified as not able to use the regular-route transit system. Under the ADA, the region is required to provide complementary paratransit service within three quarters of a mile of all regular-route transit service during the same times that the service operates, referred to as the ADA service area. Metro Mobility provides guaranteed rides that cannot be placed on standby for trips starting and ending within this area.

Minnesota state law, under the special transportation services language, requires Metro Mobility service to be provided in areas beyond the requirements of the ADA , referred to as the Metro Mobility service area. Trips that begin or end outside of the ADA Service Area but are within the Metro Mobility Service Area will be placed on standby. When regular-route service is expanded into areas that previously did not have transit service, Metro Mobility service must also be expanded to provide guaranteed rides within that new coverage area.

General public dial-a-ride is shared-ride public transportation provided for the Twin Cities metro area where regular-route transit service is infrequent or unavailable. The service area for Transit Link, the Met Council's dial-a-ride service, is based on access to regular-route services.

Metro Vanpool is provided for people who live or work in the seven-county metro area. Vanpools are made up of five or more people, including a volunteer driver, commuting to and from work at destinations throughout the region on a regular basis. The Metro Vanpool program provides financial assistance for vans serving locations or times not well served by the regular-route transit network. Participants and their vanpool must meet certain criteria. Service levels are largely based on demand and the program is promoted directly by

employers or outreach to employers. Historically, demand and availability of volunteer drivers for vanpools have been the limiting factors in expansion, not the availability of financial assistance.

Microtransit is a relatively new mode that provides shared-ride services on-demand within a defined service zone (for example, an MVTA Connect service zone is Eagan city limits). Transit agencies assign vehicles as needed in response to rider demand within a zone. The Met Council will be working with regional transit providers and local government partners to develop a regional microtransit policy framework that will be incorporated into a future Transportation Policy Plan update. Until then, regional transit providers will continue to explore microtransit services in a variety of applications in the transit network. Microtransit is a required spending category for funding from the new regional sales and use tax passed by the state legislature in 2023.

Non-regular-route service investments included in the current plan

Investments in non-regular-route transit services assumed in the fiscally constrained plan include:

- Continued operation, monitoring, and adjustment of existing non-regular-route bus services
- Metro Mobility service expansion
- Microtransit pilot projects and expansion
- Transit Link and other dial-a-ride programs
- Metro Vanpool service expansion

Metro Mobility service expansion

Metro Mobility continues to plan for growth as demand for ADA service increases with the seven-county metro area's aging population and other demographic changes. Prior to 2019, Metro Mobility saw an average annual growth in ridership of 7%. Ridership growth in 2019 was modest at 2%. However, the cost of the service has outpaced ridership growth in recent years because of driver shortages and the need to significantly increase driver wages. Additionally, the FTA has defined more stringent service quality expectations, which is lowering productivity and resulting in higher costs per passenger.

Each new ride requires added costs, on average about $45 per passenger trip in 2022. Regular-route bus service, on the other hand, becomes more cost effective with additional riders. For example, core local bus routes average passenger trip cost was just under $11, with some routes achieving $7 per passenger trip. Because Metro Mobility is an essential service for the people it serves and is required under federal law to complement the regular-route system, the growth of this program is considered an investment in the operation and maintenance of the existing transit system, rather than transit system expansion.

Microtransit pilot projects and expansion

Metro Transit micro service is currently a two-year pilot program in North Minneapolis and further options for pilot microtransit programs are being evaluated. SouthWest and MVTA have noted their intent to focus

near-term transit expansions on microtransit services as the service type continues to mature and expand its customer reach. These expansions could be in the form of new service areas, new service hours and days, and improved capacity or shorter wait times. The Transportation Policy Plan also has a Work Program item to define microtransit's role in helping achieve the broader regional transportation goals and objectives in this plan.

Transit Link and other dial-a-ride programs

The Met Council contracts with local governments and private companies to provide Transit Link general public dial-a-ride service. Some suburban transit providers also provide citywide dial-a-ride services with nonregional funds in place of regular-route service that would not be effective. Growth or reduction in these services will be as demand warrants. The expansion of the regular-route bus system may result in reduced demand for Transit Link, as more people will have access to regular-route service. However, the expansion of Suburban Edge communities at low densities may increase the demand for this type of service.

Metro Vanpool service expansion

Service expansion will be dependent on additional demand and availability of volunteer drivers. The Met Council will be working to adjust its requirements for vanpools to meet changing needs as travel behaviors continue to evolve after the COVID-19 pandemic, based on the Metro Vanpool evaluation study completed in 2022.

Investment opportunities beyond the current plan

All of the non-regular-route transit services can be expanded to improve capacity, reliability, or span of service based on demand. Adequate demand must be demonstrated to justify expansion for these modes as they are generally the most costly to operate per passenger, with the exception of vanpool. ADA paratransit service may need to expand beyond assumed amounts if the geographic coverage of regular-route transit service expands. Zero-emissions vehicles, equipment, and support facilities for these services are another potential investment the region may make if funding becomes available.

Transit fleet

The transit fleet is the most fundamental part of the transit system. The fleet includes all vehicles used for providing transit service (buses, trains, etc.), as well as support vehicles. As of 2023, the regional transit system includes about 1,165 regular-route buses, 118 light rail vehicles, 18 commuter rail passenger cars, six commuter rail locomotives, and 790 dial-a-ride or microtransit buses to operate.

Vehicles used to provide service should be comfortable, clean, and designed to meet customer needs. The region utilizes a variety of bus types to match the appropriate vehicle to the service it is providing. Vehicles are also outfitted with various types of equipment to serve customers and make operations more efficient. Finally, each transit provider uses service vehicles in supporting roles that do not transport passengers, such as road supervisor or maintenance vehicles.

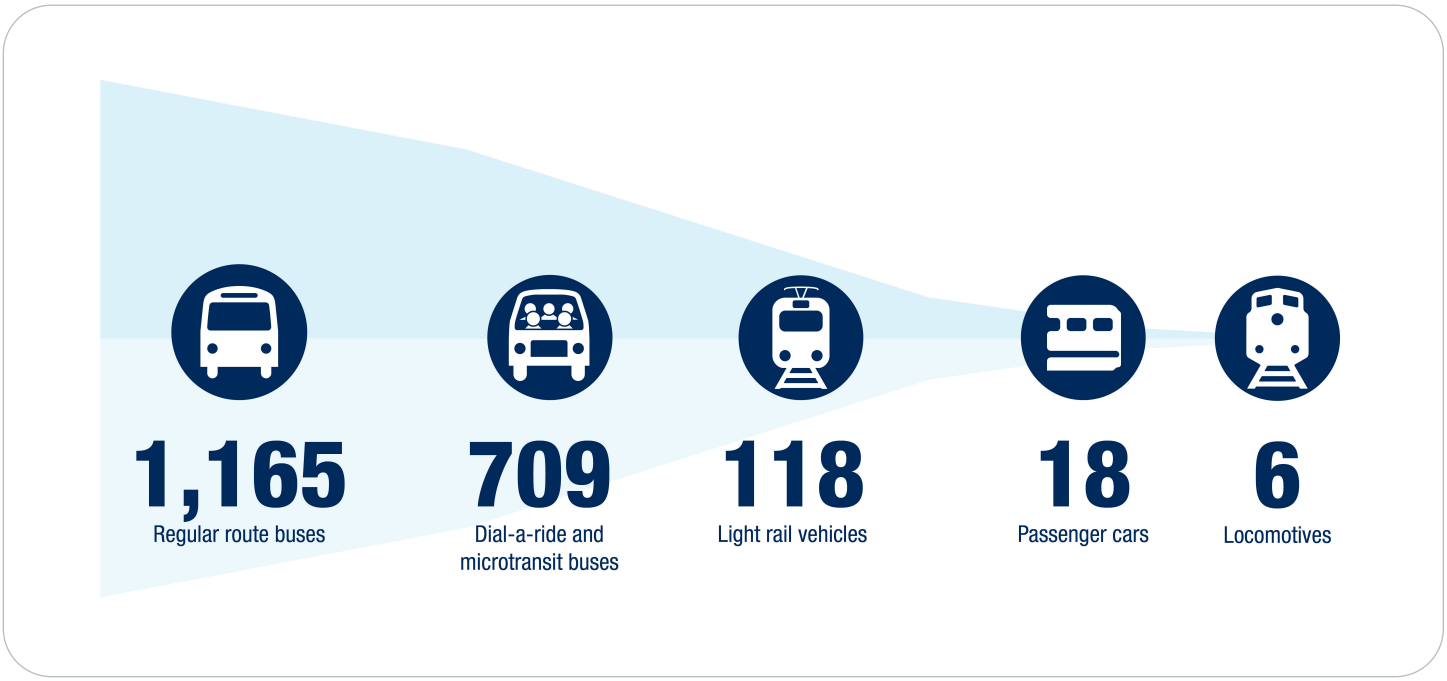
What guides decision making for transit fleet

The region's policy is to prioritize FTA formula funds and regional transit capital funding for asset management, with fleet replacement being the number one transit capital funding priority. The region also has a Fleet Management Procedure[107] that documents vehicle replacement expectations based on vehicle useful life and mileage. This document is part of the region's Transit Asset Management Plan and is intended to facilitate compliance with all federal requirements to assure that vehicles purchased meet minimum standards, and to create efficiencies and improve flexibility deploying and reassigning vehicles. This is the primary policy document guiding decisions on the region's transit fleet. Each transit provider also has their own asset management practices.

The FTA has also established standards for measuring the condition of vehicles used to transport riders (rolling stock) and support vehicles (service vehicles). All transit providers should comply with these standards and reporting requirements. There are also standards from the FTA on the percent of spare buses transit providers should keep beyond the maximum number of vehicles operated at a time, called their spare ratio. The purpose of these spare vehicles is to ensure that buses will always be available to run service even if some are in for maintenance work.

Fleet replacement is the top capital investment priority for maintaining the transit system. The region will work to maintain a bus fleet that is integrated and not overly specialized to specific services or corridors. BRT services may have sub-fleets, but these should also be integrated across corridors.

Figure 8.18: Transit fleet in the region



Transit fleet investments included in the plan

Investments in transit fleet assumed in the plan include:

- Bus and support vehicle replacement
- Light rail vehicle replacement
- Service expansion vehicles
- Fleet modernization and overhauls

Bus and support vehicle replacement

All transit vehicles need to be maintained and then replaced when they are past their useful life, which varies by vehicle type. For example, the Federal Transit Administration's default Useful Life Benchmark for a transit bus is 14 years, 10 years for a cutaway bus, and 31 years for a light rail vehicle. [108]

Light rail vehicle replacement

The original light rail vehicles supporting current METRO Blue and Green Line operations will reach the end of their useful life within the horizon of this plan. Replacing these 91 vehicles will represent a significant capital investment.

Service expansion vehicles

Transit agencies may need more vehicles when adding service at times of day when they are already running their maximum vehicles in operation. In some cases, expanding transit service does not require additional vehicles, usually if it is at lower demand times such as the weekends, late evening, or early morning. As METRO network expansion adds more stations and infrastructure to the system, additional support vehicles are also needed to sustain operations.

Fleet modernization and overhauls

Transit agencies typically outfit all their buses with the same equipment for particular systems like fareboxes or automatic passenger counters. At times, these systems may become outdated or no longer meet the transit provider's operational needs. At that point, transit providers may procure new equipment for a large portion or all their fleet at once. This can also be the case when new technology comes out that would benefit passengers or operations. Transit providers should evaluate potential fleet modernization projects based on the costs and benefits of new systems and technologies compared to the current equipment. Fleets can also undergo substantial overhauls throughout their life, as certain components are likely to wear out sooner than the overall vehicle. Components like seats, flooring, and engine parts can be overhauled prior to vehicle replacement to maintain a well-functioning vehicle for both operations and the passengers.

Investment opportunities beyond the current plan

Low- and no-emission fleet transition

New state legislation requires spending some regional transportation sales and use tax revenues on no-emission buses and requires that Metro Transit replace all qualifying buses with zero-emissions buses starting in 2035. Transit providers around the country, including in the Twin Cities, have been adding more low- and no-emissions vehicles to their fleets. These vehicles range from compressed natural gas buses, light rail vehicles, electric trolley buses, and battery-electric buses.[109] Twin Cities region transit providers have added eight battery-electric buses as well as substantial numbers of hybrid electric buses into the fleet. Many of the early hybrid buses are near the end of their useful life and need replacing.

Battery-electric bus technology may allow the transit fleet to increase its energy efficiency and sustainability. Battery-electric buses typically have lower emissions per mile traveled than diesel or natural gas buses.[110] In addition to reducing climate impacts, electric buses have no tailpipe emissions and therefore reduce local pollution in the neighborhoods they serve, like the METRO C Line. The region plans to continue adding battery-electric buses to the transit fleet, but the amount and timing are still subject to technical factors.

Like other new technologies, battery-electric buses have operational challenges, but they are expected to improve over time. They vary from charging technology to range and maintenance. All of this means a different approach to planning service using these buses is required compared to fossil fuel powered buses. The Met Council and its partners will continue monitoring the state of electric buses, charging technology, and service planning strategies with an eye for when and how to expand their use in the region's transit system while maintaining high–quality service. The region will also re-evaluate alternative options for reduced emissions from transit operations in the meantime based on lessons learned thus far.

Competitive grants are available, such as the FTA Low/No Emissions Grant Program, but these sources are limited and agencies across the country compete for them. Transit providers must also have a zero-emission fleet transition plan to be eligible for this funding.[111] All regional transit providers should prepare and maintain one of these plans.

Transit support facilities

Transit service in the region uses a substantial system of both public and private transit support facilities. Support facilities are where the necessary behind-the-scenes work occurs that is essential to maintaining reliable, high-quality service throughout the region. Facilities in this category include bus garages, maintenance buildings, rail support facilities, operations centers, communications control centers, bus layover facilities, and others.

The regional transit system must have adequate facilities to support efficient and cost-effective transit services. The region sorts transit support facilities into three categories:

- **Bus support facilities** include garages and bus maintenance facilities, bus layover facilities at route terminal points, and dispatching and control centers.
- **Rail support facilities** include operations and maintenance facilities, train storage facilities, layover facilities, and logistics facilities such as control centers.
- **System-wide support facilities** are all support facilities that are not specific to a particular mode of transit and include transit control centers, facilities maintenance headquarters, and transit police facilities.

As the transit system expands, and the types of services available and the number of riders increase, support facility capacity must increase as well.

What guides decision making for transit support facilities

Generally, as the transit network expands, bus garages, bus layovers and vehicle storage will need to be increased. Maximum use of existing support facilities should be made but overcrowded facilities lose operating efficiency, making it more difficult to provide the quality of transit service expected in the region. Support facilities expansion should precede fleet expansion.

The FTA has also established standards for measuring the condition and managing of support facilities for both bus and rail. All transit providers should comply with these standards.

Transit support facilities investments included in the plan

Investments in transit support facilities assumed in the plan include:

- Support facilities maintenance and replacement
- Bus facilities modernization and expansion
- Rail facilities modernization and expansion
- Systemwide facilities modernization and expansion

Support facilities maintenance and replacement

The current revenue scenario assumes that transit providers will replace support facilities as needed based on multiple factors like FTA useful life, condition ratings, and asset management plans, policies, and procedures.

Bus support facilities modernization and expansion

Currently, Metro Transit uses five bus garages for daily maintenance and storage of vehicles, with two additional facilities serving needs for more intensive vehicle repair and vehicle storage. Other regional transit providers have support facilities as well, such as Southwest Transit's maintenance and administrative facility in Eden Prairie, either through direct ownership or through agreements with private operators.

Existing garage facilities in the region are aging and the need to maintain or replace them will emerge as an issue to be addressed in the coming decades. Their use and effective life can be maximized with maintenance and modernization efforts, including investments that result in operating efficiencies. The North Loop Garage opened in 2023, and an expansion and modernization of the Heywood Garage was completed in 2020.

Given projected growth and capacity of existing layover facilities, the region expects additional layover facilities will be needed in both downtowns, the University of Minnesota, and some suburban locations. Bus layover facilities provide a physical space for transit vehicles to stage, an opportunity for route recovery time, and driver break rooms and restrooms. Bus layover facilities are typically located at the end of transit routes and may be co-located with customer facilities, such as transit centers. These facilities enable the system to operate cost-effectively and on time.

Rail support facilities modernization and expansion

Rail support facilities presently include two light rail transit operations and maintenance facilities, a rail operations support facility, and the Northstar commuter rail maintenance facility. A new rail support facility is planned as part of the METRO

Green Line light rail expansion project. Options to improve or expand existing facilities as well as construct new facilities will be evaluated based upon the planned transitway network, corridor-specific planning efforts, and facilities planning for the entire transit system.

Systemwide support facilities modernization and expansion

Systemwide transit support facilities currently in operation include central control centers, maintenance crew headquarters, materials warehouses, transit police facilities, and administrative offices.

Control centers monitor schedule adherence and coordinate the daily activities of buses, trains, Metro Mobility and dial-a-ride services, service vehicles, training vehicles, and other mobile units. They also dispatch vehicles to respond to on-street incidents and to support transit police.

Facilities that headquarter maintenance crews are needed to keep customer facilities clean and in good condition. Customer facility maintenance capacity must expand to meet the maintenance needs of more heavily used existing facilities and of new facilities.

Investment opportunities beyond the current plan

In general, support facilities investments should match the planned service levels and network developed by transit providers. Additional support facilities beyond those included in this plan may be needed if transit service is expanded well beyond planned levels.

Customer facilities

Customer facilities are the places where transit customers get on and off transit vehicles such as transit stations, transit centers, and bus stops. Customer facilities also serve as an important point of transfer between transit services, including bus-to-rail transfers. Regional transit providers build and maintain a range of features and amenities such as real-time transit information, shelters, and seating. Customer facilities are an important factor in people choosing to take transit, and their design should be accessible, safe, and comfortable.

What guides decision making for customer facilities

Regional guidelines for customer facilities are defined in the Transit Design and Performance Guidelines subsection. These guidelines provide for regional consistency in the spacing and features of different customer facilities. Transit providers also have their own policies and procedures for customer facilities, such as ADA transition plans, transit asset management plans, shelter placement guidelines and their bus stop design guidance that provide more detailed direction. The state and some cities also have their own regulations that affect customer facilities. For example, new legislation in 2024 requires that Met Council construct sidewalk curb ramps and pedestrian signals at each intersection adjacent to a BRT station that are not currently ADA compliant. The federal government also has standards, particularly for accessibility for people with disabilities through the ADA.[112]

Every customer facility should provide ADA accessibility and information for customers to feel secure in using the transit system.

Customer facilities investments included in the plan

Investments in transit customer facilities assumed in this plan include:

- Bus stop improvements
- Transit centers
- Transit stations
- Mobility hubs
- Park-and-rides

Customer facilities categories often overlap and share many features. For example, transit centers and stations usually have bus stops; many transit centers are also mobility hubs and transit stations; and park-and-rides have passenger amenities provided at many of these facilities.

Bus stop improvements

Bus stops are established locations for customers to get on and off the bus. There are approximately 12,000 bus stops in the region. Features that modernize bus stops – such as pavement improvements, enhanced transit information, shelters, or heat and light in shelters – improve the customer experience. Bus stop improvement programs, such as Metro Transit's Better Bus Stops program, are assumed in the plan. Maintenance, replacements, and improvements at customer facilities are a required investment category for regional transportation sales and use tax under state law.

Transit centers

Transit centers are customer facilities that provide comfortable and convenient locations for customers to transfer between routes where two or more transit routes connect. They are typically located off-street at major activity centers and have multiple bus stops with bus service timed for easy transfers. Transit centers provide customers with shelter, transit information, and other features to enhance their experience. Buses also frequently lay over and bus operators may take breaks at transit centers. Having break facilities directly at layover locations is important for scheduling and on-time performance.

Transit centers may need to be refurbished or modernized to meet customer needs for access, safety, and comfort. With changes in transit service, opportunities for new transit centers may emerge or existing transit centers may need to be adapted to meet operational needs.

Transit stations

Transit stations are customer facilities associated with transitways. They provide public access to light rail, commuter rail, and bus rapid transit services. There are currently 130 transit stations in operation on the system. New transit stations are typically developed as transitways are constructed but can also be added incrementally before or after a full transitway is in operation. More information regarding transitway investments can be found in section 8 Transitways.

As the transitway system matures, transit agencies will need to modernize existing transit stations through refurbishments and upgrades for service reliability, safety, and customer comfort.

Mobility hubs

A mobility hub is a public gathering space or transportation facility where customers can get information on and make connections between multiple transportation options. While transit customer facilities make natural mobility hubs, they are not exclusive to transit. Mobility hubs often include shared mobility travel options like bikes, scooters, and electric cars. Hubs help people easily switch between travel options and bridge the gap between different types of travel. These facilities often include features like additional passenger amenities, real-time customer information, or first-and-last-mile travel options. These improve the user experience and encourage multimodal travel. Met Council's Mobility Hub Planning and Implementation Guidebook provides comprehensive technical assistance to transportation partners for implementing mobility hubs across the Twin Cities region.

The guidebook recommends hub locations based on transportation services, land use, demographics, and other factors to highlight areas that could benefit the most from mobility hubs investments. An online map shows the region's 50 priority locations for mobility hubs.

Park-and-ride facilities

Park-and-ride facilities are surface lots and structured ramps, mostly in suburban communities, served by commuter and express bus, highway or dedicated bus rapid transit, or rail. Park-and-rides are amenities co-located with other types of customer facilities like bus stops, stations, or transit centers. Park-and-rides are important tools for creating locations with the customer density required to provide cost-effective transit service in suburban and rural areas. The system currently operates at around 15% of capacity and can accommodate the demand expected through 2050. Some additional park-and-rides are planned along new transitways that could serve a different market than the existing system.

The park-and-ride system and express bus corridors are shown in Figure 8.9 (page 299).

Investment opportunities beyond the current plan

Park-and-ride modernization

The region made significant investments in park-and-rides in prior decades. Since 2020, commuter travel patterns have drastically changed, and the longstanding 9-to-5 commute to downtown offices from suburban areas via transit has recovered slower than other transit ridership.[113] Factors for this slow recovery include an increase in telecommuting at least 1-2 days a week and lower parking rates at downtown ramps that make it more attractive to drive. Transit providers may adapt the existing park-and-ride system to changes in customer use and transit service through strategies like consolidations or transit-oriented development or even downsizing or closure per the plan's Policies and Actions.

Transit providers will continue to coordinate with local communities in planning and designing park-and-rides to integrate park-and-rides into local development patterns. Transit-oriented development and joint-use ventures associated with park-and- ride locations may become more prevalent over time as the region's transitway system and land use development matures.

Regional multimodal hubs

Regional multimodal hubs connect light rail and commuter rail transit to multiple other existing and planned services. There are currently two of these facilities in the region. The Union Depot in downtown Saint Paul is served by the METRO Green Line, local and express bus service, Amtrak passenger rail service, and several intercity bus services. It will also be served by the Gold Line starting in 2025. Target Field Station in downtown Minneapolis is served by the METRO Green Line and Blue Line light rail, Northstar commuter rail, and other bus services that connect in downtown Minneapolis. Additional multimodal hubs may be added to the system as the region continues to build out its rail transitways or passenger services that extend beyond the region (for example, passenger rail and intercity bus services). There are no additional planned regional multimodal hubs included in this plan.

Transit advantages

Transit advantages are facilities or equipment that allow transit to travel faster than general traffic or bypass it completely in some cases. These advantages include transit-only streets, bus-only shoulders and lanes, high-occupancy vehicle lanes and managed lanes, ramp-meter bypasses, traffic signal queue jumps, transit signal priority, and curb extensions at transit stops.

These features help transit be a more competitive and attractive option than driving alone, especially on congested roads or many traffic lights. Speed and reliability are consistently cited as top priorities for transit riders in the region. In addition to providing benefits to riders, transit advantages also make transit service more efficient to operate. In some cases, improvements to travel time on a route can reduce the number of buses and drivers needed to operate it, meaning the same service can be provided with fewer resources. These savings can then be allocated to other routes or used to increase frequency on the improved route. Transit advantages can also help manage vehicle demand on roadways by making transit flow smoother and attracting additional riders which also improves its people-moving efficiency.

What guides decision making for transit advantages

Decision making around transit advantages investments is largely based on coordination between the agencies that own facilities (the roadway authority) and transit service providers. On highways, MnDOT builds managed lanes, high-occupancy vehicle lanes, and bus-only shoulders in coordination with transit providers. Bus lanes are also being considered on MnDOT arterial roadways within urban cities.

Cities and counties also participate in decision making and implementation of transit advantages on their roadways. For example, several bus-only lanes have been installed in the City of Minneapolis and the City of Saint Paul in coordination with Metro Transit. More are planned.

Looking ahead, a prioritized five-year plan of transit advantage projects in Minneapolis will be available in late 2024. Minneapolis and Metro Transit evaluated 27 potential corridors for transit advantages as part of the City's Transportation Action Plan. Using data such as passenger delay or equity and other considerations like project coordination, the project team categorized each corridor into one of three tiers. Corridors that ranked in top tier will be advanced between 2024 and 2030.

Transit advantages investments included in the plan

The following transit advantages investments are included in this plan:

- Transit advantages on highways
- Transit advantages on local roads
- Transit advantages on transitways

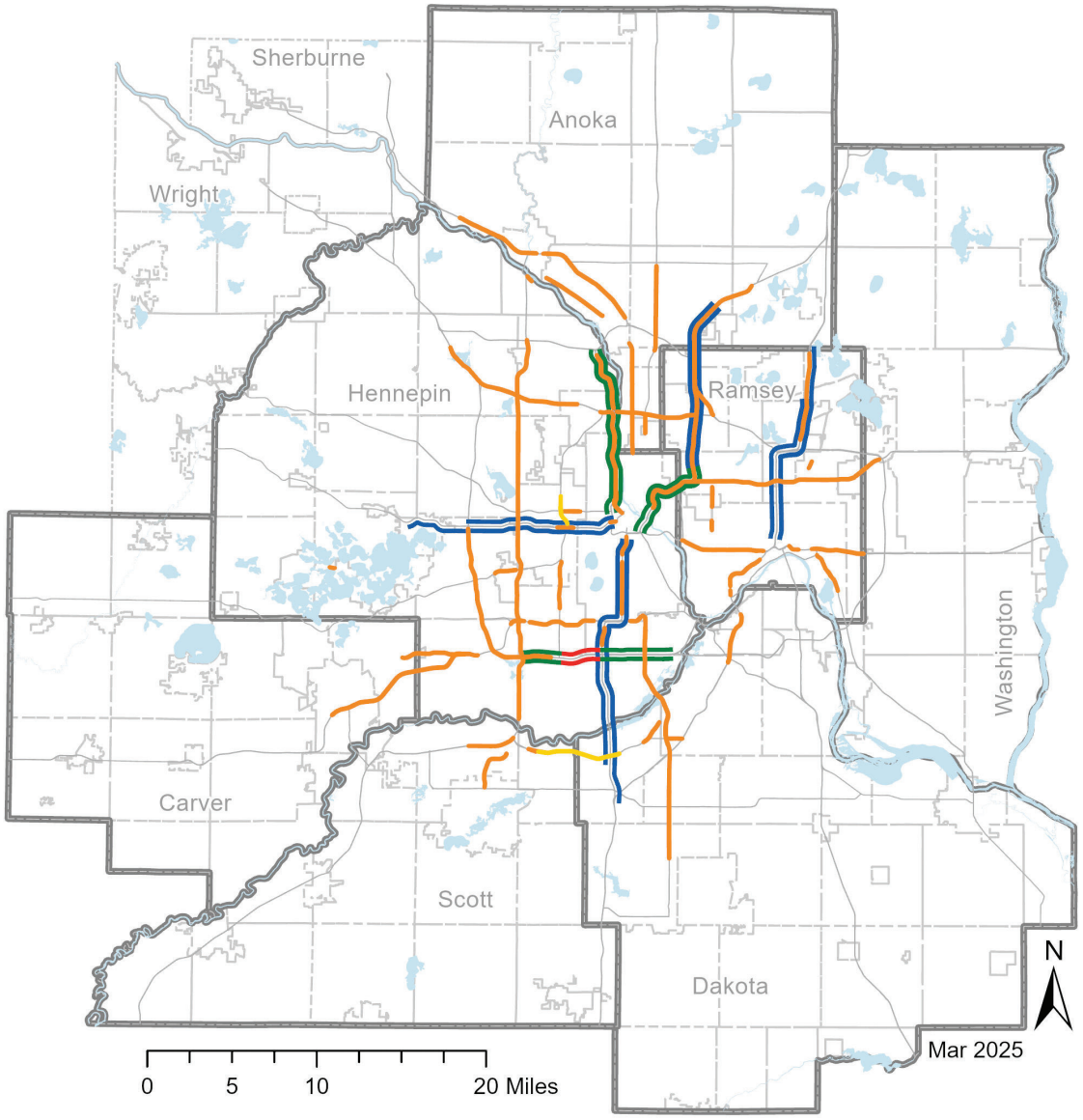
Transit advantages on highways

On state highways, transit advantages can include bus-only shoulders, dedicated bus lanes, managed lanes, ramp meter bypasses, and transit stations adjacent to or on roadways (see Figure 8.19). The managed lanes and high-occupancy vehicle lanes section of the Highway Investment Plan outlines the investments in these transit advantages facilities that are included in the fiscally constrained plan. Maintenance and spot mobility projects also offer opportunities to widen shoulders enough for bus-only lanes where they currently could not accommodate a bus.

Transit advantages on local roads

On local streets, transit advantage investments include dedicated bus lanes, dynamic parking lanes, traffic signals that are coordinated with transit service and/or provide transit priority, curb extensions that allow buses to avoid pulling out of and back into travel lanes, queue jump lanes, and more. These improvements provide faster trips for customers, improve the attractiveness of transit, and significantly increase the people-moving capacity of local streets.

Figure 8.19: 2050 bus shoulders and managed lanes



Transit advantages on transitways

Transitways generally include transit advantages appropriate to meet the speed and reliability goals for the route. For example, arterial BRT operates on busy roadways with traffic signals. As a result, they often include transit signal priority and in some cases bus-only lanes for a portion of the route. Investment plans for transit advantages are based on the planned transitway investments outlined in the Transitways section of this chapter.

Opportunities for investment beyond the current plan

Transit providers partner with roadway authorities to improve speed and reliability along high-ridership corridors served by one or more bus routes. The region is exploring an expanded network of bus-only lanes or other transit advantages that can provide more consistent travel times in congested areas and can make transit a more attractive option for the region's traveling public.

In some instances, bus lane concepts are being tested through a short-duration pilot project, such as in Hennepin Avenue bus lane pilot project completed in February 2020. This allows the transit agency and roadway authority to measure changes to route performance, observe impacts to traffic, and gather public feedback. If the initial results are promising, any lessons learned can be incorporated into the final design and expand the concept to additional corridors as it becomes a more proven concept.

Fare equipment and supporting systems

Investments in fare-collection equipment and supporting systems include fare technology, new fare media, on-vehicle fare-collection equipment, off-board fare-collection equipment, and mobile apps. All of these play an important role in transit service delivery. Improvements in fare-collection technology should ensure regional compatibility while supporting regional goals and objectives.

What guides decision making for fare equipment and supporting systems

Two documents regarding fare collection equipment and technology provide direction at the regional level. The Guidelines and Procedures for Fare Collection sets the regional fare structure for regular-route service including transfers from dial-a-ride and paratransit. Chapter 7 of the Regional Transitway Guidelines provides general guidance for decision making on transitway fare collection. Transit agencies plan for the maintenance and replacement of these systems in their transit asset management plans.

Overall, the goal of fare collection systems is to provide a convenient customer experience, support operating goals for the various service types, and provide accurate data for reporting. Regional transit providers make their own decisions within the regional guidelines based on the needs of their customers and their asset management approach. Fare collection equipment ages like any other asset and fare technology needs can change over time.

Fare equipment and supporting systems investments included in the plan

Regular replacement of fare collection equipment and supporting systems on transit vehicles and at stations as needed is managed by the regional transit agencies and assumed in the financially constrained plan. This includes a large update to Metro Transit's fare collection system software that will allow for account-based fare payment (rather than card-based like the current Go-To system), fare capping, and other features.[114]

Opportunities for investment beyond the current plan

While customers can transfer between services of the various regional providers, transfers to regular-route services from other modes can take multiple steps. The region will investigate opportunities to improve transfer experiences for customers between regular-route and non-regular-route services.

Safety and security

Safety and security investments encompass both equipment and staffing on transit vehicles and at customer facilities that help to provide an environment where transit customers and operators can take their trip or do their jobs without worrying about their personal safety. Working with transit providers and communities, the Met Council will continue to work to provide a safe and secure environment for customers and employees on vehicles and at transit facilities.



The Metro Transit Police Department and transit liaisons like the Transit Rider Investment Program (TRIP) staff at Metro Transit are important parts of this effort. Through a variety of means, transit police and transit liaisons enhance security and preserve the quality of regional transit infrastructure, which also helps to increase ridership. These include fare enforcement, welfare checks, regular patrols and rides on transit vehicles, partnerships with other law enforcement agencies and community organizations, and innovative programs such as community service officers.

Not everyone has the same experience using the region's transportation system. Analyses of enforcement data show that people of color experience disproportionate traffic stops or enforcement on transit. People of color are also disproportionately represented among the region's transit riders. The Met Council will work to ensure that Metro Transit Police actions do not perpetuate racial inequities. The Metro Transit Police Department will also work to remain current with evolving industry standards, best practices, and community expectations.

Safety is a shared responsibility, and the Met Council will continue to invest in employee awareness and public education campaigns to improve transit safety. Furthermore, public transit is a safer system when it is well used. More people use transit when they feel comfortable on it, especially new riders. Operating useful and frequent services with well-maintained facilities can also help to improve safety.

What guides decision making for safety and security investments

Federal legislation gives authority and responsibility to the U.S. Department of Transportation for safety oversight and rulemaking related to all modes. FTA has been publishing rules along these lines, focusing mostly on rail transit, but also requiring performance measures and targets for transit safety. Every transit provider in the region takes the safety of their employees, customers, and the public seriously and has procedures for ensuring safety. At Metro Transit:

- Each mode has its own system safety program plan that describes how safety is integrated into the operation. Further, all modes have an accident investigation, reporting, and corrective action planning process.
- All transit modes have an emergency management plan that describes the overarching responsibilities and public safety partners. These are updated annually for bus and light rail.
- All major capital projects undergo a safety certification process to ensure that the new service is safe for passenger operations. Similarly, significant changes to the operating system are subject to the same rigorous verification.

Regional transit providers also may produce more general safety plans such as the Metro Transit Safety & Security Action Plan,[115] which was completed in 2022. This plan summarizes the steps Metro Transit is taking to improve public safety on transit, including more than 40 individual actions focused on improving conditions on the system, training and supporting employees, and engaging customers and partners. Reported crimes declined by 25% from the first to fourth quarter of 2023.

In addition to promoting safety and security during regular transit operations, the Met Council and Metro Transit also have an important role in regional disaster preparedness. The Met Council maintains an emergency management plan to coordinate between Metro Transit and the various regional and state public safety agencies in the event of an emergency.

Safety and security investments included in the plan

Transit safety and security equipment

Equipment is an important component of safety and security. These investments range from cameras and emergency telephones on transit vehicles and at stations to improved lighting at transit stops and stations, among others. An important component of safety and security is good design of facilities, including the consideration of Crime Prevention through Environmental Design principles.[116] Regional transit providers will continue to invest in safety equipment both on vehicles and at customer facilities, such as Metro Transit expanding use of real-time cameras.

Transit liaisons and fare enforcement

The Met Council implemented the Transit Rider Investment Program (TRIP) in 2023, deploying nonpolice personnel to perform fare inspections.[117] These staff also educate and assist riders, improve the transit experience, and may issue administrative citations for fare violations in accordance with Minnesota Statutes section 473.4075. Updates to state law changed fare violations from a misdemeanor to an administrative citation, which allows agencies to use nonsworn officers to administer them. The addition of these staff will bolster official presence on transit as well as free up capacity for transit police to focus on other public safety needs.

Opportunities for investment beyond the current plan

As additional funding may be available and prioritized for this purpose, additional safety and security equipment or upgrades and additional safety and security staffing may be implemented by regional transit providers.

Financial summary

Overall, the region's financial position for transit is positive and stable going forward. This is due to increased revenues from a new regional sales tax, which the state legislature passed in 2023, as well as shifting funding responsibility for the region's ADA paratransit services (Metro Mobility) to state funding sources. The existing and new transit revenues shown in Table 8.3 will meet the needs identified in this plan for transit operations and capital investments. This funding will allow the region to maintain bus service, meet obligations to operate ADA service, and expand the region's transitway system.

Regional transit, one of the four main categories in the Finance Chapter, is projected to make up roughly one third of total regional transportation revenues and expenditures over the plan timeline, accounting for $53.9 billion out of $171 billion. This table includes revenues and spending by all regional transit providers and local governments for the regional bus and transitway systems.

Table 8.3: Regional transit revenues by source [118]

Expenditure	Calendar year 2025 Total	2025 % of total	2025 through 2050 Total	% of total
Regional sales tax	$449	27%	$17,300	32%
Motor Vehicle Sales Tax (MVST)	$368	22%	$14,300	27%
State general fund and bonds	$163	10%	$7,050	13%
Fares	$82	5%	$4,100	8%
Federal formula and Regional Solicitation	$198	12%	$5,500	10%
Federal Capital Improvement Grants	$100	6%	$1,300	2%
County sales tax and regional railroad authorities	$244	15%	$1,050	2%
Regional Transit Capital property tax and other	$63	4%	$2,450	4%
Fund balance and interest earned	-	-	$850	2%
Subtotal	**$1.67 billion**	**100%**	**$53.9 billion**	**100%**

The largest expenditure of transit funds will be for operating the system, accounting for more than two-thirds of all transit spending from 2025 to 2050. Roughly 52% of all spending will be for bus system operations, 9% for operating current transitways, and 12% for operating planned transitway lines that will be built during the plan timeline. Just under one-quarter of available funds will be used for capital projects including for the bus system, current transitways, and future transitways. This includes major individual investments such as:

- Light rail vehicle replacement ($1.1 billion) and vehicle overhauls ($600 million)
- Construction of new regional transitways including METRO Green Line Extension light rail (completion), METRO Blue Line Extension light rail, METRO Purple Line dedicated BRT, and the METRO B, E, F, G, and H arterial BRT lines.

Table 8.4: Regional transit expenditures, by category, in millions of dollars

Expenditure	Calendar year 2025 Total	2025 % of total	2025 through 2050 Total	% of total
Bus operations	$684	41%	$28,650	53%
Bus system capital	$250	15%	$6,250	12%
Current transitways operations	$143	9%	$5,200	10%
Current transitways capital	$468	28%	$3,400	6%
Expansion transitways operations	-	-	$5,550	10%
Expansion transitway capital	$447	-	$2,650	5%
Remaining transit opportunity funds	$122	7%	$2,300	4%
Subtotal	**$1.67 billion**	**100%**	**$53.9 billion**	**100%**

Regional Transportation Sales and Use Tax and other legislation

The regional sales tax created by the 2023 Omnibus Transportation Law[119] will now be the largest single transit revenue source at 27% of total revenues out to 2050. In calendar year 2025, the regional sales tax is expected to supply about $450 million in revenues for transit and a total of over $17 billion between 2025 and 2050. Most of this funding will be used to cover operating costs of services that are already present or planned.

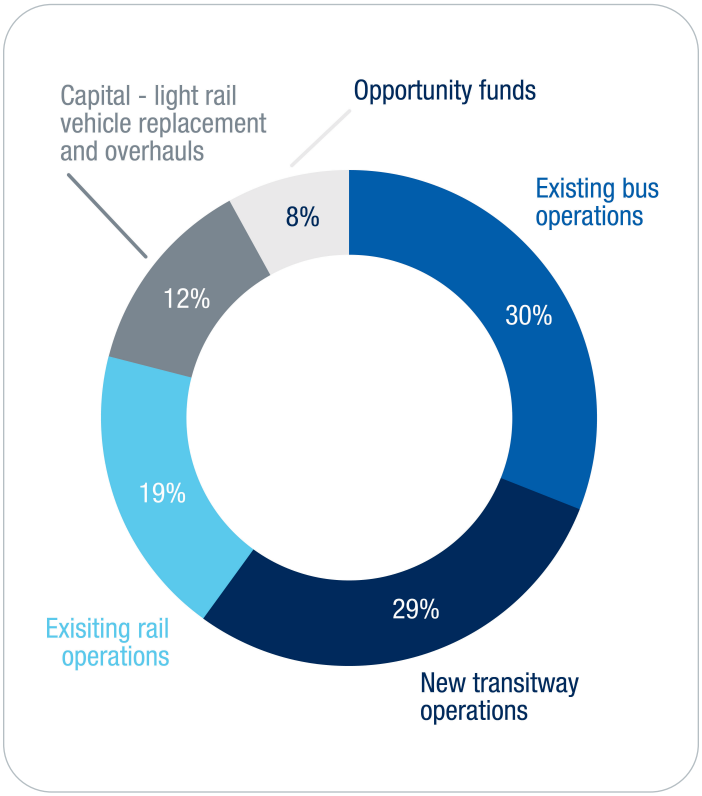
Figure 8.20 shows how the new regional sales tax funds will be used across various transit purposes, including to fill expected operating and capital shortfalls for existing bus and rail services and to provide funds for new transitway operations and capital maintenance. Roughly $2.3 billion of the sales tax funds remain to be identified for new transit spending opportunities. Figure 8.20 is current as of October 2024; these allocations will change over time with changes to capital projects, transit operations, and maintenance needs.

Other major implications for transit in the Twin Cities region from recent legislation include:

- State general fund revenues will be responsible, after fares and federal revenues, for the costs of Metro Mobility operations and capital starting in state fiscal year 2026.

- The metro counties' 50% share of dedicated transitways (light rail, dedicated BRT, highway BRT, and Northstar commuter rail) operating costs were shifted from the counties to the Met Council, accounting for about $4.2 billion, or 24% of the 26-year total regional sales tax revenues.
- The region is required to spend a portion of the regional sales tax revenues on specified purposes ranging from improvements to accessibility at customer facilities, expanding micro-transit services, to procuring zero-emissions buses in line with the Met Council's transition plan. The required investment areas are covered in the Transit Investment Plan section of this document.
- Met Council light rail capital construction funding is restricted to federal funds and direct appropriations.

Figure 8.20: Regional transportation sales tax transit spending by category, 2025-2050, as of October 2024



Additional funding opportunities

Federal discretionary funds

The region has historically been competitive for funding from many federal discretionary programs. It is anticipated that the region will continue to apply for and receive grants for opportunities to enhance its transit system. While the plan already assumes FTA Capital Investment Grants for a number of transitways, additional grants could be sought for new corridors that are identified or replace local funds for planned corridors, like arterial bus rapid transit projects.

Some examples of other discretionary transit programs that have been successful in the past include buses and bus facilities, low- and no-emission vehicle programs, and transit-oriented development planning. The vast majority of federal funding programs provide funds only for transit capital purposes, or to initiate new services over the first few years of implementation. These and other potential FTA grant programs could provide additional funding to support the transit investment plan.

Regional Solicitation

The region receives federal formula funds to allocate and invest as it chooses in the regional transportation system. The region has provided significant funding for transit projects through its Regional Solicitation competitive process and expects to continue to do so. In total, over $3 billion of federal funds will be available for the Met Council and TAB over the life of this plan to determine how to invest in our transportation system in a manner that will best help the region achieve our goals of safe and welcoming, climate leadership,

equitable and inclusive, dynamic and resilient, and protecting our natural systems.

As of 2024, the region has begun a process to evaluate and update the Regional Solicitation process. This will include transit funding categories, scoring criteria, and a general approach. Once the Regional Solicitation evaluation project is complete, changes to funding will be amended into the Transportation Policy Plan.

Carbon Reduction Program

The Infrastructure Investment and Jobs Act of 2021, also known as the Bipartisan Infrastructure Law (BIL), established the Carbon Reduction Program. Administered by the Federal Highway Administration, the program provides $6.4 billion in formula funding over five years for states to develop carbon reduction strategies and for projects to reduce transportation carbon dioxide emissions, including traffic management, public transportation, pedestrian facilities, alternative fuels, and port electrification. The Carbon Reduction Program is a formula program, meaning that federal funding is apportioned among the states and states have broad discretion over how they spend the funds. States are also able to transfer Carbon Reduction Program funds[120] to other formula programs.

The Carbon Reduction program provides Minnesota with approximately $20.9 million annually over five years to fund projects that reduce carbon emissions from surface transportation. Program funding is distributed across the state, with some funds allocated proportionally based on population. MnDOT districts and metropolitan planning organizations like the Met Council will select projects to receive Carbon Reduction Program funding. The Bipartisan Infrastructure Law required each state to develop a carbon reduction strategy to support efforts to reduce carbon dioxide emissions from on-road highway sources in consultation with metropolitan planning organizations in the state. MnDOT published a report[121] documenting the state's strategies and goals in November 2023.

State discretionary funds

Transit providers can seek one-time funding from the State of Minnesota. The state has historically provided state general obligation bonds for some transit projects over the past decades. State bonds must be used for capital projects and cannot be used for vehicle fleets or assets with a short useful life. In recent years, state bonds have been appropriated for bus rapid transit corridors and the Mall of America transit station improvements.

The State of Minnesota also provides general funds for transit operations and this number can go up or down every two-year state budgeting cycle. While less common, there have been instances of the state appropriating general funds to transit for capital purposes when there is a large state budget surplus.

County funding

Metropolitan area counties have various funding sources that can be used for transit purposes. Some counties have invested substantially in the transit system in the past, especially those counties that have planned transitways. Before the law changes in the 2023 Omnibus Transportation Law, counties provided half of transitway operations funding that is now required to be paid by the Met Council.

Going forward, metro area counties have both their own locally enacted transportation sales taxes of up to one-half-cent and 17% of the new three-quarter-cent regional sales and use tax for transportation purposes. They also receive funds from the transportation advancement account, which collects revenues from sales taxes on vehicle repair parts and a regional package delivery fee on purchases of $100 or more. Under state law, counties must spend 17% of the funding they receive through the regional transportation sales and use tax and the transportation advancement account funds on transit purposes, complete streets, or activities to reduce transportation related greenhouse gas emissions. This plan assumes counties will continue to provide the nonfederal share of funding to develop and construct new transitways that are not arterial BRT. Counties also have regional railroad authorities that can levy taxes and, in the past, some of this funding has gone toward transit projects. All county funds are administered and prioritized through county and regional railroad authority budgeting processes.

Counties, the Met Council, and regional transit providers will need to mutually explore opportunities to fund the identified transit investment opportunities in this chapter. Counties that are investing in transit should work directly with the Met Council and regional transit providers to identify how their investments fit with regional transit plans. In addition, regional transit providers and the Met Council should work directly with counties as well as MnDOT on transit investment plans to make sure they identify how they will impact and interact with county infrastructure and plans.


IMAGINE 2050

SUBSECTION 9: TRANSIT DESIGN AND PERFORMANCE GUIDELINES

SUBSECTION 9 SUPPORTS SECTION 8: TRANSIT INVESTMENT PLAN

Introduction

Demand for transit service varies across the region. This applies to the time of day that transit is used, the number of trips taken, and the purpose of those trips. While this variation in transit demand is driven by several factors, it is primarily due to differences in density of development, urban form, and demographics. To account for these differences in planning and evaluating transit service, the Met Council collaborated with regional transit providers and other partners like cities and counties to develop the following regional guidelines for transit service design and operation. The Met Council intends for these to provide transit users with consistent service quality across the region while allowing transit providers and local governments to make their own decisions about the specifics of transit service and operations in their communities.

Transit Planning Basics

The region's transit system is a network of routes, facilities, and services that need to be well designed and managed to best achieve regional goals, including good stewardship of public resources. This is especially true in a fiscally constrained situation, where available funding only allows for building and operating the highest priority projects. The region uses a number of foundational principles to guide transit route and network design and ultimately influence the overall success of the transit network.

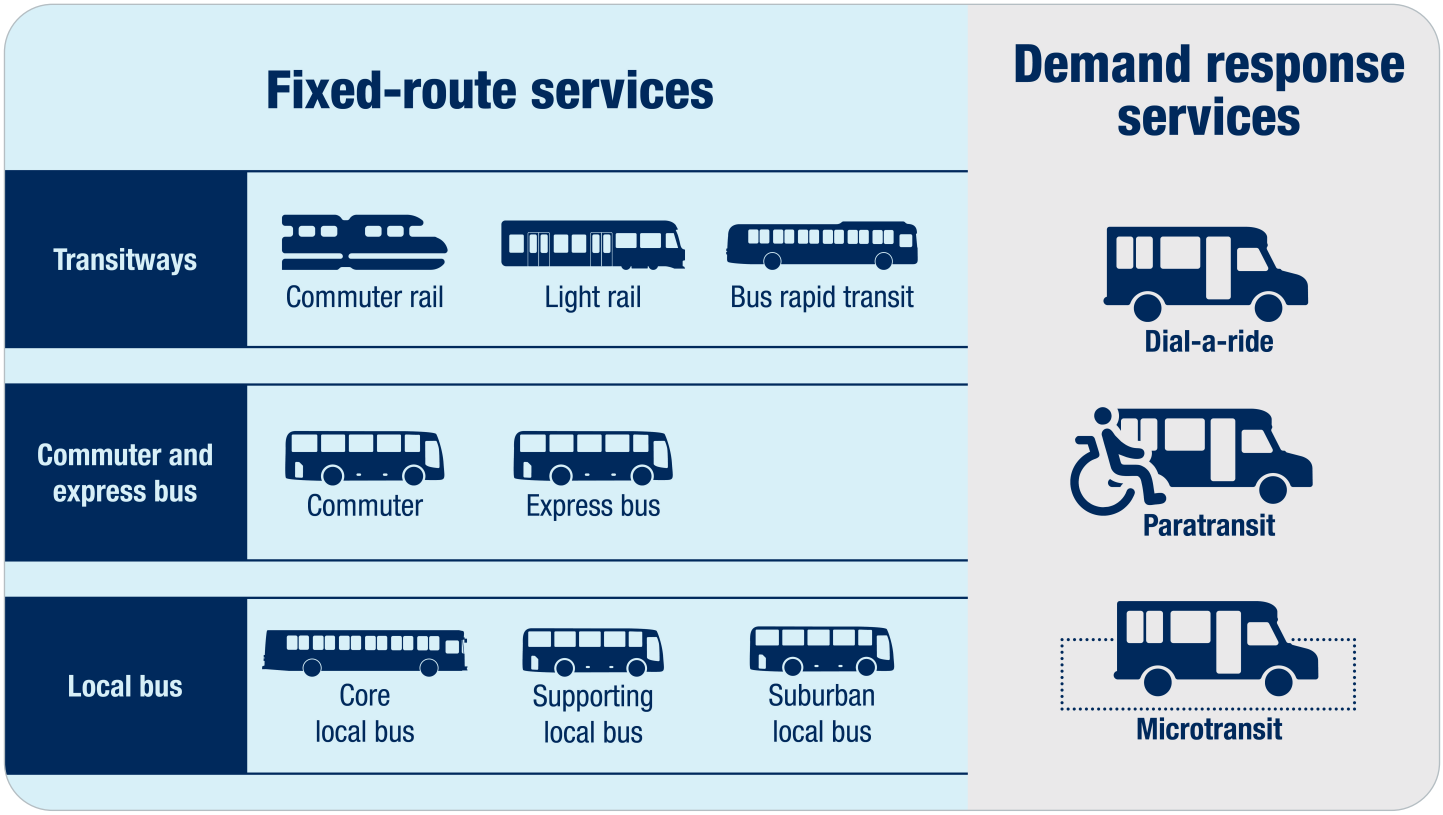
Demographic factors, generally outside the control of transit providers, and urban design shape the design and potential success of transit investments. Transit providers design the transit system and manage it largely based on these demographic and urban design factors.

Urban design, such as land use or street layout, is typically outside the direct control of any one agency or government body. However, multiple agencies can change the urban environment over time, especially when working in collaboration with each other. Urban design factors are generally managed by land use planning efforts and development policies of local governments, and transportation system planning of local, county, and state agencies. A successful transit system requires the cooperation of transit agencies, local governments, and state agencies within their respective roles.

Service and route types

The region classifies transit routes based on the type of vehicle used (mode) and their role within the region's transit network for the purposes of providing design and performance guidelines. Service types include local bus, express and commuter bus, demand response, and transitways. All service and route types classified below, except demand response, are fixed-route services. This means they operate along established paths with published schedules and designated stops, although some routes may operate with a flex or deviation pattern.

Figure 9.1: Fixed-route and demand response services



Local bus service is the foundation of the region's transit system

Local bus routes form the base of the transit network, providing access between where people live and the centers of activity, ranging from downtown cores or key destinations like medical services to neighborhood commercial centers. Some core local bus routes are supplemented with a limited stop route designed to

serve customers wishing to travel farther distances along the corridor. Limited stop routes make fewer stops and provide faster service than the core local routes. There are three main types of local bus routes including:

- **Core local bus** routes provide frequent transit service throughout the peak period and generally into the midday and evenings. These routes typically serve the denser urban areas of Market Areas I and II, usually providing access to downtowns or major activity centers along important commercial corridors. They are some of the most productive routes in the system.
- **Supporting local bus** routes are designed to provide crosstown connections, usually within Market Areas I and II. Typically, they do not serve downtowns but provide important connections between core local routes and ensure transit access for those not traveling downtown.
- **Suburban local bus** routes typically operate in Market Areas II and III. These routes serve an important role in providing a basic level of transit coverage throughout the region. Provider-specific variations on suburban local bus include community routes, feeder routes, and suburb-to-suburb routes which are similar to express bus routes but between suburban locations.

Coverage service provides regular-route transit service to areas that have lower transit demand but meet certain guidelines

The Met Council's service area encompasses seven counties. Much of the residential and population growth has been happening in areas outside of urban core communities. There is continual pressure to add service in areas that either do not currently meet or are unlikely to meet established transit route productivity guidelines. However, the value of a bus route in a lower-demand setting may not always be best measured by the number of riders it carries per in-service hour. Other measures, such as serving job centers or neighborhoods with high numbers of people likely to rely on transit to travel, also serve the region's broader transportation objectives. Guidelines for coverage service design and performance in the Transit Design Guidelines section of this subsection.

Overall, regional transit providers should operate a productive system in terms of ridership but choices on individual routes and their resulting productivity can serve multiple regional goals such as equity.

Commuter and express bus mainly serve workers traveling to and from employment centers

Commuter and express bus routes mostly operate during peak periods, serving commuters going downtown or to a major employment center. These routes typically operate on highways for portions of the route between picking up passengers at a few stops in residential areas or park-and-ride facilities.

Demand response service improves access to transportation

Demand response is a broad category of transit services that fulfill different roles based on the size of their service area, how far in advance rides must be reserved, and who is eligible to use the service. Transit providers typically use smaller vehicles to operate these services and they are designed around access to transportation rather than high ridership productivity. Three types of demand response services currently operate in the Twin Cities region:

- **General public dial-a-ride** is intended to augment the regular-route network and is only available for trips that cannot be accomplished on regular routes alone. Transit Link is the Met Council's general public dial-a-ride service and is open to the any person and operates where regular-route transit service is not available. Transit Link trips may drop off passengers at major transfer points to complete their trip on the fixed-route network.
- **Paratransit** service is public transportation for certified riders who are unable to use the regular fixed-route bus due to a disability or health condition and is required by the Americans with Disabilities Act. In the Twin Cities region, the Met Council oversees all ADA paratransit services. Metro Mobility contracts with ADA paratransit service providers, who provide customers with first door (pickup) through first door (drop-off) transportation.
- **Microtransit** provides on-demand, shared-ride transit service within a defined zone. The zone is usually small enough to keep wait times for pickup under a set number of minutes. Microtransit in the Twin Cities serves areas ranging in size from several neighborhoods to the entire service area of some smaller transit providers. The Met Council and its partners will be developing a regional framework for designing and managing microtransit services.

Paratransit riders must meet eligibility requirements to access the service

Eligibility for ADA services is determined using federal guidelines established by the Americans with Disabilities Act. A person may be eligible for ADA paratransit service if any of the following apply:

- The individual is unable to independently navigate the fixed-route transit system because of a health condition or disability.
- The individual is unable to independently board or exit fixed-route vehicles due to a heath condition or disability.
- The individual is unable to propel to or from a bus stop within the fixed-route service area due to a health condition or disability.

Paratransit service span and area are guided by federal and state requirements

The paratransit service coverage area and hours of service are determined by several factors outlined in federal and state requirements. Per the federal requirements, ADA paratransit service must operate within at least 3/4 mile of the local regular-route network and for the same hours of the day. To meet this requirement, Metro Mobility matches the regular-route hours of service delivery for weekday, Saturday, and Sunday and holiday service in each community where regular-route service is available. In addition to federal requirements, the State of Minnesota requires Metro Mobility to provide service to all communities within the transit capital levy district. Metro Mobility is available to eligible residents living in these areas by providing 12 hours of service on weekdays, and on an as-space-is-available basis on Saturdays, Sundays, and holidays.

Transitways

The region uses the term transitway as a general designation for transit routes that meet one of the following criteria:

- Providing frequent all-day service, high-capacity or uniquely branded vehicles, and high amenity stations that include off-board fare payment
- High-capacity service operating on a fixed-guideway such as rail or a bus-only facility

Transitways are built on high-demand corridors where the most customers will benefit from enhanced services and amenities. These routes are part of the METRO system and designated with a color for light rail and highway or dedicated bus rapid transit or a letter for arterial bus rapid transit.

The region operates three transitway modes including:

- Bus rapid transit
- Light rail transit
- Commuter rail

Design guidelines for each of these modes are provided in the Transitway Design Guidelines section of this appendix. Modern streetcar is also considered a transitway mode but no lines are currently operating in the Twin Cities region.

Bus rapid transit provides faster service on the highest demand bus corridors

Bus rapid transit is a high-frequency, high-amenity bus service that typically operates 18 hours a day and provides faster connections between destinations than local bus services. It uses transit advantages, off-board fare payment, and has less frequent stops. The region uses bus rapid transit on high-demand corridors to provide a convenient and reliable rider experience that encourages transit use.

Three types of bus rapid transit have been implemented in the Twin Cities region to date:

- **Arterial bus rapid transit** operates in high-demand urban arterial corridors with service, facility, and technology improvements that enable faster travel speeds, greater frequency, an improved passenger experience, and better reliability.
- **Highway bus rapid transit** operates in high-demand highway corridors with service, facility, and technology improvements providing faster travel speeds, greater frequency, an improved passenger experience, and better reliability.
- **Dedicated bus rapid transit** operates in dedicated right-of-way for the exclusive use of buses in high demand corridors. Service, facility, and technology improvements are similar to light rail. It provides faster travel speeds, greater frequency, an improved passenger experience, and better reliability.

Light rail

Light rail operates using electrically powered passenger rail cars operating on fixed rails in a dedicated right-of-way. It provides frequent, all-day service, stopping at stations with high levels of customer amenities and waiting facilities.

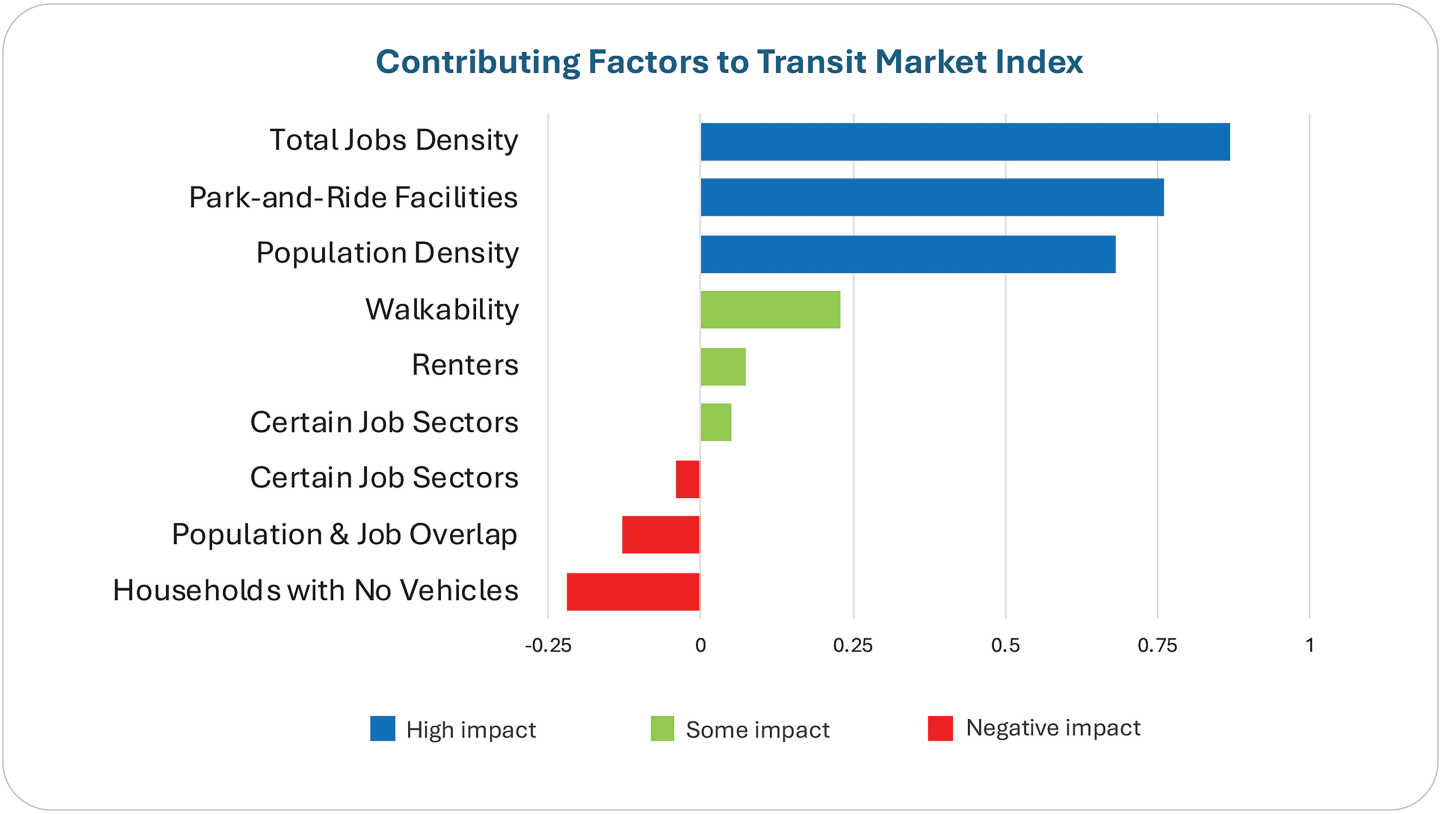
Commuter rail

Commuter rail typically operates using diesel-power locomotives (although there are examples outside the region using other power sources) and passenger coaches on traditional railroad tracks. These trains typically only operate during the morning and evening peak period to serve work commuters.

Transit market areas

The Twin Cities region uses transit market areas to describe how much demand for transit service there is in each neighborhood or community and what kinds of service can be expected to meet that demand successfully and efficiently. The region determines transit market areas using a transit market index that is based on a combination of measures including population and job density, urban form, and personal vehicle availability.

Figure 9.2: Contributing factors to transit market index



The Met Council has generally used these tools to evaluate the potential for current transit demand. However, they could also serve as a useful tool for planning future development and thinking about how different approaches to land use and transportation could help or hinder the viability of transit services. The Met Council will be working with its partners to develop this concept further. Furthermore, travel behavior in the region has been evolving since the COVID-19 pandemic and this may mean that methodologies used to create transit market area boundaries need to be re-evaluated more frequently.

Transit market index predicts transit ridership potential

The transit market index is a prediction of transit passenger activity that can be expected based on population, employment, and the built environment. The Met Council, in coordination with regional partners, uses this index to create a transit market area map that communicates the places in the region where different levels of transit service may be appropriate.

The Met Council updated the index calculation methods for the 2050 Transportation Policy Plan using 2023 ridership data as a basis to evaluate how well different factors were able to predict ridership. The calculation uses the following data sets at the census block group to predict boardings and exits:

- Population density
- Employment density looking at both total jobs and jobs by sector
- Household vehicle availability
- The proportion of residents who are renters
- Walkability
- The presence of park-and-ride facilities

These measures were found to have a strong relationship to existing transit demand in our region. Their respective weights in the transit market index formula are determined based on their relative impact on transit demand.

The equation to calculate transit market index for each block group is as follows:

$$TMI \sim -8.41 + 0.68 \cdot d_{pop} + 0.87 \cdot d_{jobs\_total} + 0.23 \cdot walkability + 0.074 \cdot d_{renter} - 0.0044 \cdot d_{jobs_4} - 0.0019 \cdot d_{jobs_5} - 0.027 \cdot d_{jobs_6} + 0.05 \cdot d_{jobs_7} + 0.0032 \cdot d_{jobs_8} - 0.0052 \cdot d_{jobs_9} - 0.032 \cdot d_{jobs_{10}} - 0.024 \cdot d_{jobs_{11}} - 0.025 \cdot d_{jobs_{12}} - 0.0053 \cdot d_{jobs_{13}} - 0.0065 \cdot d_{jobs_{14}} - 0.011 \cdot d_{jobs_{15}} + 0.00085 \cdot d_{jobs_{16}} - 0.008 \cdot d_{jobs_{17}} + 0.02 \cdot d_{jobs_{18}} - 0.00029 \cdot d_{jobs_{19}} - 0.01 \cdot d_{jobs_{20}} + 0.76 \cdot parkride - 0.22 \cdot s(d_{zerovehhh}) - 0.13 \cdot d_{jobs} \cdot d_{pop}$$

Definitions and details will be available in a methodology document that is currently being drafted.

In addition, the index score for each block group is smoothed based on its neighboring block groups with the level of influence based on how far the center of a block group is from its neighbors. Smaller block groups, typically in urban areas, have their centers closer to their neighbors and would have more influence over each other than rural block groups that are usually much larger.

Table 9.1 shows the data sources used to calculate the index measures for each block group.

Table 9.1: Transit market index data sources

Measure	Data source
Population	U.S. Census Bureau; American Community Survey 5-year Estimates
Employment	U.S. Census Bureau; Longitudinal-Employer Household Dynamics Program; LODES Data based on NAICS code
Zero-vehicle households	U.S. Census Bureau; American Community Survey 5-Year Estimates
Walkability	OpenTripPlanner
Census block group land area	U.S. Census Bureau; TIGER/Line file data

Population and employment density are the strongest predictors of transit ridership

Population and total employment density have the strongest relationship to transit demand. Higher-density areas usually generate more transit demand. The simple reason is that they have more people living within walking distance of a transit stop, and there are also more destinations like work locations or shopping and services that they can easily access by walking or rolling after disembarking. These areas can also support more frequent transit service, which makes it more convenient to use, and there are more costs associated with driving like paid parking and roadway congestion. As a result, people living and working in these areas are more likely to use transit.

For the transit market index, population and employment densities are each calculated by dividing the total population or total jobs in a census block group by the land area of that block group.

Certain jobs like retail and services support more transit ridership than others

The Met Council analyzed if some kinds of jobs are more or less predictive of transit ridership. The results showed that concentrations of retail and/or service jobs have a stronger relationship with transit ridership. These jobs require on-site work and are also destinations for people running errands and meeting their daily needs. Examples include retail stores, restaurants, and hotels. Other job types like finance, real estate, and warehousing exhibited a negative association to transit ridership when compared to total job density. The Met Council added adjustments for these different job categories into the updated index methods.

Renters are more likely to use transit

Regardless of whether they live in high- or low-density areas, renters generally are more likely to use public transit. The Met Council incorporated an adjustment in the transit market index equation to account for areas that have a higher density of renters. While this is not a large adjustment, it was substantial enough to incorporate into the equation.

More walkable areas generally have higher transit demand

Transit riders usually must walk or roll some distance between a transit stop or station and where they start or end their trip. The index measures walkability using the ratio of the area one can reach in five minutes (about a quarter mile) by walking the street network, and the area that could be reached in five minutes on a straight line unconfined by barriers. Using the street network rather than sidewalks or other walking paths provides a more complete dataset throughout the region as complete sidewalk network data is currently unavailable. Walkability is generally low near freeways, lakes, and other barriers that prevent walking, or in areas with large blocks and disconnected street and sidewalk networks. Walkability is high in areas with a well-connected street grid with smaller block sizes.

The transit market index previously used the number of intersections in a census block group divided by its land area to measure the ease of walking access and identify places that are more transit supportive. However, intersection density alone is not a good measure. For example, many mobile home communities have very high intersection density within the community, but extremely low connectivity to the surrounding area.

Zero-vehicle households can predict higher ridership potential but only at higher densities

For a variety of reasons, transit is the only means of mobility for many people in the region. Areas with high concentrations of people who do not have private vehicles will tend to generate greater demand for transit. The transit market index measures this using the number of households without a vehicle in each block group. This value is then divided by the land area of the block group.

Park-and-ride facilities concentrate transit ridership activity

Park-and-ride facilities with commuter and express or METRO service bring together transit services and riders, particularly in suburban areas. Accounting for their presence in the transit market index methodology improved predictions of ridership activity, particularly in parts of the region with lower population and employment density.

Block groups influence transit demand in neighboring blocks

While the transit market index is calculated for each block group individually, each area's population, jobs, and other predictors of transit demand can influence ridership activity in neighboring blocks. In other words, multiple connected blocks with high transit demand will have higher overall ridership potential than similar areas that are disconnected. To account for this effect, the transit market area of each block group considers the index values of neighboring block groups.

Transit market index score is the basis for determining transit market areas

Block groups are separated into five transit market areas based on transit market index values. Table 9.2 shows the index value ranges for each market area. Block groups with the highest index values are assigned to Market Area I while those with the lowest index value are Market Area V.

Table 9.2: Transit Market Areas and transit market index scores

Transit Market Area	Approximate index score range[1]	Propensity to use transit
Market Area I[2]	> 2.59	Highest potential for transit ridership
Market Area II	> 1.04 to 2.59	Approximately 1/2 ridership potential of Market Area I
Market Area III	> 0.48 to 1.04	Approximately 1/2 ridership potential of Market Area II
Market Area IV	> 0.21 to 0.48	Approximately 1/2 ridership potential of Market Area III
Market Area V	< 0.21	Lowest potential for transit ridership
Emerging market area	Meets minimum score for next market area up	Varies. Typically higher than surrounding market area.
Freestanding town center	Transit market index at least 0.48	Varies. Typically higher than surrounding market area.

Notes: 1) The transit market index score range represents typical scores. Some block groups may be categorized as a higher market area because it is surrounded by block groups with the appropriate score or to connect two areas with higher scores.
2) The maximum observed score was 170.25. The data was log-normal distributed with a median score of 0.48 and a log-transformed standard deviation of 2.41.

Transit market areas typical characteristics

Transit Market Area I includes the region's most dense urban centers and corridors

Transit Market Area I has the highest density of population, employment, and lowest personal vehicle availability. Median population density in Transit Market Area I in 2022 was 14.6 residents per acre with some census block groups exhibiting densities as high as 200 residents per acre. Job densities are similarly high, with a median of 3.6 jobs per acre and the top quartile having at least 9.5 jobs per acre. These are typically Urban communities and have a more traditional urban form with a street network laid out in grid form. Market Area I has the potential transit ridership necessary to support the most intensive fixed-route transit service, typically providing higher frequencies, longer operating hours, and more options available outside of peak periods.

Transit Market Area II covers less dense urban neighborhoods and activity centers

Transit Market Area II has high to moderately high population and employment densities, and typically has a traditional street grid comparable to Market Area I. Median population density in Transit Market Area II in 2022 was 8.5 residents per acre. The median job density for the same year was 1.3 jobs per acre and the top quartile of census blocks had at least 3.8 jobs per acre. Much of Market Area II has a Community Designation

of Urban or Urban Edge and it can support many of the same types of fixed-route transit as Market Area I, although usually at lower frequencies or shorter service hours.

Transit Market Area III is suburban but still dense enough to support some regular-route service

Transit Market Area III has moderate density but often a less traditional street grid that can limit transit's effectiveness. It is typically Suburban and large portions of Suburban Edge communities. The median population density of census block groups in Transit Market Area III was 4.8 residents per acre in 2022. The median job density for the same period was 0.9 jobs per acre and the top quartile of census blocks in Transit Market Area III had at least 2.4 jobs per acre. Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route service is not viable.

Transit Market Area IV includes low density suburban and suburban edge areas

Transit Market Area IV has lower concentrations of population and employment and a higher rate of personal vehicle ownership. It is primarily composed of Suburban and Suburban Edge communities. The median population density for census block groups in Transit Market Area IV was 3.4 residents per acre. The median job density for the same year was 0.3 jobs per acre and the top quartile of census blocks had at least 0.7 jobs per acre. This market can support peak-period express bus services if a sufficient concentration of commuters likely to use transit are located along a corridor. The low-density and suburban form of development presents challenges to fixed-route transit. General public dial-a-ride services are appropriate in Market Area IV.

Transit Market Area V is generally rural in character with some small communities

Transit Market Area V has very low population and employment densities and tends to be primarily Rural and Agricultural communities. The median population and job densities for census block groups in Transit Market Area V were 0.7 per acre and less than 0.1 per acre, respectively. General public dial-a-ride service may be appropriate here, but due to the very low-intensity land uses, these areas are not well-suited for fixed-route transit.

Emerging market areas have higher activity predictors than their surroundings

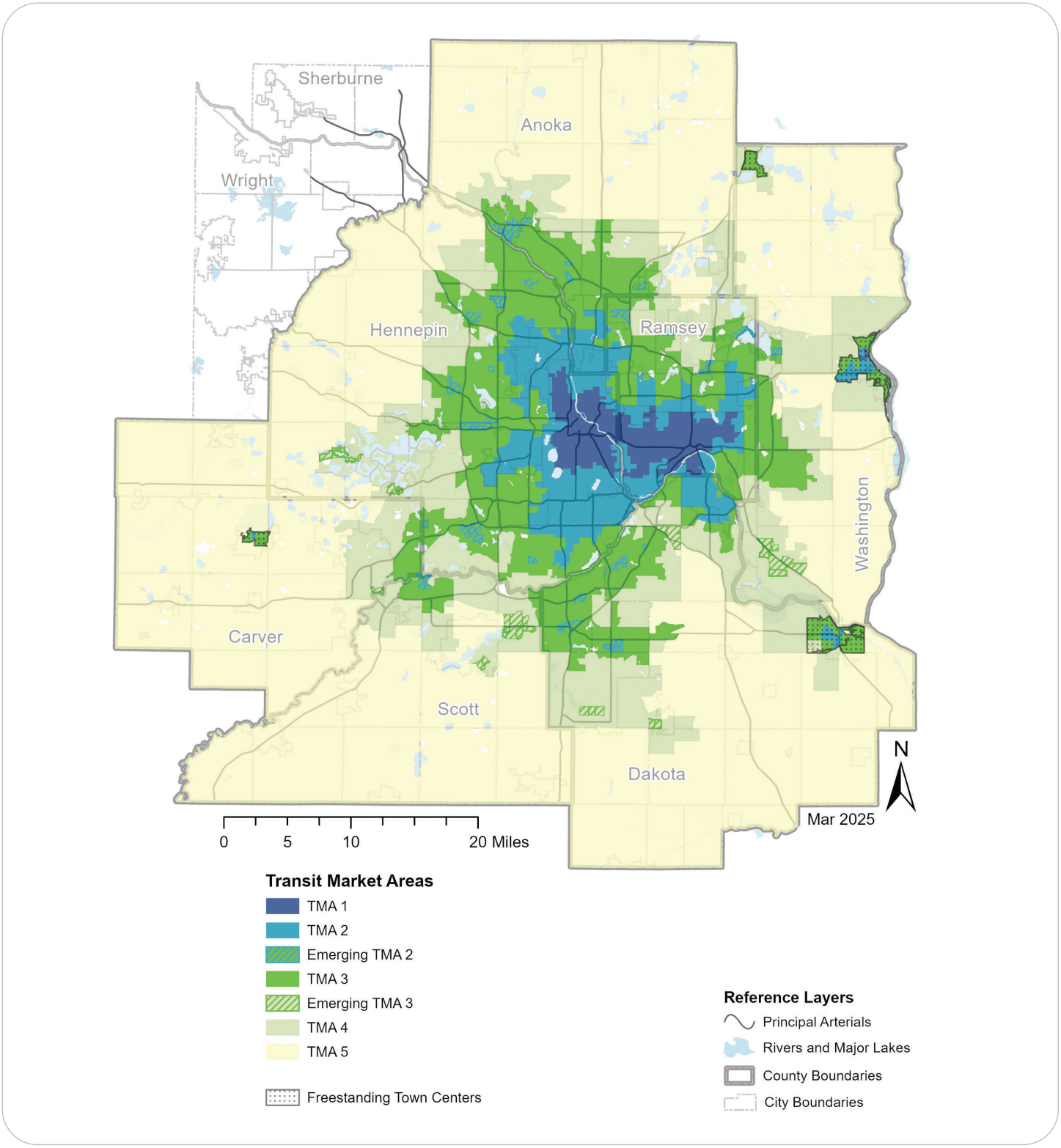
The region uses the emerging market area overlay to identify places in Transit Market Areas III and IV with higher potential for transit use than the surrounding area. These areas are currently too small or noncontiguous to support a higher level of transit service. Focusing growth in and around these areas and along corridors connecting them to other areas of higher transit use potential will present good opportunities for future transit service improvements.

Freestanding town centers are dense communities surrounded by rural areas

Freestanding town centers are areas that historically grew independently of Minneapolis and Saint Paul and are still separated from the urban and suburban areas of the metro by rural land. Because of their concentrated downtowns laid out in a traditional urban form, these areas have a transit market index value

that would indicate Market Area III or higher. However, their relatively small population and land area, as well as their distance from other transit-supportive land uses, limits the potential for local fixed-route transit. Examples include Stillwater, Hastings, Waconia, and Forest Lake.

Figure 9.3: Transit Market Areas



Transit Market Area typical service

The Transit Market Areas are typically able to support certain types and amounts of transit service. How transit providers implement transit service depends on several factors including available resources, analysis of local transit demand and existing ridership, complementary and competing services, and others. Detailed analysis of specific communities and locations may determine that other types and levels of service are more appropriate. As travel behaviors continue to evolve in the region after the COVID-19 pandemic and transit providers adjust their services to respond to changes in demand, these descriptions of typical service may also change.

