MEETING OF THE TAC PLANNING COMMITTEE

Thursday | January 9, 2020
Room LLA | 1:00 PM
Metropolitan Council, 390 Robert Street North, Saint Paul, MN 55101

AGENDA

I. CALL TO ORDER

II. APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

December 12, 2019, meeting of the TAC Planning Committee

IV. INFORMATION

1. Review of Transportation Policy Plan (TPP) Overview and Chapter 1 (Amy Vennewitz) {TPP Overview} {TPP Chapter 1}
2. Review of TPP Work Program (Amy Vennewitz) {Existing Work Program} {Draft Updated Work Program}
3. Public Comments Received on the Draft Public Transit and Human Services Coordinated Plan (Heidi Schallberg)

V. OTHER BUSINESS

VI. ADJOURNMENT

* Additional materials included for items on published agenda

Please notify the Council at 651-602-1000 or 651-291-0904 (TTY) if you require special accommodations to attend this meeting. Upon request, the Council will provide reasonable accommodations to persons with disabilities.

Full Packet

Minutes of the
REGULAR MEETING OF THE TAC PLANNING COMMITTEE
Thursday, December 12, 2019
Metropolitan Council Chambers, 390 Robert Street North, Saint Paul

Committee Members Present: Nathan Abney, Holly Anderson, Joe Barbeau, Charlie Cochrane, Paul Czech, Bill Dermody, Innocent Eyoh, Jack Forslund, Jason Gottfried, Anne Kane, Elaine Koutsoukos, Michael Larson, Paul Mogush, Kevin Roggenbuck, Angie Stenson

CALL TO ORDER
A quorum being present, Committee Vice Chair Roggenbuck called the regular meeting of the TAC Planning Committee to order.

APPROVAL OF AGENDA AND MINUTES
The agenda was adopted after amending it to include the TPP Schedule Update item before the UPWP amendment action item. The November 2019 minutes were approved without correction.

SPECIAL INFORMATION ITEM
Air Quality Conformity

Jonathan Ehrlich presented this item.
https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-Committee/TAC-Planning-Committee/2019/TAC-Planning-12-12-19/IV-Air-Quality-Conformity.aspx

Comments were made about 14% of emissions being from highways seemed low. In response to questions, staff clarified that this includes all streets. Transportation overall represents 25% of emissions, but this includes other modes such as aviation, rail, marine, ATVs; the 14% represents on-road vehicles for transportation. Council staff are working on developing a greenhouse gas emissions inventory and will share once more information is available. Consequences for not meeting standards would involve developing a plan, analyzing the cause of violations, and revising the State Implementation Plan (SIP) and revising the TPP and TIP to be compliant with the SIP. If in non-attainment, sanctions could be made on transportation funding. Once PM_{10} maintenance expires, MnDOT could use Congestion Mitigation and Air Quality (CMAQ) funding outside the region.

ACTION ITEMS
1. 2020-02 Safety Performance Measures
Dave Burns presented this item. There is no penalty for MPOs if they don't meet these federally-required targets. In response to a question, Burns said the methodology MnDOT used for their targets was a 1.5% reduction from the base year for fatalities and a 5% reduction for serious injuries. The MnDOT 2020 targets used 2018 as the base year. Jason Gottfried agreed it would be discouraging for the MPO to send a message that an increase in fatalities or serious injuries is acceptable.

Actual numbers of these crashes should be included for 2018 to provide context for these targets in the communication to TAC.

Bill Dermody moved to recommend adoption of Option 1B for the 2020 safety performance targets. Paul Mogush seconded. **The motion carried unanimously.**

Elaine Koutsoukos moved to recommend the establishment of a Safety Performance Work Group to identify a methodology for calculating future safety performance targets. Angie Stenson seconded. Dermody asked for clarification on the purpose and scope of the work group. Heidi Schallberg said the immediate scope for the group would be the methodology for these safety targets, but the work could

evolve if local partners support doing additional safety analysis and work at the regional level. **The motion carried unanimously.**

2. 2020-03 2020 UPWP Amendment and TPP Update Schedule

Amy Vennewitz presented information on the update schedule for the Transportation Policy Plan (TPP). There is no flexibility in the federally-required schedule for updates. By doing an update in 2020, the plan could remain a 2040 plan. If done after 2020, it will need to extend to 2050 to meet the federal requirements for the long-range plan. The Parks Policy Plan is also scheduled for minor updates in 2020. Fiscally, nothing for transportation has changed since there is no new revenue or major investments. The focus for this plan update will be on the work program and what needs to be studied in preparation for the 2050 plan that will be done in 2024. System statements for local governments would be updated and it's a local review and decision if their comprehensive plans need amendments. With the 2018 TPP update, the Council heard comments on transit electrification and policing and fares, and changes were made to the TPP related to those issues. The Council is committed to vehicle electrification and has it in the capital budget, but there are also issues to address with existing electric vehicles. The Council also heard comments on the 2018 plan related to shared mobility; this is a good area for local governments to look at since they are more involved on these issues.

Dave Burns presented the UPWP amendment, which includes adding funding, changing scopes, and adding the TPP update work. In response to a question from Innocent Eyoh, Burns said the PM_{10} work will be outlined in the base air quality task.

Michael Larson moved to recommend the proposed amendment to the 2020 UPWP. Innocent Eyoh seconded. **The motion carried unanimously.**

INFORMATION

1. Pathways to Decarbonizing Transportation and Clean Cars Minnesota

Amanda Jarrett Smith from the Minnesota Pollution Control Agency (MPCA) presented this item.

https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-Committee/TAC-Planning-Committee/2019/TAC-Planning-12-12-19/VI_2-Clean-Cars-MN.aspx

2. Pedestrian Safety Study

Due to time, slides for this item were emailed to committee members after the meeting with any comments to be sent to Heidi Schallberg.

https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-Committee/TAC-Planning-Committee/2019/TAC-Planning-12-12-19/VI_3-Ped-Safety-Scope-Discussion.aspx

OTHER BUSINESS

None

ADJOURNMENT

After business was completed, the meeting adjourned.

Thrive MSP 2040

TRANSPORTATION POLICY PLAN

2018 UPDATE WITH 2019 AMENDMENTS

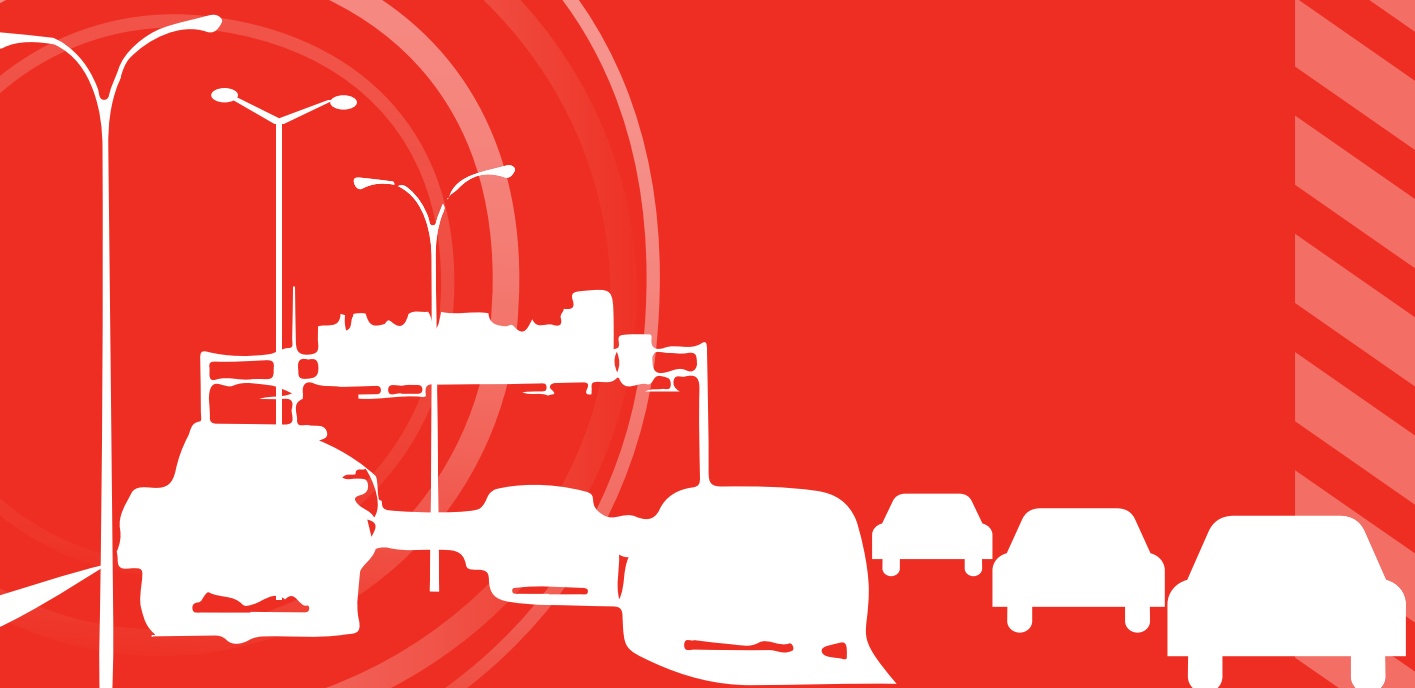
2040

Transportation provides connections to opportunity

Thrive MSP 2040

ONE VISION, ONE METROPOLITAN REGION

2040



TRANSPORTATION POLICY PLAN

2018 UPDATE WITH 2019 AMENDMENTS

The *2040 Transportation Policy Plan* presents the region's policies and plans to guide the development of the region's transportation system. It carries forward the vision of *Thrive MSP 2040* for growth and development of the Twin Cities region toward economic success and vibrancy in the decades to come.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FOR LEASE
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Life
is
ood

CONTENTS

Note: This document contains the overview/summary of the Transportation Policy Plan.
For the full document, including appendices, visit metrocouncil.org/tpp.

2040

TRANSPORTATION POLICY PLAN

Transportation provides connections to opportunity

In the Twin Cities metro region, we are on the move to our jobs, our businesses, schools, and places of worship. We run errands, gather with family and friends, move goods, deliver services, and attend sports and cultural events. The highways, rail lines, buses, airports, walkways, and bikeways that make up our transportation system are essential to the quality of our lives today and in the years to come. They connect people with places, opportunities, and each other. And they don't happen by chance. Our transportation system is the result of years of planning—in the past, currently and into the future.

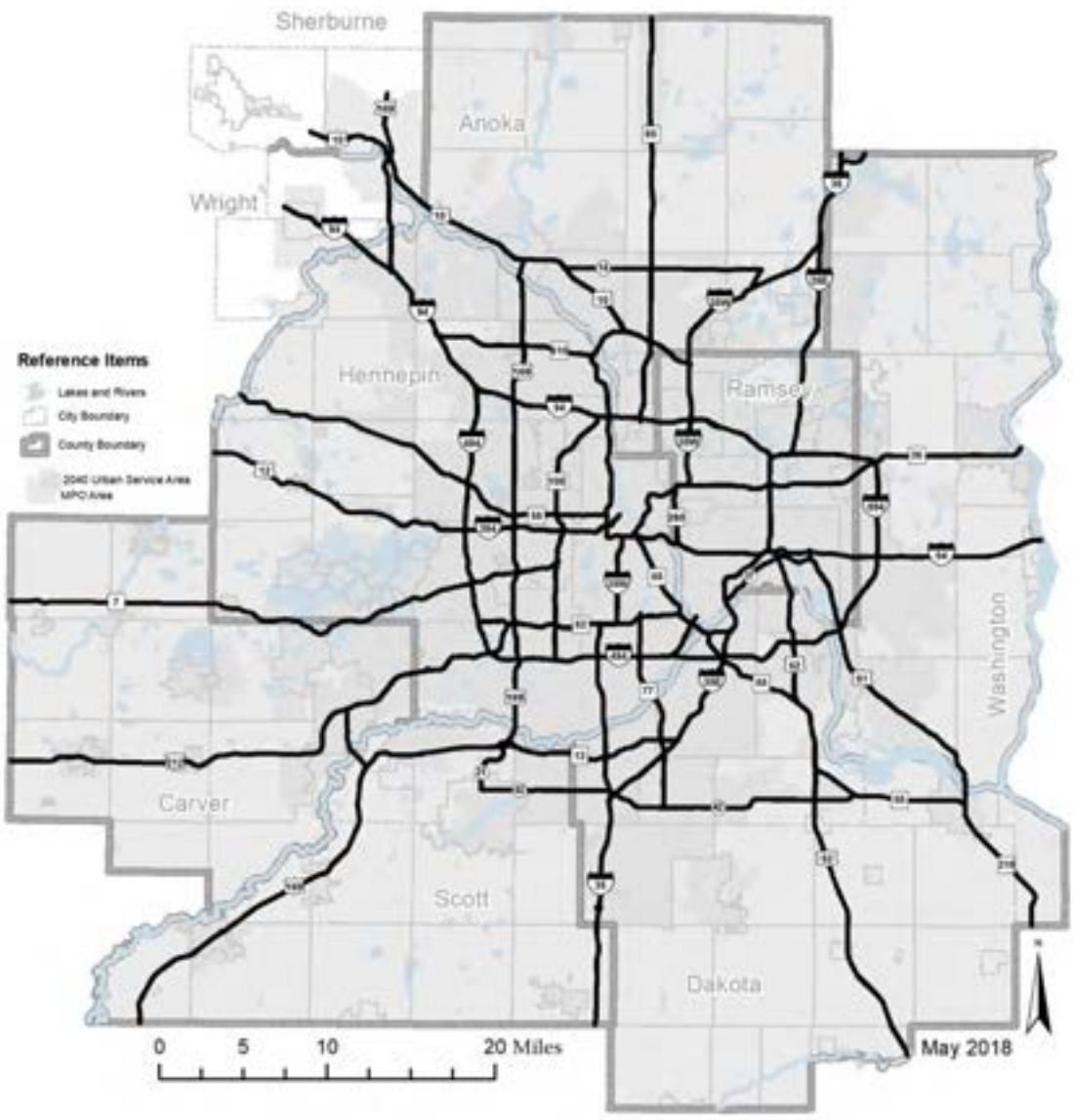
The *2040 Transportation Policy Plan* (2018 update) is prepared by the Metropolitan Council on behalf of the Twin Cities region. It includes this Overview as well as the complete plan located online at metrocouncil.org/tpp.

Metropolitan Council. The Metropolitan Council was created by the Minnesota Legislature in 1967 to address region-wide challenges with region-wide solutions. The Metropolitan Council plans for the orderly and economical development of the seven-county metro area. The orderly and economical development of the region is reflected in thoughtful, coordinated, and relevant plans for investing in infrastructure and accounting for future needs to make the best use of limited resources. 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 Metropolitan 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. For more information about how stakeholders are engaged in the Metropolitan Council's planning process, turn to *page 62* of this overview.

By 2040, the metropolitan area will add 700,000 new residents and 500,000 new jobs.

The Council also delivers region-wide services that cannot be provided by any single city or county. These include transit, wastewater treatment, regional parks, and affordable housing. In all of its work, **the Metropolitan Council's guiding principles are integration, collaboration and accountability**. The Metropolitan Council's planning region includes Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. As required by federal law, the Transportation Policy Plan also includes developed portions of southeast Sherburne and Wright counties in the transportation planning area, depicted in Figure 1.

Figure 1: Planning Area for the Twin Cities Region



Working together. The Metropolitan Council's work, including this transportation plan, is guided by input from and partnerships with the region's counties, cities, and towns; transit providers throughout the region; the governor and the state legislature; county and municipal staff; the general public; and both the non-profit and private sectors. Metropolitan Council plans, like this one, are used by the region's counties, cities, and towns as guides in their own planning processes.

Groups with special interests, such as those who advocate for more bike access or those interested in business growth, are important partners of the Metropolitan Council. The Council also collaborates with government agencies, both federal and state, such as the US Department of Transportation, the Minnesota Department of Transportation and the Metropolitan Airports Commission. Individual residents collaborate with the Council as users of Council services, by expressing their concerns and ideas, and by participating in public engagement activities, as outlined in the Council's Transportation Public Participation Plan.

Thrive MSP 2040. *Thrive MSP 2040* **is the region's long-term development plan for the seven-county area.** *Thrive MSP 2040* **provides a vision for our region's economic growth and prosperity,** and sets the foundation for policy plans developed by the Metropolitan Council including transportation, land use, water use, wastewater, housing, and parks. It guides coordinated planning among local, regional, and state governments, and promotes **partnerships that foster the prosperity, stewardship, equity, sustainability, and livability** of the region.

You can learn more about *Thrive MSP 2040* at thrivemsp.org.

ADVANCING A BOLD REGIONAL VISION

Thrive MSP 2040, the **region's long-term development plan for the seven-county area,** sets the foundation for this *2040 Transportation Policy Plan* (2018 update) and other policy plans developed by the Metropolitan Council. *Thrive MSP 2040* recommends that as a region, we take these important steps regarding transportation:

- Invest so that the region can **preserve, maintain, and operate a safe and secure transportation system** for everyone into the future.
- Provide **effective, reliable, and affordable connections** between all types of transportation modes.
- Strengthen the region's transportation system to **support the current and future vitality and prosperity** of the Twin Cities region and the state of Minnesota.
- Plan, build and operate a transportation system that **protects the natural environment** as well as communities most affected by highway noise, compromised air quality, and splintered neighborhoods. This includes **advancing equity for historically underserved and underrepresented people**, and contributing to our communities' livability and sustainability.
- Use investments to **shape development** and respond to how land use influences travel.
- **Advance prosperity** by balancing transportation planning, investments, and operations across the region.

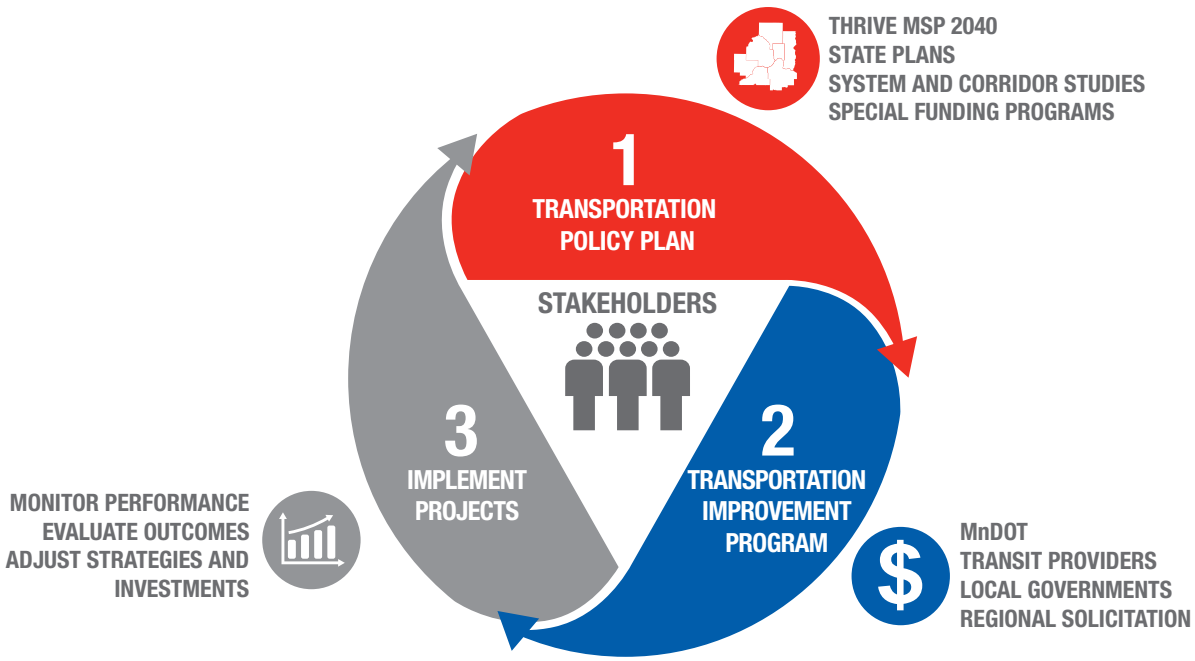
About this plan

***2040 Transportation Policy Plan* (2018 update).** The Metropolitan Council initially adopted the *2040 Transportation Policy Plan* in January 2015, and the plan was updated in 2018. The 2018 update can be found in its entirety at metrocouncil.org/tpp. The plan sets policies for the region's transportation system and is an important tool in transportation planning and funding for jurisdictions throughout the region. It is informed by *Thrive MSP 2040*, the **region's long-term development plan**.

The *2040 Transportation Policy Plan* (2018 update) also contains updated investment (funding) plans for the transportation system based on different funding scenarios. The plan reflects data analysis and policy discussion, an extensive public engagement process, and input from local and regional policymakers, business owners, and advocates for community and transportation organizations. The *2040 Transportation Policy Plan* includes federal requirements for transportation planning, and requirements for both performance standards and for environmental justice (delivering equity for historically underrepresented communities including people of color and people with disabilities).

The long-range planning process. The *2040 Transportation Policy Plan* identifies goals, strategies, and investments for the regional transportation system that work toward the desired outcomes found in *Thrive MSP 2040*, the region's development guide. State plans, system and corridor studies, and the conditions of special funding programs influence the plan's strategies and investments for the region's highways and roads, transit and transitways, bike and pedestrian infrastructure, and aviation and freight.

All proposed federally funded transportation projects in the Metropolitan Council's planning region are included in the Transportation Improvement Program (TIP). TIP projects are programmed in four-year cycles; the program includes major local projects, projects



awarded federal funds through the regional solicitation or other competitive federal grants, and projects programmed by regional transit providers or the Minnesota Department of Transportation (MnDOT). The annual Transportation Improvement Program is found in the plan's Appendix B.

Whether a state project led by MnDOT, a local project led by a county, or a transit project led by a transit provider, as projects are completed, the Council monitors changes in how well the transportation system is performing as the result of these investments. This assessment provides the Council with insights on where investments are most needed and the types of investment that gain the most benefits for the region.

Throughout these steps, the Council regularly engages in discussion and feedback from policymakers and technical partners throughout the region, and incorporates ideas and feedback from other regional stakeholders, including residents, business owners, and advocates for various community and transportation organizations.

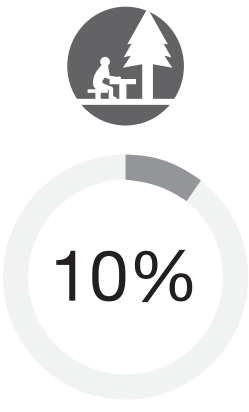
Overview of the *2040 Transportation Policy Plan* (2018 update). The Overview of the *2040 Transportation Policy Plan* (2018 update) is the document you are reading. The Overview explores the characteristics of the seven-county metropolitan region and the importance of its multi-faceted transportation system to our quality of life. You will learn about the challenges our transportation system faces, and plans to meet these challenges. Also included are goals and objectives for our transportation system, the impact of technology, how outcomes are measured and reported, and how investing in the transportation system affects our everyday lives.

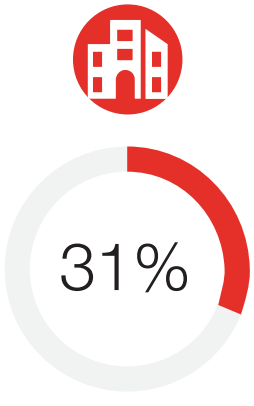
A Snapshot of Our Thriving Region

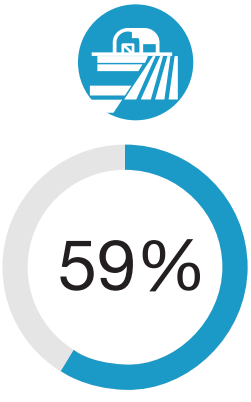
Our transportation system — from planning and funding, to operations and maintenance — doesn't happen in a vacuum. The characteristics of our region, how it has evolved and how it is changing, are integral to the ways we travel, and they inform this transportation plan.

Land, People, Economy

- The Metropolitan Council's planning region is 1.9 million acres of land and water, or about 3,000 square miles. It includes 182 towns and cities in seven Minnesota counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. The *2040 Transportation Policy Plan* (2018 update) includes these seven counties and the developed areas of Sherburne and Wright counties (along U.S. Highway 10 and I-94).
- Around 59% of the region's land is used for agriculture or is open space, including woodlands, wetlands, and water. A third of the region (31%) is developed, or built, including areas for residential, commercial, industrial, and institutional development, plus roadways. Of the total developed areas, nearly 75% are residential. About 10% of the region is dedicated to park and recreational spaces and facilities. How land is used in the region, including how densely or sparsely populated residential sections of our region are, has a big effect on how our transportation system performs and how it evolved and changes.







Why and How We Travel

Residents of the Twin Cities travel within the region for many reasons. Who we are, our incomes, our age, and where we live affects why we travel and what type of transportation mode we use. For example, 40% of travel by residents under 18 years old is to school and back. For those aged 18 through 64 who are working, 43% of trips are work commutes or travel while at work.