Prioritization factors shown in Table 9.3 are ways to help differentiate when to add service. That a factor isn't listed doesn't mean it's not an issue or present in the area. The table describes typical transit services provided in the different transit market areas.

Table 9.3: Typical service and key planning factors by Transit Market Area

Market area	Typical transit service[1]	Prioritization factors[2]
Market Area I 	Transit serves multiple trip purposes and provides the most frequent and longest span of service. Light rail and bus rapid transit serve the highest-demand corridors. There is a dense network of core and supporting local bus routes. Commuter bus and rail terminate at regional activity centers. Transit advantages maintain reliability and improve travel time competitiveness throughout. More than 98% of residents in Market Area I lived within walking distance (about ¼ mile) of a transit route as of 2022.	Highest potential for transit ridership
Market Area II 	Transit serves similar functions to Market Area I but at a lower intensity reflecting lower demand. Limited-stop services like limited-stop local bus, bus rapid transit, and light rail connect major destinations. Core and supporting bus networks are less dense than Market Area 1. Transit advantages are used on high-demand corridors to maintain reliability. About 85% of residents in Market Area II lived within walking distance of a transit route as of 2022.	Approximately 1/2 ridership potential of Market Area I
Market Area III 	Transit fulfills two major roles: commuting to/from major activity centers in Market Areas I and II, and access to suburban activity centers. Suburban local bus and commuter and express bus serving park-and-rides are the primary route types. Transit advantages may be provided on congested highways to improve travel time reliability and competitiveness. Bus rapid transit is used on select corridors connecting major regional activity anchors with adequate demand to support all-day, bi-directional, limited stop service. About 45% of residents in Market Area II lived within walking distance of a transit route as of 2022.	Approximately 1/2 ridership potential of Market Area II
Market Area IV 	Transit is mainly focused on commuter service during peak periods as demand can support, generally at park-and-ride type facilities. Some suburban local bus may operate in areas with sufficient demand, typically adjacent to Market Area III. General public dial-a-ride services are appropriate here. A little less than 15% of residents in Market Area IV lived within walking distance of a transit route as of 2022.	Approximately 1/2 ridership potential of Market Area III
Market Area V 	Not well suited for fixed-route service. Primary emphasis is on general public dial-a-ride. Around 2% of residents in Market Area II lived within a walking distance of a transit route as of 2022.	Lowest potential for transit ridership

Market area	Typical transit service[1]	Prioritization factors[2]
Emerging Market Area	Varies. Typically, similar to surrounding market area but may serve as anchor for higher levels of service such as commuter express, suburban local bus, etc.	Varies. Typically higher than surrounding market area.
Freestanding Town Center	Varies. Potential for local community circulator as demand warrants. Some peak-period commuter express service may be appropriate.	Varies. Typically higher than surrounding market area.

Notes: 1) The Met Council's paratransit service, Metro Mobility, provides guaranteed service within ¾ mile of fixed-route transit services throughout the region. Standby paratransit service is provided to rides that begin or end outside of the ADA service area but are within the state-defined Metro Mobility service area. More information about Metro Mobility is available at MetroMobility.org
2) Prioritization factors are listed in alphabetical order, not order of importance.

Transitways are unique services emphasizing customer accessibility and convenience and they require detailed planning processes to ensure specific corridors get appropriate levels of service. This detailed planning work leads to unique applications of transit service design standards and specific types of service unique to each corridor. See the Transitway Design Guidelines section for more information about planning for arterial bus rapid transit, highway bus rapid transit, light rail, and commuter rail.

Demographics

Demographic factors are outside the direct control of transit providers but play a significant role in the design of transit service. With that in mind, the impact of transit investment can indirectly influence these factors by providing access to opportunity. These factors include:

- Auto ownership or the number of cars available in households
- Household income, number of children, and marital status
- Age and disability status
- Job status and unemployment rate

The Met Council also maintains a dataset of Equity Considerations for Place-based Advocacy and Decisions, which provides a crosscutting analysis of these types of factors. More information on these is available on the Met Council's website.[122]

Equity

Equity is a key Transportation Policy Plan goal. Transit providers are required to analyze impacts of any major service or fare changes on people of color, low-income residents, and people with limited English proficiency by federal Title VI requirements implementing the Civil Rights Act of 1964[123] and environmental justice guidance.

Providing safe, affordable, and reliable transportation increases opportunity. Transit services and programs should be built to equitably benefit all, especially underserved communities, including people who identify as Black, Indigenous, and people of color; people experiencing low wealth; women; people who have a disability; people identifying as LGBTQ; youth; and older adults. Transit equity requires identifying and addressing injustices and building actionable pathways to create a fair and more just future.

Transit decisions can impact the ability of people in underserved communities to find and keep jobs, reach medical care, access educational opportunities and affordable housing, and develop and maintain social connections, among other impacts. Transit services and investments can reduce inequalities that contribute to racial, environmental, and economic disparities.

Transit planners and operators have an essential role and responsibility to examine all decisions impacting our region's access to quality transit, reduce existing disparities, and prevent further inequities by:

- Reviewing and revising policies
- Seeking partnerships with other responsible institutions
- Improving planning and operational practices

Access to destinations

Access to destinations is a measure of how well the transit network is meeting the travel needs of current and potential riders. People use transit to reach destinations like work, school, or shopping, among many others. Accessibility measures how many of these destinations transit users can reach using the transit network within a certain amount of time. This is related to but different from mobility, which measures how fast or far people can travel on the transportation network. By considering the destinations that people can access using that network, measures of accessibility provide a more complete picture of how useful the network is to its users. The Met Council views accessibility as an important tool to measure and evaluate the regional transportation network and land use patterns. The Met Council and its partners are engaged in ongoing efforts to develop and implement regionally consistent measures of access to destinations.

Local land use, urban design, and transportation networks

Land use and urban design factors that fall within the control of local governments, such as land use mix, density, and infrastructure design, have significant influence on transit service design and its ability to succeed. To be successful, transit needs people to ride and places to which they can (and want to) easily walk. Local governments and transit agencies need to work together to best match transit service with local land use and maximize the opportunities for success of the transit system. For communities that desire more transit service, local governments should plan for and help facilitate transit-supportive land use. In many suburban communities, these changes are happening, like with station-area planning along light rail and bus rapid transit corridors. The following factors are the primary components of effective local transit service. Express and commuter services are discussed separately.

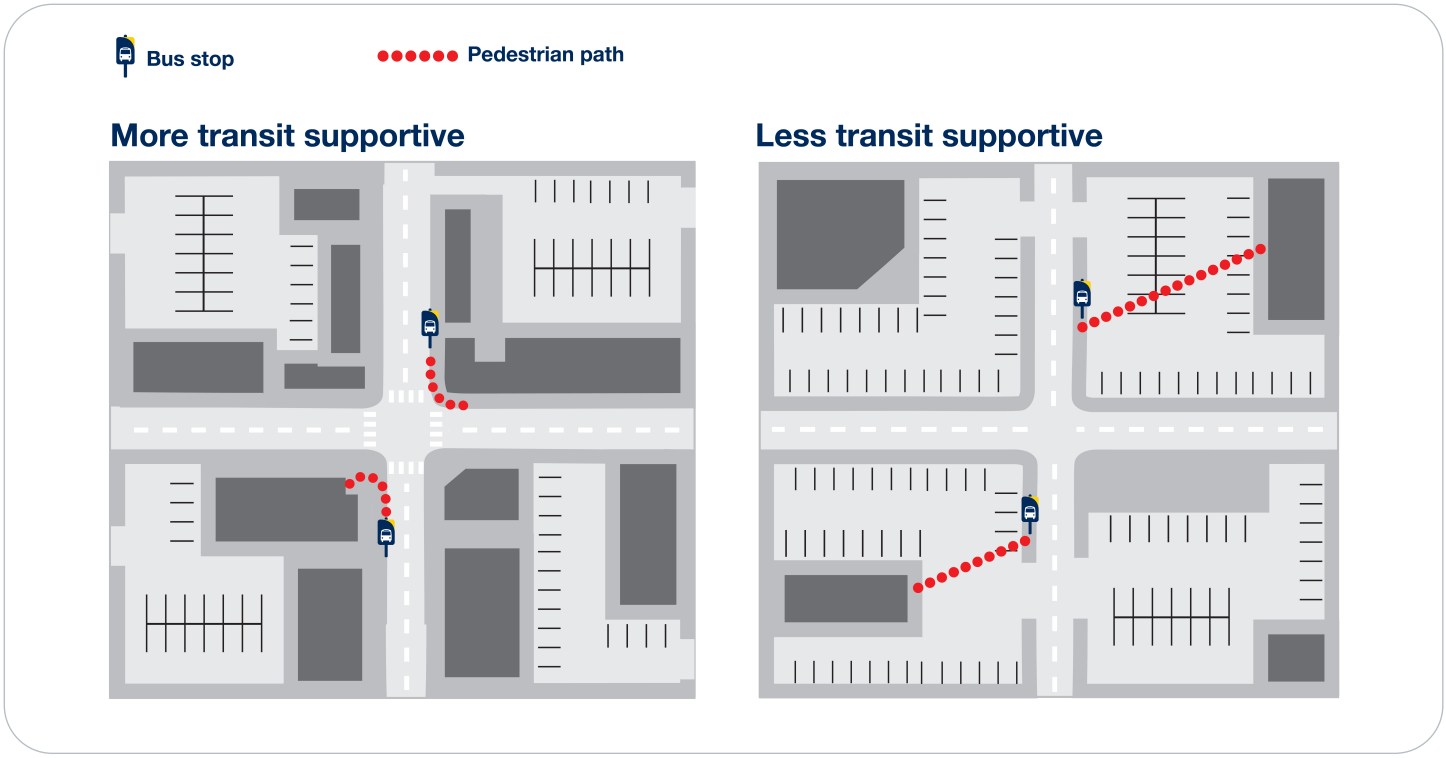
Design and build walkable, pedestrian-friendly environments along transit routes

All transit users are pedestrians for at least some portion of the beginning and end of their trip. An accessible, pedestrian-friendly environment encourages transit use by providing a comfortable walking environment and minimizing the walking distance from the transit stop to front doors. Elements that achieve these aims include:

- Complete sidewalk networks
- Plenty of destinations to walk to
- Buildings along the sidewalks
- Street parking only, no parking lots or at least behind buildings
- Boulevard trees to provide shade and/or wind breaks
- Shortened street crossings (bump outs, narrower lanes, etc.)
- Slower traffic speeds
- No right turns at red lights
- Many more

Multiple good resources on how to design walkable, accessible pedestrian environments are available, such as the National Associate of City Transportation Officials Urban Street Design Guide or MnDOT's Complete Streets Handbook. Accessible pedestrian pathways are generally built and maintained by the authority that owns a roadway, typically cities, counties, or the state. Maintenance, especially winter maintenance, is essential for year-round pedestrian use and access to transit.

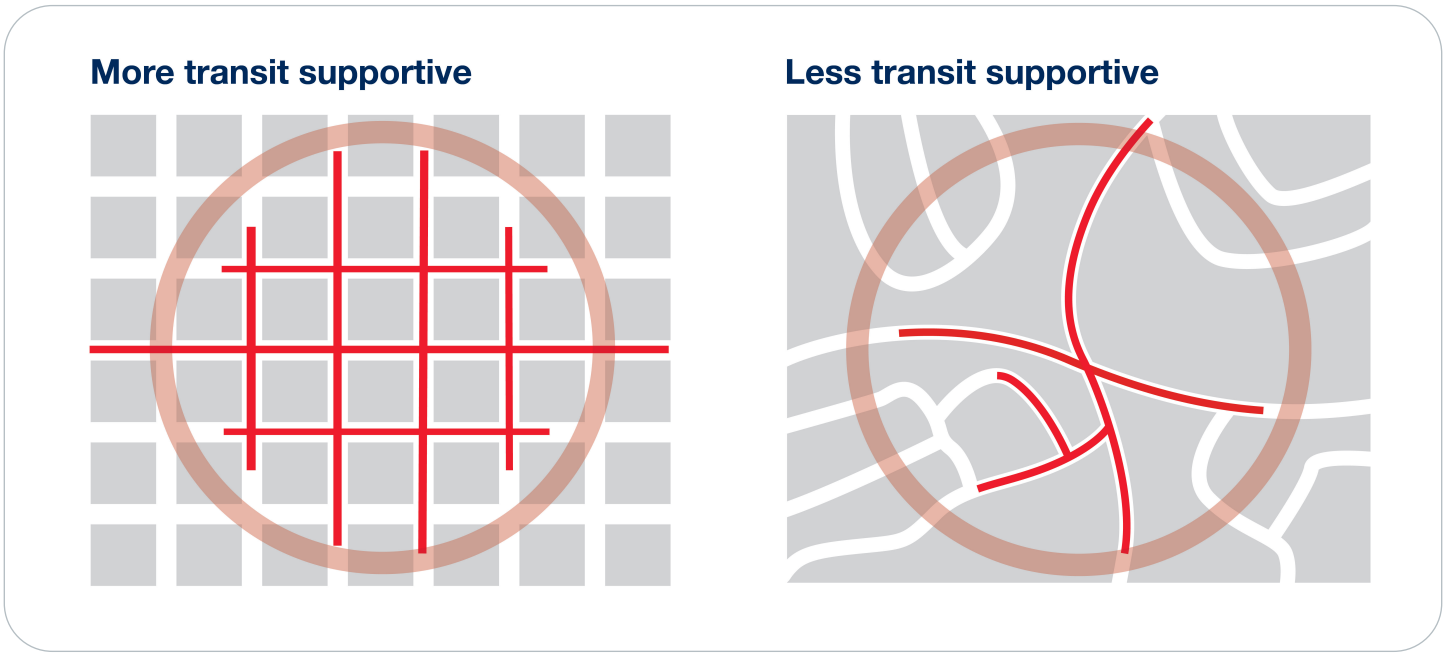
Figure 9.4: Transit-supportive stop placement



Build and maintain an interconnected street network that maximizes pedestrian and bicycle access and supports simple route design

An interconnected street network minimizes barriers and maximizes the area that is accessible within a short walk or bike to a transit stop, allowing each stop to serve more people. In addition, it supports the design of simple, direct routes that are efficient and easy to understand.

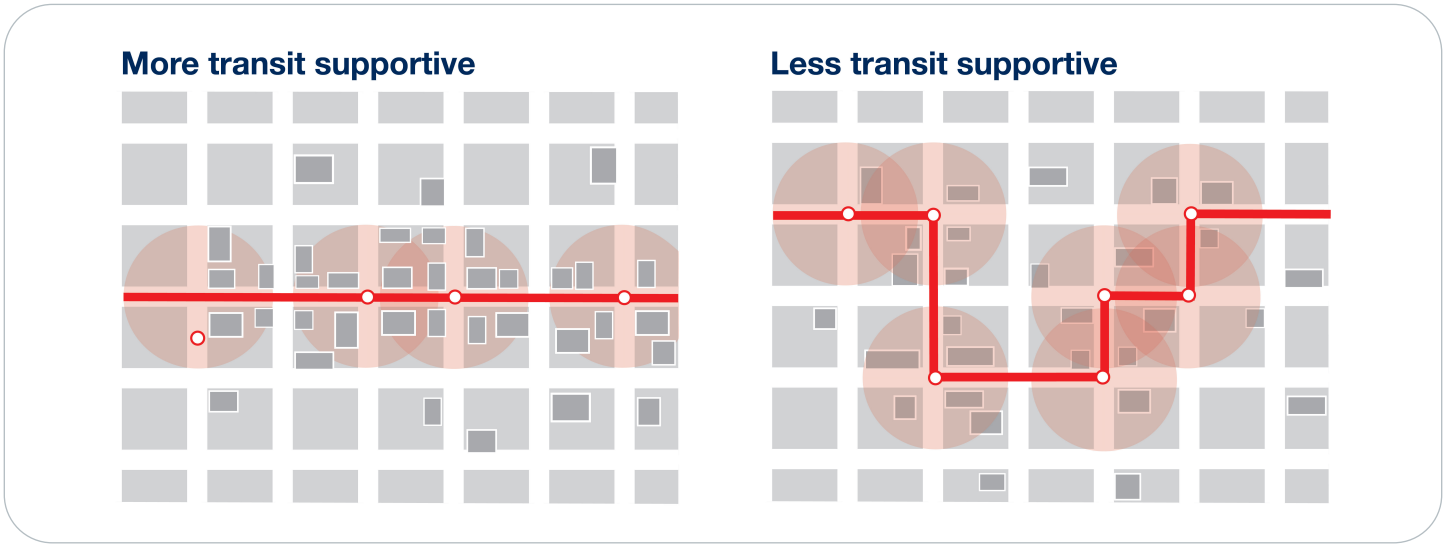
Figure 9.5: Transit-supportive street network



Plan for linear growth in nodes along corridors

A linear pattern of development along corridors is easier to serve with transit. Transit routes that are linear and consistent are the most effective to provide and easier for customers to understand. This also requires coordination across community boundaries.

Figure 9.6: Transit-supportive development pattern

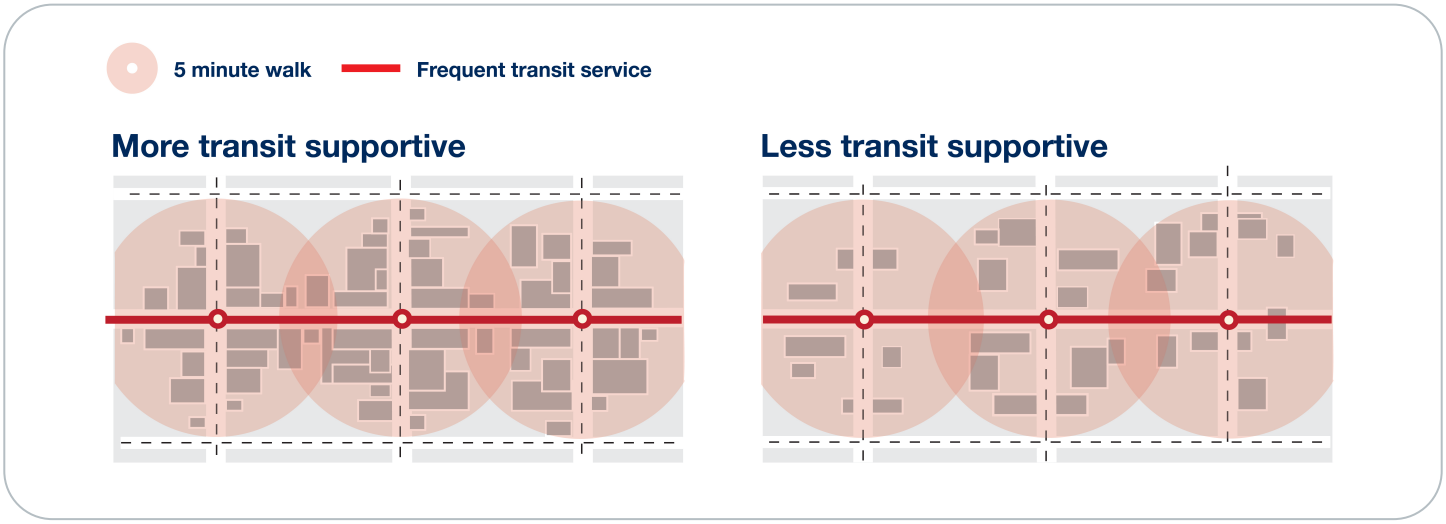


Encourage population and activity density

Population and activity, such as shopping, schools, or cultural amenities, density supports transit because it provides more people and activities within easy walking distance of stops. Additionally, people living in dense areas are more likely to use transit because more frequent and reliable transit options can be provided that are more competitive with driving, especially when accounting for the time and cost of parking.

The Met Council's research to update its Transit Market Index, which measures an area's propensity to support ridership, found job and population density are the main drivers of transit ridership currently, along with walkability. In 2022, Transit Market Area I had a median of 14.6 residents per acre and 3.6 jobs per acre with the top quartile having at least 9.5 jobs per acre. While an entire community does not need to exhibit these densities to have basic transit service, planning for these densities within a half mile of transit stops is essential for producing ridership that can support quality, frequent transit service.

Figure 9.7: Transit-supportive density



Allow and encourage a mix of different uses along transit lines

Transit is most effective when it serves a variety of trip purposes and destinations. Mixed-use development patterns encourage travel patterns with many origins and destinations throughout the day, making transit more effective and easier to provide for a variety of purposes. Some land use types were shown in the Met Council's work to update the Transit Market Index to be more supportive of transit ridership than others, including rental housing, retail and hospitality, and large institutions like schools or hospitals (assuming the surrounding environment is easily walkable).

Figure 9.8: Transit-supportive mix of uses



Provide for transit advantages and customer and support facilities on streets with transit

The design of streets that transit routes operate on can do a great deal to support or hinder ridership. Transit advantages such as bus-only lanes, transit signal priority, or bump outs at transit stops help transit vehicles maintain faster average speeds. This means a faster trip for riders and potentially more frequent transit service at less cost to the transit agency. Space should also be left for customer facilities such as bus stops,

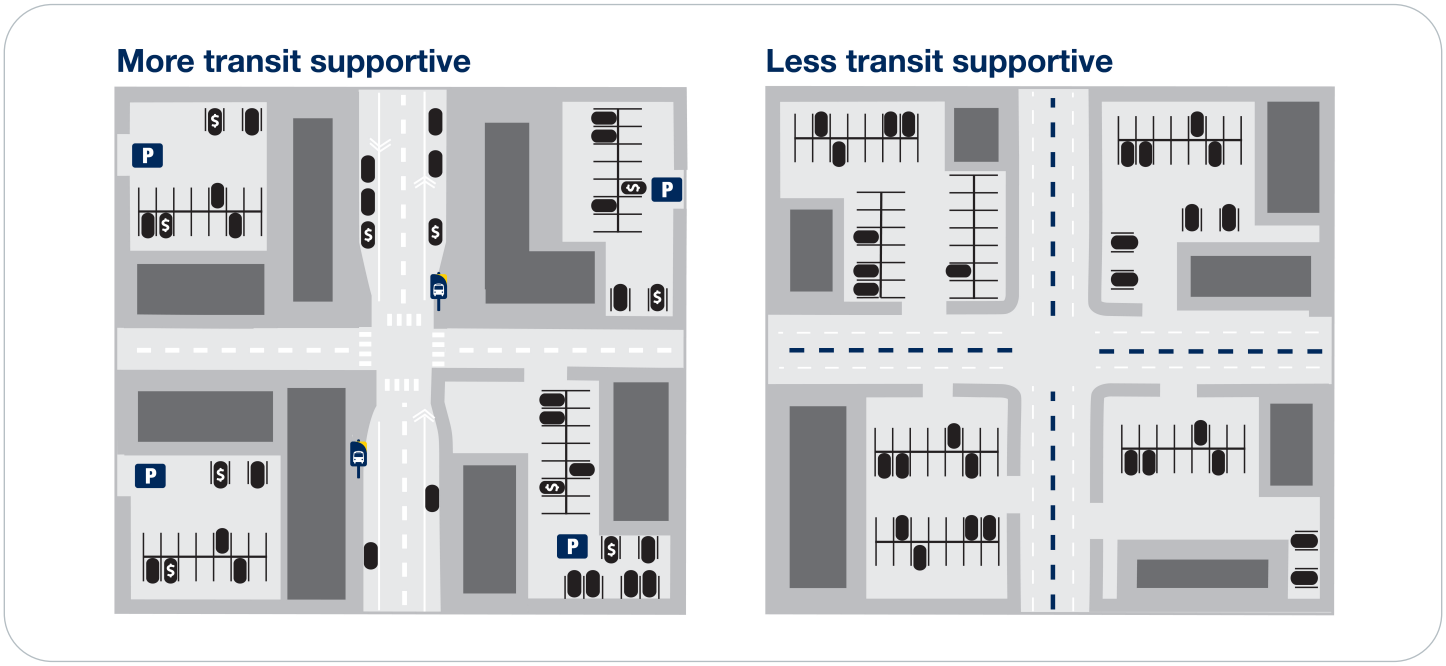
shelters, or even transit centers in busier locations with multiple routes. Finally, support facilities are vital to transit operations. Agencies that build and maintain roadways should coordinate with transit agencies on where they need break facilities for drivers or utilities to support customer facility features like heating.

Multiple useful guidance documents are available for designing streets to support transit operations, including those generated by the regional transit providers themselves. Other documents such as the National Association of City Transportation Official's Transit Street Design Guide can also be good sources of information. It is recommended that roadway owning agencies always coordinate with transit agencies when designing roads that currently carry or are likely to carry transit service in the future.

Support travel options that encourage or complement transit use

Transit is more effective in areas where the cost of driving and parking are greater, or at least comparable to the cost of using transit, and alternatives like car-sharing, bicycling, and walking are available and convenient.

Figure 9.9: Transit-supportive travel options



The factors listed above describe the general relationship between local land use decisions and transit planning. More details on these factors and the considerations for local communities on land use planning around transit are available in the Land Use Policy Plan.

Transit service route and network design principles

The quality and design of transit service is an important part of the success of transit. Regional transit providers must weigh the potential benefits of transit investments against the costs to best manage the system cost-effectively and efficiently. This applies to times when the transit system is stable, when the transit system is expanding, and when the transit system is facing cuts. There are also different factors for the design of local transit service and express and commuter transit service.

Local route and network design

Serve a variety of trip purposes and destinations

Transit will generate higher ridership and more balanced passenger loads if it is designed to serve a number of different trip purposes along the route and throughout the day.

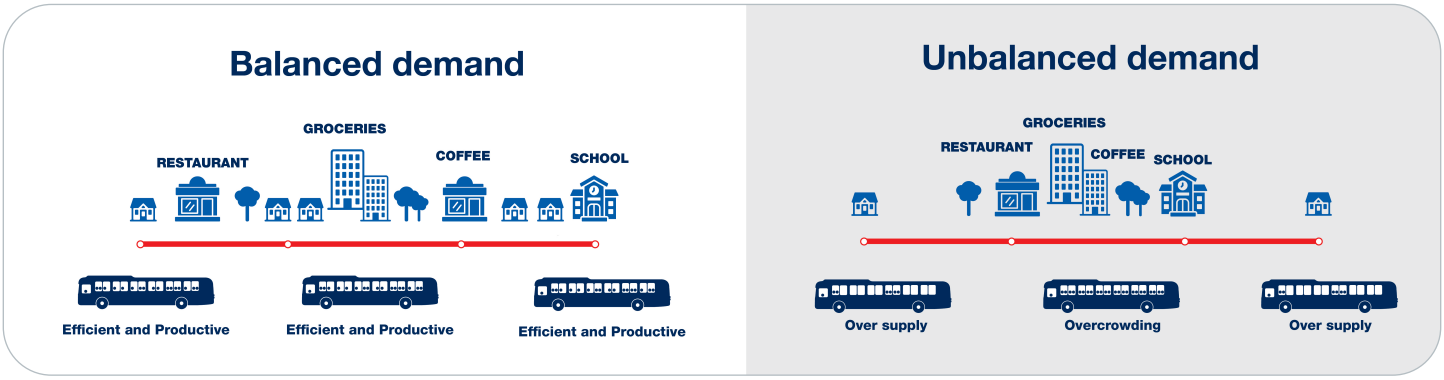
Figure 9.10: Transit that, serves a variety of trip purposes and destinations



Design routes with strong anchors at both ends

Transit is more efficient with balanced passenger loads in each direction. Major destinations at each end help to distribute demand evenly and limit overcrowding of vehicles and oversupply of service.

Figure 9.11: Transit designs that create strong anchors at both ends



Match level of service to demand

Transit is more effective if the type and amount of service provided matches the demand for transit. This allows providers to get the most out of high-demand areas while still serving lower-demand areas.

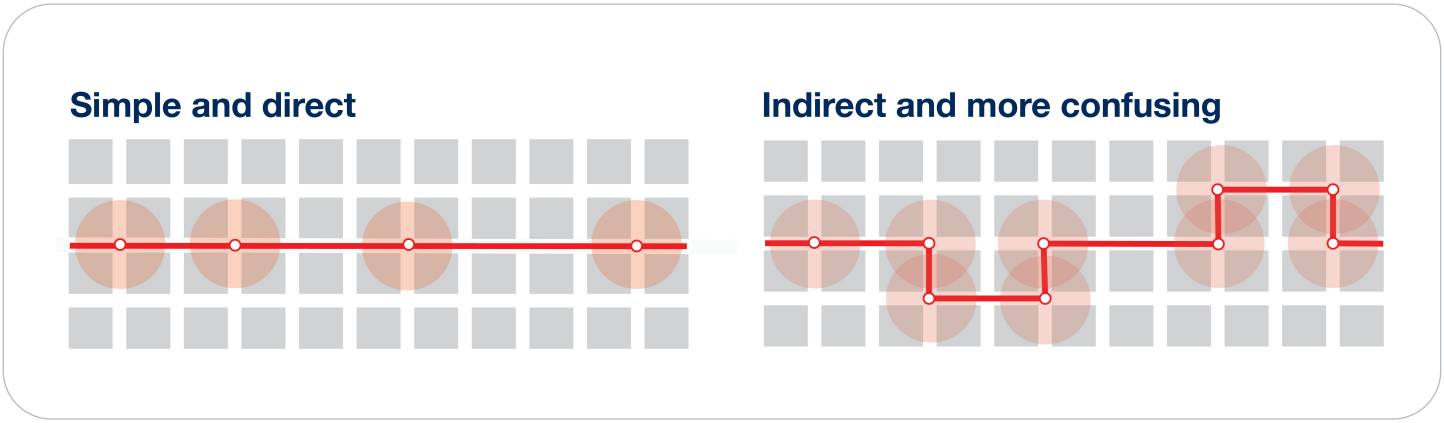
Figure 9.12: Transit service that matches level of demand



Design simple, direct routes

Transit service is more efficient, reliable, and easier for customers to understand when routes are designed in simple, linear patterns without complicated paths.

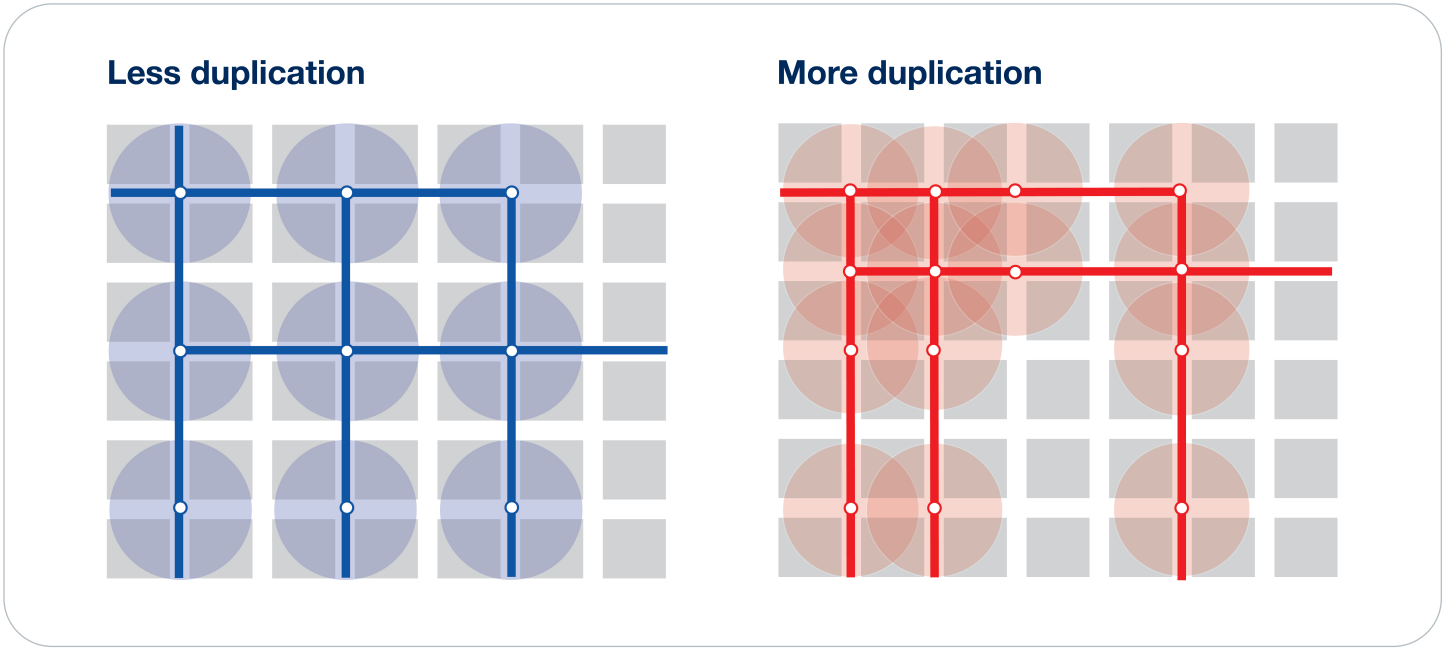
Figure 9.13: Transit designs that support simple, direct routes



Avoid duplication of service

Routes should be spaced far enough apart so that they do not compete with one another for riders at the expense of service coverage in other areas.

Figure 9.14: Transit design that avoids duplication of service



Provide useful customer information and comfortable amenities

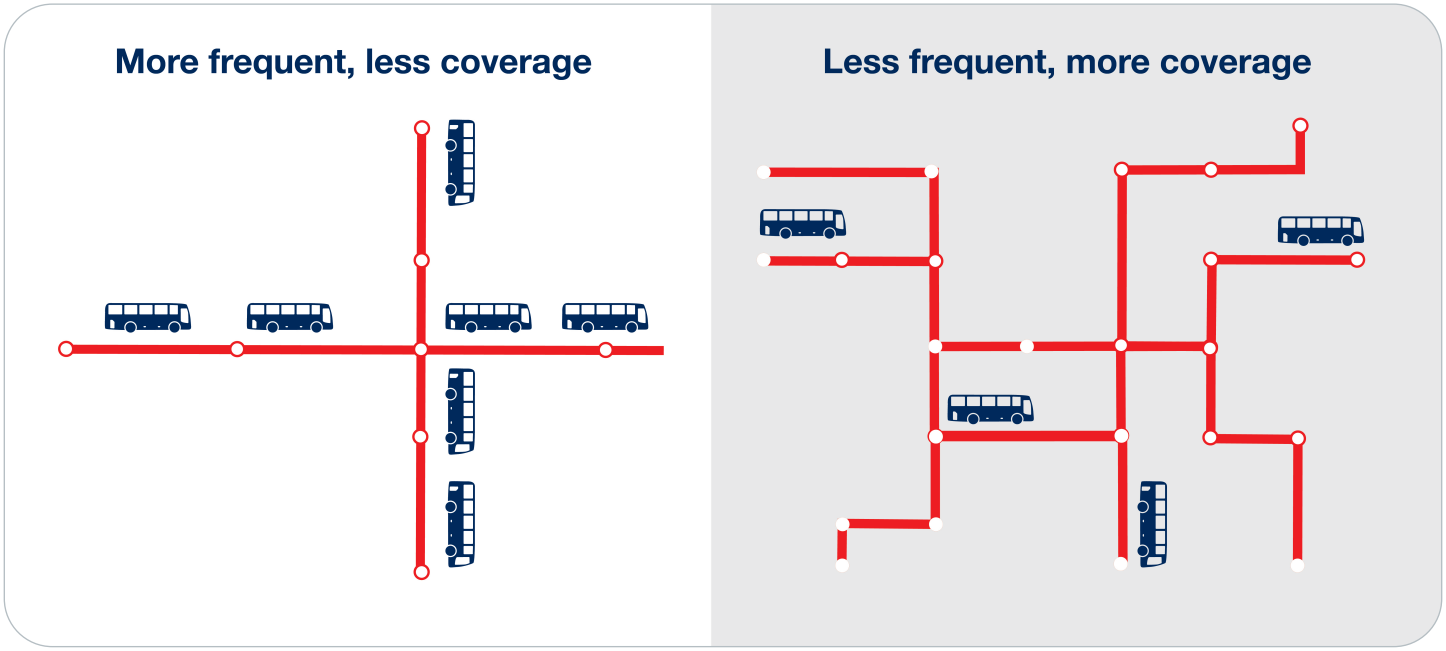
Transit ridership grows and the user experience is better when customers can easily understand the system and are comfortable while waiting at or leaving a stop and riding on a bus or train.



Balance frequency and coverage

An effective transit network finds a balance between providing fast, frequent routes that offer more convenience, and providing coverage to more area but with infrequent, less-convenient service.

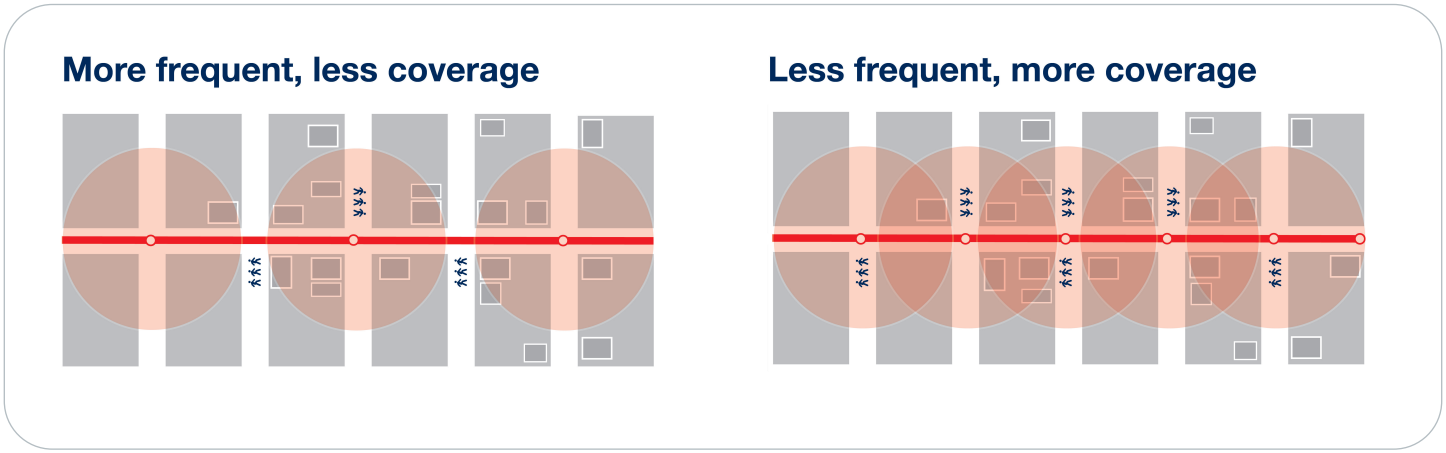
Figure 9.15: Transit designs that balance frequency and coverage



Balance walking distance and travel speed

Routes with more stops provide shorter walks to transit but are slower and can have less reliable travel speeds. A transit network needs to balance speed and access.

Figure 9.16: Transit designs that balance walking distance and travel speed



Commuter and express route design

The factors that guide commuter and express route design are somewhat different from those for local routes. These routes are focused on providing fast, reliable trips into major regional centers. The most important factors for express service success are high-density origins and destinations at both ends of the route (like at a park-and-ride and downtown), and demand management that balances parking supply and cost with the demand for parking and access to transit. The level and location of congestion can also be a substantial factor in the success of express bus services.



Transit Design Guidelines

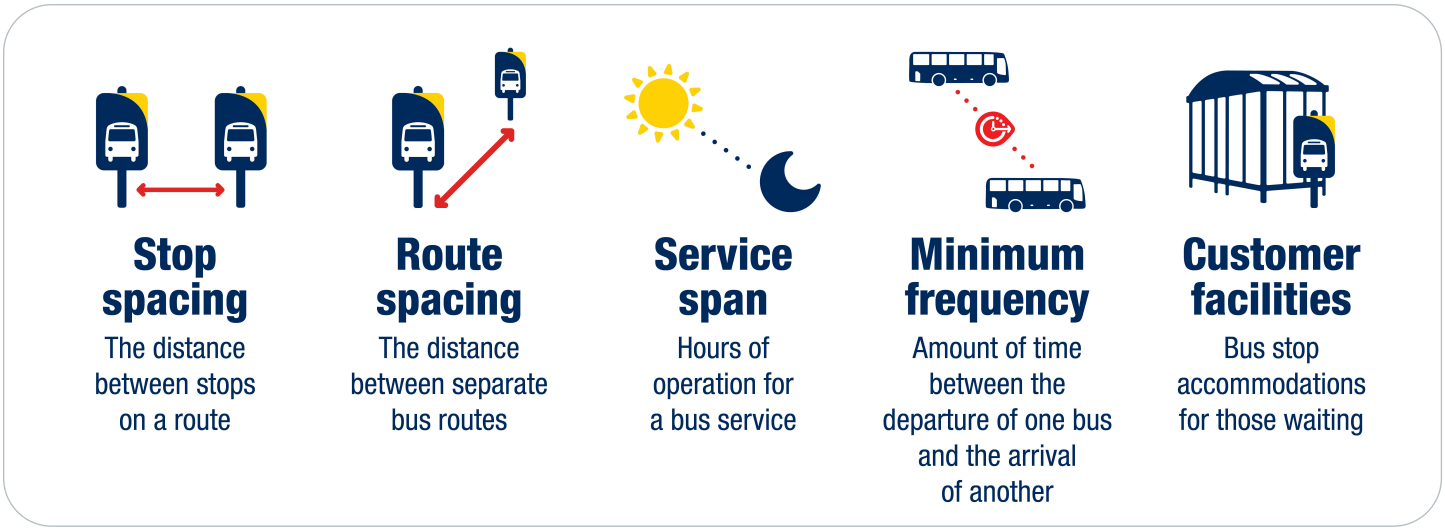
These guidelines are split into two categories: local and express bus service, and transitways. Local and express bus service guidelines are organized by transit market area and/or route type. They provide general direction on fundamental aspects of transit service design, like frequency, to ensure regional consistency. There are often exceptions to these guidelines based on local circumstances and available funding.

Transitways are unique services with high frequency and high capacity that require extensive detailed analysis and planning processes. The guidelines in this appendix are informed by the Regional Transitway Guidelines,[124] which the Met Council developed with its partners. The guidelines provide technical guidance based in best practices that support consistent, equitable, and efficient development and operation of transitways with the ultimate goal of delivering an effective, integrated, and user-friendly transit system throughout the Twin Cities region.

Local and commuter and express bus service design guidelines

Local and express bus service includes core local bus, supporting local bus, suburban local bus, commuter express bus, and reverse-commute service types. These types of transit provide most of the service throughout the Twin Cities region. The design guidelines include stop spacing, route spacing, span of service, minimum frequency, and customer facility features.

Figure 9.17: Bus service design guidelines



Stop spacing

Stop spacing must balance easy walking access to transit and travel speeds. More stops spaced closer together reduce walking distances to transit but add travel time. A general guideline in transit planning is that most people are willing to walk up to a 1/4 mile, about five minutes typically, for local bus service and 1/2 mile for limited stop bus service.

Table 9.4 shows the recommended stop spacing guidelines that balance access to transit and service speed based on the route type and purpose.

Table 9.4: Local and express route spacing guidelines

Route type	Typical stop spacing
Core local bus[1]	1/8 to 1/4 mile
Supporting local bus	1/8 to 1/4 mile
Suburban local bus	1/8 to 1/2 mile
Commuter and express and reverse commute bus	Market specific[2]

Notes: These are guidelines, not minimums or maximums. Situations may call for exceptions to these guidelines, such as within a central business district or near major traffic generators.
1) Local routes with limited stop service will have a typical stop spacing of 1/4 to 1/2 mile.
2) In downtowns and local pickup zones, stop spacing should follow local route standards. Along limited-stop or no-stop route segments, stop spacing will be much greater.

Route spacing

Route spacing refers to the distance between parallel routes. Routes that are spaced too close together will have overlapping service areas and compete for riders, reducing the productivity of both routes. Routes spaced too far apart will lead to coverage gaps. Generally, areas with lower transit demand will have routes spaced farther apart. Table 9.5 shows the route spacing guidelines by route type and market area. Commuter express bus and reverse-commute routes should be determined on a case-by-case basis according to specific transit market conditions.

Table 9.5: Local bus route spacing guidelines by route type and Transit Market Area

Route type	Market Area I	Market Area II	Market Area III	Market Area IV	Market Area V
Core local bus[1]	1/2 mile	1 mile	Specific[2]	NA	NA
Supporting local bus	1 mile	1-2 miles	Specific[2]	NA	NA
Suburban local bus	NA	2 miles	Specific[2]	Specific[2]	NA

Notes: 1) Local limited-stop routes will be located on high-demand corridors.
2) Specific means that route structure will be adapted to the demographics, geography, and land use of a specific area.

Service span

Service span is the times of the day that a route is running. Service span guidelines are typically based on a route type's role in the overall transit network. Route types designed to primarily serve commuters mostly operate during peak periods, while route types that serve a broader set of trip purposes usually have a longer service span. Table 9.6 shows the recommended hours of service by route type.

Table 9.6: Local and express bus route span of service guidelines

Route type	Weekdays				Weekends and holidays
	Peak	Midday	Evening	Owl	
Core local bus[1]	✓	✓	✓	—	✓
Supporting local bus	✓	✓	✓	—	✓
Suburban local	✓	✓	✓	—	✓
Commuter and express bus	✓	✓	—	—	—

✓ **Always provided** ✓ **Occasionally provided** — **Provided as demand warrants**

Notes: Weekday service periods are defined as follows: peak – 6:00 a.m. to 9:00 a.m. and 3 p.m. to 6:30 p.m.; midday – 9:00 a.m. to 3:00 p.m.; evening – 6:30 p.m. to 1:30 a.m.; owl – 1:30 a.m. to 5:00 a.m. Weekends include all service periods on either day. Sunday also includes holiday service.

1) Local limited-stop routes operate primarily during the weekday peak period.

Minimum frequency

Minimum frequency is the most amount of scheduled time between when one transit vehicle departs and the next arrives on a given route in the same direction. Routes types serving areas of higher transit demand will tend to have higher frequencies. Table 9.7 shows the recommended minimum frequency by route type and market area.

Table 9.7: Local and express bus minimum frequency guidelines by Transit Market Area, headways in minutes

Route type	Market Area I	Market Area II	Market Area III	Market Area IV	Market Area V
Core local bus1	Peak - 15 Off-Peak - 30 Weekend - 30	Peak - 30 Off-Peak - 60 Weekend - 60	Peak - 60 Off-Peak - 60 Weekend - 60	NA	NA
Supporting local bus	Peak - 30 Off-Peak - 30 Weekend - 30	Peak - 30 Off-Peak - 60 Weekend - 60	Peak - 60 Off-Peak - 60 Weekend - 60	NA	NA
Suburban local bus	NA	Peak - 30 Off-Peak - 60 Weekend - 60	Peak - 120 Off-Peak - 120 Weekend - 120	NA	NA
Commuter and express bus	Peak -30	Peak -30	Peak - 3 trips	Peak - 3 trips	NA
Reverse commute bus	Peak - 3 trips	Peak - 3 trips	Peak - 2 trips	Peak - 2 trips	NA

Notes: These guidelines apply primarily to the peak direction. Additional service may be added as demand warrants.

Coverage service

The region identified several service functions through the Transit Service Allocation Study that are not related to creating high ridership productivity but may deserve investment. Coverage routes that do not meet the productivity guidelines in Table 9.7 may serve another regional transportation goal by serving one of the following roles:

1. Geographic coverage – A route may be considered fulfilling this purpose if it provides the only transit service in the area. When designing these routes, transit providers should place stops in locations with transit-supportive densities of residents and/or jobs per acre. Prioritize this type of service in areas with a higher proportion of populations more likely to rely on transit than the region as a whole, such as people with low incomes; people who identify as Black, Indigenous, or people of color; people with disabilities; or households with low-vehicle access.

2. Job-access coverage – A route may be considered fulfilling this purpose if it provides access to one or more local job centers. An area may be considered a local job center for this purpose if it has more than 3,500 jobs total and a job density of five jobs per acre or more. The route should also serve populations that are employed in these locations or provide connections with other transit routes that serve those populations and result in a reasonable travel time.

Job access routes provide the best benefit when serving locations where at least one-third of jobs within 1/4 mile of stops are held by residents who are likely to rely on transit as their main means of travel. Routing and stops serving more entry-level or low-wage jobs can be considered a strength when designing job access routes. Other elements that contribute to the success of job access routes may include timing service with shift changes, the availability of free parking, where employees are coming from, and pedestrian access to transit.

Customer facility features

Regional transit providers offer a range of features at customer facilities, based on factors like how many people use those facilities each day, to improve the customer experience and meet customer needs. With limited resources for improving the more than 13,000+ bus stops and customer facilities in the region, transit agencies must prioritize the locations where investments are made and prioritize the types of facilities it can install and maintain across the system. For the purposes of regional guidelines, the Met Council groups these features into two categories, standard features and optional features, based on the type of customer facility. Two features are standard for all customer facilities:

- Pedestrian connections and ADA accessibility
- Basic stop information

Pedestrian connections and ADA accessibility must be provided at all transit stops

An accessible path and boarding area at customer facilities are essential. The Met Council is working toward improving older bus stops that do not meet ADA requirements and current best practices. Local governments and transit providers should coordinate to ensure that all regular-route transit stops are accessible. Coordination of maintenance is particularly important in winter when snow and ice can impede access to transit for all customers. Local governments' urban design decisions can help make customer facilities accessible, such as by developing an interconnected grid of sidewalks and paths. Pedestrian accessibility is also critical within and adjacent to park-and-rides. Ensuring pleasant paths between bus stops, parking areas, and surrounding land uses is critical to integrating park-and-ride facilities with surrounding communities.

Basic stop information should be provided at all transit stops

Stop information at transit facilities is an important component of transit service. Basic stop information includes the routes serving the stop, stop number, and access to Nextrip real-time information. This information increases customer satisfaction and reassures them that they can depend on transit.

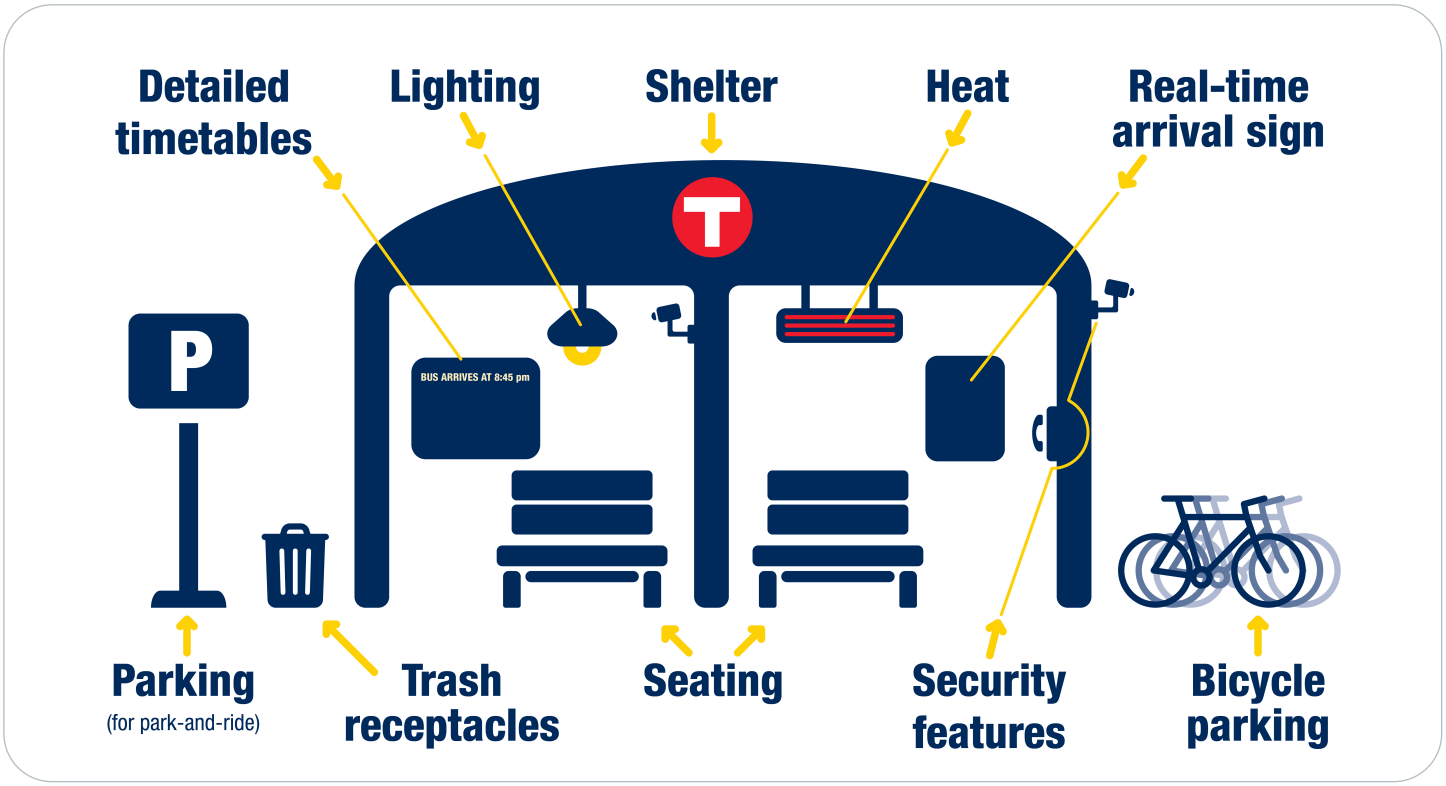
Transit operators may provide other information like a map of routes serving a stop and their schedules or dynamic real-time arrival and departure updates and customer announcements. New technologies play an important role in improving customer information and the Met Council will continue to expand a network of customer information systems using proven and cost-efficient technology at key locations, like transit stations and centers, online, and on mobile devices.

Bus stop features vary based on usage and other factors

Beyond features that are required at all transit stops (pedestrian and ADA access and basic stop information), transit operators provide a range of features at bus stops depending on how well the stops are used, the types of bus routes serving the stop, demographics of the surrounding area, and other factors. Features that transit providers might provide at bus stops include, but are not limited to:

- Shelter
- Detailed timetables
- Real-time arrival sign
- Seating
- Lighting
- Heat
- Trash receptacles
- Security features like cameras or call boxes
- Bicycle parking or secure bicycle storage
- Parking (park-and-ride)

Figure 9.18: Customer facilities



Transit agencies provide shelters at higher demand stops and based on local circumstances

Sheltered waiting places for transit customers come in many forms, including an interior waiting space or alcove in a building, a park-and-ride with a sheltered waiting area, a transit center building, a shelter at a rail or bus rapid transit station, or a shelter at a bus stop. Shelters provide a package of features for transit customers: weather protection, detailed schedules, typically a bench, and sometimes lighting and radiant heaters. Shelters also create an identifiable waiting place for transit customers. Shelters are typically provided by the transit agency, though sometimes by local government or property owners. Metro Transit has guidelines for prioritizing shelter locations as do other transit providers in the region.

Parking at transit customer facilities

Transit operators provide parking at transit facilities to aggregate rider demand in parts of the region with lower density and less walkability. These facilities are often referred to as park-and-ride facilities. However, there is a wide variety in the amount of parking provided from a couple dozen spaces on a surface lot to hundreds of spaces in large parking structures. Parking may be owned by a transit agency, leased by them, or provided by a partner agency. Generally speaking, transit agencies try to scale the amount of parking provided to rider demand.

Transit centers

Transit centers are locations where two or more transit routes connect and that provide comfortable and convenient locations for customers to connect between routes. They typically have multiple bus stops and bus service is timed for easy transfers. Buses also frequently layover with scheduled recovery time and bus operators may take scheduled breaks at transit centers. Transit centers typically provide customers with the following features beyond those standard to all transit stops:

- Shelter
- Detailed transit information like timetables
- Real-time arrival sign
- Seating
- Lighting
- Heat
- Trash receptacles

Transit providers may also provide other features to enhance their experience such as:

- Security features like cameras or call boxes
- Bicycle parking or secure bicycle storage
- Parking (park-and-ride)

Mobility hubs help people connect between different travel modes

A mobility hub is a public gathering space or transportation facility where customers can get information on and make connections between multiple transportation options. Hubs help people easily switch between travel options and fill the gaps between different types of travel. Hubs often include features like additional passenger amenities, real-time customer information, or first- and last-mile travel options like bike share, scooters, or car share.

While transit customer facilities make natural mobility hubs, they are not exclusive to transit. Met Council's Mobility Hub Planning and Implementation Guidebook provides comprehensive technical assistance to transportation partners for implementing mobility hubs across the Twin Cities region.

Transitway design guidelines

This subsection includes minimum design elements for transitways. The Met Council and its partners developed Regional Transitway Guidelines to ensure transitway projects are implemented in a consistent, equitable, and efficient manner throughout the region. One of the key elements of the guidelines was establishing a consistent definition of a transitway based on the different modes under development in the region. While the Regional Transitway Guidelines have not been updated recently, the key elements of minimum definitions have continued to apply to transitway definitions, including expanding the discussion to new modes as they are developed.

There are five transitway modes in the region:

1. Commuter rail
2. Light rail transit
3. Dedicated bus rapid transit
4. Highway bus rapid transit
5. Arterial bus rapid transit

This subsection does not directly address express buses with transit advantages or modern streetcars. Each transitway, regardless of mode, should include the minimum elements identified in the guidelines.

Multiple agencies work together to plan and implement transitways. Local governments, particularly counties and regional railroad authorities, typically lead transitway corridor planning and recommend locally preferred alternatives. The lead agency, in consultation with advisory groups, is responsible for initiating discussions and negotiations with funding partners for any deviations from the guidelines. Local land use authorities and transit operating agencies also need to be involved in these discussions. The transitway design guidelines apply whenever investments are being studied, planned, and made in a transitway corridor identified in the Transportation Policy Plan.

Stop spacing

Transitways are designed to provide faster, more reliable trips than local service. One of the ways this is done is by generally having less frequent stops. Table 9.8 presents the typical and minimum stop spacing by transitway mode. Transit agencies may provide wider spacing for segments of a route based on analysis and public engagement from the corridor planning process.

Table 9.8: Transitway typical and minimum station spacing, in miles

Transitway type	Typical	Minimum
Arterial bus rapid transit	½	¼
Highway bus rapid transit	2	½
Dedicated bus rapid transit	1	½
Light rail transit	1	½
Commuter rail	7+	5

Notes: stations may be spaced closer together within central business districts or downtowns or at key transfer locations.

The Regional Transitway Guidelines provide additional detailed guidance on different aspects of station site selection such as market analysis, land use factors, and adding new stations to a line.

Minimum service span

The region considers 18 hours of service as the general minimum service span for all transitway modes except for commuter rail, which has a minimum number of trips. Table 9.9 provides the minimum service span by transitway mode.

Table 9.9: Transitways minimum service span, in hours per day

Route type	Weekdays	Weekends
Bus rapid transit[1]	18	18
Light rail transit	18	18
Commuter rail	10 trips[2]	N/A

Notes: 1) This includes all bus rapid transit modes (arterial, highway, and dedicated).
2) Commuter rail minimum is five trips per peak period. There are two peak periods per day, so the total is 10 trips.

Minimum frequency

Transitways provide frequent service that reduces waiting time and improves transferring from other routes, so riders do not need to plan as much. Generally speaking, this means 15-minute headways or better although less frequent service may be provided during very low demand periods. These minimums also assume adequate staffing levels to maintain them. Again, commuter rail is an exception to the service is oriented toward providing high-capacity commute service.

Table 9.10: Transitway service frequency minimums, in minutes

Route type	Weekdays				Weekends	
	Peak	Midday	Evening	Early / Late	Day / Evening	Early / Late
Arterial bus rapid transit[1]	15	15	15	30	15	30
Highway bus rapid transit	15	15	Specific[2]	Specific[2]	Specific[2]	Specific[2]
Dedicated bus rapid transit	15	15	15	30-60	15	30-60
Light rail transit	15	15	15	30	15	30-60
Commuter rail	5 trips	Specific[2]	Specific[2]	Specific[2]	Specific[2]	Specific[2]

Notes: Weekday service periods are defined as follows: peak – 6:00 a.m. to 9:00 a.m. and 3 p.m. to 6:30 p.m.; midday – 9:00 a.m. to 3:00 p.m.; evening – 6:30 p.m. to 1:30 a.m.; owl – 1:30 a.m. to 5:00 a.m. Weekends include all service periods on either day. Sunday also includes holiday service. Weekends cover other reduced service days like holidays.
1) Frequency for bus rapid transit is combined with local routes for arterial bus rapid transit and express routes for Highway bus rapid transit.
2) Specific service frequency is based on demand.

Customer facilities

Transitway customer facilities should fit in with and enhance the neighborhoods surrounding them. Transitway stations and support facilities should be functional, attractive, cost-effective, and generally consistent by transitway mode across the region. All transitway customer facilities should have the following features at minimum:

Stations may have additional features based on the corridor planning process and input from public engagement efforts:

- Pedestrian and ADA access
- Off-board fare collection that integrates with regional fare system
- Station platforms
- Waiting shelters
- Radiant heat and passive cooling
- Real-time rider information
- Seating
- Lighting
- Security features
- Trash receptacles
- Passenger information
- Wayfinding

Additional detailed guidelines on rider and support facilities are available in the Regional Transitway Guidelines on topics like station and support facility design principles or enclosures at stations.

- Transit layover facilities
- Parking (park-and ride)
- Bike parking or secure storage
- Enclosures
- Elevators or escalators
- Concessions
- Acoustic treatments
- Short-term pick-up/drop-off
- Local betterments

Branding standards for vehicles and stations

Transitways should be easily recognized based on the unique look of stations and vehicles compared to local service and route-naming conventions. System brand elements for all light rail and bus rapid transit services should be consistent and visible at all stations. Transitway and system brands should take precedence over provider brand.

Vehicle standards

The most important aspects of branding on transitway vehicles are the system brand, line name/route identity, and where to find additional service information. These aspects should be included on each vehicle. Vehicles should meet the following minimum branding requirements:

- Bus rapid transit vehicles should be sleek, modern, premium-style buses appropriately sized to accommodate rider demand and configured to service characteristics and rider comfort.
- Light rail transit vehicles should be compatible with existing rail and infrastructure systems while also being configured to service characteristics and rider comfort.

Station and signage branding

The most important aspects of the branding and identity at transitway stations are the system brand, line identity, and station name. These aspects should be included at each station. Station names should be easily recognizable, distinct from other stations, and reference local landmarks. Names will be selected by the Met Council with input from the lead agency and impacted communities.

Route naming

All transitway routes should have METRO system branding in their names. Arterial bus rapid transit lines will use letter names for lines. Light rail, dedicated bus rapid transit, and highway bus rapid transit lines will use color names for lines.


LAKE &
CHICAGO
BUSES
STOP
HERE
21 LAKE-FRANCE
1716
ATLAS
STAFFING
INC

Regional transit performance guidelines

The region uses performance guidelines to evaluate the relative productivity and efficiency of transit services. To be responsive, a transit system must consistently measure and adjust service in unproductive routes and address insufficient service in productive areas. These guidelines serve as indicators of route performance and call attention to routes that may need to be adjusted. The use of multiple performance measures provides better insight into the operational and financial performance of individual services and allows transit providers to balance the cost and ridership of each route with its role in the regional transit network. A recent state statute requires the Met Council to develop route performance standards for farebox recovery ratio, which will be explored in a Work Program item on the Comprehensive Transit Financial Report. Additional refinements to performance standards will also be explored through this effort in collaboration with regional transit providers.

Productivity

Productivity is the number of passengers per in-service hour. High productivity means a route is serving more people with the resources provided. The passengers per in-service-hour standard establishes a minimum threshold of route performance. It is calculated at both the route and trip level.

Table 9.11 shows the guidelines for the minimum number of passengers per in-service hour by route type. Routes and trips that do not meet these minimum standards should be reviewed for potential changes to increase ridership or reduce service. Very poor performing routes may be considered for restructuring or elimination.

Table 9.11: Minimum guidance for passengers per in-service hour

Route type	Route average[1]	Minimum per trip[2]
Core local bus	≥ 20	≥ 15
Supporting local bus	≥ 15	≥ 10
Suburban local bus	≥ 10	≥ 5
Commuter and express bus	Peak ≥ 20; Off-Peak ≥ 10	Peak ≥ 15; Off-Peak ≥ 5
General public dial-a-ride	≥ 2	N/A
Light rail	≥ 70	≥ 50
Arterial BRT	≥ 25	≥ 5
Highway BRT	≥ 25	≥ 5
Commuter rail	≥ 70	≥ 50

Notes: 1) Route average is the average number of passengers per in-service hour over the entire day. Individual hours may fall below the standard.
2) Minimum per trip represents the minimum passengers per in-service hour for individual trips on a route. Multi-vehicle trips, such as three-car trains, will be treated as a single trip.

Coverage service productivity

Routes that provide coverage service may not meet the productivity (ridership divided by hours of service) guidelines outlined in Table 9.11, but transit service providers should strive to make the routes as productive as possible while serving the coverage purpose. If productivity of a coverage route drops below half of its route type guidelines in Table 9.11, transit agencies should evaluate the route for opportunities to improve productivity and implement them. In some cases, transit providers may determine lower productivity is beneficial to meet other regional goals like equity. Transit providers should regularly review coverage routes for productivity performance. Newly implemented routes should be allowed a reasonable period to mature before being reviewed for potential changes; 12 to 24 months is commonly used.

Cost effectiveness

A route's cost effectiveness is measured by the subsidy per passenger required to operate the route. Subsidy is calculated as the difference between the total cost of providing service minus revenue from passenger fares. Since different types of routes are expected to have different levels of performance, each route's subsidy is compared to the average subsidy of its peers. This standard identifies routes that are not operating within the range of peer routes and focuses corrective action for those services. Subsidy thresholds are determined by calculating the nonweighted, per passenger subsidy average within each route type. Table 9.12 shows the subsidy thresholds and possible corrective action.

Table 9.12: Subsidy thresholds per passenger

Level	Subsidy per passenger	Review level	Possible action
1	**20% to 35% more than peer route avg.**	Quick review	Minor changes to route, timing, stops, etc.
2	**35% to 60% more than peer route avg.**	Intense review	Major changes to route, timing, stops, etc.
3	**At least 60% more than peer route avg.**	For significant change	Route restructure or elimination

SECTION 10: BICYCLE INVESTMENT PLAN

Introduction

Bicycling is an essential travel mode in our regional transportation system that provides many local and global benefits. It allows people to leave their cars at home to make daily trips without adding greenhouse gas emissions that contribute to climate change. Riding a bike for commuting to work or school, running errands, shopping, or visiting friends provides opportunities for people to include physical activity in their daily travel routines, thereby affording them the physical and mental health benefits biking provides.

In addition, regular use of bikes for travel can reduce a household's transportation costs. For some people, bicycling may be the only affordable option given the relatively high cost of owning an automobile or due to limited transit options available. Bicycling also allows people to connect with buses or trains. This makes longer trips possible to more distant destinations that are more often accessed by personal automobiles.

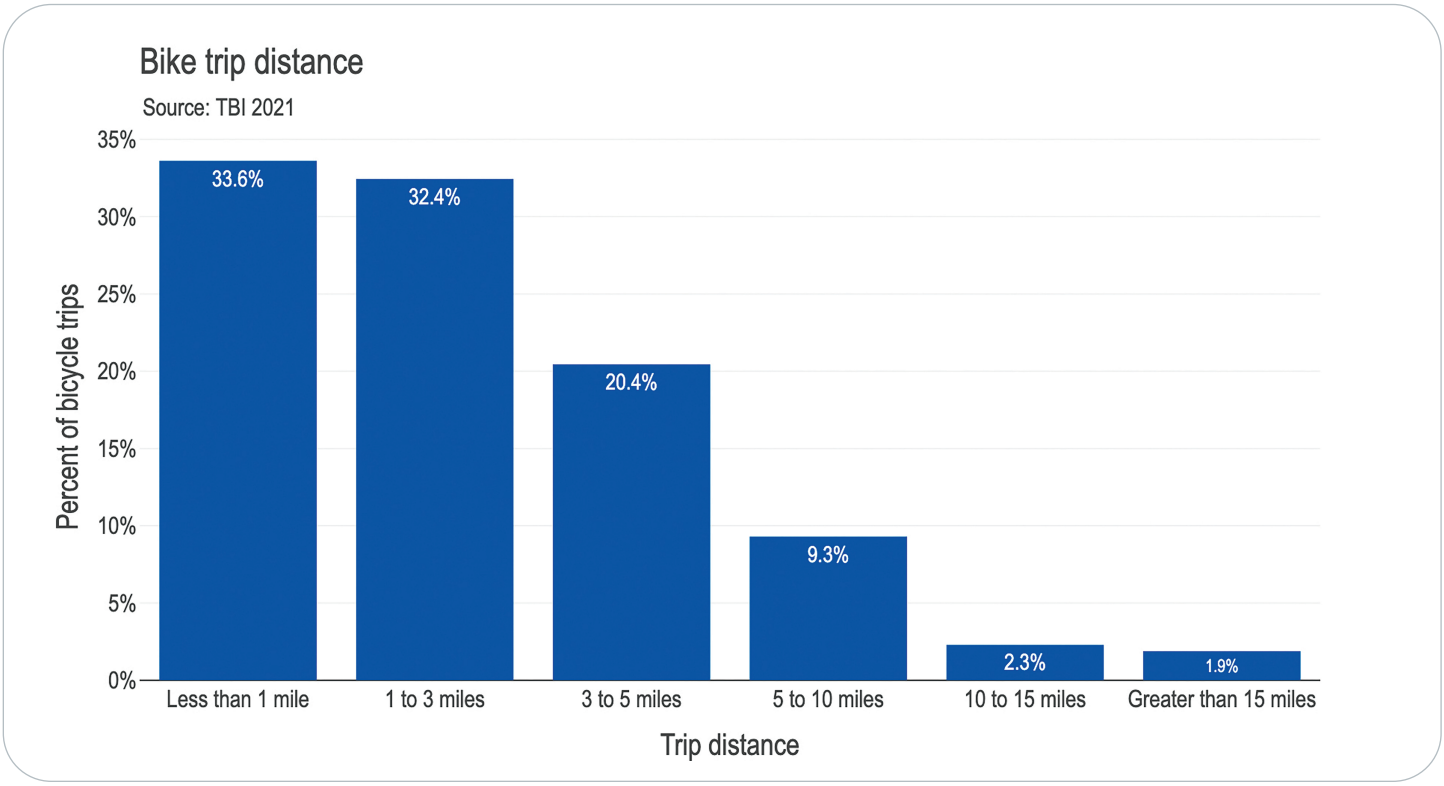
It is also important to note that investment in bicycle infrastructure often leads to higher sales and property values in well-traveled areas. Premium trail facilities can have dramatic economic benefits: The 8-mile cultural trail into downtown Indianapolis was the central component of $63 million in city investments that contributed to a nearly 2.5 times increase in assessed property values within one block of the trail.[125]

The availability of safe, continuous, and comfortable bicycle facilities plays an important role in people's decisions to ride bicycles. Lack of such facilities is often cited as a top reason for choosing other modes of travel in user surveys. In response to this concern, local agencies are planning protected bikeway networks that physically separate bicyclists from street traffic. (The cities of Minneapolis and Saint Paul are planning and building extensive protected bikeways, to name two prominent examples.)

Notwithstanding this concern, bicycling has good potential to replace car trips for personal daily travel. The National Household Travel Survey found that nearly half of daily trips taken in the United States across all transportation modes were within three miles, or a 20-minute bike ride. This is consistent with regional data shown in Figure 10.1 that indicate about three out of four bike trips are three miles or less. The average bicycle trip length in the seven-county metro region is about 2.9 miles, according to data from the 2021 Travel Behavior Inventory. For these shorter trips, bicycling can often provide the shortest travel time of any mode, particularly during

congested times. Biking can also provide reasonable travel times for longer trips (about one out of four of all trips are greater than three miles), especially when using electric bikes and/or combining with transit.

Figure 10.1: Bicycle trip distances for Twin Cities region, from 2021 Travel Behavior Inventory



Regional and local transportation planning must consider both short- and long-range bicycle trips to maximize the possible environmental and health benefits of bicycling.

Met Council roles in regional bicycle planning

The Met Council assists in planning for the development of bikeway networks and multiuse trails for bicycling. The Met Council's roles with respect to regional bicycle planning include:

- Planning regional bicycle networks to serve regional travel needs. Ensuring continuity and connectivity between regional destinations and regional networks and local bicycle networks is an essential aim.
- Identifying regional barriers to bicycling and working with state and local partners through coordinated planning to determine solutions.
- Providing guidance for evaluating bicycle facilities seeking regional funding, through the Livable Communities Act, Regional Solicitation, and active transportation programs.
- Providing guidance for other investment programs that impact bicycling or provide opportunities to add or enhance bicycle facilities, such as regional transit projects or highway corridor improvement projects.

- Providing guidance to local comprehensive plans to ensure that bicycle needs are considerations for land use and transportation planning and for reviewing how local networks connect to regional networks and regional destinations.
- Providing technical assistance and funding support to regional park implementing agencies for planning, developing, operating, maintaining, and acquiring land for regional trails.

Relationship to 2050 goals and objectives

Planning for and investing in bicycle infrastructure supports the region's goals and related Transportation Policy Plan objectives. This section highlights how the region's goals developed for Imagine 2050 relate to bicycle system planning. Each goal section describes how work carried out in response to this plan should help to advance the transportation plan objectives quoted below.

Our region is equitable and inclusive

Through the application of equity and inclusion principles in planning and developing continuous facilities on interconnected regional and local bicycle networks, the region can ensure that "historically disadvantaged communities are better connected to jobs, education, and other opportunities" and that bicycle facilities and the connections they provide will "better meet the transportation needs of people who have disabilities." Biking is also a more affordable option than owning a car and good bicycle networks can provide improved mobility for households that may not be able to afford a personal vehicle or other more expensive forms of transportation.

Our communities are healthy and safe

As a region we should purposely plan, design, and implement bicycle infrastructure facilities in ways that make "people feel safer, more comfortable, and more welcome" when riding bicycles. By applying this basic principle in the planning and design process, more desirable and effective facilities will expand opportunities where "people can increase physical activity with more opportunities to walk, roll, or bike." Well-designed facilities protect people on bikes, who are more vulnerable to serious injuries and deaths when not separated from vehicle traffic.

Our region is dynamic and resilient

Planning and continuing to develop regional and local bicycle networks to connect with the regional transit system and important daily destinations helps ensure we "can better meet [people's] daily needs with reliable, direct, and affordable options beyond driving alone."

We lead on addressing climate change

Providing well planned and prioritized bicycle facilities, which includes designing facilities that are safe, comfortable and inviting, will play an important role in helping "the region's transportation system minimize its contributions to climate change" and in meeting the 2050 regional target to "reduce vehicle miles traveled by 20% per capita below 2019 levels."

Existing Bicycle System

This existing bicycle system section discusses bicycle facilities, shared mobility options and mobility hubs, and the implications of the growing use of electric bikes.

Existing bicycle facilities

The region's bicycle facilities consist of:

- Regional trails designated in the Regional Parks Policy Plan and developed and maintained by regional park implementing agencies.
- Local on-road bikeways and off-road multiuse trails that cities, counties, and/or MnDOT are responsible for planning, developing, and maintaining.
- Several state trails in the metro region developed and maintained by the Minnesota Department of Natural Resources.

The Twin Cities region has a well-developed system of on-street and street-adjacent bicycle facilities in the urban core and suburban cities, alongside a widespread network of off-road trails throughout much of the region. Over time, the region's investments in bicycle-friendly infrastructure have supported Minneapolis and Saint Paul to a level that led to their ranking first and seventh, respectively, among large cities nationwide in the advocacy group People for Bikes' "2023 Best Places to Bike" ratings.

For more than a century a system of regional trails has been developed to extend beyond the core cities of Minneapolis and Saint Paul. The system provides paved and mostly off-road trails between our many regional parks. As the Twin Cities were early adopters and implementors of bicycle infrastructure, there is a growing need to replace multiuse trails that were built 30 or more years ago. As the system continues to age, the importance of investing in facility reconstruction projects will also grow.

Many of these trails parallel the region's rivers and streams, adding scenic beauty to the cycling experience. Other trails along abandoned rail lines provide more direct cycling routes into the core cities' downtowns or between suburban centers. There are currently more than 400 miles of off-road, paved bicycle trails along 55 designated regional trails across the Twin Cities region. Together, these trails serve more than 20 million visitors annually.

The region's existing on-road bicycle facilities have been designed and developed to include a range of characteristics. Bicycle facilities have been implemented along all roadway types in the form of adjacent-street shared-use trails, separated bicycle facilities, conventional and buffered bicycle lanes, bicycle boulevards, and designated bike routes with continuous paved shoulders. Typical bicycle transportation routes may include one or several of these facility types. (See also facility type descriptions under Facility types that meet Regional Bicycle Transportation Network functionality, later in this plan.)

A growing number of separated bikeways have been constructed or are planned in Minneapolis, Saint Paul,

and in suburban cities such as Edina and Richfield. Separated bikeways are street or sidewalk-level bicycle facilities physically separated from lanes of vehicle traffic. They are most commonly designed for exclusive use by people who bike or use electric scooters or other rolling conveyances. Separated bikeways are physically separated from general traffic lanes by vertical elements such as plastic pylons, concrete bollards, or elevated curbs and include protected bike lanes and cycle tracks. Separated bikeway networks are intended to provide a safer and more comfortable user experience that can attract and serve people of all ages and abilities.

Regional Bicycle System Inventory

The Regional Bicycle System Inventory was compiled with the help of the seven metro region counties and their member cities by combining available local bike plan data into unified county datasets. The Met Council then assembled a unified regional dataset that includes most cities with existing bike plans. The purpose of the inventory is to assist local and state planning agencies to update bicycle plans or review regional and adjacent city plans. It is also used to help identify potential alignments to be designated as official alignments within Regional Bicycle Transportation Network corridors. The inventory was developed in late 2016 and as more cities and counties have developed bicycle plans and continue to construct more bicycle facilities, an update is slated in the 2024-2025 timeframe. The data is included within the Regional Bicycle Transportation Network online map application. Table 10.1 shows the total regional bicycle system mileage by existing and planned status for all local, state, and regional bicycle facilities.