THE WORK COMMUTE

How important to our transportation system is the work commute by personal vehicle? On the one hand, the work commute represents less than 20% of total trips. However, work commutes are often longer and more often during peak travel times, so they have a major impact on the regional highway system and traffic congestion. For the individual, the work commute can be very important, as people depend on their work commutes to be reliable and predictable.

The vast majority of our trips are made by personal vehicle and this will continue to be true in the future. However, many of us use a mix of transportation modes, which means our travel is multimodal. All of us are pedestrians, at some time walking or wheeling to our destinations, to a vehicle, or to transit. More of us are walking as a chosen transportation mode especially if we live close to our destinations. Every day thousands of multimodal commuters park in free, transit-served lots, take transit from there to their destinations, and walk or wheel the rest of the way. Bicycle commuting continues to increase regardless of the season.

Transportation, Land Use, and Development

How our region's land has developed, and what new development is occurring or planned, has a sizeable impact on our transportation system. Land use and development influences where we choose to live; what housing is available to us near work, family, or school; and where available jobs or leisure opportunities are located.

Urban neighborhoods built before the late 1940s included single family homes and multifamily dwellings on modest lots within walking distance of commercial corridors and transit. The "streetcar bungalow," a single-family home design built by the thousands in the 1920s, is nicknamed for its convenience to transit. Today, residents of these urban neighborhoods continue to walk, bike, or use transit more than suburban residents, in part because their neighborhoods were designed not for automobiles but for pedestrians and transit.

Our region continues to grow – both in the core cities and throughout developed and developing suburbs. Over time, growth has affected transportation patterns and the development of our transportation system significantly. Our reality today includes increased automobile ownership and use, longer vehicle trips, less carpooling, and a lower percentage of transit use, which have generated a high level of traffic and

congestion. On the other hand, current land development in the region reflects a changing trend. The migration from urban core to suburban communities has subsided. More than half of housing units built in the region since 2009 are multifamily units. Development and re-development of land for housing in the urban areas have increased dramatically. For example, in the area designated as Downtown Minneapolis, the number of residents since 2006 has increased by 25% to 39,960 (February 2016, Downtown Council). But it's not just in the city—new housing, including multifamily, is also on the rise in suburban communities. Transportation investment has an influence on overall community development, and vice versa.

Although recent development has included an increased focus on urban communities, particularly along transitways, growth is forecast in communities throughout the region. With that growth, all communities will have different needs going forward. To prosper, they will need a range of housing, including attached housing that is mutually supportive of transit services. As the region grows responsibly, its future form will be more varied in all places.

Recent growth in the region has included commercial needs for new warehouse, shipping, and manufacturing facilities. Many of these have resulted in development on more-affordable land in what is termed the "suburban edge" – for example, Rogers, Maple Grove, or Shakopee. These new facilities need workers, often in entry level roles. Most potential employees live 20-plus miles from these employers in denser, transit-served urban neighborhoods. These workers are largely of modest or low income and many cannot afford an automobile. Getting these workers to their jobs is a transportation challenge, and it reflects the complexities of land use, location choices, affordability, and our multimodal transportation system, including transit.

Transportation and Technology

Technology has always played a role in transportation modes and systems. Extended ocean travel, inter-continental railroad service, flight, and the modern automobile would not be possible without technological discoveries.

Technology is also a major player in our region's transportation system. Automobiles today are technology-rich, including anti-collision warning features, hybrid and electric engine options, digital diagnostics, and navigation tools. Transit, both buses and rail, are managed and operated using sophisticated technologies that support safety, efficiency, clean fuel consumption, and routing. Highway technology determines traffic management, updates signage and information, increases safety, and manages high-occupancy toll (HOT or MnPASS) lanes.

Over the last decade, technology has developed new shared mobility options such as application-enabled ridesharing like Lyft and Uber and the Nice Ride network of shared bicycles. Metro Transit has a new application to provide

easier use of transit; in the future, you might subscribe to a monthly service that would provide multiple options for how you travel. Perhaps the most anticipated technological change is the arrival of self-driving, or autonomous vehicles. Learn more about this development and its importance to transportation planning in this Overview on page 32 in the section Regional Transportation Challenges and Opportunities.

2040 TRANSPORTATION POLICY PLAN (2018 UPDATE) PRINCIPLES

- Support the needs of the region's mature highway system, including dedicating significant resources to maintaining and rebuilding the existing system and using preservation projects to rethink major regional corridors
- Manage congestion in an innovative, cost-efficient manner and provide reliable alternatives to travel in congested corridors
- Implement increased transit service and an expanded transitway system; support higher demand for development (housing, shops, jobs) along transit lines and around stations
- Support more opportunities for other travel modes; include bicycle and pedestrian elements in comprehensive transportation and land development plans; provide tools needed to implement them
- Plan for the long-term needs of freight modes such as trucks, barges, and railroads
- Balance the needs of the aviation system with local land use decisions

Thrive MSP 2040

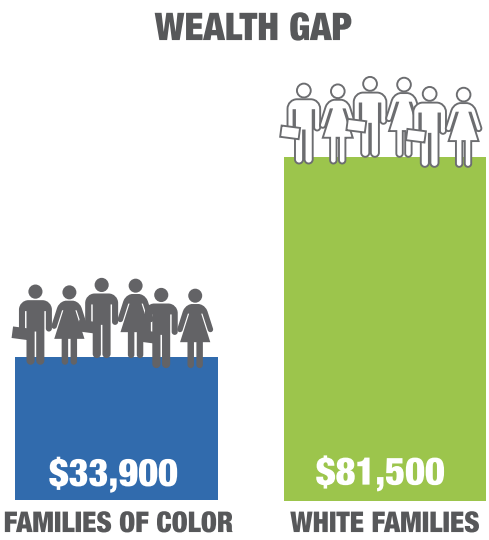
TRANSPORTATION POLICY PLAN

2040

A Summary of the Regional Transportation System

Our transportation system serves more than 3 million people living in our 2,957-square-mile region, plus the thousands who travel into our region to visit, study, work, play, and shop. All of us who are walking, biking, driving, riding in cars, and taking transit are users of our transportation system. Through the years, system operations improvements have added to the travel choices available – alternatives that diminish or avoid highway congestion. Restoring the aging infrastructure of our aging highway system is another focused, ongoing improvement.

The region consistently ranks high in quality of life factors; yet there are gaps to close in the region. Those with moderate to low incomes and communities of color have historically faced barriers to opportunity – better jobs, more schooling, and home ownership and affordability. Today, the gap in income and education in this region is one of the largest in the country. Equitable access to transportation improves everyone's chance to participate in a strong economy. We also must work harder to protect communities and the natural environment near busy roadways or major transit investments from disruption and environmental harm.



Here is a summary of our region's transportation system. This summary is guided by the region's 2040 Transportation Policy Plan (2018 update), which includes Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties and the developed areas in the southeast portions of Sherburne and Wright counties.

The Regional Highway System

No other part of the region's transportation system has increased personal mobility more than the regional highway system. Highways support flexible and independent travel for millions of people, making millions of trips, every day.

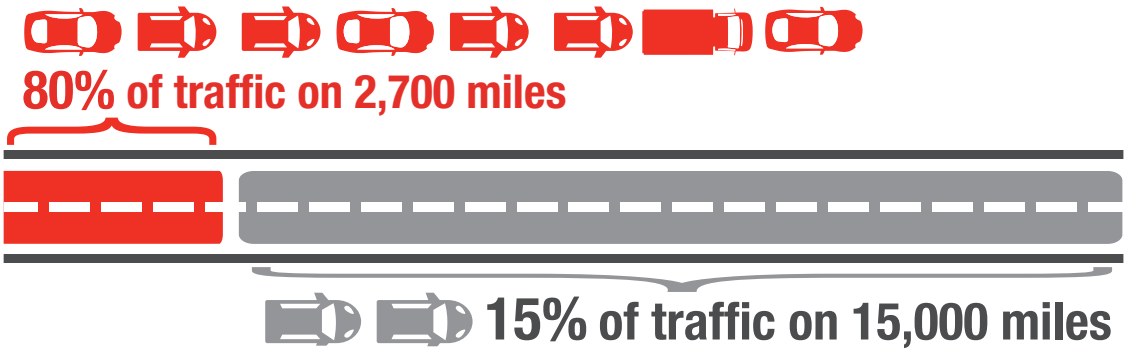
Today's highway system developed as the nation pursued good roads essential for commerce, national defense, travel, and communications. Boosted by investments like the Federal Aid Highway Act of 1956, the interstate highway system became the single largest public works project in the nation's history. The state of Minnesota is responsible for 914 miles of interstate highways, 3,200 miles of U.S. highways, and 7,600 miles of Minnesota state highways. The metropolitan region contains only 12% of Minnesota's highway system, but metro area highways account for 47% of the annual miles of vehicle travel on this system in Minnesota (MnDOT).

The benefits of these highways have been immense. Commerce, work commutes, recreational travel, and the everyday business of most people's lives, especially in rural and suburban areas, depend on a good highway system. The highway system is also essential to moving freight. Trucks move nearly 75% of all the region's freight, accounting for more than 80% of the total monetary value of all freight moved in the region.

HIGHWAYS SEEDED THE SUBURBAN BUILDING BOOM

The planning and construction of the highway system was a major factor in the post-World War II suburban building boom and the growth in automobile ownership and use. Unlike older, urban communities, suburban development design and land use favored auto-dependence rather than transit. Residents were served by local roads linked to regional highways, expanding the area in which jobs were attainable and increasing work commutes.

The region's highway system is well developed and classified into categories based on function. "Principal Arterials" are freeways and other highways with the highest travel speeds and carrying capacity, such as Interstates 35 and 94, and U.S. Highway 10. The A-minor arterials are intended to provide a lower level of mobility than the principal arterials, but provide more access to other roadways and land uses. Examples of A-minor arterials include Minnesota State Highway 51/Snelling Avenue in Ramsey County and Minnesota State Highway 5 in Carver County.



There are 17,700 miles of roads in the region. Principal and A-minor arterial roads make up only 2,700 of those miles (15%) yet they carry 80% of the region's motor vehicle traffic, including trucks and buses. Counties and cities in the region own and manage the majority of the A-minor system and a smaller part of the principal arterial system. The rest are roads that are local or carry fewer vehicles, but they are still essential to the transportation system. Local roads reflect the commitment to and investment in our transportation system by the region's counties, cities, and towns.

Future investments in the regional highway system (principal and A-minor arterials) will focus on operating, maintaining, and rebuilding the existing, aging highway infrastructure. Equally important will be increasing safety and security, and implementing affordable, effective strategies to manage congestion. Reducing highway congestion has no easy fix, and strategies must provide alternatives including all transportation modes e.g., private vehicles, transit buses, trains, bikes); new technologies for traffic management; high-occupancy toll lanes (MnPASS); lower-cost, high-benefit spot improvements; and strategically increasing capacity.

This transportation plan addresses only the regional highways; local streets are planned by local governments.

REASONS FOR CONGESTION

WHAT CAUSES HIGHWAY CONGESTION?

Congestion – traffic slowing or stopping on our highways – has several causes:

- Population growth, especially among adults 18-64 who make up most commuters
- Prosperity, which can make automobile ownership possible for more people and increase travel to work
- Most people sharing the same work schedules who then are on the highways at the same times
- Adverse weather, construction, crashes, and other traffic incidents
- Special events attracting great numbers of people, mostly in private vehicles and at the same time

HOW CAN WE MANAGE CONGESTION?

- Use and prepare for innovative technologies on our highway system including congestion pricing, driver information and lane control systems, improved signal timing, and emerging connected and autonomous vehicle technologies
- Support ways to move more people on existing highways in congested corridors through bus- only shoulders, MnPASS lanes, and park-and-ride facilities with frequent transit service, to encourage more people to use transit or share a ride for part of their trip
- Encourage land uses and development patterns that support traveling by means other than driving alone, like walking, biking, or taking transit; leverage the build-out of a transit system to guide future growth to areas where people have options for how they travel

The Regional Transit System

Public transportation, or transit, enhances quality of life, gets people to opportunities, supports prosperity, and improves the economic competitiveness of the region. Residents want transportation choices that include public transit so they can get to work, school, services and amenities, recreation, shopping, and other activities. This is especially true for many living in the region's more densely populated urban areas, where transit is close by, comes often, and is affordable. In suburban areas, public transit primarily provides an economical, convenient alternative to commuting to work by automobile. For those in rural areas who do not drive, public transit may provide critical connections to jobs and opportunities.

INVESTING IN PUBLIC TRANSPORTATION YIELDS SUBSTANTIAL RETURNS (NATIONAL AVERAGES)

- Every $10 million invested in public transportation yields $30 million in increased business sales
- For every $1 billion of federal investment in public transportation infrastructure, 47,500 jobs are created (Source: American Public Transit Association - APTA)

Not all areas of the region can be served by transit equally. It is important to spend our limited transit resources on planning, building, and maintaining transit services that will be needed and used over time. Transit is the most cost effective when it follows a regular route that travels frequently through communities with concentrations of people and destinations. Population density can be the result of urban land development and use (multifamily dwellings, reasonable walks to bus or train routes). It can also be the result of a park-and-ride facility, which creates density when transit riders drive their cars to this single location and take transit for the rest of their trips. Today, young adults and empty-nesters are moving into urban areas in part for the availability of frequent and convenient transit services.

There are currently six types of transit service in the region:

- Regular-route bus service
- Light rail transit (LRT)
- Bus rapid transit (BRT)
- Commuter rail
- Dial-a-ride services like Metro Mobility and Transit Link
- Public vanpools

The region's transit providers operate 217 bus routes: 111 local services and 106 express routes. Also in service are two light rail lines (METRO Blue and Green lines), two bus rapid transit lines (METRO Red Line and A Line), and one commuter rail line (the Northstar Line). Light rail and bus rapid transit routes are local services. The Northstar Line is an express service.

OVERVIEW

There are six major providers of public transit in the region:

- Metropolitan Council, including Metro Transit and contracted services such as Metro Mobility and Transit Link
- Minnesota Valley Transit Authority, serving eight south metro communities
- SouthWest Transit, serving three west metro communities
- Plymouth Metrolink, serving the City of Plymouth
- Maple Grove Transit, serving the City of Maple Grove
- University of Minnesota, providing bus service within and between campuses in Minneapolis and Saint Paul

Many suburban communities are served primarily by a large system of park-and-ride lots and ramps, with about 34,000 parking spaces, and serving 19,000 users daily.

BENEFITS OF TRANSIT

The benefits of public transit go beyond traveling to chosen destinations. Real estate near or along transit stations or corridors have greater value than real estate with no access to transit. Mixed-use development that incorporates transit helps make neighborhoods desirable and valuable in a number of ways, including:

- Giving residents the option of not owning a car and incurring its costs, or using a car less, avoiding fuel and parking costs
- Reducing congestion on the roadway system, which benefits drivers and freight
- Supporting a mix of housing and commercial uses—apartments, condos, retail shops, and services—that builds a neighborhood with ethnic and age diversity
- Fostering economic activity, social interaction, community involvement, and good health through physical activity
- Generating larger financial returns for communities; real estate is not devoted to parking lots and other auto-oriented infrastructure but uses that support community life and generate more revenue

Recent advancements reflect current growth as well as preparation for the future.

- Annually, regional transit operators provide nearly 100 million rides.
- In 2017, Metro Transit set a new, single-day record – nearly 370,000 rides, bolstered by the recent additions of the A Line, METRO Green Line, and METRO Red Line.
- An extension is planned for the METRO Green Line (currently the light rail route between downtown Saint Paul and Minneapolis) routed from downtown Minneapolis through St. Louis Park, Hopkins, Minnetonka, and Eden Prairie. Construction is projected to start later in 2018.
- Plans are being made for the METRO Blue line (currently running from downtown Minneapolis to the Mall of America) to be extended through north Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park.
- The A Line bus rapid transit (BRT) service opened in June 2016. The A Line connects the METRO Blue and Green lines and several bus routes with the busy Snelling Avenue corridor. This type of BRT (called Arterial BRT, because it operates on existing main thoroughfares through communities) provides a faster trip, frequent service, and specialized vehicles with train-like features. Another BRT is being developed on Penn Avenue in north Minneapolis and additional Arterial BRT routes are being planned.

Strategies to Encourage Alternatives to Commuting by Car

Transportation Management Organizations (such as I-494 Commuter Services, an outreach program of the I-494 Corridor Commission) and local governments within the region partner with the Metropolitan Council to encourage drivers to choose alternatives to driving alone to and from work. Below is some background about the work they do.

Managing Travel Demand

The Metropolitan Council partners with cities and Transportation Management Organizations to:

- Reduce travel during peak periods and in congested areas
- Promote alternatives to driving alone such as carpooling, transit, and bicycling
- Promote flexible work schedules and telecommuting
- Work with local governments to link their strategies with supportive land use policies
- Market transit services like the Northstar Line, METRO Green Line, A Line, and METRO Red Line
- Encourage the use of amenities like park-and-ride facilities, Nice Ride bicycles, and on- and off-street bicycle facilities

WHAT ARE TRANSPORTATION MANAGEMENT ORGANIZATIONS?

- Public/private partnerships that share highly congested corridors, such as the I-494 corridor in the southern metro area
- Include employers, building owners, businesses, and local governments
- Work together on strategies, programs, public education, and information to promote alternatives to driving alone during peak travel times
- Support carpooling, transit, and telecommuting

Regional Bicycle and Pedestrian Infrastructure

Walking and bicycling are essential parts of the regional transportation system. People walking and bicycling can reduce the number of vehicles on the roads and vehicle-related air emissions. Bikers and walkers incorporate exercise into their day, and often take transit as part of their trips. On a household level, people who walk or bike reduce their own transportation costs; at a national level they reduce our dependence on non-renewable energy sources. And for some, walking and biking may be their only transportation options.

Walking and bicycling trips tend to be relatively short, averaging about one-quarter to one-half mile for walking and between one and three miles for bicycling. Local governments lead the development of bicycle and pedestrian systems. The Metropolitan Council plans for regional bicycle networks that connect through several jurisdictions, and it helps identify locations to improve crossings of regional barriers to bicycling and walking.

The Regional Bike System

The region is fortunate to have significant bicycling amenities, including many miles of on-street bike lanes and robust networks of off-road trails. Twin Cities residents continue to support these improvements, and significant investments in bikeways have been made by cities and counties, the region, and the state and federal government.

Bicycling and walking have increased substantially in Minneapolis, its surrounding suburbs, and Saint Paul over the last decade, partially as a result of efforts through a federal non-motorized transportation pilot project. In addition, the Council has been improving the inventory of bicycling amenities. Current trends in bicycling and bicycle planning include the following:

- In the interest of supporting cyclists of all ages and abilities, there is a growing need to develop bikeways separate from vehicle traffic. There is a trend among the region's cities to develop protected bikeway networks for this purpose.
- The Metropolitan Council conducted a Regional Bicycle Barriers Study to identify physical barriers (such as freeways, rail lines, and rivers and streams) to daily bicycle trips. The study identifies potential crossing locations for improvement, important information for local and state programs investing in the region's bicycle system.

- Electric battery-assist bikes, or e-bikes, are an emerging trend. Mobility for adult cyclists, and particularly for senior cyclists, will be greatly improved as e-bikes enable users to climb hills easily and ride longer distances, perhaps generating more interest in certain groups to ride more frequently for transportation. Accommodating increased numbers of e-bikes will be important in future planning efforts.

Pedestrian Infrastructure

Pedestrian infrastructure – sidewalks, trails, lighting, and intersection design – is key to making places feel easily reached, inviting, and safe to people of all ages and abilities. For people who do not drive, walking or traveling by wheelchair can be essential to meeting daily needs, and walking can be an important part of active living. Unfortunately, opportunities for walking, such as going to the store or to the nearest transit station, can be thwarted by barriers, such as a lack of sidewalks, poor snow and ice removal, and wide, busy roadway intersections.

Most communities that were developed prior to 1950 included sidewalks as a component of all the streets. But many suburban communities developed after World War II were built for cars and had fewer or no sidewalks. Since the 1990s, many main roadways in the region added safe walkways.

But there are still some gaps and design-related elements to consider for pedestrian infrastructure in the region. Below are important priorities in planning for pedestrian traffic and safe and accessible walkways:

- We are all pedestrians. Depending on who we are and where we live, it may be challenging to walk safely in our communities. For people with disabilities, children, older adults, and people living in lower income communities, it can be more difficult to walk where they need to go. It is a goal that our transportation networks work safely for all of us.
- Compared to the percentage of trips made by walking, pedestrians are overrepresented in the region's deaths from traffic accidents, reinforcing the need for improved pedestrian safety on our roadways.
- Thirty years after enactment of the Americans with Disabilities Act, challenges remain for people with disabilities. Communities must work to protect the civil rights of people with disabilities, including transportation.

The Regional Freight System

Today 75% of intercity freight is moved by trucks on highways. The remaining 25% is moved by air, water, and rail. Much of the region's freight infrastructure (such as warehouse distribution centers, rail lines and terminals for multiple modes) is owned by the private sector. Public sector freight-related infrastructure includes highways, locks and dams on the Mississippi River system, some barge terminals, and airports.

There are two river ports in the Twin Cities metro region: the Saint Paul Port on the Mississippi River and the Port of Savage on the Minnesota River. Freight commodities can be hauled by barge as far as 1,800 miles downriver to the Port of New Orleans where it is loaded onto ocean-going ships for export to global markets. The channels, dams, and locks on navigable rivers are maintained by the U.S. Army Corps of Engineers.

Four Class I private freight railroads operate more than 500 miles of track in the metropolitan area, linking the region with national markets and carrying a large amount of cross-country freight. Three Class III (short-line) railroads provide local freight services on about 160 miles of track in the region.

High-value, low-weight, and time-sensitive goods are shipped long distances via the air freight system. The region's high-tech and biomedical companies are major air freight customers. Minneapolis-Saint Paul International Airport (MSP) handles air freight for the Twin Cities metropolitan area, most of Minnesota, and adjacent parts of Wisconsin and the Dakotas via air freight providers such as FedEx, United Parcel Service, and commercial airlines. Goods shipped on commercial passenger aircraft represents less than 20% on average of the overall air freight volume shipped via MSP; more than 80% is shipped via air freight carriers.

The Regional Airport System

Air travel, for people and goods, is an integral part of the region's transportation system; a nearby airport with many flights to many destinations improves our region's quality of life and economic competitiveness. The region's major airport, Minneapolis - Saint Paul International Airport (MSP), has four runways and two terminals on 3,400 acres surrounded by Bloomington, Eagan, Mendota Heights, Minneapolis, Richfield, and Saint Paul MSP, along with six smaller regional airports, is owned and operated by the Metropolitan Airports Commission (MAC), a public corporation established by state law in 1943 to provide coordinated aviation services throughout the Twin Cities metropolitan area. MAC is primarily funded through rents and fees paid by airport users.

In 2016, MSP ranked 16th nationally in volume with 37.5 million passengers and 413,000 take offs and landings. It brings more than 5 million visitors to the region every year, including 500,000 international visitors, who spend approximately $2.5 billion annually in the region. An estimated 207,000 metric tons of cargo moved through MSP in 2016. MSP is served by the METRO Blue line.

The smaller, or reliever, airports in the region include Airlake-Lakeville, Anoka County-Blaine, Crystal, Flying Cloud-Eden Prairie, Lake Elmo, and St. Paul Downtown, owned by the MAC, and South St. Paul and Forest Lake, both city-owned. These airports relieve congestion at MSP and provide improved aviation access to the region. Regional airports generate $1.4 billion in economic activity annually for the Twin Cities. Airport users at these smaller airports include air taxis, business aviation, flight training, recreational aviation, and military aviation.

Passenger Travel Beyond the Region (bus and train)

Each mode of transportation within the region is best used for trips of a certain distance range, and that is true of travel outside our region. Traveling city-to-city or town-to-town is most often by automobile, though Amtrak passenger train service and a number of intercity bus lines serve passengers who choose not to drive or fly.

Minnesota Department of Transportation (MnDOT) is currently studying potential high-speed rail services linking the Twin Cities with Duluth and Chicago as well as the potential for an additional daily Amtrak train at conventional speeds to and from Chicago. Recently, intercity bus service, like Jefferson Lines or Greyhound, have added innovations to attract passengers such as Wi-Fi and competitive pricing. The Metropolitan Council has a minimal role in planning intercity passenger rail or bus service, though significant regional facilities, such as the Union Depot in Saint Paul, provide access for this service and local transit service in both Minneapolis and Saint Paul. MnDOT coordinates with operators of inter-city services and provides some subsidies to support service in Greater Minnesota.


WALKER

Regional Transportation Challenges and Opportunities

The quality of our daily lives is greatly influenced by our region's transportation system. Is transportation available when we need it, taking us where we need to go, at a cost we can afford? What we need and how we use transportation changes over time. Those changes influence the plans and recommendations made by the Metropolitan Council regarding the future of our region's transportation system, found in the Council's *2040 Transportation Policy Plan* updated for 2018. The complete plan can be found at www.metrocouncil.org/tpp.

Elements that influence changes in our transportation system include:

- The region's growth in population and jobs
- The land use and layout of our region, and how land use evolves
- Where we live, our incomes, and the design and stability of our neighborhoods
- The locations of our many destinations, including work, school, and family
- The types, or modes, of transportation available to us, and what modes we use: personal vehicle, bus, carpool, bike, walk, train, or a mix of different modes
- How much of our incomes we can afford to spend on transportation costs
- Transportation innovations and changing technologies
- The availability of public funds for our transportation system, including highways and transit (i.e., buses, light rail)

Our transportation system is extensive and complex, affecting every resident, business, government jurisdiction, recreational venue, educational institution, and community organization in our region. Its challenges and opportunities are numerous; here are notable challenges and opportunities influencing the planning and development of our transportation system:

1. **Our highway system is well developed but is aging and will require major reconstruction. Our transitway system is newer and still being developed. These realities are reflected in plans for the future of highways and transit, and how each uses the funding available.**

The Highway System

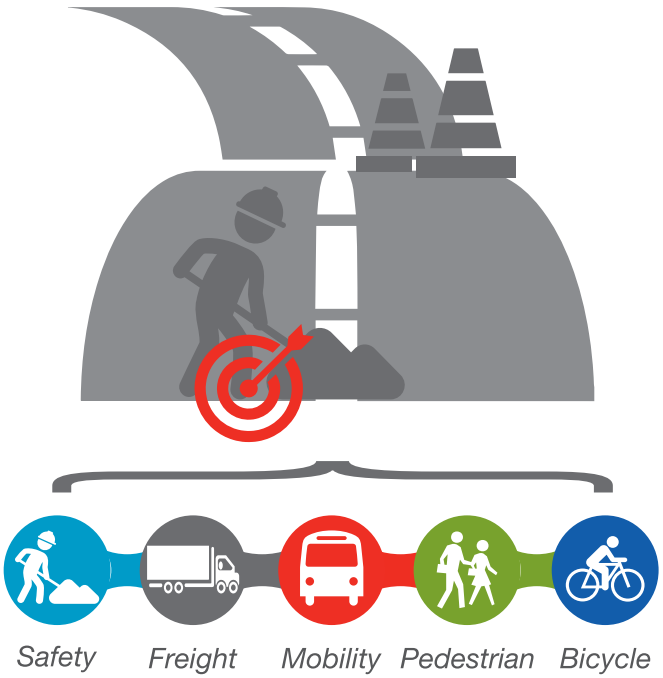
Preserving the existing highway system is a top priority for highway funding over the next decade and beyond. Most of these highways are 40 to 60 years old, and approaching the end of their original useful lives. In 2014, it was estimated that more than 30 million vehicle miles were driven on the system daily, including trucks moving 75% of all freight in and out of the region. Ongoing maintenance is mandatory to preserve the highway system and meet state and federal performance standards. Highway sections at the end of their lifecycle have deteriorating pavement and bridges, and require major rehabilitation or reconstruction.

FUNDS FOR HIGHWAYS AND FUNDS FOR TRANSIT ARE SEPARATE

Most state and federal transportation dollars are dedicated by law or the state constitution for a specific purpose, such as the state's highway system or for the development of the regional transit system. Nearly all dollars allocated for highways and dollars allocated for transit cannot be redistributed between them.

Highway reconstruction is an opportunity to identify where improvements can be made, folding other related improvements into the scheduled road work. These may include safety, mobility, freight, bicycle, and pedestrian needs. Integrating these other needs with projects to preserve roadways minimizes cost, reduces inconvenience to travelers by coordinating separate needs into one construction project, and addresses multiple policy objectives. For example, adding MnPASS lanes north of downtown Saint Paul along with improvements to the roadway helped to also improve travel times. In addition, prominent corridors such as I-35W north of Minnesota Highway 36 and I-94 between the two downtowns could be significantly reworked, as their pavement and bridges are reconstructed and replaced.

Highway Improvement Efficiencies



The Transit System

The region's transitway system is still growing, primarily by adding new transitways. Metro Transit (an operating division of the Metropolitan Council) provides the majority of transit service in the region, augmented by four suburban transit providers. Plans for transit include both new and modified transit services to the region. The region is investing in improved customer experiences with services like light rail, commuter rail, and bus rapid transit. These new services are attracting new transit riders to the system with every new line that opens.

The transit system will need funds for operations and maintenance but also for new development. Ridership continues to trend upward, as there is a direct correlation between what is invested in transit development and increased transit use. The developments since the first light rail line opened in 2004 are a case in point: the opening of two light rail lines; ever-evolving bus service; technologies from alternative fuel buses to online route mapping; bus rapid transit lines designed for improved speed, convenience, and comfort; routing that better links buses and rail; and the launching of commuter rail. The next two decades include plans for extending the METRO Blue and Green light rail lines, and adding several rapid bus routes.

2. Travel patterns are changing. Who we are, how we live, what we need, and what we want all affect the choices we make, including how we use transportation.

As we change, our travel patterns change, too.

This is clearly seen in how different age groups have different transportation wants and needs. Of particular interest to transportation planning are Gen Z (otherwise known as iGen or Centennials, born 1996 and later); Millennials (or Gen Y, born 1977 to 1995); Generation X (born 1965 to 1976); and Baby Boomers (born 1946 to 1964). Here are some notable challenges and opportunities brought about by the differing characteristics of these generations.

In both the U.S. and in Minnesota, Millennials now outnumber Baby Boomers in the region by about 100,000 people. The two groups are projected to have the largest impact on transportation plans and trends over the next several decades. Millennials, generally in their 20s and 30s, have lower rates of vehicle ownership, auto usage, and driver licensure than previous groups, and they use transit, walk, and bike more than others. However, we don't know if or how these patterns will change as Millennials start families and enter their peak travel years, between the ages of 30 and 60. Baby Boomers will have a sizeable impact on travel patterns as they retire, initially traveling more for their activities during the

IMPACTS OF URBAN HIGHWAY CONSTRUCTION

Urban highway construction 40 to 60 years ago disrupted many communities of color and others with little voice in government decision-making. Many highways built in Minneapolis and Saint Paul destroyed neighborhoods. As a result, highways split and weakened established communities, such as I-94 being constructed in the 1960s through the Rondo community, splintering this thriving, historically African-American neighborhood in Saint Paul. Today, planning for highway reconstruction is an opportunity to bring residents into the process, learn more about their needs, concerns, and recommendations, and focus on improvements that will help reunite communities split by highways.

day, and as they age and are no longer able to drive, potentially creating a notable increase in demand for services such as Metro Mobility, and perhaps autonomous vehicles as that trend emerges.

These travel patterns correlate with an increase in multifamily housing. Multifamily housing has been the majority of new home construction since 2012, often located in walkable neighborhoods served by transit. For both Millennials and Baby Boomers who want to live closer to work, entertainment, transit, and amenities, multifamily housing has been attractive.

Over the prior 50 years, there was a continuous, dramatic increase in vehicle miles traveled due to growing suburbs, more women in the workforce, and increased incomes that allowed auto ownership to expand to almost one car per driver. This growth rate is not expected to be repeated, in part because of the changing ways people today approach travel – living closer to work, biking, walking, or taking transit, and working from home. Nevertheless, population growth is likely to keep vehicle miles traveled at a significant level. Another notable change in travel patterns relates to transit ridership as transit options have expanded – including light rail, bus rapid transit, and additional commuter services. As the region continues to expand transitway and regular route transit options, there will be other emerging trends and issues to address.

3. Highway congestion is a reality of a growing region. Addressing congestion must be a priority for the region.

While each person may be traveling fewer miles each day, due to the changing travel patterns just described, the increasing population of the region will still lead to an increase in total travel over the next 20 years. Increasing levels of congestion are directly connected to our region's population growth and prosperity. For example, increased highway use reflects the region's population growth of 150,000 people, and the addition of 165,000 jobs, since 2010. And while commuter trips represent only 25% of total trips taken, these trips are often longer and likely to occur during peak travel times, having a larger impact on the highway system.

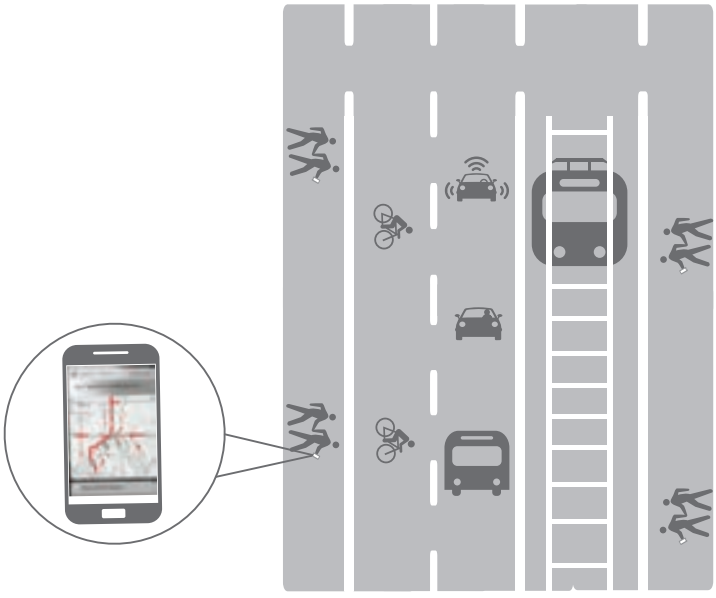
The reality of highway congestion surfaces many challenges and opportunities. For example, congestion is not solved by solely building more roads. Congestion must be managed to maximize efficiency and safety. Every mode of transportation – or what's called a multimodal system – must be part of the plans and action to manage congestion. Congestion management is a transportation system priority, and significant dollars are being invested for this purpose. These investments include:

- Making investments in technologies that improve travel in and through congested corridors;
- Offering more reliable travel options along congested corridors, such as transit options (buses, light rail, commuter rail) and high-occupancy toll (HOT) lanes (i.e., MnPASS);
- Improving congested locations with lower-cost, high-benefit fixes to stretch our limited transportation dollars further;
- Encouraging land use and development that offers the community easy access to multimodal transportation options, including transit;
- Encouraging travel outside traditional commuting times, through flexible work schedules or work-at-home options; and
- Supporting the efficient movement of freight.

4. Technology will continue to influence travel in the region.

Technology is interwoven into nearly every aspect of modern life, and transportation is no different.

One of the biggest technology influences is the prevalence of the smart phone. So many transportation-related information or sharing services are accessed through phone applications – information about traffic, finding the optimal route across town, tracking when the next bus is coming, reserving a taxi or shared-ride service, or getting a Nice Ride bike. The convenience of this consumer-based technology is changing travel patterns, and will continue to do so into the future.



On our highway system, traffic flow and improved safety is supported by many technologies, including real-time traffic and incident monitoring, electronic message signs, signal-overrides for emergency vehicles, and managing vehicle volumes in high-occupancy toll lanes (HOT or MnPASS). Technology presents many challenges and opportunities for our transportation system.

Vehicles have been revolutionized by technology. Nationally, an estimated 10% of cars on the road are battery-supported hybrid vehicles, and electric vehicles are of growing interest as the number of miles a vehicle can travel per charge increases. Technological advancements are evident in newer vehicles, as well as on the roads they travel. Technology has had a notable impact on moving freight as automated distribution of goods and online, delivery-based shopping increases. The Metropolitan Council studies the outcomes of these changes and monitors trends so it can contribute to and shape the conversation as technology and transportation planning evolves.

Autonomous, or driverless, vehicles could have the most significant impact on travel in our region over the next several decades. Auto industry leaders are dedicating sizeable resources to autonomous vehicle research and testing, and several predict autonomous models will be street-ready by as soon as 2021. Those dates may be aggressive, but there is great likelihood the industry will be focusing on this reality over the next 10-15 years. Elements of driverless vehicles are already offered in current models by several manufacturers, including collision warning, lane departure warning, and blind spot monitoring.

The cost per driverless vehicle could be initially prohibitive. As the technology becomes more common, it is expected that costs will lower. Interest by consumers will be based on several factors, including the promise of increased safety, improved mobility for those

who can't drive, more relaxed trips, and an increase in car-sharing.

The advent of autonomous vehicles is a priority for all future transportation system planning. Points to consider include:

- There will be an extended period of transition with both driverless and driver-controlled vehicles sharing the road.
- Funding will be needed for updated traffic management systems that accommodate autonomous vehicles.
- Autonomous vehicles could bring a shift in travel patterns, employment, and purchasing. Will commercial vehicles become driverless? Predictions are the number of vehicular crashes will drop, as 95% are associated with driver error. If so, how will this affect the automobile service industry or the insurance industry? Will autonomous vehicles affect the taxi industry and its drivers?
- Autonomous vehicles need less lane space because of their anti-collision technologies. Will highways accommodate more vehicles in less space? Will single occupant vehicles be parked in pay lots or ramps, or sent home, to return later for occupant pickup (having an impact on existing structures and land use and creating the potential for more congestion as empty autos circulate)?
- New opportunities for mobility could be made available to people with limited transportation options including children, people with disabilities and the elderly.
- Autonomous vehicles could change typical car ownership models.
- Land use patterns may be affected, as people potentially have the ability to live farther from work and have longer commutes.
- There is general agreement that the majority of autonomous vehicles will be powered through electric batteries. How will cities adapt to changing land uses as there is less demand for gas and service stations and greater demand for electric charging stations?
- Average earners, as well as those struggling with poverty, could be priced out of this technology at first, making transit offerings as important as ever to help decrease disparities in opportunity.
- Autonomous vehicles could change how transportation infrastructure will be financed as traditional revenue sources from fuel, motor vehicles, parking, and fines could decrease.

The Metropolitan Council, along with its state and federal partners, is preparing for the arrival of autonomous vehicles. It is conducting ongoing studies of the potential short term and long-term effects of autonomous vehicles on our region and its transportation system.

5. Our transportation system is essential to advancing equity, sustainability, and prosperity in our region.

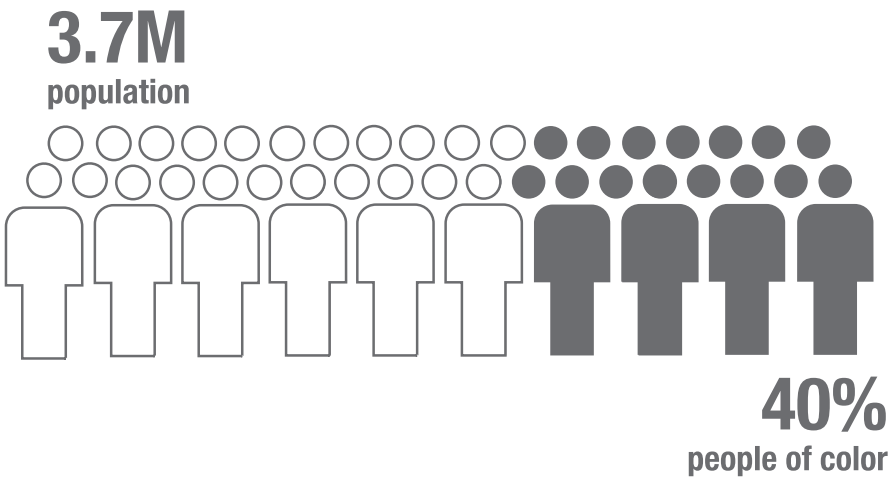
Equity

Thrive MSP 2040 defines equity as **residents of all races, ethnicities, incomes, and abilities having the opportunity to reach their** full potential—success, economic prosperity, and a good quality of life.

In this transportation plan, equity is highlighted in ways the region provides access to jobs, school, and other community amenities. Strategies include using equity as a criterion for prioritizing transportation funding, as well as making decisions about transportation investment that encourage developing healthy and livable communities. The Metropolitan Council's focus on equity includes extensive public engagement and input into its planning and decisions.

Transportation policy, including the level of investment in transportation and the transportation system that results, affects how equitably our region's residents have access to opportunities. Challenges and opportunities include:

- Nationally, the region has among the largest socio-economic disparities in education, employment, income, and homeownership between white residents and residents of color – and income disparity continues to rise. Flexible, affordable transportation options are important elements in delivering equity and diminishing these disparities.
- Poverty is often perceived as an urban problem, but poverty in suburban and rural areas has increased substantially. For many people, owning a vehicle can be cost prohibitive, yet transit options decline beyond the boundaries of Minneapolis and Saint Paul because suburban land use patterns are difficult to serve cost-effectively with regular-route transit service. The result is difficult access to education and jobs among low-income suburban residents who could benefit.
- By 2040, 40% of the region's residents will be of color, and many more residents will be elderly – two groups requiring transportation policies, actions, and funding that deliver equitable solutions.



Sustainability

Our transportation system, and how we use transportation, significantly affects the well-being of our natural environment. Challenges and opportunities include:

- Greenhouse gas emissions from on-road vehicles cause nearly a quarter of air pollution emissions, although they are decreasing. Emission levels will continue to improve as vehicle technology, including hybrid or electric vehicles, progresses. Improving vehicle technology has been, and is likely to continue to be, the most effective way to reduce emissions.
- Changing our transportation behaviors, like reducing single-occupant vehicle trips, increasing transit use, choosing housing in communities with amenities close by, and encouraging ride-sharing can also have an impact.
- People living in neighborhoods adjoining major highways have higher-than-average exposure to transportation-generated air pollution. Many experience adverse health consequences, such as asthma, at greater rates than the general population. Housing costs are often lower in urban, highway-bounded communities; so many people in these neighborhoods have low or modest incomes, resulting in these health disparities disproportionately affecting poor people.
- As electric vehicles continue to grow in popularity and share of the overall market, communities will need to consider the implications of more electric vehicles – whether to support public plug-in stations, and other local decisions, including investing in electric vehicles for their fleets. There are currently more than 200 public charging stations in Minnesota and estimates suggest many more will be necessary over the term of this plan. Many cities are already leading the way on establishing guidelines and ordinances to be ready for electric vehicles. From a regional perspective, the Council will monitor how electric vehicles are contributing to the overall vehicle miles traveled in the metro area.
- In terms of transit fleet operations, emerging electric bus vehicle technologies are promising. By the end of 2018, Metro Transit will have a plan related to expanding its fleet of electric vehicles and an analysis of related issues, including where in the system to install supportive technology for effective operations, challenges related to capacity for charging vehicles overnight, and the limitations of current battery technology. In addition to bringing 130 electric vehicles into the system through 2025, a pilot project will further evaluate the issues related to vehicle operating range and cold weather impacts. Budget impacts are still to be determined. In addition, electric vehicle technology brings other environmental hazards that need to be dealt with carefully, including disposing of used batteries. There is more to learn, but the Council's hope is that the region's transit fleet will eventually benefit from market development that is yet to come.

Prosperity

The availability of affordable, flexible transportation has a sizeable impact on the region as a whole, and on individuals who need transportation to get to jobs or school.

- An estimated one-third of projected new job growth will be located on transit routes. However, two-thirds will not be located along established transit routes**.** Manufacturing or warehouse facilities with available jobs often are located in the region's semi-rural or suburban edges, many miles from urban core neighborhoods where many of the people qualified for and looking for jobs live.
- The result is called "spatial mismatch" – the greatest concentration of unemployed workers lack adequate means to travel (whether by transit or car) to the richest concentrations of job vacancies. This disconnect has sizeable ramifications for those seeking and needing employment, and companies who are struggling to attract employees. This is a crucial opportunity for public-private collaboration and future planning.
- Transitway investments will improve access to jobs. Plans include several bus rapid transit lines, and the extension of the METRO Blue Line northwest and the METRO Green Line southwest.

A reliable and efficient regional transportation system is high on the list of needs and requirements for employers and businesses moving commercial goods. The transportation system can also play a role in attracting and retaining a talented workforce. As employment continues to grow outside the central cities, the need for greater transportation choices will also grow.

People throughout the region are advocating for efficient, reliable options on the highway system, as well as expanded regional transit, bicycle, and pedestrian systems.

Metropolitan Council's Transportation Policy Plan, on behalf of the region, works to solve challenges and plan for future transportation system changes. More information about funding and next steps is found in the following chapters.

Work Program Items

The Metropolitan Council creates a Work Program that includes studies and planning work to address specific issues and emerging trends in advance of the next update to the Transportation Policy Plan. The full Work Program is available in Chapter 14 but a summary of a few key studies is below.

Congestion Management Process

The Congestion Management Process is a cooperative, cohesive, data-driven, and regional process to identify and mitigate congestion along the transportation network. To strengthen the regional congestion management process, the Metropolitan Council has added a study to the Work Program specifically addressing aspects of congestion.

The scope of this study will be determined cooperatively involving the recently established advisory committee. At minimum, the study will help determine the extent of the transportation network to be included in the process. It will also develop methodologies for analyzing and measuring congestion, establish a comprehensive data collection program for regional coordination and monitoring, and assess the effectiveness of previous congestion management strategies in mitigating congestion within the region. The end result will be a report that is organized around the eight-step process, required by the federal government, and will guide the regional, coordinated Congestion Management Process.

Connected and Autonomous Vehicles

The advent of more connected vehicles (with Internet access and a local area network), the rapid development of autonomous vehicles, and the evolution of new transportation ownership models will have profound impacts on the region's transportation use, economics, and infrastructure. The Metropolitan Council is well positioned to convene regional stakeholders to formulate policy responses to technology change and to study potential impacts on all transportation modes and systems.

Addressing the many issues related to connected and autonomous vehicles – including legislation, regulation, policy, and planning tools – will require collaboration among state, regional, local, and corporate stakeholders. The Metropolitan Council and MnDOT will facilitate regional collaboration among all transportation stakeholders regarding connected and autonomous vehicle technology, deployment, policy, and planning. The collaboration may take the form of a new committee, a set of workshops, and dedication of staff resources.

Council staff will continue to participate in national conversations regarding connected and autonomous vehicles. As local experts on planning efforts, they will integrate work being done by the U.S. Department of Transportation, the Association of Metropolitan Planning Organizations, the Transportation Research Board, and other researchers, peer regions, and states.

The field of vehicle automation continues to evolve rapidly. It is expected that any specific workplan will become out-of-date rapidly, and this item in particular will be revisited and potentially revised annually.

Freeway System Interchanges

System interchanges are the connection of two freeways and are critical links in the region's highway system. Over the past 15 years the congestion and crash numbers at these locations have increased significantly. Major investments have recently been made at system interchanges such as U.S. Highway 169 and I-494 (Bloomington), I-35W and Minnesota Highway 62 (Richfield and Minneapolis), and I-35E and I-694 (Vadnais Heights). Other system interchanges often cited for needing improvements include I-35W and I-494 (Bloomington; a northbound I-35W to westbound I-494 ramp improvement was recently programmed for construction), I-94 and I-494/I-694 (Oakdale and Woodbury; ramp improvements programmed for construction), and I-35W and I-694 (New Brighton), as examples. The level of problem and cost of solutions at these locations overshadow most other mobility and crash problem areas in the region.

Later in this Overview, there is a review of the Metropolitan Council's two funding or investment structures. In brief, the first "Current Revenue Scenario" assumes transportation funding will be as expected. The "Increased Revenue Scenario" assumes that additional funding beyond the Current Revenue Scenario becomes available.

The *2040 Transportation Policy Plan* lists system interchanges as a "strategic capacity expansion" project type under the Increased Revenue Scenario. However, analysis of the individual interchange problems, solution identification, and funding have proceeded independently. As such, there is currently not any prioritization of these projects if more money would become available to the region. This Work Program item prioritizes these interchanges, so that the region can have the best information available on where to invest limited resources. Similar regional prioritization efforts have been completed for other investment types such as MnPASS.

This project would be a joint effort between MnDOT and the Metropolitan Council.

Transit Service Allocation

The Transportation Policy Plan stresses the importance of transit investments in making progress toward the transportation goals for the region. However, roles for transit require different types of service, including some where priorities conflict with limited resources. One role transit can play is to serve the highest demand corridors, where land use and development can support strong ridership. Another role transit can play is providing access to a large number of people and jobs across the region, and to provide an alternative to driving, regardless of the ridership potential. The transit system can be designed to address these two roles on opposing ends of a spectrum, maximizing efficiency or maximizing coverage. The Council will work with regional transit providers to conduct a study that will analyze how current transit service is allocated between service meant to maximize efficiency (often involving areas of denser population) and service meant to increase transit coverage (geographically, which includes areas of sparser ridership). The study will explore the trade-offs of the different approaches, identify a target balance of investment, and identify possible transit solutions to serve areas of the region that can't be effectively served with regular-route service.