Table 10.1: Regional bicycle system mileage summary

Bikeway status	On-street	Off-street	Undefined	Total
Existing	1,880	2,030	NA	3,910
Planned	1,030	820	1,010	2,860
Total	2,910	2,850	1,010	6,770

Note: As initially compiled by Met Council from Regional Bicycle System Inventory, 2016.

Shared mobility options and mobility hubs

The term shared mobility refers to a set of transportation resources that are shared among users and are typically designed to function on technology-enabled platforms (meaning, they will work with a smartphone). Shared mobility is distinct from traditional transportation services in that it is technology-enabled and supports real-time travel needs by providing flexible options to match customer preferences. Shared mobility services have developed and evolved in large part due to private sector innovation and entrepreneurship aimed at extending the reach of and filling gaps in traditional fixed-route transit service. Private transportation network companies like Uber and Lyft were major developers of ride-hailing programs designed to connect passengers with drivers in real time. Companies like Lyft and Lime were leaders in developing e-bike and e-scooter operating systems, and Lime continues to provide bikeshare service in Minneapolis and St. Paul.

Shared mobility encompasses a wide range of transit, micromobility, and ride-hailing services available in the Twin Cities including:

- Public transit services (see Transit Investment Plan)
    - Fixed-route transit
    - Dial-a-ride (Metro Mobility, Metro Move, Transit Link)
    - Microtransit (online platforms assign passengers to vehicles for six or more riders)
    - Vanpooling (Metro Vanpool)
- Micromobility
    - Bikeshare (e-bike short-term rental such as LimeBike, Zeo)
    - E-scooter share (e-scooter short-term rental, like Lime, Bird)
- Carshare (auto rentals for less than one day like Evie and HOURCAR)
- Carpooling
- Taxis
- Ride-hailing and transportation network companies (Uber, Lyft)

Twin Cities Shared Mobility Action Plan

In 2017, a coalition of regional stakeholders developed the Twin Cities Shared Mobility Action Plan. This initial plan was aimed at improving coordination of shared mobility services toward achieving two goals:

1. Reduce single-occupant vehicle use by removing 50,000 cars a day from the region's roads within 10 years.

2. Ensure the equitable deployment of shared mobility options that serve the public transit market.

The regional stakeholders group evolved to become the Twin Cities Shared Mobility Cooperative to advance these shared mobility goals through implementing the action plan. In 2023 this group was expanded and redefined with a statewide focus as the Minnesota Shared Mobility Collaborative. The collaborative is guided by a steering committee and is currently staffed by the University of Minnesota Center for Transportation Studies.

From the Shared Mobility Action Plan vision, Metro Transit created the Shared Mobility Strategy (2019) to guide the Met Council's efforts in pursuing shared mobility integration. The strategy developed the overall

Shared Mobility Program goal of “enabling more people to travel without the need for a personal automobile.” In support of this goal, the strategy further supports “transportation system integration and seamless connectivity for users.”

Metropolitan Council Mobility Hub Planning and Implementation Guidebook

Metro Transit’s Shared Mobility Strategy identified shared mobility hub planning, development, and implementation as key steps toward achieving its goals. Shared mobility hubs are places where people can connect with multiple modes of transportation in a safe, comfortable, and accessible environment, facilitating convenient and reliable travel. The purpose of mobility hubs is to co-locate diverse transportation options with community amenities to help people access shared vehicles, connect between travel services, and/or orient themselves when they arrive. These hubs are designed to be accessible and inclusive spaces for people to experience simplicity in planning their multimodal trips.

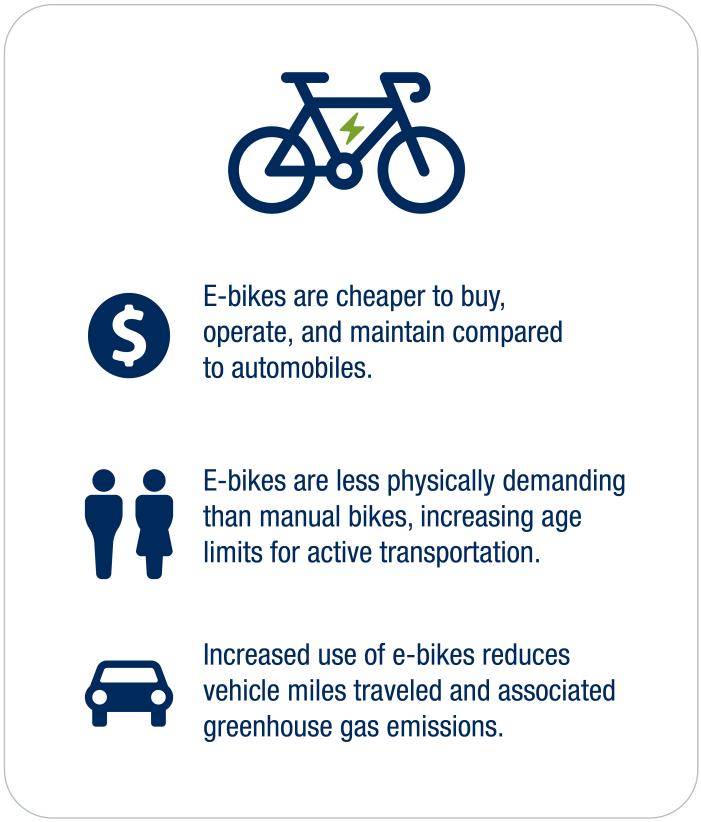
As a continuation of the work identified through the shared mobility strategy, the Mobility Hub Planning and Implementation Guidebook was created in 2022 to provide guidance to the region’s communities and public agencies for advancing mobility hubs from concept and planning to implementation and management. Through the planning process, Met Council worked with regional partners to identify the 50 top regionally significant mobility hub locations across the region. More information on this initiative, including the prioritized shared mobility hubs, is available on the Mobility Hub Planning Guide web page.

Implications of the growing use of electric bikes

The purchase and use of electric bicycles, or e-bikes, are on the rise in the Twin Cities region as they are seen on local streets and trails with growing regularity. E-bikes are popular because they’re easy to operate and require less physical exertion, which allows for longer trips and trips over hillier terrain than with a traditional bicycle. Their growing presence in the region suggests a trend similar to the continuing rapid growth observed in e-bike purchases in the United States.

Although e-bike sales statistics specific to Minnesota were not available, there has been anecdotal evidence of rapid growth in the public’s interest and purchases of e-bikes. One 2023 Minnesota Public Radio article generally noted that bicycle retailers in Minnesota have been seeing a surge in e-bike sales in recent years and have been experiencing an uptick in e-bike inquiries since the legislature passed the

Figure 10.2: Advantages of electric bikes



e-bike purchase rebate program in 2023. The same article also reported that one major bicycle retailer had seen an annual doubling of e-bike sales over several years to where it made up more than half of the retailer's overall dollar sales in 2023 across its 32 stores in Minnesota and the Midwest.[126]

Nationwide, there were 1.1 million e-bikes sold in the U.S. in 2022, up from about 325,000 purchases in 2018, [127] and representing nearly a four-times factor jump in four years. An e-bike industry analysis projects e-bike sales in the United States to grow from just under $2 billion in 2022 to more than $7 billion in 2030.[128] Given these national growth statistics and local qualitative evidence in e-bike sales growth, it is likely that e-bike usage in this region will continue to grow in the foreseeable future.

E-bikes offer a host of benefits to the consumer, not the least of which relates to their relative affordability. The upfront cost of e-bikes has decreased in recent years with prices as low as $1,000 for a basic new e-bike. Although these prices will remain unaffordable for some, an e-bike's relatively low maintenance costs can offset their purchase price and save money in the long run, especially when compared to the high costs of owning and driving an automobile. Starting in 2024 Minnesota resident taxpayers are able to receive a discount of up to 75% off a new e-bike purchase through a new state rebate program (discount capped at $1,500), perhaps making e-bikes an affordable option for more residents.[129] This program is currently funded through June 2026.

Local governments can also provide e-bike stimulus programs in addition to what is available from the state. There are e-bike stimulus programs initiated by local city governments around the nation that are good examples for the region's cities to consider. The Atlanta Regional Commission partnered with the City of Atlanta to develop the equity-focused Atlanta E-Bike Rebate Program. The City of Denver also created an E-Bike Rebates Program that is scaled based on levels of income and includes bump-ups in the total rebate amounts for people with disabilities using adaptive bikes and for cargo e-bike purchasers.

There are growing safety concerns around potential conflicts due to the speed differential between e-bikes and standard bicycles that could affect users of all surface transportation modes. Conversations on e-bike safety will be important to have among regional transportation partners and other state/local agencies with implications relating to design standards, regulation, and enforcement. The Met Council's role will be to convene meetings and facilitate discussions among agencies more closely tied to these planning and policy areas, which can begin in 2025. Although there are some risks for new e-bike riders due to potential overconfidence in their abilities to maneuver a powered bicycle, bicycling via e-bike can be made safer through advance-obstacle or oncoming-vehicle warnings as newer smart technologies are incorporated into e-bike designs.

What e-bikes could ultimately mean for regional and local bicycle planning remains to be determined, but a few changes can be seen about how people use e-bikes now and into the future:

- Upper age limits for healthy biking are being extended because the physical demands of biking are lessened by e-bikes.
- Bicycle trip distances will likely increase due to higher average speeds with less energy expended (a research study of e-bike versus nonelectric bicycle trip behavior found that average trip distance for e-bikers nearly doubled, as did daily bike distance traveled when including trips via both bike types for e-bikers compared to traditional bicyclists[130]).
- More demand for on-street and off-street bicycle facilities will likely result, including demand for more bicycle-specific investments that offer full separation from vehicle traffic.
- Daily bicycle routes may become more direct in areas where hills were a constraint to route choice, now that anyone with an e-bike can ride with ease over long or steep hills.
- The need to manage speeds along bicycle facilities and to provide separation between people biking and rolling, pedestrians, and potentially e-bikes may grow due to the widening range of moving speeds introduced with more e-bikes.
- Cargo e-bikes will provide additional opportunities to reduce vehicle miles traveled and greenhouse gas emissions through performing last-mile deliveries to consumers and businesses for more details on how cargo e-bikes can be incorporated into e-commerce freight delivery systems).

Most importantly, demand for e-bicycles may increase and continue to compete with automobiles for more and longer trips than traditional bicycles. E-bicycling, given its longer range of travel, could become a bigger factor in lower-density suburban and rural areas where biking hasn't been seen often as a viable option in the past. This has great potential to reduce vehicle miles traveled by gasoline and diesel-fueled automobiles with reductions to associated greenhouse gas emissions. This benefit of increasing e-bike usage also extends to trips taken by electric vehicle, though to a lesser degree. E-bikes operate with zero emissions but also produce a much smaller carbon footprint in their manufacturing process compared to electric vehicles. Thus, in the near future, e-bikes may have an equal or even greater role than electric vehicles in fighting climate change in this region and beyond.

Bicycle Investment Plan

Regional investments for bicycle infrastructure are determined by the Transportation Advisory Board through the Regional Solicitation for federal transportation funds administered by the Met Council. Other federal, state, and local funding sources are discussed later in the funding programs section. In addition to the Regional Solicitation, a new regional sales and use tax for active transportation was passed by the state legislature in 2023. This new active transportation fund is estimated to provide an additional $24 million per year to fund bicycle and pedestrian projects in this region. This annual infusion of funds may facilitate building out better connected and more continuous local and regional bikeway networks. It may aid local governments who have been constrained by limited funds and have only been able to construct discrete segments of bikeways that are less than ideal for transportation and recreational trips. More details on this funding source are discussed in the funding programs section.

This section of the plan gives direction for planning, implementing, and prioritizing bicycle system improvement projects. Bicycle planning, facility design, and project selection for transportation funding are driven by a set of key factors that often are mirrored in bicycle study analyses and facility type selection processes. Minimizing the risk of crashes and providing a level of comfort and convenience to attract and serve a wide range of rider experience levels, ages, and abilities, are top considerations in planning bicycle facilities. Other important factors typically include:

- Network connections to transit and regional and/or local destinations.
- Social and economic equity factors that account for and work toward rectifying economic and racial or ethnic disparities.
- Potential bicycle trip demand based on factors like future population and employment density and proximity to major destinations.

Through several regional studies, these factors have been used to establish three useful planning and investment prioritization tools: the Regional Bicycle Transportation Network, regional bicycle barriers with their integrated barrier-crossing opportunity areas, and major river bicycle barrier crossings. This section includes guidance on how to apply these tools for prioritizing the region's bicycle infrastructure investments. References to detailed technical information are provided through links to the underlying regional planning studies, state and federal design guides, and interactive online maps and tools. For more information on regional investment priorities, see other key bicycle system investment factors at the end of this section.

The Regional Solicitation Evaluation study will be analyzing similar factors and project selection criteria to determine how they influence regional transportation investments and to what extent they reflect and advance regional transportation goals. Results of the evaluation may include adjustments or additions to the criteria and analysis factors (which also have been applied in regional and local bicycle studies over time). MnDOT's Suitability of Pedestrian and Cycling Environments is another planning tool that complements the regional tools and may be helpful to local agencies in planning their local networks.

Regional Bicycle Transportation Network

The Regional Bicycle Transportation Network is the established regional network that is used by the region as a planning and investment tool. This section describes the network's purpose and goals and documents its foundational guiding principles. Following this introductory background are detailed discussions of network corridors, alignments and priority tiers, the specific definitions and thresholds for the network's regional destinations, and the interrelationship of the network and regional trails. The section concludes with general guidance for local and state practitioners on planning and implementing bicycle facilities on the network, and the process for updating Regional Bicycle Transportation Network corridors and alignments.

Description and purpose

The Regional Bicycle Transportation Network was adopted into the Transportation Policy Plan in 2015 as the official regional bikeways network that sets the region's priority vision for planning and investment. The network is based on a Regional Bicycle System Study analysis and prioritization of potential corridors that includes factors such as bicycle trip demand, network connectivity, social equity, population and employment density, and connections to transit. Read more details of Regional Bicycle System Study.

The purpose of the Regional Bicycle Transportation Network is shaped by the following goals:

- Establish an integrated and seamless network of on-street bikeways and off-road trails.
- Provide the vision for a "backbone" arterial network to serve daily bicycle trips by connecting regional destinations and local bicycle networks.
- Encourage cities, counties, park agencies, and the state to plan and implement future bikeways in support of the network vision.

In support of these overall goals, cities and counties are encouraged to plan and implement the regional bicycle network and its connections to local bicycle networks through local comprehensive, transportation and/or bicycle-specific plans. The Regional Bicycle Transportation Network is one of multiple factors used in the Regional Solicitation process to select projects for receiving federal transportation funds. (See regional, state, and local programs in the funding programs section below for details on this and other state and federal funding opportunities to support local projects.)

Guiding principles

A set of guiding principles was used to develop the Regional Bicycle Transportation Network by identifying regional bikeway corridors that would:

- **Overcome physical barriers and eliminate critical system gaps**. Specifically addressing gaps and barriers in the regional system will improve convenience and continuity for bicyclists.
- **Facilitate safe and continuous trips to regional destinations**. Developing and upgrading bicycle facilities along the network will improve the convenience and safety of bicycling along these facilities.

- **Function as arteries to connect regional destinations and the transit system year-round.** Designating alignments within network corridors and implementing bikeways on the network will provide the needed connections to regional destinations and the regional transit system.
- **Accommodate a broad range of cyclist abilities and preferences to attract a wide variety of users.** Bicyclists have varying levels of comfort to ride based on facility type (on-street facility vs. off-road trail), roadway characteristics, and personal levels of experience and ability. In some urban, high-demand corridors it may be appropriate to develop both an on-street facility and an off-road trail to accommodate the full range of cyclist preferences.
- **Integrate and/or supplement existing and planned infrastructure.** When developing the Regional Bicycle Transportation Network, existing and planned infrastructure should be used when possible to reduce the need to purchase new right-of-way and to minimize the growing financial burden of preserving and maintaining existing facilities.
- **Provide improved opportunities to increase the share of trips made by bicycle.** Implementing a complete network that provides convenient connections to designated regional destinations and the regional transit system will increase the likelihood of choosing bicycling for transportation over other travel modes.
- **Connect to local, state, and national bikeway networks.** Connecting to other established bicycle networks will expand the reach and effectiveness of the regional network.
- **Consider opportunities to enhance economic development.** New bicycling investments can be an effective tool for creating local economic development opportunities and to foster the Twin Cities region's image as highly livable with many bike-friendly destinations.
- **Be equitably distributed throughout the region.** Social equity and regional geographic balance were emphasized in designating the Regional Bicycle Transportation Network. By focusing on population and employment concentrations, the network will be able to attract the greatest number of riders. By considering areas where more people live with lower incomes and where more people of color live and work, the network will offer equitable access to bicycling facilities and the economic opportunities and health benefits afforded by bicycle infrastructure.
- **Follow spacing guidelines that reflect established development and transportation patterns.** The Regional Bicycle Transportation Network corridors were developed in a way that applied spacing concepts based on urban and suburban development patterns and plans. The resulting network is denser and has greater accessibility compared to regional bikeway corridors found in other metropolitan regions.
- **Consider priorities reflected in adopted plans.** The Regional Bicycle Transportation Network was developed to reflect local bicycle plans and policies that inform regional priorities.



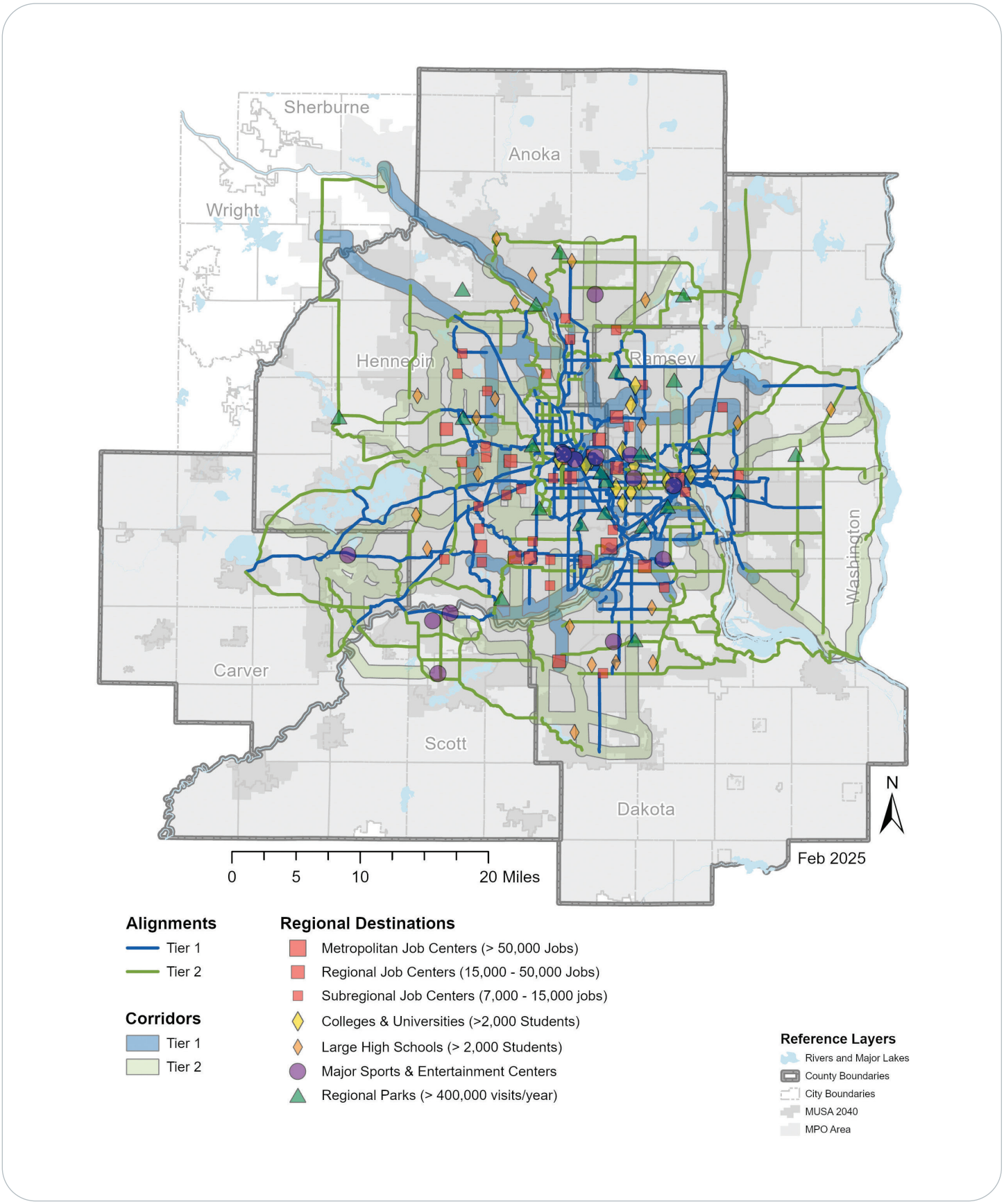
Regional Bicycle Transportation Network elements

Corridors, alignments, and priority tiers

Figure 10.3 shows the Regional Bicycle Transportation Network of corridors and alignments. Network corridors are established where there is existing or potentially high bicycle trip demand between regional network-designated regional destinations, major activity centers, and moderate-to-higher density local neighborhoods or commercial areas. Corridors reflect where alignments have not yet been identified. The presence of corridors allows for local planning processes to determine the most appropriate alignment that follows the directional orientation of the corridor and combines on-street bikeways with off-road trails, where appropriate.

Regional Bicycle Transportation Network alignments are defined where there are existing or planned bikeways, or in the absence of these, a consensus of which road or roadways would most efficiently meet the regional corridor's intent. When these conceptual planning alignments are identified within an existing corridor by the local jurisdiction, the original corridor will dissolve and be replaced by the alignment on the network map. Corridors and alignments are classified as Tier 1 or Tier 2 priorities, with Tier 1 representing the region's highest priorities for bikeway planning and investment. Tier 1 corridors and alignments are planned in locations where they can attract the most riders and where they can most effectively enhance mode choice in favor of biking, walking, and transit over driving alone. For more detail, see the interactive online map.

Figure 10.3: Regional Bicycle Transportation Network



In order to advance the Regional Bicycle Transportation Network vision to create the "backbone arterial network to serve daily bicycle trips by connecting regional destinations and local bicycle networks," projects that enhance existing or complete new segments of the network should be given priority for federal transportation funding. As identified in Figure 10.3, the network is divided into two priority tiers:

- **Tier 1 Regional Bicycle Transportation Network Corridors and Alignments** should be given a high priority for transportation funding. These are the established corridors and alignments that provide the highest potential bicycle transportation function by connecting regional destinations and major activity centers with local bicycle networks.
- **Tier 2 Regional Bicycle Transportation Network Corridors and Alignments** should be given a moderate-to-high priority for transportation investment. These corridors and alignments provide transportation connectivity to more outlying regional destinations and serve to connect Tier 1 regional bicycle transportation corridors and alignments.

Regional destinations

Regional destinations are included in the Regional Bicycle Transportation Network to define the major development and activity nodes between which the network is intended to provide connections. These are currently defined in the network map legend (see Figure 10.3) and include the following:

- Major employment centers[131] (minimum density of 10 jobs per acre)
    - Metropolitan job centers (greater than 50,000 jobs)
    - Regional job centers (15,000 to 50,000 jobs)
    - Subregional job centers (7,000 to 15,000 jobs)
- Universities and colleges (at least 2,000 students)
- Large high schools (at least 2,000 students)
- Major sport and entertainment centers
- Highly visited regional parks (more than 400,000 annual visits)

Several new sports venues have been constructed in recent years that are deemed worthy of regional destination status, including Allianz Field in Saint Paul and the Vikings' headquarters and TCO Stadium in Eagan. In addition, regional transit nodes were an important determinant of the original Regional Bicycle Transportation Network corridors created through the Regional Bicycle System Study. Therefore, to update the network to the latest state of constructed and planned sports stadiums and regional transitways, the following transportation nodes are new network regional destinations:

- Allianz Field soccer stadium in Saint Paul
- Minnesota Vikings TCO Stadium in Eagan
- All existing and planned rail transit stations
- All existing and planned bus rapid transit stations

Regional Bicycle Transportation Network relationship to regional trails

In practice, the Regional Bicycle Transportation Network, regional trails, and all local trail and bikeway networks complement each other to serve

the overall bicycle transportation and recreation needs of the region. All of these elements serve to provide an integrated and cohesive system that supports all forms of bicycling and the full range of bicycle trip needs.

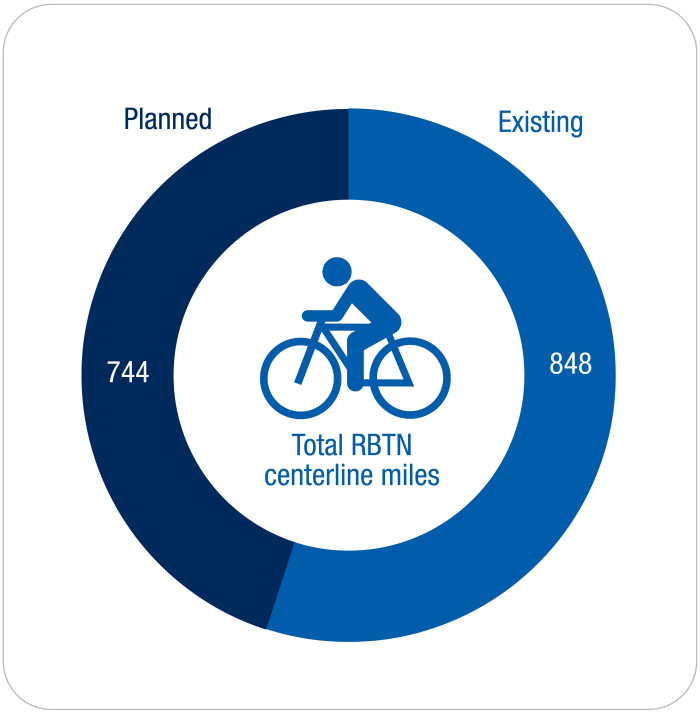
Regional trails were an important input during the development of the original Regional Bicycle Transportation Network, and many regional trails have been identified as important alignments within it. While there is significant overlap between the two networks, there are also some distinct differences. The Regional Bicycle Transportation Network is planned to facilitate daily bicycling for transportation, including commute trips to work and school, shopping trips, trips to entertainment venues, medical-related trips, and social trips. In contrast, regional trails are planned and designed more from a recreational perspective.

The Regional Bicycle Transportation Network values trip efficiency over route aesthetics. It focuses on connecting its designated regional destinations to and between local bicycle networks by integrating on-street bikeways and off-road trails that offer the most direct and efficient routes. For regional trails, the planning philosophy is more focused on providing connections between regional parks, mainly by developing off-road facilities that are routed to provide scenic value over route efficiency. Many regional trails also serve as significant and highly used bicycle transportation corridors as evidenced by their inclusion on the Regional Bicycle Transportation Network.

Although not the main focus of the Transportation Policy Plan, recreational bicycling is significant to the region. It represents an important entry point for many cyclists to become familiar with bicycling in general, and how to navigate between bicycle facilities on lower-volume streets and trails. Ultimately, many recreational cyclists will become users of these systems for a variety of transportation purposes.

An integrated system of regional trails and the Regional Bicycle Transportation Network requires a collaborative approach to regional trail and bicycle transportation planning by the Met Council and its agency partners. The Met Council is committed to continued participation in meetings with regional park and trail implementing agencies and will facilitate broader meetings, as needed, to enhance collaboration and coordination among transportation and parks agency planners toward maintaining and building a cohesive and integrated regional bicycle system overall.

Figure 10.4: Total RBTN centerline miles



Regional Bicycle Transportation Network planning and implementation guidance

Because the Regional Bicycle Transportation Network has been the established regional network since 2015, it is appropriate to continue monitoring

progress on its implementation. Table 10.2 shows the estimated centerline miles of existing and planned Regional Bicycle Transportation Network alignments and/or corridors and their corresponding percentages of total network centerline miles. These totals include all recent network updates further described under the "Regional Bicycle Transportation Network update process" section below.

Table 10.2: Regional Bicycle Transportation Network implementation status

Network facility status	On-street	Off-street	Undefined	Total	% planned	% total
Existing bikeways (alignments)	199	649	0	848		53.3%
Planned bikeways						
Network alignments	64	159	61	284	38.2%	
Network corridors	NA	NA	460	460	61.8%	
Total planned bikeways	64	159	521	744	100%	46.7%
Total network centerline miles	**263**	**808**	**521**	**1592**		**100%**

Note: Table values are in miles based on Met Council-estimated Regional Bicycle Transportation Network centerline miles.

Local planning for Regional Bicycle Transportation Network corridors and alignments

The broad Regional Bicycle Transportation Network corridors shown in Figure10.3 (one-mile wide in suburban and rural areas, one half-mile wide in the core cities) are intended to allow flexibility among local government agencies to tailor specific alignments for bikeway facilities through the local planning process. As specific alignments that run within and along the corridors are designated through the local planning process, the regional corridor will be replaced on the Regional Bicycle Transportation Network map with the preferred alignment. These new alignment designations are periodically added to the Regional Bicycle Transportation Network map as an administrative task and do not require a formal Transportation Policy Plan modification or amendment.

The goal of providing continuity of regional bicycle corridors and facilitating direct access to corridor destinations may be reached by building safe and comfortable bicycle facilities along roadway corridors. Planning for cyclists' comfort and convenience across a wide range of experience levels, ages, and abilities is an important focus for any major roadway project. Other priorities, including safety for all users, mobility for all transportation modes, and corridor aesthetic enhancements (like open space, trees, or other corridor greening features) should also be considered. Prevailing vehicle speeds and volumes in adjacent traffic lanes are paramount safety-related considerations in the design and implementation of on- or off-street bicycle facilities.

Some highways serve as the only practical and effective crossing over a major barrier (such as rivers, freeways, multi-lane highways, and railroad corridors). In these cases, safe bicycle accommodations should

be provided on the highway segment that crosses over (or under) the barrier. On some other highway segments not crossing a barrier but having high traffic volumes, an intensive mix of trucks and buses, and limited right-of-way to provide designated bicycle facilities, it may be appropriate to route the facility away from the highway when a nearby, parallel local street is available. This condition occurs more frequently on A-minor arterials in highly developed urban corridors than on A-minors in less developed, suburban, or rural corridors. However, this will not always be the case, and each corridor should be planned to address its unique issues and needs from both a local and regional perspective.

As an alternative to locating regional bikeways along major highways, regional transportation partners can also plan and build new, continuous bicycle facilities that cross barriers via the local street system. With their lower traffic volumes and slower speeds, local streets can be improved to serve a broader range of cyclist ages and abilities. These improvements might include traffic calming measures like traffic circles (islands) at intersections, traffic diverters, and improved crosswalks at higher volume streets.

Facility types that meet Regional Bicycle Transportation Network functionality

A range of treatments for on- and off-street bicycle facilities may be applied in different parts of the region to accomplish the function of regional bicycle corridors and to maximize their attractiveness to potential cyclists. Local planners will need to consider their community's local corridor context to determine the feasibility of an off-road trail facility, or to identify which on-street or street-adjacent facility type would be most appropriate for the specific corridor.

In addition to off-road trails, the list below of on- and adjacent-street bicycle facility types provides a few examples for implementing the Regional Bicycle Transportation Network. With an eye toward consistency with the previously stated guiding principle to "accommodate a broad range of cyclist abilities and preferences to attract a wide variety of users," these Regional Bicycle Transportation Network bicycle facility types are listed in descending order of comfort level and design complexity. More detailed design standards and criteria and planning guidelines can be found in MnDOT's Bicycle Facility Design Manual and the FHWA Bikeway Selection Guide.

- **Shared-use trails:** Also known as shared-use paths or multiuse trails, these are off-road or roadway-adjacent paved facilities for bicycling, walking, and rolling. They can be developed as independent trails completely outside of the road's right-of-way, or along and adjacent to roadways as side paths.
- **Separated bicycle lanes (facilities):** Also known as protected bikeways, these on-street or street-adjacent facilities are physically separated from lanes of moving traffic and walkways. They are separated from general traffic with vertical elements such as bollards, vertical pylons, or an elevated concrete barrier or curb (separated facility, generally, or cycle track). There are one-way and two-way facility design options. In areas where on-street parking is allowed, they can be placed between the parking lane and sidewalk.
- **Bicycle boulevards:** Also known as neighborhood greenways, these may be appropriate in some urban and suburban settings to improve a designated regional bicycle corridor. Bike boulevards are created on lower-volume, low-speed roads and are designed to give cyclists priority over motorized

vehicles. These facilities typically apply relatively low-cost treatments like signs and pavement markings, along with traffic-calming features such as vehicle traffic diverters or traffic circles (islands) at intersections. Bicycle boulevards can be especially effective in providing a more bicycle-friendly alternative to a parallel-running, high-volume, arterial street, or highway.

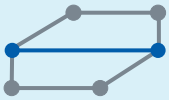
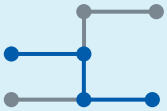
- **Buffered bicycle lanes:** Buffered bike lanes are conventional lanes that are combined with a buffer space designated with pavement markings (but no vertical elements) to separate vehicle traffic from bike traffic. This treatment type may be appropriate for urban and suburban areas on streets with moderate traffic volumes and lower speeds.
- **Conventional bicycle lanes**: Bike lanes can facilitate a safer and more comfortable trip for some cyclists by providing a dedicated space for on-street bicycle travel. These facilities are most often placed on the right-hand side of the street (so they flow with traffic) between the general traffic lane and the curb or parking lane and are designated through pavement striping and signage. These facilities are one of the more common treatment types in urban areas and are also suitable in suburban areas along low- or medium-volume streets.
- **Continuous shoulders:** Though not a preferred treatment in urban and suburban contexts, continuous paved shoulders may be the most feasible treatment available for some roads in rural areas. To make these facilities more prominent to cyclists and motorists, bike route or share-the-road signs and/or pavement markings can be added along the route. Paved shoulders along bicycle routes are built wider than the typical five- to six-foot shoulders found on other roadways. These facilities may be impacted by the placement of rumble strips that require wider shoulders to maintain safety and comfort for bicycling.

Regional Bicycle Transportation Network update process

The Met Council has established a formal process that allows for significant updates to Regional Bicycle Transportation Network corridors and alignments about every two years. This process provides the opportunity for local agencies to propose potential additions or changes to the network for consideration by the Transportation Advisory Board and the Met Council ahead of each Regional Solicitation cycle. In addition to this formal update process and prior to the next Transportation Policy Plan update, the Met Council will explore options to better connect Regional Bicycle Transportation Network corridors and alignments to rural centers and communities beyond the current reach of the regional bicycle network.

As the Regional Bicycle Transportation Network has expanded to serve regional growth, a set of formal measures for evaluating network attributes was needed to improve regional network planning (for example, identifying where corridor coverage gaps exist) and to supplement the review process for network additions or changes proposed by local agencies. Such measures were developed through the Regional Bicycle Transportation Network Guidelines and Measures Study (2021) and are applied through the formal network update review process. This review tool includes measures for evaluating net changes in corridor spacing, route directness, route connectivity/continuity, social and economic equity, and proximity/density to population and jobs. A summary of these measures is provided in Table 10.3. More details on the development of the measures can be found in the Regional Bicycle Transportation Network Guidelines and Measures Study.

Table 10.3: Regional Bicycle Transportation Network measures summary

Measure type	Name of measure	Measure description
Route directness 	Destination proximity	Net change in proximity to regional destinations and transit nodes with proposed change.
	Out-of-direction ratio	Measures comparative efficiency of existing and proposed Regional Bicycle Transportation Network routes.
Corridor spacing 	Spacing buffer	Measures proposed route's ability to fill a spacing gap in the Regional Bicycle Transportation Network.
Connectivity/ Continuity 	Connectivity to regional bike barrier crossings	Number of new direct connections to regional barrier crossings with proposed change.
	Continuity with adjacent city/county bicycle networks	Number of new connections to city and/or county bikeway networks with proposed change.
	Connectivity with local bicycle networks	Number of new intersections with local bikeway networks with proposed change.
	Connectivity with state and regional trails	Number of new intersections with state and regional trails (not including existing Regional Bicycle Transportation Network routes).
Social and economic equity 	Access to BIPOC population and people in poverty	Proximity to BIPOC and below poverty threshold populations.
	Agency self-assessment of benefits to disadvantaged and vulnerable populations	Qualitative measure of benefits to BIPOC, people in poverty, seniors, youth, and disabled population that result from proposed change.
Proximity/ Density 	Proximity to population and jobs	Proximity to population/jobs along proposed route corridor; applies density targets that vary across urban and suburban communities.
	Activity per mile ratio	Provides a density-over-route-length ratio used only for new or extended Regional Bicycle Transportation Network routes that connect suburbs and/or rural centers through rural areas.

The initial round of Regional Bicycle Transportation Network updates conducted in 2021 resulted in the addition of one new corridor, 19 new alignments, and seven extensions or shifts to alignments or corridor centerlines. In addition to the formal round of updates, an administrative adjustments-only process carried out in 2023 resulted in refinements to one corridor and 10 alignments. All additions and changes to the Regional Bicycle Transportation Network from the 2021 formal updates and 2023 administrative adjustments are included in the map shown previously in Figure 10.3.

Regional bicycle barriers

Regional Bicycle Barriers are the designated freeways and/or expressways, rail corridors, and secondary rivers and streams that are the major physical barriers to bicycling and are used by the region as a planning and investment tool. This section defines these regional barriers and provides details about prioritizing barrier segments, barrier-crossing spacing criteria, investment priorities, and the process for updating regional barriers. Major rivers as barriers to bicycling are included as their own category and are described in the next major section.

Figure 10.5: Major bicycle barriers.



Barrier definitions

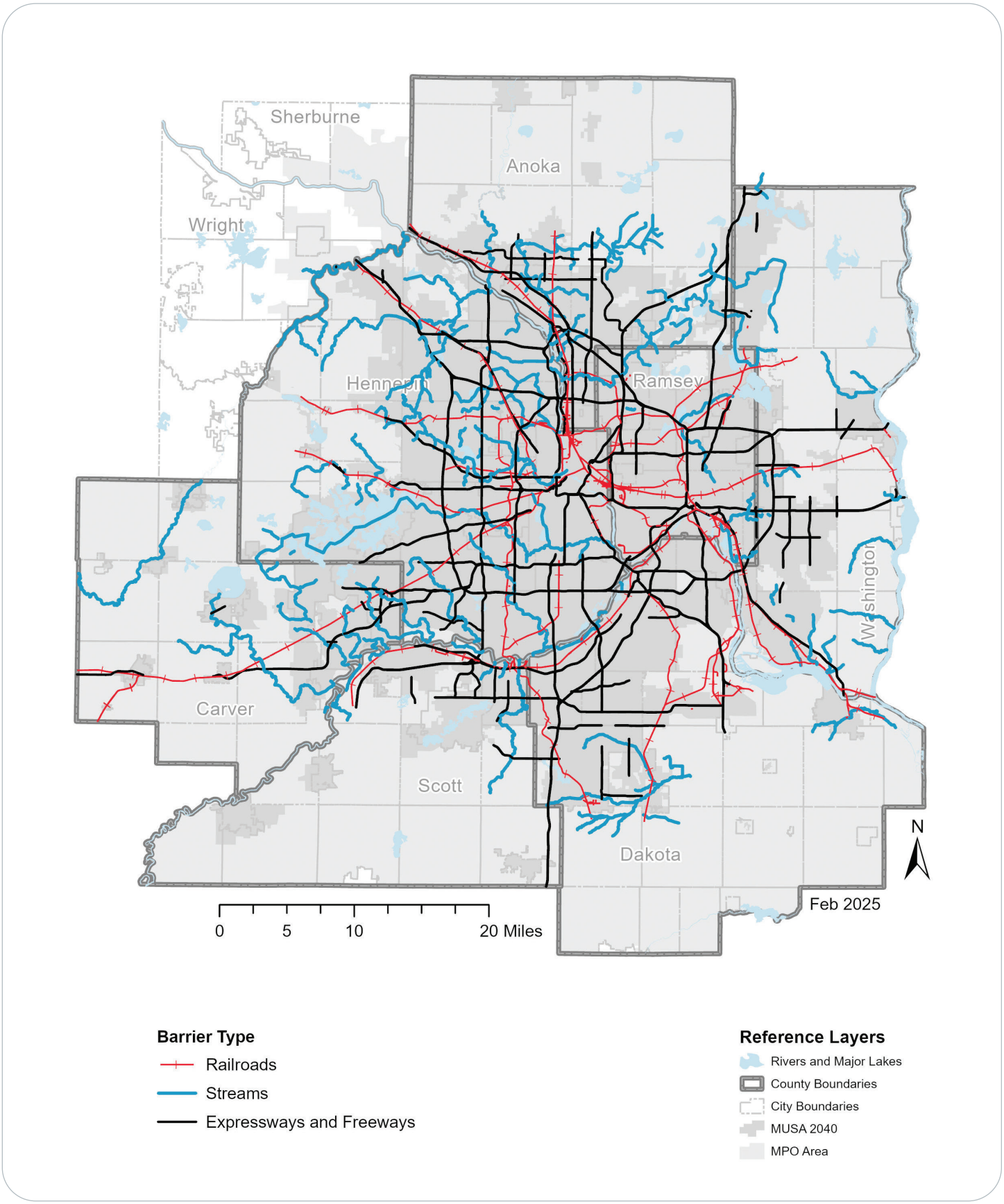
The region's major physical barriers to bicycling were analyzed through the Regional Bicycle Barriers Study (2017) and added to the 2040 Transportation Policy Plan through the 2020 update to the plan. These regional bicycle barriers are shown in Figure 10.5 and are available to view on the interactive online map. Regional bicycle barriers include secondary rivers and streams (those that flow into one of the three primary rivers), rail corridors, and freeways and expressways. Freeways are highways with full access control, meaning motorists do not encounter any intersecting crossroads. Expressways as defined in the study include the region's nonfreeway principal arterials that have at least four lanes and are divided by a median. These highways differ from freeways in that they have intersecting crossroads with traffic signals and some partial stop-sign-controlled intersections with right-turn-in and right-turn-out-only access.

Regional bicycle barrier crossing opportunity areas

Prioritization of barrier segments

The set of regional bicycle barriers in Figure 10.6 are the major physical barriers to bicycling that include freeways and expressways, rail corridors, and secondary rivers and streams. The bike barriers study identified the series of tiered regional barrier-crossing opportunity areas shown as circles for freeway and expressway barriers (Figure 10.7) and for railroad and stream barriers (Figure 10.8). The circle diameters in these maps represent the prioritized barrier segments where future crossings may be developed. The circle colors indicate three priority tiers with Tier 1 (magenta) indicating barrier-crossing locations with the highest priority. The placement of these crossing locations is based on the preferred barrier-crossing spacing distances derived through the study and shown in Table 10.4. The designated barrier segments, represented by the circle

Figure 10.6: Regional Bicycle Barriers



diameters, vary in length by their corresponding 2040 Thrive MSP community designation group as described in the map legends. These designations can be reviewed as changes to the RBTN are requested to ensure alignment with Imagine 2050 community designations. For more detail, see the online map.

Table 10.4: Regional bicycle barrier-crossing spacing criteria

Thrive MSP 2040 planning area	Preferred maximum spacing	Example cities
Urban Center	½-mile	Minneapolis, Saint Paul, Richfield, Hopkins, South St. Paul
Urban	¾-mile	Golden Valley, Roseville, Maplewood, Crystal, Edina
Suburban, Suburban Edge, Emerging Suburban Edge	1 mile	Blaine, Woodbury, Maple Grove, Eagan, Lakeville
Diversified Rural, Rural Residential, Agricultural	2 miles	Grant, Afton, Ham Lake, Lake Elmo, Independence

Investment priorities

The circles in Figures 10.7 and 10.8 define regional bicycle barrier-crossing opportunity areas. The circle diameters (or intersecting lines for curved segments) represent the barrier segments where future barrier-crossing improvement projects may be developed. These barrier segments are prioritized by the color-coded tiers with Tier 1 segments (magenta circles) having the highest priority for investment. The following types of projects should be given priority for federal and state transportation funds:

- Roadway and bridge projects that add new or upgrade existing bicycle facilities on or approaching bridges or tunnels that cross these designated barrier segments
- Projects that add or upgrade surface street-level bicycle crossings of the barrier segments
- Projects that construct new or upgrade existing stand-alone bicycle-pedestrian bridges or tunnels that cross the designated barrier segments
- Projects that add a new bicycle facility or bike-specific safety improvement at an existing roadway crossing of a designated barrier segment

Figure 10.7: Regional Bicycle Barrier crossing opportunity areas: freeways and expressways

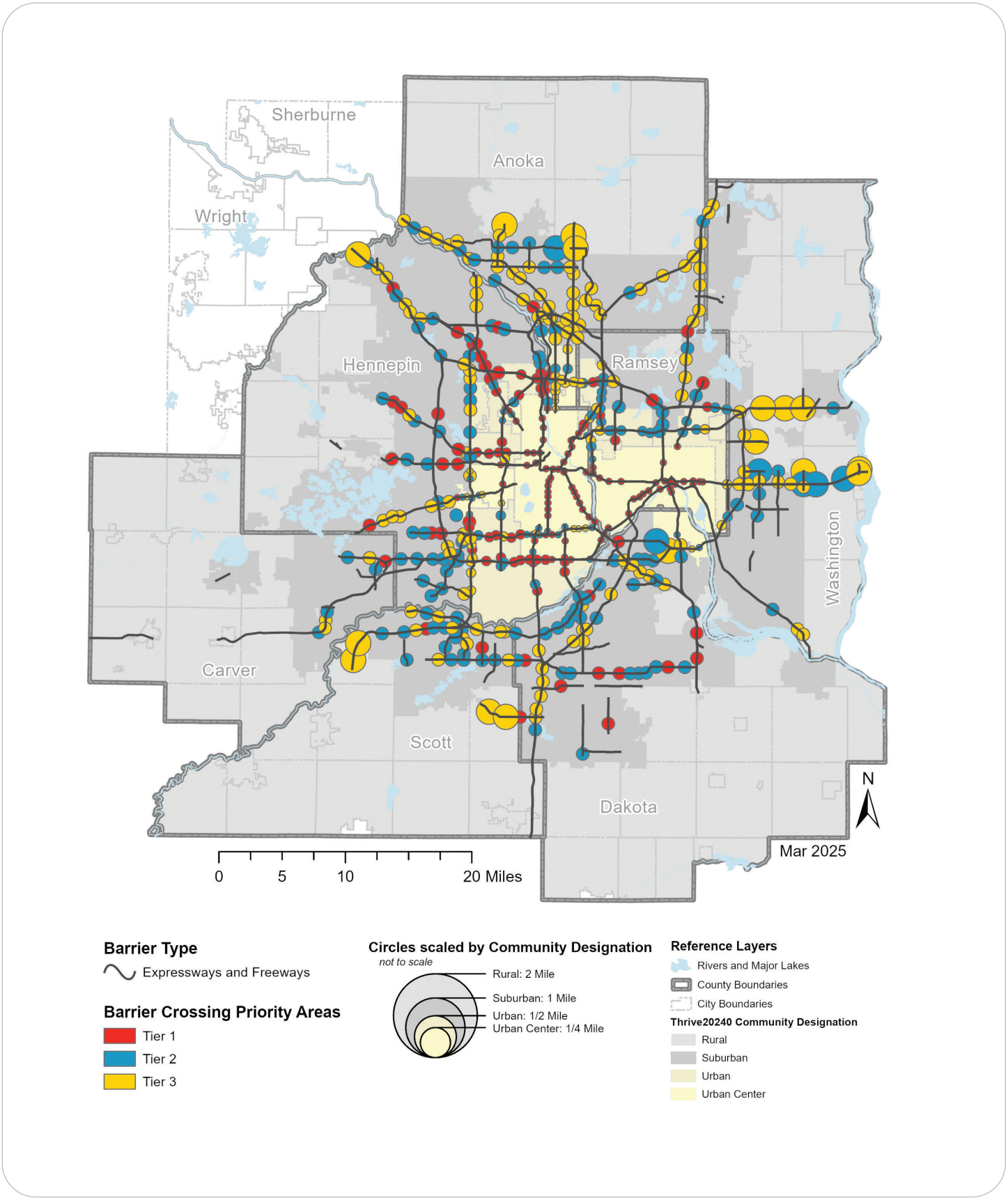
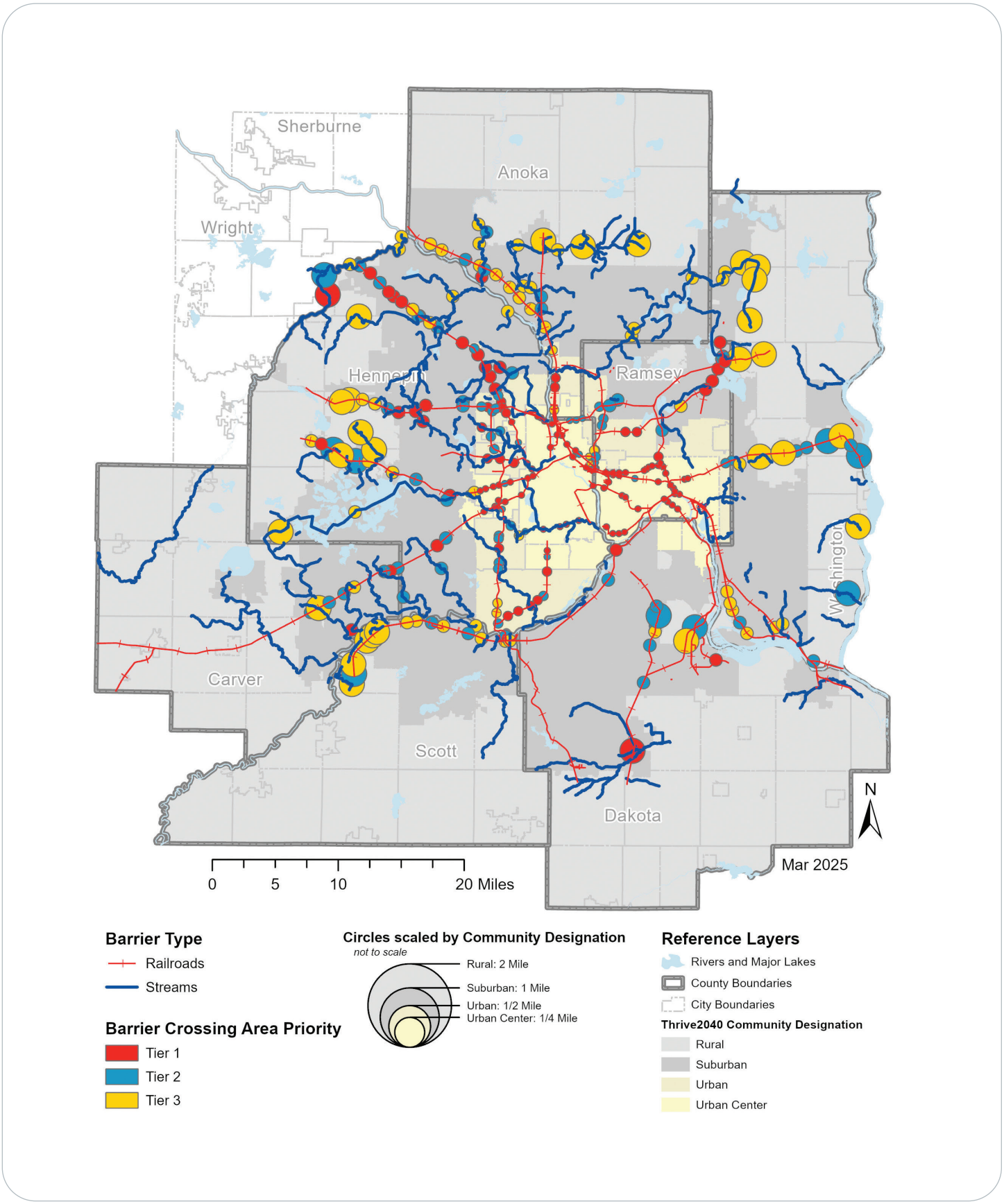


Figure 10.8: Regional Bicycle Barrier crossing opportunity areas: railroads and streams



Update process

Regional bicycle barriers are updated about every two years and ahead of each Regional Solicitation funding cycle. Agencies are given the opportunity to request corrections to existing barriers or to request additions for new barriers. All new regional bike barriers must meet the definitions for regional bicycle barriers described in the description and purpose section above. The most recent update to regional bicycle barriers resulted in the addition of one new freeway and/or expressway barrier, one new rail corridor segment, one rail corridor segment correction, and two new secondary streams within two local jurisdictions.

Major river bicycle barriers

This section defines major river bicycle barriers that are used as an important regional investment criterion. It describes major river bicycle barrier crossings, how they are applied as regional priorities, and the process used to update the crossings.

Barrier definitions

In addition to the regional bicycle barriers and outside the purview of that regional study, the Twin Cities region has three primary rivers that represent major barriers to all transportation modes. These include the Mississippi, Minnesota, and St. Croix rivers, which also serve as the boundary lines between cities, counties, and in the case of the St. Croix, the Wisconsin-Minnesota state line.

Currently 38 roadway bridges and 5 independent stand-alone bicycle and pedestrian bridges cross these major river barriers. Of the 38 roadway bridges, 28 have existing bikeways, four have planned bikeways, and six have no existing or planned bicycle facilities. In addition to the five existing stand-alone bicycle bridges, there are four stand-alone or rail bridge-adjacent bicycle crossings planned in Minneapolis and the City of Carver.

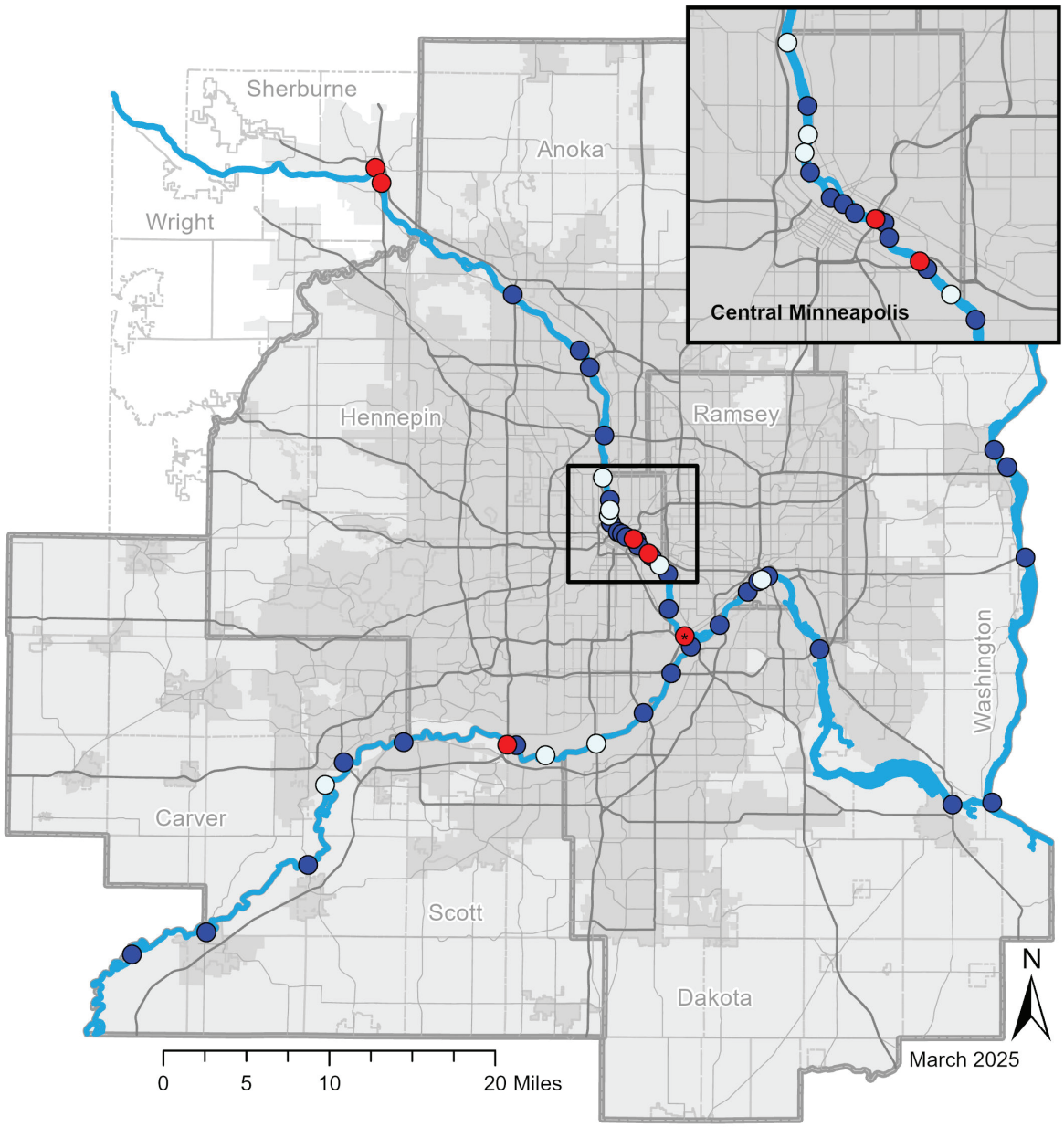
Roadway and stand-alone bicycle and pedestrian bridges crossing the Mississippi, Minnesota, and St. Croix rivers are relatively infrequent (outside of the Minneapolis and Saint Paul downtowns and the University of Minnesota campus) and thereby provide limited access and great inconvenience for the relatively shorter bicycle trips compared to vehicles. Because of this, all the region's existing roadway bridges and existing or planned stand-alone bicycle and/or pedestrian bridges are designated as major river bicycle barrier crossings. They are shown in Figure 10.9.

Investment priorities

All the region's existing roadway bridges and existing or planned bicycle and/or pedestrian bridges that cross the Mississippi, Minnesota, and St. Croix rivers are designated as major river bicycle barrier crossings. Projects that improve these designated major river crossings should be given a high priority for receiving federal and state transportation funds under the following conditions:

- Projects that add new or upgrade existing bicycle facilities on roadway bridges
- Projects that construct new or upgrade existing stand-alone bicycle-pedestrian bridges

Figure 10.9: Major River Bicycle Barrier crossings



Bike Facilities

- Existing
- Planned
- None *(roadway crossing, no bike facilities)*

** TH 5 (West 7th) Mississippi River Bridge sidewalk only with stairs on both ends.*

Major Rivers

- Mississippi, Minnesota, St. Croix Rivers

Reference Layers

- County Boundaries
- City Boundaries
- MUSA 2040
- MPO Area
- Principal Arterials
- Minor Arterials

Update process

Major river bicycle barriers are reviewed by Met Council staff with each new Transportation Policy Plan to determine if there were any recent major river crossing improvement projects that require a change in the status of any crossing.

Other key bicycle system investment factors

In addition to the more specific and detailed regional networks used for prioritizing regional transportation investments and described above, this section covers several general prioritization criteria that are recommended for the transportation modal funding categories of the Regional Solicitation.



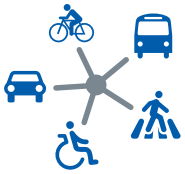
Safety

Regional evaluation criteria will favor infrastructure projects that significantly improve safety for people who walk, bicycle, or use other forms of rolling. Funding should be provided to projects that significantly improve the safety of bicycling or rolling for users of all ages and levels of mobility, such as separated and/or protected bicycle lanes described previously under "Facility types that meet Regional Bicycle Transportation Network functionality." Projects that address an identified critical safety problem should also be prioritized. An example of this type of project would be improvements to intersections that receive a high level of bicycle traffic but were not originally designed with bicycle safety in mind.



Continuity and connections between jurisdictions

Regional evaluation criteria should favor projects that improve continuity and/or connections between jurisdictions. This could include, for example, extending a specific bikeway facility treatment and/or an intersection crossing treatment across jurisdictional boundaries to improve consistency and convenience for people who bicycle or roll. Creating more consistent, continuous, and connected facilities improves access between local and regional bicycle networks, as well as improving the overall bicycling comfort and safety for people of all ages and levels of mobility.



Multimodal projects

Roadway projects seeking federal funds should include features that benefit all users of the transportation system including people who bicycle, roll, or walk (including users of all ages and levels of mobility) in addition to transit, freight, and passenger vehicles. Regional evaluation criteria should favor roadway projects that meet the needs of people biking, walking, and rolling with an emphasis on safety and barrier removal. In addition, evaluation criteria for stand-alone bicycle projects should favor those that provide direct connections to transit facilities and/or secure bicycle-parking storage areas to encourage multimodal trips.



Bicycle connections to transit

Regional evaluation criteria should favor local bicycle projects that connect to an existing or planned regional transitway or that connect to, or provide secure bicycle storage near, a bus transit stop or transit station. These potential connections and facilities should be emphasized in the project development process to maximize local opportunities to take advantage of transit for longer and faster trips.



Reconstruction of existing facilities

In addition to building new bicycle facilities, local agencies can access Regional Solicitation funds to reconstruct existing facilities if the project improves a bikeway to a quality level superior to that of the existing facility, and where facilities have been properly maintained.



Maintenance agreements

To maximize the usable life cycle of bicycle facilities, it is imperative that funded projects are properly maintained. It is also essential to keep facilities open and operable throughout the year to extend benefits to as many people as possible. Therefore, projects considered for federal funding should have an approved plan for operations and maintenance, or an operations/maintenance agreement with another jurisdiction or third party, to ensure the entire segment of the proposed bikeway and any adjoining segments within the jurisdiction remain passable and in good repair throughout the year.

Funding programs

The bicycle investment plan can be supported by federal discretionary programs, regional funding programs, and other state and local funding programs.

Federal programs

Federal discretionary grants

The Rebuilding American Infrastructure with Sustainability and Equity discretionary grant program has been allocated just under $2.3 billion through the Infrastructure Investment and Jobs Act of 2021 and the fiscal year 2023 Appropriations Act. These grants are intended as investments in surface transportation infrastructure projects that will have significant local or regional impact by improving “safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity including tourism, state of good repair, partnership and collaboration, and innovation.”

Two local examples of how Rebuilding American Infrastructure with Sustainability and Equity grants are being used relate to bicycle transportation: Dakota County was recently awarded an $8.8 million grant to complete segments of the Mississippi River Greenway, and the City of Saint Paul was awarded $1.4 million in 2021 to complete the Rondo Neighborhood Streets Improvements Study.

Active Transportation Infrastructure Investment Program

Enacted in 2021 through the Infrastructure Investment and Jobs Act, the Active Transportation Infrastructure Investment Program authorized up to $200 million per year over five years for state and local governments to construct projects that provide safe and connected facilities as part of an active transportation network or spine. This new, federal competitive program will provide grants for planning and design, or construction. Planning and design projects must have a minimum of $100,000 in costs to be eligible, while construction projects require a minimum cost of $15 million. Grant recipients must provide 20% of the total cost with local matching funds. However, at the U.S. Department of Transportation's discretion, the federal share can be increased to 100% for projects in disadvantaged communities with a poverty rate of over 40%. As of 2023, only $45 million has been allocated to the Federal Highway Administration for this grant program. Assuming Congress will appropriate funds closer to the $200 million annual authorization amount over the next few years, the program will move the nation significantly forward in addressing the large backlog of active transportation funding needs.

Regional programs

Regional Solicitation

The Met Council, through the Regional Solicitation process, makes specific categories of federal transportation funds available to transportation partners on a competitive basis. Partners may apply for stand-alone bicycle facilities, or these facilities may be provided as part of related roadway and bridge projects. Projects funded through this process require a 20% local match under federal rules. Current federal law makes about $250 million available through the Regional Solicitation for every two-year cycle. Historically, between 9% and 20% of these funds have been allocated to bicycle and pedestrian projects, amounting to between $22 million and $50 million every two years. This funding does not include bicycle and pedestrian facilities that are frequently funded and implemented through roadway and bridge projects. The Regional Solicitation evaluation Work Program item will inform how bicycle projects are funded starting with the 2026 Regional Solicitation.

Carbon Reduction Program

One federal funding program that can be applied to bicycle facility projects, the Carbon Reduction program, is included in the $250 million per two-year cycle of the Regional Solicitation. Specific funding categories and criteria for this program will be determined through the Regional Solicitation evaluation Work Program item to inform the 2026 Regional Solicitation. Current federal law makes about $14 million available through the Carbon Reduction program for every two-year cycle.

Active Transportation Program (MnDOT)

The Active Transportation Program was established by the state legislature in 2018 and initially funded with $5 million in 2021. The competitive grant program is administered by MnDOT to improve conditions for biking, walking, and rolling. Grants are provided to local agencies for active transportation technical planning assistance, education and encouragement programs, engineering studies, and infrastructure investment.

Through July 2023, MnDOT had awarded about $7.7 million to local agencies statewide for 20 active transportation infrastructure projects. Of that total, about $1.6 million had been awarded to advance four bicycle-related infrastructure projects in the metro region. An additional $13 million was available for projects seeking funding through MnDOT's 2023 Active Transportation Infrastructure Solicitation. For the first time in fiscal year 2023, metro area projects were not eligible for this funding program. Program eligibility may be revisited by MnDOT in future funding cycles.

Regional Sales and Use Tax for Active Transportation

In the 2023 transportation finance law passed by the state legislature, the Met Council was directed to implement and administer a new regional transportation sales and use tax of 3/4 of one cent in the seven-county region. Of the Met Council's 83% share of the new revenue, 5% must be used for active transportation (walking, biking, and rolling) projects in the region selected by the Transportation Advisory Board. Estimated proceeds from the new tax for TAB distribution are $24 million per year. In addition to the Met Council's share, the remaining 17% of the new revenues goes to the seven counties in the region and 41.5% of that share must be used for active transportation projects or safety studies. The metro counties will also receive funding through the state's transportation advancement account, from a new $0.50 per retail delivery fee. These funds are subject to the same 41.5% requirement to be used for active transportation projects or safety studies.

Other state and local funds

MnDOT uses state highway funds to add or improve bicycle facilities along and across the state highway system. These investments are most often made as part of larger highway pavement and bridge projects. Bicycle improvements within these larger projects may include trails or sidepaths parallel to the roadway or as part of a reconstructed bridge, as well as bicycle lanes in some urban corridors or wide paved shoulders in rural areas.

City, county, and park agency funds have been integral to supporting the development, maintenance, and preservation of local multiuse trail and bikeway systems. These funds typically derive from local property taxes for trail system improvements and from property assessments in the case of city street improvements. Like MnDOT, counties and cities may also use their roadway state aid revenues from the state gas tax to invest in bicycle and pedestrian facilities as part of roadway and bridge reconstruction projects on county and municipal state aid roads.

SECTION 11: PEDESTRIAN INVESTMENT PLAN

Introduction

Walking is celebrated when we take our first steps in life, but after that significant achievement, it is often taken for granted. Yet walking remains our most universal mode of travel – we all walk or roll (using a mobility device such as a wheelchair or walker) and walking also makes essential connections to other modes of travel. When looking at Travel Behavior Inventory data on all trips made in the region using all modes, more are done through walking and rolling (9.0%) than biking (1.2%) or transit (2.8%).

Met Council's role in planning for pedestrians

While local agencies are primarily responsible for planning and implementing pedestrian infrastructure, the Met Council's role in planning for pedestrians includes:

- Assessing the trends and needs in pedestrian travel and providing resources to agencies implementing transportation projects to include safe, accessible, and convenient support for pedestrians.
- Investing in walking through the Regional Solicitation, regional transportation sales and use tax, and other unique regional and federal funding sources.
- Providing guidance to agencies working to address regional pedestrian barriers, implementing ADA transition plans and assisting with monitoring progress, and making pedestrian connections to regional destinations.
- Providing guidance for facilities that support transit investments, Livable Communities Act investments, and universal design and equity.
- Providing guidance for local comprehensive plans to ensure walking is a key consideration in land use and transportation planning, including review for planning for continuity and connectivity between jurisdictions.
- Setting overarching land use policy in the region that supports walking and safety for people traveling this way. (Land use is discussed in more detail in the land use portion of Imagine 2050.)
- Ensuring safe, accessible, and convenient pedestrian connections to transit service in connection with our role as a transit operator.
- Certifying that the metropolitan transportation planning process complies with the ADA.

Relationship to plan goals

Planning for walking and rolling supports the five main goals in the Transportation Policy Plan and their related objectives. Each goal is covered in more detail in distinct chapters.

Goal: Our region is equitable and inclusive

Providing safer, more walkable communities supports an equitable and inclusive region. Walking and rolling are universal, regardless of other ways we may travel. For some residents, walking and rolling are more crucial, such as for those who cannot drive due to age or physical condition. Being able to walk to destinations is the most affordable way to travel. The region has racially inequitable outcomes with traffic safety. For example, Black and American Indian residents have higher rates of pedestrian fatalities in the region, and areas with higher shares of Black or American Indian residents have more pedestrian crashes. These findings may be linked to exposure, but they closely mirror historic patterns of disinvestment and racially biased lending practices. Beyond traffic safety, we know residents experience our transportation system in different ways based on intersections of their identities, such as race and ethnicity, disability, or gender.

Goal: Our communities are healthy and safe

Safe ways to walk and roll benefit our physical and mental health and help connect us to community. Under this goal, people walking or rolling do not die or face life-changing injuries. They feel safe, comfortable, and welcome. With safer, more comfortable facilities, people have more opportunities to walk or roll. Safe ways to walk and roll must address crossing roadways, not just walking along them on sidewalks.

Goal: Our region is dynamic and resilient

Planning for safe, direct, and reliable walking and rolling supports this regional goal by providing another option for travel. Part of planning for walking and rolling will need to ensure that the infrastructure for doing so can withstand and recover quickly from natural and human-created disruptions, whether from increased snowfall events, increases in freeze-and-thaw events, or localized flooding that can have bigger impacts on people who are walking and rolling.

Goal: We lead on addressing climate change

Walking and rolling produce zero emissions and can contribute to the region minimizing our contributions to climate change. In addition, the majority of the region's residents who use transit access it by walking or rolling. Safe, comfortable infrastructure for pedestrians supports more zero emission trips made by walking, strengthens the ability of our transit system to better serve travel needs, and helps reduce vehicle miles traveled.

Goal: We protect and restore natural systems

Infrastructure for walking and rolling can minimize impacts on natural systems through its generally smaller footprint than infrastructure for vehicles. People walking and rolling will benefit from protection and restoration of natural systems, such as tree canopy, that provides shade.



Existing Conditions

This section broadly describes the existing facilities and features of the pedestrian system. There are also discussions about pedestrian system challenges around the needs of people with disabilities, winter maintenance, and safety.

Pedestrian facilities and features

Walking is an essential means of travel within the regional transportation system, but availability, type, and quality of facilities for walking vary across the region. Facilities for walking include a few state trails in the metro, regional trails (as designated in the Met Council's Regional Parks and Trails Policy Plan), local multiuse paths, sidewalks, skyways, and pedestrian or multiuse bridges or underpasses.

Examples of pedestrian facilities

Pedestrian facilities are more than just sidewalks and multiuse paths. Often the most dangerous part of walking or rolling is crossing streets, so street-crossing treatments are just as critical for safe travel by people walking and rolling. These treatments can include elements such as:

- Crosswalks (marked and unmarked) of different types for increased visibility
- Raised crossings to prioritize pedestrians at conflict points
- Advance stop bars, which are solid white lines striped ahead of crosswalks to show drivers where to stop
- Curb extensions to reduce crossing distances and exposure and improve pedestrian visibility
- Street designs that slow driver speeds
- Medians designed with pedestrian refuge islands
- Pedestrian-scale lighting to increase safety and visibility to drivers
- Leading pedestrian intervals used at traffic signals to give a head start to pedestrians in crossing the street
- Rectangular rapid flashing beacons, or pedestrian hybrid beacons at midblock crossings or intersections without traffic signals
- Separation from roadway curbs through buffers such as boulevards to help minimize stress from vehicle traffic

Many of these treatments are identified in the Federal Highway Administration's Proven Safety Countermeasures and can be used in different community types, from urban to suburban and rural. They have also published a reference on Proven Safety Countermeasures in Rural Communities that focuses on those most applicable in this context. For additional reference on pedestrian facility design, MnDOT provides Minnesota's Best Practices for Pedestrian/Bicycle Safety. MnDOT's Facility Design Guide includes a chapter on nonmotorized facilities. The Work Program for this plan also includes a project to develop a Complete Streets Local Implementation Guide that will provide additional guidance on implementing streets that are context sensitive for all users.

Paved shoulders may be used by pedestrians where not specifically prohibited, though separated facilities reflect more of a Safe System Approach and Complete Streets implementation.

Under the Americans with Disabilities Act (ADA), facilities must also be accessible to people with different types of disabilities. While this is not a complete list, these accessibility requirements include:

- Curb ramps with detectible warning surfaces
- Accessible pedestrian signals for people with visual disabilities
- Passing spaces where continuous width does not provide for passing
- Cross slope and running slope maximums

Other supportive elements

Other features may not be explicitly considered pedestrian facilities but can be important supports for pedestrians of all abilities to travel with safety, dignity, and comfort. Examples include:

- Shade (whether from tree canopy or structures)
- Lighting that works at a pedestrian scale
- Places to sit and to rest
- Public water fountains
- Public restrooms

Traffic calming and changes to roadway configurations can have significant safety and comfort benefits for people walking or rolling as well as drivers. Roadway reconfigurations are included in the Federal Highway Administration's Proven Safety Countermeasures. These reconfigurations are usually when an existing four-lane undivided road is changed to a three-lane road that has two through-lanes and a center left-turn lane.

Ongoing pedestrian challenges

While the official pedestrian facilities described above can take many different forms, people can walk or roll many places throughout the region, regardless of whether the facilities are officially designated for pedestrians. Where no pedestrian facilities are provided, people are often forced to walk or roll on the edges of roads, sharing space with vehicles traveling at speeds that could likely kill them. People who walk or roll need an accessible and safe network to use, no matter their age or abilities.

The urban core of the region has the most connected pedestrian network, but it becomes sparser through the rest of the region due to previous development patterns and underinvestment. Pedestrian facilities are usually needed on both sides of a roadway to serve destinations on each side, but there may only be facilities on one side coupled with a challenging environment for crossing. People walking and rolling are more sensitive to weather conditions and distance and tend to take the most direct route. In areas without sidewalks, paths can often be seen worn into the dirt where people are walking in grass to get where they need to go.

For people to walk or roll to their destinations, connections often cross both public and private property, and the entire trip needs to be considered when planning for good experiences for people walking or rolling. Private development that includes parking lots can also be challenging for people to navigate safely and comfortably when walking or rolling. To create the best environment for pedestrians, land use and development are also important considerations along with transportation. Land use is discussed more in the Land Use Policy Plan.

Better meeting needs of people who have disabilities

Pedestrian facilities are particularly important to people who have disabilities. For people with disabilities, it is considerably more difficult and nearly impossible to travel where there are no pedestrian facilities. People

who use wheelchairs or walkers may especially need to use the street when sidewalks and curb cuts are incomplete, uneven, or obstructed, especially in winter when snow and ice may not be promptly cleared. The Americans with Disabilities Act (ADA) of 1990 is federal civil rights law that requires all government entities that provide transportation services and/or infrastructure to ensure that people with disabilities can use the transportation system in an accessible, equitable, and safe manner.

For the pedestrian network, the ADA requires different elements to make the system more accessible for different disabilities. These requirements are considered to be the bare minimum for access. Curb ramps allow people who use wheelchairs or walkers to safely travel along sidewalks and cross. Detectable warnings on curb ramps allow people who are blind or have low vision to know that they are entering an area with potential conflicts with vehicle traffic. Accessible pedestrian signals provide vibrotactile buttons (providing vibration people can sense) and audible alerts to let people who are blind or have low vision and those who are also deaf know when walk signals are on to cross streets. Slope requirements address the need for stable surfaces for people with different impairments, especially people using manual wheelchairs. More information about all of the requirements for the public rights of way is available from the U.S. Access Board.

In the Twin Cities region, one in every 11 residents has a disability. As people age, disabilities become more common, so the region will likely have significantly more people with disabilities as the share of residents who are 65 or older increases. By 2050, the region expects to have 22% percent of residents who are 65 or older, compared to 15% in 2020. The COVID-19 pandemic also increased the numbers of people in the United States reporting they have disabilities. Disabilities are also more common among some people of color. About one in every six residents who are American Indian has a disability, and about one in every eight Black residents has a disability. Ensuring the region is accessible for people with disabilities is an equity issue. The core of the challenge is changing an environment that is built and operated in ways that do not meet the different accessibility needs of people.

Figure 11.1: Residents that have a disability



Federal Highway Administration emphasis on ADA transition plans

The U.S. Department of Transportation has put greater emphasis on ensuring compliance with the ADA. In 2015, USDOT guidance to metropolitan planning organizations (MPOs) on planning emphasis areas included a focus on providing access to essential services. This includes evaluating compliance with the ADA to help people with disabilities gain needed access to services and destinations. Beginning in 2016, the Minnesota division of the Federal Highway Administration asked MPOs in Minnesota to do ADA-focused work, including coordination and monitoring of progress, as part of the MPO requirement to certify the metropolitan

transportation planning process is being done in compliance with the ADA, among other requirements in 23 CFR 450.336. This includes required transition plans in the region. The Met Council certifies this process annually with its submittal of the Transportation Improvement Program.

As part of the certifications for 2019-2022 Transportation Improvement Programs, Minnesota MPOs were asked to survey local agencies about the status of their ADA transition plans and report the responses to the division office. Federal funds could have potentially been withheld if local agencies did not have or were not making substantial progress toward completing the required ADA transition plans. The point of these plans is to remove the identified barriers for people with disabilities to have equitable access to the transportation system and public services.

The ADA requires that all government agencies conduct a self-evaluation of facilities, programs, and services to identify any that must be modified to remove barriers to participation by people with disabilities. In addition, any government agency with 50 or more employees must also have an ADA transition plan. The transition plan details the steps needed for removing barriers and making the community more accessible. These plans must identify physical obstacles that limit accessibility, describe the methods for making the facilities more accessible, specify a schedule for each year of the transition period, and indicate the responsible official for plan implementation. Because sidewalks can potentially be barriers for people with disabilities due to slope, obstructions, width, gaps, or other elements, they are required to be included in self-evaluations and transition plans.

When the Met Council first surveyed local agencies in 2018 (28 years after the ADA became law), 46% of agencies had a transition plan, and 40% were in the process of creating one. In 2018, a qualifying requirement was added to the Regional Solicitation for applicants to have an adopted ADA transition plan or self-evaluation to prompt agencies to meet this longtime need. According to the second survey done by the Met Council in 2021, 88% of agencies reported having a transition plan, and 9% were in the process of doing one. Having a plan is just one step toward transitioning to a transportation system that is fully accessible to everyone. Removing the barriers helps provide access to all.

MnDOT's approach to ADA and designing with disabilities in mind

The Federal Highway Administration created a map of state Transportation Departments' ADA transition plans and inventories in 2023 to help these departments and the public better understand the purpose of the plans. The Federal Highway Administration notes that federal funding in the Bipartisan Infrastructure Law can help accelerate implementation of these plans toward more accessible transportation systems.

In Minnesota, MnDOT is committing to achieving substantial compliance with the ADA on its system no later than 2037. Progress on accessibility improvements on the state system are tracked not only through MnDOT's performance dashboard for Minnesota GO but also through the state's Olmstead Plan, which is designed to help the state "to provide individuals with disabilities opportunities to live, work, and be served in integrated settings."

Guidelines and resources on ADA planning and implementation

A casebook of success stories on Creating High-Quality ADA Transition Plans for the Pedestrian Environment was released in 2023 by the Great Lakes ADA Center and the University of Illinois -Chicago. It outlines several key elements of successful implementation of ADA transition plans by local agencies. Among these elements are "having a specified target for achieving barrier removal" and "monitoring progress yearly." MnDOT's example of reporting annually and having a target date of 2037 for compliance is one the rest of the region should follow to ensure we are better meeting the needs of people with disabilities. The time horizon of this plan (year 2050) comes 60 years after the adoption of the ADA, and local agencies should strive for accessible networks no later than 2050.

In 2023, the Public Right of Way Accessibility Guidelines Final Rule was published by the U.S. Access Board after decades of work. These guidelines became effective on Sept. 7, 2023. After the U.S. Departments of Transportation and Justice adopt the guidelines, they will become enforceable by law. The U.S. Department of Transportation issued its final rule for Public Right of Way Accessibility Guidelines for new construction and alteration of transit stops on December 18, 2024, which is effective beginning January 17, 2025. The Department of Justice has indicated plans for rulemaking on these guidelines beginning in 2025. Agencies can still follow the guidelines now to ensure their public right of way is more accessible to people with disabilities. MnDOT began implementing portions of the guidelines relating to curb ramps in 2010. Standards adopted by the Departments of Transportation and Justice must be consistent with the public access guidelines and not provide less accessibility than what was included in the U.S. Access Board's final rule. If agencies are not currently following these guidelines, it would be good stewardship to begin doing so rather than just following existing standards. The guidelines cover many areas relating to pedestrian travel, including pedestrian access routes along sidewalks and shared use paths, alternate pedestrian routes in construction areas, curb ramps, detectable warning surfaces, accessible pedestrian signals, pedestrian medians at crossings, and transit stops and shelters.

Role of universal design in meeting the needs of all ages and abilities

The ADA is just the baseline of the legal minimum required for people with disabilities. Ensuring ADA compliance doesn't ensure a transportation facility fully meets the needs of all users, including all people with disabilities. For example, the existing guidelines don't fully address the needs of people with cognitive or sensory disabilities.

To truly meet the needs of all ages and abilities on our transportation system, the region must also think beyond minimum compliance toward universal design. Universal design ensures that our environments, including the public right of way, are designed to work for everyone, regardless of age, ability, or size. Universal design includes seven principles[132]:

1. Equitable use – useful for people with different abilities
2. Flexibility in use – useful for a wide range of abilities and preferences
3. Simple and intuitive use – easy to understand, regardless of individual language, experience
4. Perceptible information – necessary information is effectively communicated
5. Tolerance for error – minimizes hazards or adverse consequences
6. Low physical effort – minimizes fatigue

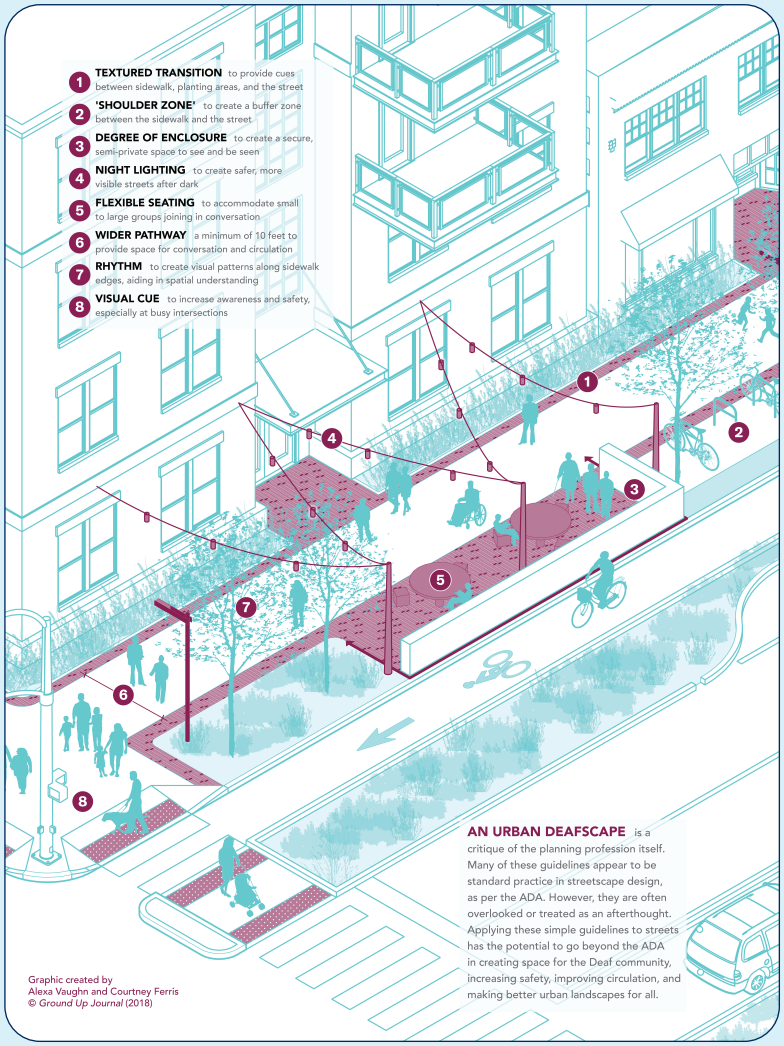
7. Size and space for approach and use – allows for differences in body sizes, position whether seated or standing, mobility

Universal design elements can include:

- Wider sidewalks and paths to allow people to travel side by side
- Enclosed spaces for socializing or sensory processing
- Street trees and traffic calming to help minimize stress from vehicle noise
- Clearly defined and marked spaces, which can use color and texture for these distinctions
- Frequent seating, including options with arm rests to use to brace while sitting or standing up

Ongoing engagement with people with different

One example of what universal design could include for transportation and streets comes from work done by Alexa Vaughn and Gallaudet University on DeafScape and DeafSpace. Gallaudet University's DeafSpace Design Guidelines help architects and planners design the built environment so that it removes physical barriers for people who are deaf. Disabilities are created by environments designed without consideration of the wide range of potential needs. DeafSpace identified five areas where the built environment (with more emphasis on buildings) can create better spaces for those who are deaf, as well as others in the community. Alexa Vaughn applied DeafSpace to urban design and landscapes with DeafScape. Elements include wider walkways so that people who use sign language have enough space to communicate with each other, flexible seating in public spaces to adjust for needed lines of sight, and using textured transitions and visual clues to aid with orientation.



Vaughn, Alexa. "DeafScape: Applying DeafSpace to Landscape," Ground Up Journal 7 (May 2018): 102.

disabilities and needs can help ensure designs address the full range of needs.

Winter maintenance

Planning studies routinely identify the need for reliable and timely winter maintenance for pedestrian facilities. In addition, the ADA requires agencies to maintain pedestrian facilities in accessible conditions throughout the year with only isolated or temporary interruptions due to maintenance or repairs.[133] The region's Public Transit and Human Services Transportation Coordinated Plan from 2020 identified creating and maintaining accessible pathways and transit stops as one of the high priority needed strategies, with timely snow and ice removal as part of that needed work. The 2023 Transportation Needs in Daily Life study echoed this critical need.

The responsibility to do this critical maintenance is spread across many different partners, and agencies may address these needs in different ways. Some cities consider snow and ice removal for sidewalks to be the responsibility of adjacent property owners with enforcement done by the city, while some cities provide municipal clearance for pedestrian facilities. The Minnesota Department of Health provides case studies on options for this needed maintenance and impacts on public policy.

While the need for better winter maintenance is a common concern for people walking and rolling, there is less understanding of how different policies and practices across the region work effectively to address this need. Technology is often identified and developed for other modes of transportation, but it often has not been a priority for helping to support people walking and rolling. A 2023 research project done by MnDOT and the Local Road Research Board on Designing and Implementing Maintainable Pedestrian Safety Countermeasures identified recommendations for year-round maintenance considerations for other pedestrian infrastructure used in safety countermeasures such as crosswalks, curb extensions, medians with pedestrian refuge islands, and speed humps or tables. These recommendations included addressing designs that can be maintained in winter operations.

Safety

While this topic is covered in more detail in the Safety section of the Transportation Overview, this section discusses some highlights of how safety relates to pedestrians including the relationship to Safe System Approach and the findings from the Regional Pedestrian Safety Action Plan.

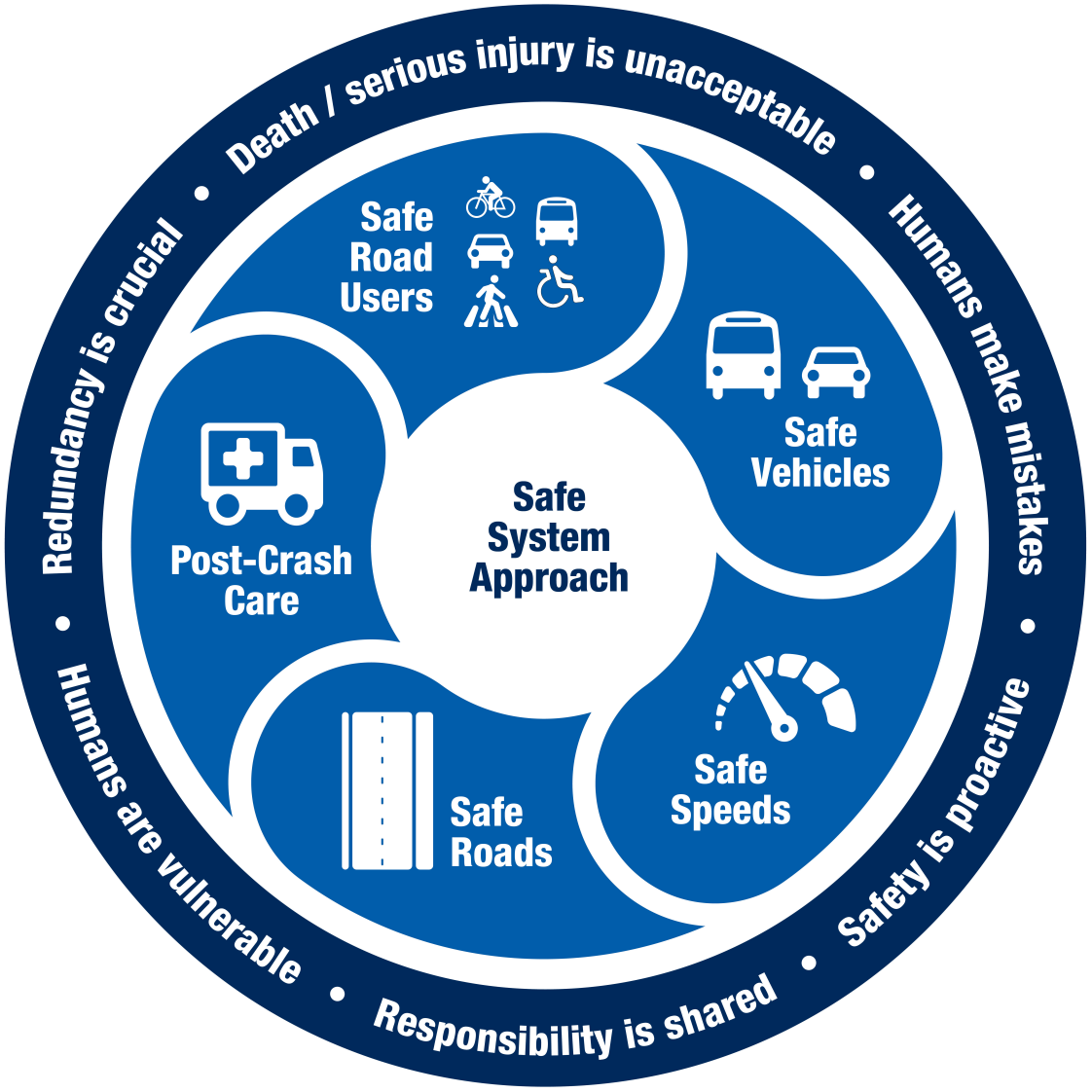
Safe system and pedestrians

The Safe System Approach is discussed more fully in the Safety section of the Transportation Overview. Crash risks are addressed through the five elements of the Safe System Approach. This approach, promoted by the USDOT, is an important shift in safety planning and implementation. It provides a more holistic approach to addressing safety in systems rather than as individual problems or solutions.

The principles that humans make mistakes and are vulnerable are a key aspect of the Safe System Approach. This approach recognizes that it is unrealistic to expect perfect human behavior to eliminate deaths and serious injuries from traffic crashes. We need redundancy in our system so that when mistakes happen,

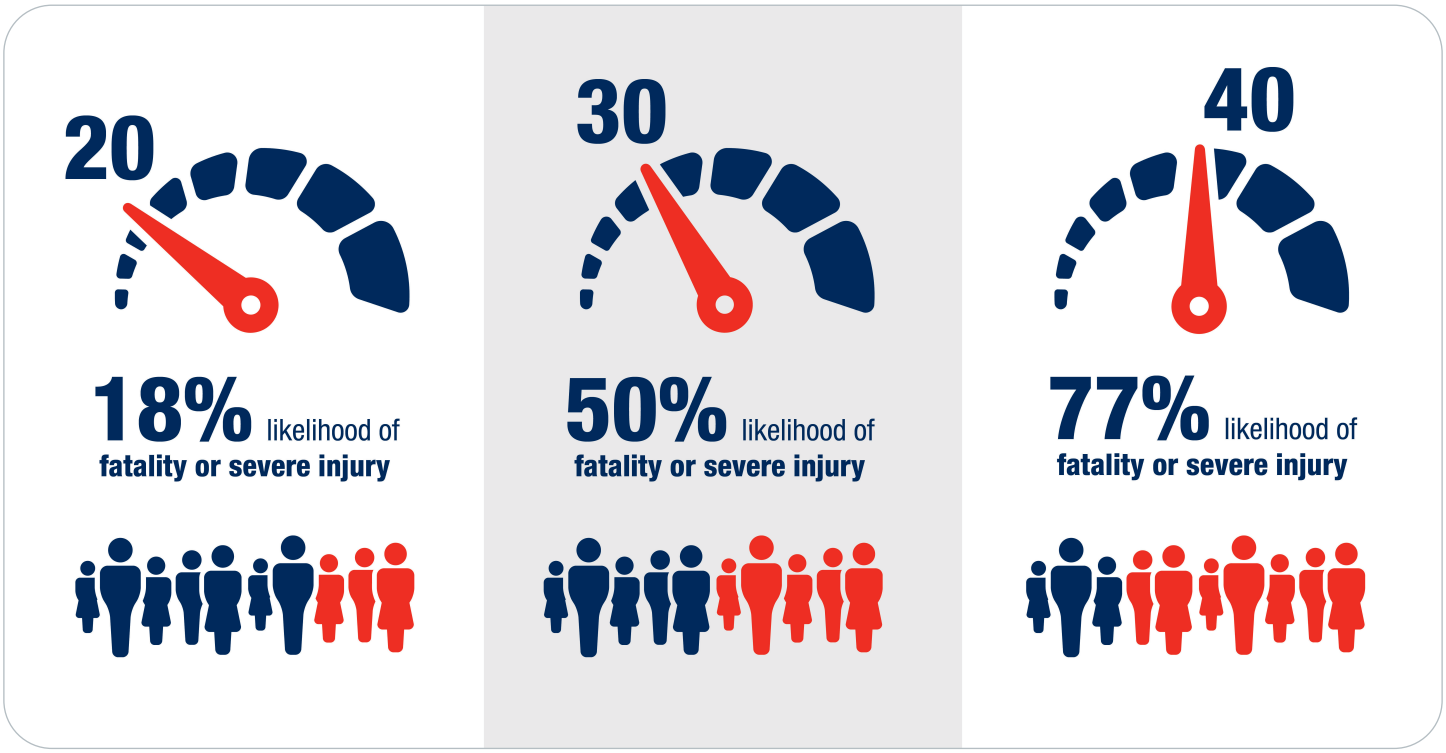
people don't pay with their lives or future abilities. This is an especially important concept when planning for pedestrians and their safety. We need to address systemic issues rather than individualize responsibility. This means, for example, ensuring the transportation system is sufficiently lighted and driver speeds are slow enough to support the visibility of people walking and rolling, rather than expecting everyone walking and rolling to make certain clothing choices like wearing brighter colors. While responsibility is shared among governments, industry, other stakeholders, and travelers on our transportation system, not all people have the same impacts on outcomes. Drivers of vehicles and people walking don't share the same level of impact in the system.

Figure 11.2: Safe System Approach Principles and Elements [134]



Recognizing the role of speed in a safe system is another important distinction with this approach, especially with pedestrians. Vehicle speed is one of the crucial factors in the likelihood that a pedestrian will die or be seriously injured if they are hit by a driver. The Safe System Approach includes the principle that human bodies have inherent limits on the impacts they can absorb in a crash. The transportation system needs to be designed and operated in a way that focuses on these limits to eliminate deaths and serious injuries. The safer roads and safer speeds elements include designing roads to promote safer speeds, mitigate human mistakes, and facilitate safe travel by the most vulnerable users, including pedestrians. Traffic calming elements for roadways remain an important ongoing strategy to help counter the physics of crashes with drivers of vehicles and pedestrians.

Figure 11.3: Effect of speed, in miles per hour, on pedestrian risk



In the United States, vehicle sizes, weights, and designs have changed in the past decade in ways that are detrimental for pedestrian safety. Increased hood heights and bluntness change how and where a pedestrian is impacted in a crash, potentially leading to more severe outcomes. This issue is also briefly discussed in the safe vehicles section of the healthy and safe section of the Transportation Overview. The policies and actions also include an action to look at local options to address increased vehicle weights and sizes.

Findings from the Regional Pedestrian Safety Action Plan

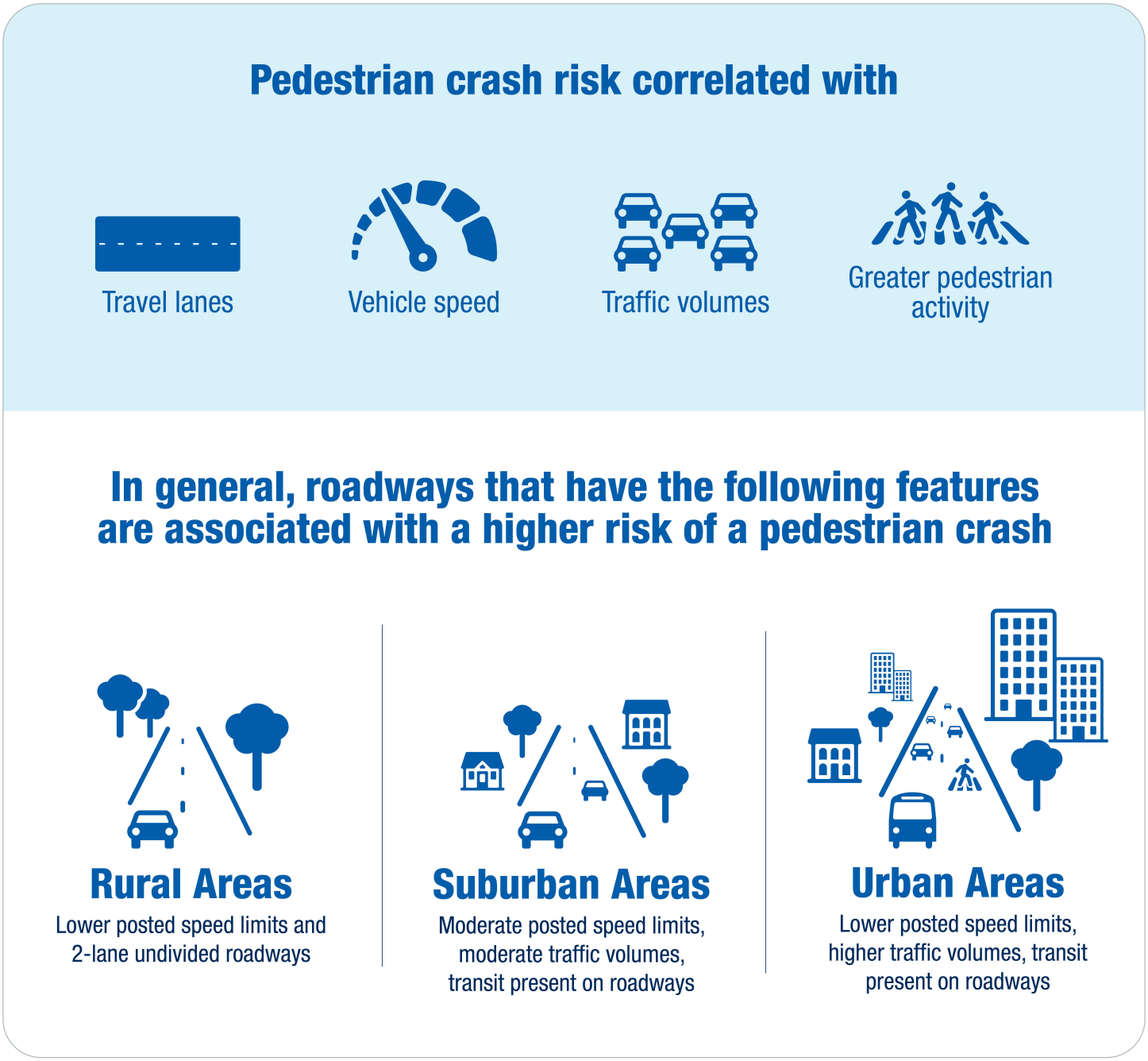
In 2022, the Met Council completed a Regional Pedestrian Safety Action Plan. The plan analyzed pedestrian crash trends and risk factors for all roads in the region, with an emphasis on fatal and serious injury crashes, and a systemic safety analysis to identify risk factors. Other previous safety planning work for MnDOT and counties focuses solely on the systems each agency maintains; this study was a holistic look at the region. A pedestrian safety measure was added to three of the roadway categories in the Regional Solicitation based on the findings of the analyses done in this project.

Key findings from the historic crash data analysis for 2016-2019 included:

- Pedestrian safety is an issue throughout the region. More crashes occurred in urban areas (2,287 crashes, of which 15.6% were serious injuries or fatal), while a greater percentage are severe in rural areas (68 crashes, of which 47.8% were serious injuries or fatal). The significant percentage (70% for all pedestrian crashes and 57% for severe crashes) in urban areas demand attention, and the higher severity in rural areas also needs action.
- Fewer than 25% of all intersections are within 500 feet of a transit stop, yet nearly 80% of fatal or serious injury intersection crashes were near a transit stop.
- More crashes and the most severe crashes happened at intersections with a signal (1,413 crashes, of which 16% were serious injuries or fatal).
- There was no discernible pattern of youth pedestrian crashes happening near schools that was disproportionate in frequency or severity.
- Black and American Indian people are disproportionately killed while walking. (14% of pedestrians killed were Black, compared to being only 9.6% of the region's population. 2.3% of pedestrians killed were American Indian, compared to being only 0.48% of the region's population.)
- Neighborhoods with higher percentages of people of color, people with disabilities, and households with lower incomes experience higher prevalence of pedestrian crashes, including fatalities and serious injuries. These findings may be linked to exposure, but they closely mirror historic patterns of disinvestment and racially biased lending practices.

The systemic risk analysis key findings are illustrated in Figure 11.4.

Figure 11.4: Pedestrian crash risk findings



Because pedestrian count data is not widely available throughout the region, the project used proxies to understand where people would most likely be walking. The systemic analysis identified locations where there is a higher risk of a pedestrian crash.

The plan also provides countermeasure resources for partners to use to identify the best infrastructure changes to address pedestrian safety in their communities.

The Met Council is developing a follow-up plan that will be finalized by the end of 2024. This Regional Safety Action Plan focuses on vehicle crashes and bicycle-vehicle crashes. However, it will also include identification of high-injury streets in the region for pedestrians, building on analysis that was done in the pedestrian plan.

Analysis done as part of the annual target setting for the safety performance measures shows that pedestrian fatalities and serious injuries have increased since 2020, underscoring the need for pedestrian safety improvements.

MnDOT Vulnerable Road User Safety Assessment

In 2023, MnDOT completed a federally required Vulnerable Road User Safety Assessment for the state. This assessment is required by the 2021 Bipartisan Infrastructure Law to be done by state departments of transportation every five years. When compared to the state, the region has a higher percentage of crashes that involve these road users (which also includes bicyclists). The report notes that of all types of road users, "Pedestrian crashes are the most likely to result in a fatality or serious injury."[135] The vast majority – "approximately three-fourths" – of pedestrian crashes with injuries in the state happen in this region, which has approximately 55% of the state's population.



Pedestrian Plan and Investment Direction

This section includes considerations for local plans in addressing needs for walking, guidance and factors in regional funding decision-making, and funding programs available for meeting pedestrian infrastructure needs.

Planning for pedestrians

Comprehensive plans should address pedestrian needs

Local comprehensive plans should address the needs of pedestrians for transportation. Often these plans may have a more recreational focus on parks, yet transportation needs of people walking and rolling cover the whole community. The necessary planning for pedestrians can be done within the comprehensive plan or as a distinct pedestrian, active transportation, or multimodal plan that is adopted as an addendum to or in addition to and in alignment with the comprehensive plan.

Common elements for pedestrian planning, in addition to general planning elements, include:

- Establish existing conditions with data.
    - Self-evaluations done for the ADA can contribute to this baseline data. Although the ADA does not require sidewalks, sidewalks must meet ADA requirements where they exist.
    - Existing conditions should also include:
        - Safety and crash data
        - Identification of key destinations
        - Existing network deficiencies
- Prioritize actions to take with policies, programs, and projects. This may include:
    - Prioritized pedestrian networks or high-priority gaps to address
    - Supportive land use and zoning changes that are needed, including pedestrian overlay districts to support design for more pedestrian-oriented environments
- Decide how to monitor progress and accountability in plan implementation.

Complete Streets

Complete Streets describes an approach to transportation planning, design, construction, maintenance, and operations that considers the needs of all potential users of all ages and abilities as they travel along and across roads and through intersections. Potential users include, but are not limited to, pedestrians, bicyclists, electric scooter riders, transit riders and transit vehicles, freight trucks, emergency vehicles, and drivers. Adopting and implementing local Complete Streets policies at the city or county level benefits all travelers

and is particularly impactful for pedestrians. Complete Streets also supports a Safe System Approach through implementation for safer roads and safer speeds.

As a resource, the National Complete Streets Coalition routinely reviews Complete Streets policies nationally and publishes the best policies along with the elements of a strong policy framework. The main elements of a strong Complete Streets policy, according to this framework, include:

1. Establishes commitment and vision
2. Prioritizes underinvested and underserved communities
3. Applies to all projects and phases
4. Allows only clear exceptions
5. Mandates coordination with government departments, partner agencies, and private developers
6. Adopts excellent design guidance
7. Requires proactive land-use planning
8. Measures progress
9. Sets criteria for choosing projects
10. Creates a plan for implementation

In future planning work, the Met Council plans to develop a Complete Streets typology that will develop a guide for regional transportation partners to implement Complete Streets elements in their projects. This work will provide the region with recommended actions for incorporating and incentivizing Complete Streets elements in its project scoping and selection processes. Typology can be thought of as an overlay on functional classification, describing Complete Streets contextualized by land use and the functions of different mode choices.

Pedestrian project selection – regional investment guidance and key factors

Baseline requirements

All public agencies must have a current ADA self-evaluation that covers the public rights of way for transportation, as required under Title II of the ADA. Agencies with 50 or more employees must also have a transition plan, not just a self-evaluation. Public agencies that do not meet this requirement are ineligible to apply for Regional Solicitation funding in any category. (Organizations that are not public agencies are not subject to Title II of the ADA and are exempt from this requirement.)

The Transportation Policy Plan requires that these transition plans are reviewed and updated regularly with a goal of full system compliance of removal of barriers no later than 2050. Earlier compliance is encouraged and supported. These plans assist with transitioning to barrier removal in compliance with the ADA. The plan's horizon of 2050 will be six decades after the passage of the ADA in 1990. ADA requirements are the minimum that should be done, while policies in this plan call for the region to fully meet the needs of people with disabilities (discussed more in the universal design section above). To reach this plan's goals and objectives of eliminating injustices and fully meeting the needs of people who have a disability, the region will need to work to address the minimums that have not yet been achieved after decades.

Agencies must also affirm that the owner or operator of a facility ensures it is maintained year-round for all modes, including pedestrians. The Federal Highway Administration clarifies that day-to-day maintenance responsibilities under the ADA include keeping the path of travel on pedestrian facilities "open and usable for persons with disabilities, throughout the year. This includes snow removal… as well as debris removal, maintenance of accessible pedestrian walkways in work zones, and correction of other disruptions."[136] The Federal Highway Administration's Guide for Maintaining Pedestrian Facilities for Enhanced Safety provides more information on year-round maintenance.

Prioritization factors

There are important prioritization factors for regional investments in the pedestrian system. These factors, described below, include safety, connections to transit and destinations, barrier removal, continuity across communities, demand, equity, and Complete Streets. These factors are not listed in order of priority, which is generally determined through investment processes.

Safety

Safety is a key priority for the region, with an emphasis on reducing fatal and serious injury crashes while maintaining and improving the convenience and comfort of walking and rolling. Investments should prioritize countermeasures for pedestrian safety that address crossing streets, not just traveling along them. Prioritization factors should also address motorist speeds, which are critical for pedestrian safety.

Evaluation criteria should prioritize consideration of risk factors for pedestrian exposure and location characteristics based on data analysis, such as what was done in the Regional Pedestrian Safety Action Plan. Addressing locations identified as having historical fatal and serious injury crash challenges or documented high risk areas should be considered in addition to risk factors. Only focusing on historical crash locations is a limited approach to proactively addressing safety on a systemic level. Projects should prioritize improvement locations based on close proximity (in other words, within 500 feet) to known pedestrian generators, such as transit stops, schools, community centers, housing (especially multifamily or affordable), shopping, dining, or entertainment destinations.

The Regional Safety Action Plan update, expected to be complete in 2024, will identify high-injury streets for pedestrians, in addition to bicyclists and motorists, on all roads in the region with the exception of freeways. This high-injury street identification may be used to prioritize investments along with identified risk factors for systemic improvements across the network.

Connections to transit

Independent pedestrian projects should prioritize facilities and improvements that connect to transit service. This includes:

- Pedestrian safety-focused improvements with a focus on safer crossings within 500 feet of an existing transit stop (whether local bus stops, or bus rapid transit or light rail stations). Almost 80% of severe (fatal or serious injury) intersection crashes for pedestrians between 2016 and 2019 were within 500 feet of a transit stop.
- Connecting to existing or potential high-frequency transit service.
- Transit-oriented developments around existing or programmed transitway stations.
- Existing transit stations, centers, or frequent service park-and-ride locations that are within reasonable walking distance to residential development, activity centers, or metropolitan job concentrations such as downtowns and the University of Minnesota.

The Work Program for this plan includes a project, Safer Connections to Transit, to better understand the relationship between pedestrian safety and transit, including strategies to improve the relationship.

Connections to destinations

Independent pedestrian projects should prioritize connections with job concentrations at different levels as identified in the Imagine 2050 Regional Development Guide. These job concentrations include other destinations important for people to be able to reach by walking, including grocery stores, libraries, schools, government services, shopping, and daily needs. Pedestrian facilities done as part of larger transit or roadway projects should ensure the work facilitates these connections.

Barrier removal

Projects that are specifically identified as priorities in a community's ADA transition plan should receive favor in consideration for removing barriers. Barriers can include, but are not limited to, pedestrian facilities that are not wide enough, are obstructed by utility poles or other items, have unacceptable slopes or conditions, or lack curb ramps with detectable warning surfaces. Projects that demonstrate best practices in design for use by people of all ages and abilities should also be prioritized. Highways and gaps in pedestrian networks are also barriers.

Continuity and connections across communities

Prioritization should favor projects that improve continuity and/or connections across communities. Creating more consistent and continuous facilities for walking and rolling improves access and the overall experience.

Complete Streets

Roadway projects should include elements that address all users of the transportation system, including people who are walking and rolling, no matter their ages or abilities. Roadway projects should emphasize safety and barrier removal for pedestrians. For roadway projects, independent pedestrian projects, or facilities shared with bicyclists within employment centers and connections to high-frequency transit service, the projects should emphasize support for compact, mixed-use, transit-oriented development.

Demand

Just like vehicle-count data, counts of pedestrians traveling on the system are important for baseline data. Having reliable data on traffic volumes and patterns for pedestrians is important for informing planning and engineering done at all levels. This data can be used to address traffic safety, health, economic development, and environmental goals.

However, counts of people currently walking or rolling are not enough to determine pedestrian demand. As an example, in locations where pedestrian facilities are not provided or are insufficient, counts will not reflect the need. To better assess pedestrian demand, tools can be developed to identify areas where pedestrian needs may be greater. MnDOT developed the Priority Areas for Walking Study as part of the Statewide Pedestrian System Plan to highlight areas that are important for walking. This work was based on the same unit of analysis that MnDOT also uses in its publicly available Suitability for the Pedestrian and Cycling Environment (SPACE) tool, which helps identify, select, and prioritize pedestrian and cycling facility projects. Both processes use an index of 19 social and demographic factors to calculate scores for half-mile hexagons throughout the state. Higher scores indicate latent demand for pedestrian and bicyclist facilities. This tool may be useful at the regional and local levels. Future Met Council work will look at this MnDOT tool and other options for estimating latent demand for pedestrians throughout the region. Other factors, such as land use, can help identify latent demand.

Equity

This is generally addressed separately when prioritizing projects, but equity is especially important to consider for pedestrians because of the disparities found in fatal and serious injury crashes in the data reviewed in the Regional Pedestrian Safety Action Plan. These disparities include higher rates of fatal or serious injury crashes for Black or American Indian residents and people with disabilities.

Funding programs

Pedestrian infrastructure can be funded from programs at the federal, state, regional, and local levels.

Federal programs

The 2021 Bipartisan Infrastructure Law created new federal funding programs for walking facilities and improved safety for pedestrians, in addition to continuing existing programs that provide funding for pedestrian infrastructure.

Safe Streets and Roads for All

This new federal discretionary funding program provides $5 billion in grants over a five-year period from 2022 through 2026 to prevent roadway deaths and serious injuries. The program funds planning and demonstration activities and implementation grants to carry out activities identified in a comprehensive safety action plan. In the initial rounds of funding in this program for 2022 through 2024, local jurisdictions in the region received grants directly from the federal government to create comprehensive safety action plans, including Hennepin County and the cities of Apple Valley, Bloomington, Brooklyn Park, Columbia Heights, Cottage Grove, Eagan, Edina, Elk River, Fridley, Hastings, Hopkins, New Brighton, St. Louis Park, Shakopee, West St. Paul, and Woodbury. The cities of Minneapolis and Saint Paul have received grants from this program for implementation of safety improvements.

Reconnecting Communities and Neighborhoods Program

This federal discretionary funding program combines two grant programs: the Reconnecting Communities Pilot and the Neighborhood Access and Equity program. These direct federal grants can be used for building or improving Complete Streets, as well as other activities focused on connecting communities who have been cut off from economic opportunities by transportation infrastructure such as highways. To date, the region has received grants from this program for planning for a land bridge and African American Cultural Enterprise District in the Rondo neighborhood of Saint Paul and for planning for Olson Memorial Highway/Minnesota Highway 55 in Minneapolis to reconnect communities along the route.

Highway Safety Improvement Program

This existing federal formula funding program is continued in the Bipartisan Infrastructure Law at increased funding levels and can be used for pedestrian safety improvements, among other modes. The focus of this funding program is to reduce and prevent fatal and serious injury crashes on all public roads. This funding is allocated to MnDOT, and the region's process is done in partnership with the Met Council and the Transportation Advisory Board (TAB). Applications are submitted to MnDOT, who runs the selection committee review of applications. The TAB and Met Council approve projects to receive this funding.

Federal law requires that states where pedestrians and bicyclists are more than 15% of all traffic fatalities use a minimum of 15% of their highway safety improvement funds for infrastructure improvements for the safety of these modes. This federal requirement is applied on a statewide, rather than a regional, basis. However, it is important to note that the 2024 solicitation for this program indicated 24% of the fatal and serious injury crashes in the region from 2018 through 2022 involved a pedestrian. Action 10G in the Policies and Actions chapter calls for the region to ensure that it is distributing funds for pedestrian and bicyclist safety in proportion to the percent of all pedestrian and bicyclist fatalities and serious injuries.

State programs

Safe Routes to School

Minnesota has used state funds from the general fund for Safe Routes to School since the state legislature created this program in 2012. This program has funded both noninfrastructure programs and infrastructure projects to support students walking and biking to school. This state funding is in addition to Safe Routes to

School being an eligible activity for federal funding as part of the Transportation Alternatives set-aside of the Surface Transportation Block Grant program.

Statewide Health Improvement Partnership (SHIP)

Created in 2008 by the Minnesota Legislature, this state program administered through the Minnesota Department of Health provides $35 million every two years to support critical primary prevention activities led by local public and Tribal health partners. Active living is one of the emphasis areas for locally driven solutions to help prevent chronic diseases, and communities can use this funding to help make it easier to walk and bike.

Active Transportation Program

The Active Transportation Program was created by the legislature in 2018 and initially funded with $5 million in 2021. This competitive grant program is administered by MnDOT to improve conditions for walking, biking, and rolling. Grants are provided to local agencies for active transportation technical planning assistance, education and encouragement programs, engineering studies, and infrastructure investment. In 2023, for the first time, MnDOT did not allow metro-area projects to apply for this funding.

Regional programs

Regional Transportation Sales and Use Tax for Active Transportation

The 2023 Minnesota Legislature created a new revenue source for the region's transportation system with a three-quarter-cent sales tax that began in the region in October 2023. The proceeds from this sales tax will be split between the Met Council, which will receive 83%, and the seven counties in the region, which will receive 17% (referenced in the other state and local funds section). For the Met Council's portion, 5% will be for active transportation (in other words, walking, biking, and rolling). Approximately $24 million is estimated to be available for active transportation projects annually from the Met Council's share alone. The Met Council's funding will be programmed through the TAB and must meet the requirements outlined in state law.

Regional Solicitation

The Met Council, through the Regional Solicitation process, programs federal transportation funds from different programs, including the Surface Transportation Block Grant program, the Congestion Mitigation and Air Quality program, and the Transportation Alternatives Program that is part of the Surface Transportation Block Grant Set-aside Program. The Regional Solicitation process currently includes three primary application categories: roadways, including mode-choice elements; transit and travel demand management projects; and bicycle and pedestrian facilities. Pedestrian projects can be funded from any of these federal programs within the limitations of the functional classification requirements for roadways.

Current federal law makes about $250 million available through the Regional Solicitation every two years. Bicycle and pedestrian facilities applications historically have received a range of 9% to 20% of the total available funds (around $22 million to $50 million every two years). Facilities for pedestrians may be included in the three application categories for bicycle and pedestrian facilities: Safe Routes to School infrastructure projects; pedestrian facilities; and multiuse trails and bicycle facilities (since multiuse trails serve both

pedestrians and bicyclists). Facilities for pedestrians may also be funded as part of roadway and bridge projects that are funded in separate application categories. The Regional Solicitation evaluation work program item will direct how pedestrian projects are funded starting with the 2026 Regional Solicitation.

Carbon Reduction Program

The region received federal Carbon Reduction Program formula funds that can be used for pedestrian facilities. Specific funding categories and criteria for this program will be determined through the Regional Solicitation evaluation Work Program item to inform the 2026 Regional Solicitation. Current federal law makes about $14 million available through this program, which provides funds for five years from 2022 through 2026.

Federal law requires each state to develop a State Carbon Reduction Strategy to support efforts to reduce carbon dioxide emissions from on-road highway sources in consultation with metropolitan planning organizations in the state. MnDOT published a report documenting the state's strategies and goals in November 2023.

Other state and local funds

State highway funds pay for some pedestrian facilities on the state highway system, often as part of larger roadway projects. MnDOT plans specifically for accessible pedestrian infrastructure as a category within the State Highway Investment Plan, among others that address pedestrian needs.

Local funds from counties, cities, and park agencies are also critical to development of pedestrian facilities. These funds are typically provided from property taxes but may also come from sales taxes. Like MnDOT, counties and cities may also use their roadway state-aid revenues from the state gas tax to fund pedestrian facilities as part of overall roadway and bridge reconstruction projects on their state-aid roads.

Counties will also have funds available from the Regional Transportation Sales and Use Tax for Active Transportation that can be used for active transportation (walking, biking, and rolling) projects. The legislature also required at least 41.5% of the counties' share of the sales tax to be used for active transportation projects or safety studies. This is a significant new funding source for projects focused on people walking, biking, or rolling that will be programmed at the local level.

SECTION 12: TRAVEL DEMAND MANAGEMENT INVESTMENT PLAN

Introduction

The ways people and goods travel are based on three primary factors: the supply of transportation infrastructure and services, the location of origins and destinations based on land use, and travel demand. These are influenced by personal factors like costs, travel time and reliability, comfort and safety, awareness, and the goods, people, or other cargo that are traveling, in addition to the culture that drives values in a region. The other 2050 Transportation Policy Plan investment chapters focus on the supply of transportation infrastructure and services, with investment plans for things like highway lanes, transit routes, bicycle paths, and freight routes. Imagine 2050, the regional development guide, includes land use policies and actions that focus on the location and intensity of development patterns, including their relationship to regional systems like transportation. The remaining factor, travel demand, is the focus of this chapter.

Figure 12.1: Factors that influence how people and goods travel



Travel Supply

Available infrastructure and its capacity

Roads (number of lanes), transit (routes/frequency), bike and pedestrian infrastructure (lanes/trails/sidewalks), parking (surface/garage/park and rides), vehicle availability (personal or shared)

Land Use

Distance between destinations

Where people live, work, attend school, socialize, and shop

Travel Demand

Factors travelers consider when choosing how to travel

Financial costs (gas/parking), travel time costs (real and perceived), time of day, comfort/ease of use, knowledge and information about travel options, passenger and cargo needs

Travel demand reflects all the circumstantial factors that influence how and when travel occurs, such as financial cost, travel-time cost, comfort, knowledge of options, and passenger and cargo needs. While these factors can be influenced by investment in transportation infrastructure or services, they can also be heavily influenced by travel demand management investments. A foundational principle of travel demand management is that people driving alone in personal vehicles is the most inefficient transportation option for achieving the region's goals and objectives, and travel options that are more efficient should be encouraged.

Travel demand management is a set of strategies that support the most sustainable and efficient use of the transportation system by making personal travel options more flexible, clear, or convenient.

- Sustainable and efficient in terms of costs, time, effort, and energy.
- Flexible: There are multiple options so that travelers can choose what they need for that type of trip at that specific time.
- Clear: Information about how to use options is easy to understand.
- Convenient: Options are easy to access.
- Safe: Options are comfortable, welcoming, and safe for all.

Figure 12.2: Travel demand management desired outcomes



What makes travel demand management unique in the 2050 Transportation Policy Plan is that travel demand management investments can rise above all modes of travel and are not infrastructure investments, but rather operations or planning investments that support the efficient use of infrastructure. Table 12.1 includes example strategies linked to which travel demand factor they can influence. There may be cases where personal preference is also a deciding factor in travel demand, including cultural influences. Travel demand management strategies will have a more difficult time influencing these personal preference behaviors, but cultural influences can shift over time.

Table 12.1: Examples of how travel demand management strategies can influence travel demand factors

Factor	Elements	Strategy examples
Financial cost	Gas, parking, transit pass	• Reduced fare transit passes • Parking cash-out programs • Financial incentives
Travel-time cost	Actual travel time, perceived delays, or uncertainty	• Travel-time information and real-time updates • Trip-planning tools • Congestion data and maps • Construction impacts and detours
Comfort	Safety, ease of understanding, welcoming	• Travel option guides, how-to brochures • Travel and safety training • Wayfinding • Sense of place
Knowledge of options	Awareness of travel options, knowledge of how to find options and plan trips	• Targeted employer outreach • Unified brand and supporting communications materials, website
Passenger and cargo needs	Traveling with people and kids, need to transport goods	• Home delivery services • Carpool incentives

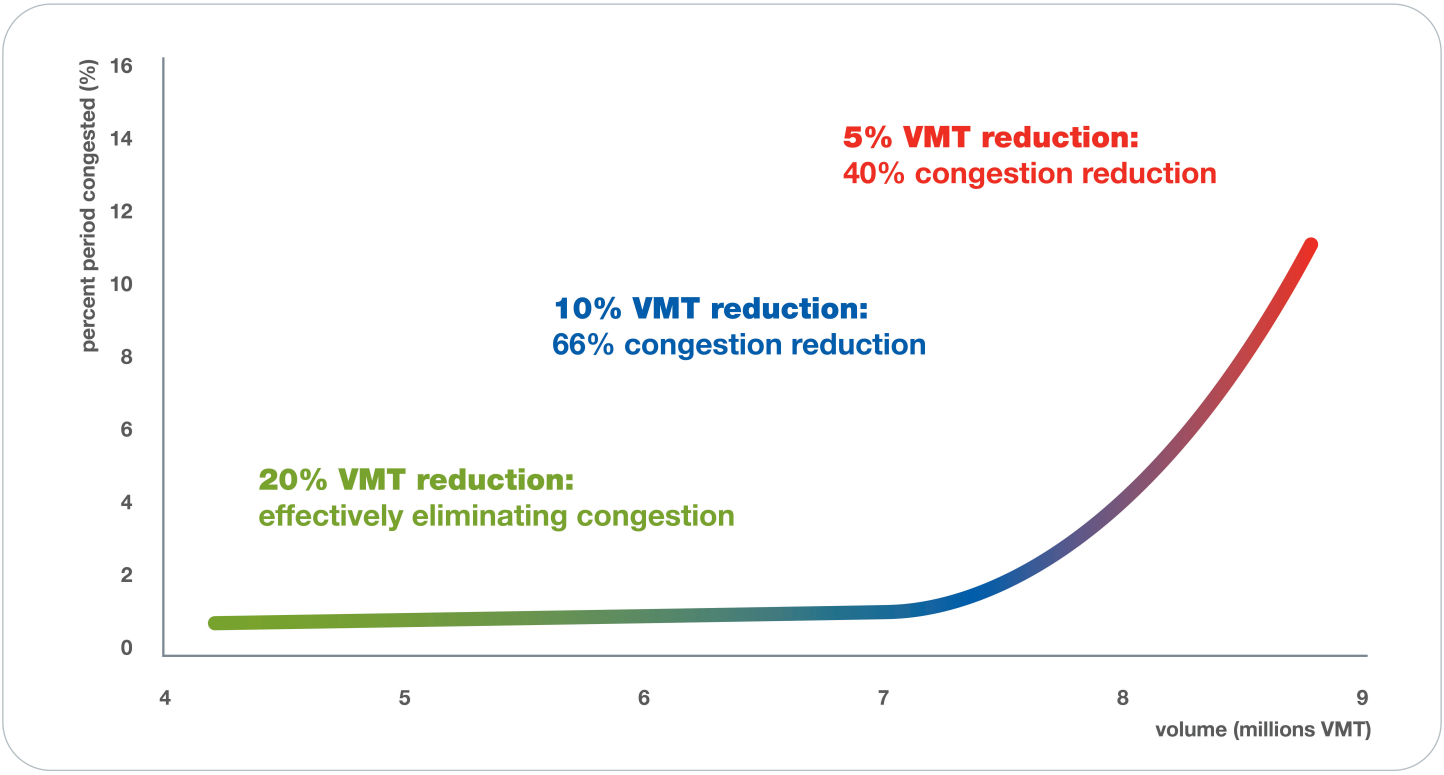
Travel demand management provides regional value

Travel demand management is an important contributor to achieving regional goals and objectives. Providing people with affordable, attractive, comfortable, and safe travel options is what keeps the region dynamic and resilient and is a major piece of creating equity and reducing our contributions to climate change.

The COVID-19 pandemic and the unanticipated widespread implementation of remote work by employers illustrated how travel demand management can reduce travel demand and impact the performance of the transportation system. A MnDOT research project[137] demonstrated that because highway congestion only occurs for short periods of the day on most of the system, a small reduction in travel demand can nearly eliminate highway congestion in the region.

Figure 12.3 shows that a 5% reduction in regional vehicle miles traveled during the afternoon peak is associated with an estimated 40% reduction in regional congestion. Similarly, a 15% reduction in regional vehicle miles traveled is associated with an estimated 84% reduction in regional congestion. Reducing an overcrowded transportation system can be done by shifting the demand of a congested period to another time (either moving earlier or later), shifting the travel to a higher capacity or nondriving mode (for example, carpooling, transit, biking, or walking), or eliminating the trip altogether (for example, telework).

Figure 12.3: Relationship of vehicle miles traveled and congestion



Source: MnDOT Tipping Point research.

For many people, teleworking was an involuntary travel demand management strategy for vehicle-miles-traveled reduction during the pandemic, demonstrating that the potential of travel demand management to affect the regional system is substantial, but it has to proactively support people's needs rather than be imposed on people. The reduction in vehicle travel has many potential benefits beyond congestion reduction including:

- Reduced system maintenance from vehicle wear
- Reduced pollution from exhaust and vehicle parts that impact public health
- Potential for decreased serious injuries and deaths resulting from auto crashes
- Reduced emissions that contribute to global climate change
- Reduced societal transportation costs by reducing the need for auto ownership

The outcomes of travel demand management are also related to the reduced need to expand infrastructure to meet demand that only exceeds capacity for short periods of the day. This reduced need for infrastructure saves public money and environmental resources, and reduces impacts on neighborhoods that might be affected by construction projects.

Travel demand management relationship to plan goals

Travel, the movement of people and goods throughout the region, is an essential part of the region's economy and quality of life. However, too much travel demand for the same space at the same time can create pressure on the transportation system that reduces its effectiveness and performance. Travel demand that encourages driving can also create externalities that the region does not want, like pollution, noise, greenhouse gas emissions, and injuries and deaths. This plan has policies and actions to expand transportation system choices and lessen those harmful impacts to allow for growing travel demand, but those policies and actions alone will not achieve the region's goals and objectives. Travel demand management is another set of policies, actions, and investments that help the region achieve its goals and objectives by shifting how and when people travel while still helping them meet all of their daily needs.

The Met Council led a Regional Travel Demand Management Study in 2022-2023 that identified four goals and 15 objectives for travel demand management that can guide how the program contributes to regional goals and objectives, shown in Table 12.2.

Table 12.2: Regional Travel Demand Management Study goals and objectives (2023)

Regional TDM Study Goals	Regional TDM Study Objectives
Goal 1: Vehicle miles traveled and single-occupant vehicle trips are reduced because travelers view alternatives to single-occupant-vehicle travel as attractive, reliable, safe, and easy to use.	• Alternatives to single-occupant-vehicle travel feel inviting and safe for all users. • Trip-planning information (including ridesharing/microtransit/paratransit, transfers) is highly visible, easy to access and understand. • Alternatives to single-occupant-vehicle travel are coordinated, connected, and easy to navigate. • Alternatives to single-occupant-vehicle travel are cost competitive.
Goal 2: Regional and local transportation and land use policies and programs encourage demand for alternatives to single-occupant-vehicle travel.	• Travel demand management is effectively integrated in transportation and land development planning processes at the early stages. • Government plans, policies, and investments prioritize development that is connected to high-quality bicycle, pedestrian, transit networks. • The private sector (employers and developers) is incentivized and equipped to improve the availability, attractiveness, and quality of alternatives to single-occupant-vehicle travel. • Partners, including law enforcement agencies, are involved in campaigns to help travelers feel safe and comfortable using alternatives to single-occupant-vehicle travel.
Goal 3: Travel demand management programs, policies, and incentives are equitably focused and delivered.	• Travel demand management programs and policies address needs of historically underrepresented populations and vulnerable populations in an equitable manner. • Travel demand management programs include outreach to underserved communities to understand and address needs. • In addition to addressing the traditional peak-hour commute trip, travel demand management programs and policies are broadened to include off-peak and noncommute trips (essential trips).

Regional TDM Study Goals	Regional TDM Study Objectives
Goal 4: Travel demand management programs and services are coordinated and delivered consistently throughout the region and by all travel demand management service providers and partners.	• Travel demand management service providers and partners create consistent communications and expectations for travel demand management service users. • Travel demand management services are streamlined and consistently delivered regionally, but customized locally for different contexts (for example, rural, suburban, and urban). • Travel demand management programs and service performance are evaluated for effectiveness in meeting travel demand management goals and regularly monitored during implementation. • Travel demand management program funding is effectively leveraged to reduce the need for investments in additional roadway capacity.

The relationship between the travel demand management goals and objectives and the 2050 Transportation Policy Plan goals and objectives is shown in Figure 12.4.

Figure 12.4: How the travel demand management goals and objectives relate to the 2050 TPP goals and objectives



The following is a brief description of how planning for travel demand management supports the region's five goals.

Goal: Our region is equitable and inclusive

Travel demand management can be used as a tool to make travel options more affordable and accessible, and those efforts can be focused on certain populations. The Regional Travel Demand Management Study has a goal specific to equity to acknowledge this important opportunity to use travel demand management to balance out or at least not perpetuate inequities in transportation access and affordability. Equity must be centered in the frameworks that guide decision making for travel demand management policies and investments.

Goal: Our communities are healthy and safe

Safety and comfort are key factors in travel demand management because they are essential to travel but also can be an important barrier, both real and perceived, to some travel options that travel demand management is trying to encourage. Travel demand management can be an approach to addressing safety concerns through programs like traveler training, which aims to build the confidence of travelers to use new means of travel. Travel demand management is also fundamental to changing physical and mental health outcomes by reducing travel that contributes negatively to health and increasing travel that contributes positively to health.

Goal: Our region is dynamic and resilient

Travel demand management is an investment focused on travel options, and travel options are fundamental to the region's ability to respond dynamically to changing trends and needs. The region cannot remain a sustainable region without supporting different options that address varied consumer preferences. Providing travel options is also part of being resilient, both to a changing climate and to the challenges of maintaining the transportation system.

Goal: We lead on addressing climate change

One of the purposes for travel demand management is reducing vehicle miles traveled, which is a direct way to mitigate changes to the climate created by greenhouse gas emissions. Travel demand management can also be a means to encourage behavior change when impacts from climate change make the transportation system function worse during floods or heavy snow. Travel demand management can reduce the need for roadway expansion to address peak-period traffic congestion, which further induces inefficient land use patterns that lead to the growth of vehicle miles traveled. In 2023, the state passed new legislation identifying travel demand management as a greenhouse gas mitigation tool for highway projects that would increase vehicle miles traveled.

Goal: We protect and restore natural systems

A benefit of travel demand management is lessening the need to expand the transportation system, particularly expanded roadways. This can positively impact natural systems because transportation infrastructure is often a contributor to negative impacts on natural systems. Decreasing pavement can reduce run-off and water pollution, lessen disruptions of natural landscapes and habitats, and decrease the consumption of natural resources.

Travel Demand Management and community context

Travel demand management is not a one-size-fits-all approach. A perfect example is the current structure of the region's individual transportation management organizations. Of the four transportation management organizations, one is county-based, one is city-based, one is center-based, and one is corridor-based. Travel demand management can be more effective in places where the land use and development patterns are conducive to travel options and there are more travel options to support.

For example, in Urban and Urban Edge communities, travel demand management investments may focus more heavily on transit, biking, walking, and rolling options because their density of places and infrastructure better support those options. Suburban and Suburban Edge communities may emphasize other options like telework, carpooling, and vanpooling that are less dependent on dense development patterns. These communities may also focus their efforts on their densest centers rather than doing a community-wide approach. Examples might include shopping centers, transitway stations, or major new or redevelopment areas.

Comprehensive plans and local ordinances are effective ways to identify these focus areas. Local communities can identify focus areas that regional travel demand management implementers can then use to focus their efforts in a coordinated manner, rather than a top-down approach. As the region puts more travel demand management programs and frameworks into action, as described in this investment direction, there will be opportunities to better identify how actions relate to the underlying variety of community types, land uses, and built form. The Land Use Policy Plan also discusses approaches to guide land use and development in a way that supports travel demand management coordinated with the strategies in this investment plan.

Figure 12.5: Greater space efficiency of bus and bicycle travel

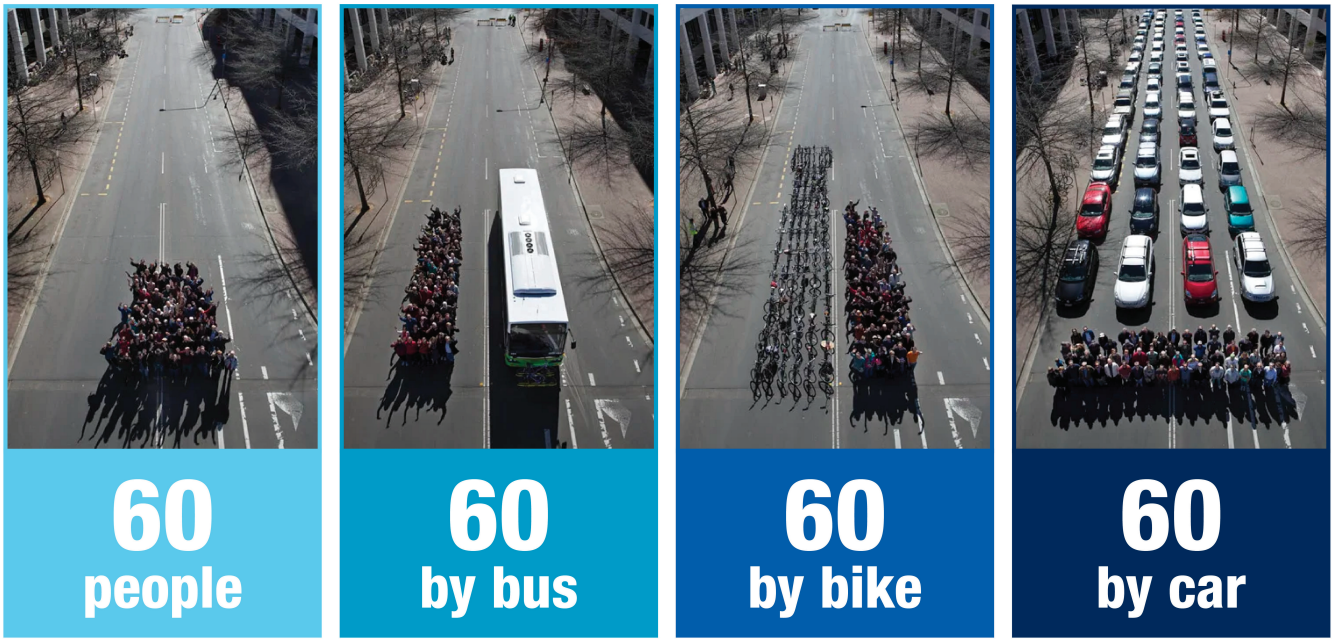


photo credit: Cycling Promotion Fund (CPF)

Travel Demand Management: Existing Conditions

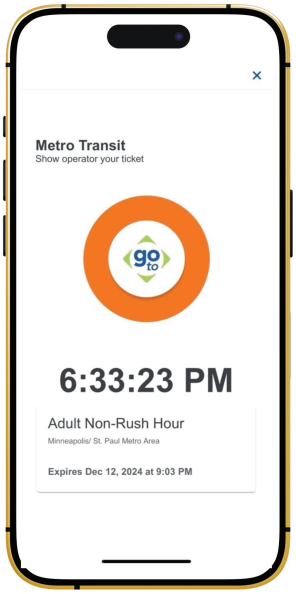
The Met Council partners with transit providers, counties, cities, the Minnesota Department of Transportation, and transportation management organizations to work on travel demand management. Transit currently plays an important role in travel demand management, particularly by providing more transportation system capacity in congested areas of the region or to destinations with difficult access.

The transportation management organizations and transit providers offer services that encourage the use of several types of public transit service, including biking, walking and rolling options, and other travel options like carpooling and telework. In addition, every two years the Regional Solicitation provides a funding opportunity for innovative travel demand management projects. Travel demand management funding helped Metro Transit develop a mobile app for fare payment, and transit information and transit providers are making progress in developing relationships with other complementary mobility services, like car share.

Travel demand management funding has also supported pilot projects like transportation management staff at various agencies, outreach and engagement and technology solutions for encouraging shifting away from single-occupant vehicles, and educational campaigns about travel choices. The travel demand management funding in the Regional Solicitation is unique in that it has typically supported a variety of nonprofits' efforts in addition to government agencies.

Figure 12.6: Regional Solicitation funds TDM projects

Regional Solicitation provides funding for innovative TDM projects that make it easier to take a variety of travel modes, like a mobile fare payment app for Metro Transit.



Roles

The various roles of implementing partners are described in the following sections. The region's implementing partners will need to coordinate with each other to advance the Travel Demand Management Investment Plan. There are additional roles that may not be described here that also play a role in travel demand management implementation, including roles for new partners as the program expands.

Met Council – Metropolitan Transportation Services

Metropolitan Transportation Services is the division of the Met Council that leads regional long-range transportation planning. This includes the development of the Transportation Policy Plan, administration of the congestion management process, and leading system studies on policy and investment. Travel demand management will be a consideration in all these activities.

The division prepares the list of projects selected for federal funding through the Regional Solicitation and a four-year Transportation Improvement Program, working in collaboration with the Transportation Advisory Board. The division is responsible for creating the travel demand management policy for the region, awarding grant funds, and appraising the success of travel demand management initiatives. The division has also led the last two regional travel demand management studies to inform strategic direction for travel demand management activities.

Metropolitan Transportation Services coordinates a regional vanpool program, Metro Vanpool, and other contracted transit services that are discussed in more detail in the Transit Investment Plan.

Met Council – Metro Transit

Metro Transit serves several important roles in the region's current travel demand management efforts. Related activities and responsibilities include Commuter Programs, the revenue and fare operations program, and the shared mobility program. Metro Transit's Commuter Programs serve employers, institutions, developers, and commuters with outreach and engagement, guaranteed-ride-home administration, and technical assistance. Commuter Programs currently functions as the administrator of the region's travel demand management program, promoting all transportation options that reduce single-occupant-vehicle travel to areas not served by a transportation management organization. They also manage the travel demand management customer relationship management system. Commuter Programs has managed subrecipient grants with transportation management organizations and other Regional Solicitation travel demand management funding recipients for the past few decades.

Metro Transit's revenue and fare operations program has developed several different transit pass programs, including reduced fares for seniors, youth, Medicare card holders, and residents experiencing low incomes, as well as pass programs for employers and their employees and students. Metro Transit's shared mobility program team coordinates with the growing industry of shared mobility providers and other emerging trends in transportation. Most recently, Metro Transit began a residential pass program that provides discounted or free transit passes to residents of multi-tenant properties when the property manager joins the program.

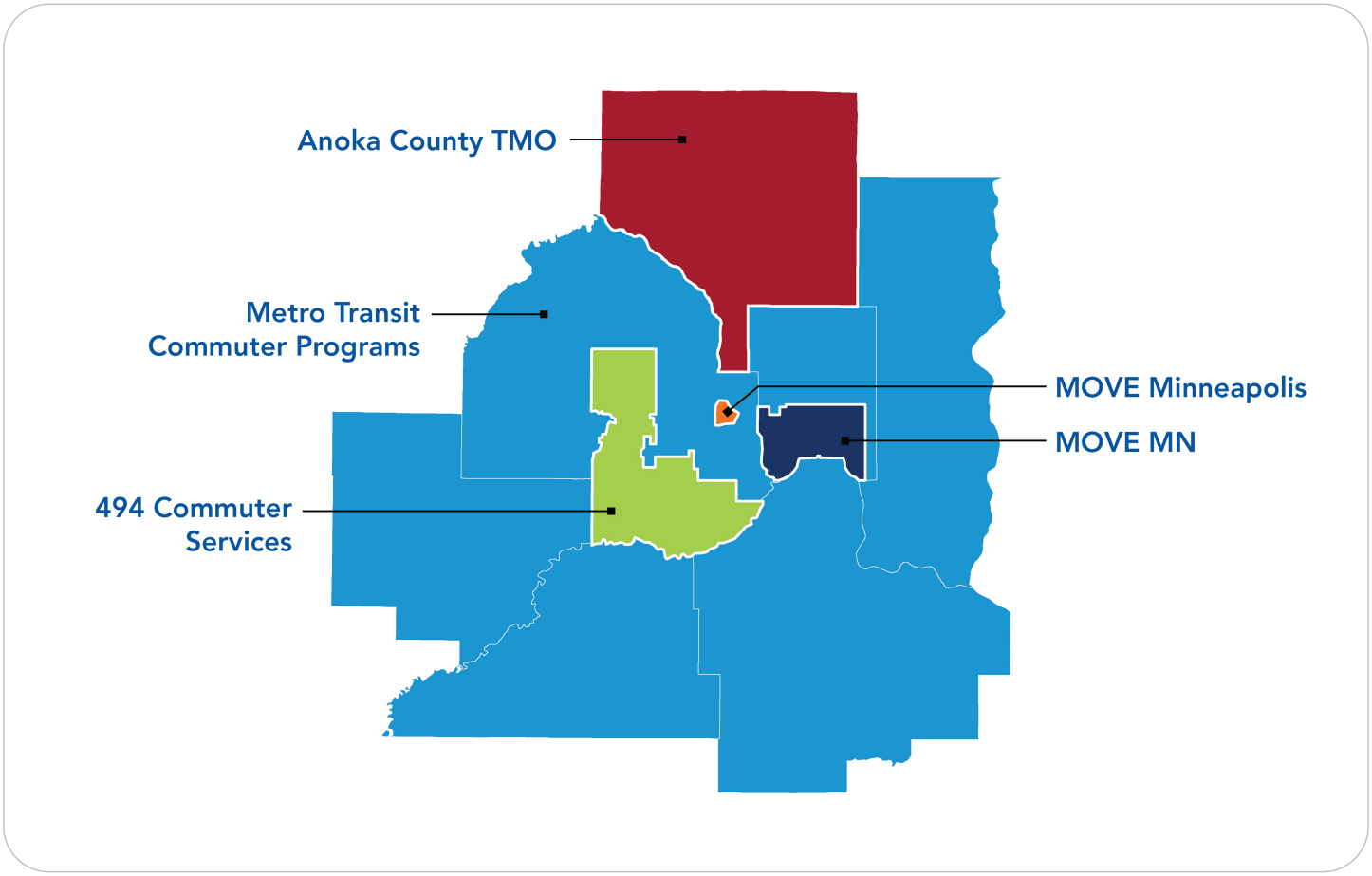
Transportation management organizations

Transportation management organizations are nonprofit management organizations formed to optimize the movements of people within a specific area. Partners of transportation management organizations are often local governments but can also include employers, developers, and property managers. They work together to promote transportation and commuting solutions within a defined area. Many transportation management organizations are based in areas that have unique transportation demands or challenges, such as central business districts, congested corridors, or large employment hubs.

Four existing transportation management organizations currently receive Regional Solicitation ongoing funding for travel demand management activities:

- **Move Minneapolis** primarily serves downtown Minneapolis by promoting travel options for commuters and residents working or living downtown.
- **Commuter Services** serves the I-494 corridor by promoting travel options to the destinations along the corridor.
- **Move Minnesota** serves the City of Saint Paul by promoting travel options to workers, residents, and policymakers in the city.
- **Commute Solutions** serves Anoka County by promoting travel options for residents in the county and commuters working in the county.

Figure 12.7: Transportation management organization service areas



The transportation management organizations provide and promote travel demand management services in their areas in similar ways to Metro Transit, but also implement unique programs that are specific to their customer needs. The transportation management organizations also regularly collaborate on regional initiatives such as Car Free MSP and outreach efforts and their staff meet as a group to discuss coordination. Transportation management organizations often apply for specific projects through the Regional Solicitation travel demand management innovation funding category.

Minnesota Department of Transportation

MnDOT provides transportation policy and planning support for all modes of transportation in Minnesota and is responsible for maintaining the state's trunk highway system, which includes state highways, U.S. highways, and interstates. MnDOT is subdivided into eight geographic regional district areas and topical suboffices to address the specialized fields within the regional transportation system. MnDOT's primary travel demand management efforts include management of the trunk highway system, the managed-lane system, and a large amount of programming and funding of priorities that provide opportunities for smaller agencies to implement travel demand management strategies and policies.

Currently MnDOT indirectly supports travel demand management efforts throughout the state with multimodal investments, including projects in rural Minnesota, where congestion is rare and transit service is generally limited. MnDOT's travel demand management programming includes performance measures related to emissions and reducing vehicle miles traveled, rather than congestion, mode shift, or reducing delay that is typical of urban travel demand management programs. MnDOT currently supports travel demand management by including parallel pedestrian and bicycle infrastructure along trunk highway projects, Safe Routes to School programming, the managed-lane system, partnerships with regional transit agencies (in other words, park-and-rides along MnDOT right-of-way, and center-running transit lanes/stations along trunk highways).

Counties

Counties have not historically played a strong role in travel demand management implementation but have been major funders of infrastructure including highways, transit, bicycle, and pedestrian infrastructure. Counties in the seven-county metro area have funding that can be used for travel demand management purposes under the regional transportation sales and use tax and transportation advancement account revenues. Under state law, travel demand management would be eligible as a use for active transportation and for mitigating greenhouse gas emissions. Because counties play a lead role in planning and investing in major transportation projects, there is a potential role for counties to both fund travel demand management activities and incorporate travel demand management activities into their long-range and project-planning processes.

Suburban transit providers

Suburban transit provider services are the primary alternatives to single-occupant-vehicle commuting for trips to or from the downtown cores of the Twin Cities. As such, the fixed-route transit service offered by the suburban transit providers is largely oriented toward express service into downtown Minneapolis and the University of Minnesota. The demand is growing for reverse commute and suburb-to-suburb commuter service, and the providers are expanding the use of microtransit service to replace or supplement fixed-route service. Like Metro Transit, suburban transit providers conduct community outreach and engagement to promote their services.

There are currently four suburban transit providers in the region.

- **Minnesota Valley Transit Authority (MVTA)** serves seven communities south of the Minnesota River including Eagan, Apple Valley, Burnsville, Prior Lake, Shakopee, Rosemount, and Savage.
- **SouthWest Transit** serves Chaska, Eden Prairie, and Chanhassen.
- **Maple Grove Transit** is operated by the City of Maple Grove.
- **Plymouth MetroLink** is a service of the City of Plymouth.

More detail on these transit providers and their services is available in the Transit Investment Plan.

Cities

Cities play an important role in the implementation of travel demand management strategies, though the prevalence of these strategies in cities varies widely across the region. Examples of travel demand management strategies for cities include requirements for developments to address travel demand through specific actions, Complete Streets policies, parking maximums or elimination of parking minimums, traffic impact analysis requirements for developments, promotional marketing campaigns, parking pricing, and traffic management. Cities with dedicated transit service and first-ring suburbs tend to have more travel demand management strategies in place, whereas suburbs farther from the urban core and rural areas have fewer such strategies in place. Similar, travel demand management strategies in the urban core and urban communities are more multimodal in nature while farther out communities have more traffic-management strategies.

Property developers and managers

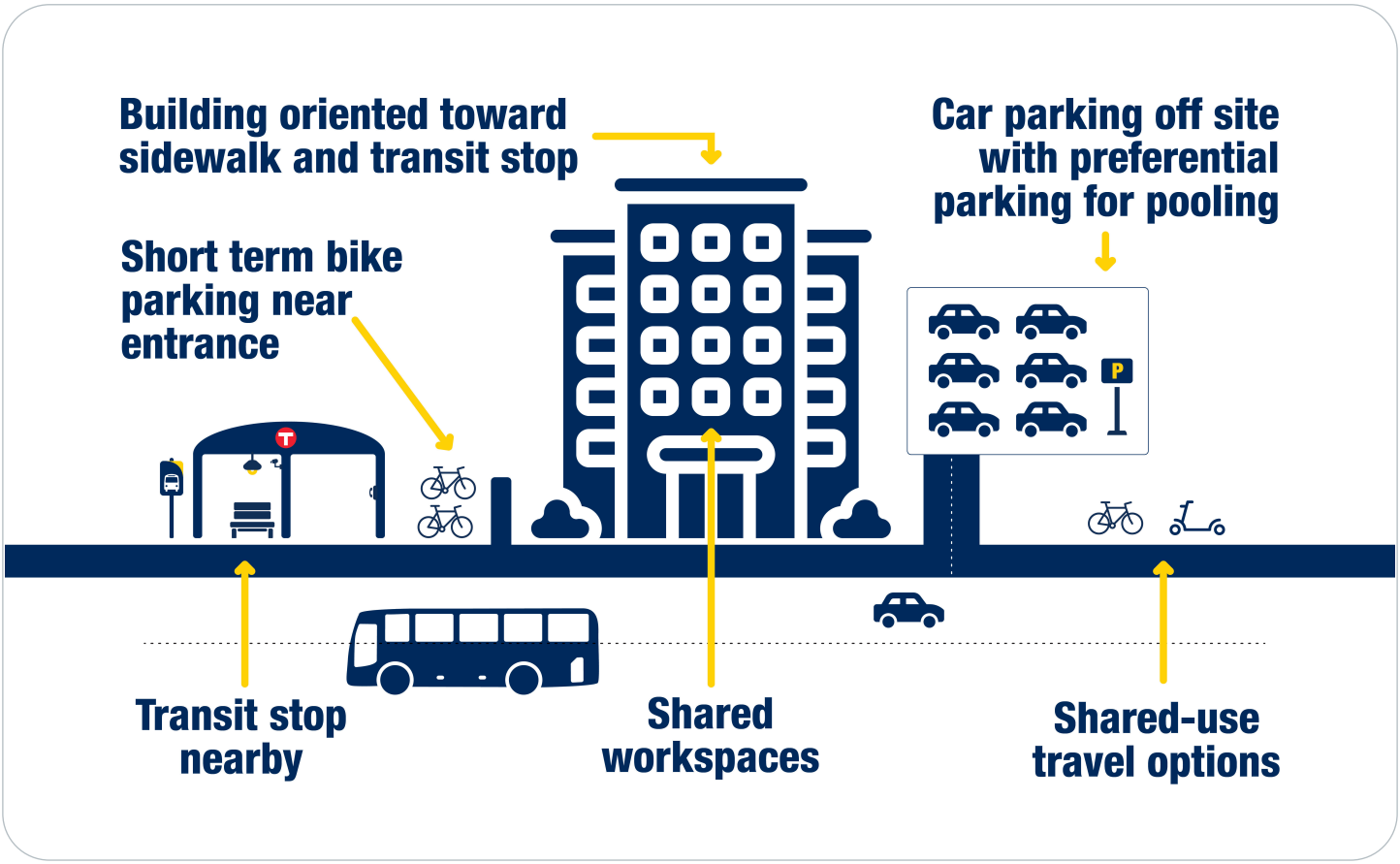
Residential and business property developers and managers can influence travel demand management in a variety of ways:

- Parking supply and cost either encourages or discourages driving, which impacts the effectiveness of travel demand management programs. Providing secure bicycle parking and end-of-trip facilities, such as showers and lockers, can also encourage biking.
- Site plan and design, and orientation of buildings to transportation, impacts how easily people can access a site from different forms of transportation. Developers can also provide infrastructure connections to public systems like sidewalks, bike paths, and transit stops.
- Some property managers can directly provide shared-use travel options, and some can facilitate the availability of third-party options.
- Property managers can provide incentives to tenants that are direct travel demand management activities, including preferential carpool parking and opt-in programs, like Metro Transit's Residential Pass Program.

- Property managers can facilitate data collection from tenants for use by other travel demand management programs, including the use of surveys, and share travel demand management program information materials.
- Shared workspaces in multifamily residential properties can support teleworking for residents.

Many of these can be regulated through city codes with ordinances or permit review processes. Other activities could be incentivized with access to regional travel demand management program benefits or development funding (for example, Livable Communities Act funding).

Figure 12.8: How developers and managers can influence travel demand



Employers

Employers play an important role in travel demand management implementation by connecting workers with travel demand management programs. Employers can influence the travel behavior of their employees through internal policies and benefits, and by setting a company culture that supports travel demand management. Employers can manage access to travel demand management programs for their employees as well as provide their own incentives in addition to those provided by travel demand management programs. Employers can collect information about their employees more readily through surveys or other tools that can be distributed to employees through trusted engagement outlets. Many travel demand management programs work best when presented as an employer-provided benefit like health care or retirement funding.

Like property managers, employers can also provide site amenities, manage parking supply, and provide facilities like locker and bike storage and shower rooms.

Employers can also support remote working and hybrid work by having policies and procedures for telework agreements and providing the necessary technical capabilities to their employees.

University of Minnesota

The University of Minnesota-Twin Cities implements, maintains, and promotes transportation options and benefits for its students, staff, and faculty; and promotes travel options for campus visitors. This work is carried out in partnership with internal and external stakeholders and partner agencies, like Metro Transit, transportation management organizations, and other transportation-focused organizations.

Notable programs include:

- Universal transit passes for eligible students and employees.
- League of American Bicyclists Platinum Level Bike/Business program that prioritizes campus connections and offers a radio frequency identification-tracking incentive program for bicyclists.
- Dedicated fixed-route transit and paratransit programs.

Travel demand management activities

This section describes the existing travel demand management activities being conducted by regional travel demand management partners. This includes transit fare programs, carpool, vanpool, and shared mobility options, outreach and promotion, pricing and incentives, local travel demand management ordinances, and the congestion management process.