Twin Cities Region Transportation Goals, Objectives, Strategies

This *2040 Transportation Policy Plan* (2018 update) and our transportation system itself help fulfill the vision of the region's long-term plan, *Thrive MSP 2040. Thrive MSP 2040* reflects our concerns and aspirations, anticipates future needs in the region, and addresses our responsibility to future generations.

The Metropolitan Council – with input from businesses, the public, partner agencies, and local elected officials – has identified six broad goals for the regional transportation system, and a framework for how to achieve them. Consistent with federal requirements, the Council is also developing performance measures and targets to evaluate how effectively these goals have been achieved. Here you will find these six transportation goals, their corresponding objectives, and a summary of the strategies that will be used to achieve them.

Thrive MSP 2040 **includes five general outcomes for a thriving region: stewardship, prosperity, equity, livability, and sustainability**. You will see these outcomes noted with each of the transportation goals.

Performance-related outcomes are also discussed later in this Overview on page 79.

Definitions

Goals are broad statements of aspiration that describe a desired future for the region's transportation system.

Objectives represent achievable outcomes that together help to realize a goal within the timeframe of the plan.

Strategies identify how objectives will be met through specific actions, including who is responsible. In this Overview, strategies will be summarized for each section. For full detailed strategies, see Chapter 2.

Performance measures are things that can be measured to determine if a strategy is working. In this Overview, performance measures for each goal are listed at the end. For a full detailed discussion of performance outcomes, see Chapter 13.

GOAL: TRANSPORTATION SYSTEM STEWARDSHIP (TAKING CARE OF WHAT WE HAVE)

Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.

Objectives:

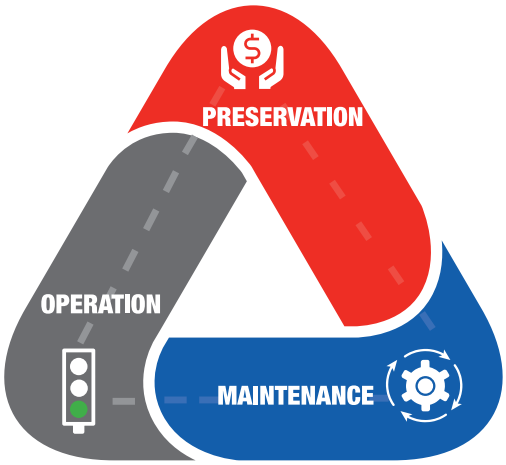
A. **Efficiently preserve and maintain the regional transportation system in a state of good repair.**

B. **Operate the regional transportation system to efficiently and cost-effectively connect people and freight to destinations.**

STRATEGIES SUMMARIZED:

- The transportation system is extensive and represents a significant investment over multiple generations. Most resources in this plan will be dedicated to operating, maintaining, and rebuilding what already exists.
- To maximize investments, this plan supports making the system more efficient and effective and providing for the best user experience the region can afford.
- The region needs to focus on investments that have the greatest benefit for all users of the transportation system: residents, businesses, and people of all ages, abilities, and backgrounds.

The public has invested heavily in its transportation system. Its preservation, maintenance, and operation are important to protect this investment for generations to come.



A significant portion of funding is spent every year for maintenance, operation, repair, and replacement of the existing system. This includes major infrastructure such as pavement, bridges, the bus and rail fleet, park-and-ride facilities, transit stations, stops, and shelters. Climate-related severe weather events such as flooding and colder winters will continue to have impacts on regional transportation infrastructure. Continued and enhanced system maintenance, repair, and preservation will increase the resiliency of regional transportation infrastructure.

Maintenance includes repairing buses and light rail cars, mowing and maintaining landscaping, clearing snow, ice, and debris from roadways, and building and maintaining transit facilities, sidewalks, and trails. Preservation includes the repair or replacement of pavement, bridges, and infrastructure to support their safe and efficient use.

Operations includes MnDOT's Freeway Incident Response Safety Team that helps people who are stranded on the roadway; traffic signal operations; and operation of the regional traffic management center (including the variable message signs and advisory speeds). Transit operations include the day-to-day service of buses, light rail, commuter rail, Metro Mobility, and Transit Link dial-a-ride service.

An important part of stewardship is getting the most out of the investments made in the transportation system. During maintenance and preservation projects, there are often opportunities to integrate other improvements at a lower cost. These improvements can lead to better user experiences – for example, safer roads, less congestion, or better sidewalk connections. Initial capital improvements can also create efficiencies in long-term operations and maintenance. For example, investing in automated card-swipe fare technology for transit produces cost savings over the long-term by speeding up service and creating a better customer experience that attracts more riders.

System stewardship includes assessing the performance of the system and the level of satisfaction that its users are experiencing, and making adjustments as necessary to continually improve performance and service.

Measuring Performance

Performance measures that will be used to measure successful stewardship of the transportation system include:

- Roadway pavement conditions
- Bridge conditions
- Condition of transit infrastructure (state of good repair)
- Reliable speed in MnPASS lanes

Related *Thrive MSP 2040* Outcomes: Stewardship, Prosperity

GOAL: SAFETY AND SECURITY

The regional transportation system is safe and secure for all users.

Objectives:

A. **Reduce fatal and serious injury crashes and improve safety and security for all modes of passenger travel and freight transport.**

B. **Reduce the transportation system's vulnerability to natural and human-caused incidents and threats, including climate change and terrorism.**

STRATEGIES SUMMARIZED:

- Safety and security are at the heart of providing a comfortable, trustworthy system and will be a focus in all areas of transportation investments.
- Safety and security include identifying and addressing existing safety and security concerns and building a transportation system that avoids future problems.

Increasing the safety and security of people using the region's transportation system is the fundamental goal of all agencies that deal with the system. Providing a safe and secure transportation system is paramount from planning to operations. Providing safety and security requires an understanding of what areas are vulnerable and why. Using data and analysis to identify these areas helps the region focus on the greatest risks and proactively avoid creating new vulnerabilities.

The number of traffic crashes with fatalities and/or serious injuries has been decreasing, but there is room for improvement. The Metropolitan Council joins its partners, including MnDOT, the Minnesota Department of Public Safety, the Minnesota Department of Health, and local jurisdictions, to advance the state's Toward Zero Deaths Program, which has a vision of a fatality-free highway system. Regional transportation partners also use best practices to provide and improve safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system.

Safety and security on transit is, in part, as much about the perception of safety, including providing environments that feel safer through lighting, design, and technology such as cameras. The region has installed cameras onboard buses and trains, and in some stations, and has its own Metro Transit police force that collaborates with local enforcement agencies to respond to incidents quickly and effectively.




Rail freight incidents occur less frequently than truck freight incidents, but tend to be high profile, and have the potential to cause more fatalities, injuries, and damage to property. Of recent concern is the rise in oil freight trains passing through the region. The Federal Railroad Administration has developed a *National Rail Safety Action Plan* that identifies safety improvements railroad companies need to take, such as improving or eliminating at-grade crossings. Other measures include maintaining sufficient right-of-way in case there is a spill or derailment. Another notable rail freight safety and security issue is trespassing pedestrians and cyclists who are looking for short-cuts across rail tracks and yards. Nationally, over 500 people die each year in trespassing-related incidents. These trespassers also pose a security threat when there are shipments of hazardous materials.

The changing climate poses new threats to transportation infrastructure, particularly from warming winters, extreme rainfall, and heat waves. The Council has published a Climate Vulnerability Assessment to identify risks to infrastructure, including transportation infrastructure.

Measuring Performance

Performance measures that will be used to measure improved safety and security include:

- Number and rate of crashes with serious or fatal injuries
- Fatal or incapacitating injuries involving bicycles or pedestrians

Related *Thrive MSP 2040* Outcomes: Stewardship, Livability, Equity

GOAL: ACCESS TO DESTINATIONS

A reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond.

Objectives:

A. **Increase the availability of multimodal travel options, especially in congested highway corridors.**

B. **Increase reliability and predictability for travel on highway and transit systems.**

C. **Ensure access to freight terminals such as river ports, airports, and intermodal rail yards.**

D. **Increase the number and share of trips taken using transit, carpools, bicycling, and walking.**

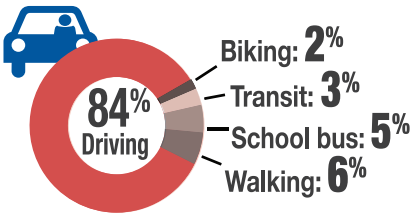
E. **Improve the availability and quality of multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically underrepresented populations.**

STRATEGIES SUMMARIZED:

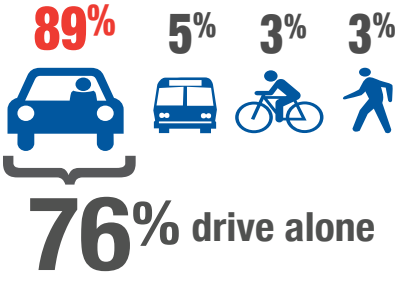
- The region will focus on providing a transportation system that offers practical and affordable options, so all users, regardless of their social or economic background, can get to the places they need to go.
- This plan emphasizes the importance of improving and expanding transportation options through investments in a multimodal system of highways with MnPASS options, local and express bus service, transitways, a regional bicycle system, and local pedestrian amenities.
- The plan emphasizes providing a transportation system that connects people to jobs, activities, and opportunities. It supports a regional approach to investment and prosperity.

How Do We Get There?

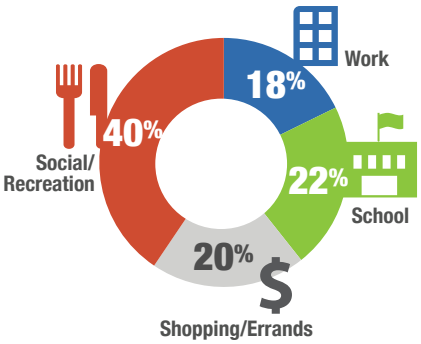
Driving is still the way most trips are made in the region.



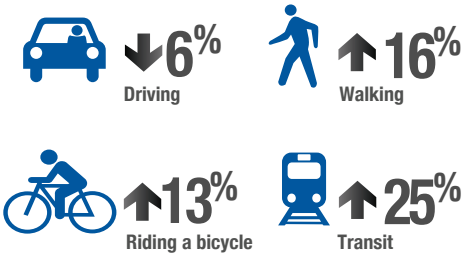
Commuting to Work



Where is MSP Going?



Mode Share Changes 2000-2010



Providing access is transportation's fundamental purpose for people and businesses. There are ways in which access can be better provided, and there are barriers to good access that need to be managed or eliminated.

Both population and employment are forecasted to increase in the coming years, which will increase congestion. Congestion management and reduction requires improvements to both state and local highways and practical options for multimodal travel. Examples of highway improvements include using technology to help manage the flow of traffic during rush hours and to clear incidents quickly, MnPASS lanes, and spot mobility or strategic capacity enhancements to state and local highways.

Multimodal options include a variety of transit services from bus and train service to dial-a-ride or shared ride, as well as bicycling and walking. In heavily traveled corridors, transit can be an advantage because of bus-only highway shoulders, ramp meter bypasses, and park-and-ride lots. MnPASS lanes are free for cars with two or more passengers, and provide congestion-free lanes for transit and carpools during peak use times. MnPASS also provides a subscriber option for single-occupant vehicles and small delivery trucks to bypass congestion for a fee. Bicycle and pedestrian infrastructure will continue to be improved throughout the region with the aim of increasing access, connectivity, and safety.

Lack of access to frequent and convenient transit disproportionately affects historically underrepresented populations such as people of color, those with low incomes, or those with disabilities who are less likely to drive or don't have access to a car. Improving transit options and accessibility for these communities increases opportunities for employment, education, and training.

Efficient freight transport through and within the region is vital to our economic competitiveness. Freight-related infrastructure such as ports and intermodal rail yards should be protected because they are expensive to relocate. Many of these facilities are located near highways for easy access through and beyond the region.

Measuring Performance

Performance measures that will be used to measure improved mobility and access to destinations include:

- Access to jobs
- MnPASS usage
- Percentage of travel by modes other than single-occupant vehicles
- Transit ridership
- Mode participation rate
- Peak hour excessive delay
- Average aircraft delay at MSP International Airport
- Regional bicycle transportation network implementation

Related *Thrive MSP 2040* Outcomes:

Equity, Livability, Prosperity

GOAL: COMPETITIVE ECONOMY

The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.

Objectives:

A. **Improve multimodal access to regional job concentrations identified in *Thrive MSP 2040*.**

B. **Invest in a multimodal transportation system to attract and retain businesses and residents.**

C. **Support the region's economic competitiveness through the efficient movement of freight.**

STRATEGIES SUMMARIZED:

- The plan directs investment so the transportation system will serve the generations of today and tomorrow and attract talent and businesses looking for a place to prosper.
- This plan expands the regional transit and bicycle systems and provides reliable options on the highway system to keep the region competitive.
- Our connections to places beyond the region that foster its growth and economic prosperity will be strengthened by corridors that connect us statewide and beyond, reducing the impacts of congestion on freight corridors and supporting a strong airport system with national and international connections.

The region's economy is strong and trending up.

$246B
Gross regional product in 2017

1.8M
Jobs generated in 2018

2.6%
Unemployment rate in 2018

The region's economy is diverse and includes:

A good transportation system is fundamental to a robust and thriving economy. To continue being competitive, the region must shift its focus to operating and maintaining what we have while at the same time creating a more multimodal system that provides all its residents and businesses choices in how they or their freight moves from point A to B. Providing practical options to the single-occupant car benefits everyone, including those who want to drive and never use another mode. Providing people safe and convenient transportation choices such as walking, bicycling, and transit can remove cars from highways and streets, and increases quality of life for everyone.

An integrated multimodal transportation system helps to retain and grow existing businesses and industries, and attracts new ones. It also retains and attracts talent, and the market shows people are increasingly seeking a less car-dependent lifestyle. The region will focus on investing in a multimodal system that builds on its well-developed highway system to expand and better integrate transit, bicycling, and walking improvements that support and strengthen the region's economy.

Thrive MSP 2040 has identified 42 job concentrations as of 2011. These job concentrations are contiguous areas that have at least 7,000 jobs at a net density of at least 10 jobs per acre. The Council will continue to monitor employment patterns to identify new concentrations that meet these criteria. Transportation priorities should be geared toward providing good access to these concentrations while still addressing emerging needs in other areas.

Providing good access to freight terminals throughout the region is also key to this objective. As mentioned before, efficient freight movement is vital to the region's economy, especially maintaining existing freight facilities, which are often difficult and costly to relocate. Wherever possible, communities should identify and preserve land near highways for certain freight movement, particularly in existing industrial areas.

Measuring Performance

Performance measures that will be used to measure transportation-related elements include:

- Travel time reliability for freight traveling on highways
- Percentage of existing population near high-frequency transit service
- Cost per passenger mile at MSP International Airport

Related *Thrive MSP 2040* Outcomes: Prosperity, Livability, Sustainability

GOAL: HEALTHY AND EQUITABLE COMMUNITIES

The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting natural, cultural, and developed environments.

Objectives:

A. **Reduce transportation-related air emissions.**

B. **Reduce impacts of transportation construction, operations, and use on the natural, cultural, and developed environments.**

C. **Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities through the use of active transportation options.**

D. **Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations.**

STRATEGIES SUMMARIZED:

- The plan works toward state and regional goals for greenhouse gas and air pollutant emissions by factoring these considerations into the Metropolitan Council's operations and investment priorities. The plan also starts a dialogue on how all the region's partners, including local governments, can contribute to these efforts.
- The plan supports a transportation system that considers the needs of all potential users while promoting the environmental and health benefits of transportation options like carpooling, transit, bicycling, and walking.
- Investments in the transportation system will protect and enhance the natural, cultural, and developed environments, and will be identified through effective engagement with affected communities.
- A special emphasis is put on avoiding, minimizing, and mitigating impacts of the transportation system on people and the environment, especially disproportionately adverse impacts to people of color or people with low incomes.

There are a number of ways to define health and environment that are relevant to transportation and the region's development. For example, health can include the physical well-being of people, the quality of the environment that supports health and well-being, or the potential for social capital for an entire community. Examples of environment include the air we breathe, the water we drink and play in, the weather we experience, the characteristics of the neighborhood we live in, and the built infrastructure of roads, bridges, and buildings. A healthy environment is one where impacts of transportation are considered and mitigated in as many ways as we can afford.

Transportation has an enormous impact on air quality. The region's transportation-related pollutant emissions account for:

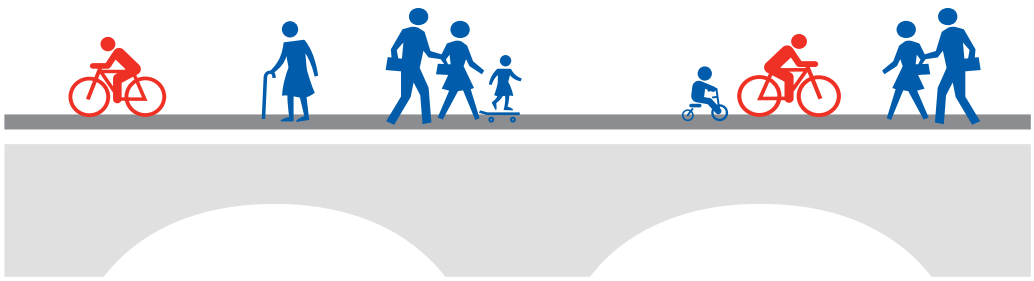
- 68% of carbon monoxide emissions
- 40% of nitrogen oxide emissions (toxic by itself and an ozone precursor)
- 32% of volatile organic compound emissions
- 5% of particulate matter (small particles of pollution in the air that can be inhaled)

The region has been considered to be in "maintenance" or "attainment" since 1999 for all transportation-related pollutants regulated by the federal government – meaning we meet the Environmental Protection Agency's acceptable standards for certain pollutants in the air. While the region has not exceeded the federal standards for fine particulate matter and ozone concentrations, current concentrations of those pollutants in the region reach 80% of standards. This indicates a need to further reduce transportation-related air pollution, most importantly to improve human health but also to avoid violating federal standards. Additionally, transportation accounts for one quarter of statewide greenhouse gas emissions, contributing to global climate change. The region supports state efforts related to the Next Generation Energy Act to reduce all greenhouse gas emissions to 80% below 2005 levels by 2050.

The region will consider air pollutant and greenhouse gas emission information as it makes investments with a target of helping to reduce transportation's contribution, particularly by supporting transportation options such as carpooling, transit, bicycling, walking, and shipping freight by rail or barge. The region will also develop more efficient land use and development patterns that contribute to lower pollutant and greenhouse gas emissions. But all of these will be the starting point for a broader conversation with local, regional, state, and federal partners about how the region can be more sustainable in our decision-making and outcomes.

If not appropriately managed, transportation construction and operations can negatively impact communities, including significant noise, pollution, and inaccessibility due to lane or sidewalk closures. It is critical for regional transportation providers to coordinate with each other, with communities, and other organizations such as Transportation Management Organizations to help diminish the effects of construction on residents, businesses, pedestrians, bicyclists, and drivers. Some actions include:

- Signage, detours, and maintenance of access for pedestrians and bicyclists
- Incentives to construction companies to work during off-peak construction times such as at night or on the weekends, where appropriate
- Financial and/or marketing support of businesses affected by disruption of roadway construction



Transportation can play a significant role in fostering personal and community health by increasing pedestrian and bicycle infrastructure and connecting them region-wide. Many residents in the region want the option of walking or bicycling to work, school, errands, and appointments but do not feel they have safe routes. The Metropolitan Council will continue to promote bicycle and pedestrian infrastructure including planning with communities to enhance the system, close gaps, and make critical connections region-wide. Walkable and bikeable communities also tend to have healthier residents.

During the development of the Interstate system in Minneapolis and Saint Paul, communities of color and low-income communities were disproportionately affected. Many communities were severed. Streets and walkways that connected different parts of neighborhoods were interrupted by freeways. The legacy of the Interstate system has been both positive and negative as discussed earlier in this introduction. One of many goals moving forward is to help reestablish neighborhood connections that were lost, and design new transportation projects with an eye toward community cohesion, accessibility, and appropriate size and scale for people in- and outside motor vehicles.

An example was the building of I-94 through the Rondo neighborhood in St. Paul. The freeway completely severed this historically vibrant and thriving African-American neighborhood, which both destroyed community connections and reduced opportunities for financial prosperity. Residents were separated from businesses and services, and those businesses were separated from key markets necessary to their success. Were the project proposed today as built, it would probably fail on the grounds that it disproportionately affected a historically underrepresented community.

While some may argue that the days of community-disruption project plans are over, it's important to understand that transportation investments must connect communities and enhance access to opportunities rather than disconnecting them, making it more difficult for people to access jobs and opportunities. It's also important to assure that the people potentially affected by these projects and investments have an opportunity to assess the impact on their own communities and influence the ultimate decision.

With these considerations, whether near an area of concentrated poverty or simply involving a portion of a community that could benefit from access to jobs and commerce, our investments have a better chance of achieving equitable outcomes.

Measuring Performance

Performance measures that will be used to measure the transportation-related elements of state of the environment include:

- Miles traveled via biking and walking
- Vehicle-miles traveled per person
- Air emissions from on-road vehicles

Related *Thrive MSP 2040* Outcomes: Stewardship, Equity, Livability, Sustainability

GOAL: LEVERAGING TRANSPORTATION INVESTMENT TO GUIDE LAND USE

The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.

Objectives:

A. **Focus regional growth in areas that support the full range of multimodal travel.**

B. **Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement.**

C. **Encourage local land use design that integrates highways, streets, transit, walking, and bicycling.**

D. **Encourage communities, businesses, and aviation interests to collaborate on limiting incompatible land uses that would limit the use of the region's airports.**

STRATEGIES SUMMARIZED:

- The Council will partner with local governments responsible for planning and implementing the land use and local infrastructure needed to support Thrive MSP 2040. Local governments will prepare comprehensive plans that address the policies in Thrive MSP 2040 and system plans.
- The plan emphasizes the importance of job concentrations and nodes along transportation corridors and the need for local governments to plan for more dense development and diverse uses especially in these areas. The plan also emphasizes the importance of freight terminals and corridors, and their relationship to land use planning.
- The plan will ensure that local government land use policies allow for the creation of livable communities that support stewardship and sustainability of the transportation system, and the prosperity and livability of our region. This includes:
  - Planning and implementing an ample system of interconnected local highways and streets
  - Supporting higher expectations for land use around transit stations
  - Including bicycle and pedestrian elements, and supportive tools, in comprehensive plans
  - Planning for the long-term needs of freight modes such as trucks, barges, and railroads
  - Balancing the needs of the aviation system with local land use decisions

OVERVIEW

This plan describes relationships between land use and transportation, and the importance of coordinating strategic planning for both. This coordination requires strong partnerships between the Council, MnDOT, other regional transportation partners, and local communities that plan for land use, regulate its implementation, and provide the local transportation system. These important relationships impact the sustainability and stewardship of our natural, cultural, and fiscal resources. They impact our choices for where we live, how we travel, and how we ship our freight.

To guide our growth equitably, efficiently, and sustainably, the Council will continue to collaborate with communities on their local plans to support their development and growth in ways that best meet their needs and the needs of the regional *Thrive MSP 2040* vision.

The intersection of land use, urban form, and the transportation system shapes the effectiveness of stewardship of transportation investments. The Council will work with local governments to align development patterns and highway investments by focusing growth and investment along corridors with strong potential for future transit or managed lanes. Areas outside these corridors may continue to develop but will receive only limited investments from federal or state sources for new or expanded highways.

An important emphasis of *Thrive MSP 2040* is encouraging local communities to guide denser and more mixed-use development to job concentrations and nodes along corridors. This will provide greater housing options near jobs and activities that are cost-effectively supported by highways, streets, transit, bicycling, and walking, creating more livable communities where the market demands them. Local communities can also identify local centers to emphasize for this type of development.

The region is changing its focus from expanding the highway system to operating and maintaining it and investing in an expanded network of transitways supported by strong bicycle and pedestrian systems. To correspond, local governments should plan for higher intensity land use near transitways, including:

- A mix of housing choices, retail, and other commercial uses around station areas, known as transit-oriented development.
- Communities designed for biking and walking, where residents can choose to use their car less (or not at all) to go shopping, get to a transit stop or station, get to work and school, and recreation areas.

- Building housing and commercial developments that are denser to create more successful and efficient transit service areas, including providing more transit service.
- Providing a mix of housing choices, including affordable options near transit to accommodate youth, the elderly, and populations looking for an alternative to driving.

Thrive MSP 2040 also emphasizes the significance of continuing to move freight efficiently to our region's overall prosperity. Our highway, railroad, river, and aviation systems will continue to be the foundation for these important freight movements. Freight infrastructure and land use – particularly riverfront and rail-accessible facilities – can be difficult and expensive to reestablish.

Just as with freight-related land uses and infrastructure, the region's airports are important to the flow of commerce and people. Communities, businesses, and aviation stakeholders should collaborate to:

- Limit residential and other incompatible land use encroachment near airports
- Limit negative impacts on adjacent communities including noise

Measuring Performance

Performance measures that will be used to measure the alignment of transportation and land use include:

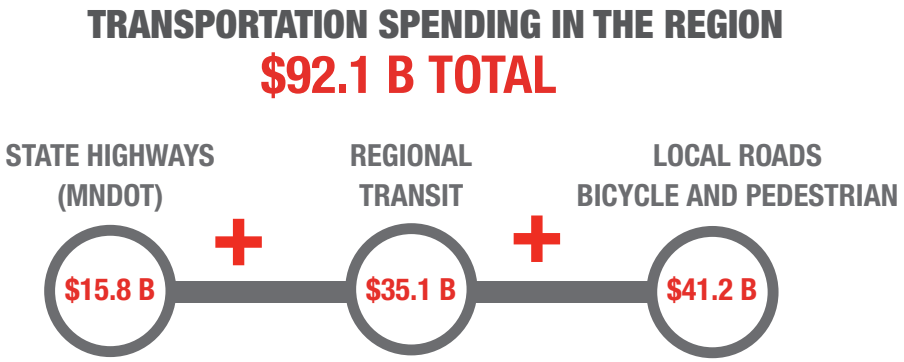
- Industrial land near river/rail access
- Percentage of projected population and job growth near high-frequency transit service
- Inclusion of transit supportive policies in local comprehensive plans

Related *Thrive MSP 2040* Outcomes: Stewardship, Livability, Sustainability

Investing in the Region's Transportation System

Investments in the region's transportation system depend on a complex mix of funds and funding sources, including tax dollars from local, county, state and federal sources, user fees and fares.

From 2015 through 2040—the duration of this Transportation Policy Plan—it is estimated that $92 billion will be available for transportation funding in the region. Of these, about 48% of funds are from local sources (taxes, fares), 38% are from state taxes and fees; and 14% are from federal sources. When spending these funds, about 45% are designated for local transportation, 38% for transit and 17% for highways. This funding level will not meet the needs of the region's transportation system over time, and inadequate transportation funding remains a major issue facing the region.



The condition and performance of our highways will decline if transportation funding continues at the current level. Current highway funding (from all sources – state, federal and local) is increasing at less than the rate that costs are increasing for highway construction and maintenance. Over time, this will lead to a greater number of roads and bridges in the region rated in poor condition, with limited resources to address those issues.

For transit, current funding levels can maintain today's transit system, but without the ability to improve or expand the bus system. Current funding levels, primarily due to local revenues from the county sales taxes for transit, also can provide slow growth for transitways (light rail, bus rapid transit). However, this funding level does not meet the projected demands for more transit service from a growing regional population filling an increasing number of jobs.

Identifying transportation priorities is essential when transportation dollars are limited. During this plan's initial development in 2015, the Metropolitan Council consulted with regional policymakers including county and city elected officials and staff, state agencies such as the Minnesota Department of Transportation (MnDOT), and the public to identify factors for setting investment priorities for highways and transit. The identified transportation investment factors are used to prioritize potential investments. They are incorporated into the regional outcomes noted in *Thrive MSP 2040* (the Metropolitan Council's overall plan for the region), as well as in the goals and objectives in this transportation plan. These investment factors can be found at metrocouncil.org/tpp.

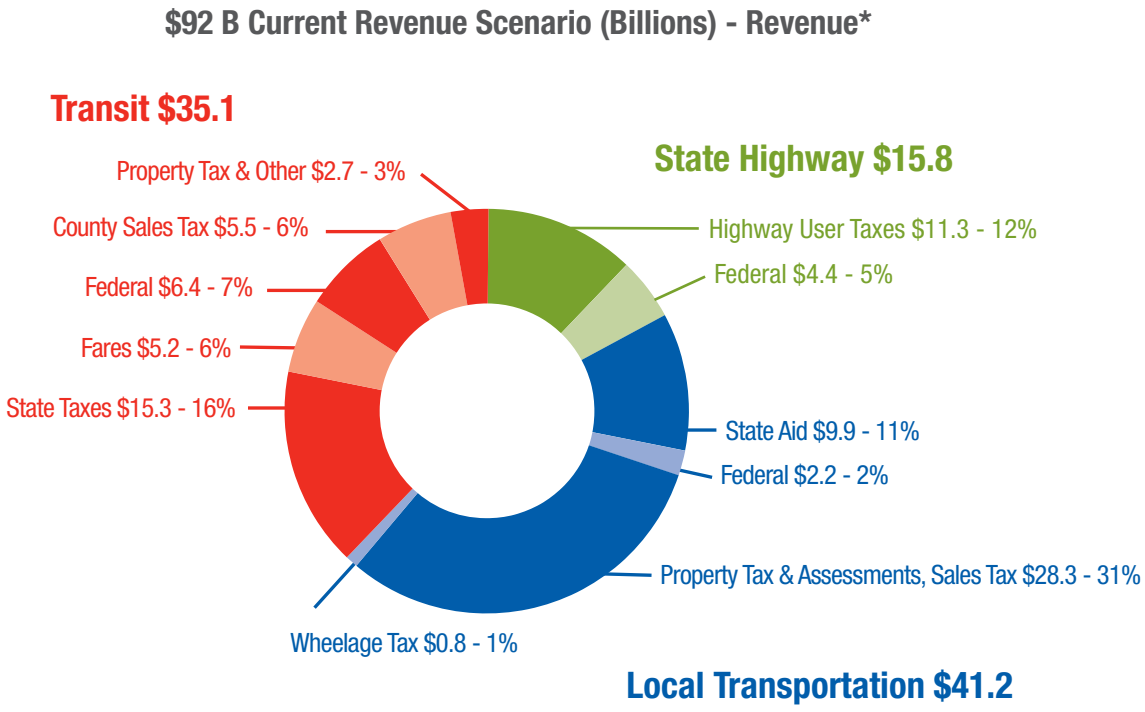
Two Funding Scenarios

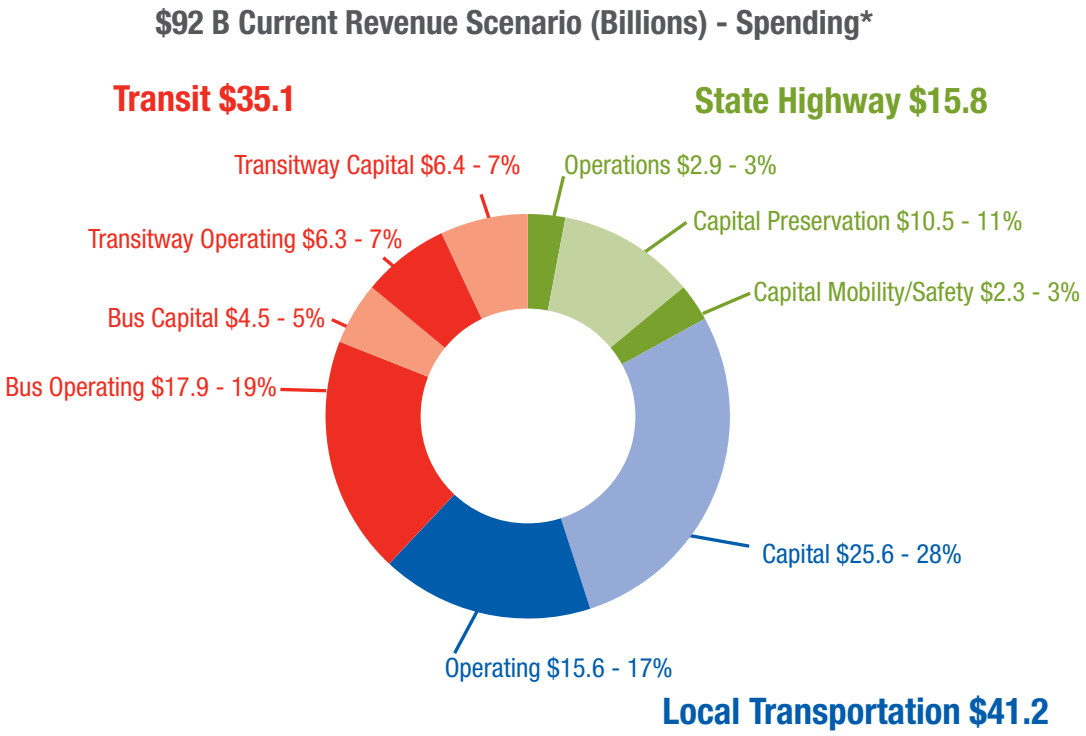
This Transportation Policy Plan uses two funding scenarios: Current Revenue Scenario and Increased Revenue Scenario.

The Current Revenue Scenario assumes that transportation funds will be available based on current laws and experience (under federal regulations, this scenario is called "fiscally constrained"). The Current Revenue Scenario in this plan assumes revenue growth consistent with past growth rates and experience with revenue sources. This plan also accounts for recently enacted county sales tax and wheelage tax increases, and new state highway revenues provided in the 2017 legislative session. No other new increases or changes in federal, state, or local taxes are assumed.

The Increased Revenue Scenario represents how the region could invest if funds were available beyond past growth rates implemented through policy and statutory changes at the local, state, or federal levels. Under federal regulations, the programs or projects identified in the Increased Revenue Scenario are examples of what might be achieved with additional revenues, but these projects are not part of the approved plan.

Figure 2: Regional Transportation Revenue and Spending 2015-2040





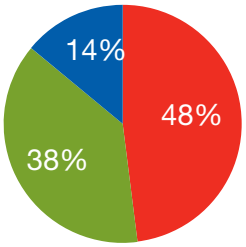
* These financials do not reflect the Riverview amendment and related project funding.

Figure 2 – the two pie charts - show the region's revenues and spending estimated from 2015 to 2040 for all transportation purposes under this plan's Current Revenue Scenario. Over the 26-year duration of this plan, an estimated $92 billion will be available for transportation purposes region-wide. Regional transportation revenues and spending are categorized into three broad types:

- Local transportation includes revenues and spending by cities and counties on local transportation systems, including roads, streets, and local bicycle and pedestrian systems.
- The state highway category includes revenues and spending on the state highway system by MnDOT in the metropolitan area.
- The transit category includes revenues and expenditures to build and operate the buses and transitways by all regional transit providers, counties, and other local governments.

Regional Transportation Revenues

Funding for the region's transportation system comes from local, state, and federal sources. These include user fares, fees, general state and local taxes, federal formula funds and competitive federal funds, some of which the region competes for with other metropolitan areas. The general breakdown of regional transportation funding is as follows:



- 48% - Local sources (including property taxes, county sales taxes, and user fares)
- 38% - State taxes and fees
- 14% - Federal sources

A major portion of the state and federal sources is the gas tax.

Over the 26-year duration of this plan, funding sources are assumed to grow at varying rates depending on the source and history of the past revenues. Details on the revenue growth assumptions can be found in Chapter 4, "Regional Transportation Finance," in the 2040 Transportation Policy Plan (2018 update).




Local Funds and Local Decisions Support Regional Transportation

Transportation funding provided through local revenue sources, such as property taxes, provide a significant percentage of total funding for transportation in the metropolitan area. In the past, local revenues (such as property taxes) provided a very small amount of funds for transportation investments on the regional highway and transit systems. However, recent changes in state law, which allowed for the implementation of county sales taxes (for transportation) and an increase in local wheelage taxes, now enable local decision makers to choose to use these new potential sources of funding for regional transit and highway investments.

An example is the implementation by Carver, Hennepin, Ramsey, Scott, and Wright counties of a half-cent sales tax dedicated to transportation. Anoka, Dakota, and Washington counties have implemented a quarter-cent sales tax dedicated to transportation. Hennepin and Ramsey counties have indicated that all of their sales tax revenues will be used for regional transitway capital and operating purposes. Several other counties are proposing using a portion of these local funds to contribute to improvements on the state-owned highway system operated by MnDOT.

The Regional Solicitation is another source of transportation funds where local stakeholders help determine their use. Every other year, through the Regional Solicitation, counties and cities make application and compete for federal transportation funds for transportation projects. As the region's federally designated metropolitan planning organization, the Metropolitan Council and its Transportation Advisory Board review these applications using an objective, data-driven, transparent process, and determine how funds are allocated.

Ten application categories are available, including roadway expansion and modernization, bridge rehabilitation and replacement, multiuse trails and bicycle facilities, and transit expansion and modernization. (Modernization projects might include safety, technology, or efficiency improvements.) The availability of Regional Solicitation funds has increased the role of local jurisdictions in regional transportation planning and funding. Local jurisdictions receiving these federal transportation dollars increasingly are dedicating these funds to improve region-wide transportation amenities. For example, all seven roadway expansion projects selected in the 2016 Regional Solicitation were interchange or lane expansion projects led by cities or counties on the state highway system.

Dedicated Funds for Transportation

No matter their source, nearly all transportation funds are allocated for use on roadways or highways, or are allocated for transit. Funds specifically designated for highways and funds allocated for transit are separate and cannot be redistributed between them. The Regional Solicitation, which represents approximately 3% of the region's total transportation revenue, is the primary source of flexible funding – it can be used for roadways, transit, or bicycle and pedestrian projects.

Table 1 shows both the approximate 2018 amounts expected from each revenue source and the total amount expected to be raised from that revenue source for transportation, over the 26-year duration of the plan.

Table 1: Metropolitan Area Projected Transportation Revenues, 2015-2040*

REVENUE SOURCES	Ongoing or Project-Specific Funding	2018 Annual Amount	Total Current Revenue Scenario 2015-2040
State Highway Revenues			
Highway User Taxes	Ongoing	315M	11.3B
Federal	Ongoing	124M	4.4B
Subtotal State Highway Revenues		**$439 M**	**$15.8 B**
Transit Revenues			
Motor Vehicle Sales Tax	Ongoing	282M	10.3B
State General Fund/Bonds	Ongoing	132M	5B
Fares	Ongoing	121M	5.2B
Federal Regional Solicitation	Ongoing	24M	750M
Federal Formula (5307, 5340)	Ongoing	112M	3.3B
Fed. Capital Investment Grants (CIG)	Project-Specific	0	2.3B
County Sales Tax	Project-Specific	328M	5.5B
Property Tax and Other	Project-Specific	131M	2.75B
Subtotal Transit Revenues		**$1.1 B**	**$35.1 B**
Local Transportation Revenues			
Highway User Taxes/Veh. Lease Tax	Ongoing	308M	9.9B
Federal Regional Solicitation/HSIP	Project-Specific	64M	2.2B
Wheelage Tax	Ongoing	26M	800M
Property Tax/Sales Tax/Assessments	Ongoing	911M	28.3B
Subtotal Local Transportation Revenues		**$1.3 B**	**$41.2 B**
TOTAL REVENUES		**$2.9 B**	**$92.1 B**

* These financials do not reflect the Riverview amendment and related project funding.

Regional Transportation Spending

Transportation expenditures, or spending, generally fall into one of two categories: capital expenditures or operations expenditures. Local transportation, state highways, and transit spending categories all have capital and operations expenditures. Capital expenditures include new construction, reconstruction, and improvement or replacement of transportation facilities, such as roadway pavement or bridge replacement. Operations expenditures include wages for transit operators, fuel and vehicle maintenance, snowplowing, and minor facility repair. Table 2 shows regional transportation spending with both an annual amount for 2018 and total transportation spending – more than $92 billion – expected from 2015-2040, the duration of this transportation plan.

Transit operations are different from highway or roadway operations. For example, transit operations include the operator and vehicle costs associated with daily service operations. For roadways, the equivalent operational expenses are incurred by private vehicle drivers, as driving is mostly a cost to individuals. Examples of these costs include the purchase of private vehicles, fuel costs, insurance, and vehicle maintenance. These privately incurred expenses, when totaled, greatly exceed public roadway expenditures.

Table 2: Metropolitan Area Projected Transportation Spending, 2015-2040*

EXPENSES	2018 Annual Amount	Total Current Revenue Scenario 2015-2040
State Highways Expenses		
Operations	88M	2.9B
Capital Asset Preservation	298M	10.5B
Capital Mobility/Expansion	52M	2.3B
Subtotal State Highways Expenses	**$439 M**	**$15.8 B**
Transit - Bus and Support System		
Operations	438M	17.9B
Capital	65M	3.75B
Regional Solicitation	24M	750M
Subtotal Bus and Support System	527M	22.4B
Transit - Transitway System		
Operations	97M	5.5B
Capital	408M	5.5B
Locally designated to future projects	-	1.7B
Subtotal Transitway System	505M	12.7B
Subtotal Transit Expenses	**$1.0 B**	**$35.1 B**
Local Transportation Expenses		
Operating	496M	15.6B
Capital	813M	25.6B
Subtotal Local Transportation Expenses	**$1.3 B**	**$41.2 B**
TOTAL EXPENSES	**$2.8 B**	**$92.1 B**

* These financials do not reflect the Riverview amendment and related project funding.

Highway Investment Summary

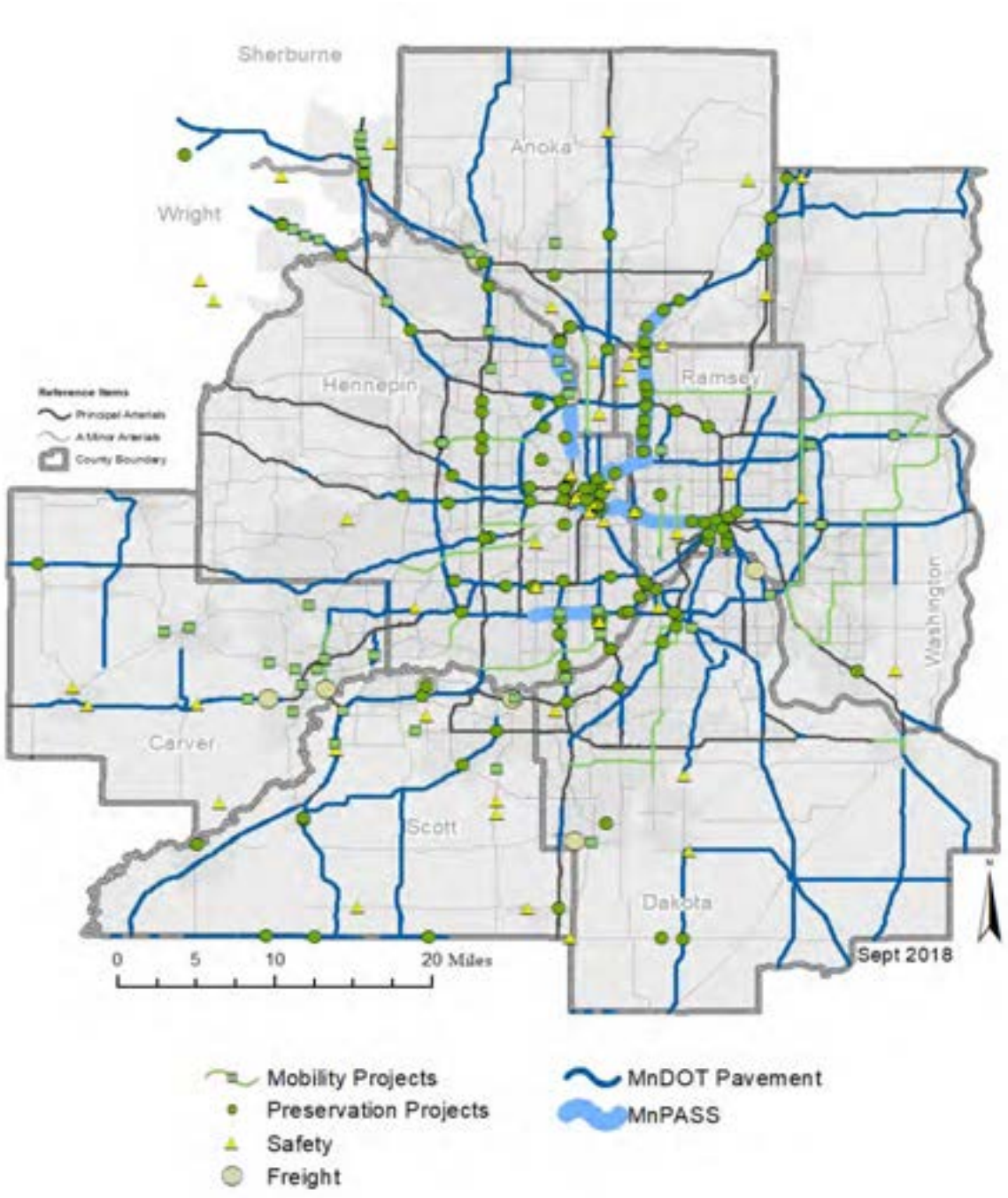
Chapter 5, "Highway Investment Direction and Plan," of the *2040 Transportation Policy Plan (2018 update)* continues the investment direction set in the previous Transportation Policy Plan (2015) and the Minnesota State Highway Investment Plan published in January 2017. These include:

- Placing priority on operating, maintaining, and rebuilding the existing state highway system
- Continuing to make safety improvements on the Regional Highway System a priority
- Implementing mobility improvements such as traffic management technologies, spot mobility improvements (improve traffic flow and provide bottleneck relief), new or extended MnPASS (high-occupancy toll) lanes, and affordable strategic capacity enhancements (such as new interchanges)

In the Current Revenue Scenario in Chapter 4, "Transportation Finance," $15.7 billion are anticipated to be available for state highways for the years 2015-2040. Seemingly a sizeable total, planning and analysis concludes that it will not be adequate to fully fund the core functions of operating, maintaining, and rebuilding the existing state highway system. And while these core functions must happen in order to preserve the existing state highway system, this system will not accommodate the region's growing highway needs. For our growing region to continue to prosper, adequate funds are needed for both existing system preservation, as well as system modifications that increase mobility. These modifications would require additional funds.

Figure 3 illustrates the highway investments that have been identified to date in the 2018-2027 timeframe. Because of identified funding constraints, few projects that increase mobility on our highways are anticipated after 2026. As mentioned earlier, some highway projects that increase mobility could be funded and led by local jurisdictions through new or expanded county sales and wheelage taxes.

Figure 3: Identified Highway Projects 2018 through 2027 (Current Revenue Scenario)



Additional information about the categories identified in Figure 3 can be found in Chapter 5, "Highway Investment Direction and Plan" of the *2040 Transportation Policy Plan (2018 update)*.

The Increased Revenue Scenario in this transportation plan calls for an additional $9 billion to $11 billion (in current dollars) above the Current Revenue Scenario. It is based on the 2016 update to MnDOT's Minnesota State Highway Investment plan, plus updated information from MnDOT. This only includes MnDOT's system and does not reflect the significant part of the regional highway system owned by counties and cities. Spending in the Increased Revenue Scenario would include programs such as:

- Requirements for additional highway operations and maintenance funding, estimated at $500 million to $1 billion, an increase of up to 35% over current funding
- Increases in highway, safety, and multimodal investments of approximately $4 billion to $5.5 billion, an increase of up to 50% over current spending levels
- Additional improvements for improved mobility and access projects of $4.5 billion, a 250% increase over current spending levels

Transit Investment Summary

Chapter 6, "Transit Investment Direction and Plan," includes about $35 billion (calculated according to the year the funds will be spent) of transit investments under the Current Revenue Scenario. Additional bus and support (like customer information centers, scheduling centers, and maintenance facilities) system expansion and transitway projects are identified for potential investments in the Increased Revenue Scenario. A summary of the plan's outcomes for the Current Revenue Scenario for transit is summarized below.

Current Revenue Scenario – Bus and Support System

The bus and support system includes local, express, dial-a-ride, and vanpool services that are available throughout the entire metropolitan area.

- The region is able to operate and maintain the existing bus and support system with current revenues.
- No significant expansion of bus service is available in the Current Revenue Scenario beyond the growing demand for Metro Mobility dial-a-ride service for people with disabilities.
- There are funds for limited expansion and modernization of the bus and support system through maintenance and preservation efforts and through competitive funds like the Regional Solicitation or unique federal programs.

Current Revenue Scenario – Transitway System

In the Current Revenue Scenario, the region is able to operate and maintain the existing transitways, which include the METRO Blue Line, METRO Green Line, METRO Red Line, A Line, and Northstar Line.