Transit fare programs

A variety of special transit fare programs in the region impact travel demand:

- The Transit Assistance Program provides reduced transit fare passes to people with lower incomes.
- Metropass provides discounted monthly passes to employees through companies and organizations that can be further discounted through pre-tax benefits or through employer subsidies. These passes are most effective for employees that regularly work in-person and commute.
- Student Pass provides free transit passes to Minneapolis and Saint Paul Public School students through a partnership with the school districts.

- College Pass and Universal Transit Pass provide discounted transit passes provided to post-secondary students through their colleges and universities.
- Residential Pass Program provides discounted transit fare passes for multifamily developments of 10 units or more when property managers sign up for the program.

The region also has a Guaranteed Ride Home program that provides up to four trips or $100 in value per year for transportation on a taxi or on-demand service for eligible emergency trips on a day a person commuted by carpool, vanpool, biked, walked, or took transit.

Carpool and vanpool

Carpools and vanpools are supported through a variety of strategies. Met Council and Metro Transit provide support for forming carpools and vanpools by offering ride matching databases, direct employer assistance, and administration, funding support, and providing vehicles (in the case of vanpools).

MnDOT also provides support for carpooling and vanpooling by providing infrastructure that gives preference to carpools such as managed lanes, ramp meter bypass lanes, and special freeway ramps. MnDOT also partners with Move Minneapolis to provide deeply discounted parking rates for carpools at their ABC Ramps in downtown Minneapolis. Many employers also offer preferential parking for carpools.

Shared mobility services

Shared mobility refers to transportation services that are shared across users and can include technology platforms or different modes like bikeshare. Shared mobility services reduce single-occupant vehicle trips, allow for more flexible travel, and reduce the need for vehicles in a household. Shared mobility is a critical piece of an integrated, intermodal transportation network in the Twin Cities region. By layering these services with traditional transit, users have more freedom to travel in ways that meet their needs, and it increases the resiliency of our transportation networks. Shared mobility can also fill gaps within our networks where demand isn't sufficient for traditional transit services (for example, microtransit).

Shared mobility services can contribute to travel demand management by providing expanded travel options. The region has seen a variety of shared mobility services operate in the region including car share, bike share, scooter share, and shared-ride services. Most of these services have been provided by private companies or nonprofits, but some public agencies have incorporated shared mobility into their purview, such as travel agencies providing shared bikes for their riders. Some of the nonprofit services like Hourcar and/or Evie carsharing and Nice Ride bike share previously received federal funding to support the expansion of their services to new geographies. There is risk with investing federal dollars in new shared mobility options that may not prove sustainable, such as what happened with Nice Ride folding after private investment pulled out.

Because many shared mobility services are privately operated, there can be issues with equitable access if some travelers cannot afford the services. This has been as area where the public sector can intervene to support more equitable access to services.

Outreach and promotion

A significant focus of the region's travel demand management program is on outreach and promotion of many of the other activities described here. Outreach has historically been focused on reaching the commuter, particularly by providing employers with travel demand management assistance. The COVID-19 pandemic shifted travel patterns enough that this focus must be broadened to noncommute travelers, but this can be a more difficult form of outreach because there isn't always an easy single contact. Recent experience has found success in working through property managers and neighborhood associations when promoting programs like the Residential Pass program. Beyond working with employers, outreach can include one-on-one travel advice, tabling events, fairs, and pop-up events, and promotional materials included with mail or other marketing mediums. There are also regional travel demand management events like commuter challenges, Bike to Work Week, Try Transit, Twin Cities Telework, and Car Free Day. Most travel demand management partners have a social media presence and maintain a newsletter or email distribution lists.

Pricing and incentives

Currently, the Minnesota E-ZPass program is the only example in operation that includes pricing strategies on roadways in the region. The E-ZPass program provides access to congestion-free travel lanes Monday-Friday, 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m., depending on the route and direction of travel. MnDOT manages the Minnesota E-ZPass program; carpoolers and transit vehicles are allowed to travel for free in the express lanes, incentivizing travelers to choose these higher-occupancy modes. MnDOT has also designed and implemented bus-only shoulders on interstates to further support reduced travel times for transit riders. MnDOT offers discounted parking rates for carpoolers at the ABC ramps they own and operate in downtown Minneapolis.

Metro Transit and transportation management organizations provide technical support for setting up pre-tax deductions as a fringe benefit for employers to provide to encourage the use of transit passes. There are similar pass programs for nonemployers described in the Transit Fare Programs section.

Local travel demand management ordinances

Local governments often have ordinances that require additional reviews, commitments, reporting, or other travel demand management considerations for developments seeking approvals. Local travel demand management ordinances can be implemented with a variety of tools including tiers based on development size, application to residential and/or nonresidential development, reporting requirements, and enforcement mechanisms. Five communities have travel demand management ordinances related to new development review, as shown in Table 12.3.

Local travel demand management ordinances can also be flexible in the types of strategies they consider during development review and approval. Some examples include:

- Transit fare provision or subsidy to tenants
- Reduced or zero vehicle parking

- Pedestrian and bicycle amenities
- Shared vehicle provision
- Unbundling of parking from rent pricing
- Preferential parking for carpool and vanpool
- Teleworking strategies

Table 12.3: List of cities with travel demand management ordinances and the associated details

City	Typology	Implementation	Impacted	Reporting	Enforcement
Minneapolis	Urban Core	Tiered, points-based plan	Residential and nonresidential development	Self-reported audits every two years	Permit approval
Saint Paul	Urban Core	Points-based plan	Residential and nonresidential development	Annual status reports for two years via appointed travel demand management coordinator	Permit approval, two years program budget held in escrow
Bloomington	Suburban	Tiered implementation, points-based plan	Nonresidential development	Annual status reports for two years	Permit approval, two years of travel demand management program operating funds held in escrow
Eden Prairie	Suburban	Discretionary	New office and light industrial development in certain districts	Annual status report for two years	Permit approval, two years program budget held in escrow
Minnetonka	Suburban	Tentative	Emerging based on 2040 plan	None	None

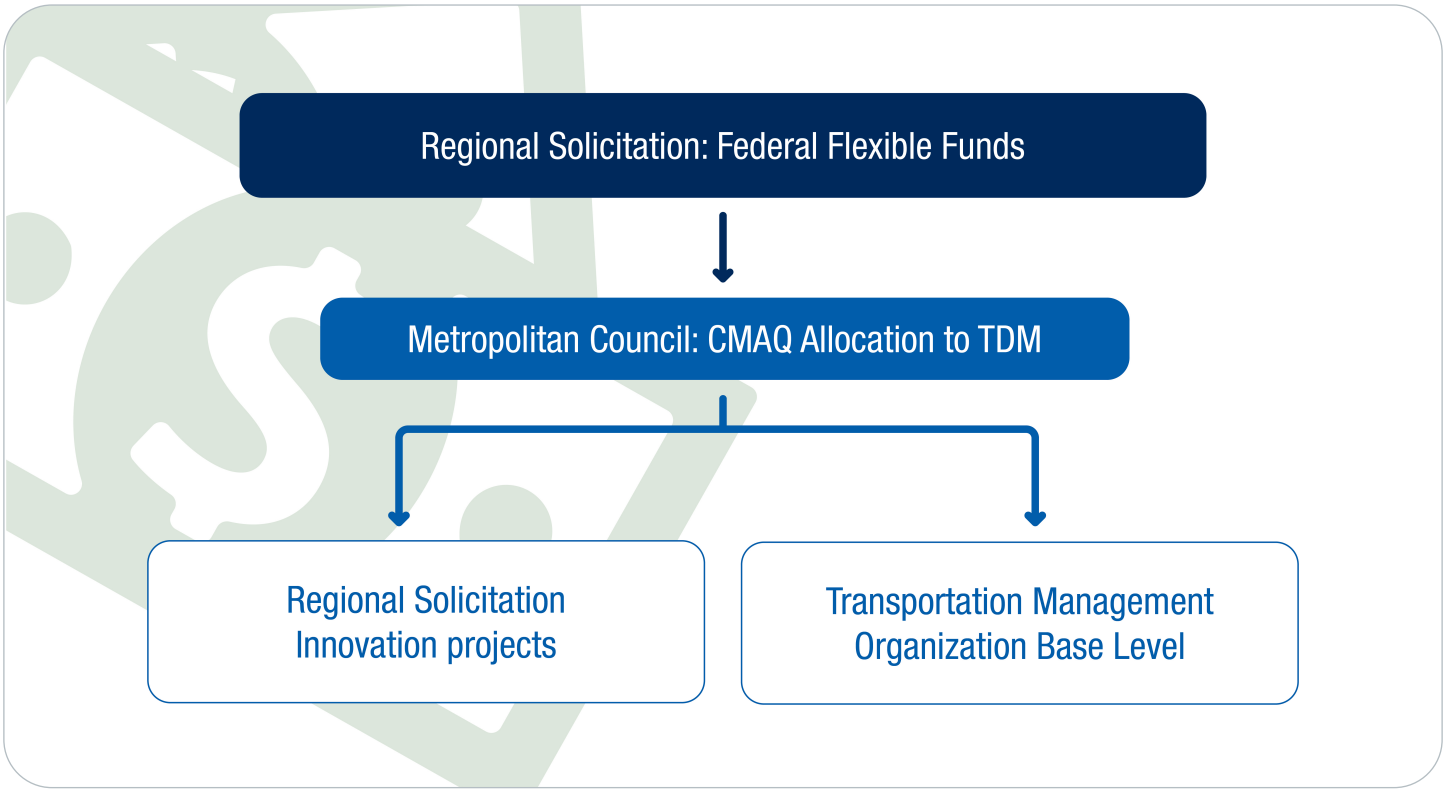
Congestion Management Process

The Congestion Management Process provides guidance to MnDOT, municipalities, and counties about how to identify, screen, and select treatments for areas that experience recurring congestion within the Congestion Management Process roadway network. The Congestion Management Process Policies and Procedures Handbook prioritizes travel demand management strategies over adding roadway capacity and provides guidance on how to consider travel demand management in corridor decision-making. More information on the Congestion Management Process can be found in the Congestion Management Process Appendix.

Existing funding sources

The ongoing regional travel demand management activities are funded with federal Congestion Mitigation and Air Quality funds from the Regional Solicitation and local match, mostly for Metro Transit and cities and counties that are served by transportation management organizations. An additional funding pot is set aside to fund innovative travel demand management projects selected through the Regional Solicitation.

Figure 12.9: Regional Solicitation: Federal Flexible Funds allocation to TDM

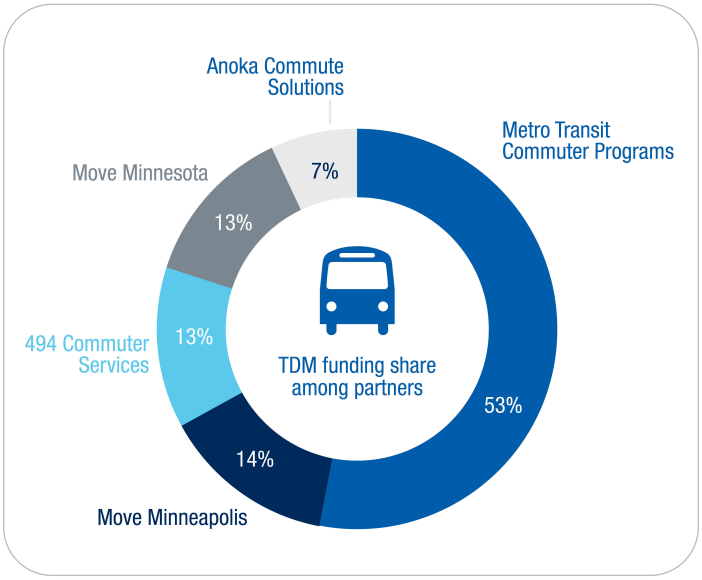


Ongoing travel demand management program

Funding for the ongoing regional travel demand management program is set aside in the Regional Solicitation as a $7 million award every two years, with approximately $5.8 million supporting ongoing programs and $1.2 million for travel demand management innovation projects. As of 2023, the $5.8 million is split between the travel demand management partners as follows:

- 53% to Metro Transit outreach plus regional programs
- 14% to Move Minneapolis
- 13% to 494 Commuter Services
- 13% to Move Minnesota
- 7% to Anoka County Commute Solutions

Figure 12.10: Existing TDM funding share among partners, as of 2023



This distribution is set up as a legacy structure that is anticipated to continue to receive funding as a base amount even as the program changes. As the five travel demand management implementors expand programs or identify new initiatives, they either need to reprogram existing budgets or find additional funding from other sources. In 2023, the State of Minnesota Legislature did provide one-time general funds to specific agencies to support travel demand management activities, but this has historically been quite rare. These funds also do not support ongoing administration, which is only eligible for Congestion Management and Air Quality funding for up to five years for new or expanded travel demand management programs.

Some travel demand management initiatives are supported through other funding categories, such as discounted fare passes and managed lanes that are funded through toll payments and MnDOT operations. There is not a detailed accounting for travel demand management investments like this because the costs are only partially attributable to travel demand management, which is often why it is difficult to quantify the cost-benefits of travel demand management. Even within a single agency like Metro Transit, there can be a gray area between the costs of travel demand management programs and other related programs like fare administration, marketing, and general outreach and engagement. Many of the costs, savings, or other benefits are not in public budgets or only indirectly related to travel demand management activities.

Travel demand management innovation application category in the Regional Solicitation

Since 2016, the regional travel demand management Regional Solicitation award has included at least $1.2 million every two years for an application category for travel demand management innovative projects, with an additional $1.8 million included in 2015. This application category funds small projects with a maximum award of $500,000. The travel demand management application category is unique in that nonprofits and other smaller organizations can apply for Regional Solicitation funds. Between 2014 and 2024, the Met Council received 44 applications to the travel demand management category and awarded 31 travel demand management applicants $9.5 million in grant awards.



Travel Demand Management Investment Plan

The region has a well-established travel demand management program that has been providing services for over 30 years. The program has grown and changed over time as service options and travel needs have evolved. The conditions in the early 2020s, including the COVID-19 pandemic, created significant disruptions in people's lives that are having lasting effects on travel patterns. These disruptions also created an opportunity as many people were experiencing a drastic form of travel demand management with remote work requirements and social distancing. The region used this opportunity to conduct a Regional Travel Demand Management Study that documents opportunities and an action plan for expansion of regional travel demand management programs. The Regional Travel Demand Management Study Action Plan will serve as a guide for travel demand management expansion consistent with the Transportation Policy Plan and using regional funds, but still allow for local innovation and program delivery.

The Regional Travel Demand Management Study Action Plan laid out six categories of travel demand management strategies with a series of actions to implement them. The six categories are:

- Establish a structure for the regional travel demand management program.
- Administer employer-based, trip-mode-shift incentives.
- Administer land development-based mode-shift initiatives.
- Administer travel pricing and incentive strategies to make sustainable transportation options affordable and cost competitive.
- Implement strategies that improve the customer experience while using sustainable transportation options and enhance traveler's sense of place.
- Utilize travel demand management strategies to reduce capital highway expansion needs.

General descriptions of these categories and their related actions are discussed in the subsequent sections. Some of the categories relate to investments in other sections of the Transportation Policy Plan and those references are included in each section. The time frame for implementation will be determined as part of a regular travel demand management work plan development process with regional implementing partners and dependent on factors such as technical capacity, funding, needed legal authority, and stakeholder input.

Establish a structure for the regional travel demand management program

The region can establish a regional travel demand management program structure that leverages existing programs and partnerships to deliver travel demand management services consistently and equitably across the region, which can also be customized for local contexts. A regional travel demand management program structure will ensure a cohesive approach to delivering travel demand management services, offering a one-stop-shop service for travelers and a streamlined structure for interested stakeholders. A central structure will maximize resource efficiency and help increase awareness of the program through a single, customer-facing brand.

Investment opportunities

Establishing a structure requires several key steps to be effective in guiding the regional travel demand management program's expansion and ongoing management.

- Develop a framework for how travel demand management can work in different community contexts and to guide evaluation of the travel demand management program's performance, including how social equity is considered and evaluated. This may also include an application of the Met Council's Maximum Mode Shift Study or similar data analyses to identify priority areas for travel demand management investment.
- Create a travel demand management program advisory group to guide the Met Council's work as travel demand management program manager.
- Use a multi-year work plan to guide travel demand management investment, highlighted areas of focus and funding needs over a two- to four-year period, with ongoing updates.
- Develop a travel demand management brand and traveler information hub to serve as an interface for travel demand management stakeholders, including travelers, employers, and businesses.

These tasks are foundational to creating a regional travel demand management program that will be impactful but sensitive to context and local needs.

Administer employer-based trip mode shift incentives

The regional travel demand management program should encourage workplace mode shift strategies that reduce single-occupant commute and work-related trips through equitable financial incentives and recognition campaigns. Employers need technical support and encouragement to support choices for workforce transportation solutions and need assistance with making the business case for implementation. Employer-based initiatives are often effective because of the historical regularity of workplace trips and the convenience of implementation through employer-sponsored outreach to their employees.

Incentives and recognition can include:

- Grants to set up mobility option programs at an employer, including employee travel incentive programs (in other words, reward point systems).
- Awards for successful programs branded to help promote an employer as a good workplace.
- Technical support for building an employer options program, such as commute and trip planning analysis, or parking reduction studies.

These programs can also be customized for specific time frames, with the right implementation tools, such as during poor air quality days or during days with multiple regional events like concerts, sports games,

and the Minnesota State Fair. Using a broad regional travel demand management framework previously discussed, the programs can also be customized by area, especially where local governments partner with implementation tools (for example, ordinances) and funding.

Investment opportunities

Creating employer-based incentives requires a variety of administrative tasks to create, track, manage, and evaluate the programs over time so they can be tailored to changing needs and right-sized for effectiveness. This requires collaboration between regional travel demand management implementation staff from the Met Council, Metro Transit, transportation management organizations, and other agencies that conduct travel demand management employer outreach. This category of investment can be scalable depending on budget and expectations, but there are some fundamental steps up front prior to promoting and recruiting participants.

- Establish frameworks for employer recognition and financial incentives, including a campaign name and promotional tools. Determine where they might be most effective in the region, including any context-sensitive approaches. Frameworks should also establish program requirements, benefits for participants, and tracking and reporting.
- Recruit participant employers and administer the recognition and financial incentives program.
- Evaluate the program annually and adjust to improve effectiveness.

Employer relationships are important for this investment category and should build on existing relationships that exist between travel demand management program implementers and employers, but with a focus on expansion and recruitment through added incentives. The region should place greater emphasis on nonwhite-collar job types and schedules to ensure that everyone has the opportunity to share in travel demand management benefits. The region should also continue to work with recruitment partners like Greater MSP to create tools and outreach materials that promote travel demand management for people relocating to the region from elsewhere.

Administer land development-based mode-shift initiatives

As the region grows and redevelops, the regional travel demand management program should support local governments in their development review and permitting process to administer development-based mode-shift initiatives. Land development-based initiatives are an opportunity for both the public and private sectors to engage in travel demand management practices that can encourage demand for nonsingle-occupant-vehicle travel and lead to a more efficient use of resources. This approach ties in closely with the region's policies around transit-oriented development that require more dense development around transitway stations and high-frequency transit routes. There are several communities that have local travel demand management ordinances in place, as previously described. A travel demand management ordinance is an effective way to engage the private sector in thinking about travel demand as they progress through the development process.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There is no regional permitting authority for developments and no regional entity has ordinance authority to require developments to meet certain standards. However, the regional travel demand management program can provide technical assistance and funding support to help communities plan for more efficient developments that reduce reliance on single-occupant vehicles. It is important to consider that local travel demand management initiatives will likely look different depending on the local context. The Met Council's Community Designations are a useful tool for looking at different contexts for similar community types, but other factors like the presence of transit, neighborhood nodes, business parks, and active transportation options will also be important.

This category of travel demand management strategies is also essential in addressing other categories because land use planning and implementation is a major factor in the success of travel demand management. They can also be a mitigation strategy for induced travel demand that occurs as the result of other transportation investments like highway expansion.

Investment opportunities

The focus of this category of travel demand management strategies is to support local governments in doing land use planning that advances regional goals and objectives. This is best rooted in local government input to understand what tools and support are most desirable to help local governments in this role. The regional travel demand management program can do so by providing models of best practices for local governments and by providing tools or funding support to use in local government practices. The regional travel demand management program can provide resources for local governments that guide the following:

- Modifying policies and ordinances, including parking policies, policies that impact people with disabilities, zoning, and subdivisions, and establishing travel demand management-specific ordinances or mandates.
- Establishing travel demand management districts where specific travel demand management requirements apply to an entire area, especially those experiencing development demand. Examples include transit-oriented development districts, pedestrian overlay districts, and growth centers or areas of change.
- Reflecting travel demand management approaches in comprehensive plans.
- Incorporating active travel infrastructure into roadway improvement or construction plans.
- Parking management (for example, shared or district parking, unbundling, public parking).
- Strategies for mitigating the impact of development on transportation networks (for example, agencies reviewing developments that impact their system, such as MnDOT reviewing developments from local cities that impact the trunk highway network).
- Development regulations that integrate travel demand management strategies and travel demand management-supportive site designs with regional travel demand management goals and objectives and local context.

- Providing training and technical assistance to local jurisdictions on a variety of development-related topics, such as sustainability, equity, and performance monitoring.

In some instances, these resources can be helpful regionwide. There is also a need to develop resources for different contexts around the region, starting with Community Designations, and implementing pilot projects to explore travel demand management potential in these markets. This should be accompanied by an evaluation plan.

The regional travel demand management program can provide support to developers, property owners and managers, and business associations. The development process in the region can be complex, with so many cities each with their own code of ordinances and travel demand management ordinances. Developers might feel overwhelmed and find this complexity burdensome, until these travel demand practices become more standardized and established. Local governments will remain the primary interface with developers and property owners and managers, but the regional travel demand management program can produce helpful guidance or facilitate learning opportunities that raise the level of understanding of travel demand management in land-development practices.

Travel pricing and incentive strategies

It is often difficult to travel in the region by means other than driving alone. However, these options beyond driving alone have many benefits to individuals and society including affordability, environmental friendliness, health and wellness, and safety. The region should encourage transportation options beyond driving alone by using pricing and incentives to reflect the true societal cost-benefit of these modes. This would help bring transportation options beyond driving alone into more parity with driving, since the region's development has prioritized driving through its transportation investments and land development patterns. A combination of pricing and incentive strategies can help increase the attractiveness of options beyond driving alone, improve affordability and equity of travel, and support the 2050 Transportation Policy Plan goals and objectives.

The region is investing heavily in infrastructure that provides travel options like light rail, bus rapid transit, bikeways, and managed lanes. This infrastructure benefits from not just promotion, but from creating incentives to use the infrastructure. There is also an opportunity to incentivize travel on existing infrastructure, including using expansion as a means to promote new incentives. The COVID-19 pandemic illustrated the potential of remote work to influence the impact of travel.[138] There was anecdotal evidence of the impacts on the health and wellness of people through increased active transportation (walking, biking, and rolling) during the pandemic. Using incentives to promote activities like walking and biking can have many benefits beyond improved transportation system performance. For example, people that walk and bike are happier and healthier than those that drive or take transit.[139] Research shows that shifting to active transportation modes may help prevent and reduce depression symptoms in working adults.[140] They also travel through their community at a human-scale speed, potentially experiencing and interacting with it on a more personal level.

There is a need to identify an agency or set of agencies that can administer this set of actions, with the right authorities and agreements to secure funding.

Investment opportunities

The regional travel demand management program should administer a range of pricing and incentive strategies that improve the affordability of travel options and make travel options more cost-competitive with driving alone. The regional travel demand management program should develop a universal pricing and incentives framework. The framework should outline incentives that enhance equity of access to opportunity, increase use of travel options, decrease driving alone, reduce climate impacts, and be universally designed to incentivize a range of populations.

The framework should:

- Include pricing and incentives for all modes and be designed to motivate all populations and income levels.
- Outline all the transportation options available in the Twin Cities, by mode, and identify financial incentives or subsidies that could persuade different populations to use those modal options, including the provision of financial incentives, subsidies, simplified fare structures, simplified fare payment processes, or other financial aspects of sustainable transportation.
- Develop criteria for prioritizing investments, such as characteristics for priority areas and populations. Priority areas could include highly localized areas, such as redevelopment districts or neighborhoods with high/low access to transportation services. Populations could include equity groups such as low-income households, households with large shares of transportation costs, those who drive alone, and rural populations or populations with lower access to opportunity.
- Develop outcome-based measures for each priority area to evaluate the effectiveness of the framework.
- Develop a strategy for messaging, outreach, and promotion of new incentive tools.

The region should use customer relationship management tools to track this information, whether this is expansion of existing tools or development of new tools. To the extent possible, pricing and incentives should be integrated with existing pricing programs such as transit fare passes, E-ZPass, parking ramps, and shared mobility options. As new programs are identified, such as mobility-as-a-service or mileage-based user fees for drivers, this framework should be a helpful tool in shaping the structure of those new programs. In 2023, the State of Minnesota authorized a $4 million electric-assisted bicycle rebate of up to $1,500 per individual through June 2026. These types of incentives should be evaluated and expanded upon if successful, whether through statewide initiatives or regional initiatives.

Much like the employer-based incentives described earlier, traveler incentives are scalable, and the regional travel demand management program should identify targets for incentives that tie out to regional goals and objectives and seek funding to meet those targets. In some instances, pilot programs may be a first step to broader incentive programs and this step-by-step approach to expansion should be identified in the regional travel demand management program work plan.

The administrator of any direct incentive programs to travelers will need to be identified, and other travel demand management implementing partners will need to support the regional travel demand management program initiatives through promotion, partnership, and data sharing. Incentive programs that utilize reward gifts like products or gift cards should emphasize local businesses, underutilized businesses, and products to build support for regional partnerships. Incentive programs should also consider the equity of the benefits being provided across race, ethnicity, and other demographic factors.

Implement strategies that improve the customer experience while using sustainable transportation options and enhancing traveler's sense of place

Attractiveness, convenience, safety, comfort, and security are key factors in mode choice. Enhancing these factors by providing guidance and funding opportunities will enable local governments and transit agencies to implement projects that encourage travelers to choose sustainable transportation options over driving alone. Transportation funding, particularly regional transportation funding, has typically avoided investments that are more sense-of-place oriented in favor of expansion, reconstruction, or modernization of transportation facilities. For transportation modes other than driving, the travel experience is influenced more personally by the place in which or through which you are traveling. For example:

- Transit riders spend most of their travel time in spaces that drastically affect their experience, whether waiting at a public stop or station or riding in a communal vehicle with other passengers.
- Bicyclists travel in a variety of environments ranging from shared space with cars to separated bikeways to off-road trails, and these have impacts on the level of stress that a biker experiences while traveling. Bicyclists must manage their personal safety and security as well as deal with varying weather conditions. Bicyclists also need to be able to secure their bikes and personal belongings during their travel. Less-stressful bicycle facilities can greatly influence the willingness of travelers to consider biking.
- Pedestrians have similar experiences to bicyclists but also experience spaces at a slower pace, meaning that details can have a more profound impact on their experience. Details such as cleanliness, landscaping, lighting, protection from the elements, accessibility and places to rest, sights, sounds, and smells are all heightened as part of the experience. Most travelers, including drivers, are also pedestrians for some portion of their trips.
- Carpoolers and shared-ride users also share spaces when traveling, and the quality of their travel can depend on the ease of finding carpools, parking, and their destinations from where they park.

For all these travelers, the sense of place when traveling is most often a public space or at least a shared space. The quality of these spaces, and not just the physical quality but the comfort and convenience quality – including features like places to sit or use a bathroom – greatly contributes to a traveler's willingness to use the different travel options.

Many partners contribute to these spaces including transit providers, cities, counties, MnDOT, parks agencies, and even private sector partners like business owners, property owners, and property managers. It

will be difficult for the regional travel demand management program to create an agreed-upon approach for all public spaces, but there are elements that consistently contribute to travel experiences that can be identified and prioritized for all these partners to consider, especially when seeking funds from shared resources.

Investment opportunities

The regional travel demand management program can start by identifying and dedicating funding within existing resources to implement projects that improve the customer experience while using sustainable transportation options and/or enhancing the physical environments related to sustainable transportation modes. This could be through broad programs like the Regional Solicitation or Livable Communities Act or through smaller pilot programs funded exclusively through the regional travel demand management program. Either way, the most important step is to develop a customer experience and placemaking framework. This framework will create a shared understanding of what travelers need to feel comfortable walking, rolling, biking, taking transit, or using other sustainable transportation modes. This framework should build on recent or upcoming work already being done, like the Regional Pedestrian Safety Action Plan, Regional Safety Action Plan, Metro Transit Safety and Security Action Plan, Safe Routes to Transit, and Mobility Hub Planning and Implementation Guidebook.

The framework should identify priority areas or facilities for enhanced placemaking improvements and determine how these priorities can be emphasized in funding programs. To the extent that placemaking or design guides exist, the framework can refer to good work that is already out there. Additional guidance may be required, however, particularly related to Complete Streets typologies and transportation investments in activity centers where multimodal travel demand is highest. There is an opportunity to improve school access as well, both with infrastructure and with training and education. For example, in 2023 the state passed a new Active Transportation Safety Training requirement for public schools that will provide an opportunity for coordination with school districts.

The regional travel demand management program and this framework can also aid in developing selection criteria for projects in various funding programs, including the Regional Solicitation and Livable Communities Act previously mentioned. There may also be a role in other programs such as active transportation (walking, biking, and rolling), transit-oriented development, and federal competitive grants. Selection criteria may include measures of effectiveness for follow-up and evaluation.

Use travel demand management strategies to reduce capital highway expansion needs

The region's highway mobility hierarchy identifies exploring travel demand management as the first priority in addressing congestion management, prior to investments like system management, spot mobility, and capacity expansion. This process is spelled out in more detail in the Highway Investment Direction and Congestion Management Process Handbook. A more integrated approach that links travel demand management strategies to highway and road planning processes can ensure a more efficient use of resources.

However, this requires a different approach that involves land use planning authorities, transit agencies, and travel demand management implementers in the highway planning and project development processes. This is essential to achieving the region's goals and objectives. Regional highway projects have tremendous influence on travel demand, for better or worse, and a thoughtful approach to highway planning coordinated with travel options and land use planning is the only way to assure that the region does not build infrastructure that continues to perpetuate the status quo of driving as the only viable travel options in most parts of the region.

In addition, the State of Minnesota has new rules on highway expansion restrictions in the face of the climate change impacts related to greenhouse gas emissions from transportation. Travel demand management is an eligible and likely mitigation activity for these requirements, but it is unclear how this activity would integrate with highway planning processes. Further, highway project budgets are typically not scoped with travel demand management activities in mind, particularly if the activities are ongoing beyond the construction phase of the project. This is not usually on purpose; travel demand management is a lesser understood tool for highway planners and engineers to include in their processes.

Investment opportunities

Highway planning and development processes are complex with the different roadway authorities each managing their own processes. The first opportunity for investment is a Transportation Policy Plan Work Program item to study how travel demand management can be integrated into highway project processes. It is essential to identify and understand all the phases of the planning and development of highway mobility and improvement projects to ensure that travel demand management strategies are considered, prioritized, and integrated into the final highway project.

A follow-up study could help identify the phases of all highway funding programs and/or project types to provide guidance on how travel demand management strategies can be integrated into all phases of project development. This study would identify and examine individual funding programs and/or project types and develop strategies to ensure travel demand management is integrated into the project selection, planning, scoping, and environmental review processes to determine where partners should coordinate with decision makers on potential travel demand management solutions. For example, there may be opportunities within the Corridors of Commerce process, led by state legislators, such as requiring travel demand management plans for projects seeking Corridors of Commerce funding or adding it to the evaluation metrics.

Other examples include identifying ways to leverage technical expertise, business engagement, and outreach capabilities, by identifying travel demand management practitioners, organizations, or districts that can assist (for example, transportation management organizations, cities, large property owners). The Met Council and/or MnDOT are the likely leads for this work, in collaboration with counties and cities. This will also provide an opportunity to share the travel demand management investment opportunities with new partners. This Work Program item will ultimately result in updates to other documents and processes, including the Congestion Management Process Strategy Matrix, MnDOT's Complete Streets Handbook, and Regional Solicitation.

The state and region invest billions of dollars in the regional highway system, and travel demand management only receives a small portion of that funding through programs like the Regional Solicitation and managed-lane promotion and operations. State highway funding is a substantial source of revenue that could support travel demand management initiatives that could achieve many of the same results that highway projects are trying to achieve, particularly providing reliable travel, and minimizing the impacts of travel on the region's people, businesses, and environment. Travel demand management can also play a role in construction-impacts mitigation, particularly working with MnDOT through state aid and state road construction.

Travel demand management expansion funding opportunities and approach

The previously described expansion opportunities will require additional funding for the regional travel demand management program. Some of the activities are scalable, so the exact funding amount needs to be assessed during the work plan development and may grow or shrink as activities become more established. The following sources of funding could be used to support the travel demand management expansion opportunities.

Table 12.4: Travel demand management funding opportunities, by source

Source	Decision-making body	Details
Regional Solicitation (Congestion Management and Air Quality)	Met Council and the Transportation Advisory Board	• Expanded award could be used for most activities, including up to five years of program administration for expansion purposes.
Carbon Reduction Program	Met Council and the Transportation Advisory Board	• New formula funding source where TDM is an eligible expense.
Discretionary federal funding	U.S. Department of Transportation	• A variety of discretionary programs could support travel demand management activities including Climate Pollution Reduction, Congestion Relief, Thriving Communities, and Safe Streets and Roads for All.
MnDOT formula funds and general fund transfers	State of Minnesota and MnDOT	• Activities would need to be identified in MnDOT's plans and funding would be subject to eligibility, depending on the source.
Regional Transportation Sales and Use Tax (transit)	Met Council and Suburban Transit Providers	• Use of funds for transit purposes is limited by enabling legislation for transit but can include most transit-related travel demand management activities.
Regional Transportation Sales and Use Tax (active transportation)	Transportation Advisory Board	• Active transportation includes travel demand management and the sales and use tax has more flexibility for noninfrastructure travel demand management activities that support active transportation.

Source	Decision-making body	Details
County revenues (sales tax, Transportation Advancement Account, and general funds)	County Boards	• County funds have flexibility to fund both infrastructure and operations activities. There are required allocations for some state authorized revenues established in law for active transportation, transit, and climate mitigation activities.
City revenues (general funds, fees, other sources)	City Councils	• Cities have fairly broad authority to support travel demand management programs if there is a clear public purpose. Some cities already provide funding support for transportation management organizations, while others may support travel demand management activities through code implementation and development review.

Regionally allocated revenues

Regional Solicitation

The Met Council, through the Regional Solicitation process, makes specific categories of federal transportation funds available to transportation partners on a competitive basis. The Regional Solicitation is the largest current source of funding for the regional travel demand management program, with approximately $7 million set aside for travel demand management activities every two years. The Regional Solicitation evaluation work program item will provide an updated structure for project categories and evaluation metrics for the 2026 Regional Solicitation. Given the importance of the Regional Solicitation in supporting the regional travel demand management program, the region should consider maintaining and expanding a dedicated travel demand management funding category that includes a mix of ongoing regional travel demand management program support and a competitive application category that can support the Travel Demand Management Investment Plan and other local innovative projects.

An expansion in funding should be discussed based on the Travel Demand Management Investment Plan and detailed recommendations in the Travel Demand Management Action Plan. The Regional Solicitation structure and its relationship to travel demand management is shown in Figure 12.9.

Carbon Reduction Program

One federal funding program that is included in the $250 million per two-year cycle of the Regional Solicitation is the Carbon Reduction Program, which can be applied to travel demand management projects. Specific funding categories and criteria for this program will be determined through the Regional Solicitation Evaluation to inform the 2026 Regional Solicitation. Current federal law makes about $14 million available to the region through the Carbon Reduction Program every two-year cycle.

Federal law requires each state to develop a State Carbon Reduction Strategy to support efforts to reduce carbon dioxide emissions from on-road highway sources in consultation with metropolitan planning organizations in the state. MnDOT published a report documenting the state's strategies and goals in November 2023.

State funding

State funding can support travel demand management activities for investments consistent with the Statewide Multimodal Transportation Plan. The funding could be directed by the Minnesota State Highway Investment Plan in support of reducing demand on the state highway system. MnDOT administers these funds as well as federal funds that are provided to the state and not suballocated to regions. Figure 12.9 demonstrates the mechanisms for how state and federal funding flow through MnDOT and where opportunities exist to identify travel demand management funding for projects.

The state general fund can provide more flexibility for its use on travel demand management and has been allocated directly to travel demand management implementers as recently as 2023. General fund appropriations for travel demand management should support activities consistent with state and regional plans, though they may be addressing more specific project needs.

County and city funding

Local governments can play a unique role in funding travel demand management, particularly cities. Cities can fund travel demand management activities that are related to their authority to develop land use plans and review development permits. Cities also play a role in shared mobility, mobility hubs, parking, and local travel tools like wayfinding. These are all opportunities for cities to do more of something they are already doing or do it differently in support of travel demand management. In addition, cities and counties can participate in travel demand management by establishing funding relationships with travel demand management implementers, like the existing transportation management organizations in the region.

Counties have similar opportunities to support travel demand management but usually through their public works departments. The county role is like MnDOT in identifying how travel demand management fits with the county's transportation investment philosophy and creating partnerships to implement actions as a funding partner. With expanded funding in 2023, counties can assess how travel demand management fits into their funding plans based on the direction of the regional travel demand management program.

Both counties and cities identify their funding priorities through their capital and operating budget processes and are encouraged to consider funding travel demand management activities that align with regional needs.


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SECTION 13: FREIGHT INVESTMENT PLAN

Introduction

A safe and efficient freight transportation system is essential to the economic well-being of the region and the state. Manufacturers rely on the system to receive raw materials or parts to produce or assemble their finished products, retailers depend on the system to receive goods at distribution centers and retail outlets, and consumers rely on it to stock their favorite stores or to deliver their orders directly to their homes. In fulfilling these roles, the freight system allows the region to stand out as an important global business and transportation hub.

Throughout the evolution of the Twin Cities' robust freight transportation system, the region's residents have been provided access to the goods and materials they need to live and work. Without an effective freight system, businesses would be unable to distribute their goods to customers or receive shipments needed to manufacture products.

The growth of the Twin Cities region has been historically tied to its function as a major shipping center. While the region does not carry a major share of through-moving freight on a national scale when compared to coastal shipping ports like Seattle and New York, or mid-American rail hubs like Chicago and Kansas City, the region is the primary freight hub for Minnesota. The metro region continues to serve as the major distribution center for goods produced and consumed in Minnesota, and portions of Wisconsin, North Dakota, and South Dakota, including many products that serve a global market.

Because the majority of freight interactions statewide move to or through the Twin Cities, this region's specific mobility and access issues impact the overall efficiency of freight movements for the entire state. To account for this interactive relationship, the Metropolitan Council works closely with the Minnesota Department of Transportation (MnDOT) and other transportation partners in support of a healthy regional freight system that makes a thriving and sustainable economy possible for the entire state.

Relationship to 2050 goals and objectives

Planning for and investing in freight-supportive infrastructure helps to advance the region's goals and related Imagine 2050 Transportation Policy Plan objectives. This freight plan directly ties back to three key regional goals. Each goal subsection describes how work carried out in response to this plan helps advance the transportation plan objectives (represented below in quotation marks).

Our region is dynamic and resilient

The region invests in roadway, bridge, and traffic management system improvements on Regional Truck Freight Corridors, which are the highways most relied upon by the trucking industry to move

the region's freight and goods. These investments help to assure that "…businesses can rely on predictable and cost-effective movement of freight and goods" by:

- Addressing excessive highway delay through projects that provide, for example, spot mobility improvements or that coordinate and optimize corridor traffic signals to facilitate freight movements.
- Improving travel time reliability through corridor mobility projects, including managed-lane investments (like E-ZPass, for example) that allow light- or medium-duty commercial trucks and delivery vans to access during congested times for a fee and attract more transit and carpool riders, further removing vehicles and reducing overall congestion.

In addition, transportation investments can help to assure that "…businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions" by:

- Minimizing the impacts of nonrecurring delays caused by crashes or mechanical breakdowns through incident management programs (such as MnDOT's Freeway Incident Response Safety Team).
- Continuing to maintain a grid network of principal arterials that create redundancy in the regional highway system with multiple options for detours on nearby parallel highways.

We lead on addressing climate change

The transportation sector is the largest net contributor to climate change in Minnesota, producing about 26% of overall greenhouse gas emissions from vehicles. Freight transportation is a large contributor to the overall share, largely through privately owned and operated transportation companies. One significant industry subsector that can be influenced through regional policies is the e-commerce last-mile distribution system (see detailed discussion under "Planning guidance for e-commerce, last-mile distribution"). The light- and medium-duty trucks, vans, and cars that comprise the majority of vehicles delivering goods to businesses and consumer households have the highest potential for converting to electrification and alternative fuels. Within this realm of influence, this plan can help facilitate "the region's transportation system [to] minimize its contribution to climate change," help the region reach its 2050 goal to "reduce vehicle miles traveled by 20% per capita below 2019 levels," and move toward achieving federal and state targets for reducing transportation related greenhouse gases by:

- Promoting electrification of e-commerce delivery fleets and personal vehicles through planning and investments in public charging infrastructure.
- Identifying and promoting more sustainable shopping, purchasing, and delivery practices that businesses and residents can take to minimize vehicle miles traveled and greenhouse gas emissions.
- Assisting in planning (in coordination with MnDOT) for the implementation of National Zero Emission Freight Corridors as envisioned by the federal Joint Office of Energy and Transportation.

Our communities are healthy and safe

For all freight transport modes, funding programs are prioritized for projects that proactively or reactively address safety issues. As it specifically relates to freight moved by trucks, there are several mechanisms for improving safety so that "people feel safer, more comfortable, and do not die or face life-changing injuries when using any form of transportation." These include:

- Prioritizing safety in transportation funding processes.
- Ensuring that Complete Streets planning processes fully consider and account for the safe movement and delivery of freight and goods within the context of providing and integrating safe facilities for vulnerable road users and passenger transportation modes.
- Improving real-time safety information relating to inclement weather, vehicle crashes, or pavement conditions to advise drivers to take precautionary measures or to reroute to a suitable detour.

Private sector and public sector roles

The Twin Cities region is served by five modes of freight transportation, each having its own role in moving goods to, from, through and within the region. These modes include:

- Trucks carrying freight on roadways.
- Railroads moving heavy bulk goods and containerized freight.
- Barges moving bulk freight along the Mississippi River Waterway system.
- Air freight services for shipping smaller, lower-weight and high-value items.
- Pipelines transporting liquid fuel and chemical products.

Several freight transportation modes and much of their accommodating infrastructure are owned and operated by private sector businesses. Railroads and pipelines, for example, are entirely owned and operated by private corporations. In addition, most freight terminals that serve to store, manage, and distribute freight shipments for a single transport mode or between two modes (intermodal) are operated by private companies. Due to this dominance by the private sector in owning, operating, and maintaining infrastructure for these nonhighway freight transportation modes, and the relatively low level of direct influence the Met Council has on how they are operated, the investment direction section of this plan focuses on highway freight transportation.

Public sector government agencies are responsible for developing, managing, and maintaining highways and roads, including, federal, state, and/or local agencies. Airport terminals and runways are managed by special government districts like the Metropolitan Airports Commission for Minneapolis-St. Paul International Airport. The federal Army Corps of Engineers maintains and operates the Mississippi River Waterway system, including the Minnesota River to the Ports of Savage. They are responsible for maintaining and updating locks and dams and for maintaining river depth through extensive channel dredging operations. As part of this

system of barge transportation, the Saint Paul Port Authority owns and leases land along the Mississippi River to private barge terminal operators.

Government agencies also play a significant role in regulating freight transportation operations and infrastructure, particularly in areas with potentially high risks of public safety impacts. The pipeline industry is regulated by the U.S. Department of Transportation and U.S. Department of Energy through the Pipeline and Hazardous Materials Safety Administration and the Federal Energy Regulatory Commission, respectively.

Other sections of this plan describe future public investments in infrastructure to support two of the five freight modes: highways and aviation (see the Highway Investment Plan and Aviation System Plan). In addition, the 2022 Transportation System Performance Evaluation contains more information and statistics about freight movement in the region.

Existing Metropolitan Freight System

The existing metropolitan freight system is shown in Figure 13.1. It consists of several interconnected networks and regional freight terminals that facilitate the movement and transfer of freight within and between freight transportation modes. One regional freight terminal was added in Washington County through the process for updating Regional Truck Freight Corridors, described later in this investment plan.

Freight transportation modes

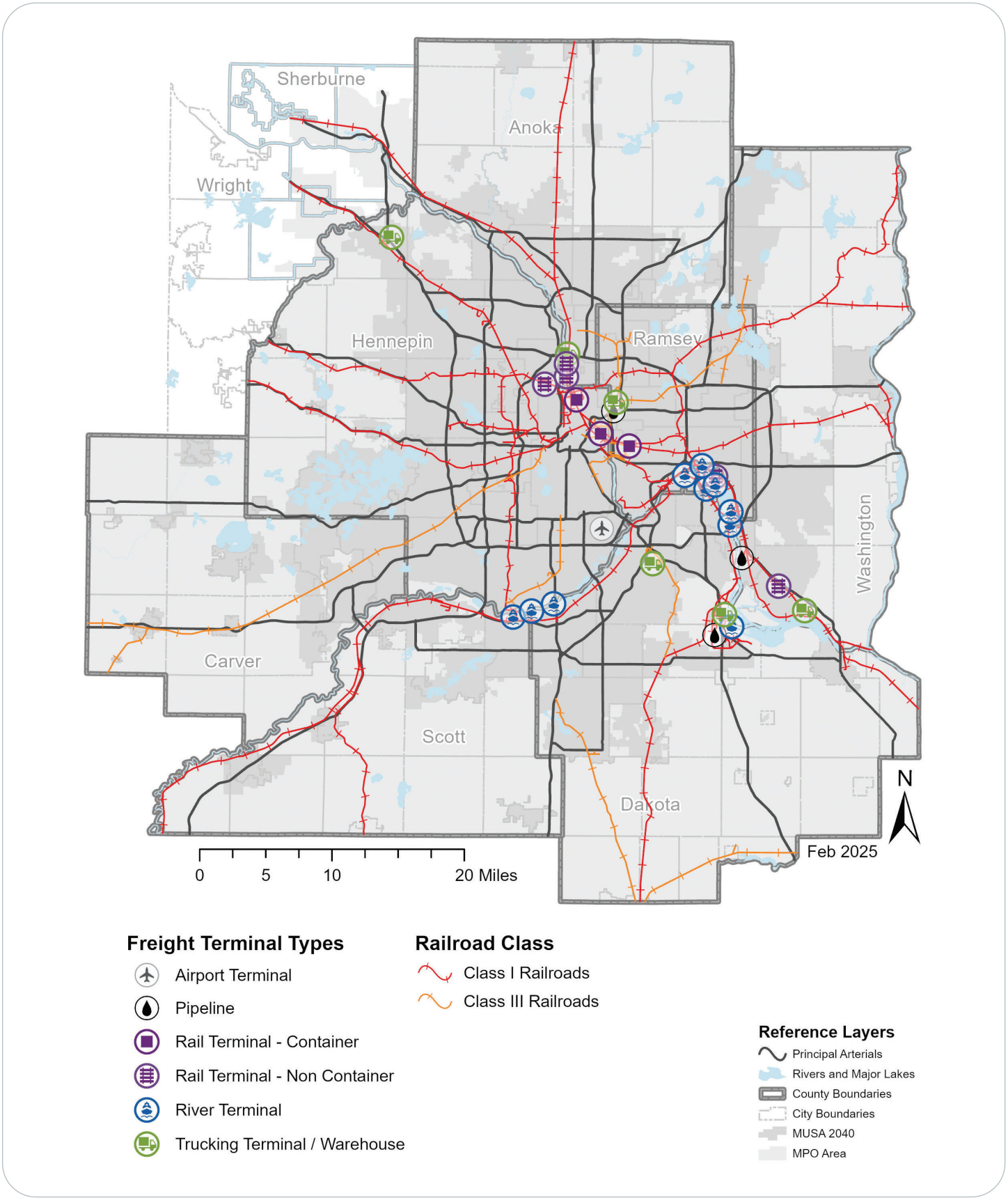
Freight has a system of interconnecting transportation modes, some of which are unique to freight and some which overlap with passenger travel modes. The five modes of freight transportation that make up the overall metropolitan freight system are detailed in this section.



Trucks on highways

Within this region, freight continues to move primarily by truck, and the region's highways continue to be a critical element of the freight transportation system. The regional highway system of principal arterials, which include interstate freeways and minor arterials (mostly county highways), provide a redundant and reliable network to support the movement of goods within the metro region. Interstates and other principal arterials provide vital connections to the other major economic centers within the state and beyond. Trucks moving freight destined to or originating from the region's riverports, rail yards, warehouse and distribution facilities, and freight-dependent industries, as well as local businesses and consumer households, all rely on first-and-last-mile connections to fulfill their trips. First-and-last-mile connecting roadways often are local city streets or county roads that may have limited capital budgets for road maintenance and reconstruction.

Figure 13.1: Metropolitan freight system



Railroads

In the early 20th century, rail lines were built to connect between a few large cities and were mostly located outside of urban areas. With steady population and employment growth through the first half of the 20th century, followed by accelerated growth in the 1960s and 1970s, came the development and growth of suburban and rural communities along rail corridors. Railroads then grew their systems to serve the growing communities along their lines. In the 1980s, the technology of intermodal container-based shipping was introduced. This innovation greatly increased system efficiency by increasing train capacities through the ability to run double-stacked containers and eliminating the need to repack goods with each transfer between modes. Containerized intermodal freight is now the predominant rail service today and has contributed to the steady growth in demand for freight rail service. The Twin Cities has three container intermodal terminals serving the region:

1. Burlington Northern Santa Fe Midway Hub terminal in Saint Paul
2. Shoreham Yard run by the Canadian Pacific Kansas City railroad in northeast Minneapolis
3. Union Pacific intermodal yard in Minneapolis' Southeast Manufacturing Industrial area

Today, there are four Class I railroads that collectively operate more than 500 miles of track in the metro region: the Burlington Northern Santa Fe, Canadian National, Union Pacific, and the Canadian Pacific Kansas City, which resulted from the 2023 merger of two Class I railroads. Class I railroads connect the region to major national markets and carry large quantities of cross-continental freight that moves through the region.

There are also four Class III or short line railroads, the Minnesota Prairie Line, Progressive Rail, Twin Cities & Western, and Minnesota Commercial, that operate about 160 miles of track within the region. Class III railroads handle many local rail freight transfers, generally within 100 miles of the core cities. The railroads continue to be an increasingly important part of the region's freight system, especially for heavy bulk goods and containers, and serve national markets and international trade through east and west coast ports. It should be noted that freight moved by rail is known to be more efficient than if moved by truck with respect to greenhouse gas emissions from transportation. Future studies are planned that will explore this sustainability advantage, including the Greenhouse Gas Emission Reduction Strategy Development Study and the Twin Cities Metropolitan Freight Study Update. Both these planning studies are described as Work Plan items in Section 17.

Barges on rivers

Barges provide water transportation over the Mississippi River Waterway System. They offer lower-cost, high-volume shipping options compared to other modes, which brings a particular advantage for hauling bulk freight over long distances. Portions of the Mississippi and Minnesota rivers in the region are navigable by barge through channels and locks maintained by the U.S. Army Corps of Engineers. Barges carry bulk commodities like grain, minerals, fertilizer, and aggregate to domestic and international markets. There are two major river ports in the Twin Cities metro region: the publicly owned Saint Paul Port Authority on the Mississippi River and the privately managed Ports of Savage on the Minnesota

River. In addition, there are multiple private barge terminals in Burnsville and along the Mississippi River between Saint Paul and Hastings.

Bulk freight is hauled by barge more than 1,800 miles downriver from the Twin Cities to the Port of New Orleans where it is loaded onto ocean-going ships for export to global markets. Also, sand for fracture mining of natural gas and oil is being shipped by barge down the Mississippi and up the Ohio River to river terminals closer to Pennsylvania oil and gas fields.

Barge freight activity from Twin Cities river ports represents a small share of total freight movements, but is significant for the region, especially for the agriculture sector. As of 2019, riverports in Minnesota (which include the Ports of Red Wing and Winona) handled more than 50% of total state agricultural exports. In that year overall, the Twin Cities river ports operated roughly 30 active freight terminals that collectively handled about 8.9 million tons of barge-hauled freight.

Similar to freight rail, freight hauled by river barge is also more efficient than if moved by truck in terms of greenhouse gas emissions. The future Work Plan studies relating to greenhouse gas emissions reduction and described above for railroads also apply to barge freight transportation.



Air freight

High-value, low-weight, and/or time-sensitive goods can afford higher shipping rates and are typically well positioned to benefit from air freight transportation, especially when moving over long distances or when the shortest possible transit times are urgent. The region's high-tech and biomedical companies rely most on air freight service to make timely shipments of medical supplies to hospitals throughout the nation.

Minneapolis-St. Paul International Airport (MSP) handles air freight for the Twin Cities metro region, most of Minnesota, and for some adjacent areas in Wisconsin, North Dakota, and South Dakota. Major air freight carriers include Federal Express (FedEx), Amazon, UPS, and the U.S. Postal Service, as well as commercial airlines. The region continues to take advantage of belly freight opportunities for shipping freight in the baggage compartments of passenger aircraft. Goods shipped by passenger aircraft represent between 20% and 24% of overall air freight tonnage moving through MSP with the remaining tonnage shipped through the four major air freight carriers. More detailed statistics on air freight moved through MSP can be found in the 2023 Transportation System Performance Evaluation.



Pipelines

Pipelines represent an extensive infrastructure network developed to efficiently transport liquid fuel and chemical products for consumption by transportation, heating, and manufacturing industries in the Twin Cities. While less obvious than other modes, as all pipelines are buried underground, they play an important role in freight transportation by significantly reducing the volume of trucks that would otherwise be required to travel on the region's highways. Although not absent of some environmental risks, such as leaks to lakes and rivers or potential explosions and fires, pipelines are a relatively safe mode of transport compared to other modes. For example, pipelines do not require transfers between multiple surface

transport modes and they remove the risk of physical crashes with other vehicles for long-distance product distribution. Major pipelines in the region serve the region's two petroleum refineries located in St. Paul Park and Rosemount, and to the Magellan pipeline terminal in Roseville.



Related Freight Plans and Studies

The region works in close collaboration with MnDOT's Office of Freight and Commercial Vehicles to develop plans and conduct related studies for advancing freight transportation across Minnesota and the Twin Cities region. MnDOT freight-specific plans and two freight-specific planning studies are described below.

2024 Minnesota State Freight Plan

In 2024 MnDOT released a new, updated State Freight Plan to align with new requirements established by Congress in the Infrastructure Investments and Jobs Act (IIJA). The new plan sets the direction for freight improvements across modes over the next 20 years.

This plan update included a new Minnesota Freight Action Agenda consisting of 23 strategic actions to be undertaken with public and private sector partners on the Minnesota Freight Advisory Committee in support of the state's vision for a safe, sustainable, and equitable transportation system. Within the new plan, MnDOT released an updated Freight Investment Plan Chapter that included $82.4 million in state and federal funding for freight improvements in the Twin Cities region.

MnDOT Metro District Freight Plan

A MnDOT Metro District Freight Plan for the Twin Cities region was under development at the time of this plan's writing. The new metro district plan will provide a resource to analyze freight needs, issues, and opportunities. The plan will provide an updated picture of regional freight movements and trends by building off the 2013 Twin Cities Metro Area Freight Study and the 2019 Urban Freight Perspectives Study. During plan development, input will be obtained from freight stakeholders as part of a new Metro District Freight Advisory Committee. Plan completion is expected in 2025.

Minnesota State Rail Plan

An update to the 2015 State Rail Plan was under development at the time of writing this plan. The purpose of this rail plan is to guide the future of freight and intercity passenger rail systems and services across the state. The plan identifies rail issues and system bottlenecks and provides guidance for rail initiatives and investments, including a vision for the effective utilization and development of the state's rail network.

Minnesota Statewide Ports and Waterways Plan

An update to the 2014 Statewide Ports and Waterways Plan was under development at the time of writing this plan. The statewide plan includes an overview and history of Minnesota's waterways, industry shipper profiles, and an inventory of facility conditions for metro region port terminals and locks. It also offers strategies designed to preserve and enhance Minnesota's ports and waterways system and describes the system's economic benefits, financial support, and future opportunities and challenges.

Twin Cities Metropolitan Region Freight Study

The Twin Cities Metropolitan Region Freight Study was a collaborative effort led by the Met Council and MnDOT in 2013. It highlighted the importance of freight transportation and its role in maintaining a healthy and sustainable regional economy and developed the framework for a regional freight planning and implementation strategy. This strategy was further developed in the Statewide Freight Plan, which described and prioritized critical freight transportation planning activities. Given that the needs of freight transportation and the manufacturing and retail sectors it supports have continued to grow and evolve over the last decade, an update to this study has been added as a Transportation Policy Plan Work Program item in Section 17.

National Zero-Emission Freight Corridor Strategy

The National Zero-Emission Freight Corridor Strategy was released by the Biden Administration in early 2024. It was developed by the Joint Office of Energy and Transportation as a guide for deploying zero-emission medium- and heavy-duty vehicle charging and hydrogen fueling infrastructure over the 2024 to 2040 period. The goal of the strategy is to prioritize investments along the National Highway Freight Network (described later under "Funding Programs") to accelerate the adoption of commercial zero-emission vehicles. The U.S. Department of Transportation is applying a phased implementation timeline that identifies segments of the highway freight network. Deployment of charging and fueling infrastructure of Zero-Emission Freight Corridors on the highway freight network in Minnesota (as well as in neighboring Upper Midwest states) won't begin until Phase 3 (2030-2035) of the strategy. However, planning and strategizing to prepare for $2.5 billion in forthcoming competitive grants to build alternative fueling infrastructure nationwide will need to begin earlier. Ultimately, the full zero-emission freight corridor network will extend to the vast majority of the National Highway Freight Network by 2040.

Minnesota Statewide Freight Bottlenecks Report

Each state is required to identify a list of state freight bottlenecks based on requirements identified in the Moving Ahead for Progress in the 21st Century Act (MAP-21), the federal law that identified specific transportation performance measure reporting requirements. The report provides a summary narrative of the most severe and acute statewide freight bottleneck locations on the National Highway System and on the Interstate System within the state of Minnesota. The report is created in alignment with the 2018 Statewide Freight System and Investment Plan, and it informs subsequent investment plans, including the 2024 Minnesota State Freight Plan and Metro District Freight Plan. The last report listing the state's severe bottlenecks was published initially in 2020 and updated in 2021. The report is typically produced every two years, but due to the economic impacts of COVID-19, there was a lag in the usual reporting timeline.

Urban Freight Perspectives Study

The Urban Freight Perspectives Study, completed by MnDOT for the metro district in 2019, focused on enhancing freight mobility by improving communication with public and private sector freight stakeholders and integrating freight considerations into the district's project development process. The study also created a GIS database tool to assist project managers in identifying and addressing key freight issues during the project design process and construction.

Urban Freight Distribution Study on E-Commerce Impacts and Opportunities

Met Council led the Urban Freight Distribution Study in 2023 with a specific focus on e-commerce online purchasing trends and the impacts and opportunities of last-mile parcel deliveries. The study's scenarios and key findings only apply to this specific, yet significant, aspect of e-commerce activity.

E-commerce has the potential to be a "win-win-win" opportunity that can extend benefits to consumers through convenience and choice, to businesses by offering greater market reach, and to the environment through reducing regional vehicle miles traveled and greenhouse gas emissions by replacing potentially modest portions of personal shopping trips. The following subsections summarize three key study focus areas: e-commerce sustainability impacts, opportunities for advancing curbside management, and emerging technologies for last-mile deliveries.

E-commerce sustainability impacts

Since 2010, online consumer retail sales have grown at an average rate of about 11% per year, nationally, and in 2023 represented about 15.4% of total retail sales – up from just under 5% in 2011. The study projects that e-commerce will continue to grow in total sales and in its share of overall retail, nearing 35% of retail sales by 2050.

A key research question from the Urban Freight Distribution Study was "To what extent does e-commerce parcel delivery increase or decrease this region's vehicle miles traveled and greenhouse gas emissions?" Through detailed analyses, the study found that:

- While the vehicle miles traveled from last-mile delivery vehicles is significant, it represents less than 1% of total regional shopping vehicle miles traveled and only about 1.4% of greenhouse gas emissions associated with the region's total personal shopping trips (Met Council's 2021 Travel Behavior Inventory).
- One package ordered online might add about 0.4 mile traveled by delivery vehicles, compared to an average of about 10 miles traveled for a single shopping trip. This means that in theory, and to the extent that shopping trips are replaced by e-commerce at-home deliveries, personal shopping trips to physical stores could have an impact factor as high as 25 times compared to ordering online and receiving deliveries at home.
- Given that the e-commerce share of total retail sales is projected to increase to nearly 35% by 2050, there is reasonable potential to significantly reduce the region's shopping-related vehicle miles traveled and related greenhouse gas emissions through increasing efficiencies in e-commerce parcel delivery systems.

Figure 13.2: Estimated vehicle miles added by shopping method in Twin Cities region



E-commerce last-mile parcel delivery scenarios

This study developed four e-commerce-specific future scenarios to compare relative impacts to regional vehicles mile traveled and greenhouse gas emissions. Of the four scenarios analyzed, the two demonstrating the most potential for significant vehicle miles traveled and greenhouse gas reductions include:

- **E-commerce scenario 1: techno-freight revolution scenario** assuming high adoption levels of automation for freight distribution that drives lower shipping costs with a rapid upsurge in e-commerce relative to overall retail sales. These factors are likely to be accommodated by:
    - A large increase in parcel deliveries across the region.
    - A rapid shift by delivery providers to zero tailpipe-emission vehicle fleets and more efficient routing/delivery scheduling practices.
    - A continued decline in shopping at physical retail stores leading to fewer overall personal shopping trips and reductions in associated vehicle miles traveled.
- **E-commerce scenario 2: eco-conscious consumer scenario** assumes consumers will reduce the vehicle miles traveled and greenhouse gas emissions impact of their deliveries through a combination of:
    - More efficient ordering through consolidating purchases and deliveries, and reducing necessary item returns.
    - Reducing vehicle miles traveled impact of personal shopping trips by combining trips, shopping closer to home, and shifting to non-automobile modes.
    - Shifting to purchasing and/or leasing of zero-emission vehicles.

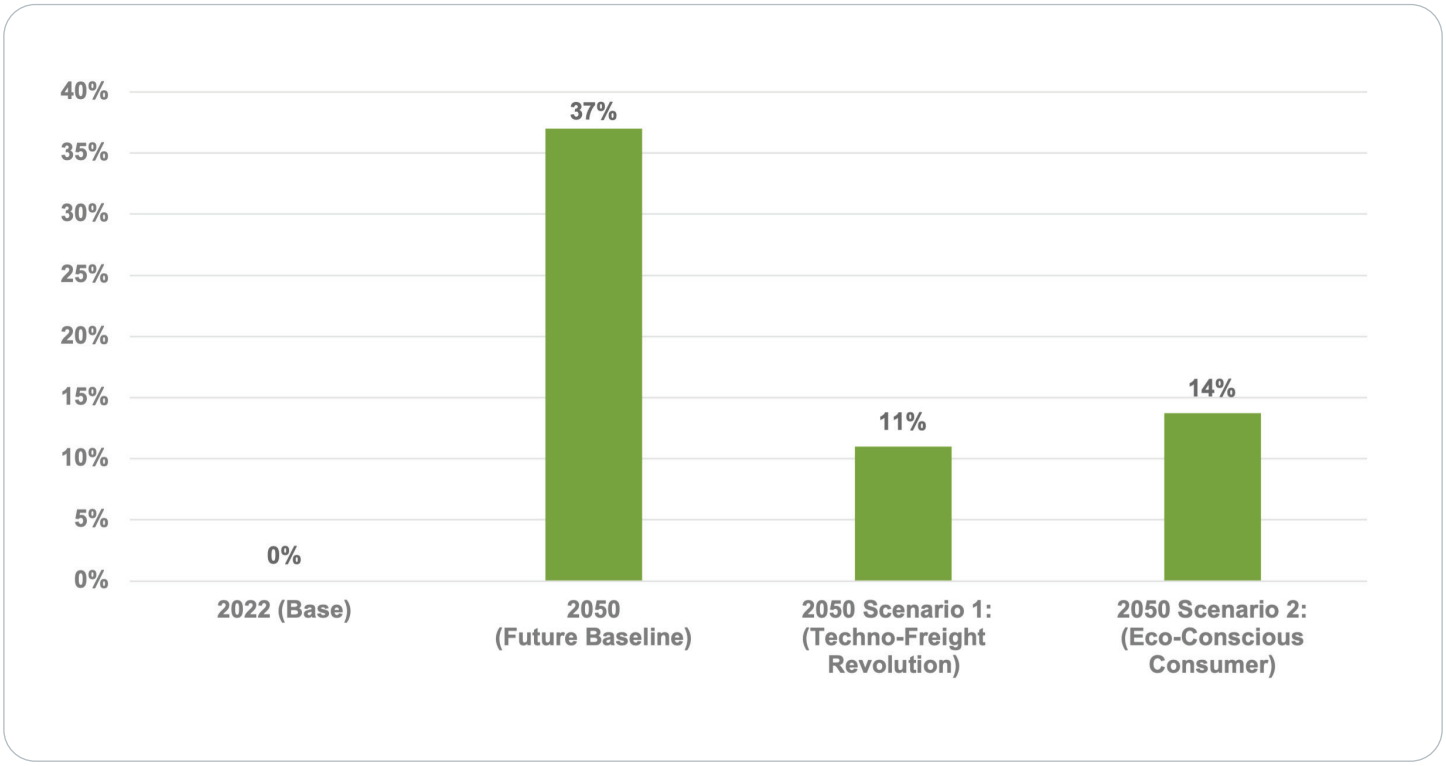
Key findings of vehicle miles traveled and greenhouse gas analyses

For the scenarios described above, comparative analyses were done to illustrate their highest theoretical limits in potential reduction of vehicle hours traveled. These theoretical total reduction scenarios are shown in Figure 13.3 (along with the projected year 2050 baseline regional vehicle miles traveled) as percent change in vehicle miles traveled compared to the region's estimated 2022 overall vehicle miles traveled. Scenarios 1 and 2 have the maximum potential, in theory, to hold down growth in overall regional vehicle miles traveled to 11% and 14%, respectively, compared to estimated 2022 overall regional vehicle miles traveled. The scenarios also compare favorably to the projected 37% growth in vehicle miles traveled from 2022 to the 2050 baseline case.

Note that the results from the scenarios analysis do not reflect what is necessarily achievable, but rather, the direction and highest theoretical potential impact assuming:

- **Scenario 1** (techno-freight revolution) with complete deployment of technology including lower- and zero-emission modes (electric and hydrogen fuel cell powered vehicles) and last-mile micro modes (air drones, robots, cargo e-bikes, and other nonmotorized means).
- **Scenario 2** (eco-conscious consumer) with a full shift to optimal shopping and receiving practices by consumers and delivery providers.

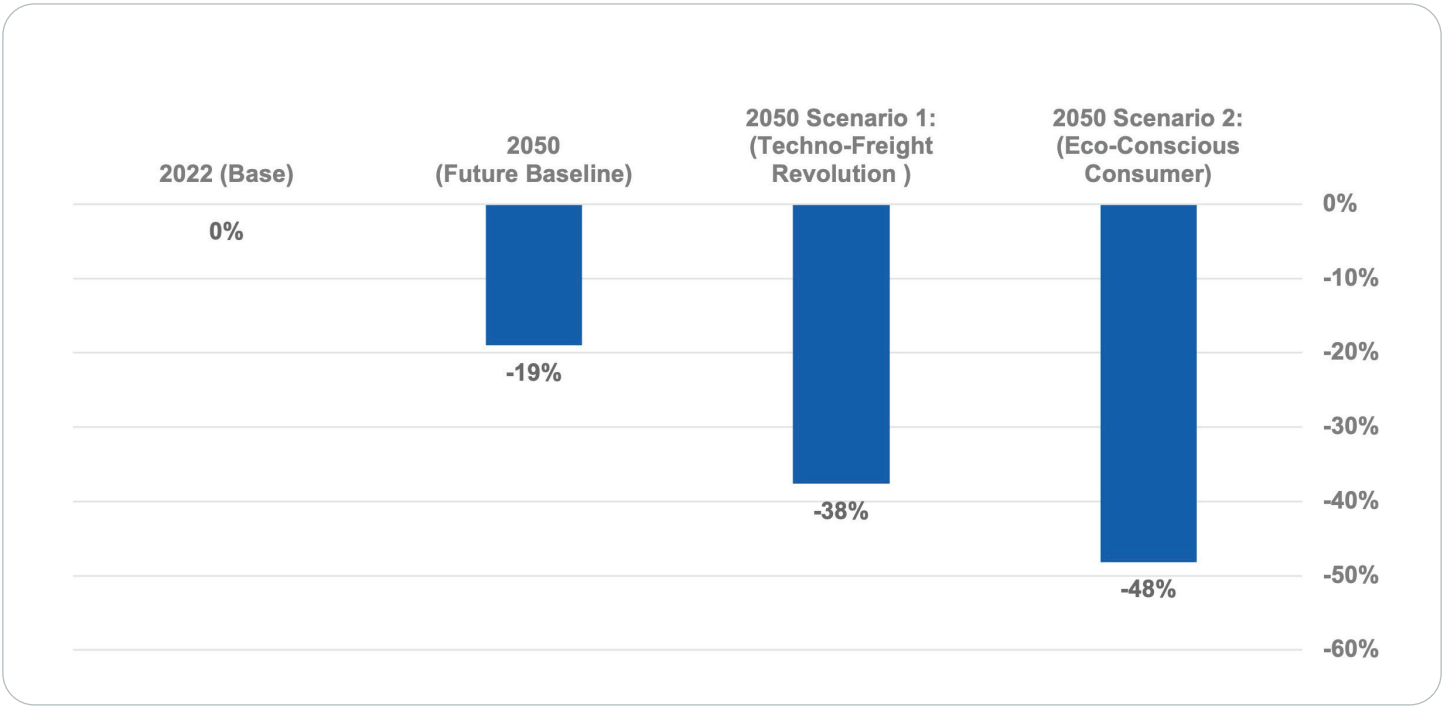
Figure 13.3: E-Commerce future scenarios: Relative change in projected regional vehicle miles traveled compared to base year 2022 and 2050 baseline conditions[141]



Note that these results only apply to the specific segment of e-commerce relating to last-mile parcel deliveries.

Through a similar comparison of the future scenarios on potential greenhouse gas emission impacts and based on the same overall regional vehicle miles traveled projections, Figure 13.4 demonstrates the theoretical potential for greenhouse gas emission reductions of 38% and 48%, respectively, for future Scenarios 1 and 2 compared to the 2022 base year. This represents potential greenhouse gas emissions reduction factors of 2 times and 2.5 times the projected 2050 baseline emissions for Scenarios 1 and 2, respectively. Again, note that the greenhouse gas analysis carries the same caveats as described above for the vehicle miles traveled analysis in terms of representing only theoretical potential maximum reductions.

Figure 13.4: E-Commerce future scenarios: Relative change in projected regional greenhouse gas emissions compared to base year 2022 and 2050 baseline conditions [142]



These results from the future scenarios analysis provide the basis for thse e-commerce-related planning guidance described in the Freight Investment Plan. More details on the vehicle hours traveled and greenhouse gas analyses can be found in the study's E-Commerce Trends and Sustainability Impacts subreport.

Opportunities for advancing curbside management for urban deliveries

One element of the Urban Freight Distribution Study assessed best practices in curbside space management relating to last-mile urban parcel deliveries. Details on these topics, including numerous examples of cities' experiences with curbside management, can be found within the Curbside Management and New Technologies for Last-Mile Deliveries subreport. This study element provides a comprehensive review of curbside management programs in diverse cities across the United States and Canada.

Curbside space management is seen by practitioners as a means to transform the last mile of freight delivery. Studies have shown that urban delivery drivers spend around 80% of their time loading and unloading goods or walking to final delivery destinations. Delivery drivers are often forced to park in unauthorized spaces,

cruise for parking, reroute their vehicles, or double park and wait for parking to become available. In turn, this increases vehicle miles traveled and greenhouse gas emissions and creates longer delivery times. Insufficient curb access can create negative impacts on people walking, biking, rolling, or using transit due to excessive vehicle emissions and increased risk of conflicts leading to traffic-related crashes. Therefore, the availability of short-term curbside parking is a critical safety and efficiency factor for urban deliveries and passenger transportation users alike. A few concept strategies for advancing curbside management are described in the Freight Investment Plan section.

Emerging technologies for last-mile deliveries

The Urban Freight Distribution Study also researched the status and promise of new and emerging technologies related to reducing vehicle miles traveled and greenhouse gas emissions associated with last-mile deliveries. Specific details on this research can be found in the Curbside Management and New Technologies for Last-Mile Deliveries subreport.

The study reviewed and documented the following technologies relative to last-mile deliveries:

- Electric delivery vehicles
- Hydrogen fuel cell electric vehicles
- Micro-delivery modes including cargo e-bikes, e-scooters, and e-carts
- Air-based drones
- Sidewalk delivery robots
- Autonomous delivery vans

Electric delivery vehicles and cargo e-bikes are relatively mature technologies, having benefited from significant improvements in speed, battery life, and adoption rates. Newer and emerging technologies such as air-based drones, sidewalk delivery robots, and autonomous delivery vans are in the early stages of development and are undergoing pilot testing trials. They also face some regulatory and infrastructure-related hurdles. For example, constraints affecting full deployment of delivery robots include street permit requirements in some cities and the absence of continuous smooth sidewalks in many others. Other technology issues remain, such as the battery weight and operating range limitations for air-based drones.

Cargo e-bikes and e-scooters rely on well-developed bicycle and pedestrian facilities and networks. In many cases they also will require access to nearby off-street sites for managing package consolidation and parcel pickups and drop-offs. These locations are also known as last-mile distribution microhubs. Cargo e-bikes and e-scooters have smaller carrying capacities and shorter ranges of operation than their motorized vehicle counterparts, and thus require frequently placed microhubs along major delivery routes. As parcel deliveries by e-bikes and e-scooters continues to expand, there is a growing need to provide access to specific wattage-appropriate chargers for these micro-delivery modes.

The suitability of delivery technologies for urban, suburban, or rural communities was also assessed. Micro-delivery modes such as a, and sidewalk delivery robots are best suited to dense urban settings due to the higher delivery frequency potential from within their shorter ranges of operation. Autonomous delivery vans and electric delivery vehicles, given their larger capacities and longer ranges, are well suited to serve suburban and rural communities in addition to serving more densely developed urban areas. Air-based drones have the potential to serve anywhere in the region. In suburban and rural settings where shopping trips are longer and were found to represent up to half of the region's shopping-related vehicle miles traveled, the use of drones could be an effective method in reducing vehicle miles traveled and greenhouse gas emissions.

Urban areas present unique challenges for drone deliveries, but also significant opportunities. Higher densities can pose navigational issues for drones with more above-ground obstructions from development. Drones can also be constrained by limited drop locations, such as rooftops higher than the maximum 400-feet flight limit set by the Federal Aviation Administration. Aside from these constraints in urban areas, the higher frequency of deliveries in high-density neighborhoods and the ability to bypass traffic congestion offer air drones an efficiency advantage for delivering small parcels.

The study's findings on the potential of new and emerging technologies to further reduce regional vehicle miles traveled and related greenhouse gas emissions are the basis for the related planning guidance described in the Freight Investment Plan.


IMAGINE 2050

Freight Investment Plan

This section of the regional freight investment plan provides direction for prioritizing roadway and bridge projects that benefit freight moved by trucks. The purpose and application of designated Regional Truck Freight Corridors are described in relation to regional transportation investments that are determined through the Regional Solicitation, as well as for other state and federal transportation programs administered by MnDOT. References to detailed technical information are provided through links to the underlying regional planning studies and interactive online maps.

Planning guidance for e-commerce, last-mile distribution

The following planning guidelines were developed in response to the technical findings of the Urban Freight Distribution Study described above and adapted from its recommendations. The guidelines apply to Met Council and its transportation partner agencies except where additional or specific agencies or agency types are mentioned. These guidelines directly support the following goals and policies from the Policies and Actions Section:

- Goal: Our region is dynamic and resilient
    - Policy 24: Plan for and invest in first/last-mile freight connections between major freight generators and the regional highway system
- Goal: We lead on addressing climate change
    - Policy 29: Ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure
    - Policy 31: Prioritize projects that reduce vehicle miles traveled through sustainable transportation options

Related policy actions are referenced in the guidelines below, where applicable.

Support for electrification of delivery vehicles

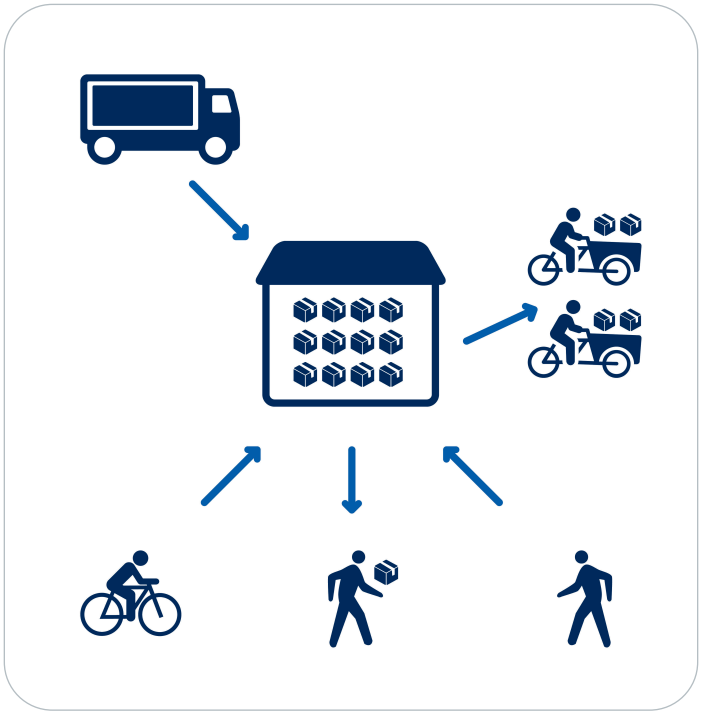
Providing widely accessible and reasonably spaced e-charging stations will increase their visibility to businesses and transportation system users, thereby growing confidence in the ability and convenience of recharging vehicles. This, in turn, can help accelerate the adoption rates for electric vehicles by consumers and for conversions to electrified delivery fleets by commercial carriers. In addition to charging stations for electric cars, vans, and trucks, lower-voltage chargers for e-bikes and e-cargo bikes are needed in proximity to stores and other commercial businesses where goods are delivered.

The increased visibility of e-charging facilities may signal a growing general level of acceptance that further promotes the concept. To advance toward this outcome, Met Council and its transportation partners should promote electrification through planning and investments in public charging infrastructure. (See also Policy 29 and its supporting actions in the Policies and Actions Section.)

Promote and facilitate last-mile parcel distribution microhubs

In addition to vehicle-miles-traveled efficiencies gained from home deliveries compared to traditional shopping models, the Urban Freight Distribution Study found a few opportunities that could potentially further reduce regional vehicle miles traveled. For example, the opportunity to locate microhubs or consolidated distribution and pickup centers and stations nearer to the customer (like parcel pick-up and drop-off lockers in grocery stores) could significantly reduce vehicle miles traveled and/or transfer final deliveries to zero-emission modes. Microhubs placed in or near dense neighborhoods can replace personal trips by motor vehicles, or delivery trips by truck, with walking, biking, e-scooters, or other human-powered or zero-emission modes.

Figure 13.5: Microhubs and zero-emission modes for last-mile deliveries



Government agencies, particularly cities with dense urban or suburban activity centers, can support new efficiencies and minimize impacts of last-mile deliveries through the distribution microhub concept. Agencies should seek opportunities to lead and/or partner with private sector companies and academic institutions on pilot studies and/or projects that promote and facilitate parcel distribution microhubs for last-mile deliveries. The concept of distribution microhubs is related to Action 22C regarding mobility hubs, which often include parcel pick-up and drop-off stations.

Promote actions to minimize vehicle miles traveled and greenhouse gas emissions

Residents and businesses should be reminded that their individual and company shopping decisions have an impact on climate change and are encouraged to take actions like bundling orders, combining multiple trips into one, using nonautomobile or zero-emission travel modes, and shopping closer to home when possible. Private-sector delivery providers can adopt and promote more efficient and climate-friendly order fulfillment options for their customers. To encourage a collective shift toward more efficient consumer behaviors and business practices, the region's transportation, health, and environmental agencies should develop educational materials to inform the public and to promote more sustainable shopping, purchasing, and delivery practices that residents and businesses can adopt to minimize vehicle miles traveled and greenhouse gas emissions. This strategy is directly tied to Action 31D.

Improve data collection, develop metrics to track progress in meeting sustainability goals

Private e-commerce carriers and delivery service providers should be encouraged to report summary data on delivery fleet vehicle types, delivery vehicle miles traveled, and other measures undertaken or planned to reduce overall vehicle miles traveled and greenhouse gas emissions. The data can then be aggregated for analyzing progress toward meeting regional and statewide goals. To further this important initiative, Met Council and MnDOT should encourage major e-commerce parcel carriers to provide summary data related to delivery vehicle fleets and vehicle miles traveled and should develop aggregated data metrics to help track progress in meeting regional and statewide goals. This strategy is directly supported by Action 24H.

Opportunities for advancing curbside management for urban deliveries

Curbside access for deliveries is important for optimizing freight operations and essential for sustaining a vibrant local economy. As the demand for curb space by business establishments and residences for receiving parcels continues to increase, maintaining adequate curbside access will become increasingly critical. A few concept strategies from the Urban Freight Distribution Study are listed below that local agencies and/or Met Council can apply to advance more effective curbside management practices and new technologies for last-mile deliveries. These strategies will be most applicable to cities with defined business districts, neighborhood commercial zones, or developed commercial or mixed commercial and residential areas that lack sufficient off-street parking or docks for loading and/or unloading goods.

Establish curbside use inventories and promote sharing of curbside use data

Curb-use data are a crucial element of effective curbside management programs. The first step in developing curb-use policies is to conduct curbside inventories. Local agencies in the region can leverage new technologies in curbside data collection and allow sharing of any findings or strategies with other cities and Met Council to begin developing a local knowledge base. Municipalities with defined business districts, or areas with densely developed commercial or mixed commercial and residential streets are encouraged to: 1) establish curbside use inventories, 2) investigate and apply new technologies for collecting data on multimodal curbside use (including commercial delivery activities), and 3) share local data and trends with partner agencies and the public. This concept is directly tied to Action 22E relating to curbside management plans of which curbside use inventories are an integral component.

Facilitate industry engagement and coordination

Engaging with industry representatives in the process of resolving curbside challenges to take advantage of their operational experience and perspectives will result in better and more cost-effective solutions. Industry stakeholders are directly affected by curbside issues and can bring a pragmatic, front-line perspective to the table. Commercial delivery service providers have the closest and most consistent experience to notice potential safety issues and offer ideas for potential solutions. Municipalities are encouraged to include e-commerce industry representatives in street planning and design processes and in discussions to resolve everyday curbside challenges.

Ensure freight delivery needs are integrated into Complete Streets planning

Complete Streets initiatives seek to prioritize safe mobility and access for the full range of street users, including people biking, walking, or rolling. Freight delivery vehicles are often not well represented in such planning processes and, as a result, can be underprioritized. This potential oversight is significant as freight deliveries are critical to local commerce and make use of the curbside in unique ways compared to other vehicles and nonmotorized transportation modes. This issue is addressed in Action 24E.

Streets should be designed to serve the delivery needs of businesses and residents adequately and in concert with the needs of people walking, biking, rolling, or using transit. Streets designed without fully considering the needs of all users will only increase conflicts among them. Addressing conflicts (such as unloading trucks blocking bicycle or bus lanes or trucks taking more turns across bike lanes and crosswalks while searching for parking) through a Complete Streets process should result in designs that improve safety and convenience for all transportation users.

Complete Streets planning processes should address the anticipated daily use by freight delivery vehicles, including goods delivered through new technologies and methods, and preferably as conceived through a curbside management plan. Cities involved in planning street projects in commercial districts using Complete Streets principles should consider developing a curbside management plan as part of the pre-design planning process. This strategy is directly tied to Action 22E and applies to a planned Work Program item in Section 17 for developing a Complete Streets Local Implementation Guide.

Advance new technologies in last-mile delivery systems through pilot studies

The acceptance and adoption among the public of new and emerging technologies for last-mile deliveries are best advanced through demonstration pilot projects and test trials. These first steps are essential to establishing a technology's commercial viability. They are also needed to grow confidence within a community that full implementation of the new delivery mode will result in safe operation and will enhance convenience or efficiency for a reasonable cost. The creation of public-private partnerships has proven to be an effective approach for carrying out pilot studies by leveraging the diverse strengths of both sectors. Whenever possible, it is helpful to include academic institutions as a project partner or participant.

To help expedite the acceptance and adoption of new zero-emission delivery technologies, government agencies should pursue opportunities to lead and/or partner with private sector companies and academic institutions on pilot studies or projects that test, evaluate, and demonstrate to the public the potential benefits and costs of last-mile delivery technologies. This strategy is directly supported by Action 24G.

Prepare for the deployment of air-based drones for last-mile deliveries

While we do not have specific guidance on air drones to offer local agencies at this time, there is evidence that opportunities to establish and deploy air drones for small parcel deliveries are on the near-term horizon. Amazon Prime Air and the Mayo Clinic, to name two major air freight shippers, are developing facilities to take advantage of the Federal Aviation Administration's approval of rules for Beyond Visual Line of Sight (BVLOS) operations. The use of air drones for small parcel deliveries will be discussed in more detail in a planned update to the Aviation System Plan in 2025. Future aviation-specific policies and actions around this emerging technology will inform future Met Council work.

Investment direction

Regional Truck Freight Corridors

Description and purpose

Regional Truck Freight Corridors were developed through the Regional Truck Highway Corridors Study (2017) and adopted in the 2018 update to the 2040 Transportation Policy Plan. They are defined as the set of the region's principal and minor arterial highways that are most heavily relied on by the trucking industry for delivering the region's freight and goods. One important distinction about these corridors is that they are not intended to represent officially established or planned truck routes, but rather, they provide a snapshot in time of how trucks are using the existing highway system based largely on heavy commercial average daily traffic counts and locations of major freight centers. These freight-dependent corridors are used to plan and prioritize highway improvement projects and are used as criteria in regional and state project funding processes.

Regional freight terminals are an official component of the metropolitan freight system (previously shown in Figure 13.1) and are one of the criteria used in prioritizing the Regional Truck Freight Corridors.

Update process

Regional Truck Freight Corridors are updated to make use of the most recently available truck volume data from MnDOT and other sources. The Met Council reviews and updates these corridors about every two years in close coordination with state and local highway transportation agencies and ahead of each Regional Solicitation cycle for distributing federal transportation funds. (See Regional Truck Corridors Update for the most recent review.) The updated corridors were adopted in 2022 as shown in Figure 13.7, which reflects the addition of 11 newly approved corridors.

During the update process, local agencies are given an opportunity to propose new or extensions of existing corridors based on the availability of more recent heavy commercial annual average daily traffic counts. A future update may include an overall reassessment of the heavy commercial traffic counts at a regional scale. New truck corridor roadway segments must meet one of the following thresholds:

- A minimum annual average of 300 heavy commercial daily trucks
- A minimum annual average of 200 heavy commercial daily trucks AND a heavy truck volume percentage of average total daily traffic of at least 10%

Newly proposed Regional Truck Freight Corridors are evaluated across four primary data factors that include:

- Heavy commercial annual average daily traffic (truck volumes)
- Percent of annual average daily traffic represented by heavy commercial trucks
- Proximity to freight industry economic centers
- Proximity to regional freight terminals (as designated within the previously shown metropolitan freight system map in Figure 13.1)

Regional Truck Freight Corridors are assigned to one of three priority tiers based on these data factors that are used to determine composite scores for all existing and new corridors. Other considerations for tier assignments include natural breaks in the corridor composite scores, the distribution of corridor miles across the three tiers compared to the original corridor tiers, and roadway functional class. Table 13.1 shows the distribution of Regional Truck Freight Corridor centerline miles among the priority tiers and across highway classification groups.

Table 13.1: Highway centerline miles by regional truck corridor priority tier and roadway class

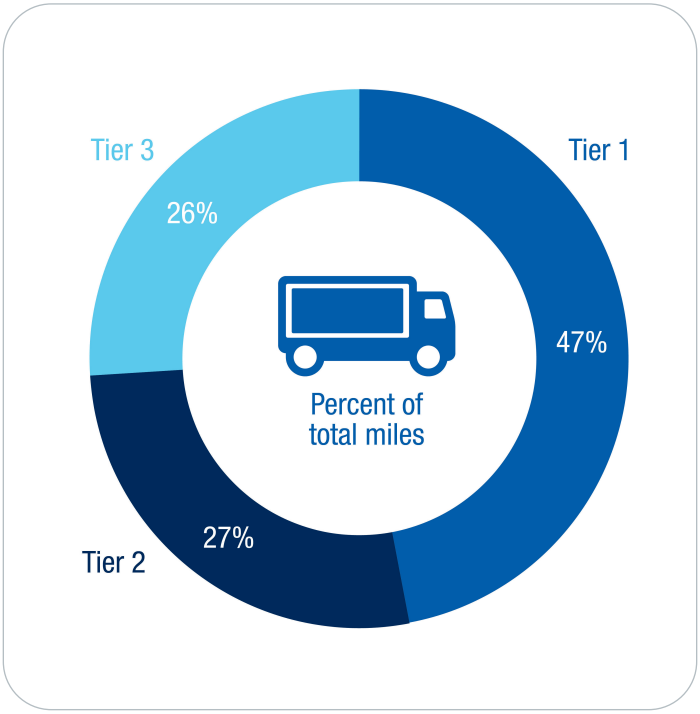
Priority tier	Interstates	Principal arterials (noninterstate)	Minor arterials	Total	Percent of total
Tier 1	254	121	229	604	47%
Tier 2	0	153	192	345	27%
Tier 3	0	31	308	339	26%
Total	254	305	729	1,288	100%

All the interstate highway miles in the region are designated as Tier 1 truck corridors, which is consistent with their recognized importance to overall regional trucking. Principal arterials, designated for longer and higher-speed trips through the region, make up nearly 40% of the noninterstate mileage for the Tier 1 and Tier 2 truck corridors. Minor arterials, more closely associated with first-and-last-mile connections to freight centers, make up 73% of the Tier 2 and Tier 3 truck corridor miles combined. The proportionate mileage shares for tiers 1 through 3 (shown in the right-hand column of Table 13.1) are notable because they are one of the factors used in determining the priority tiers in future corridor updates.

Regional investment priorities

Regional Truck Freight Corridors (Figure 13.7) are designated as regional priorities and provide an additional context for evaluating projects considered for receiving transportation funds. Proposed projects that address safety, congestion, or roadway preservation on segments of Regional Truck Corridors should be given priority in regional- and state-administered transportation funding programs. In addition, because this region's freight transportation system touches most freight movements within the state or between Minnesota and other states, other MnDOT funding programs, including the Minnesota Highway Freight Program, should prioritize funds for freight-beneficial projects within the region.

Figure 13.6: Highway centerline miles by regional truck corridor tier



Other highway funding priorities that benefit freight

The Highway Investment Plan describes general highway funding programs across various project categories. Investments in several areas provide direct or indirect benefits for trucks moving freight on highways.

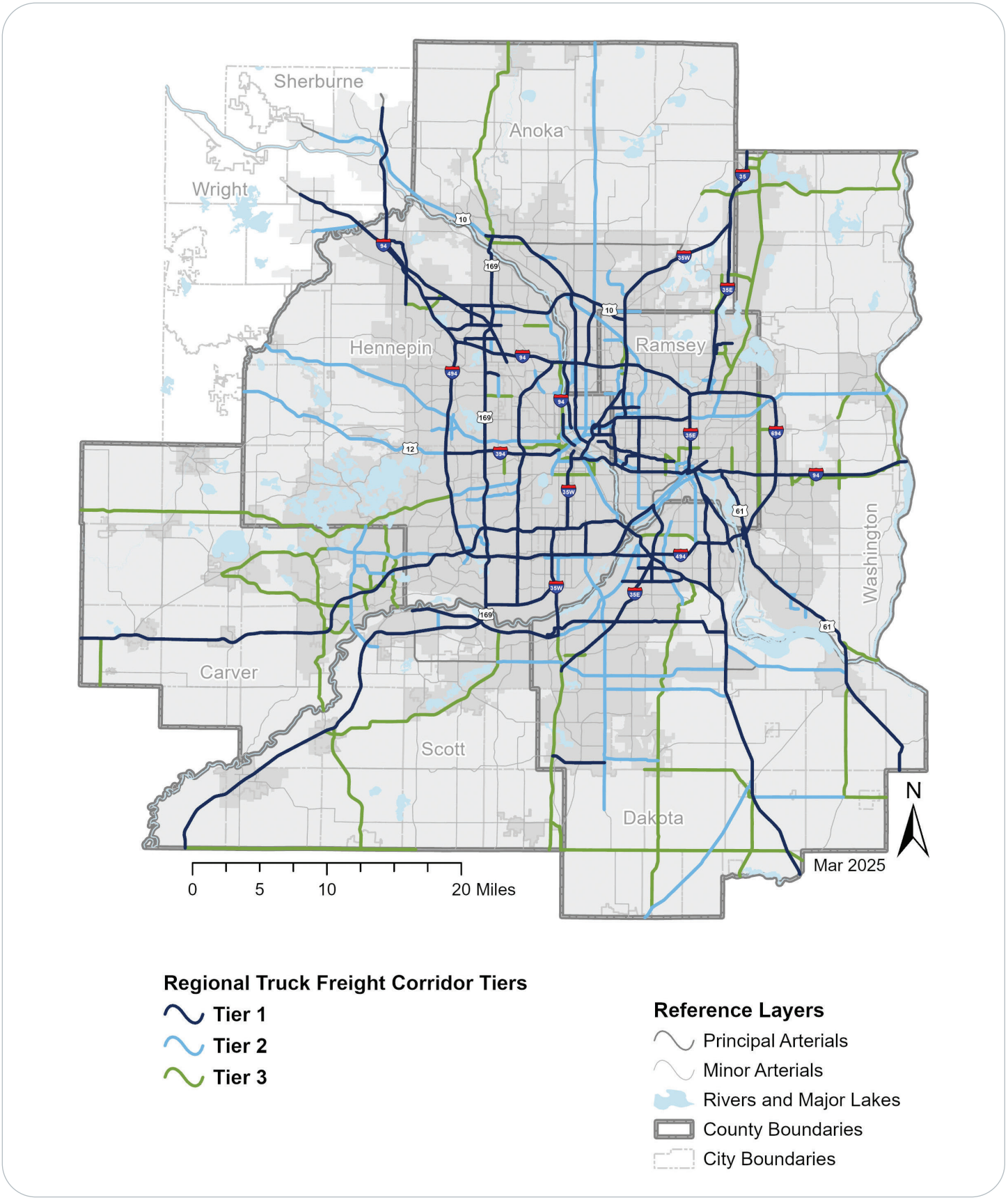
Operations, maintenance, and preservation of highway assets

Funding for highway operations and maintenance is critical for moving freight by trucks safely and efficiently. Snow and ice removal during winter months is especially important to ensure safe and timely, all-weather freight delivery. Ongoing maintenance and replacement of bridges and road pavement are also essential for transporting freight. Weight-restricted bridges due to poor conditions can greatly impact truck movements by forcing trucks to detour to alternative crossings which adds time and fuel costs. Poor pavement quality is often raised as a key concern in surveys of freight operators and deficient highway pavement has been found to damage cargo like precision instruments and high-tech machinery, in addition to damaging trucks.

Regional highway mobility improvements are also important for trucks. The implementation of traffic management technologies on highways, including traveler information systems, incidence response programs, corridor traffic signal coordination, and queue warning systems may reduce breakdowns in traffic flow. These technologies benefit freight by helping to maintain on-time reliability for freight deliveries and by improving overall safety for trucks and other vehicles.

The provision of adequate facilities for overnight truck parking is a current deficiency nationally and locally and relates directly to overall safety in the trucking industry. The Federal Motor Carrier Safety Administration established hours-of-service regulations that generally allow up to 11 hours of driving per 24-hour

Figure 13.7: Regional truck freight corridors



period which can impact long-haul truckers in need of a place to park and rest. Providing well lit, secure, consolidated areas to park and rest are essential for truck drivers to stay awake and alert while driving. More parking facilities are needed so that drivers don't have to resort to parking in areas that can create additional safety issues, like along freeway on-ramps, off-ramps, and shoulders.

For some locations, implementing spot mobility improvement projects may be the most cost-effective options to relieve congestion. Examples of these project types may include things like on-ramp and off-ramp extensions or auxiliary lanes that allow for the slower acceleration and deceleration speeds of trucks. Projects like these can be effective in alleviating bottleneck congestion associated with trucks and may also improve safety for all highway users.

Managed lane system investments

The system of existing and planned managed lanes, including the existing managed lanes along I-394, I-35W, and I-35E, provides benefits to local and regional freight moved by truck. Managed lanes can directly benefit shipments made by single-unit commercial vehicles (dual-axle trucks weighing less than 26,000 pounds), delivery vans, and cars when they pay to use these lanes otherwise reserved for transit and high-occupancy vehicles. This is especially beneficial to freight carriers like FedEx and UPS that transport goods for biomedical, high-tech, and other industries that rely on expedited deliveries of high-value, time-sensitive products.

The development of a managed-lane system may also benefit traditional freight movements by larger trucks. Managed lanes can effectively free up some capacity, creating more reliable traffic flows for freight traveling in general-purpose lanes. Managed lanes can also improve the safety and reliability of freight by helping to reduce the number and duration of crash-related breakdowns, minimizing total hours of corridor congestion for trucks. Similarly, greater use of managed lanes by transit (the primary beneficiary for managed lane investments) further reduces the number of passenger vehicles and creates more reliable travel times for freight-hauling trucks and other delivery vehicles.

Funding programs

Regional Solicitation

The Met Council and the Transportation Advisory Board, through the Regional Solicitation process, make specific categories of competitive federal transportation funds available to regional transportation partners for roadway and bridge projects. Historically, there has not been an application category specifically for freight projects. Freight considerations have been addressed through application criteria and measures. The region also has Carbon Reduction Program formula funds that can be used to implement freight-related projects that demonstrate a net carbon reduction benefit.

Funding categories and criteria for these programs will be determined through the Regional Solicitation evaluation work program item that will shape the 2026 Regional Solicitation. About $250 million is available to the region through the Regional Solicitation and Carbon Reduction Program for every two-year cycle. Freight should continue to be a consideration in project selection moving forward, either through freight-specific

application categories or criteria and measures, especially for roadway and bridge categories where freight is a significant user of the facilities.

Federal and state programs

National Highway Freight Program

The 2016 Fixing America's Surface Transportation (FAST) Act established the National Highway Freight Program and was reauthorized under the 2021 Infrastructure Investment and Jobs (IIJA) Act. The IIJA authorized $7.15 billion over five years for states to invest in freight projects that improve the National Highway Freight Network shown in Figure 13.8. Projects eligible for funding through this program must contribute to the efficient movement of freight on the network and must be identified in a freight investment plan included in a state freight system plan.

Minnesota Highway Freight Program

MnDOT created the Minnesota Highway Freight Program based on feedback from local governments, regional planning partners, and freight industry representatives as a new way to invest in key freight improvements across the state. The program is a competitive solicitation open to a wide variety of entities and uses federal National Highway Freight Program dollars. These funds were initially authorized through the FAST Act for improvements within the state to the National Highway Freight Network. This network includes all interstate highways plus intermodal connectors already included on the National Highway System. The state solicits project proposals from eligible transportation agencies every two years in cooperation with its State Freight Investment Advisory Committee. MnDOT has about $21.6 million per year to fund freight-specific construction projects through this program for state fiscal years 2021 through 2025.

As part of this process, MnDOT and the Met Council are jointly responsible for identifying additional roadways to designate as part of the National Highway Freight Network (the roadway component of the National Multimodal Freight Network) for the Twin Cities region. This is coordinated with the project selection process for the Minnesota Highway Freight Program through the designation of Critical Urban Freight Corridors and Critical Rural Freight Corridors. The Met Council is the lead agency for designating the urban freight corridors in coordination with MnDOT, while MnDOT takes the lead for designating the rural freight corridors in coordination with the Met Council. The federal Infrastructure Investment and Jobs Act expanded the previously established mileage limits for each state when designating these freight corridors, as follows:

- 150 urban miles statewide or 10% of Minnesota's primary highway freight system miles, whichever is greater
- 300 rural miles statewide or 20% of Minnesota's primary highway freight system miles, if greater

Freight project locations identified for Minnesota Highway Freight Program funding through the 2023 solicitation, along with highway connections to the National Highway Freight Network that are also designated through this process as Critical Urban Freight Corridors and Critical Rural Freight Corridors, are shown together in Figure 13.8. Table 13.2 lists the specific termini and lengths of the Critical Urban Freight Corridors designated by the Met Council for the Twin Cities region.

Figure 13.8: National Highway Freight Network in Twin Cities region

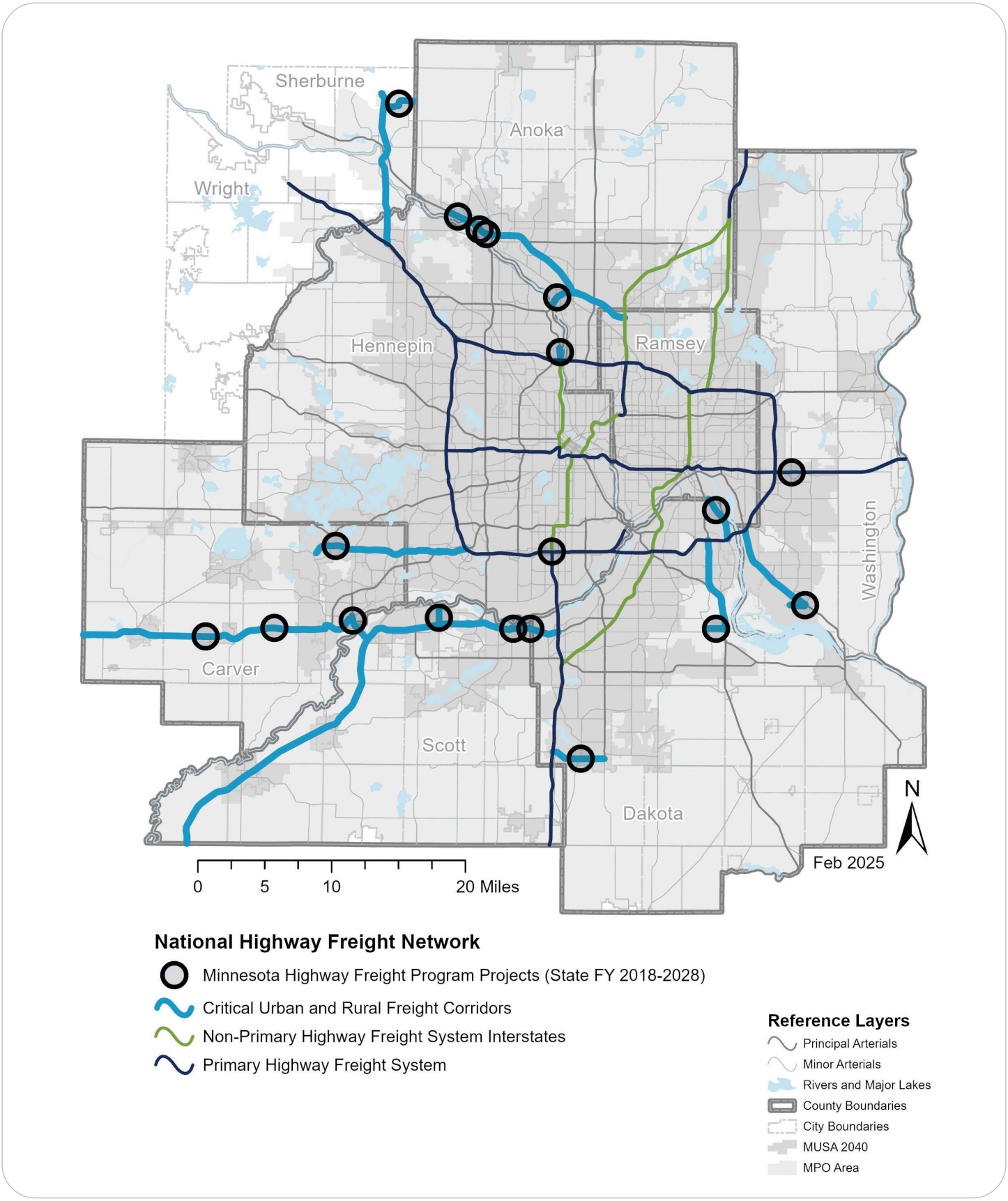


Table 13.2: Critical urban freight corridors in Twin Cities region

Agency	Highway	From	To	Miles
MnDOT	US 61	Innovation Blvd	I-494	7.5
MnDOT	MN 5	I-494 in Eden Prairie	80th St in Victoria	11.7
MnDOT	US 610	Mississippi River Bridge	800 ft east of CSAH 1 (E. River Rd)	2.5
MnDOT	US 52	117th St E in Inver Grove Heights	I-494	7.5
MnDOT	US 10	Armstrong Blvd NW	I-35W	16.8
City of Inver Grove Heights	117th St	CSAH 71 (Rich Valley Rd)	US 52	1.2
Sherburne County	CSAH 33	Auburn St	CSAH 13 (Twin Lake Rd NW)	1.7
MnDOT	MN 101	I-94 near Rogers	US 169	6.9
MnDOT	US 169	MN 101	213th Ave NW (Elk River)	4.7
Dakota County	CSAH 70	I-35	MN 3	4.0
Dakota County	CSAH 56	I-494	Annapolis St E	3.5
MnDOT	MN 13	US 169	I-35W	7.1
MnDOT	US 169	MN 13	MN 41	8.7
Scott County	CSAH 83	4th Ave E in Shakopee	US 169	1.1
MnDOT	MN 41	US 169	CSAH 61 (Chaska Blvd)	2.0
Carver County	CSAH 61	MN 41	CSAH 11 (Jonathan Carver Pkwy)	2.5
Carver County	Jonathan Creek Pkwy	Chaska Blvd	US 212	0.2
Washington County	CR 19A (Innovation Rd S)	100th Street South	US 61	0.1
City of Cottage Grove	Miller Rd/100th St S	Co. Rd 19A (Innovation Rd)	Jamaica Avenue South	1.1
MnDOT	MN 252	I-694	70th Ave N	0.9

Nationally Significant Multimodal Freight and Highway Projects program

The Nationally Significant Multimodal Freight and Highway Projects program is closely tied to freight as highway, bridge, intermodal freight, and freight rail projects on the National Highway Freight Network or the National Multimodal Freight Network are directly eligible. The National Multimodal Freight Network is being updated (2024) through the newly established USDOT Office of Multimodal Freight Infrastructure Policy. Its purpose is to assist states in directing resources toward improving system performance, to inform freight transportation planning, and to help prioritize federal investments. Program funding is awarded on a competitive basis and is focused on projects having national or regional significance.

The fiscal year 2023-2024 program provided $3 billion in transportation project investments. Two major freight-related projects in this region were funded through this program in 2022: the U.S. Highway 212 freight mobility and safety project in Carver County was awarded $10 million, and the MnDOT led I-494, U.S. Highway 169 to MSP Airport (Project 1) was awarded $60 million.

Other MnDOT freight-specific funding programs

Port Development Assistance Program

MnDOT programs these state funds to support capital investments at public ports that expedite the movement of commodities, enhance the commercial vessel construction and repair industry, and promote economic development in and around ports. In the Twin Cities region this funding program supports development projects by the Saint Paul Port Authority. The Ports of Savage is privately managed and therefore not eligible for funding under this program. However, intermodal facility or access improvement projects would be eligible under the Minnesota Highway Freight Program and through other federal funding such as the Nationally Significant Multimodal Freight and Highway Projects program described above. Eligible projects include facility and infrastructure upgrades, rehabilitations, or expansions. Funding levels vary from year to year, but the 2023 Minnesota Legislature appropriated $18.1 million for these capital investments, which MnDOT has made available the state's port authorities through its 2023 project solicitation.

Railroad At-Grade Crossing Safety Program

MnDOT distributes about $6 million per year for safety improvements at railroad-highway surface crossings throughout Minnesota through the federal Railway Highway Crossing (Section 130) Program. These funds are the state's annual apportionment of federal transportation dollars set aside from the Highway Safety Improvement Program and are specifically targeted on eliminating hazards at rail-highway crossings. Top project priorities for funding include at-grade crossing closures, installation of active warning devices (crossing gates with flashing signals), and the replacement of outdated warning systems.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SECTION 14: AVIATION SYSTEM

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SUBSECTION 15: AVIATION SUPPORTING INFORMATION

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SECTION 16: EVALUATION AND PERFORMANCE

The 2050 Transportation Policy Plan uses a performance-based approach to measure success in meeting the region's transportation goals and objectives. This chapter describes the performance measures the Metropolitan Council will use to monitor and evaluate this plan's effectiveness.

The Met Council and its regional partners have selected performance measures that are clear, measurable, and closely tied to the plan's goals and objectives. The measures will indicate where the region is meeting its goals and objectives and what areas require greater emphasis and resources.

The 2050 Transportation Performance Plan performance measures fall into one of two main categories:

- Required federal performance measures that are tracked and must be reported about on a regular basis. As the region's Metropolitan Planning Organization, the Met Council is required to set short-term performance targets for these measures. The results of these measures are primarily concerned with the overall short-term trend and whether this trend is meeting the desired expectations.
- Regional performance measures that the Met Council tracks to evaluate the region's progress towards its goals and objectives.

Regional performance measures are organized by the plan's goals and objectives:

- **Our region is equitable and inclusive**
- **Our communities are healthy and safe**
- **Our region is dynamic and resilient**
- **We lead on addressing climate change**
- **We protect and restore natural systems**

Each section describes what measures will be used for that goal and objective. The sections provide tables or graphics summarizing existing trends. In cases where a measure can be forecasted, this chapter provides projections of the measure under the following scenarios:

- Base Scenario: This scenario uses 2022 regional population and employment estimates and the existing roadway and transportation network, as well as some projects with an estimated completion date of 2025.
- 2050 No-build Scenario: This scenario uses year 2050 regional population and employment forecasts and the Base Scenario transportation network. This scenario explores how the transportation system will perform under forecasted regional growth if we do not make any further investments.

- 2050 Current Revenue Scenario: This scenario uses regional population and employment forecasts for the year 2050 and investments included in the plan's current revenue scenario.

The Met Council used forecasts from the Regional Travel Demand Forecast Model (called an Activity-Based Model) and the Regional Transit Ridership Model to forecast the performance outcomes of each scenario.

Some performance measures apply to multiple goals and objectives. For instance, access to destinations can be used to evaluate progress towards both an equitable and inclusive region as well as a dynamic and resilient region. In these cases, measures have been linked to the goals and objectives where they can provide the greatest insight.

This performance-based approach is an ongoing, dynamic program. The Met Council and its partners in the region will update these measures throughout the plan's implementation as needed. Ongoing Met Council studies and reports, like the Met Council's Transportation System Performance Evaluation and future work items, will continuously refresh these performance measures. Going forward, the Met Council will also explore methods of providing evaluations in more dynamic and interactive ways.



Federal Performance Measures

Federal law (23 CFR 490.29) requires that all state departments of transportation and metropolitan planning organizations establish a performance-based planning program that monitors and tracks the transportation system's performance. This requires setting performance measure targets for the following six categories:

- **Transportation safety**
- **Bridge and pavement condition**
- **System performance and reliability**
- **Congestion mitigation and air quality**
- **Transit asset management**
- **Transit safety**

For each of the non-transit performance measures, the Minnesota Department of Transportation has an established deadline to set an overall statewide target. After that target is set, metropolitan planning organizations have 180 days to either:

- Adopt a performance measure target specific to the metropolitan planning organization planning area, or
- Agree to plan and program projects so that they contribute toward accomplishing the state department of transportation performance measure target.

The performance measure categories are either four-year targets with the option to revise in the middle of the performance period or set on an annual basis. Per federal requirements, the Transportation Policy Plan includes an evaluation of the region's progress in meeting the established performance measure targets. The following sections discuss the current metro area performance.

Roadway safety

This plan sets an objective that people do not die or face life-changing injuries on our transportation system, supported by several policies and actions to improve safety for users of all modes. These support the Met Council's commitment to aggressively reduce the number of fatal and serious injury crashes annually, with an aspirational goal of achieving zero fatal and serious injury crashes no later than 2050, supporting the Minnesota Strategic Highway Safety Plan's commitment towards zero deaths.

Pursuant to federal requirements, the Met Council has adopted short-range annual highway safety performance targets that are both reasonable and achievable. The Met Council adopted 2024 targets that reflect an annual reduction from the base-year data for fatal and serious injury crashes, as shown in Table

16.1. For 2024, the Met Council set safety targets on a straight-line decline from the 2020 and 2021 targets. Additionally, baseline and prior year performance in the federal pedestrian and bicycle measure has been disaggregated by mode and injury type.

Table 16.1: Metropolitan Council-adopted transportation safety performance measures, metropolitan planning area, 2024

Measure	Baseline (5-year average, 2019-2023)	2023 actual performance	2024 adopted target
Number of fatalities (all crash types)	153	147	No more than 82
Fatal injuries per 100 million vehicle miles traveled	0.57	0.53	No more than 0.29
Number of all serious injuries (all crash types)	811	924	No more than 532
Serious injuries per 100 million vehicle miles traveled	3.00	3.32	No more than 1.89
Pedestrian and bicyclist fatalities and serious injuries	192	199	No more than 131
Pedestrian fatalities	30	29	No target
Bicyclist fatalities	4	4	No target
Pedestrian serious injuries	112	112	No target
Bicycle serious injuries	45	54	No target

The Transportation Policy Plan uses two ways of measuring fatalities and injuries: total injuries and deaths and injury rates. Injury rates look at the number of people being killed or seriously injured per hundred million vehicle miles traveled. Both are ways of measuring the region's progress towards zero deaths and serious injuries.

Fatal injuries

Figure 16.1 and Figure 16.2 show recent trends. Between 2019 and 2022, injuries in the Twin Cities rose from 0.44 people killed per 100 million miles traveled (or 130 total people) to a rate of 0.65 (or 179 total people). Although this rate declined slightly from 2021 to 2022, the rates are still alarmingly higher than rates prior to the COVID-19 pandemic. Fatalities across the state of Minnesota have followed a similar pattern.

Figure 16.1: Number of crash fatalities on all Minnesota roads and Twin Cities metropolitan planning area roads

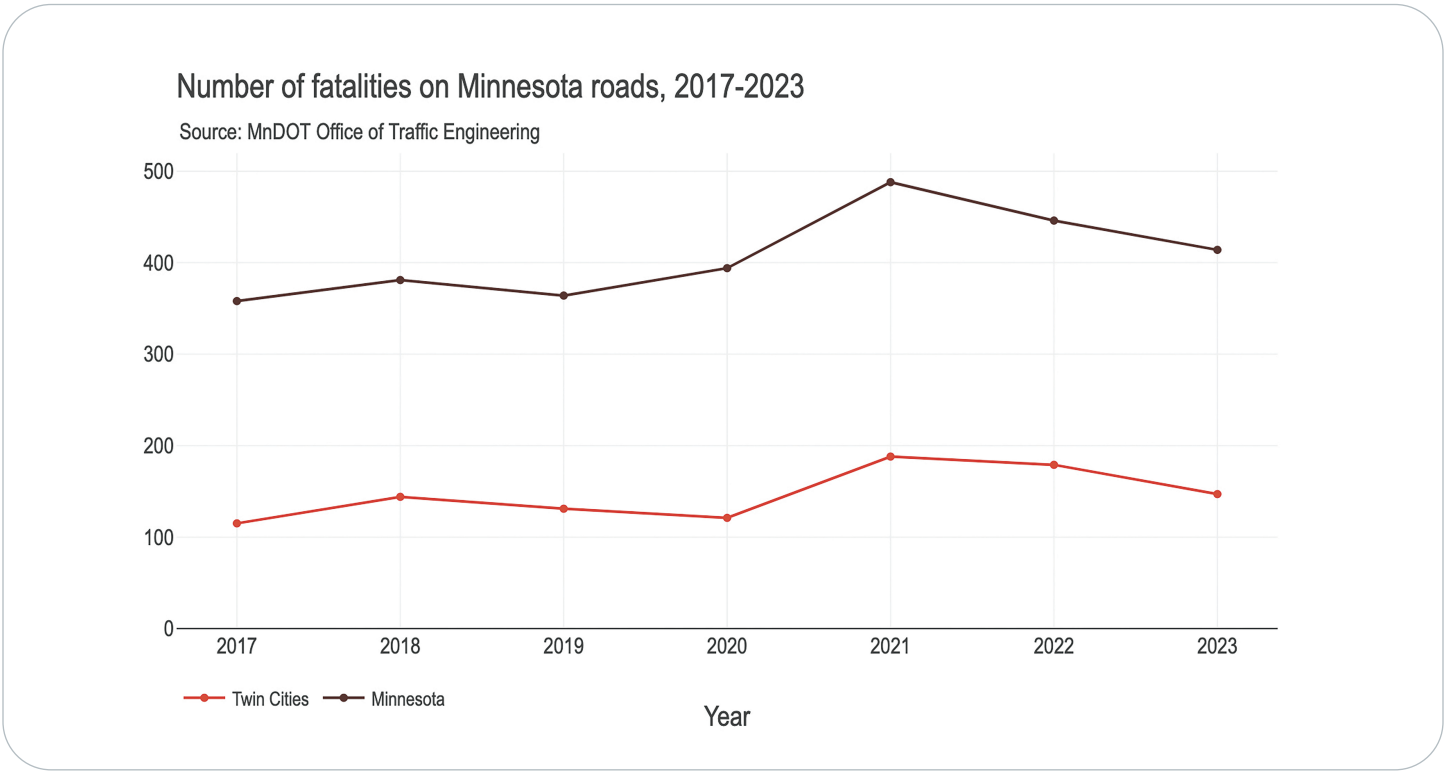
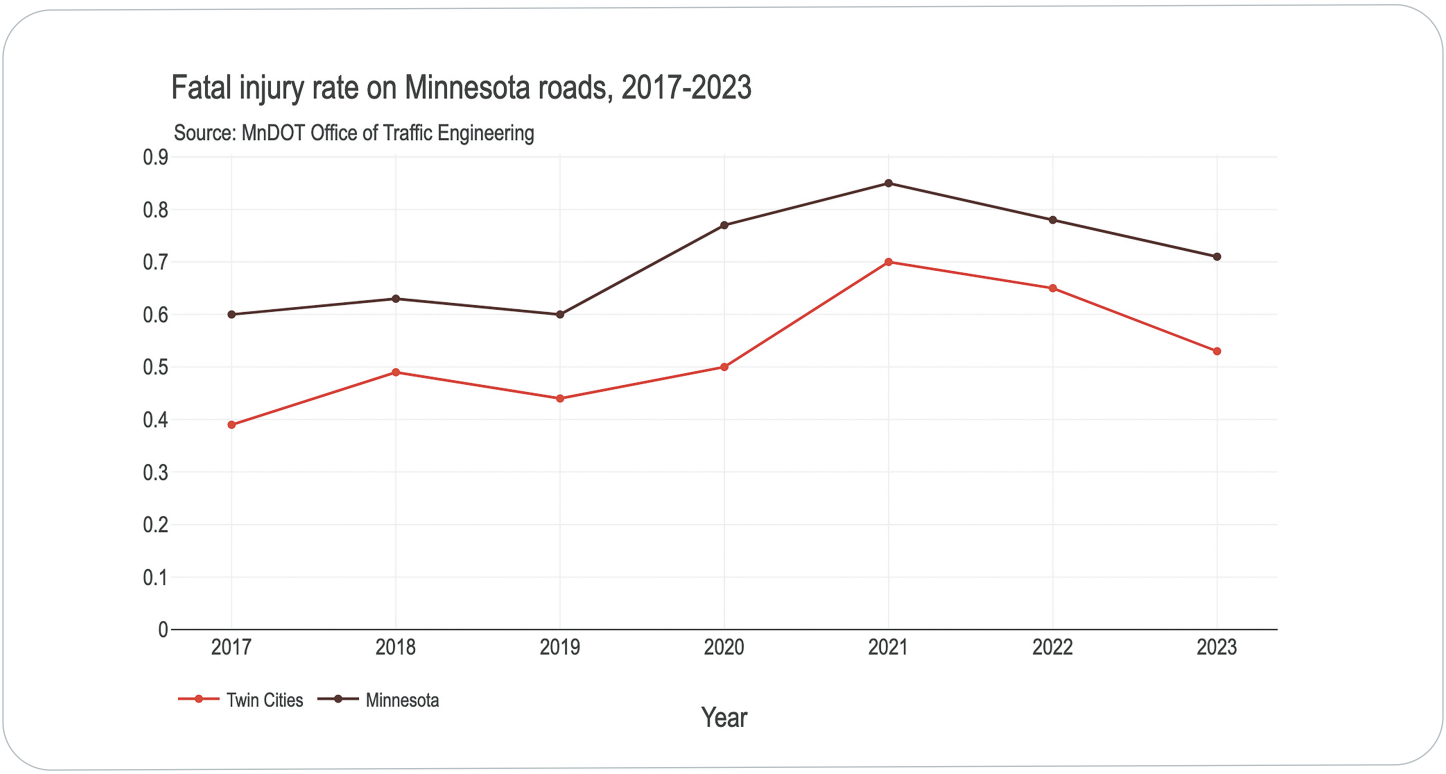


Figure 16.2: Fatal injury rate on all Minnesota roads and Twin Cities metropolitan planning area roads, per 100 million vehicle miles traveled



Serious injuries

Serious injuries have also increased over the last three years (see Figure 16.3 and Figure 16.4). Between 2019 and 2022, serious injury rates in the Twin Cities increased from 2.37 (or 699 total injuries) to a rate of 3.46 (or a 949 total) in 2022. As with fatalities, the regional injuries followed a similar pattern as rates across the state. Starting in 2021 following the onset of the COVID-19 pandemic, the regional injury rate began to surpass the state injury rate.

Figure 16.3: Number of serious injuries on all Minnesota roads and Twin Cities metropolitan planning area roads

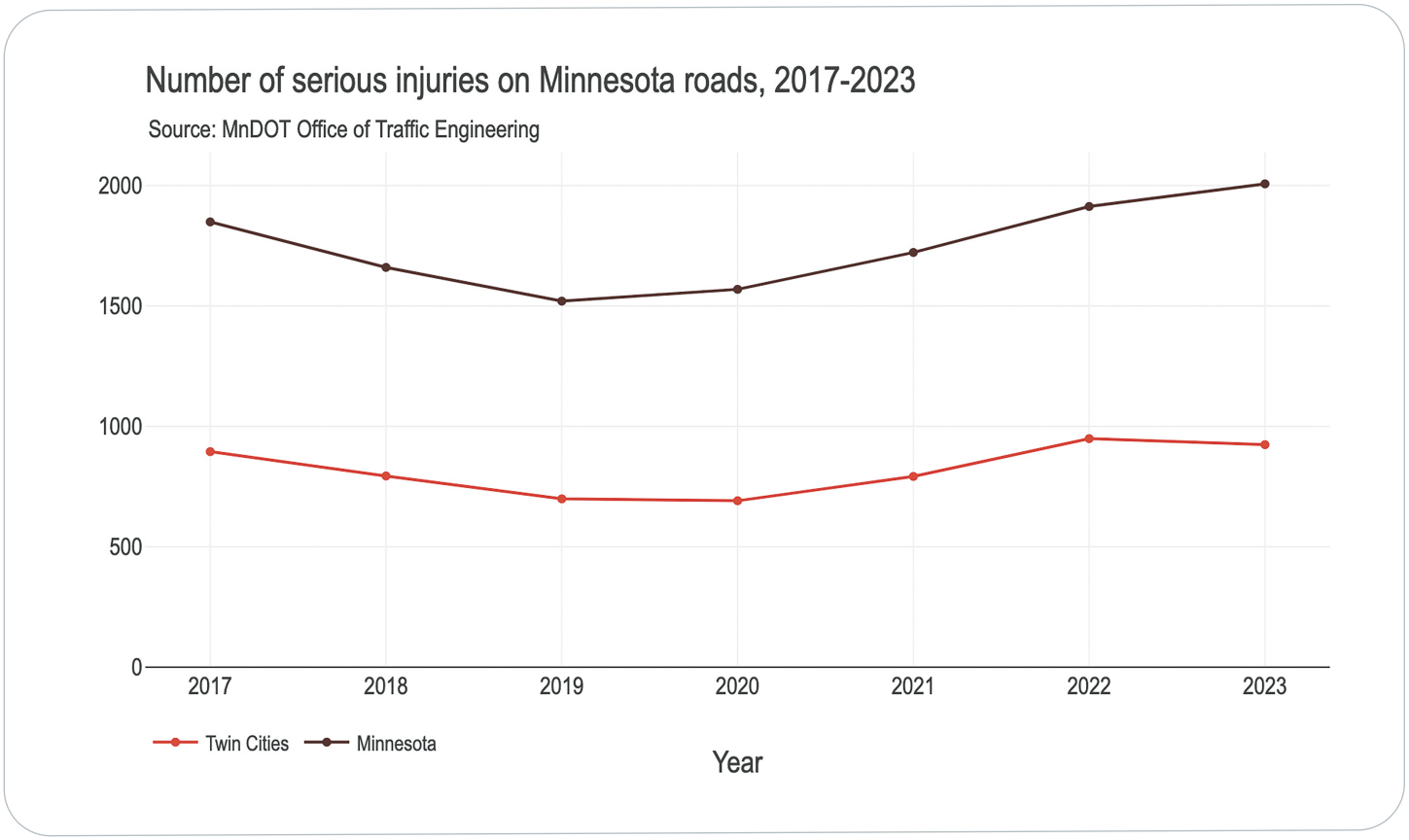
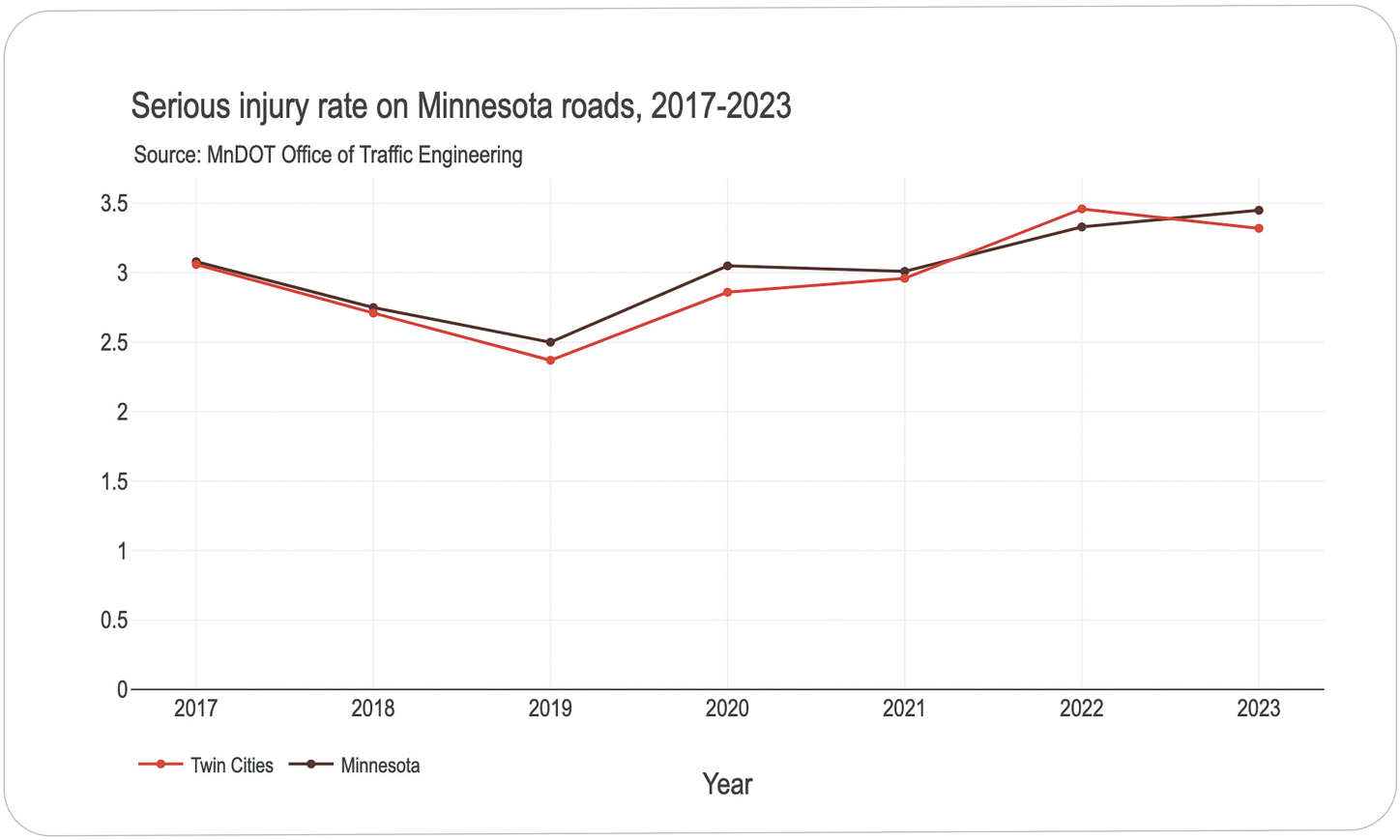


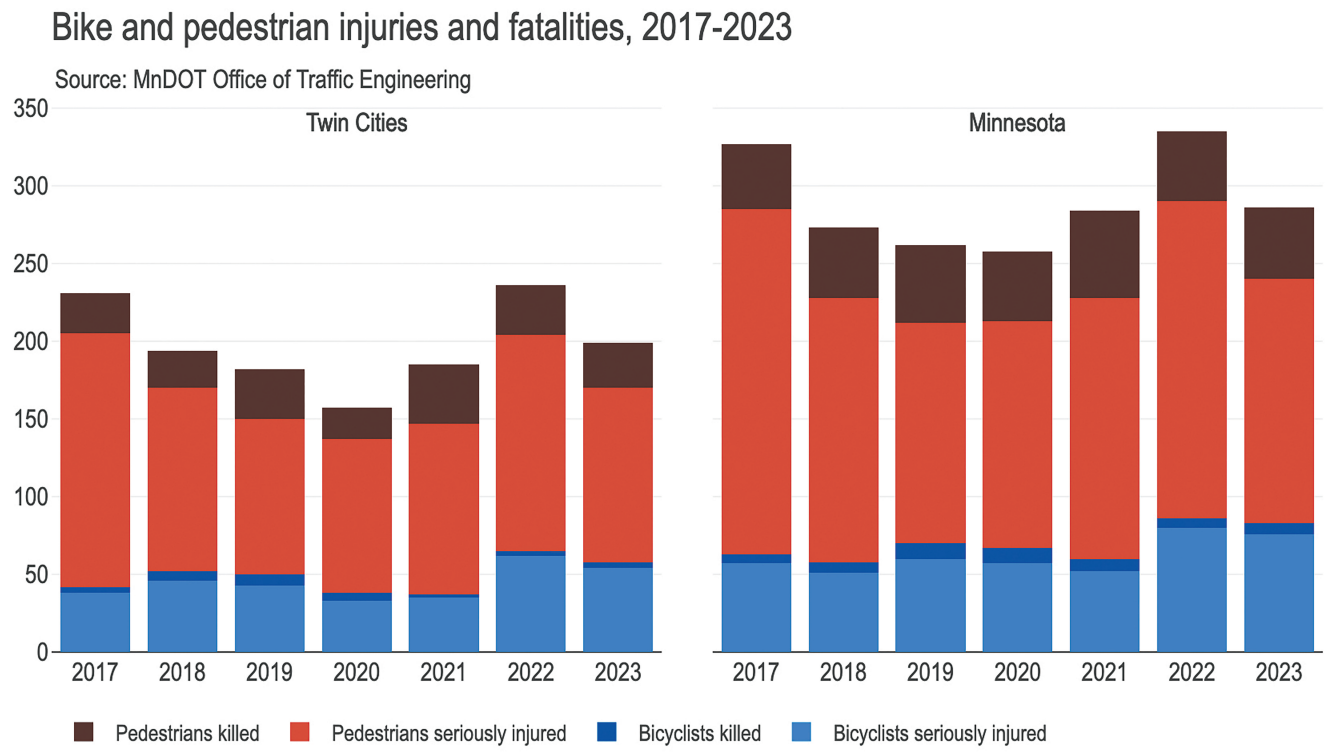
Figure 16.4: Serious injury rate on all Minnesota roads and Twin Cities metropolitan planning area roads, per 100 million vehicle miles traveled



Pedestrian and bicycle fatal and serious injuries

Figure 16.5 shows pedestrian and bicyclist injuries over the last several years. In 2022, the latest year of available data, the bicyclist serious injuries rose to 62, a 43% increase over the previous year. There were 3 fatalities in 2022, one higher than in 2021. In 2022, there were 139 pedestrian deaths and 32 serious injuries, which were slight decreases over 2021.

Figure 16.5: Pedestrian and bicyclist fatal and serious injuries



Bridge and pavement condition

In 2023, the Met Council adopted bridge and pavement performance measure targets that matched the statewide targets adopted by MnDOT. The targets were determined through close coordination with MnDOT staff. Overall, bridge and pavement conditions are similar in the metro area to the entire state. The adopted targets are shown in Table 16.2 and Table 16.3.

Table 16.2: Adopted pavement performance measure targets

Measure	Baseline	Adopted 2023 target	Adopted 2025 target
Percent of National Highway System bridges by deck area in good condition	28%	>30%	>35%
Percent of National Highway System bridges by deck area in poor condition	5%	<5%	<5%

Table 16.3: Adopted bridge performance measure targets

Measure	Baseline	Adopted 2023 target	Adopted 2025 target
Percent of interstate pavement in good condition	70%	>60%	>60%
Percent of interstate pavement in poor condition	2%	<2%	<2%
Percent of non-interstate National Highway System pavement in good condition	57%	>55%	>55%
Percent of non-interstate National Highway System pavement in poor condition	0.5%	<2%	<2%

System performance and reliability

The Met Council adopted performance and reliability measures for interstate, non-interstate, and truck travel times. System reliability is a measure of the dependability of travel times across different days. Table 16.4 shows the adopted targets for 2023 and 2025.

Table 16.4: Adopted system reliability performance measure targets

Measure	Baseline	Adopted 2023 target	Adopted 2025 target
Percent of reliable person-miles traveled on the interstate	91%	>82%	>82%
Percent of reliable person-miles traveled on the non-interstate National Highway System	95%	>90%	>90%
Truck travel time reliability index	1.49	<1.4	<1.4

Congestion mitigation and air quality

Congestion mitigation and air quality measures are unique in that they only apply to areas which are not in full air quality attainment. Targets must be jointly agreed to by both the Met Council and MnDOT. The region is currently in full air quality attainment; however, new two- and four-year congestion mitigation and air quality measures were required in October 2021, just under a year before the 20-year maintenance period expired in September 2022. These two- and four-year targets are shown below.

The on-road mobile source emission target applies to PM-10 emission, the pollutant for which the region was under a maintenance plan until 2022. The maintenance plan applied to a small portion of Ramsey County. PM-10 emissions in this maintenance area are largely due to stationary sources; transportation sources are not a significant contributor. Staff have determined that the only project in this area that might reduce PM-10 emissions is the METRO Gold Line Project, and these impacts would be very small. Based on this, the two- and four-year targets for PM-10 reductions due to transportation projects were set to 0.0 kg/day.

The percentage of regional travel by non-single-occupancy vehicles has been gradually increasing over the past several years, with more residents choosing to carpool, walk, bike, or take transit to and from work. The slight increase from >28% to >29% reflects expectations that this trend of increasing use of alternatives to single-occupancy vehicles will continue in the future.

Excessive delay is a significant mobility concern within the metro area and affects the access to destinations goal of the Transportation Policy Plan, among others. The adopted target was set to no more than 8.5 hours of peak-hour excessive delay per capita in both 2023 and 2025.

Table 16.5: Adopted congestion mitigation and air quality performance measure targets

Measure	Baseline	Adopted 2023 target	Adopted 2025 target
On-road mobile source emissions reduction (PM-10)	0.0 kg/day	0.0 kg/day	0.0 kg/day
Percent of travel by non-single-occupancy vehicles	27%	>28%	>29%
Peak-hour excessive delay (annual hours of excessive delay per capita)	3.2 hours	<8.5 hours	<8.5 hours

Transit asset management

Transit asset management, a best practice and a requirement under federal law, is a business model that prioritizes funding decisions based on the condition of transit assets. Transit providers are required to assess, track, and report on their assets to FTA, and develop annual targets for asset management to ensure a state of good repair. Transit providers also develop transit asset management plans that document implementation actions for asset management within their transit systems. Initial transit asset management targets must be coordinated with the Met Council, which is the region's metropolitan planning organization. The four FTA-required performance measures for transit asset management are:

- Rolling stock (buses and trains used for serving customers): The percentage of revenue vehicles (by type) that exceed the useful life benchmark.
- Equipment (vehicles used in a support role): The percentage of nonrevenue service vehicles (by type) that exceed the useful life benchmark.
- Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model Scale.
- Infrastructure: The percentage of rail track segments (by mode) that have performance restrictions.

Track segments are measured to the nearest one-hundredth of a mile. The region's transit operators' officially established targets are shown in Table 16.6. The Federal Transit Administration (FTA) does not require metropolitan planning organizations to adopt regional transit asset management targets on an annual basis.

Table 16.6: Adopted transit asset management performance measure targets

Measure	Baseline	Adopted 2023 target
Rolling stock (revenue vehicles): percent exceeding useful life, by vehicle type	Articulated bus: 9.22% Over-the-road bus: 8.39% Bus: 7.97% Cutaway: NA Light rail vehicle: 0% Other: NA Commuter rail locomotive: 0% Commuter rail passenger coach: 0%	Articulated bus: 7.35% Over-the-road bus: 7.8% Bus: 30.17% Cutaway: 27.6% Light rail vehicle: 0% Other: NA Commuter rail locomotive: 0% Commuter rail passenger coach: 0%
Equipment: percent exceeding useful life, by vehicle type	Automobiles: 54.4% Trucks/other rubber tire vehicles: 33.4%	Automobiles: 66.7% Trucks/other rubber tire vehicles: 26.1%
Facility: percent rated below a 3 on condition scale, by facility type	Passenger/parking facilities: 0% Administrative/maintenance facilities: 0%	Passenger/parking facilities: 0% Administrative/maintenance facilities: 0%
Infrastructure: percent of track with performance restrictions	Light rail: 1%	Light rail: 1%

Transit safety

The Federal Transit Administration provides some guidance for transit providers in setting their safety performance targets. Transit agencies are required to these targets by mode. Agencies are allowed to set targets for mode categories as broad as “fixed-route bus,” “non-fixed-route bus,” and “rail” when setting safety performance targets.

Metro Transit monitors performance and sets federally required targets for rail and fixed-route bus service. The Strategic Initiatives department of Metro Transit works with data collected from many sources to identify significant risk factors and trends in accidents and injuries, leading to informed recommendations for accident reduction programs and more efficient use of limited resources. Table 16.7 summarizes the region’s transit safety measures.

Table 16.7: Adopted Metro Transit bus and light rail safety performance measure targets

Measure	Baseline – bus	Baseline – light rail	Adopted 2024 target – bus	Adopted 2024 target – light rail
Collisions	0.302 per 100k vehicle miles traveled	0.5 per 100k vehicle miles traveled	3.8 per 100k vehicle miles traveled	0.6 per 100k vehicle miles traveled
Annual fatalities from vehicle operations	0.01 per 100k vehicle miles traveled	0.05 per 100k vehicle miles traveled	0 per 100k vehicle miles traveled	0 per 100k vehicle miles traveled
Annual injuries from vehicle operations	120 per calendar year	85 per calendar year	105 per calendar year	75 per calendar year
Rate of injuries	0.65 per 100k vehicle miles traveled	2.10 per 100k vehicle miles traveled	0.31 per 100k vehicle miles traveled	2.04 per 100k vehicle miles traveled
Number of safety events	130 per calendar year	94 per calendar year	117 per calendar year	91 per calendar year
Rate of safety events	0.70 per 100k vehicle miles traveled	2.32 per 100k vehicle miles traveled	0.43 per 100k vehicle miles traveled	2.47 per 100k vehicle miles traveled
Total major mechanical failures	4,085	131.8	3,905	192
System reliability: vehicle mean distance between failures	5,084.4 miles mean distance between failures	25,961.7 miles mean distance between failures	6,900 miles mean distance between failures	25,000 miles mean distance between failures


MIND YOUR STEP
STOP
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Regional Performance Measures

The Transportation Policy Plan regional performance measures track the region's progress towards achieving this plan's goals and objectives. This chapter looks at recent trends and current conditions to evaluate where the region presently stands in relation to goals and objectives. Where possible, the chapter compares existing conditions with performance goals or with forecasts of different transportation investment scenarios.

Goal: Our region is equitable and inclusive

These measures evaluate how the transportation system provides access to opportunities for historically disadvantaged communities and repairs disparate impacts to Black people, Indigenous people, and people of color. These measures also explore how well the transportation system accommodates people with disabilities or limited mobility.

A key feature of these measures is that they look at the impacts of the transportation system on different groups of people, not just how the transportation system affects the region as a whole.

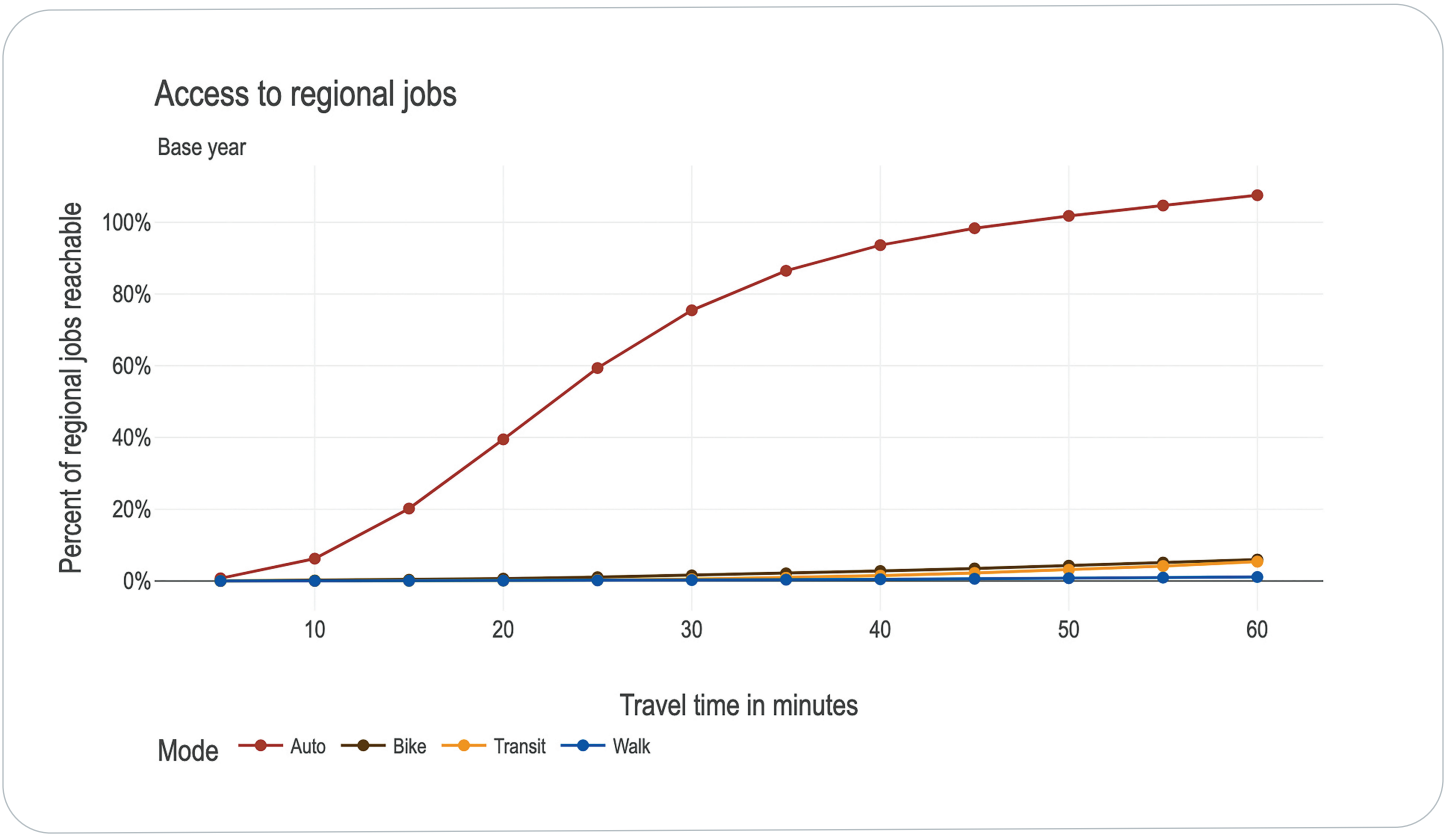
Access to destinations

Access measures look at how many opportunities and resources (jobs, shopping, etc.) people can reach within a certain travel time.

Unlike measures like average speeds, access considers both land use and the transportation system. Access measures acknowledge that it doesn't just matter how fast you can travel to your destination, but also how close or far you might be from that destination.[143]

Job access is a useful measure since it indicates both employment opportunities and access to services like retail. As the chart Figure 16.6 shows, automobiles currently offer the highest job accessibility. The average resident can reach 50% of all jobs in the region in 20-35 minutes by car on a weekday and 100% of jobs in about 50 minutes. (Note: Percentages in Figure 16.6 exceed 100% since commuters also begin to have access to jobs outside the region with higher travel times). Access to jobs by other modes (for example, bikes, transit) is much lower under our current land use and transportation system.

Figure 16.6: Access to regional jobs, base year

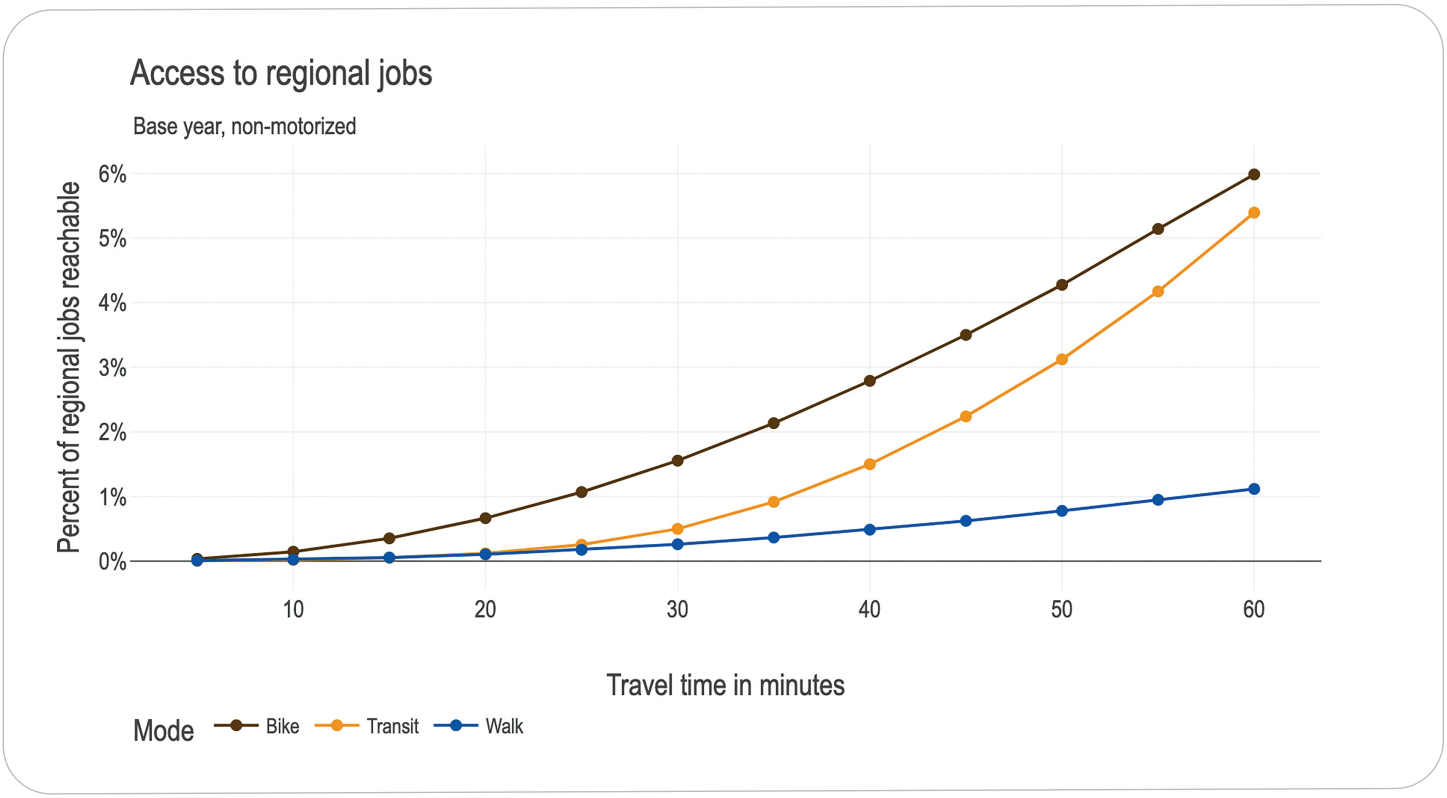


Regional job access varies across the Twin Cities and is affected by factors such as surrounding land uses, transit service, and transportation infrastructure. For instance, communities designated as Urban are the most centrally located cities in the region. These include Saint Paul and Minneapolis as well as surrounding cities like Columbia Heights, Hopkins, and Richfield. In Urban communities, half of the region's jobs can be reached by auto in between 15 and 20 minutes. By contrast, for cities designated as Suburban Edge, it takes between 25 and 30 minutes to access half of the regional jobs on average.

Because of the dramatic difference between auto accessibility and other modes, it is useful to look at these other modes with a separate chart. Bikes and transit offer the next highest levels of access to jobs. By bike, less than 2% of all regional jobs are accessible within 30 minutes and just over 6% of regional jobs can be reached in an hour on average. By transit, just under 2% of all regional jobs are accessible within 40 minutes and just over 5% of regional jobs can be reached in an hour on average.

This transit accessibility varies widely across the region. In some areas of the region, transit service is not available. In areas with more limited transit service, such as Suburban communities, 5% of regional jobs are only accessible on average within 70 minutes of travel time. In Suburban Edge Communities, about one-half of one percent can be reached by transit in 70 minutes. Bike access to regional jobs is similarly lower outside of Urban and Urban Edge Communities.

Figure 16.7: Access to regional jobs, nonmotorized, base year



Another way of looking at how accessibility differs by mode is measuring how long it takes people to get to common destinations by different travel modes. Table 16.8 uses analysis from the University of Minnesota's Accessibility Observatory of typical travel times for two different common destinations: food stores and K-12 schools. This analysis looks at how long it takes to reach the three nearest options for food stores and K-12 schools, based on the assumption that people might need access to more than the nearest option to meet their needs.

Table 16.8 shows that driving offers significantly faster average travel times to common destinations compared to other modes.

Table 16.8: Typical travel times to food stores and K-12 schools by different modes (2022-2023) [144]

Performance measure	Driving	Transit	Walking	Biking
Median time to reach the nearest three food stores (minutes)	2.8	21	26	11
Median time to reach the nearest three K-12 schools (minutes)	3.6	26	32	14

Improving these differences requires a combination of changes to transit services as well as land use changes. For instance, communities that fall within the Imagine 2050 Community Designation of Urban feature some of the densest land uses in the region. These include Saint Paul and Minneapolis as well as surrounding cities like Columbia Heights, Hopkins, and Richfield. These cities also feature some of the most abundant transit service. In these communities, the typical travel times for transit, biking, and walking are much lower. For instance, the typical travel time to the nearest three food stores is 12 minutes by transit and six minutes by biking, nearly half as much as the regional average (21 minutes and 11 minutes, respectively). The median time for walking to the third nearest school in Urban areas is also much shorter, 22 minutes, which is 10 minutes shorter than the regional median.

One way of looking at how accessibility changes with future scenarios is to forecast the change in average job accessibility. Table 16.9 shows average job accessibility by auto within 30 minutes and transit by 45 minutes for the three different scenarios. The numbers in this table reflect how many jobs a person (on average) can reach by traveling 30 minutes by car and 45 minutes by transit.

The table shows that job accessibility by automobile goes down in the future between the base year and the no-build scenario. This could be due to population growth in areas where there is less employment as well as slightly higher travel times due to more people using the highway network. The current revenue scenario goes up 2% compared to the no-build, suggesting that some of the new highway investments will improve job accessibility slightly compared to the no-build; however, average job accessibility is forecasted to decrease between the base year and 2050, even under the current revenue scenario.

Future transit accessibility is forecasted to increase in the future. The average job accessibility of 45 minutes by transit goes up 28% between the base-year and the no-build. This increase is probably due to the forecasted growth of jobs and population along transit-rich corridors. This transit accessibility goes up even further in the current revenue scenario due to the increased transit service provided by improvements such as arterial bus rapid transit and new transitways.

Why does job accessibility change in the no build scenario? Job accessibility can increase or decrease even without new transportation investments. Other factors, like population growth, job location, and congestion can affect job accessibility.

Table 16.9: Forecasted change in job accessibility by mode [145]

Performance measure	2025 base	2050 no-build	2050 current revenue	% change 2025 base – 2050 no build	% change 2050 no build – 2050 current revenue
Average job accessibility by car (30 minutes)	1,295,387	1,094,693	1,114,913	-15%	2%
Average job accessibility by transit (45 minutes)	38,446	49,296	56,377	28%	14%

A more detailed breakdown of how job accessibility changes under the current revenue and no-build scenarios by neighborhood demographics is discussed in the Environmental Justice Analysis section.

Exposure to pollution

Exposure to air pollution is a risk for all communities in the region. However studies show that low-income neighborhoods and communities of color face higher risks. According to the Minnesota Pollution Control Agency, 46% of all low-income communities and 91% of communities of color face air-pollution risks above health guidelines. The statewide average is 32%.[146]

The region's pollution measures will go beyond measuring regional pollution totals; it will also look at how pollution exposure concentrates in specific communities based on socioeconomic characteristics. To do this, this measure evaluates localized indicators of pollution.

One tool that summarizes more localized indicators of pollution is the U.S. Department of Transportation's (USDOT) Equitable Transportation Community (ETC) Explorer.[147] This website application provides measures of "the cumulative burden communities face," including a community's environmental burden. The Environmental Burden is an index that compares a community's exposure to environmental burdens – from sources like air pollution, hazardous sites, infrastructure, and water pollution – to other communities across the nation or state. It includes factors such as ozone levels, diesel particulate matter, air toxics cancer risk, highway proximity, and impaired surface waters.

Figure 16.8 shows how higher Environmental Burden indices are often concentrated in areas that have a higher percentage of people experiencing poverty or where more people of color live. The map highlights census tracts where the Environmental Burden is above average for the state. The map also identifies census tracts where the either the percentage of people of color or the percentage of people in poverty is higher than average for the region.

Although areas experiencing above average Environmental Burden indices are found throughout the region, most tracts with high Environmental Burden indices are located in tracts with higher shares of people in poverty or people of color. In Figure 16.8, about 57% of all tracts in the region have an Environmental Burden higher than the stateside average. For tracts with higher shares of people in poverty or people of color, this percentage is significantly higher – about 79%.

Several other useful sources look at local pollution across the region. One is the Environmental Protection Agency's Environmental Justice Screening and Mapping Tool[148] This resource provides environmental and socio-economic indicators to help identify communities at higher environmental risks.