In the next decade, the region also expects to expand the transitway system by:

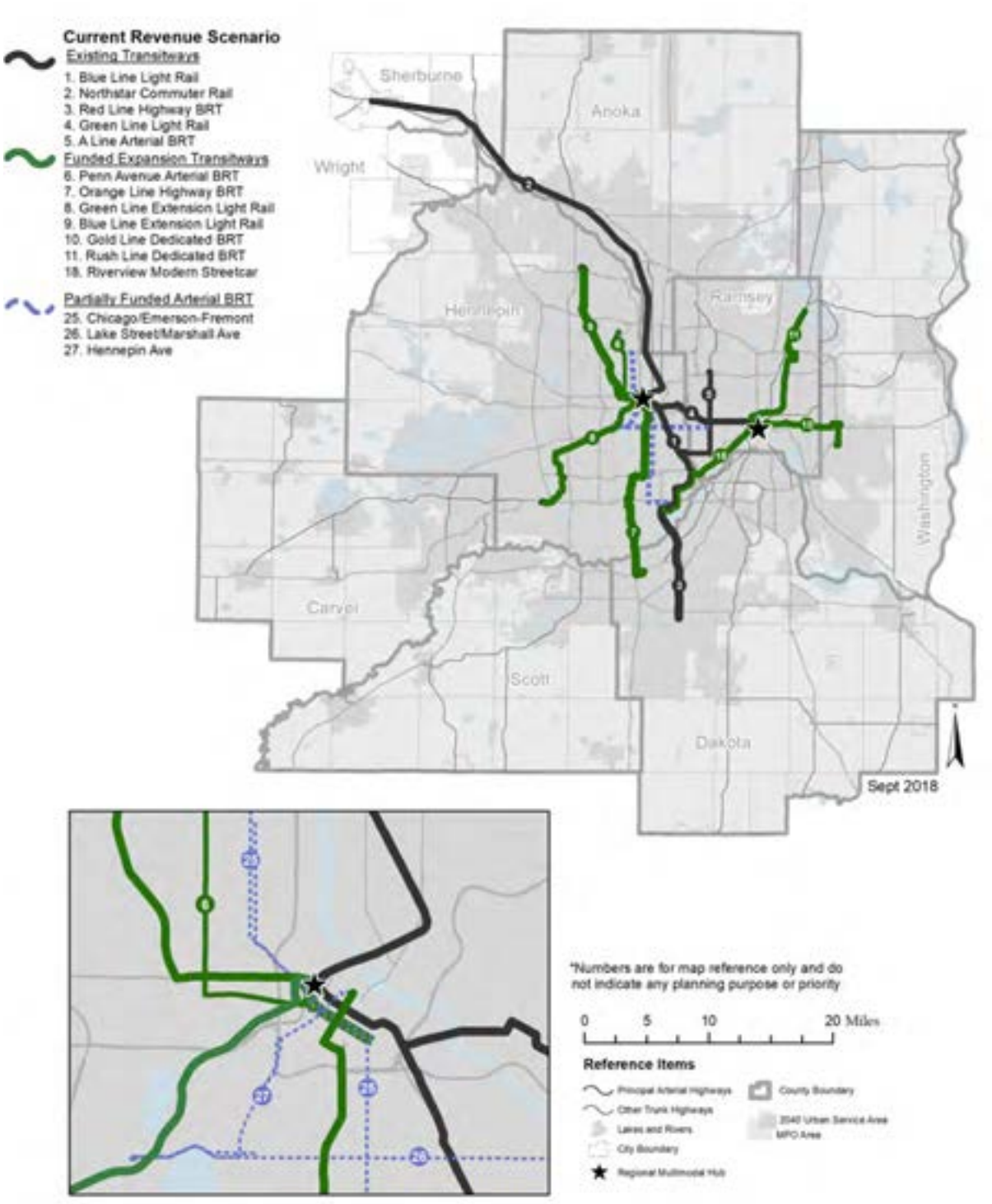
- Building and operating five additional METRO lines:
  - METRO Orange Line (I-35W South Bus Rapid Transit)
  - METRO Green Line Extension (Southwest Light Rail)
  - METRO Blue Line Extension (Bottineau Light Rail)
  - METRO Gold Line (Gateway dedicated bus rapid transit)
  - Rush Line dedicated bus rapid transit
- Building another BRT line on an arterial (urban street) roadway: C Line (Penn Avenue North)

With several metro-area counties generating revenues for transit investments, a number of other priorities could emerge as county plans are finalized. In Ramsey County, the Riverview Corridor Policy Advisory Committee has developed a modern streetcar project and made it a priority in their funding plans. The Council amended the *2040 Transportation Policy Plan* in February 2019, adding the Riverview transitway project to the Current Revenue Scenario.

In addition, funding for three BRT lines on arterial streets, like the A and C lines, has been identified, at least for parts of their implementation. This includes BRT on Chicago-Emerson-Fremont Avenues in Minneapolis, Lake Street and Marshall Avenue in Minneapolis and Saint Paul, and Hennepin Avenue in Minneapolis. Of these lines, the Chicago-Emerson-Fremont line is the highest priority for implementation, and the Council is aggressively seeking funding for the remaining capital costs. Planning and engineering work on these corridors will continue to advance until all the funding is identified for a future update or amendment to the Transportation Policy Plan.

A number of other policy groups and local project sponsors have developed study recommendations for transit projects throughout the region. These projects cannot be included in the Transportation Policy Plan's Current Revenue Scenario until their funding outlook meets the reasonableness requirement for federal transportation planning. These projects are included in the Increased Revenue Scenario but could be amended into the Current Revenue Scenario if their status changes.

Figure 4: Map of Existing Transitways and Current Revenue Scenario Expansion Transitways



Increased Revenue Scenario — Bus and Support System

The Increased Revenue Scenario includes an expansion of funds for bus service averaging 1% per year, between 2015 and 2040. The needs for bus service likely exceed this estimate – the Regional Service Improvement Plan (described in Chapter 6, "Transit Investment Direction and Plan") provides the basis for the most current assessment of these needs. The capital needs for bus service expansion are included in the Increased Revenue Scenario. These would provide opportunities to modernize the bus system and offer an improved overall customer experience.

The improvements in bus service under the Increased Revenue Scenario would provide for:

- Improved frequencies and hours of service on existing bus routes for more reliable, attractive service to more destinations
- Expanded bus route coverage to new areas, with an emphasis on connecting medium- and high-density residential areas with jobs and transitways
- Expanded commuter and express bus routes to new markets and improved routes where capacity is needed

Bus service expansion would be prioritized based on investment factors in Chapter 6, "Transit Investment Direction and Plan," and would identify opportunities for all regional transit providers.

Under the Increased Revenue Scenario, modernization and expansion of transit facilities would provide for:

- Improved or expanded customer facilities including more shelters, better customer information, improved multimodal connections, and more amenities
- New and expanded park-and-rides
- Expanded bus garages, layover facilities, and operations support facilities associated with the expansion of the system

Increased Revenue Scenario – Transitway System

The Increased Revenue Scenario identifies potential projects for accelerated investment in the transitway system by 2040. The level of investment and a list of prioritized projects will depend on a number of factors, including the details of proposed investments. There is a level of uncertainty in any project cost estimate during the planning process. Similarly, the need for funding to operate and maintain a transitway project depends on when a project would open, which is currently undetermined in this plan for the Increased Revenue Scenario. The technical and policy investment factors for setting transitway priorities would be considered in an Increased Revenue Scenario in a future plan update. For more information, see Chapter 6 "Transit Investment Direction and Plan."

This scenario could reasonably include investments in corridors identified in Figure 5 "Transitway System in an Increased Revenue Scenario," which are categorized based on their development status as follows:

Projects with study recommendations in advanced stages of development (e.g., environmental documentation or early engineering):

- METRO Red Line future stages
- Nicollet-Central modern streetcar

Projects with study recommendations:

- Midtown rail
- Red Rock bus rapid transit
- West Broadway modern streetcar
- Highway 169 bus rapid transit

Projects under study or to be studied:

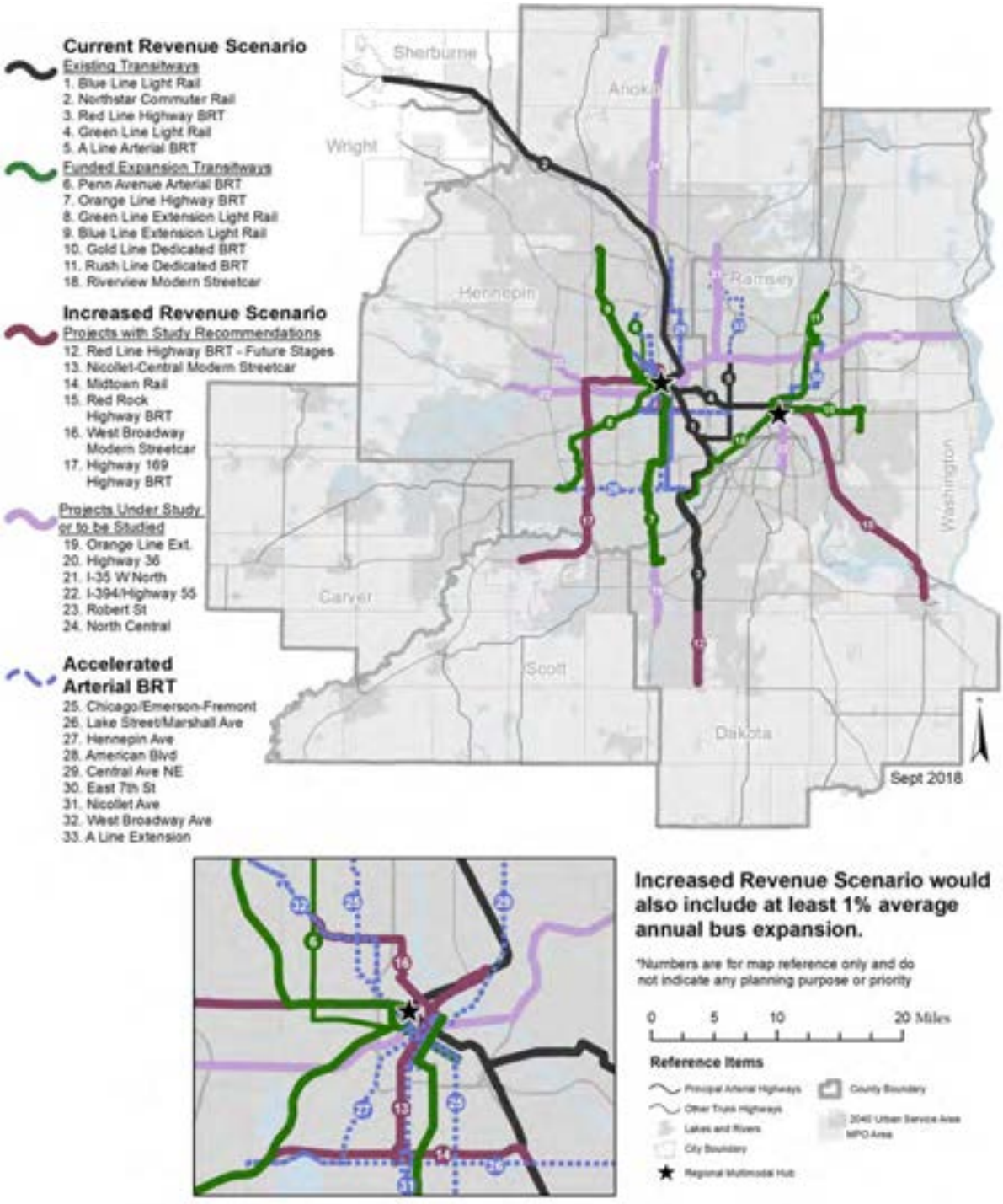
- METRO Orange Line Extension
- Highway 36
- I-35W North
- I-394/Highway 55
- Robert Street
- North Central

The Increased Revenue Scenario could also reasonably include the following arterial bus rapid transit investments[1], beyond the funded and partially funded projects in the Current Revenue Scenario:

- American Boulevard
- Central Avenue NE
- East 7th Street
- Nicollet Avenue
- Robert Street
- West Broadway Avenue

[1]Several arterial bus rapid transit corridors are under consideration for other modes, such as modern streetcars.

Figure 5: Map of Transitway System in an Increased Revenue Scenario – Building an Accelerated Transitway Vision

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Local Transportation Investment Summary

Local transportation includes all projects that are implemented or operated by cities and counties on local transportation system within their boundaries. These include local road and street operating and capital expenditures. It also includes expenditures for bicycle and pedestrian projects. As mentioned earlier, several counties also are investing in region-wide transportation system improvements.

Local transportation operations and capital expenditures are funded by three primary revenue sources: local property taxes and assessments, highway user taxes, and federal revenues. The highway user taxes are allocated to cities and counties based on state constitutional and statutory formulas that provide state aid for county and municipal state aid systems. According to MnDOT's long-range estimates, highway user revenues for use by local jurisdictions for transportation will grow over the period of the plan by 2% annually.

As mentioned earlier, federal revenues are allocated to cities and counties for transportation through the biennial (every two years) Regional Solicitation process. The Regional Solicitation allocates federal funds available to the region through the federal Surface Transportation Block Grant program, Congestion Mitigation Air Quality, and Highway Safety Improvement Program. The process is competitive between local project sponsors, like cities and counties. The Metropolitan Council and its Transportation Advisory Board, in their role as the region's metropolitan planning organization, use a detailed and transparent set of criteria to allocate the funds. Because these revenues are allocated through a competitive process every two years, it is difficult to know how much will be available to local governments. Based on past allocations of the federal funds, along with inflationary assumptions of 2.2% annually for federal revenues, this plan estimates that approximately $2.2 billion of federal revenues will be available for local transportation over the period of this plan. An additional $750 million from Regional Solicitation funds is expected to be allocated to transit and is reflected in the transit investment summary.

It is difficult to know how local spending on transportation will grow over the period of the plan. This plan assumes local transportation expenditures will grow at about the rate of inflation, approximately 4.5% annually for capital expenditures and 3% for operations spending. Because state and federal revenue for local use are growing at a rate less than inflation, locally controlled revenue sources, local property taxes and fees, and county transportation sales tax and wheelage taxes will be required to grow at a rate that exceeds inflation in order to maintain current levels of local transportation spending.

In 2018, the County Arterial Preservation study documented current pavement conditions on the A-minor arterials (e.g., Ramsey County Highway 34/University Avenue in Saint Paul and Dakota County Highway 31/Pilot Knob Road) as largely in good to fair condition. Based on

current policies and funding levels, the study estimated that, absent inflation, the region is well positioned to preserve pavement conditions. However, based on experience, inflation is expected to outpace the anticipated growth in revenue by a substantial margin. In the last years of this plan, this difference in revenue and cost growth could even reduce the buying power of transportation revenue by half or more. If this were to occur and current practices continued, the result could require an additional need between $800 million and $4 billion. This unmet need could be resolved in a number of ways. Agencies responsible for these roads will continue to implement better pavement management strategies and apply new technologies when available. They will also consider the need to shift resources towards preservation and away from other priorities, and further consider the need for additional transportation resources.

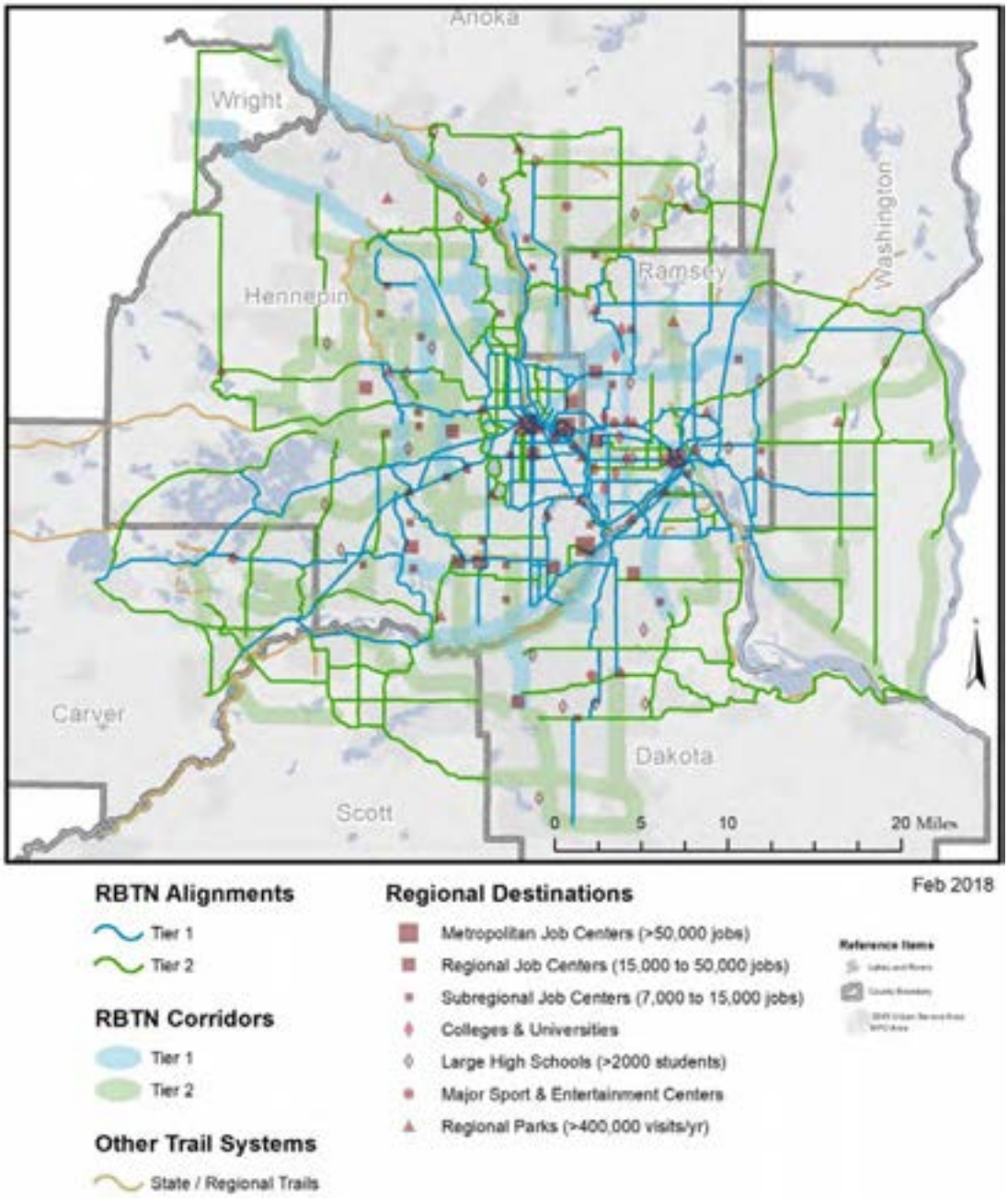
Regional Bicycle Transportation Network

The *2040 Transportation Policy Plan* adopted in 2015 established the Regional Bicycle Transportation Network as the official regional bikeway network. It sets the region's vision for bicycle planning and investment.

This network serves as the "backbone" arterial network to accommodate daily bicycle trips by connecting regional destinations and local bicycle networks. Additional goals include establishing an integrated and seamless network of on-street bikeways and off-road trails, and to encourage cities, counties, parks agencies and the state to plan and implement future bikeways that support the overall network vision.

Because there is limited funding for bikeway amenities at all levels, this regional network is planned to have the greatest potential to attract new riders. Specific facility treatments that can improve the attractiveness of the regional network to potential bicyclists are provided in Chapter 7 "Bicycle and Pedestrian Investment Direction." Cities, counties, and parks agencies are also encouraged to plan and implement local bicycle facilities that connect their local bikeway networks to the regional network.

Figure 6: Map of regional bikeway network



Aviation

Maintenance of existing airport facilities is the priority for aviation investments. Enhancements for the safety and security of air operations, many of which are required and funded by Homeland Security or Federal Aviation Administration, will also continue to be a priority.

Planned investments in the aviation system are demand driven and subject to change. They are reviewed every five to seven years as each airport updates its Long Term Comprehensive Plan. Larger projects beyond maintenance are not built unless needs warrant implementation.

An Environmental Assessment has been completed by the Metropolitan Airports Commission for all airport projects identified through 2020. Planned investments include a potential Minneapolis-Saint Paul International Airport (MSP) Terminal 2 expansion, since existing terminals are not capable of handling passenger numbers forecasted. Many of the future projects are landside based (e.g., terminals, roads, parking) and in progress, including roadway work, adding a hotel to the MSP campus, and large-scale terminal rehabilitation. The most recent long-term comprehensive plans also recommend runway extensions or runway relocations at Airlake Airport, Lake Elmo Airport, and South Saint Paul Airport. Preparation of Environmental Assessments and Environmental Assessment Worksheets are in progress at Lake Elmo and Crystal Airport.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Performance Outcomes

This Transportation Policy Plan builds on desired regional outcomes as identified in *Thrive MSP 2040* and discussed in the Goals and Objectives section: stewardship, prosperity, equity, livability, and sustainability. This plan also addresses federal transportation planning requirements including Environmental Justice and the development of a performance-based transportation planning and programming process as required by Fixing America's Surface Transportation (FAST) Act. Key performance outcomes are summarized here.

Equity and Environmental Justice

An important consideration for the Transportation Policy Plan is its impact on all populations in this region, particularly those who have been historically underrepresented, including communities of color, low-income populations, people with disabilities, and people with limited English proficiency. Past plans adhered to federal requirements for Environmental Justice; this plan further responds to additional aspirations for equity set forth in *Thrive MSP 2040*. In this plan, 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."

Specific strategies and investments identified in the Transportation Policy Plan serve to create benefits or mitigate impacts on historically underrepresented populations, including communities of color, low-income populations, people with disabilities, and people with limited English proficiency. The following summarizes these key strategies and investments. See Chapter 10, "Equity and Environmental Justice," for additional detail and discussion.

- **Public Engagement**: The Council prepared the *2040 Transportation Policy Plan* under its Public Participation Plan for Transportation Planning and has built on the extensive outreach and engagement completed for *Thrive MSP 2040*, including targeted community engagement with historically underrepresented communities.
- **Healthy and Cohesive Communities**: Historically, transportation investment decisions that encroached upon, divided, or displaced neighborhoods, cut off access to the regional transportation system or blocked multimodal options have done great harm to communities of color and low-income populations. The *2040 Transportation Policy Plan* seeks to reverse this direction by promoting the development and enhancement of healthy, connected communities.

- **Transit and Pedestrian Safety**: People of color, low-income residents, and people with disabilities currently use the regional transit and pedestrian systems at higher rates than the general population and are more likely to be vulnerable when they are traveling.
- **Provision of Options**: Key to the philosophy of the Transportation Policy Plan is the provision of options. The expansion of options to travel and to access employment and other opportunities without requiring an automobile is especially important to low-income populations, who are less likely to own or have access to a vehicle.
- **Focus on Preservation**: While an equity assessment of historical preservation and maintenance investments and system condition has not been performed, higher concentrations of low-income populations and people of color can be found in older areas of the region that would benefit from an increased focus on preservation.
- **Transit Service Planning**: Many of the Transportation Policy Plan's strategies are aimed at improving the preservation of the transportation system in the urban center communities, where the highest concentrations of low-income populations and communities of color are currently located.
- **Spatial Analysis of Investments**: The spatial analysis of investments planned in the Current Revenue Scenario does not result in disproportionately high and adverse impacts to historically underrepresented populations.
- **Accessibility Analysis of Investments:** Highway and transit investments in the Current Revenue Scenario increase accessibility to jobs and other community amenities by both automobile and transit for both people of color and the total population. Transit investments in the Current Revenue Scenario provide higher percentage increases in accessibility for every destination type for people of color compared to the total population.

Air Quality

The federal Environmental Protection Agency has designated the Twin Cities region as a limited maintenance area for carbon monoxide. For air quality conformity analysis, this area includes the seven-county Metropolitan Council jurisdiction plus a portion of Wright County and a portion of the City of New Prague. A map of the area is included in Appendix E. Pursuant to the Air Quality Conformity Rule, the Council certifies that this plan conforms to the State Implementation Plan and does not conflict with its implementation.

Transportation System Performance Measurement and Monitoring

Federal transportation funding law requires that the metropolitan planning process establish and use a performance-based approach to transportation decision-making. The Federal Highway Administration has issued rules to implement the performance-based approach. The rules address challenges facing the highway system, including:

- Improving safety
- Maintaining infrastructure condition
- Reducing traffic congestion
- Improving efficiency of the system and freight movement
- Protecting the environment
- Reducing delays in project delivery

In addition, the Federal Transit Administration has implemented performance measures addressing transit infrastructure condition.

Implementation of these performance measures by the Minnesota Department of Transportation (MnDOT) and the Metropolitan Council are detailed in the federal rules. The two agencies must establish targets for each performance measure. The safety performance measure must be reviewed annually in compliance with National Highway Traffic Safety Administration reporting requirements. All other measures must be reviewed biennially with two-year and four-year targets being set by MnDOT. The Metropolitan Council is required to either support the relevant MnDOT targets or establish targets within 180 days following the establishment of the state targets.

In addition to the federally-required performance measures, the Transportation Policy Plan includes a number of measures developed to better assess the plan's impacts on issues important to the region. The historic trends of many of these measures are documented in the 2016 Transportation System Performance Evaluation. The Council is required to prepare this assessment prior to the update of each Transportation Policy Plan. Key findings from the initial performance measurement are summarized below. See Chapter 13, "Performance Outcomes," for more detail and discussion.

These local measures were based on the measures reported in the previous *2040 Transportation Policy Plan* adopted in January 2015 and developed in coordination with the region's transportation providers. Targets for relevant local performance measures and the federal measures will be developed and adopted by the end of 2018.