Another is the Minnesota Pollution Control Agency's Understanding Environmental Justice in Minnesota story board,[149] which provides an online, interactive depiction of local air pollution risk. This resource provides maps of the Air Pollution Score (an index that looks at the highest air pollution risk communities face) alongside maps of Areas of Environment Justice Concerns.


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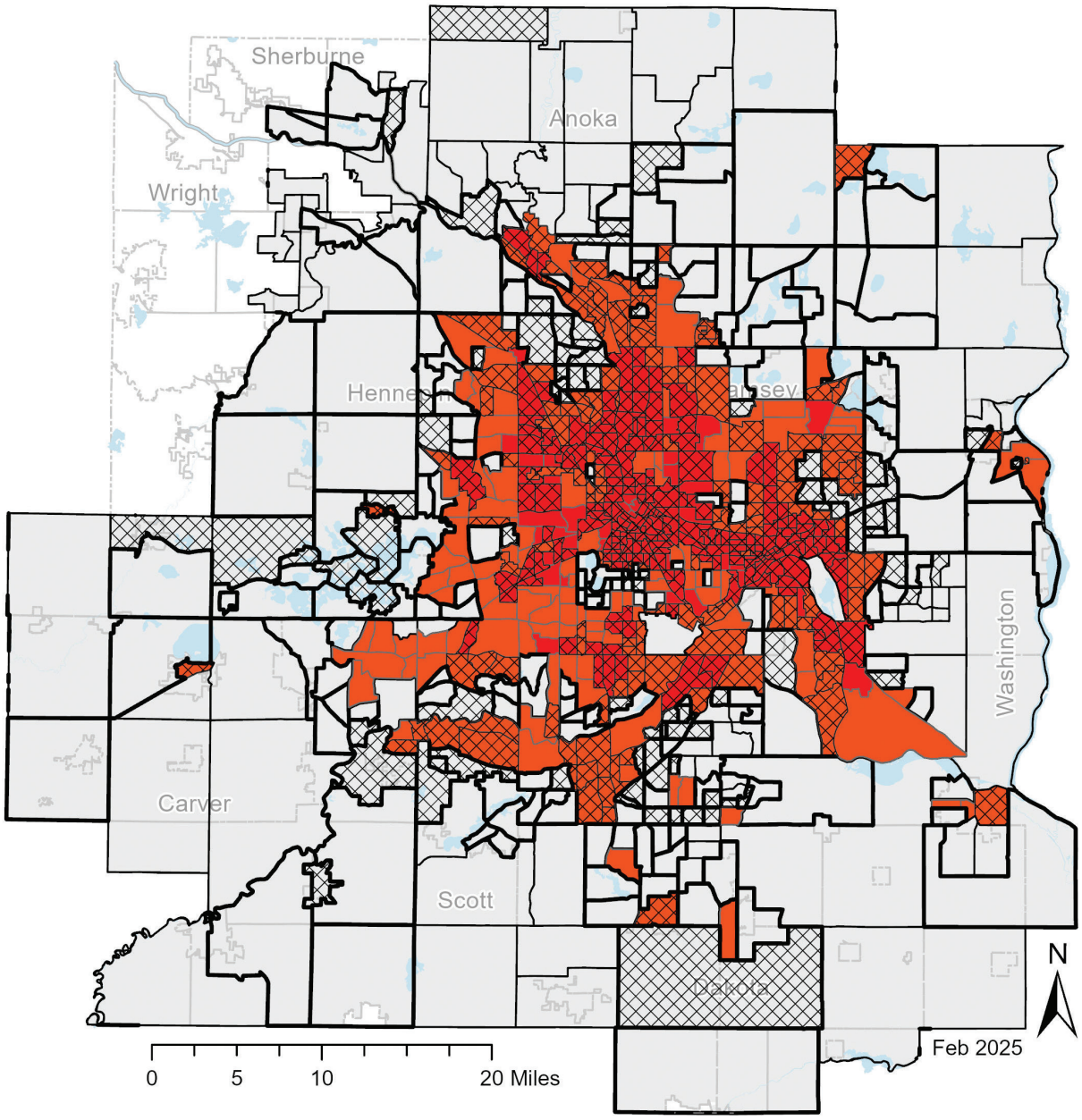
Figure 16.8: Environmental Burden Index



Census Tracts with higher than average percentage of People In Poverty or Population of Color

Environmental Burden Index

- Higher Than 50% - 75% of Tracts in State
- Higher Than 75% - 100% of Tracts in State

People in Poverty
The Census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional average percentages at either level.

Population of Color
Population of Color is defined as all persons not classified as White, Non-Latino

Source: Metropolitan Council, US Census, US DOT

Exposure to noise

Noise exposure is a complex topic; noise modeling is very technical and exposure varies depending upon where you are in the region. Both factors make noise exposure a challenging topic to encapsulate in a few paragraphs in this chapter. Even so, noise exposure is an important way that the transportation system affects different communities.

At a very simple level, exposure to highway traffic noise is heavily dependent on three things:

- Traffic volumes
- Traffic speeds
- How much of that traffic comes from trucks [150]

A rise in any of these things increases noise exposure for populations living near transportation facilities. Furthermore, this noise exposure decreases the further people are from these things. Consequently, populations living close to highways and other major roads have the greatest potential for noise exposure. Noise exposure can also affect wildlife.[151] Mitigation efforts such as noise barriers can minimize how much actual noise people experience near roads.

The Met Council will explore ways to work with other agencies to evaluate how transportation projects disparately affect communities. One potential resource for this work will be the upcoming Freeway Harms Study, which can explore this topic in more depth.



Exposure to extreme heat

As stated in the Met Council's Keeping our Cool project, "Extreme heat has unequal impacts across the region. Individual with low incomes are more likely to live in areas with less tree cover and more impervious surfaces compare to wealthier individuals."[152]

The project explored land surface temperatures to look at extreme heat risk throughout the region. Residents with low incomes are more likely to live in hotter neighborhoods (see Figure 16.9). The transportation infrastructure plays a role in this heat exposure through impacts like increasing impervious spaces or altering tree canopies. The transportation system also plays a role in people's accessibility to places that provide relief from extreme heat.

Figure 16.9: Land temperature and median household income

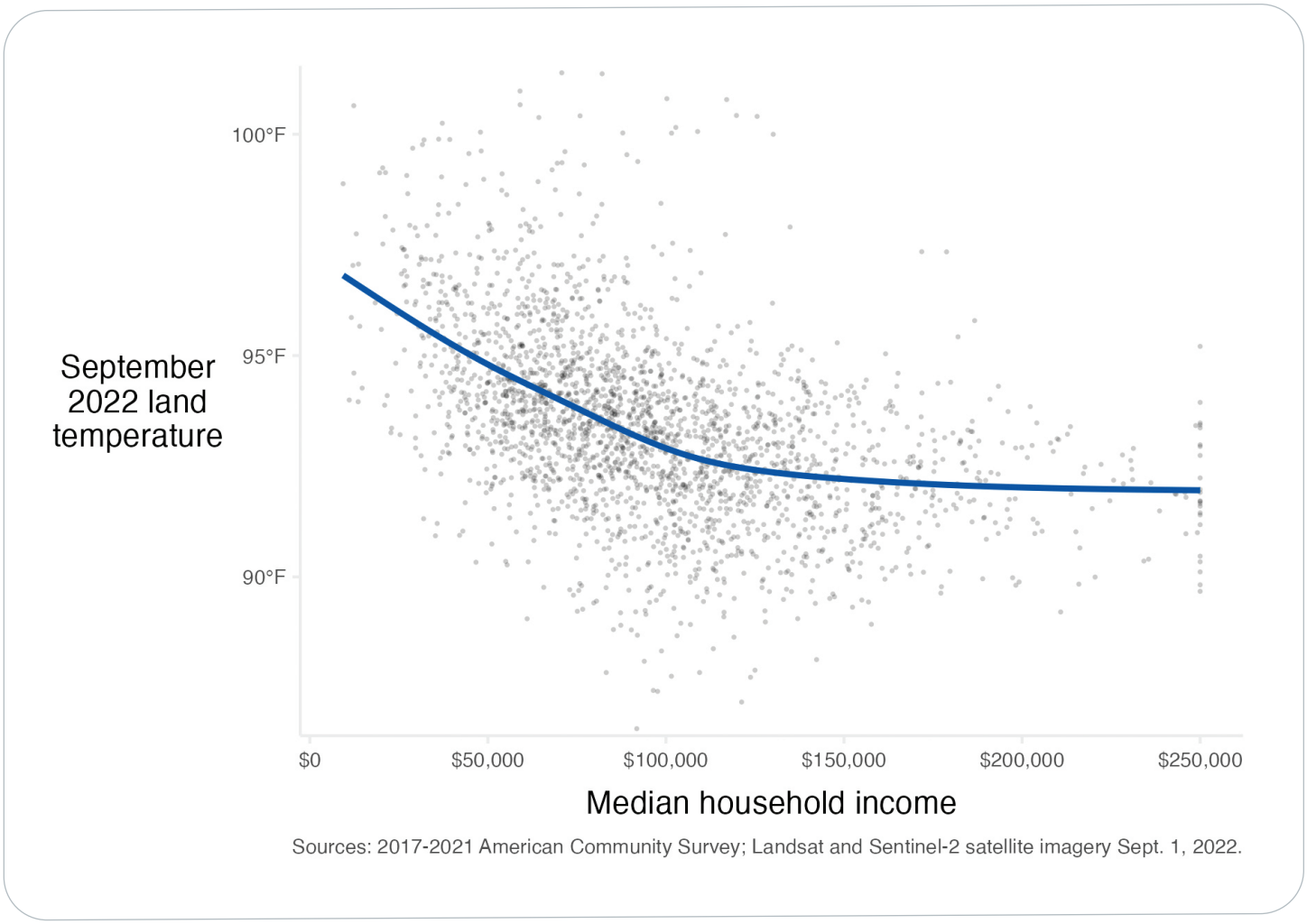
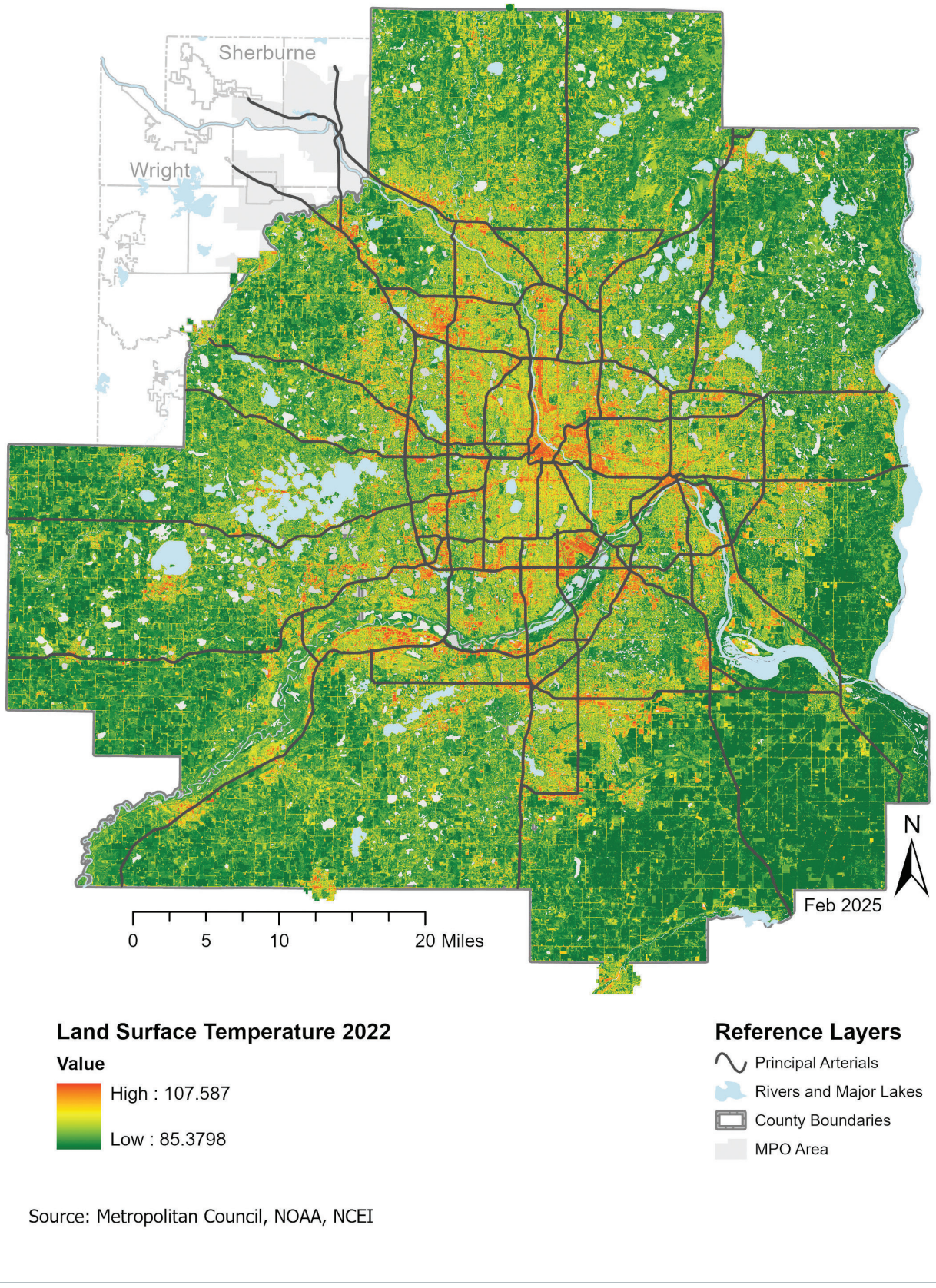


Figure 16.10 shows surface temperature across the region. The map highlights how surface temperatures are often higher in areas characterized by impervious surfaces associated with the transportation infrastructure.

Figure 16.10: Map of land surface temperatures, 2022



Source: Metropolitan Council, NOAA, NCEI

Goal: Our communities are healthy and safe

This goal's measures include indicators of how we reduce the harmful impacts of our transportation system, such as pollution and deaths and serious injuries from traffic crashes, for all the region's residents. They measure how our transportation system promotes public health by providing opportunities for active transportation.

Roadway fatalities and serious injuries

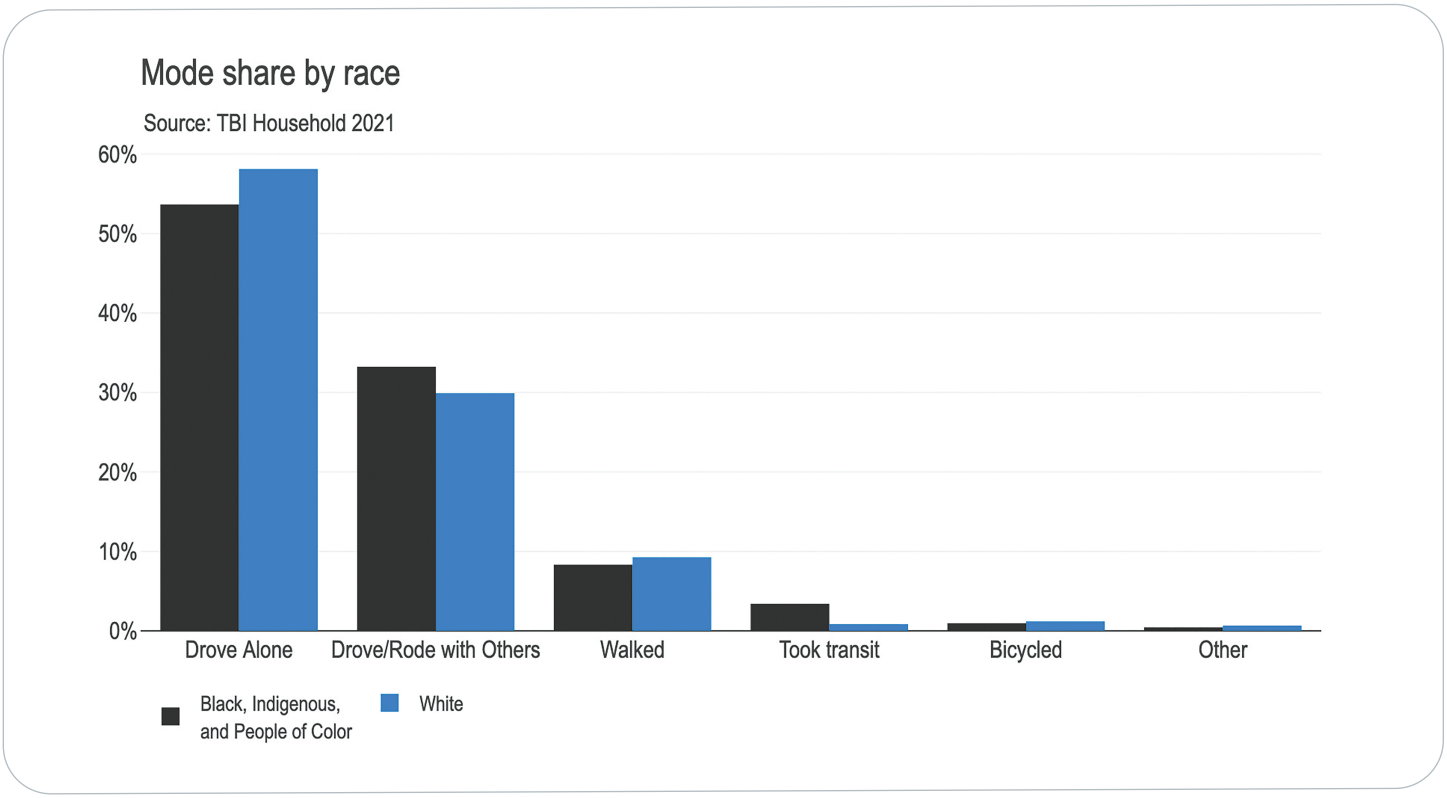
The Met Council reports roadway safety performance measures as part of the federal performance-based planning requirements. Please refer to the Federal Performance Measures: Transportation safety section of this document for detail on roadway fatal and serious injuries.

Travel by mode

The health and safety goal promotes the comfortable use of all modes and increased opportunities for active transportation. Differences in the modes of travel people use can be one measure of how our transportation system meets this goal. As shown in the table below, most trips made by households in the region are made by car (about 85%). The remaining 15% of trips use other modes. But these regional numbers do not tell the whole story. Mode share varies widely across the region based on geography and demographic factors.

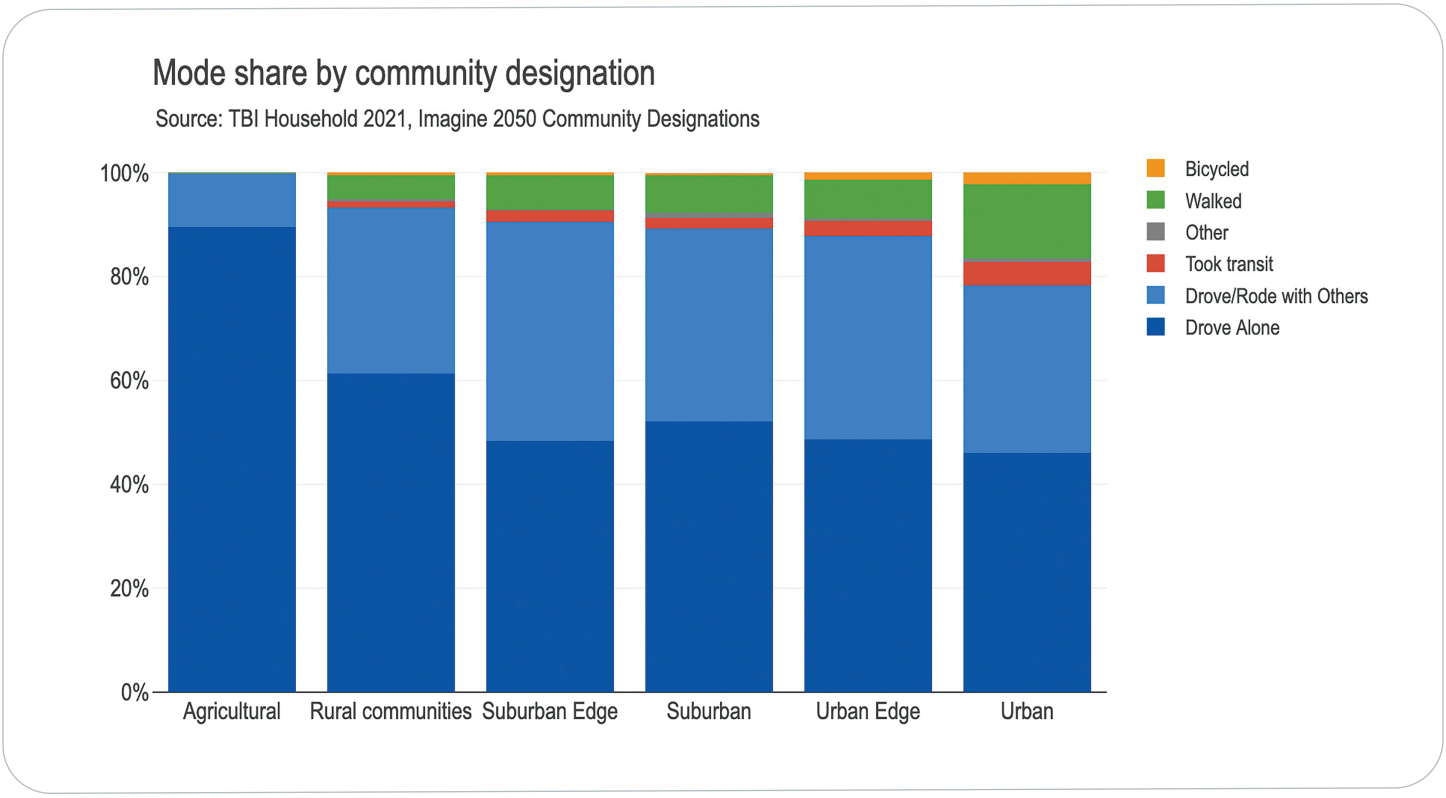
For instance, the Travel Behavior Inventory (2021) shows that Black people, Indigenous people, and people of color are more likely to make trips using some alternative to driving alone compared to white people. The use of transit to make trips is especially higher among Black people, Indigenous people, and people of color (see Figure 16.11).

Figure 16.11: Mode share by race



Mode share also differs depending upon where you live. Factors like land use patterns and the availability of alternate modes affect how people travel. Figure 16.12 below shows mode share by Imagine 2050 Community Designations. Urban areas show significantly higher usage of walking, biking, and transit compared to suburban areas. Higher density and more transit options likely influence these differences in mode share. Higher density can include higher numbers of housing and jobs or services in closer proximity, which can make modes like walking, biking, and transit more convenient and appealing.

Figure 16.12: Mode share by Imagine 2050 Community Designation



One measure of the transportation plan's investments will be to evaluate how these mode shares might change based on transportation system improvements, changing demographics and future land use patterns. Future transportation investments – for instance, making suburban street networks less circuitous, more frequent transit service, or improvements to bike infrastructure – will also influence what mode people use. The table below summarizes how the Regional Travel Demand Model and the Regional Transit Ridership Model forecast mode share will change under three transportation investment scenarios.

Table 16.10: Regional mode share by scenario [153]

Performance measure	Drove alone	Drove /Rode with others	Took Transit	Walked [154]	Bicycled	Other
Mode share of all regional trips (base - 2021)	49.4%	37.1%	2.8%	9.0%	1.2%	0.7%
Mode share of all regional trips (2050 no build)	49.5%	35.7%	3.1%	10.0%	1.3%	0.9%
Mode share of all regional trips (2050 current revenue)	49.4%	35.7%	3.2%	10.0%	1.3%	0.9%

The first row in the table is based on observed data (in other words, not forecasts) from the 2021 Met Council Travel Behavior Inventory Household Survey. The second and third rows are forecasts of how this mode share will change in 2050 under the 2050 no-build and current-revenue scenarios.

The forecasts show slight increases in people using transit, walking, and biking in the future. The main difference between the base – 2021 and the no-build is future population – both assume a similar transportation system. Some of these forecasted changes are likely occurring due to demographic changes, such as an aging population. For instance, the Other category includes school bus trips, which is forecasted to go down as the average age of the population increases in 2050. A share of these lower school bus trips could be shifted to other modes like transit, walking, or biking. Other factors, such as more people living along transit lines, or increased congestion, might also account for the small shift to transit.

The table also shows further slight increases to transit under the current revenue scenario. These shifts are likely due to the increased transit services in the form of increasing arterial bus rapid transit and new transitway corridors.

Air pollutants emission levels [155]

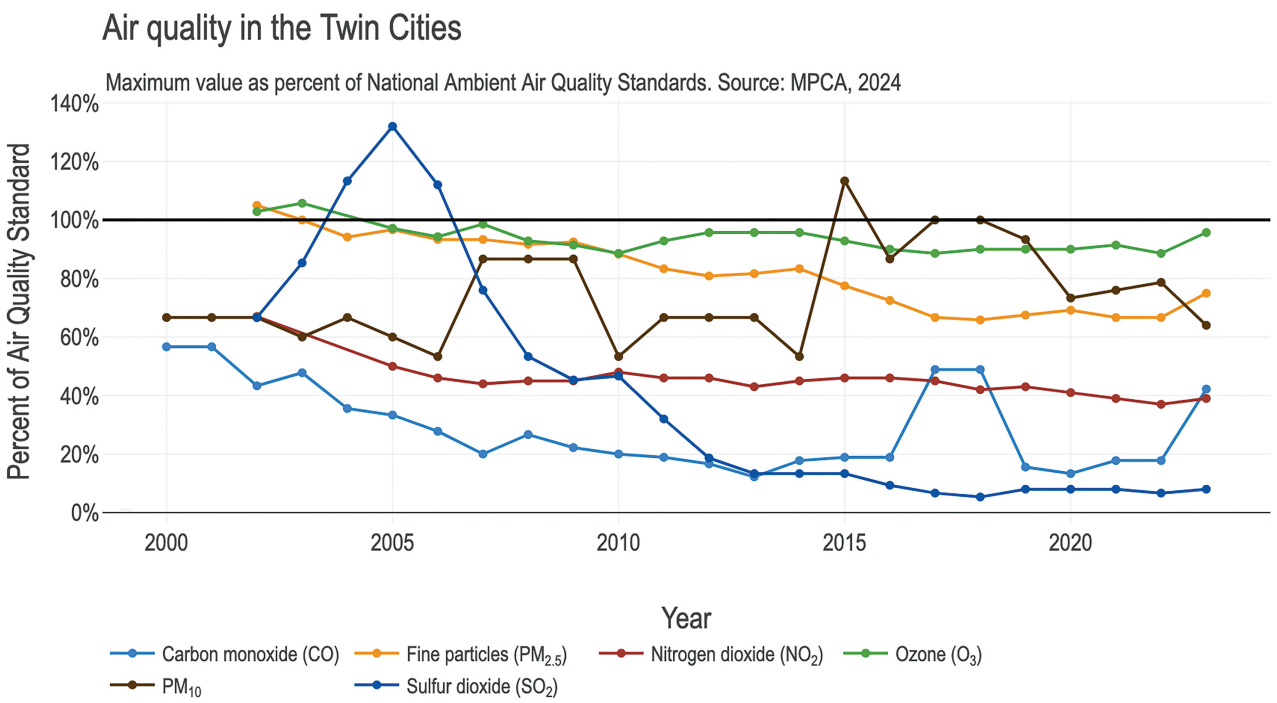
The Clean Air Act (1970) established standards for six pollutants known to cause harm to human health and the environment. These six pollutants, known as criteria pollutants, are:

- Particulate matter (currently PM2.5 and PM10)
- Ozone (O3)
- Nitrogen dioxide (NO2)
- Sulfur dioxide (SO2)
- Carbon monoxide (CO)
- Lead (not monitored in the transportation planning process)

The federal Environmental Protection Agency (EPA) developed National Ambient Air Quality Monitoring Standards for each of these criteria pollutants. Primary standards are set to protect public health, while secondary standards are set to protect the environment and public welfare (for example, visibility, crops, animals, vegetation, and buildings).

As shown in Figure 16.13, the region is currently in attainment for all the pollutants regulated by the EPA. The figure shows the maximum pollutant level for each year as a percentage of the National Ambient Air Quality Standards from all sources (not just transportation); anything below the solid line means the pollutant is below the standard.

Figure 16.13: Maximum air pollutant values as a percent of National Ambient Air Quality Standards



As shown in the chart, pollutant levels have generally trended downward since 2000 except for PM10. Not all emissions come from transportation sources. Some decreases are due to changes in things such as energy production, building practices, and land use changes. Other changes are due to things beyond the region's control, such as the weather and wildfires. But regional transportation decisions do play a part in minimizing air pollution. Examples of transportation-related changes that might decrease pollutant levels include decreased vehicle travel, changes in vehicle emissions technology, and growing use of alternative fuel sources.

While Minnesota Pollution Control Agency measures of observed air pollutant levels include all sources (including non-transportation sources), the Met Council can use an EPA model called Mobile Vehicles Emissions Simulation to estimate pollutants specifically from vehicle emissions. The Mobile Vehicles Emissions Simulation model takes information from the Regional Travel Demand Model about vehicle miles traveled and vehicle speeds to estimate pollutants. This connection with the Regional Travel Demand Model also allows Mobile Vehicles Emissions Simulation to forecast how these emissions might change under different transportation scenarios.

Table 16.11 shows the results of emission modeling for criterion air pollutants for the base year of 2025. (Note: Volatile organic compounds and oxides of nitrogen are included since they are precursors of ozone). It also compares the base year emissions with modeling for the no-build scenario and the current revenue scenario. The table shows dramatic decreases in emissions between the 2025 base year and the 2050 no-build. These differences are largely due to assumptions of increased fuel efficiency and cleaner burning combustion

engines over the next 30 years. These decreases also include forecasts of increasing proportions of electric vehicles. Emissions in the build scenario are slightly higher compared to the No Build scenario due to a small increase in vehicle miles traveled. These emissions increases are very small – each is under one-half of 1%.

Table 16.11: Forecasted increases in air pollutant emissions due to mobile sources (in pounds) [156]

Performance measure	Base year	2050 – no-build	2050 – current revenue scenario	% change base/no build	% change no build/current revenue
Particulate matter – 2.5	1,125	578	579	-49%	0.23%
Particulate matter – 10	1,256	653	654	-48%	0.23%
Carbon monoxide (CO)	684,830	273,691	274,417	-60%	0.27%
Nitrogen dioxide (NO2)	4,291	1,115	1,115	-74%	0.01%
Sulfur dioxide (SO2)	296	216	217	-27%	0.20%
Volatile organic compounds (VOC)	56,406	30,724	30,711	-46%	-0.04%
Oxides of nitrogen (NOx)	44,973	13,601	13,629	-70%	0.21%

Goal: Our region is dynamic and resilient

The measures under this objective look at the transportation infrastructure's ability to withstand and recover from natural or human-caused disruptions. Performance measures for this goal also look at whether the region's transportation infrastructure meets users' need for predictable and reliable travel times.

Infrastructure

Several sources look at the condition of our regional infrastructure, as well as its vulnerability to extreme heat and flooding.

One useful source of information about bridges throughout the region is MnDOT's Bridge Info Interactive Map. The resource provides an interactive tool to see the location of bridges as well as information about their age and condition.

Other information can be found in the Metropolitan Council's Climate Vulnerability Assessment, which includes links to a Localized Flood Map Screening Tool among other resources. According to a 2018 Regional Climate Vulnerability Assessment, about 17% percent of the region's transportation and transit assets fall within a Flood Impact Zone (FIZ).[157] Table 16.12 summarizes the percentage of various regional transportation asset that fall within a FIZ.

Table 16.12: Transportation and transit potential localized flood vulnerability by flood impact zone [158]

Asset	Total	Total Asset in FIZ
Bus routes	5,976 mi	17.4%
LRT/commuter lines	111 mi.	9.6%
All transit stops	19,422 stops	12.8%
All roadways	44,266 mi.	12.8%
Regional highways	24,584 mi	16.2%
Bicycle routes	6,773 mi	15.5%

MnDOT also provides several resources for assessing flood vulnerability, including the Extreme Flood Vulnerability Analysis and the Flash Flood Vulnerability and Adaptation Assessment Pilot Project.

The Met Council will explore ways to work with MnDOT to bring in the most up-to-date studies and tools to measure how the regional transportation infrastructure's vulnerability to flooding changes over time.

Congestion and reliability

System reliability measures how dependable travel times are on different days. Reliability acknowledges that congestion is not the only thing that affects users. Inconsistent travel times can also cause problems for travelers. Travel time reliability is a measure of the ratio of vehicle miles traveled on the highway system that incur longer-than-normal travel times to vehicle miles traveled that experience normal travel times. A higher percentage means more consistent travel times and a lower percentage means more inconsistent travel times. Table 16.13 shows recent travel time reliability measures from MnDOT and compares them to the federal performance measure target.

Table 16.13: Travel-time reliability [159]

Performance measure	Statewide target	2018	2019	2020	2021	2022
Percent of person-miles traveled that are considered reliable	> 90%	75.0%	74.4%	98%	92.5%	91.7%

Travel-time reliability increased significantly after the COVID-19 pandemic. Between 2019 to 2020, travel-time reliability jumped from 74% to 98%, within the statewide target. This increase occurred as fewer people made peak-period commuting trips at the beginning of the COVID-19 pandemic. This number began to creep back down after COVID-19; however, as of 2022 travel time reliability is still well above pre-COVID levels. It will be important to keep monitoring this over the coming years to see the longer-term post-COVID trends.

One regional measure of congestion is the weekday delay per capita. The Regional Travel Demand Model provides a way to forecast this delay by looking at the automobile travel time for each forecasted trip and comparing that to the trip time if there was no congestion (for example, posted speed limits). The difference between these congested travel times and free travel times is the weekday delay. Adding those delays by each person gives us the delay for each traveler.

Table 16.14 compares median delay per automobile traveler using the Regional Travel Demand Model for the three scenarios. The median is the mid-point of traveler's delay in the forecasts, in other words, the point where half of the travelers have a lower delay and half of the travelers experience higher delay.

Table 16.14: Forecasted automobile delay per traveler [160]

Performance measure (regional)	Base year	2050 – no-build	2050 – current revenue
Median weekday delay per traveler (in minutes)	9:43	10:51	10:34

The table shows some small changes in the median delay per travel across the scenarios. Median delay per traveler goes up from nine and three-quarter minutes in base year to just under 11 minutes in the no build. This increase is due to increased population (and, consequently, more trips) in 2050 under the same transportation system. This median delay goes down slightly in the current revenue scenario, but these changes are small since the current revenue adds relatively little new capacity to the highway system.

Goal: We lead on addressing climate change

These measures will be used to evaluate how well our transportation decisions minimize our region's contribution to climate change. This includes policies that increase confidence in zero emissions transportation options and decrease vehicle miles traveled.

Greenhouse gas emissions

The transportation sector is the largest contributor to regional greenhouse gas emissions. According to the Met Council's Greenhouse Gas Inventory, the transportation sector, including all on-road emissions sources, accounts for about 35% of the region's total greenhouse gas emissions in 2021.[161]

As with vehicles emissions modeling, the Met Council uses the Motor Vehicle Emissions Simulator Model, in conjunction with Regional Travel Demand Model, to forecast how our transportation investment strategy will change greenhouse gas emissions. Table 16.15 shows the results of greenhouse gas emission modeling for the base year of 2022 and how those emissions are forecasted to change by 2050 under minimal transportation investments (no build) and under our planned transportation investment scenario (current revenue scenario).

Table 16.15: Forecasted greenhouse gas emissions [162]

Performance measure	Base year	2050 – no build	2050 – current revenue	% change base/ no-build	% change no build/current revenue
Greenhouse gas equivalents (pounds)	65,156,523	47,734,883	47,831,338	-27%	0.20%

As with the mobile air pollutant emission forecasts, greenhouse gas equivalent emissions are forecasted to go down between the base year and the 2050 no build. These changes are due to forecast assumptions of more efficient vehicles and increased adoption of electric vehicles. The current revenue scenario is forecasted to see slightly higher greenhouse gas emissions (under one-quarter of 1%) due to slightly higher vehicle miles traveled.

Vehicle miles traveled

Vehicle miles traveled typically rise with population increases. If typical travel behavior remains the same, more people in a region means more vehicle miles traveled. Without changes to the transportation system and travel behavior, regional vehicle miles traveled historically goes up over time with population growth.

Vehicle-miles-traveled per capita accounts for population growth by dividing the total vehicle miles traveled by the population. This filters out the effects of population growth on vehicle miles and highlights how vehicle travel goes up or down due to changes in travel behavior, such as people making fewer trips, commuters making shorter trips, or people switching from driving alone in a vehicle to other modes (for example, transit, bikes, etc.).

Figure 16.14 shows that average weekday vehicle-miles-traveled per capita remained constant around 25 miles per day for much of the early 2000s. In 2020, however, vehicle-miles-traveled per capita dropped dramatically to just over 20 miles per day as people reduced their trips and stayed home due to COVID-19. Beginning in 2021, vehicle-miles-traveled per capita began to trend up and by 2023 vehicle-miles-traveled per capita was nearly 23 miles. It is uncertain when or if vehicle-miles-traveled per capita will return to its pre-COVID levels. Some travel behaviors, such as telecommuting, will likely persist in the long-term.

Figure 16.14: Average daily vehicle-miles-traveled per capita

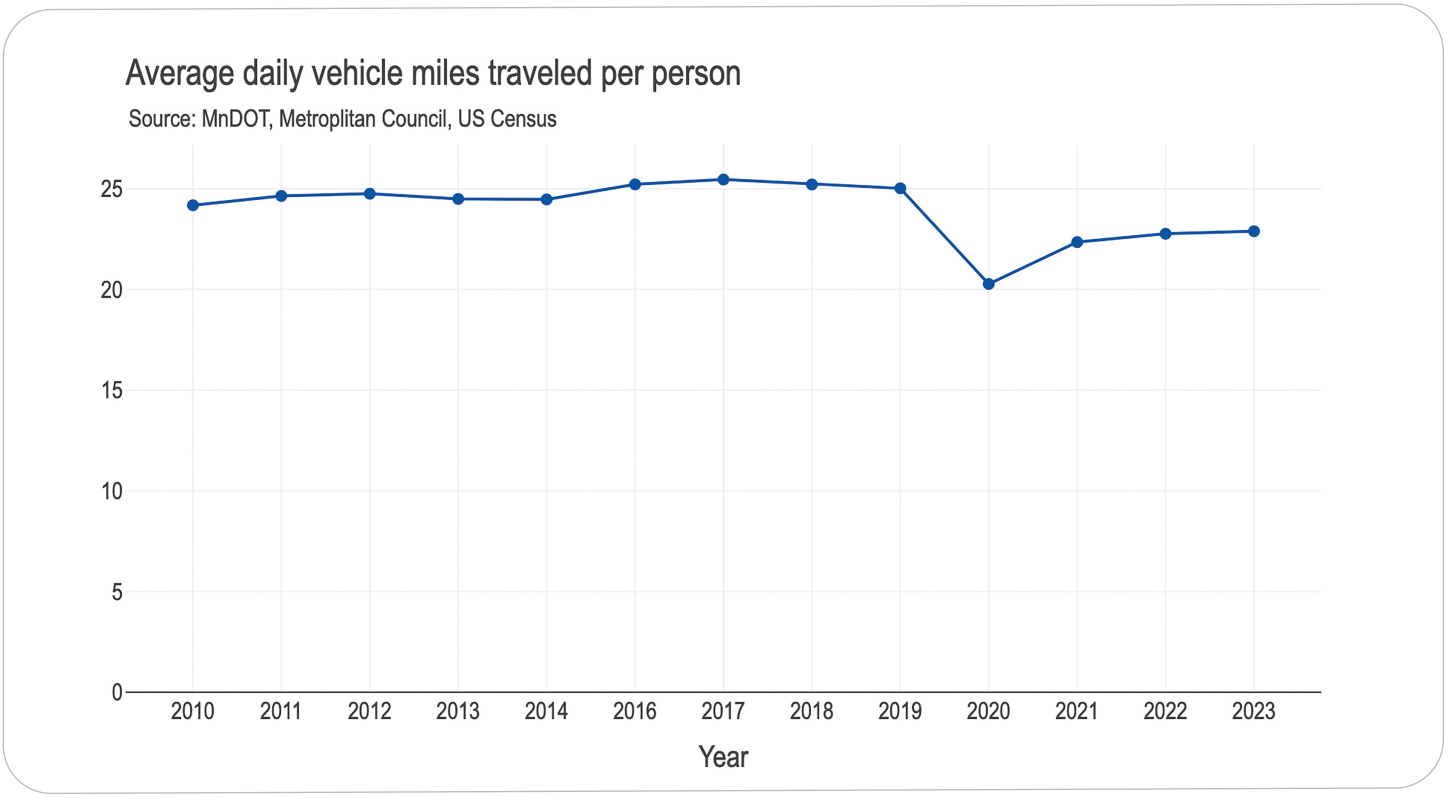


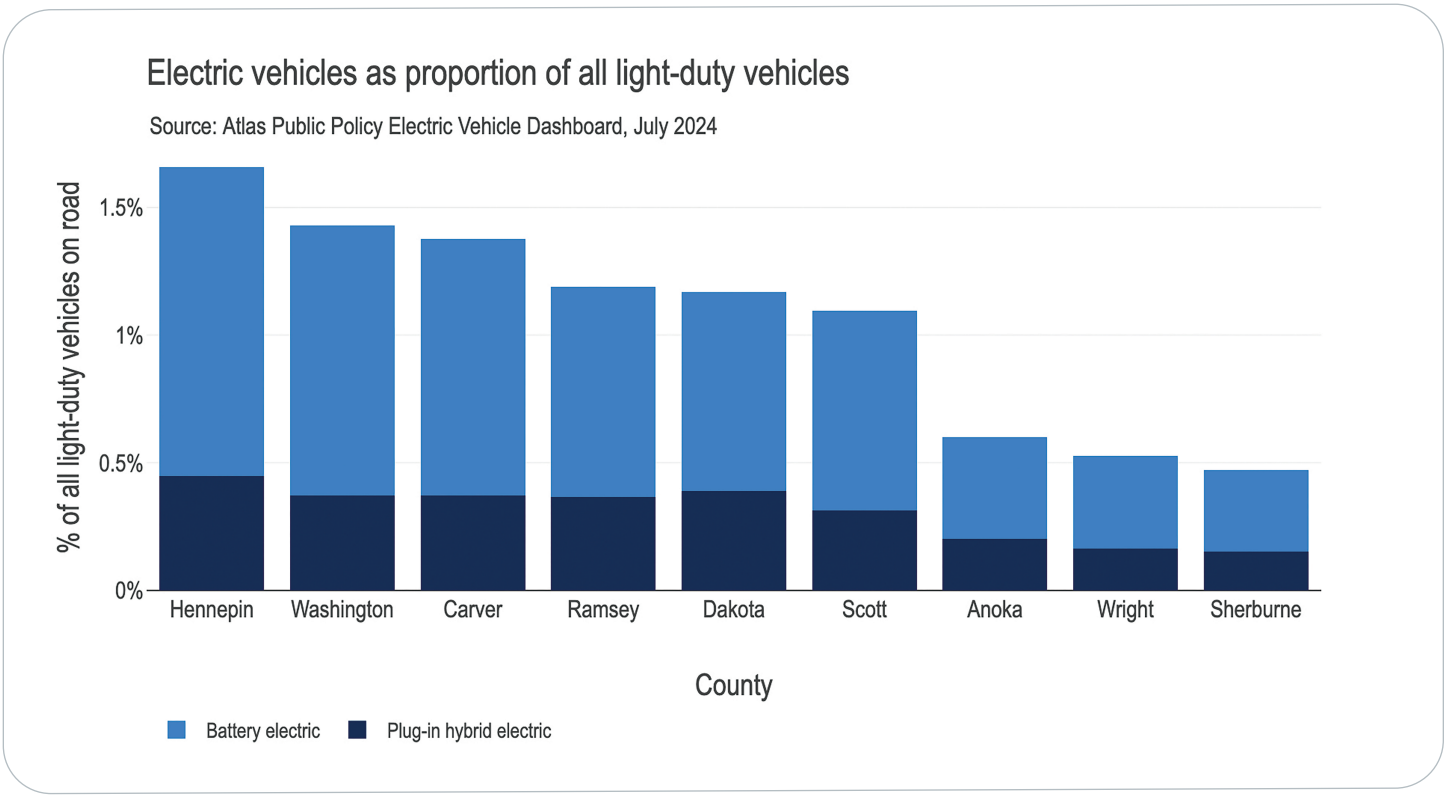
Table 16.16 includes forecasts from the Regional Travel Demand Model that show that vehicle-miles-traveled per capita is forecasted to change going from the base year to the no-build year. Since the transportation network remains the same between the two scenarios, this decrease likely reflects demographic changes such as an aging population or smaller households. The current revenue scenario vehicle-miles-traveled per capita goes up slightly (about 0.4 %) compared to the no build; however, vehicle-miles-traveled per capita in the current revenue scenario is still lower than the base year.

Table 16.16: Forecasted vehicle-miles-traveled per capita [163]

Performance measure	Base year	2050 – no build	2050 – current revenue	% change base/ no-build	% change no build/current revenue
Vehicle-miles-traveled per capita	22.6	21.95	22.0	-3%	0.4%

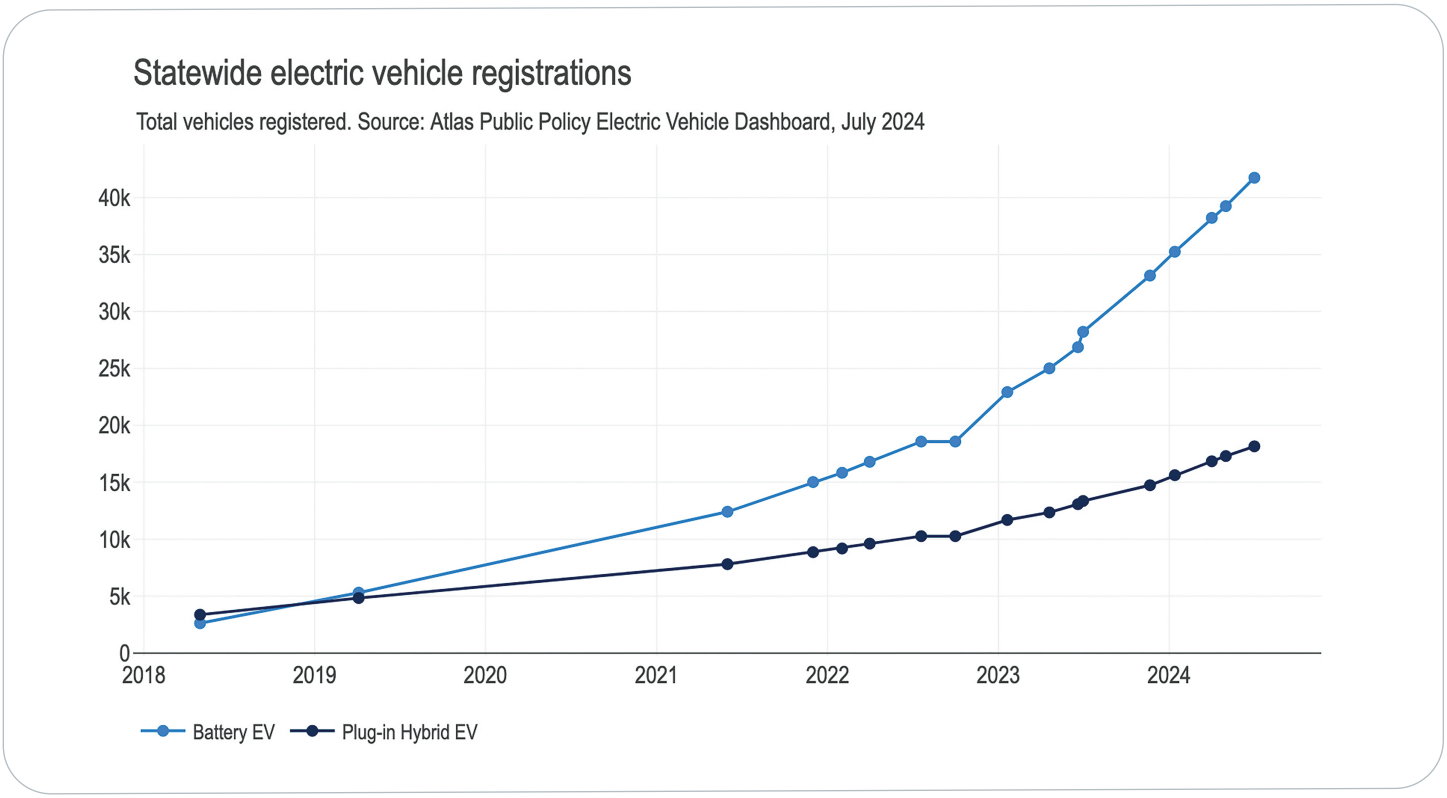
Electric and hybrid vehicles are still a small portion of light-duty vehicles, but their usage appears to be growing in the last few years. Figure 16.15 shows the current percentage of light-duty vehicles in the Twin Cities metropolitan planning organization area that are fully electric or hybrid. Across the nine counties, the percentage of hybrid or fully electric vehicles ranges from about 1.6% (Hennepin County) to around 0.4% (Sherburne County).

Figure 16.15: Electric vehicles as a percent of all light-duty vehicles, Twin Cities metropolitan planning organization counties



While still a small portion of overall personal vehicles, electric vehicle market share of newer vehicles has begun to pick up recently. Statewide registration of battery and plug-in hybrid electric vehicles grew rapidly over the last five years. The total number of registered battery electric vehicles increased nearly seven times, from over 5,300 in 2019 to over 40,000 in 2024. During this same period, plug-in hybrids more than tripled, from 4,888 to over 18,000.

Figure 16.16: Statewide electric vehicle registrations



Electric vehicles' share of statewide new vehicles (see table below) has risen substantially over the last several years, although they are still trending well below MnDOT's goals of 60% by 2030 and 100% by 2035.

Table 16.17: Electric vehicle share of new vehicle sales [164]

Performance measure	2018	2019	2020	2021	2022	2023
Electric vehicle share of new vehicle sales	0.9%	1.2%	1.4%	2.4%	4.7%	6.2%

Goal: We protect and restore natural systems

This goal aims to limit the transportation system's impact on natural systems such as water, vegetation, and habitats. One feature of the transportation system with a big impact on these resources is impervious surfaces.

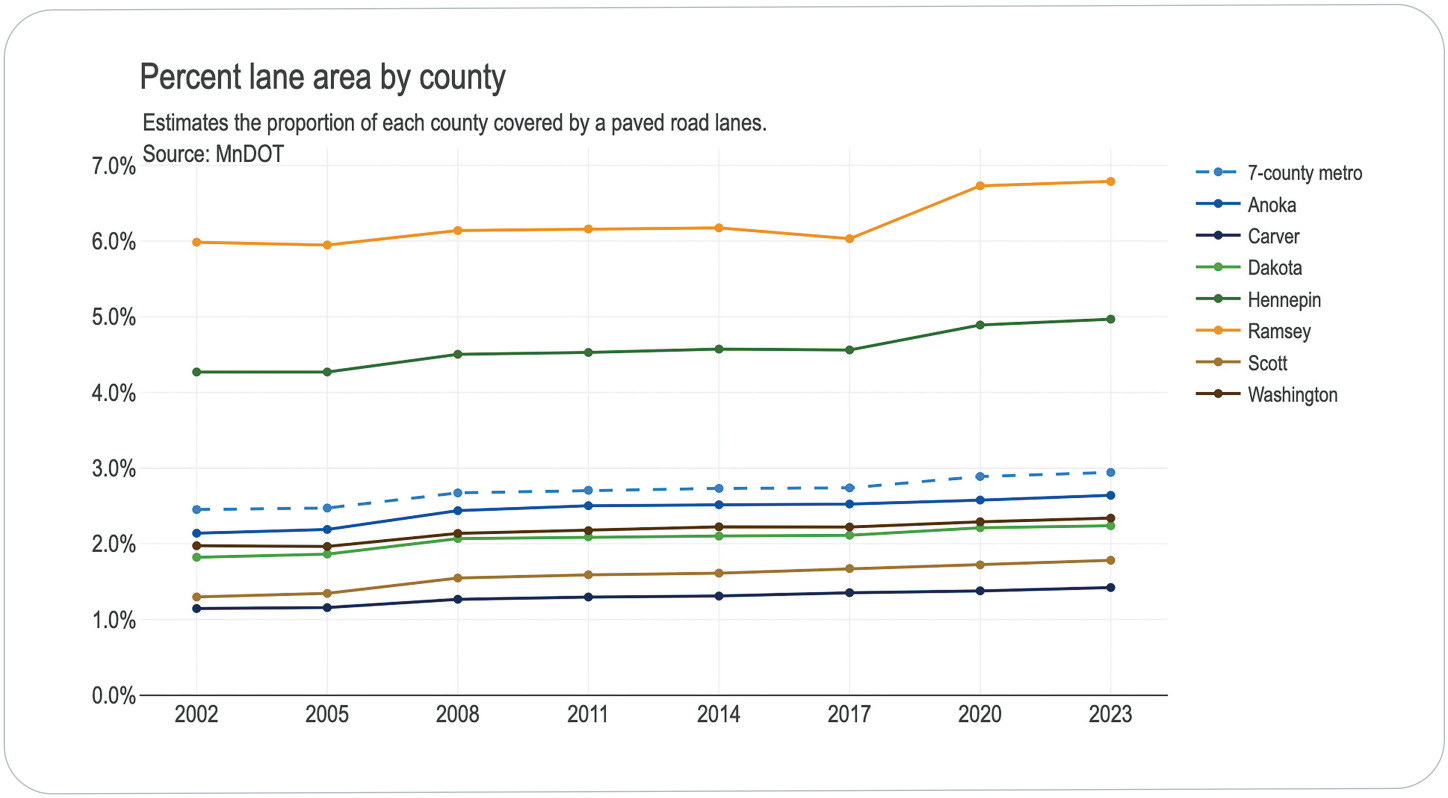
Impervious surfaces

Paving over surfaces creates several adverse effects. Impervious surfaces prevent water from filtering into the ground either by directing it into storm drains and/or concentrating it into runoff, which increases how fast water flows into rivers and streams. This reduction of infiltration and increase in runoff can affect water quality and the risk of flooding. Impervious surfaces can also trap heat, which is worsened where more impervious

surfaces are present, creating the “urban heat islands.” This warming effect is made more concerning as temperatures rise due to climate change.

As of 2023, about 2.94% of the region’s land area is covered by impervious surfaces used for paved roads. This number is even higher in more urbanized counties such as Ramsey and Hennepin (6% and 4.9%, respectively). This number has gone up gradually over time as new facilities are built. Barring any future removal of roads or major changes in their design, these percentages will continue to increase over time as new the region builds more transportation infrastructure.

Figure 16.17: Percent lane area by county



Potential Measures for Work Plan

As part of its Performance and Evaluation Program, the Met Council will explore new measures that might be accomplished through future work programs, new research, and increased partnerships with other agencies and community groups. A robust performance and evaluation system needs to constantly evolve. Shifts such as technological innovation and environmental change will create the need for new evaluation measures. Innovations in research and data availability will open opportunities to measure things the Met Council has not been able to study.

Potential measures for future exploration include:

- Research into where transportation redundancy is needed to minimize the impacts of system disruptions.
- An inventory of compliance with the Americans with Disabilities Act (ADA) on public rights-of-way.
- A study of transportation stormwater conveyance systems.
- An examination of public perceptions about the safety of the region's transportation network.
- A project evaluating how well the transportation system connects different communities, and where investments can be made to improve connectivity in places that are geographically isolated.

SECTION 17: WORK PROGRAM

The Metropolitan Council will carry out or participate in many studies and plans over the next five years that will contribute to updates to the 2050 Transportation Policy Plan. This is not an exhaustive list of all the work to be completed, but rather a list of projects that will build on areas of uncertainty, need, or concern resulting from the 2050 Transportation Policy Plan development that require further exploration. Ongoing work items that the Met Council regularly conducts are not included here. Work Program items will address aspects of the 2050 policy plan that include investment prioritization tools, project lists, evaluation and performance management, exploration of emerging topics, and policy direction.

This chapter provides an overview and description of the planned work program items. The items directly respond to the needs identified in the Policies and Actions chapter of the 2050 Transportation Policy Plan. This chapter reflects the five regional goals in Imagine 2050, which in turn guides the long-term transportation policies and actions. The work program items are organized by the policy area and specific actions that require further study, as outlined in the Policies and Actions chapter.



Policies That Guide All Work

Policy 2: Ensure the region has funding to achieve our goals.

Action 2E: Develop resources, data, and guidance for local agencies to support their federal discretionary grant pursuits, focusing on workforce development, equity, and climate and sustainability.

Work Program Item: Local Agency Federal Grant Resource Guide

The Inflation Reduction Act and the Infrastructure Investment and Jobs Act allocated a historic amount of funding for transportation, including competitive grant programs like Rebuilding American Infrastructure with Sustainability and Equity, Safe Streets and Roads for All, Mega/, and Infrastructure for Rebuilding America. To help the region increase its competitiveness at the federal level, the Met Council will create a federal grant resource guide. This guide will focus on best practices, opportunities and project alignment, programs, and training to bolster responses to the merit criteria surrounding climate and sustainability, equity, and inclusive economic growth. This guide is intended for agencies of all sizes and will require close coordination with agencies already advancing this work, including MnDOT. It may also identify areas where further regional prioritization studies are needed.

Policy 3: Asset management activities and investments should advance regional goals and objectives.

Action 3C: Complete an Existing Interchange Modification Study to prioritize investments on existing interchanges based on infrastructure condition, presence/absence of multimodal elements, mobility, equity, safety, and other factors.

Work Program Item: Existing Freeway Interchange Improvement and Modernization Study

This study will prioritize improvements on existing interchanges based on infrastructure condition; presence of bicycle, pedestrian, and transit elements; and mobility, resiliency, freight, equity, safety, and other factors. The study process will include close coordination with cities and counties who often own the cross-street at an existing freeway interchange. Local agencies and communities can be negatively affected by a variety of deficiencies at current interchanges, but also stand to benefit most from future improvements. The study also has a potential tie-in to help prioritize future funding applications as several local agencies have applied for this project type and have received funding in the past.

Goal: Our region is equitable and inclusive

Policy 4: Conduct engagement activities and implement shared decision making with historically underrepresented communities throughout policymaking, planning, and project development to ensure equitable distribution of the benefits and burdens of transportation investments.

Action 4E: Create processes and guidelines and implement training for a community assessments process. Document project processes and decision making for future reporting.

Work Program Item: Community Assessment and Project Public Engagement Guide

The Equity Evaluation of Regional Transportation Investments Study identified the need for technical assistance on early community engagement. A more equitable distribution of transportation benefits and burdens starts with including community in identification of a project's purpose and need. This guide will draw on existing work, like the Federal Highway Administration's Community Impact Assessment: A Quick Reference Guide, Equity Evaluation of Regional Transportation Investments study recommendations, and other resources, to develop a project-level public engagement guide. This will provide guidance on identifying and defining community, methods for mapping community assets and context, methods for engaging with communities about their transportation needs, and integrating those findings into a project's purpose and need, planning, development and decision-making.

Policy 7: Evaluate processes, policies, programs, and plans to ensure that community benefits and burdens from transportation investments are distributed equitably.

Action 7F: Develop an analysis methodology and environmental justice framework to evaluate how projects benefit and harm different communities and demographics.

Work Program Item: Transportation Project Impacts to Disadvantaged Communities

This project should build on the Equity Evaluation of Regional Transportation Investments study recommendations to develop an analysis methodology for evaluating how transportation projects benefit and harm different demographics and communities. This work will need to address different federal contexts for transportation planning, including environmental justice populations and Justice40 project benefits requirements for specific federal funding programs. In addition, Imagine 2050 may also include considerations that should be incorporated into this work. This project should include guidance from representatives of environmental justice communities. This methodology should address different levels of detail and analysis needed, such as inclusion in the Transportation Policy Plan or selection for funding in competitive processes.

Policy 8: Implement investments that repair harms and impacts to historically disadvantaged communities from past highway investments.

Action 8A: Complete and implement the Freeway Harms Study.

Work Program Item: Freeway Harms Study

It is well established that the construction of freeways and other controlled access highways across the nation imposed significant impacts, costs, and burdens on communities and people in the path of and living nearby these highways. These impacts were borne most strongly by members of disadvantaged communities including Black people, Indigenous people, and other people of color, and people with low incomes, and people otherwise adversely affected by persistent poverty and inequity. In Minnesota, these freeways and expressways comprise what is defined as the Metropolitan Highway System. Communities near the Metropolitan Highway System today still bear the harms, impacts, and consequences from the original highway construction and the continued operation, maintenance, and presence of these facilities. This study will identify the types and levels of long-term and continuing harms and impacts of the Metropolitan Highway

System on adjacent communities and populations, propose mitigation investment actions, and will prioritize mitigation investments and locations for funding and eventual inclusion in the transportation policy plan.

Goal: Our communities are healthy and safe

Policy 11: Emphasize and prioritize the safety of people outside of vehicles in the transportation right-of-way.

Action 11D: Develop and implement a Safer Connections to Transit program to ensure safe and year-round access to transit for people walking, rolling, and biking.

Work Program Item: Safer Connections to Transit Study

The Regional Pedestrian Safety Action Plan identified that significant percentages of pedestrian crashes happen near transit stops or stations, though this does not mean that transit is causing these crashes. While these locations are common destinations for pedestrians, they are also proxies for where more people tend to be walking. To help reduce the numbers of pedestrians who are killed or seriously injured in the region, this plan recommended further study to understand the relationship with pedestrian safety and elements of transit system design and roadway design that can affect traffic safety outcomes for pedestrians. This study will address how to improve these relationships.

Additional work may be included to develop a methodology for identifying barriers to accessing transit by walking, rolling, or biking, as well as recommended strategies for addressing those barriers. This work will build on related work from other partners such as MnDOT and local agencies. This study will also engage transit riders and residents living near transit to collect information on the barriers that keep them from safely accessing transit services. This study will be the precursor for potentially developing a safer connections to transit funding program.

Policy 13: Use transportation investments and priorities to reduce negative health impacts influenced by the transportation system.

Action 13M: Define, inventory, and map essential destinations to aid local and regional partners to connect communities to these destinations and improve public health outcomes. Expand the accessibility analysis to include essential destinations when defined and inventoried.

Work Program Item: Framework for Accessibility to Public Health Destinations

Accessibility measures frequently focus on how many jobs people reach in a certain amount of time by different travel modes (for example, bus, car, bike, etc.) But people need to access more than just jobs and shopping centers. To maintain and improve their quality of life, people need access to services such as food, health care, educational facilities, restorative open spaces, and social and cultural events. This study will help communities identify where and how they can improve peoples' access to these services. The first step will be to work with partners to identify and then create an inventory of essential destinations in different community contexts (including rural areas) that positively contribute to public health. The next step will expand existing accessibility analysis to include an evaluation of accessibility to these public health destinations across the region.

Goal: Our region is dynamic and resilient

Policy 18: Use a variety of transit service types to match transit services delivery to meet residents' daily needs based on transit markets.

Action 18E: Create a microtransit policy framework to establish an understanding of the opportunities to deliver local microtransit services in a consistent manner across regional providers and service models.

Work Program Item: Microtransit Regional Policy Framework Study

SouthWest Transit began operating the region's first microtransit service, SouthWest Prime, in 2015. Since then, other regional transit providers have been launching or testing microtransit services. The Met Council will work with transit planning partners and operators to create a regional framework guide that defines where providers should operate microtransit, creates regional service guidelines that support a consistent rider experience, integrates microtransit with the rest of the transit system, and develops performance baselines. This framework will recognize that different service delivery models may work for different contexts and the varying needs of transit riders across the region.

Policy 19: Plan for, invest in, and implement a network of transitways to expand access to reliable, frequent, high-capacity transit services.

Action 19E: Update the network of arterial bus rapid transit corridors. Identify, evaluate, and prioritize future lines for investment.

Work Program Item: Metro Transit Arterial Bus Rapid Transit Network Plan Update

The region has successfully built and opened three arterial bus rapid transit lines (METRO A Line, C Line, and D Line) and is working on five additional lines to be opened by 2030 (METRO B, E, F, G, and H lines). A previous planning effort in 2020-2021 selected the METRO F, G, and H Lines while also prioritizing the candidate corridors for future arterial bus rapid that are included in the Transit Investment Plan. Metro Transit will lead an Arterial Bus Rapid Transit Network Plan Update project in 2024 and 2025 to identify the next programmed corridors beyond the METRO H Line. This effort will work collaboratively with regional partners to identify potential candidate corridors including those already in the Transit Investment Plan, screen the corridors for the highest BRT potential, evaluate the corridors for implementation prioritization, and identify the next three lines, targeted to open between 2030-2035. A future update to the 2050 Transportation Policy Plan will include an updated list of arterial bus rapid transit corridors.

Policy 21: Use travel demand management to plan, fund, and promote multimodal travel options and alternatives to driving alone.

Action 21H: Create methodologies and guidance to integrate travel demand management activities into highway planning and project development processes.

Work Program Item: Integrating Travel Demand Management into Highway Planning

The Met Council will work with regional highway planning partners to identify travel demand management considerations and implementation strategies in highway planning and the project development processes,

including the corridor planning process. This work will acknowledge that the processes will vary by the type, context, and operator of each roadway. The work will create context-specific guides and methodologies to integrate travel demand management into the regional highway planning process. The work will also explore how to better link highway planning to policies that are not typically the responsibility of highway authorities, like land use and development review, and employer relations. This work will advance details on elements of the Travel Demand Management Plan and the Congestion Management Process and build on corridor planning processes at MnDOT and counties.

Action 21I: Create frameworks for travel demand management incentives, pricing, and development review programs to support implementation of actions.

Work Program Item: Travel Demand Management Implementation Framework Development

The Travel Demand Management Plan identifies a number of frameworks needed to guide the implementation of new regional travel demand management approaches. These new frameworks will address traveler incentives and pricing, development-based programs, expanded employer-based programs, and create a sense of place. The frameworks will address priority focus areas, both geographic and demographic, structure of programs, potential costs or scalability, performance evaluation, and roles for implementation. These frameworks will be developed in partnership with regional travel demand management stakeholders through a new Travel Demand Management Program Advisory Group. The Transportation Policy Plan will incorporate these frameworks and any policy direction that emerges from their development through a future update.

Policy 23: Implement a Complete Streets approach in policy, planning, operations, and maintenance of roads.

Action 23D: Create a regional Complete Streets typology that is sensitive to land use context and supplements functional classification. Provide local assistance and workshops to aid in the implementation of Complete Streets policies and processes.

Work Program Item: Complete Streets Local Implementation Guide

The Infrastructure Investment and Jobs Act (IIJA) provides increased design flexibility in federal-aid roadway projects. This task will provide partners with guidance on using this flexibility, particularly adapting roadway design to different land use contexts or as a tool to guide desired land uses. The project may provide partners implementation guidance on common Complete Streets project elements, recommend actions for prioritizing projects with Complete Streets elements in selection processes, and provide a land use and traveler-sensitive supplement to functional classification. This project will build upon existing guidance like the Federal Highway Administration's Complete Streets Transformations scenarios, Minnesota Department of Transportation's Complete Streets Handbook, National Association of City Transportation Officials' Urban Street Design Guide, and similar work by peer metropolitan planning organizations. This guide may be supported with assistance and workshops to support implementation.

Action 23E: Identify regional priorities for Minnesota Department of Transportation's new main streets / urban pavement funding program.

Work Program Item: Main Streets / Urban Pavement Funding Program Priorities Study

The Met Council will co-lead, with MnDOT, a study that identifies regional priorities for MnDOT's main streets/ urban pavement investment category, added as a new program in the latest Minnesota State Highway Investment Plan. This investment category is intended to facilitate more complex fixes to bicycle and pedestrian infrastructure (including adequate bike parking), include local priorities, and coordinate with local government to address water and sewer infrastructure. With this new investment category comes the need to prioritize the limited funding to best meet the goals of the program. This study will also examine a potential use in future Regional Solicitation funding processes.

Policy 24: Plan for and invest in first-/last-mile freight connections between major freight generators and the regional highway system.

Action 24J. Perform an update to the Twin Cities Metropolitan Regional Freight Study

Work Program Item: Twin Cities Metropolitan Region Freight Study Update

The Twin Cities Metropolitan Region Freight Study, a cooperative effort led by Met Council and MnDOT, was finalized in 2013. Several goals were accomplished through the original study in that it:

- Highlighted the importance of freight transportation and its contributions to a healthy and sustainable regional economy.
- Identified issues and trends related to freight transportation.
- Developed a framework for a coordinated regional freight planning and implementation strategy that prioritized critical freight transportation planning activities.

Since 2013, the metropolitan freight system has continued to evolve amidst new and emerging freight mode technologies and the rapidly growing presence and impact of e-commerce freight logistics. This update will revisit the earlier study's findings and conclusions, determine their current levels of significance. and develop potential planning-level solutions. Among other potential issues to be defined later, this study may examine these known issues:

- Lack of available overnight truck parking areas
- Potential last-mile solutions to encourage development of distribution microhubs that incentivize transfers from large trucks to small trucks/vans and/or micro-delivery, zero-emission modes (such as bikes, e-cargo bikes, scooters, robots, drones, and automated vehicles)
- Added burdens placed by e-commerce distribution on the overall freight logistics and transportation system

- Impacts of freight transportation on greenhouse gas emissions, potential emission minimizing actions, and other sustainability-related strategies
- Truck freight bottlenecks prioritization and investment strategy

Policy 25: Provide transportation options and transit advantages on roadway corridors with delay and travel time reliability issues.

Action 25G: Identify and prioritize investments for dedicated transit lanes and transit advantages.

Work Program Item: Transit Advantage Priority Guide

The Met Council will work with regional transit planning partners, including transit operators, MnDOT, and local agencies, to develop a consistent methodology for identifying and prioritizing corridors for implementing transit advantages. This work will acknowledge that the processes vary by type and context of the corridor, as well as the agency that owns and operates corridor facilities. The work will create context-specific guides and methodologies. In addition, the study will identify regional priority corridors for implementing new transit advantages and modernizing or improving existing transit advantages. A future Transportation Policy Plan update will include results from this study.

Policy 26: Focus highway mobility investments on corridors with high levels of existing delay and travel time reliability issues.

Action 26E: Identify, prioritize, and fund corridors for traffic technologies that would most effectively mitigate impacts from recurring and nonrecurring congestion.

Work Program Item: Congestion Management and Traffic Management Technology Prioritization Study

Enhancing traffic management technologies along congested corridors is one part of the Met Council's mobility hierarchy. Relatively low-cost and high-impact traffic technologies can reduce delay and emissions, increase transit reliability, and improve safety. The Met Council, through its Regional Solicitation process, has invested in traffic technologies as part of its objective to provide reliable highway travel for transit and personal vehicles. Focusing on nonfreeway arterials, this study will identify new technologies, coordination opportunities, implementation and best practice guidance, and prioritize corridors for technology investment that could improve safety, reliability, universal design, and accommodating high-frequency transit.

Action 26F: Update the Congestion Management Safety Plan to identify congestion- and safety-related problem locations and potential solutions on state highways.

Work Program Item: Congestion Management and Safety Plan, Phase 5

This study will build upon existing work to update both the solutions and specific locations that should be prioritized for funding and will address congestion and safety problems within the metro area. The Congestion Management Safety Plan is a program that seeks to implement low-cost, high-benefit improvements on the regional highway network, specifically aiming to maximize return on investment. The recommendations are typically lower in cost and smaller in scope than traditional highway investments, allowing them to

be completed more quickly and efficiently. This study will identify problem locations and update potential solutions that may best mitigate the problem in a cost-effective and timely manner.

Action 26G: Update the Managed Lane System Study to establish a managed lane system vision and a prioritized list of corridors.

Work Program Item: Managed Lane Vision and System Study, Phase 4

This study will update the MnPASS (now E-ZPass) System Study Phase 3, published in 2017, to analyze and make recommendations for potential managed lane locations within the region. It will go further by establishing an overall long-term vision for managed lanes within the region, which will in turn direct a prioritized list of corridors.

Managed lanes may help achieve lower greenhouse gas emissions by incentivizing the traveling public to use high-occupancy vehicles instead of single-occupant vehicles. This equates to fewer vehicles on the road carrying the same amount of people, serving also to assist in reducing congestion during peak periods. This study will provide an updated recommendation for the conversion of general-purpose lanes to managed lanes and to develop a shared regional vision for managed lanes.

Policy 27: Identify and implement activities and investments that will mitigate current or anticipated climate or weather-related impacts.

Action 27I: Complete and maintain a resilience improvement plan and associated mapping applications. Consider ways to customize to the metro area's needs.

Work Program Item: Twin Cities Transportation Resilience Improvement Plan

As part of the new federal funding program Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation, MnDOT is developing a statewide Resilience Improvement Plan. Building off the statewide plan and ongoing and completed Met Council work, this study will identify the key issues within the region and develop mapping applications, best practice guides, and investment priorities to improve transportation resilience in the Twin Cities region.

Policy 28: Pursue opportunities to minimize disruption and nonrecurring delay from weather, security, and traffic incidents.

Action 28D: Analyze the regional roadway network to identify where system redundancy is needed or where a missing connection would improve the overall system (interchanges, over/underpasses, river crossings, frontage roads, grid connections, or other similar elements).

Work Program Item: Twin Cities Incident Management and Redundancy System Plan

When natural and human caused events disrupt transportation facilities, a redundant transportation network paired with quick response can minimize the impacts. This study would evaluate opportunities to build out a redundant network for all modes and identify where connections would improve system outcomes including interchanges, missing interchange ramp movements, over / underpasses, river crossings, frontage roads, grid connections, bicycle and pedestrian connections and crossings, parallel routes, or other similar elements.

Goal: We lead on addressing climate change.

Policy 29: Ensure the availability, visibility, and accessibility of electric vehicle charging infrastructure.

Action 29F: Identify methods and processes to prioritize targeted charging and fueling infrastructure funding with a focus on historically disadvantaged and rural communities.

Work Program Item: Electric Vehicle Public Charging Needs Analysis

The 2021-2022 Electric Vehicle Planning Study included an analysis of public charging needs at an aggregate level at various levels of electric vehicle market share for the region. This technical analysis will extend that work to consider the more detailed ecosystem of public charging needed if the region is to accommodate and accelerate equitable light-duty electric vehicle adoption. The study results will estimate and identify remaining gaps in charging infrastructure investment needs beyond what exists, and the investments anticipated from utilities, the private sector, and available federal funding. This work will be coordinated with MnDOT's ongoing Minnesota Infrastructure Needs Assessment.

Policy 30: Evaluate and mitigate the greenhouse gas impacts of transportation plans and projects.

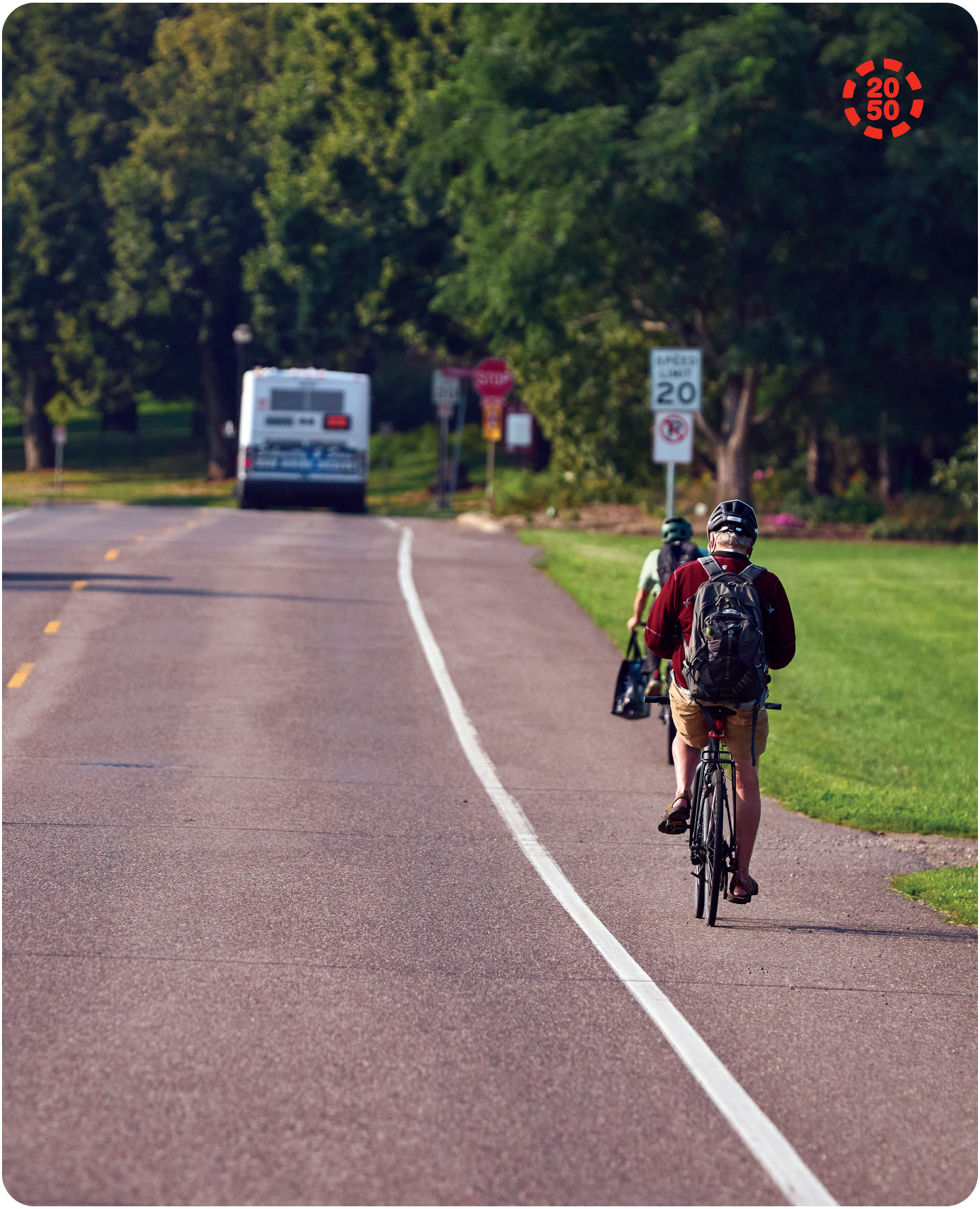
Action 30D: Develop, evaluate, and implement other transportation strategies to reduce greenhouse gas emissions.

Work Program Item: Greenhouse Gas Emission Reduction Strategy Development

This study will follow up on global, national, and state work on greenhouse gas reduction strategies to further develop local priorities and implementation details in coordination with partners. It will consider cost-effectiveness, equity, implementation ease, geographic context, and other factors. The work will build off of the Multimodal Measures Study which is identifying methods for estimating the emissions impacts of projects. It will further consider solutions to implement strategies like funding. This work will follow from the state's Climate Action Framework, State Multimodal Transportation Plan and Carbon Reduction Strategy, and other local and regional work. It will include work in the areas of electrification, travel options, low-carbon infrastructure, and operations.

Work Program Item: Electric Vehicle Public Engagement and Support for Local Implementation

Individuals and cities will play a central role in determining how fast the benefits of transportation electrification are realized. This work will develop and provide the information these important stakeholders need to make decisions related to charging infrastructure and electric vehicles and accelerate the adoption of electric vehicles. This work will provide updated information to the public in a variety of forms, and direct technical support (for example webinars, published guidance and one-on-one discussions with electric vehicle experts) to cities to better plan and regulate for accelerated electric vehicle adoption, to educate their residents, and to implement in their own operations and programs for electric vehicles. This project is a 2024 work program item and listed in the 2024 Unified Planning Work Program with the title: Electric Vehicle Public Engagement and City Support.


20
50
SPEED LIMIT
20
STOP

SECTION 18: LONG-RANGE CAPITAL PROJECT LISTS

The Long-Range Highway and Transit Capital Project lists summarize planned regionally significant highway and transit capital projects within the planning time frame of this Transportation Policy Plan (2025-2050). These projects will be planned and implemented by the Minnesota Department of Transportation (highways), the Metropolitan Council and Metro Transit (transit), or other local agencies. These lists do not include projects on minor arterial highways or nontransitway systems; those projects are listed in the Transportation Improvement Program (TIP).

Transportation Improvement Program

All known regionally significant local projects are included here and in the Transportation Improvement Program. The federally required Transportation Improvement Program for the Greater Minneapolis-St. Paul region – as defined by the U.S. Census Bureau and the Met Council to consist of the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington, and the contiguous urbanized areas of Wright and Sherburne counties – is updated each year by the Transportation Advisory Board and the Met Council.

Federal transportation regulations require that all federally funded transportation projects within the region be included in the four-year Transportation Improvement Program. The Transportation Improvement Program is prepared by Met Council staff with assistance from the Minnesota Department of Transportation. It is a fiscally constrained four-year program for project delivery, which means anticipated revenues and estimated project costs balance over the four-year period covered by the program. The current Transportation Improvement Program is available on the Met Council website.

Regionally significant projects

The Federal Highway Administration defines regionally significant projects as those that serve regional transportation needs that would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

For highways, regionally significant projects include the following project types on principal arterials:

- Adding or removing a lane (for example, general-purpose lane, managed lane, an entirely new roadway, or continuous auxiliary lane that extends more than one interchange).
- Constructing a new interchange on an existing or developing freeway, adding or removing a new ramp movement at an existing interchange.

For transit projects, regionally significant projects include:

- Adding a new transitway including arterial bus rapid transit, highway bus rapid transit, dedicated bus rapid transit, light rail, commuter rail, and modern streetcar.
- Adding or removing one or more transitway stations, including extending existing transitways (does not include minor station relocations that are part normal planning and engineering).
- The addition of a permanent park-and-ride facility (for example, not leased) with a capacity of 250 or more stalls.

List contents

The Met Council will update the following lists as needed through amendments to the Transportation Policy Plan. These lists are not and cannot be interpreted as a project programming document. These lists summarize planned regionally significant projects in the fiscally constrained plan (where estimated project costs are equal to anticipated revenues) and includes each project's:

- Primary investment category
- Project location (called "route")
- Project description
- Estimated cost
- Approximate implementation time frame

These lists are exhaustive only for highway managed lanes, interchanges, targeted regional capacity, and transitways. When new projects are identified for funding in these four categories, they must be amended into the Transportation Policy Plan. For more information contact Met Council long-range transportation planning staff.

Long-Range Highway Projects 2025-2050

Table 18.1 shows all planned regionally significant highway projects in the region. Programmed projects are in the Transportation Improvement Program and all regionally significant highway projects are mapped in the Highway Investment Plan. Each of these is fiscally constrained. The Highway Investment Plan shows additional projects that are part of a longer-term vision and not formally part of this fiscally constrained plan. This list only includes those projects that meet the definition of regionally significant and fall into mobility categories of interchanges, managed lanes, and targeted regional capacity.

Table 18.1: Long-range regionally significant highway projects, 2025-2050 [165]

Category	Route	Project Description	Estimated Cost [165]	Timeframe
Interchange	US 169 at MN 282/Scott CSAH 9	In Jordan, construct interchange, rehabilitate bridge	$49,000,000	2025
Targeted Regional Capacity	I-35W at Cliff Rd	In Burnsville, northbound only, fill gap in fourth lane to connect upstream and downstream fourth lanes	$80,000,000	2025
Targeted Regional Capacity	I-394 at Louisiana Av	In St. Louis Park, eastbound only, fill gap in third general purpose lane to connect upstream and downstream third general purpose lanes	$5,000,000	2025
Interchange	I-35E at Ramsey/Anoka CR J	In Lino Lakes, add access to and from the north to complete access here	$11,000,000	2025
Interchange	MN 65 from 99th Av to 117th Av	In Blaine, construct interchanges at 99th Av, 105th Av, 109th Av, and 117th Av	$195,500,000	2026
Interchange	MN 36 at Washington CSAH 17 (Lake Elmo Av)	In Grant and Lake Elmo, construct an interchange	$40,000,000	2026
Interchanges, Managed Lanes	MN 252 from MN 610 to I-94 and I-94 from MN 252 to 4th St N	In Minneapolis, Brooklyn Center and Brooklyn Park, construct interchanges at 66th Ave N, Hennepin CSAH 109 (85th Av N), and Brookdale Dr, improve safety and mobility on and across MN 252 and I-94	To be determined	2028
Interchange	MN 610 at East River Rd	In Coon Rapids, add interchange access ramps	$35,000,000	2027
Interchange	MN 13 from west of Quentin Av to east of Nicollet Av	In Savage and Burnsville, construct grade separation and reconstruction	$140,408,000	2027
Interchange	MN 65 at Anoka CSAH 116 (Bunker Lake Blvd)	In Ham Lake and Blaine, construct an interchange	$36,625,500	2028

Category	Route	Project Description	Estimated Cost [165]	Timeframe
Interchange	Hennepin CR 81 at Bass Lake Rd	In Crystal, construct an interchange in coordination with Blue Line light rail extension	To be determined	2025-2035
Interchange	MN 36 at MN 120	In North St. Paul and Oakdale, construct an interchange	To be determined	2029-2050
Interchange	MN 5 at Hennepin CR 4 (Eden Prairie Rd)	In Eden Prairie, construct an interchange	To be determined	2029-2050
Interchange	MN 65 from 85th Av to 93rd Av	In Spring Lake Park and Blaine, construct two interchanges	To be determined	2029-2050
Managed Lanes	I-494 from US 169 to east of MN 77/24th Av	In Bloomington and Richfield, complete managed lanes addition	$350,000,000	2026
Managed Lanes	I-35W from Mississippi River to Ramsey County Rd C	In Minneapolis and Roseville, add managed lanes	To be determined	2029-2050

Long-Range Transit Capital Projects 2025-2050

The Met Council (including Metro Transit), local governments including cities and counties, and suburban transit providers worked together to develop the list of transit projects included in the fiscally constrained plan. The list (Table18.2) includes only those projects for which potential funding sources, transit mode, and route alignment are identified in the plan. There may be funding that exceeds anticipated project costs identified in the transitway system investments category. The region will add transitway projects to this list through future plan updates and amendments as needed. For multi-year projects with expenditures prior to or across multiple time frames, this list includes the total estimated project cost, including already spent funds.

Table 18.2: Long-range transit capital projects, 2025-2050

Category	Route	Project Description	Estimated Cost [166]	Timeframe
Transitway System	METRO Green Line Extension	15-mile light rail extension of the Green Line with plans to include 15 new stations between Minneapolis and Eden Prairie	$2,860,000,000	2025-2035
Transitway System	METRO Blue Line Extension	13-mile light rail extension of the Blue Line with plans to include 11 new stations between Minneapolis and Brooklyn Park	$1,535,900,000[167]	2025-2035
Transitway System	METRO Gold Line	10-mile dedicated bus rapid transit line with plans to include 21 new stations between Saint Paul and Woodbury	$505,000,000	2025-2035
Transitway System	METRO Purple Line	10- to 12-mile dedicated bus rapid transit line with plans to include 12 new stations between Saint Paul and Maplewood	$400,000,000	2025-2035
Transitway System	METRO B Line Arterial Bus Rapid Transit	12-mile arterial bus rapid transit line with 33 planned stations between St. Louis Park and downtown Saint Paul	$65,000,000	2025-2035
Transitway System	METRO E Line Arterial Bus Rapid Transit	9-mile arterial bus rapid transit line with 34 planned stations along University Ave/4th St, Hennepin Ave, and France Ave between the University of Minnesota and Southdale	$68,000,000	2025-2035
Transitway System	METRO F Line Arterial Bus Rapid Transit	15-mile arterial bus rapid transit line with 32 planned stations between downtown Minneapolis and Northtown Transit Center along Nicollet Mall, Central Avenue, 53rd Avenue, and University Avenue	$98,000,000	2025-2035
Transitway System	METRO G Line Arterial Bus Rapid Transit	13-mile arterial bus rapid transit line with 32 planned stations between Little Canada and the Dakota County Northern Service Center through downtown Saint Paul to mainly along Rice Street and Robert Street	$82,000,000	2025-2035
Transitway System	METRO H Line Arterial Bus Rapid Transit	16-mile arterial bus rapid transit line along the Como/Maryland corridor between downtown Minneapolis and Sun Ray Transit Center on the east side of Saint Paul	$118,000,000	2025-2035

Note: Amendments related to the Blue Line Extension, Gold Line Extension, and Purple Line are likely in 2025.

SECTION 19: ENVIRONMENTAL JUSTICE ANALYSIS

As we look toward the future with the 2050 Transportation Policy Plan, our commitment to fostering an inclusive and equitable Minneapolis-Saint Paul region remains steadfast. This plan aims to ensure that the benefits of our transportation systems are shared by all, particularly those who have historically been marginalized in regional planning efforts. This includes communities of color, American Indians, low-income households, people with disabilities, and individuals with limited English proficiency. By addressing both federal requirements for environmental justice and the broader equity aspirations outlined in Imagine 2050, we are dedicated to creating a transportation network that connects everyone to opportunities for success, prosperity, and a high quality of life.

This section addresses federal requirements. Federal guidance for evaluating impacts is derived from Title VI of the Civil Rights Act of 1964, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, and Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All. Under the executive order, transportation plans and programs 1) must provide a fully inclusive public outreach program; 2) should not disproportionately impact minority and low-income communities, and 3) must assure the receipt of benefits by minority and low-income populations. The Transportation Policy Plan addresses these three principles, which were considered throughout the decision-making process. The analysis section of this section discusses these in more detail. These principles must also be considered in the project design and implementation phases for future specific projects.

Regional guidance for pursuing equity and environmental justice is outlined in Imagine 2050, the metropolitan development guide required by Minn. Stat. 473.145. More related information is also included in the Equitable and Inclusive sections of the Overview, the Highway Investment Plan, and the Evaluation and Performance sections of the Transportation Policy Plan. This section is not intended to duplicate content from any of the other sections of the plan.

In the following pages, the terms "people of color" and "low-income households" are used to address the federal Environmental Justice requirements for "minority and low-income." Where regional approaches to pursuing equity are discussed, broader language is used, such as "all races, ethnicities, incomes, and abilities."

Identification of populations

In comparison to the previous Transportation Policy Plan, this analysis now includes individuals with disabilities where a census tract contains a population exceeding the regional average, in addition to people of color and people with low incomes.

Federal guidance on Environmental Justice applies to low-income households, people of color, and people with disabilities. This guidance defines people of color as all persons who are not white/non-Latino. While Environmental Justice applies regardless of population size, identifying concentrations of potentially affected populations is useful for application to system-level planning.

For the purposes of regional analysis, regional percentages were calculated at the census tract level for low-income households, people with disabilities, and people of color using the 2018-2022 American Community Survey. Under this analysis, 29.2% of the region's population are people of color or American Indians, 8.3% of the region's population live with incomes below 100% of the federal poverty level, and 17.7% of the region's population live with incomes below 185% of the federal poverty level. Additionally, under this analysis 10% of the region's population are people with disabilities. These regional percentages are used to identify census tracts with populations above the regional percentage.

Qualitative Analysis of Plan Investments and Strategies

Specific policies and actions identified in the Transportation Policy Plan serve to create benefits or mitigate impacts to communities of color, low-income households, people with disabilities, and people with limited English proficiency. This section highlights specific plan policies and actions that support Environmental Justice and broader equity work. Following the discussion of plan strategies, a series of maps show the location of plan investments and the existing transportation system in relation to people of color, people with low incomes, and people with disabilities in the region.

Plan policies and actions

The Policies and Actions section includes all the detail on these in relation to the plan's goals. This section summarizes areas where they address environmental justice or equity more broadly.

All work

Three policies guide all work, separate from those policies categorized by goals. These policies include actions that specifically identify equity as considerations or focus areas when ensuring the region has funding to achieve our goals, and that asset management work and investments advance regional goals.

Our region is equitable and inclusive

The plan's equitable and inclusive goal includes five policies and 19 related actions. These policies address:

- Engagement
- Meeting the needs of people with disabilities
- Gentrification and displacement caused by transportation investments
- Benefits and burdens of transportation investments
- Repairing harms and impacts from past highway investments

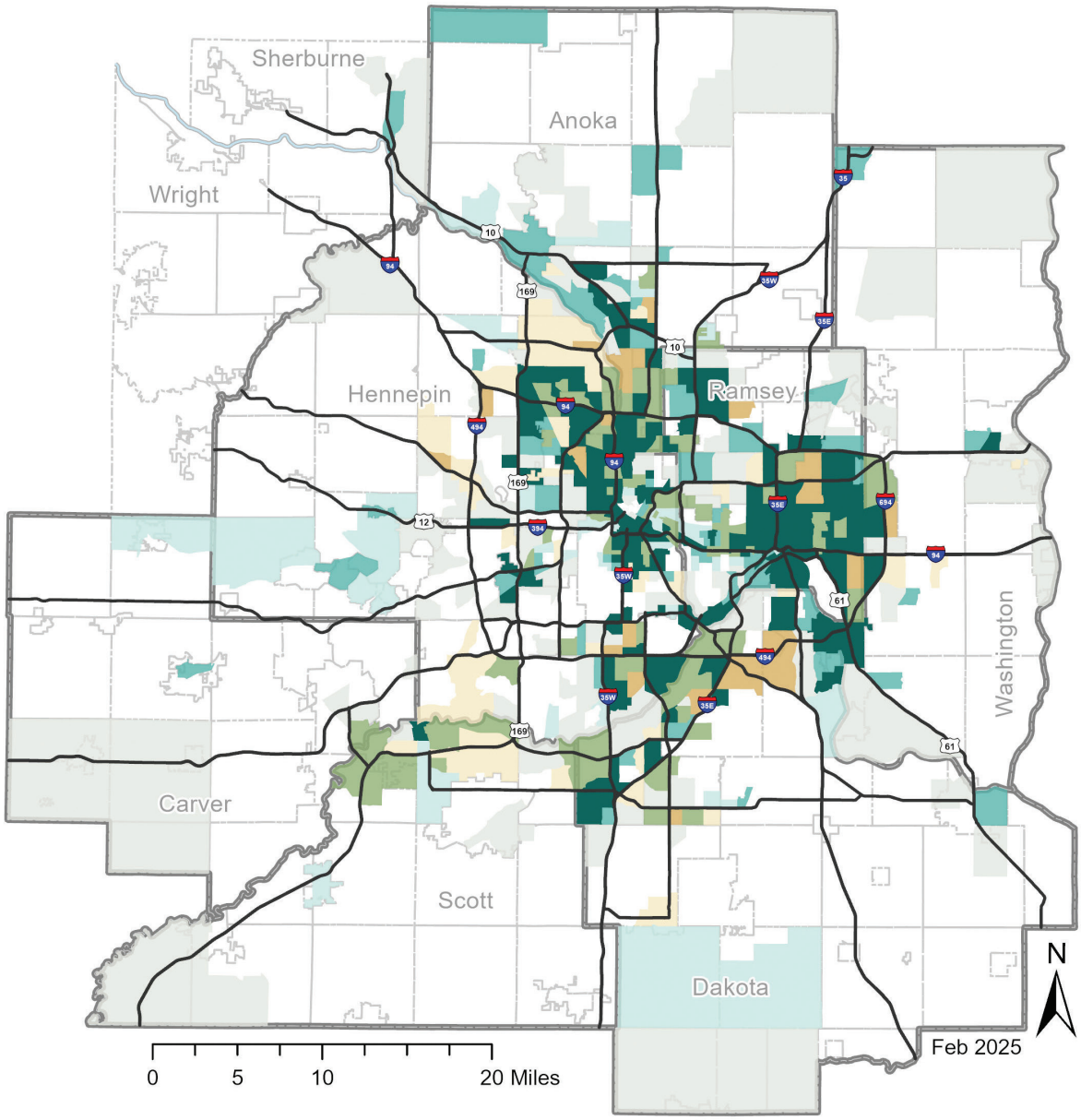
Other goals

- The six policies for the healthy and safe goal address the needs of all road users, safety from crashes, repairing negative health impacts to overburdened communities, and a sense of place. Historically, transportation investment decisions have at times divided or displaced neighborhoods, especially creating harms for communities of color, people with low incomes, and people with disabilities. Actions to address these needs include directing investment focuses, specifying equitable enforcement strategies should be used for addressing speed in a safety context, and addressing racial profiling of those traveling on the regional transportation system. An action in the healthy and safe goal specifically addresses opportunities for supporting access to Dakota, Ojibwe, and Ho-Chunk cultural resources.
- The 14 policies for the dynamic and resilient goal address providing better transportation options, recovery from disruptions, predictable travel times, and goods movement. Supportive actions address ways to plan and invest in transportation options and climate mitigation.
- The three policies for the leading on addressing climate change goal include 17 supportive actions. These include some direction on prioritizing investments in areas that have been historically disadvantaged.
- The two policies for the protecting and restoring natural systems goal include 14 supportive actions for reducing impervious surface coverage or limiting right-of-way needs and using the regional transportation system to protect and restore natural systems.

Spatial analysis of investments

The following series of figures identifies the populations of color, people with disabilities, and low-income residents in the Twin Cities region, as well as the highway, bicycle system and transit investments within those areas.[168] Analysis of the location of projects relative to historically overburdened communities, as well as the location of their positive benefits and negative impacts is also recommended at the local and project level.

Figure 19.1: Population and existing highway system



Principal Arterial Highways

Regional Percentage by Tract

- Disability only
- POC only
- Poverty Only
- POC and Disability
- Poverty and Disability
- Poverty and POC
- ALL

People in Poverty
The Census defines individual poverty at two levels, 100% of poverty and 185% of poverty.

100% poverty regional percentage is 8.3%
185% poverty regional percentage is 17.7%

Population of Color
Population of Color is defined as all persons not classified as White, Non-Latino
Regional percentage is 29.2%

People with Disabilities
The census includes information on many types of disabilities.
The disability data here is "Any Disability".
The regional percentage is 10.0%

This map highlights census tracts that are above the regional percentage for each population group.

Figure 19.2: Population and transitways

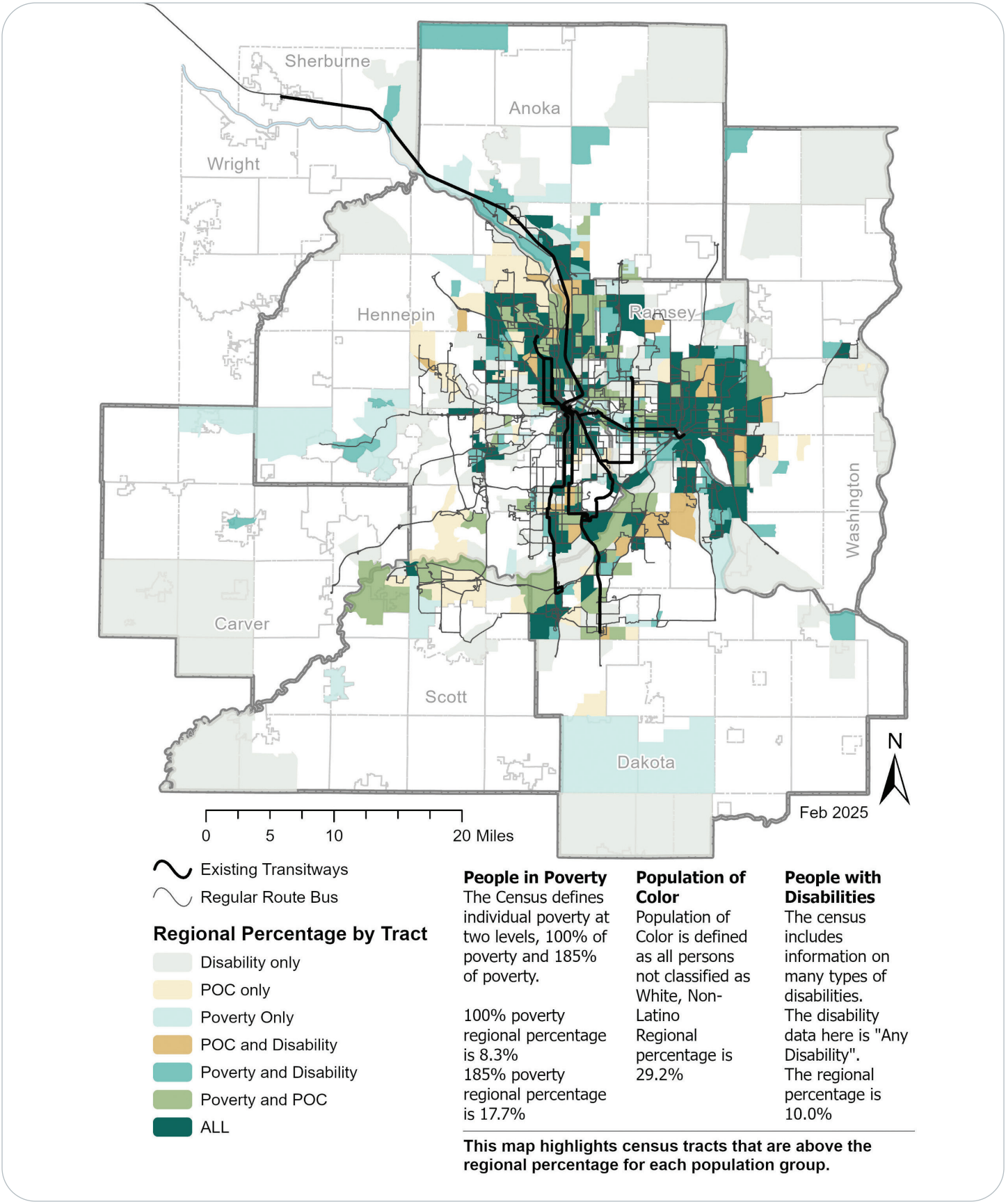
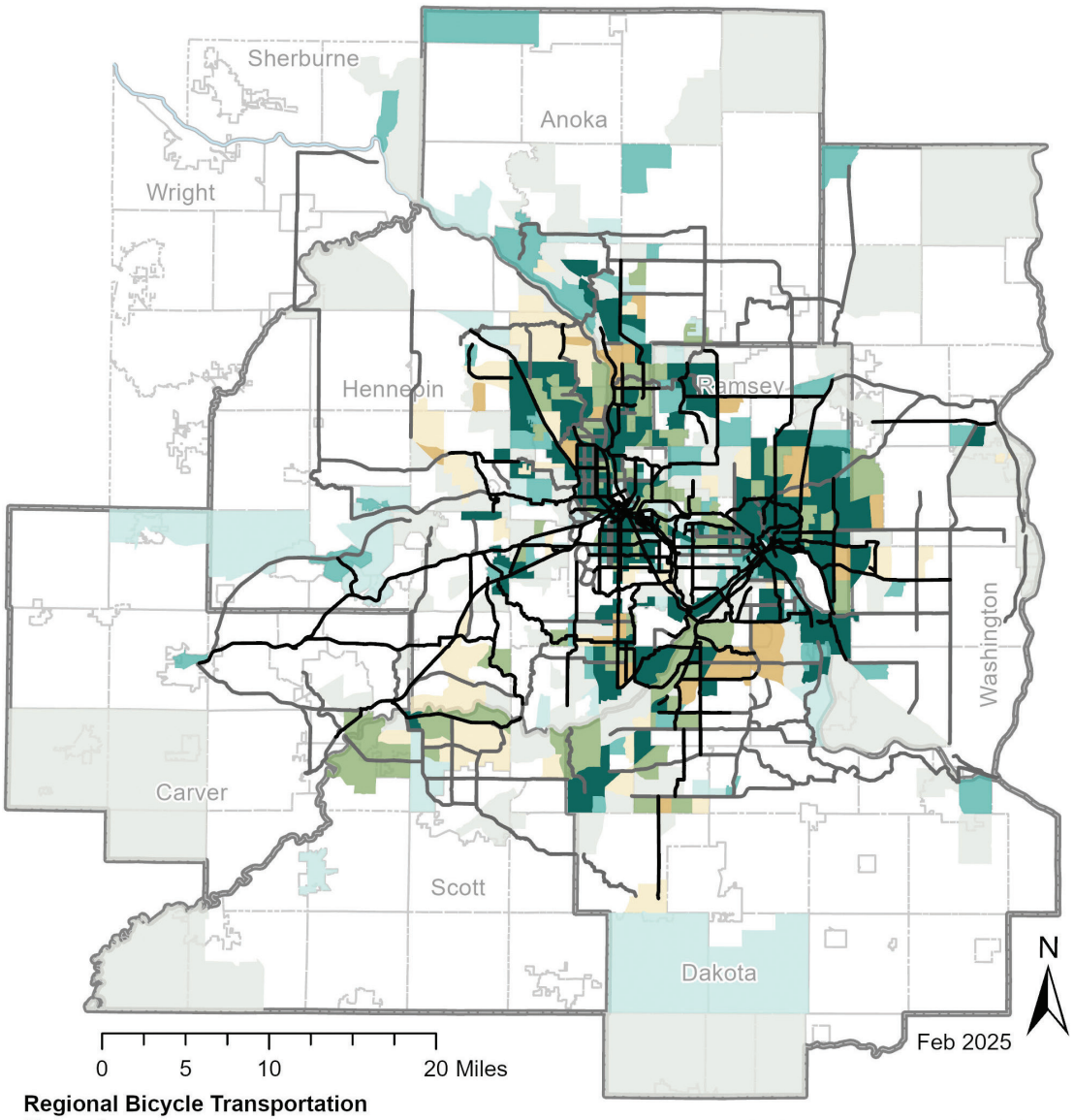


Figure 19.3: Population and regional priority corridors for bicycle infrastructure



Regional Bicycle Transportation Network

- Tier 1 Alignment
- Tier 2 Alignment

Regional Percentage by Tract

- Disability only
- POC only
- Poverty Only
- POC and Disability
- Poverty and Disability
- Poverty and POC
- ALL

People in Poverty
The Census defines individual poverty at two levels, 100% of poverty and 185% of poverty.

100% poverty regional percentage is 8.3%
185% poverty regional percentage is 17.7%

Population of Color
Population of Color is defined as all persons not classified as White, Non-Latino
Regional percentage is 29.2%

People with Disabilities
The census includes information on many types of disabilities.
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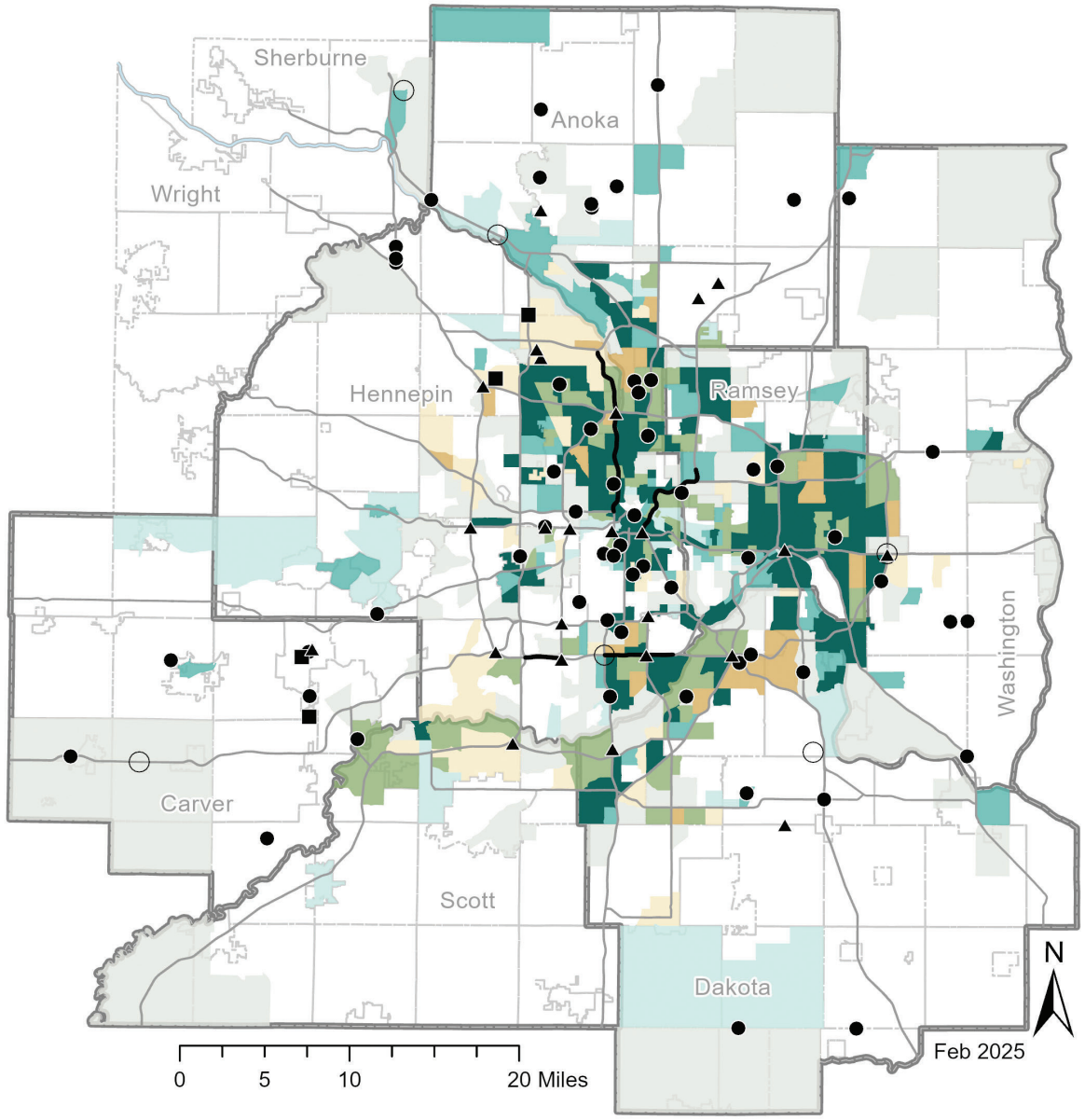
The regional percentage is 10.0%

This map highlights census tracts that are above the regional percentage for each population group.

Figure 19.4: Population and 2050 highway investments



Funded Highway Projects

- Funded Targeted Regional Capacity
- Freight Program
- Funded Spot Mobility
- Funded Safety
- Funded Managed Lanes

Regional Percentage by Tract

- Disability only
- POC only
- Poverty Only
- POC and Disability
- Poverty and Disability
- Poverty and POC
- ALL

People in Poverty
The Census defines individual poverty at two levels, 100% of poverty and 185% of poverty.

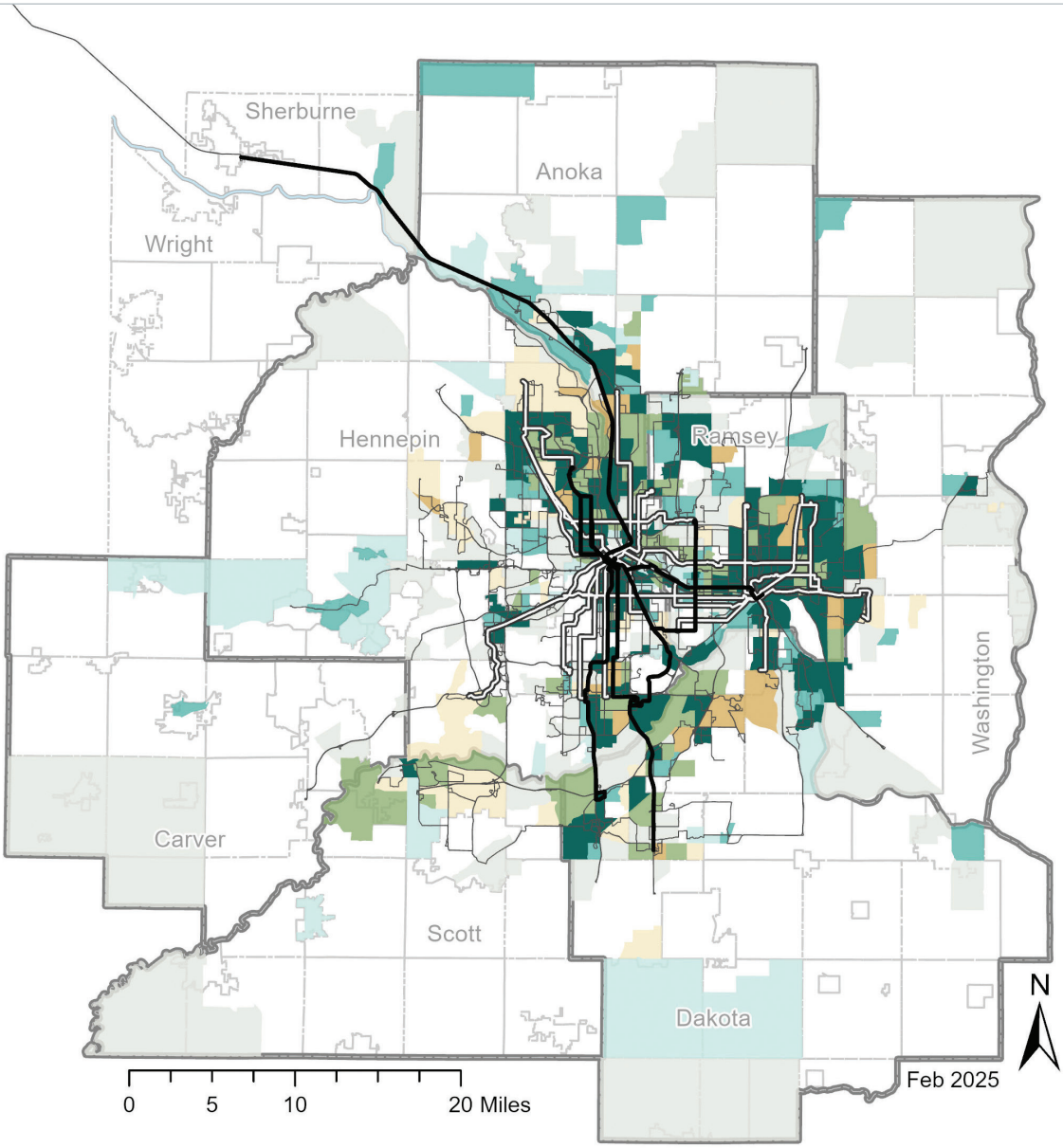
100% poverty regional percentage is 8.3%
185% poverty regional percentage is 17.7%

Population of Color
Population of Color is defined as all persons not classified as White, Non-Latino
Regional percentage is 29.2%

People with Disabilities
The census includes information on many types of disabilities.
The disability data here is "Any Disability".
The regional percentage is 10.0%

This map highlights census tracts that are above the regional percentage for each population group.

Figure 19.5: Population and 2050 transit investments



Existing Transitways
Planned Transitways
Existing Bus Routes

Regional Percentage by Tract

- Disability only
- POC only
- Poverty Only
- POC and Disability
- Poverty and Disability
- Poverty and POC
- ALL

People in Poverty
The Census defines individual poverty at two levels, 100% of poverty and 185% of poverty.

100% poverty regional percentage is 8.3%
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Population of Color
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People with Disabilities
The census includes information on many types of disabilities. The disability data here is "Any Disability".
The regional percentage is 10.0%

This map highlights census tracts that are above the regional percentage for each population group.

Quantitative Analysis of Plan Investments and Strategies

Federal guidance includes direction to evaluate the distribution of benefits from the plan's investments. Highway and transit investments are intended to provide regional benefits, and a spatial analysis reveals a widespread application of these benefits. While benefits of highway investments extend well beyond the immediate area of a project, in some cases these projects provide little benefit to those living directly alongside those investments. Furthermore, there can be a disproportionate burden placed on communities located near highway investments. One way of capturing the benefits is through accessibility, in this case measuring cumulative access to employment within a reasonable time for the general population, for people of color, and for low-income households. To quantify benefits of the plan's highway and transit investments, an accessibility analysis was done using the regional model for employment and other community amenities.

Highway and transit accessibility

This analysis compares the plan's accessibility benefits for the entire region with the benefits to areas with higher percentages of people in poverty, people of color, and people with disabilities. Accessibility benefits are estimated by looking at the difference between accessibility under the 2050 Transportation Policy Plan investments (the Build scenario) and accessibility under a scenario in which no transportation investments are made after 2025 (referred to as a No Build scenario). In this case, accessibility is measured by how many jobs residents can reach on average in 30 minutes by automobile or in 45 minutes by transit. Table 19.1 summarizes the percent change in accessibility between these two scenarios. The table summarizes these changes for the entire region and for census tracts with percentages above the regional average for the three population groups. These population groups are mapped in Figures 19.1 through 19.5 on the previous pages.

Table 19.1: Percent change in average jobs accessibility between the no-build and build scenarios [169]

Mode	Regional	People with disabilities	People in poverty	People of color
Auto	2%	2%	1%	1%
Transit	14%	15%	14%	12%

The accessibility benefits for tracts with higher-than-average percentages of these three population groups closely match the regional benefits, although the percent changes are slightly lower. However, these groups of census tracts have access to higher average overall numbers of jobs as a baseline, compared to the rest of the region (shown in Table 19.2). This is likely due to generally higher overall development densities and levels of transit service.

Populations in proximity to the regional highway system

In the most recent Statewide Multimodal Plan, MnDOT cited work performed by the Minnesota Pollution Control Agency that showed 91% of Black people, Indigenous people, and people of color in Minnesota are exposed to higher levels of air pollution than the state average. This is attributed in part to a higher portion of these communities living in proximity to MnDOT's roadway system. For the region, the regional highway

system includes highways designated as principal arterials and minor arterial roadways. Principal arterials are generally limited-access highways and freeways. Minor arterial roadways support and supplement principal arterials and provide access to jobs and education.

To determine if there were more Environmental Justice populations in proximity to the regional highway system, these populations within a quarter mile of principal arterials (PA) and minor arterials (MA) were compared to their overall percentages of population within the region. As shown in Table 19.2, Environmental Justice populations have higher concentrations near principal arterials compared to minor arterials, and the percentages of Environmental Justice populations living within a quarter mile of either principal or minor arterials are higher than they are in the region's population.

Table 19.2: Percentage of regional population by race near the highway system [170]

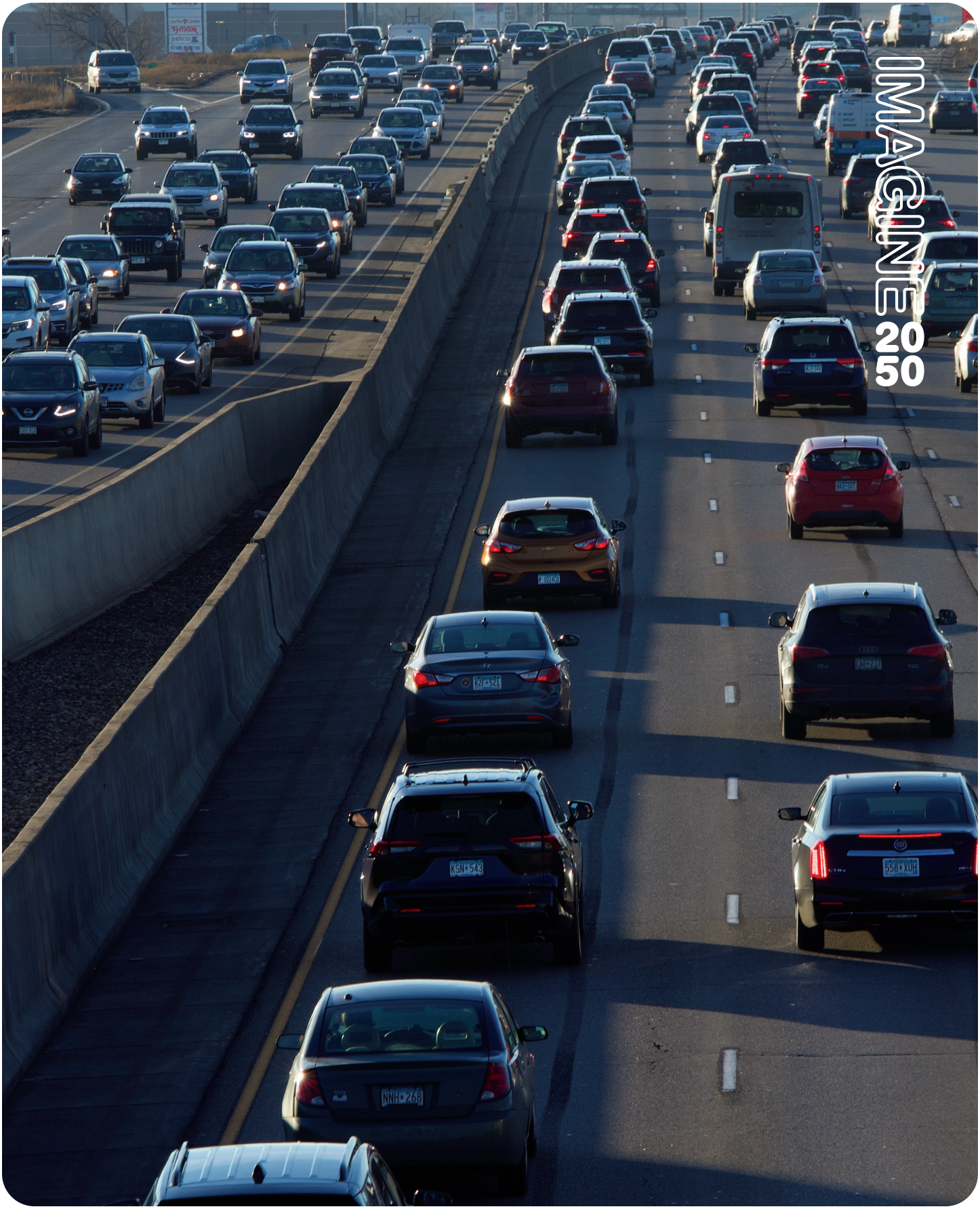
Population	Within ¼ of MA	Within ¼ of PA	Region
White alone	29.4%	12.1%	70.8%
Black or African American alone	40.9%	25.2%	9.8%
American Indian and Alaska Native alone	41.8%	20.3%	0.4%
Asian alone	33.5%	15.5%	7.6%
Some other race alone	37.9%	16%	0.5%
Two or more races	33.2%	15.4%	4.4%
Hispanic or Latino	35.7%	18.3%	6.6%

In 2022, the Minnesota Pollution Control Agency and the Minnesota Department of Health released the update for their report on Life and Breath: How Air Pollution Affects Public Health in the Twin Cities. This 2022 analysis found that "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 who live with a disability."[171]

Statement of Environmental Justice Compliance

After analyzing the distribution of programs, strategies, and projects identified in the 2050 Transportation Policy Plan, and the location of historically overburdened populations in the region, it can be concluded that any benefits or adverse effects associated with implementing the plan are not distributed to these populations in a manner significantly different than to the region's population as a whole.

During the project selection and project development processes, individual programs and projects will be further evaluated for potential disproportionate and adverse effects on these population groups.


IMAGINE 2050

Inclusion in Regional Solicitation

In 2014, the Transportation Advisory Board and the Met Council completed an evaluation and redesign of how the region distributes federal transportation funding through its competitive process.

Based on Thrive MSP 2040 and the Transportation Policy Plan, equity – including affordable housing – was included in the 2014 solicitation as part of the prioritization criteria. This criterion has continued to be used with some refinement for solicitations since, including in 2024. In November 2019, the Met Council hosted workshops for potential applicants on engaging overburdened populations. The Regional Solicitation Evaluation underway will consider any potential changes needed for the prioritization criteria for the 2026 Regional Solicitation.

Title VI Compliance

Title VI of the Civil Rights Act of 1964 provides that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Federal guidance on Title VI implementation requires that metropolitan planning organizations submit a Title VI report that includes:

- A demographic profile of the metropolitan area that includes identification of the locations of minority populations in the aggregate.
- A description of the procedures by which the mobility needs of minority populations are identified and considered within the planning process.
- Demographic maps that overlay the percent minority and nonminority populations as identified by Census or American Community Survey data, at census tract or block group level, and charts that analyze the impacts of the distribution of state and federal funds in the aggregate for public transportation purposes, including federal funds managed by the metropolitan planning organization as a designated recipient.
- An analysis of impacts that identifies any disparate impacts on the basis of race, color, or national origin, and, if so, determines where there is a substantial legitimate justification for the policy that resulted in the disparate impacts, and if there are alternatives that could be used that would have a less discriminatory impact.

These items are included in the Met Council's Title VI Compliance and Implementation Plan from 2022.

Justice40

The Justice40 Initiative is a government-wide effort to ensure federal benefits reach communities who have the most need based on previous underinvestment and overburdening by pollution. This initiative was created by Executive Order 14008: Tackling the Climate Crisis at Home and Abroad. The goal of this work is to ensure at least 40% of the benefits of specific federal investment programs are delivered to disadvantaged communities.

While there are many federal funding programs included in Justice40, several that our region allocates include the Carbon Reduction Program, the Congestion Mitigation and Air Quality Improvement Program (CMAQ), the Transportation Alternatives Surface Transportation Block Grant set-aside, and the PROTECT formula program. Discretionary programs direct from the federal government are also included, like the Safe Streets and Roads for All program and the RAISE discretionary grants.

As the U.S. Department of Transportation releases more guidance on this initiative, work will continue to ensure the region's planning process incorporates the initiative for applicable federal funding.

Appendices

APPENDIX A

Endnotes

1 Metropolitan Council. (2023). The Regional Forecast: Population and employment in the Twin Cities region in 2050, 2023 update. The-Regional-Forecast-Update-2023.aspx

2 Metropolitan Council. (2024). 2021 Travel behavior inventory household survey, 2024. https://metrocouncil.org/Transportation/Performance/Travel-Behavior-Inventory/Data.aspx

3 Metropolitan Council. (Accessed Jan. 31, 2024). 2023 Transportation system performance evaluation, fig. 8.3. https://metropolitan-council.github.io/tspe-quarto/

4 Andrew Owen, et al. (July 2023). Access across America: Auto 2021. University of Minnesota, Center for Transportation Studies. https://www.cts.umn.edu/publications/report/access-across-america-auto-2021

5 People for Bikes (2023). 2023's best places to bike. https://www.peopleforbikes.org/news/2023s-best-places-to-bike

6 Metropolitan Council (2024). 2021 travel behavior inventory household survey. https://metrotransitmn.shinyapps.io/travel-survey-explorer/

7 23 CFR § 450.104. https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450

8 Minnesota Pollution Control Agency (2022). Health impacts of air pollution. In Life and Breath: Metro. https://data.web.health.state.mn.us/web/mndata/life_and_breath

9 Metropolitan Council, Toole Design (2022). Regional safety action plan," p. 25 https://metrocouncil.org/Transportation/System/Bicycle-and-Pedestrian/Studies/Regional-Pedestrian-Safety-Action-Plan/Regional-Pedestrian-Safety-Action-Plan.aspx; NHTSA Fatality Analysis Reporting System, 2014-2018 https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars; American Community Survey 2014-2018 5-year estimates. https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2018/5-year.html

10 Johnson, S. (March 21, 2024). U.S. life expectancy gains ground despite another overdose record. U.S. News and World Report. https://www.usnews.com/news/health-news/articles/2024-03-21/u-s-life-expectancy-gains-ground-despite-another-overdose-record

11 Minnesota Department of Transportation. (April 14, 2023). Strategic Highway Safety Program performance measures summary file.

12 Federal Highway Administration (January 2024). Zero deaths and safe system. https://safety.fhwa.dot.gov/zerodeaths/zero_deaths_vision.cfm

13 Federal Highway Administration (2021). Safe system approach brochure. https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

14 Xu, G. et al. (2022). Speed management is key to road safety. In Public Roads, 85(4) (Report no. FHWA-HRT-22-002). https://rosap.ntl.bts.gov/view/dot/67989

15 City of St. Paul. (May 2024). Speed limits. https://www.stpaul.gov/departments/public-works/traffic-lighting/speed-limit

16 Collaborative Sciences Center for Road Safety (n.d.) What is a safe systems approach? University of North Carolina, Chapel Hill. https://www.roadsafety.unc.edu/home/prof-dev-focus-area/top10sspitfalls/

17 Collaborative Sciences Center for Road Safety. (n.d.) Top 10 safe system implementation pitfalls and suggestions for how to avoid them. University of North Carolina, Chapel Hill. https://www.roadsafety.unc.edu/home/prof-dev-focus-area/top10sspitfalls/

18 Ibid. https://www.roadsafety.unc.edu/home/prof-dev-focus-area/top10sspitfalls/

19 Freemark, Y. & Jenkins, W. (June 2022). In the US, could taxing heavy cars be a first step toward reducing pedestrian fatalities? Urban Institute. https://www.urban.org/urban-wire/us-could-taxing-heavy-cars-be-first-step-toward-reducing-pedestrian-fatalities

20 Insurance Institute for Highway Safety. (November 2023). Vehicles with higher, more vertical front ends pose greater risk to pedestrians. https://www.iihs.org/news/detail/vehicles-with-higher-more-vertical-front-ends-pose-greater-risk-to-pedestrians

21 Ederer, D. et al. (September 2023). The safe systems pyramid: A new framework for traffic safety. Transportation Research Interdisciplinary Perspectives. https://www.sciencedirect.com/science/article/pii/S2590198223001525

22 Vue, K. (March 2021). A surge of hate crimes has left many Asian Americans feeling vulnerable. A new Minnesota safety patrol aims to stop that fear in the streets." Sahan Journal. https://sahanjournal.com/race/anti-asian-hate-minnesota-safety-patrol/

23 Institute on Metropolitan Opportunity. (2003). The Minnesota statewide racial profiling study. University of Minnesota Law School. https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1113&context=imo_studies

24 U.S. Dept. of Justice Civil Rights Division and U.S. Attorney's Office Dist. of Minnesota. Investigation of the City of Minneapolis and the Minneapolis Police Department. https://www.justice.gov/d9/2023-06/minneapolis_findings_report.pdf

25 Ross, K. (June 7, 2023). Reducing pretextual stops leads to more equitable traffic policing. Justice Innovation Lab. https://www.justiceinnovationlab.org/news-and-updates/ramsey-county-reports-on-traffic-stop-policy-2023-0607

26 Carson, J. R., et al. (July 2023). Neighborhood walkability, neighborhood social health, and self-selection among U.S. adults. Health & Place, Vol. 82. https://doi.org/10.1016/j.healthplace.2023.103036

27 Chatterjee, R. (Aug. 23, 2023). Why a stranger's hello can do more than just brighten your day. National Public Radio: All Things Considered. https://www.npr.org/sections/goatsandsoda/2023/08/23/1193148718/why-a-strangers-hello-can-do-more-than-just-brighten-your-day

28 Schweninger, E. et al. (2021). Transportation: A community driver of health. American Public Health Association. https://www.apha.org/-/media/Files/PDF/pubs/Transportation_Health_Community_Driver.pdf

29 Wilder Foundation (November 2020). Transportation is a key component of equitable food access. Wilder Foundation. https://www.wilder.org/articles/transportation-key-component-equitable-food-access

30 Urban Institute (2021). Transportation access. Urban Institute. https://upward-mobility.urban.org/transportation-access

31 Minnesota Pollution Control Agency. (n.d.). Air quality and health. https://www.pca.state.mn.us/air-water-land-climate/air-quality-and-health

32 Patel, K. (July 9, 2023). Why tires – not tailpipes – are spewing more pollution from your cars. The Washington Post. https://www.washingtonpost.com/climate-environment/2023/07/09/tire-brake-tailpipes-emissions-pollution-cars/

33 Zipper, D. (July 2023). EVs are sending toxic tire particles into the water, soil, and air. The Atlantic. https://www.theatlantic.com/technology/archive/2023/07/electric-vehicles-tires-wearing-out-particulates/674750/

34 Baumgaertner, E. et al. (June 9, 2023). Noise could take years off your life. Here's how. The New York Times. https://www.nytimes.com/interactive/2023/06/09/health/noise-exposure-health-impacts.html

35 Doan-Nguyen, R. (June 13, 2023). When wildfires make your air unhealthy. Harvard Magazine. https://www.harvardmagazine.com/2023/06/wildfire-air-pollution-public-health

36 Owen, A. et al. (July 2023). Access across America: Auto 2021. University of Minnesota Center for Transportation Studies. https://www.cts.umn.edu/publications/report/access-across-america-auto-2021

37 Owen, A. et al. (July 2023). Access across America: Transit 2021. University of Minnesota Center for Transportation Studies. https://www.cts.umn.edu/publications/report/access-across-america-transit-2021

38 Owen, A. et al. (July 2023). Access across America: Biking 2021. University of Minnesota Center for Transportation Studies. https://www.cts.umn.edu/publications/report/access-across-america-biking-2021

39 Metropolitan Council. (n.d.). 2021 Transit on-board survey pilot results: Transit trends. https://metrocouncil.org/Transportation/Performance/Travel-Behavior-Inventory/Data/Onboard-Survey-pilot-results-2021.aspx

40 Metropolitan Council (accessed 2024). Community profile: 7-county region. https://stats.metc.state.mn.us/profile/detail.aspx?c=R11000

41 Metropolitan Council (2024). 2022 TBI on-board survey. Peak-hour commutes include trips taken to work from home between 6 a.m. and 9 a.m. and trips taken from work to home between 3 p.m. and 6:30 p.m.

42 Metropolitan Council. (January 2024). Maximum mode shift. https://metrocouncil.org/Transportation/Performance/Travel-Behavior-Inventory/Data/Maximum-Mode-Shift.aspx

43 Krantz, M. (2023). Development trends along transit. Metropolitan Council. https://metrocouncil.org/Council-Meetings/Committees/Metropolitan-Council/2023/12-13-23/Council_2023-12-13_DTAT-Presentation_final.aspx

44 People for Bikes (June 2023). 2023's best places to bike. https://www.peopleforbikes.org/news/2023s-best-places-to-bike

45 National Association of City Transportation Officials. (December 2017). Designing for all ages & abilities: Contextual guidance for high-comfort bicycle facilities. https://nacto.org/wp-content/uploads/2017/12/NACTO_Designing-for-All-Ages-Abilities.pdf

46 Spack, M. et al. (January 2010). Travel demand management: An analysis of the effectiveness of TDM plans in reducing traffic and parking in the Minneapolis-St. Paul metropolitan area. Spack Consulting. https://trid.trb.org/View/1307149

47 Gopalakrishna, D. et al. (2012). Integrating demand management into the transportation planning process: A desk reference - Chapter 10. (Report No. FHWA-HOP-12-035). Federal Highway Administration. https://ops.fhwa.dot.gov/publications/fhwahop12035/chap10.htm

48 Wilson, A. & Crimmins, A.R. (Ed.) (2023). Midwest U.S. global change research program. https://doi.org/10.7930/NCA5.2023.CH24

49 Khatami, D. & Shafei, B. (2021). Impact of climate conditions on deteriorating reinforced concrete bridges in the US midwest region. Journal of Performance of Constructed Facilities, 35(1), 9-10. https://doi.org/10.1061/(ASCE)CF.1943-5509.0001528

50 Liban, C. & Crimmins, A.R. (Ed.) (2023). Transportation U.S. global change research program. https://doi.org/10.7930/NCA5.2023.CH13

51 Owen, A. et al. (July 2023). Access across America: Auto 2021. University of Minnesota Center for Transportation Studies. https://www.cts.umn.edu/publications/report/access-across-america-auto-2021

52 Metropolitan Council. (Accessed Jan. 21, 2024). 2023 Transportation system performance evaluation (fig. 8.3). https://metrocouncil.org/METC/media/TSPE/index.html

53 Minnesota Pollution Control Agency. (2023). Greenhouse gas emissions in Minnesota 2005-2020: Biennial report to the Legislature tracking the state's contribution to emissions contributing to climate change. https://www.pca.state.mn.us/sites/default/files/lraq-2sy23.pdf

54 Minnesota Pollution Control Agency (July 2022). Greenhouse gas emissions data. https://public.tableau.com/app/profile/mpca.data.services/viz/GHGemissioninventory/GHGsummarystory

55 International Energy Agency (n.d.). Electric vehicles. https://www.iea.org/energy-system/transport/electric-vehicles

56 Rocky Mountain Institute (September 2023). EVs to surpass two-thirds of global car sales by 2030, putting at risk nearly half of oil demand, new research finds. https://rmi.org/press-release/evs-to-surpass-two-thirds-of-global-car-sales-by-2030-putting-at-risk-nearly-half-of-oil-demand-new-research-finds/

57 State of Minnesota Climate Change Subcabinet (n.d.). The next step in our clean energy transition. https://climate.state.mn.us/next-step-our-clean-energy-transition

58 U.S. Department of Energy. (Accessed September 2023). Alternative Fuels Data Center: Emissions from electric vehicles. https://afdc.energy.gov/vehicles/electric-emissions

59 Atlas Public Policy. (Accessed January 2024). EValuateMN dashboard. https://atlaspolicy.com/evaluatemn/

60 Associated Press (Oct. 13, 2023). Xcel Energy, Heartland Hydrogen Hub selected for up to $925 million federal award. CBS News. https://www.cbsnews.com/minnesota/news/xcel-energy-heartland-hydrogen-hub-selected-for-up-to-925-million-federal-award/

61 Currier, B. (August 2020). History of regulation of stormwater runoff from transportation. TR News, 5-8. https://www.trb.org/Main/Blurbs/181815.aspx

62 Minnesota Pollution Control Agency (July 20, 2022). What is stormwater and why does it need to be managed? In Minnesota Stormwater Manual. https://stormwater.pca.state.mn.us/index.php?title=What_is_stormwater_and_why_does_it_need_to_be_managed%3F

63 Metropolitan Council (November 2022). Water Quality Executive Summary. https://metrocouncil.org/Wastewater-Water/Planning/2050-Water-Policy-Plan/Research/Water-Quality/Water-Quality-Executive-Summary.aspx

64 Minnesota Pollution Control Agency (Nov. 23, 2022). Environmental impacts of road salt and other de-icing chemicals. In Minnesota Stormwater Manual. https://stormwater.pca.state.mn.us/index.php?title=Environmental_impacts_of_road_salt_and_other_de-icing_chemicals

65 Minnesota Pollution Control Agency (Oct. 20, 2020). Statewide chloride management plan. https://www.pca.state.mn.us/sites/default/files/wq-s1-94a.pdf

66 Minnesota Pollution Control Agency (Feb. 20, 2023). Street sweeping for trees. In Minnesota Stormwater Manual. https://stormwater.pca.state.mn.us/index.php?title=Street_sweeping_for_trees

67 Huijser, M.P. et al. (August 2008). Executive summary in wildlife-vehicle collision reduction study: Report to Congress (Report no. FHWA-HRT-08-034). Montana State University Western Transportation Institute. https://www.fhwa.dot.gov/publications/research/safety/08034/exec.cfm

68 Shannon, G. et al. (November 2016). A synthesis of two decades of research documenting the effects of noise on wildlife: Effects of anthropogenic noise on wildlife. Biological Reviews, 91(4), 982-1005. https://doi.org/10.1111/brv.12207

69 Longcore, T. & Rich, C. (2004). Ecological light pollution. Frontiers in Ecology and the Environment, 2(4), 191-198. https://doi.org/10.1890/1540-9295(2004)002%5b0191:ELP%5d2.0.CO;2

70 Note: Estimated costs are provided for general context and come from a variety of sources including MnDOT, the region's Transportation Improvement Program and sponsor agencies.

71 Project costs for the METRO Blue Line Extension and METRO Purple Line represent figures for the adopted locally preferred alternative in the plan, but it is anticipated that these figures will be updated in 2025 through plan amendments in development at the time of the plan's adoption.

72 Metropolitan Council (2024). 2021 Travel Behavior Inventory household survey. https://metrocouncil.org/Transportation/Performance/Travel-Behavior-Inventory/Data.aspx

73 2019 Quetica Freight Intelligence Tracker data provided by MnDOT.

74 Vehicle miles traveled (VMT) includes only the seven-county metropolitan area. Numbers shown may not add up correctly due to rounding.

75 Note: The category labeled municipal in this table includes less than one mile each of township- and Metropolitan Airports Commission-owned minor arterials.

76 Minnesota Historical Society. (2025). Rondo neighborhood & I-94: Overview. Gale Family Library. https://libguides.mnhs.org/rondo

77 Kleven, S. (Nov. 18, 2021). The construction of the 35W freeway meant destruction for Black neighborhoods in Minneapolis. A new museum exhibit looks back at the damage. Sahan Journal. https://sahanjournal.com/culture-community/minneapolis-35w-construction-black-neighborhood-destruction-hennepin-history-museum/

78 Minneapolis (n.d.). Policy 48: Freeway remediation. City of Minneapolis Comprehensive Plan: Minneapolis 2040. https://minneapolis2040.com/media/1488/pdf_minneapolis2040.pdf Minneapolis (n.d.). Policy 48: Freeway remediation. City of Minneapolis Comprehensive Plan: Minneapolis 2040. https://minneapolis2040.com/media/1488/pdf_minneapolis2040.pdf

79 Minnesota Department of Transportation. (2024) Performance Measure Dashboard: Metro freeway congestion report. https://www.dot.state.mn.us/measures/congestion.html

80 Note: Population growth is not reported between the 2050 No Build and Build scenarios because the modeling process holds this constant in these scenarios.

81 Daily vehicle miles traveled per capita may be slightly different than the result of dividing population by daily vehicle miles traveled due to rounding and distinctions the travel model makes between population in households and population in group quarters.

82 Minnesota Department of Transportation. (June 2023). Electric vehicles in Minnesota. https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=34217835

83 MnSHIP plans for 2023-2042, the statewide numbers have been trimmed and extended to reflect the period of this plan. Categories of advancing technology and freight showing zero investment during these years of the Capital Highway Investment Plan are due to the data available at this time and is not anticipated to reflect actual investments. MnDOT metro district generally represents the Twin Cities metro area covered by this plan with only modest additions and subtractions. Local transportation investments are identified in local capital improvement programs. Due to rounding, numbers may not add to the totals.

84 Note: 2022-2033 figures reflect MnDOT metro district from 2024-2033 Capital Highway Investment Plan, 2042 figures are statewide from the 2024 20-Year State Highway Investment Plan

85 Federal Highway Administration. (n.d.) Proven safety countermeasures. https://highways.dot.gov/safety/proven-safety-countermeasures

86 Regional transit providers include the City of Maple Grove, City of Plymouth, the Met Council (Contracted Services and Metro Transit), Minnesota Valley Transit Authority (MVTA), the University of Minnesota, and Southwest Transit.

87 Litman, Todd (2014). A New Transit Safety Narrative. Journal of Public Transportation, 17(4). https://www.sciencedirect.com/journal/journal-of-public-transportation

88 Transit Rider Investment Program (TRIP) pays for non-police staff who check fares and provide rider education and assistance

89 Metro Transit High Frequency Network (webpage) - https://www.metrotransit.org/high-frequency-network

90 Met Council – Transit Link (webpage) - https://metrocouncil.org/Transportation/Services/Transit-Link.aspx

91 Minnesota State Statute 473.399 defines which modes maybe a transitway for the purposes of the statute including “bus rapid transit, light rail transit, commuter rail, or other available systems or technologies that improve transit service”; https://www.revisor.mn.gov/statutes/cite/473.399

92 Transit Advantages and Transit Signal Priority Report; https://www.lrl.mn.gov/docs/2024/mandated/240348.pdf

93 Network Now: Establishing the Foundation (PDF) – https://www.metrotransit.org/Data/Sites/1/media/network-now/pdfs/16623_establishingthefoundation_report_100423.pdf#page=5

94 Presentation to Transportation Committee on February 12, 2024 - https://metrocouncil.org/Council-Meetings/Committees/Transportation-Committee/2024/February-12,-2024/Info-1-2023-Year-End-Ridership-Report-(1).aspx

95 Development Trends Along Transit 2024 (PDF) - https://www.metrotransit.org/Data/Sites/1/media/tod/2024devtrendsreport.pdf

96 National Transit Database: SW Transit Profile (PDF) – https://www.transit.dot.gov/ntd/transit-agency-profiles/southwest-transit

97 Metro Transit micro (webpage) – https://www.metrotransit.org/micro#How%20to%20Ride%20Metro%20Transit%20Micro

98 Guidelines and Procedures for Fare Collection System (PDF) – https://www.metrotransit.org/Data/Sites/1/media/pdfs/gotoguidelinesandprocedures/guidelinesprocedures4farecollect.pdf

99 Urbanized Area Formula (webpage) – https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Federal-Funding/Urbanized-Area-Formula.aspx

100 Sec. 174.49 MN Statutes - https://www.revisor.mn.gov/statutes/cite/174.49#stat.174.49.1

101 Guidelines and Procedures for Fare Collection System (PDF) – https://www.metrotransit.org/Data/Sites/1/media/pdfs/gotoguidelinesandprocedures/guidelinesprocedures4farecollect.pdf Regional Transitway Guidelines: Chapter 7 – Fare Collection System Guidelines https://metrocouncil.org/Transportation/System/Transit/Bus/Regional-Transitway-Guidelines/Regional-Transitway-Guidelines-By-Chapter/Regional-Transitway-Guidelines/Regional-Transitway-Guidelines-Chapter-7-Fare-Coll.aspx

102 Metro Mobility Service Area (Webpage) – https://metrocouncil.org/Transportation/Services/Metro-Mobility-Home/MM-Service-Map.aspx

103 Transitways operate at least 18 hours per day, except for Northstar Commuter Rail.

104 There are examples of electrically powered commuter rail like the South Shore Line connecting South Bend, Indiana and Chicago, Illinois.

105 Minnesota Statute 473.3994 LIGHT RAIL TRANSIT; DESIGN PLANS. (webpage) - https://www.revisor.mn.gov/statutes/cite/473.3994

106 Metro Transit: Green Line Extension Route and Stations (webpage) – https://metrocouncil.org/Transportation/Projects/Light-Rail-Projects/METRO-Green-Line-Extension/Route-Stations.aspx

107 Regional Vehicle Fleet Policy – https://metrocouncil.org/Transportation/Services/Regional-Vehicle-Fleet-Policy.aspx

108 Federal Transit Administration Default Useful Life Benchmark Cheat Sheet (PDF) - https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-11/TAM-ULB-CheatSheet.pdf#:~:text=FTA%20has%20set%20a%20default%20ULB%20as%20the,Model%20%28TERM%29%20scale%2C%20assuming%20a%20standard%20maintenance%20schedule.

109 Metro Transit studied CNG 15 years ago and decided not to pursue it for technical reasons. Trolley buses were also studied and are not being pursued currently. Hydrogen fuel cell may also be a possible future technology

110 Electric Utility Investment in Truck and Bus Charging; Union of Concerned Scientists (PDF) – https://www.ucsusa.org/sites/default/files/attach/2019/04/Electric-Utility-Investment-Truck-Bus-Charging.pdf#page=3

111 Zero-Emission Fleet Transition Plan; Federal Transit Administration – https://www.transit.dot.gov/funding/grants/zero-emission-fleet-transition-plan

112 Metro Transit: Accessibility (webpage) - https://www.metrotransit.org/accessibility

113 Presentation to Transportation Committee on February 12, 2024 – https://metrocouncil.org/Council-Meetings/Committees/Transportation-Committee/2024/February-12,-2024/Info-1-2023-Year-End-Ridership-Report-(1).aspx

114 Presentation to Transportation Committee May 8, 2023 (PDF) - https://metrocouncil.org/Council-Meetings/Committees/Transportation-Committee/2023/May-8,-2023/0508_2023_106-pwrpt.aspx

115 Metro Transit Safety and Security Action Plan – https://www.metrotransit.org/public-safety

116 Crime Prevention Through Environmental Design for Transit Facilities (PDF) - https://www.apta.com/wp-content/uploads/APTA-SS-SIS-RP-007-10_Rev1.pdf

117 Presentation to the Met Council Committee of the Whole in September, 2023 – https://metrocouncil.org/Council-Meetings/Committees/Committee-of-the-Whole/2023/09-20-23/9-20-23-TRIP-Overview.aspx

118 Notes: 1) Includes Regional Solicitation funding allocated through 2029. 2) Only a portion of counties' revenue from the regional sales and use tax must be used for transportation purposes. This figure reflects that portion, but counties may decide to use it for purposes other than transit.

119 Minnesota House HF 2887 Bill (webpage) – https://www.revisor.mn.gov/bills/bill.php?b=house&f=HF2887&ssn=0&y=2023

120 MnDOT Carbon Reduction Program (webpage) – https://www.dot.state.mn.us/carbon-reduction-program/

121 Minnesota DOT Carbon Reduction Strategy (PDF) – https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=36928262

122 https://metrocouncil.org/Data-and-Maps/Research-and-Data/Place-based-Equity-Research.aspx

123 https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Title_VI_FINAL.pdf

124 https://metrocouncil.org/Transportation/Publications-And-Resources/Transit/TRANSITWAYS/RegionalTransitwayGuidelines-pdf.aspx

125 Indian University, Public Policy Institute. (2015). Assessment of the impact of the Indianapolis Cultural Trail: A legacy of Gene and Marilyn Glick. https://archives.indianapolis.iu.edu/items/8fd71b46-725a-4042-a992-dd9633a677d7

126 Minnesota Public Radio. (May 26, 2023). Minnesota's new rebate powers up 'year of the e-bike.' https://www.mprnews.org/story/2023/05/26/minnesotas-new-rebate-powers-up-year-of-the-ebike

127 U.S. Department of Energy Vehicle Technologies Office. (Dec. 18, 2023). FOTW #1321, December 18, 2023: E-Bike sales in the United States exceeded one million in 2022. https://www.energy.gov/eere/vehicles/articles/fotw-1321-december-18-2023-e-bike-sales-united-states-exceeded-one-million

128 Grand View Research. (n.d.) U.S. E-bike market size, share and trends report, 2030. https://www.grandviewresearch.com/industry-analysis/us-e-bike-market-report#:~:text=The%20U.S.%20e%2Dbikes%20market%20is%20expected%20to%20grow%20at,USD%207.16%20billion%20by%202030

129 CBS News. (April 5, 2024). Minnesota touts e-bike rebates worth up to 75% off cost of new purchase. https://www.cbsnews.com/minnesota/news/ebike-rebate-program-minnesota-refunds/

130 Science Direct. (June 2019). Physical activity of electric bicycle users compared to conventional bicycle users and non-cyclists: Insights based on health and transport data from an online survey in seven European cities. Transportation Research Interdisciplinary Perspectives. Vol. 1, June 2019. https://www.sciencedirect.com/science/article/pii/S259019821930017X#s0015

131 Metropolitan Council. (2014). Major employment centers and thresholds are described in Thrive MSP 2040, Special Features, p. 85. https://metrocouncil.org/Planning/Publications-And-Resources/Thrive-MSP-2040-Plan-(1)/4_ThriveMSP2040_SpecialFeatures.aspx

132 The RL Mace Universal Design Institute. (2011). What is UD? https://www.udinstitute.org/whatisud

133 Federal Highway Administration. (n.d.) Questions and answers about ADA/Section 504. https://highways.dot.gov/civil-rights/programs/ada/questions-and-answers-about-adasection-504#q31

134 Federal Highway Administration. (January 2024). Zero deaths and safe system. https://highways.dot.gov/safety/zero-deaths

135 Minnesota Department of Transportation. (2023). Vulnerable road user safety assessment, p. 12. https://www.dot.state.mn.us/trafficeng/safety/vrusa.html

136 Federal Highway Administration. (n.d.) Questions and answers about ADA/Section 504. https://highways.dot.gov/civil-rights/programs/ada/questions-and-answers-about-adasection-504#q32

137 Minnesota Department of Transportation. (April 2022). The tipping point: What COVID travel reductions tell us about effective congestion relief. https://mdl.mndot.gov/items/202209

138 Remote work can influence land use and housing preferences that could contribute to more travel that is counter to the purpose of TDM. Remote work strategies need to consider coordinated land use policies and the regional and local level. See Land Use Policy Plan for more details.

139 Zhu J., Fang Y (2017). Daily travel behavior and emotional well-being: A comprehensive assessment of travel-related emotions and the associated trip and personal factors. University of Minnesota, University Digital Conservancy. https://conservancy.umn.edu/handle/11299/185433

140 Knott, C., Panter, J., Foley, L., Ogilvie, D. (March 28, 2018). Changes in the mode of travel to work and the severity of depressive symptoms; a longitudinal study. National Library of Medicine. https://pubmed.ncbi.nlm.nih.gov/29604327/

141 Source: CPCS Transcom, Inc. Note that the scenarios only reflect the direction and highest theoretical potential impact with complete deployment of technology and/or a full shift to optimal shopping, delivery, and receiving practices and are not intended to depict achievable results.

142 Source: CPCS Transcom, Inc. Note that the scenarios only reflect the direction and highest theoretical potential impact with complete deployment of technology and/or a full shift to optimal shopping, delivery and receiving practices and are not intended to depict achievable results.

143 The accessibility measures discussed in this section come from an analysis that the University of Minnesota's Accessibility Observatory conducted for the Metropolitan Council. This was not available in a separate report at the time of this plan's publication. The Met Council will explore ways to make this data available through its website or online reports and data.

144 University of Minnesota Accessibility Observatory, Met Council.

145 University of Minnesota Accessibility Observatory, Met Council.

146 Minnesota Pollution Control Agency. (Accessed June 2024.) Environmental justice. https://www.pca.state.mn.us/about-mpca/environmental-justice

147 A full list of Environmental Burden variables can be found on U.S. DOT's Equitable Transportation Community Explorer website. https://www.transportation.gov/priorities/equity/justice40/etc-explorer-indicator-table

148 U.S. Environmental Protection Agency. Environmental justice screening and mapping tool. https://www.epa.gov/ejscreen/what-ejscreen

149 MPCA. (Accessed June 2024.) Environmental justice. https://www.pca.state.mn.us/about-mpca/environmental-justice

150 Federal Highway Administration. (August 2017). Noise analysis and abatement guidance: Three-part approach to highway traffic noise abatement. https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/polguide01.cfm

151 National Park Service. (February 2018). Effects of noise on wildlife. https://www.nps.gov/subjects/sound/effects_wildlife.htm

152 Metropolitan Council. (August 2023). Keeping our cool. https://storymaps.arcgis.com/stories/10ec7b3b6dde440cbb0047cb01c51327

153 TBI Household 2021, Met Council transit ridership model, Met Council Regional Travel Demand Model

154 The walk category includes walked, jogged, or rolled using a mobility device.

155 The discussion of "Exposure to Pollution" in the "Goal: Our Region is Equitable and Inclusive" section focused on how localized pollution can affect residents differently based upon the neighborhoods in which they live. The measures discussed in this section deal with regional air pollutant levels.

156 Met Council Regional Travel Demand Model, EPA Model.

157 Metropolitan Council. (August 2018). Localized flood risk. https://metrocouncil.org/Communities/Planning/Local-Planning-Assistance/CVA/Localized-Flood-Risk.aspx

158 Metropolitan Council. (August 2018). Regional climate vulnerability assessment, part 1: Localized flood risk. https://storymaps.arcgis.com/stories/10ec7b3b6dde440cbb0047cb01c51327CVA-Localized Flood Risk, Met Council

159 MnDOT.

160 Met Council Regional Travel Demand Model.

161 Metropolitan Council. (March 2024). Greenhouse gas inventory. https://metrocouncil.org/Data-and-Maps/Research-and-Data/Climate-tools.aspx

162 Met Council Regional Travel Demand Model, EPA Model.

163 Met Council Regional Travel Demand Model.

164 Minnesota Department of Transportation. (2024). Performance measure dashboard: Electric vehicles. https://www.dot.state.mn.us/measures/electric-vehicles.html

165 Estimated costs are provided for general context and come from a variety of sources including MnDOT, the region's Transportation Improvement Program, and sponsor agencies.

166 Estimated costs are provided in year of expenditure dollars

167 Project costs for the METRO Blue Line Extension and METRO Purple Line represent figures for the adopted locally preferred alternative in the plan, but it is anticipated that these figures will be updated in 2025 through plan amendments in development at the time of the plan's adoption.

168 U.S. Census, 2018-2022 American Community Survey 5-Year Estimates, tract level used in Figure 1-5.

169 U.S. Census, 2018-2022 American Community Survey 5-Year Estimates, tract level, with Metropolitan Council forecasts and University of Minnesota Accessibility Observatory data.

170 U.S. Census, 2018-2022 American Community Survey 5-Year Estimates, Tract Level.

171 Minnesota Pollution Control Agency. (2022). Health impacts of air pollution, Life and Breath: Metro. https://data.web.health.state.mn.us/web/mndata/life_and_breath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