By implementing the transportation projects identified in the Current Revenue Scenario, the region is forecasted to experience the following outcomes by 2040. The point of comparison is the transportation system as it exists in 2015 with no additional investments.

- Forecast vehicle miles traveled: 90,092,000 (20% more than existing, 0.2% more than no-build scenario.)
- Forecast vehicle miles traveled per capita: 23.3 (2.5% less than existing, the same as the no-build scenario.)
- Forecast transit ridership: 460,000 Current Revenue Scenario would result in an increase of 145,000 dailly transit trips from current conditions; the no-build scenario would result in an increase of 74,000 from current conditions.

Public Engagement

The *2040 Transportation Policy Plan* was prepared following the Metropolitan Council's *Public Engagement Plan* and its ***Public Participation Plan for Transportation Planning,* which meets requirements of 23 CFR§450.316 and federal guidance on Environmental Justice.**

This transportation plan was built on the extensive outreach and engagement activities that informed the development of *Thrive MSP 2040.* In developing *Thrive MSP 2040*, the Council engaged thousands of residents throughout the region, including targeted community engagement with historically underrepresented communities.

In addition, this plan, and its related elements, was created in collaboration with technical subject matter experts and policymakers who serve the Transportation Advisory Board and its technical advisory committees. The members of the board and technical committees reflect all levels of government (city, county, regional, state, federal) and interested parties who represent different transportation modes and community interests.

The Transportation Policy Plan strategies listed under the "Healthy and Equitable Communities" goal commit the Metropolitan Council and its regional transportation partners to foster public engagement in all systems planning and project development. Projects in the *2040 Transportation Policy Plan* (adopted in 2015) Work Program—and related studies performed by local government partners, the Metropolitan Council, and MnDOT since 2015—are included as public engagement. These studies led to changes in regional policy or adjustments to this 2018 update to the *2040 Transportation Policy Plan.*

Those studies included the following:

- MnPASS corridors
- Principal Arterials Intersection Conversion
- Truck Freight
- Minnesota State Highway Investment Plan
- Congestion Management Safety Plan
- Highway 169
- Transportation System Performance Evaluation
- Riverview Corridor
- Rush Line Corridor
- West Broadway Transit Corridor

PUBLIC ENGAGEMENT

14,500+ PEOPLE ENGAGED

600+ AGENCY STAKEHOLDERS INVOLVED

NEARLY 300 MEETINGS/ INTERACTIONS

COMMUNITIES AND INTEREST GROUPS ENGAGED

- *Communities of color*
- *People with disabilities*
- *Immigrant and refugee groups*
- *Other racial and ethnic groups*
- *LGBTQ Communities*
- *Low-income communities*
- *Transit-dependent populations*
- *Senior populations*

METHODS USED

- *Listening Sessions*
- *Online tools*
- *Surveys*
- *Visualization techniques*
- *Bus-stop outreach*
- *Stakeholder meetings*
- *Focus Groups*
- *Meetings: town hall, pop-up, small groups, one-on-one, open house*

Draft 2018 Update to the 2040 Transportation Policy Plan

The 2018 draft update to the *2040 Transportation Policy Plan* was released for public comment on June 28, 2018. Public comment was received through Aug. 13, 2018. A public hearing was conducted on Aug. 1, 2018.

During the public comment period, nearly 300 comments were received from about 150 organizations and individuals, including 25 people who testified at the Aug. 1 public hearing. A complete summary of the public comment period is posted at metrocouncil.org/tpp.

Among the dominant themes from the public comment process were a number of elements related to transportation operations, which were primarily addressed in Chapter 2 of this document, through strategies and supportive local actions. Issues included:

- Advocating for a conversion to an electric-powered bus fleet by 2030 (see the Challenges and Opportunities section of this Overview on page 27)
- Concern over police presence on the transit system, for general policing and fare enforcement (see Strategy B8 in Chapter 2)
- Advocating for no/low fares and better promotion of the Transit Assistance Program, a low-income fare program offered by Metro Transit (fare policy is governed separately from the Transportation Policy Plan)


WARNING

Mandates and Requirements for Regional Transportation

State-Mandated Comprehensive Guide and Related Systems Plans

This Transportation Policy Plan is based on the regional comprehensive development guide and plan, *Thrive MSP 2040,* that the Council is required by state law (Minn. Stat. 473.145) to prepare every 10 years for Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. *Thrive MSP 2040* provides a policy framework for regional systems plans for water resources, regional parks, housing, and transportation. The Transportation Policy Plan also fulfills state requirements for land transportation and aviation plans (Minn. Stat. 473.146), and incorporates and supports state goals from the Next Generation Energy Act (Minn. Stat., sec 216H.02) to reduce greenhouse gas emissions.

Mandated Federal Metropolitan Transportation Plans

The Transportation Policy Plan fulfills all requirements in federal law (23 USC §134 and 49 USC §5303) for a Metropolitan Planning Organization for a region in air quality maintenance status to prepare and update a metropolitan transportation plan at least every four years. The plan also conforms to all air quality-related requirements for metropolitan transportation plan content and development in the Clean Air Act (42 USC §85).

In addition, the 2010 Census identified urbanized (developed) areas of Wright and Sherburne counties (primarily along the I-94 and U.S. Highway 10 corridors) as part of the Minneapolis-Saint Paul urbanized (developed) planning area. Federal transportation law therefore required that those areas be included in this plan, though these areas are not otherwise a part of the Metropolitan Council's jurisdiction, which includes Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties.

The preparation of this report 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.

The Council's mission is to foster efficient and economic growth for a prosperous metropolitan region.

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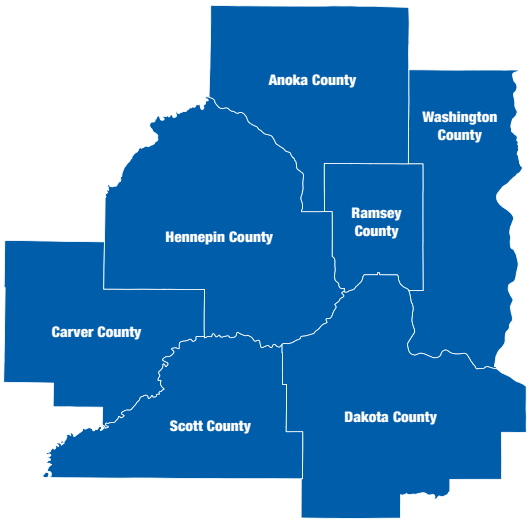

The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, engages communities and the public in planning for future growth, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

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CHAPTER 1

THE TRANSPORTATION SYSTEM VISION AND PERFORMANCE-BASED PLANNING

What is Performance-Based Planning?

Relationship to the Metropolitan Transportation Planning Process

Long-range metropolitan transportation planning is required under federal law and Minnesota state law. Its purpose is to facilitate a process for determining how to invest in transportation to meet the travel needs of a metropolitan area. Federal law is grounded in the concept of the "Three C's" in which the metropolitan transportation planning process should be comprehensive, cooperative, and continuing. State law also establishes a strong role for the regional integration of transportation planning with local government planning through the Metropolitan Land Planning Act.

The Three C's Planning Process

Comprehensive: Consideration of a wide range of strategies and investments

Cooperative: Participation by all relevant agencies, organizations and the public

Continuing: Including an on-going performance-based monitoring, evaluation and update process

The metropolitan transportation planning process provides for the consideration and implementation of transportation strategies, projects, and services that work toward addressing the travel needs of a metropolitan area. Performance-based planning provides a framework for evaluating the potential performance of a long-range transportation plan. Performance-based planning is a significant part of the "continuing" aspect of the federal planning law. There are five major aspects of the transportation planning process that can be described in terms of questions they are trying to answer:

1. *Where are we now?* – Current conditions, system performance, and issues
2. *Where do we want to go?* – Goals and objectives for the transportation system
3. *How are we going to get there?* – Strategic direction and investment priorities
4. *What will it take?* – Funding levels and list of projects
5. *How did we do?* – Evaluation of performance measures and targets

These questions are generally addressed in sequential order. At the end of the process, the strategies and investments are put into practice and the planning process starts over again after a few years. If performance is less than expected, the "continuing" planning process allows for and expects the strategies and investments to be revisited. Figure 1-1 illustrates how this process functions and interacts with public involvement and data evaluation.

Figure 1-1 – Performance-based Planning Framework

Source: FHWA Performance-based Planning and Programming Guidebook, Page iv.

Elements of Performance-Based Planning

There are a number of key elements to performance-based planning described below: goals, objectives, performance measures and targets, and strategies. This chapter introduces the goals and objectives framework for the plan.

Goals

A goal is a broad statement that describes a desired end state. Transportation planning goals represent key priorities for desired outcomes for the transportation system and/or for society as a whole. Goals are typically broad, visionary statements focused on key priority topics.

Objectives

An objective is a specific, measurable statement that support the achievement of goals. Transportation objectives describe an achievable outcome within constraints (timeframe, funding). Objectives are more specific than goals and there often multiple objectives for every goal.

Performance Measures and Targets

Performance measures and associated targets serve as the basis for measuring objectives with technical analysis and data. Performance measures are used to compare alternative plan strategies and for tracking performance over time. Performance measures and targets can also be used to identify the location, extent, and intensity of travel needs or deficiencies.

More information on the plan's performance measures and targets can be found in Chapter 13, "Plan Outcomes."

Strategies

Strategies describe actions that can or will be taken to address goals and objectives. Strategies describe the role of programs, policies, and priorities in determining a list of projects and services for investment. Strategies can also address guiding principles for how implementing partners will act to progress toward goals and objectives. The strategies used to achieve the broad goals described in the plan may at times need to balance potential outcomes against one another to maximize benefits to the region while minimizing negative impacts.

This transportation plan's strategies are discussed in more detail in Chapter 2, "Transportation Policy Plan Strategies."

What are the Federal Requirements?

Federal transportation legislation first established performance-based planning requirements for metropolitan planning organizations (MPOs) in 2012 with the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was continued in 2015 with the Fixing America's Surface Transportation (FAST) Act. The requirement is for a streamlined and performance-based process for transportation planning, implementation, and evaluation that shows how these together will address national transportation goals. National goals for performance areas include:

- **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** – To maintain the highway and transit system infrastructure assets in a state of good repair.
- **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System.
- **System Reliability** – To improve the efficiency of the surface transportation system.
- **Freight Movement and Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

- **Environmental Sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays** – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

The legislation also requires metropolitan regions to use a performance-based planning process when identifying how transportation funds will be allocated and to assess progress towards meeting national and regional goals. This Transportation Policy Plan responds to this mandate in its regional transportation goals and objectives that address and go beyond federal goals to align with the region's new metropolitan development guide, *Thrive MSP 2040*.

Federal Requirements for Performance-Based Planning

"Metropolitan planning organizations … in cooperation with the state and public transportation operators, shall develop long-range transportation plans and transportation improvement programs through a performance-driven, outcome-based approach to planning…" 23 USC § 134(c)(1); 49 USC § 5303(c)(1).

"The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals…." 23 USC §134(h)(2); 49 USC § 5303(h)(2)

What is the Relationship to *Thrive MSP 2040*?

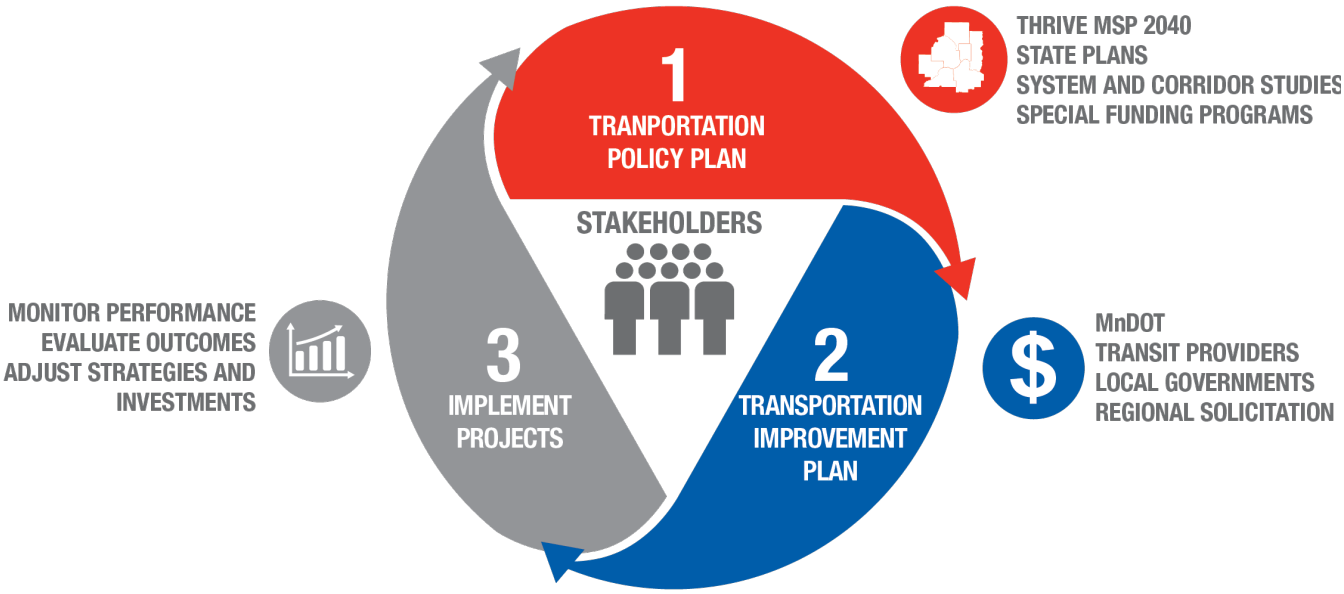
Thrive MSP 2040 is our region's long-term development guide and provides the coordinated vision for transportation, water resources, parks, housing and other essential services for our region's future. *Thrive MSP 2040* identifies five key outcomes for the region to achieve over the next 25 years:

- **Stewardship** advances the Council's longstanding mission of orderly and economical development by responsibly managing the region's natural and financial resources and making strategic investments in our region's future.
- **Prosperity** is fostered by investments in infrastructure and amenities that create regional economic competitiveness, thereby attracting and retaining successful businesses, a talented workforce, and consequently, wealth.
- **Equity** connects all residents to opportunity and creates viable housing, transportation, and recreation options for people for all races, ethnicities, incomes, and abilities so that all communities share the opportunities and challenges of growth and change.
- **Livability** focuses on the quality of our residents' lives and experiences in our region, and how places and infrastructure create and enhance the quality of life that makes our region a great place to live.
- **Sustainability** protects our regional vitality for generations to come by preserving our capacity to maintain and support our region's well-being and productivity over the long term.

In addition to providing a coordinated vision, *Thrive MSP 2040* establishes the socio-demographic forecasts and land use policy for the region's future. The Transportation Policy Plan goals, objectives, strategies and investments reflect how the transportation system will contribute to achieving the regional outcomes identified in *Thrive MSP 2040*.

About the long-range planning process

The 2040 Transportation Policy Plan (TPP) identifies policies, strategies and investments for the regional transportation system that work toward the desired outcomes found in Thrive MSP 2040, the region's development guide. State plans, system and corridor studies and the conditions of special funding programs influence the TPP strategies and investments for the region's highways and roads, transit and transitways, bike and pedestrian infrastructure, aviation and freight.



All proposed federally funded transportation projects in the Metropolitan Council's planning region are included in the Transportation Improvement Program (TIP). Those projects include major local projects, projects awarded federal funds through the regional solicitation or other competitive federal grant, and projects programmed by regional transit providers or the Minnesota Department of Transportation.

Whether a state project led by MnDOT, a local project led by a county, or a transit project led by a transit provider, as projects are completed, the Council monitors changes in how well the transportation system is performing as a result of these investments. This assessment provides the Council with insights on where investments are most needed and the types of investment that gain the most benefits for the region.

Throughout these steps, the Council regularly engages in discussion and feedback from policymakers and technical partners throughout the region, and incorporates ideas and feedback from other regional stakeholders, including residents, business owners, and advocates for various community and transportation organizations.

What are the Region's Transportation Goals and Objectives?

There are six goals and 20 objectives that make up the performance-based planning vision for the Transportation Policy Plan. Below is a general overview of the six goals and Table 1-1 includes a list with the objectives.

Transportation System Stewardship – *Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.*

The transportation system that exists, at any given time, needs to be maintained and operated. The priority is to keep the system we have in working order and maximize its potential in terms of effectiveness and efficiency. Keeping up a well-maintained, functional transportation system is at the core of transportation investment.

Safety and Security – *The regional transportation system is safe and secure for all users.*

In order for the transportation system to function well, it needs to be safe and secure. Safety and security are not only essential to protect life, but also to instill confidence in the user of the system. Every investment in the transportation system should strive to make it safer and more secure for the users.

Access to Destinations – *A reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond.*

Transportation is fundamentally about providing access to destinations, the places where people and goods want to go. People choose destinations based on the ease of access, whether that relates to cost, their trust that the system will work reliably, or the transportation mode that might be able to get them there. When access is possible, other factors will also affect how people choose to get to destinations, such as the travel time, reliability, pleasantness, comfort, and safety of the trip. Travel preferences can vary widely across people and transportation modes.

Competitive Economy – *The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.*

A well-developed and functioning, multimodal transportation system is a significant attractant to worldwide business and talent. It also helps the region retain existing businesses and residents, allowing them to thrive in current and future work environments by supporting efficient movement.

Healthy and Equitable Communities – *The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments.*

The transportation system can be the catalyst for improving communities, but it can also contribute negatively to communities, and historically has had disparate impacts on communities of color and other underrepresented communities. The transportation system needs to contribute to the health and vitality of all communities, and avoid worsening the world we all live in. This includes protecting and enhancing the existing communities and their cultures as well as future communities and cultures.

Leveraging Transportation Investments to Guide Land Use – *The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.*

The effective use of land by people and businesses requires a transportation system to access it. Similarly, land use drives the need for the transportation system. The two systems must work together to be effective, and the transportation system can be a catalyst for land use change that will contribute toward achieving the other five goals.

Table 1-1 – The Plan's Performance-Based Planning Framework of Goals and Objectives

Goal	Objectives
A. Transportation System Stewardship ***Goal Statement*** *Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.*	• Efficiently preserve and maintain the regional transportation system in a state of good repair. • Operate the regional transportation system to efficiently and cost-effectively connect people and freight to destinations
B. Safety and Security ***Goal Statement*** *The regional transportation system is safe and secure for all users.*	• Reduce fatal and serious injury crashes and improve safety and security for all modes of passenger travel and freight transport. • Reduce the transportation system's vulnerability to natural and human-caused incidents and threats, including climate change and terrorism.
C. Access to Destinations ***Goal Statement*** *A reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond.*	• Increase the availability of multimodal travel options, especially in congested highway corridors. • Increase travel time reliability and predictability for travel on highway and transit systems. • Ensure access to freight terminals such as river ports, airports, and intermodal rail yards. • Increase the number and share of trips taken using carpools, transit, bicycling and walking.

Goal	Objectives
	• Improve the availability and quality of multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations.
D. Competitive Economy ***Goal Statement*** *The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.*	• Improve multimodal access to regional job concentrations identified in *Thrive MSP 2040*. • Invest in a multimodal transportation system to attract and retain businesses and residents. • Support the region's economic competitiveness through the efficient movement of freight.
E. Healthy and Equitable Communities ***Goal Statement*** *The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments.*	• Reduce transportation-related air emissions. • Reduce impacts of transportation construction, operations, and use on the natural, cultural, and developed environments. • Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities through the use of active transportation options.
F. Leveraging Transportation Investments to Guide Land Use ***Goal Statement*** *The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.*	• Focus regional growth in areas that support the full range of multimodal travel. • Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement. • Encourage local land use design that integrates highways, streets, transit, walking, and bicycling. • Encourage communities, businesses and aviation interests to collaborate on limiting incompatible land uses that would limit the use of the region's airports.

The strategies or actions that the Metropolitan Council and its transportation partners can take to help achieve the regional transportation goals and objectives are discussed in Chapter 2, "Transportation Policy Plan Strategies." The key regional performance measures, how the system is currently performing and the performance that can be expected in the future under the both the current revenue and increased revenue scenarios is discussed in the Chapter 13, "Performance Outcomes."

CHAPTER 14
WORK PROGRAM

The Metropolitan Council will carry out or participate in many studies and plans over the next three years. This is not an exhaustive list of all work to be completed by the Metropolitan Council, but rather a list of projects that will contribute to the work of the Metropolitan Council and will likely require coordination among agencies. Several ongoing work items that are regularly conducted by the Metropolitan Council are not included here. The studies listed here will be used to gather additional information and perform further analysis to inform future revisions to this policy plan. The next scheduled update of the Transportation Policy Plan, as required by state and federal law, is due in 2023.

Highway Related Studies

Congestion Management Process (CMP) Plan

The Congestion Management Process (CMP) is a cooperative, cohesive, data-driven, and regionally-agreed upon process to identify and mitigate congestion along the transportation network. To assist in strengthening the regional congestion management process, the Metropolitan Council has added an item to the work program specifically addressing CMP-related items.

The plan will be used to determine the extent of the CMP network, develop methodologies for analyzing and measuring congestion, establish a comprehensive data collection program for regional coordination and monitoring, and assess the effectiveness of previous CMP strategies in mitigating congestion within the region. The end result of this effort will be a report that is organized around the federal eight-action step process and will serve to guide the regionally coordinated Congestion Management Process.

As part of the CMP, the Metropolitan Council will assess the thresholds for determining if a roadway is congested, particularly on the arterial network. Different ways to measure, display, and communicate congestion to the public will also be further explored.

Freeway System Interchange Study

System-to-system interchanges serve as the connection of two freeways and are critical links in the region's highway system. Over the past 15 years, the congestion and crash problems at these locations have increased significantly. Major investments have recently been made at system interchanges, such as U.S. Highway 169/I-494, I-35W/Minnesota Highway 62 and I-35E/I-694. Other system interchanges are often cited for needing improvements including I-35W/I-494 (a northbound I-35W to westbound I-494 flyover ramp was recently programmed for construction), I-94/I-494/I-694 (ramp improvements programmed for construction) and I-35W/I-694, as examples. The level of problem and cost of solutions at these locations overshadow most other mobility and crash problem areas in the region.

The Increased Revenue Scenario of the 2040 Transportation Policy Plan lists system interchanges as a Strategic Capacity Expansion project type. However, the analysis of the individual interchange problems, identification of solutions, and funding have proceeded independently. As such, there is currently not any prioritization of these projects if more money would become available to the region. This work program item prioritizes these interchanges, so that the region can have the best information available on where to invest limited resources. Similar regional prioritization efforts have been completed for other investment types, such as MnPASS.

This task would be a joint effort between MnDOT and the Metropolitan Council.

Prioritize Bridge Replacement

MnDOT has compiled a list of major bridges (over $5 million) statewide that need repair or replacement by 2030 but are not planned to receive funding in MnDOT's 10-year Capital Highway Investment Plan (CHIP). Over 50% of the 60-plus statewide bridges that meet this threshold are in the Twin Cities Metropolitan Area.

The order in which these bridges are repaired or replaced, and level of investment received, will be determined in large part by each bridge's condition. While the bridge's condition and sufficiency ratings are important criteria to use in these decisions, there are other factors that should also be considered given the region's multiple needs and limited resources. If multiple objectives such as mobility, safety, bicycle, pedestrian, and transit can be met with bridge construction or reconstruction, the region can benefit. These other factors should also be considered when investment decisions are made.

This task would be a joint effort between MnDOT and the Metropolitan Council.

Highways Performance Measures and Funding Decisions

As highway assets degrade, more and more of the transportation revenues are needed to preserve the existing system. This effort will look at existing pavement and bridge performance targets. It will also analyze the assumptions used in the pavement and bridge models to allocate resources to see if they adequately account for the high the amount of traffic and freight in the region. The study will also examine other performance measures, such as mobility, to see how they might play a role in MnDOT funding decisions.

This task would be a joint effort between MnDOT and the Metropolitan Council.

Connected and Autonomous Vehicles

The advent of more connected vehicles, the rapid development of autonomous vehicles, and the evolution of new models of new transportation ownership/provision will have profound impacts on the region's transportation use, economics, and infrastructure. The Metropolitan Council is well positioned to convene regional stakeholders to formulate policy responses to technology change and to study impacts to all transportation modes and systems.

Collaboration among state, regional, local, and corporate stakeholders will be necessary to address the myriad of issues in how legislation, regulation, policy, and planning tools address issues across all

transportation modes resulting from connected and autonomous vehicle adoption. The Metropolitan Council, with MnDOT, will work together on developing regional collaboration among all transportation stakeholders on connected and autonomous vehicle technology, deployment, policy, and planning. The collaboration may take the form of a new committee, a set of workshops, and dedication of staff resources.

Metropolitan Council staff will continue to participate in national conversations regarding connected and autonomous vehicles and will become local experts on planning efforts, integrating work being done by USDOT, the Association of Metropolitan Planning Organizations, the Transportation Research Board, researchers, other peer regions and states into regional planning work.

The following list of Work Program items are related to the topic of connected and autonomous vehicles. The field of vehicle automation continues to evolve rapidly. It is expected that any specific work plan will become out-of-date rapidly, and these items will be revisited and potentially amended annually.

Connection to TPP Goals and Objectives, Issue Analysis

A matrix will be continuously updated with links to relevant materials on connected and autonomous vehicle attributes, development and implementation status, and positive/negative benefits relative to Transportation Policy Plan goals and objectives and to Thrive MSP 2040 outcomes. A key objective of this matrix will be to give access to Metropolitan Council Members and other policymakers to structured information on multiple sides of emerging issues.

Scenario Development and Performance Measurement

Connected and autonomous vehicle development will be integrated into a performance-based planning framework. Measures will be developed to track the trajectory for various potential scenarios that the region, or parts of it, may be experiencing. Scenarios may include adoption rate of autonomous and/or connected technology, public acceptance of a particular technology, and the degree to which public and private shared mobility technologies exist and affect travel behavior. How and at what rate connected and autonomous vehicles will exist in the market in the planning horizon is uncertain, and planners and policymakers need to begin to plan for the possibility of multiple futures.

Integration into Congestion Management Process

Connected and autonomous vehicles scenarios will be integrated into potential Transportation System Management and Operations planning.

Emerging Truck Technologies

A review will be conducted of new and emerging technologies related to freight transportation. Among other issues, this review will include a planning and implementation assessment of automation technology for the commercial trucking industry. This effort will document current and planned deployment of autonomous trucks, the implications for street/highway planning, and the potential impacts to the freight transportation workforce.

Forecasting and Investment Assessment

Work will continue on quantifying the outcomes of multiple potential future scenarios on key transportation metrics. Transportation models will be developed and enhanced to respond to the types of change that experts anticipate under these scenarios. This work will ultimately provide a risk-assessment of Transportation Policy Plan investments in light of connected and autonomous vehicle adoption.

Regional Transportation Research and Modeling

The Metropolitan Council has historically, in coordination with MnDOT and regional partners, conducted a battery of data collection to learn about where, how, when, how often, and why people in the region travel. The Travel Behavior Inventory (TBI) is used to provide policymakers and researchers current data about travel in the region and to develop updates to the region's travel demand forecasting models. During the last four years, the region has transitioned the TBI program from a decennial project to a continuing program of data collection and travel model improvement activities.

Travel Behavior Inventory Program

The centerpiece of the TBI program will be a biennial household travel survey, beginning in 2018. A transit on-board survey will be conducted every five years, with the next occurring in 2021. Other data collection activities may be done as custom surveys or as third-party data purchases.

Regional Travel Demand Model

Work will continue on implementing and enhancing the Activity Based Model that has been released over the past couple of years. Several projects to add analytical components to the model, in coordination with planning needs and to update the model in light of new survey data, will occur over the next five years.

Transit Related Studies

Comprehensive Transit Financial Report

Minnesota Statute requires the Metropolitan Council to work with regional transit providers and funders to prepare a comprehensive report on metropolitan area transit finance every two years, starting with the first report in 2018. The report will provide a catalog of all funding sources and expenditures related to transit in the metropolitan area. The report will include a section summarizing the status of "guideway" and "busway" projects (referred to as transitways in this plan) in the metropolitan area, including past and projected expenditures for each project and updates on project status. The report will also include an analysis of the performance of the transit network at the route and line level, an analysis that is largely already prepared every year. A new requirement for this analysis will require the development of performance standards for farebox recovery and the identification of routes not meeting those standards, which may impact Appendix G: Regional Transit Design Guidelines and Performance Standards.

Bus Service Allocation Study

The plan stresses the importance of transit investments in making progress toward the transportation goals for the region. However, there are different roles for transit that require different types of service with conflicting priorities with limited resources. One role transit can play is serving a limited number of the highest demand corridors, where land use and development can support strong ridership. Another role transit can play is providing access to a large number of people and jobs across the region to provide an alternative to driving, regardless of the ridership potential. The transit system can be designed to address these two roles on opposing ends of a spectrum, maximizing efficiency or maximizing coverage. The Metropolitan Council will work with regional transit providers to conduct a study that will analyze how current transit service is allocated between service meant to maximize efficiency and service meant to increase transit coverage. The study will explore the trade-offs of the different approaches, identify a target balance of investment, and identify possible transit solutions to serve areas of the region that can't be effectively served with fixed-route service.

Employment Last Mile Transit Connection Study

One of the major challenges facing the Twin Cities is improving accessibility to suburban employment opportunities; these areas are difficult to serve cost effectively with fixed route transit. The plan states that new advances in mobility technology should be used to complement the fixed-route transit network. Emerging transportation technology has created new forms of "shared mobility", modes of transportation characterized by dynamic routing and the integration of improved user interaction with services. Examples of shared mobility modes include transportation network companies, bikeshare, and microtransit. The Metropolitan Council will work with regional transit providers, local governments, and regional employers to explore and analyze options for completing last mile gaps in the regional transit system that could connect riders to suburban employment opportunities. The study will evaluate potential market areas and service delivery models that could lead to the launch of a pilot project providing last-mile transit connections.

Local Bus Speed and Reliability Initiative

The plan's strategies address the need to work collaboratively as a region to build transit advantages that provide fast and reliability transit as an alternative to single-occupant vehicles. Chapter 6, "Transit Investment Direction and Plan," describes the extensive network of highway transitway advantages and transitways, but there is not a significant discussion of transit advantages or other strategies for providing faster, more reliable service on the local bus network. This initiative will assess the performance of routes and implement improvements to the local bus network (excluding corridors already examined, such as the arterial bus rapid transit corridors) to address reliability and speed issues. The results of this initiative, particularly the evaluation of implemented strategies on select local routes, will provide a better understanding of the impact of specific strategies that could be implemented on additional routes. This initiative may inform strategies in the Plan and Regional Transit Design Guidelines in Appendix G. The initiative will include collaborations with local municipalities and other stakeholders for implementation, since many options may involve changes to roadway design or

operations. As the region's transit network continues to grow, the Metropolitan Council can also use this information to help local governments plan for effective transit service in their community.

Setting Regional Transitway Priorities – Data Coordination

During the development of this 2040 Transportation Policy Plan, data was collected on transitways to provide a table of basic facts about projects in the Plan (Current and Increased Revenue Scenarios). It was discovered that the methodology behind the data was not consistent across projects to allow for a reasonable comparison, particularly for estimated costs impacted by inflation. The Metropolitan Council intends to work with transitway project sponsors to develop consistent information for all projects to include in a future TPP update.

Downtown Transit Capacity and Transit Advantages Analysis

One of the goals in Chapter 6, "Transit Investment Direction and Plan," is to improve access to destinations. Consequently, the strategies to do so include expanding the transitway and bus network that connects in downtown Minneapolis and downtown Saint Paul. There are 16 local bus routes that travel through downtown Minneapolis or Saint Paul and 16 local bus routes that terminate in either downtown along with the substantial number of peak period express bus routes. The Blue Line and Green Line will travel through downtown Minneapolis when the light rail extensions open. There are also several other transitways planned to serve downtown Minneapolis or downtown Saint Paul. The Marquette and 2nd Avenue express bus lanes provide a good example of adding transit advantages in downtown to address capacity, reliability, or travel time concerns. This analysis will consider strategies for maximizing transit capacity in downtown Minneapolis and potentially downtown Saint Paul, as well as strategies to increase reliability and speed of transit in or passing through the downtowns. The cities of Minneapolis and Saint Paul will be partners on this work and these efforts may be integrated into local planning efforts as opposed to a Metropolitan Council-led project.

Public Transit and Human Services Transportation Coordinated Action Plan Update

This plan is required by federal transportation legislation. The current plan was adopted in 2013 and needs to be updated. This plan update will assess currently available services from public, private, and non-profit providers; assess current transportation needs for people with disabilities, older adults, and people with low incomes; and identify and prioritize strategies, activities, or projects to address identified gaps between current services and needs.

Arterial Bus Rapid Transit Corridor Study

Successful implementation and operation of the A Line has created significant interest in identifying and selecting new arterial bus rapid transit corridors. In 2019, Metro Transit plans to conduct an evaluation of arterial BRT corridors beyond the five lines currently in development. The study will re-evaluate seven corridors previously studied and will identify and evaluate new corridors for potential arterial BRT service. In partnership with agencies and local communities, an evaluation framework will include technical performance and corridor readiness factors. Study results are anticipated to guide

prioritization and selection of the region's next arterial BRT lines. This study will advance in coordination with Metro Transit's Service Improvement Plan update. The Metropolitan Council will work closely with local communities, transit riders, and the public to conduct this corridor evaluation.

Bicycle and Pedestrian Related Studies

Regional Bicycle Transportation Network (RBTN) Refinement and Concept Progression

To further refine the physical RBTN and to advance the overall RBTN concept, several ongoing and new efforts will need to be undertaken. The following items and issues will be addressed in collaboration with local and state agency stakeholders:

- Identify specific bikeway alignments within the broad RBTN corridors
- Review RBTN corridors and alignments to develop regional expectations for bicycle facility treatments and future spacing criteria for new corridors that vary across regional sub-areas.
- Investigate a range of RBTN on-road facility treatments within the context of roadway functional classification. This effort will evaluate and compare potential synergies and conflicts between bicycling and vehicular traffic.
- Conduct a regional study to identify and evaluate a set of transportation corridors to determine opportunity corridor locations to implement protected or separated bikeways along RBTN corridors and alignments and local bicycle corridors. Protected bikeways can provide a high-quality facility for safe and high-capacity bicycle travel for a broader range of cyclist ages and abilities.
- Develop a more structured process for local agencies and the Council to update RBTN corridors or alignments at interim points between TPP updates and during the TPP update process.

Bicycle Parking: Review of Land Use and Urban Design Best Practices

Many popular urban and neighborhood commercial districts have very limited bicycle parking facilities available to serve the growing numbers of people using bicycles for transportation to access jobs, school, parks, and entertainment centers. Met Council will conduct a review of cities in peer regions with respect to the application of zoning mechanisms, evaluation of bike parking demand, and urban design principles and best practices relating to the placement, orientation and design of bike parking stands, bike lockers, and large bicycle storage facilities to serve multiple businesses and employers. These reviews will offer suggestions for how each "best practice" could be applied in the Twin Cities region.

Pedestrian Crash Data Analysis

The Twin Cities area has almost 55% of Minnesota's pedestrian fatalities from 2013-2015 compared to 26 percent of all traffic fatalities in the state. While walking trips are 6 percent of all trips made within the

region, almost 17% of all traffic fatalities are pedestrians. This analysis would look at pedestrian crash data for the Twin Cities region to identify common contributing factors for high-severity pedestrian crashes in the region and potential countermeasures. This analysis would also include looking at crashes in areas with higher percentages of people of color or people with low incomes; other studies done throughout the nation show disproportionate numbers of high-severity crashes in neighborhoods with environmental justice populations.

Bicycle and Pedestrian Count Program

Metropolitan Council staff will procure automated counters for pedestrians and bicyclists to use with local partners to collect standard count data and develop a regional count program for use in regional pedestrian and bicycle planning. MnDOT's Bicycle and Pedestrian Counting Initiative started to institutionalize bicycle and pedestrian counts by providing annual training for local partners in how to conduct counts; the installation of permanent monitoring stations throughout the state, including the Twin Cities region; and a MnDOT district-based portable counting equipment loan program to support local partners in conducting bicycle and pedestrian counts. Metropolitan Council procurement of similar equipment would enable a focus on locations of interest to regional planning.

Review of Best Practices for Walkable Neighborhoods and Connections to Transit

Metropolitan Council staff will review best practices for infrastructure treatments supporting walkable neighborhoods and enabling better pedestrian connections to transit in different types of communities. For the majority of transit trips, riders reach their stops by walking. Identifying best practices can help to address gaps in the pedestrian system and its connection to transit.

Freight Related Studies

Regional Truck Data Collection Framework

In collaboration with MnDOT, the Metropolitan Council will develop a framework for collecting truck classification data on regional truck freight corridors that responds to short-term and long-term data needs. Development of the framework will include:

- Coordination with MnDOT and County highway departments to review existing and planned data collection efforts for the Twin Cities metro area relevant to truck volumes and regional trip patterns on principal and minor arterials.
- Contacting staff from peer state DOTs and regional MPOs to determine the most promising truck data collection methods and technologies to employ in this region.

Aviation Related Studies

Regional Aviation System Plan

The 2009 aviation system technical report, (Regional Aviation System Plan) should be updated before the adoption of the next Transportation Policy Plan. The update will include an analysis of the system changes and improvements since 2009, system performance evaluation, and local and national system forecasts and trends. This study will also look at the impacts of the recent Long-Term Comprehensive Plans that will have been adopted by the Metropolitan Council for the regional aviation system. This study will also look at the impacts of the Unmanned Aerial Systems (UAS) on the regional system as well as the effects of the evolution of Light Sport Aircraft. This study could be financed in part through a planning grant from the Federal Aviation Administration.

Performance Measures and Data-Related Studies

Safety Planning and Priorities in the Region

Significant safety planning has been done in the region through MnDOT's Toward Zero Deaths initiative and development of an updated statewide Strategic Highway Safety Plan 2014-2019 that was finalized in 2014. MnDOT also partnered with each county in the state to develop County Road Safety Plans and has piloted plans for cities. To assist with the goal of improving safety for all users of the system in the region, the Metropolitan Council will review statewide and local safety plans, crash data, and other safety planning efforts to identify safety needs and priorities for all modes within the region, in coordination with other local partners.

Congestion Mitigation and Air Quality Performance Plan

The federal law MAP-21 established requirements for a Congestion Management/Air Quality performance (CMAQ) plan, which applies to metropolitan planning organizations with a population of over one million in air-quality nonattainment or maintenance areas. The Metropolitan Council will work with MnDOT on this plan as well as their annual CMAQ report to the USDOT. Performance measures and target setting for emissions and traffic congestion reduction for the CMAQ program will be established through rulemaking, which is tentatively scheduled for late 2015. Results from rulemaking are expected to include the following:

- Completion and updates expected biennially
- Baseline levels for traffic congestion and on-road mobile source emissions
- A progress report on achievements in reaching performance targets described in 23 U.S.C. 150(d)
- A description of the projects identified for CMAQ funding and a projection of how these projects will contribute to achieving the emission and traffic congestion reduction targets pursuant to 23 U.S.C. 150(d)
- A separate report assessing the progress of the projects under the previous plan in achieving the air quality and congestion targets of the previous plan

- Submission of this plan with the CMAQ annual report for that year, which is submitted by MnDOT

Equity

Equity Analysis for Transportation

The Metropolitan Council's *Choice, Place and Opportunity: An Equity Assessment of the Twin Cities Region* (2014) analyzed the region and its investments to understand patterns of need and opportunities. To fully integrate equity into the transportation planning process, the Metropolitan Council will conduct additional analysis on transportation-related issues. Two potential areas for study are safety outcomes by race and income and spending on preservation and maintenance and condition of transportation facilities by race and income. Putting into operation the use of the equity lens throughout transportation planning decision making is another step in ensuring that transportation policies, practices, and procedures advance equity rather than create barriers to equity. The use of this lens should be done in combination with using disaggregated data when possible and leveraging existing assets to make any necessary changes to transportation policies, practices, and procedures.

CHAPTER 14
WORK PROGRAM

The Metropolitan Council will carry out or participate in many studies and plans over the next three years. This is not an exhaustive list of all work to be completed by the Metropolitan Council, but rather a list of projects that will contribute to the work of the Metropolitan Council and will likely require coordination among agencies. Several ongoing work items that are regularly conducted by the Metropolitan Council are not included here. The studies listed here will be used to gather additional information and perform further analysis to inform future revisions to this policy plan and to the next update of the Regional Development Guide to occur in 2023-2024.

Highway Related Studies

Congestion Management Process (CMP) Plan

The Congestion Management Process (CMP) is a cooperative, cohesive, data-driven, and regionally agreed upon process to identify and mitigate congestion along the transportation network. To assist in strengthening the regional congestion management process, the Metropolitan Council has an item in the work program specifically addressing CMP-related items.

In 2018-2019 the Council, with assistance and input from a CMP Technical Advisory Committee, developed a broad plan to determine the extent of the CMP network; developed methodologies for analyzing and measuring both recurring and non-recurring congestion; established a comprehensive data collection program for regional coordination and monitoring; and assessed the effectiveness of previous CMP strategies in mitigating congestion within the region. One result of this effort is a plan that is organized around the federal eight-action step process and will serve to guide the regionally coordinated Congestion Management Process. This plan will continue to be refined with a new methodology using speed and congestion data to determine the extent and duration of congestion on regional corridors.

The Metropolitan Council will also assess the thresholds for determining if a roadway is congested, particularly on the minor arterial network. Means in which to disseminate this information to the public and effectively communicate to policymakers will continue to be developed. This includes the development of a performance dashboard and an evaluation of the region's transportation system in relation to peer regions. In addition, the Council will develop a detailed handbook of the corridor analysis methodology, which will contain sufficient detail to allow stakeholders such as MnDOT, the cities, and counties to conduct CMP corridor analyses in a consistent manner.

Highways Performance Measures and Funding Decisions

As highway assets degrade, more and more of the transportation revenues are needed to preserve the existing system. This effort will look at existing pavement and bridge performance targets. It will also analyze the assumptions used in the pavement and bridge models to allocate resources to see if they

adequately account for the high amount of traffic and freight in the region. The study will also examine and develop performance measures for regional mobility to see how they might play a role in MnDOT funding decisions. The goal is to identify a mobility need monetary value based upon performance measures and targets that can then be incorporated into the next Minnesota State Highway Investment Plan (MnSHIP) Update.

This task would be a joint effort between MnDOT and the Metropolitan Council.

Regional Solicitation Projects Before and After Analyses

This project will assist the Council in evaluating the impact that the Regional Solicitation has had on the region by evaluating actual project outcomes against the proposed outcomes submitted during the application for funding. It will examine the forecasted benefits of projects to the region in comparison to the actual benefits of the funded, constructed projects. This will assist in determining if the criteria used in the Regional Solicitation are successful in garnering the desired outcomes or if the criteria need to be modified to attain the desired outcomes.

It will also identify how the scoring criteria can better tie in with federal performance targets and the Congestion Management Process.

Connected and Autonomous Vehicles

The advent of more connected vehicles, the rapid development of autonomous vehicles, and the evolution of new models of new transportation ownership/provision will have profound impacts on the region's transportation use, economics, and infrastructure. The Metropolitan Council is well positioned to convene regional stakeholders to formulate policy responses to technology change and to study impacts to all transportation modes and systems.

Collaboration among state, regional, local, and corporate stakeholders will be necessary to address the myriad of issues in how legislation, regulation, policy, and planning tools address issues across all transportation modes resulting from connected and autonomous vehicle adoption. The Metropolitan Council, with MnDOT, will work together on developing regional collaboration among all transportation stakeholders on connected and autonomous vehicle technology, deployment, policy, and planning. The collaboration may take the form of a new committee, a set of workshops, and dedication of staff resources.

Metropolitan Council staff will continue to participate in national conversations regarding connected and autonomous vehicles and will become local experts on planning efforts, integrating work being done by USDOT, the Association of Metropolitan Planning Organizations, the Transportation Research Board, researchers, other peer regions and states into regional planning work.

The following list of Work Program items are related to the topic of connected and autonomous vehicles. The field of vehicle automation continues to evolve rapidly. It is expected that any specific work plan will quickly become out-of-date, and these items will be revisited and potentially amended annually.

Scenario Development and Performance Measurement

Connected and autonomous vehicle development will be integrated into a performance-based planning framework. Measures will be developed to track the trajectory for various potential scenarios that the region, or parts of it, may be experiencing. Scenarios may include adoption rate of autonomous and/or connected technology, public acceptance of a particular technology, and the degree to which public and private shared mobility technologies exist and affect travel behavior. How and at what rate connected and autonomous vehicles will exist in the market in the planning horizon is uncertain, and planners and policymakers need to begin to plan for the possibility of multiple futures.

Integration into Congestion Management Process

Connected and autonomous vehicles scenarios will be integrated into potential Transportation System Management and Operations planning.

Emerging Truck Technologies

A review will be conducted of new and emerging technologies related to freight transportation. Among other issues, this review will include a planning and implementation assessment of automation technology for the commercial trucking industry. This effort will document current and planned deployment of autonomous trucks, the implications for street/highway planning, and the potential impacts to the freight transportation workforce.

Regional Transportation Research and Modeling

Travel Behavior Inventory Program

The Metropolitan Council has historically, in coordination with MnDOT and regional partners, conducted a battery of data collection to learn about where, how, when, how often, and why people in the region travel. The Travel Behavior Inventory (TBI) is used to provide policymakers and researchers current data about travel in the region and to develop updates to the region's travel demand forecasting models. During the last four years, the region has transitioned the TBI program from a decennial project to a continuing program of data collection and travel model improvement activities.

The centerpiece of the TBI program will continue to be the biennial household travel survey, which began in 2018 with a second round of household travel surveys beginning in 2020. The travel data collected through these household surveys will be analyzed and incorporated into the regional travel model A transit on-board survey will be conducted every five years, with the next occurring in 2021 and a special generator travel survey of the airport will also be conducted in 2021. Other data collection activities may be done as custom surveys or as third-party data purchases.

Regional Travel Demand Model

Work will continue on implementing and enhancing the Activity Based Model that has been implemented over the past couple of years. Several projects to add analytical components to the model, in coordination with planning needs and to update the model in light of new survey data, will

occur over the next five years including: implementing ActivitySim an open-sourced activity-based modeling software; implementing the federal STOPS modeling software for transitway corridor modeling; and improving the current Tourcast modeling software which serves as the backbone of the current activity-based travel demand model.

Transit Related Studies

Comprehensive Transit Financial Report

Minnesota Statute requires the Metropolitan Council to work with regional transit providers and funders to prepare a comprehensive report on metropolitan area transit finance every two years, starting with the first report submitted in 2018. The report will provide a catalog of all funding sources and expenditures related to transit in the metropolitan area. The report will include a section summarizing the status of “guideway” and “busway” projects (referred to as transitways in this plan) in the metropolitan area, including past and projected expenditures for each project and updates on project status. The report also includes an analysis of the performance of the transit network at the route and line level, along with reporting on performance standards including for farebox recovery.

Network Next

Metro Transit, the region’s largest transit provider, is working on a multifaceted effort to develop a vision for their bus network for 2040. This effort will address a number of areas of potential investment in transit including transit service, bus rapid transit investment, customer facilities (e.g. bus stop shelters and transit centers), transit information, and possible relationships between transit and shared mobility. The outcome of these topics may have implications for regional planning, given the size and extent of Metro Transit’s network, but two areas are of particular interest for future updates of the Transportation Policy Plan:

- **Local Bus Speed and Reliability Improvements** The plan’s strategies address the need to work collaboratively as a region to build transit advantages that provide fast and reliability transit as an alternative to single-occupant vehicles. Chapter 6, “Transit Investment Direction and Plan,” describes the extensive network of highway transitway advantages and transitways, but there is not a significant discussion of transit advantages or other strategies for providing faster, more reliable service on the local bus network. This component of Network Next will assess the performance of routes and implement improvements to the local bus network (excluding corridors already examined, such as the arterial bus rapid transit corridors) to address reliability and speed issues. The results of this initiative, particularly the evaluation of implemented strategies on select local routes, will provide a better understanding of the impact of specific strategies that could be implemented on additional routes. This initiative may inform strategies in the Plan and Regional Transit Design Guidelines in Appendix G. The initiative will include collaborations with local municipalities and other stakeholders for implementation, since many options may involve changes to roadway design or operations. As the region’s transit network continues to grow, the Metropolitan Council can also use this information to help local governments plan for effective transit service in their community.

- **Arterial Bus Rapid Transit Network Update** Successful implementation and operation of the A and C Lines has created significant interest in identifying and selecting new arterial bus rapid transit corridors. Metro Transit plans to include an evaluation of arterial BRT corridors in Network Next that will go beyond the five lines currently in development. The study will re-evaluate corridors previously studied and will identify and evaluate new corridors for potential arterial BRT service. In partnership with agencies and local communities, an evaluation framework will include technical performance and corridor readiness factors. Study results are anticipated to guide prioritization and selection of the region's next arterial BRT lines. This study will advance in coordination with Metro Transit's Service Improvement Plan update that is also part of Network Next. The Metropolitan Council will work closely with local communities, transit riders, and the public to conduct this corridor evaluation.

Bus Service Allocation Study

The plan stresses the importance of transit investments in making progress toward the transportation goals for the region. However, there are different roles for transit that require different types of service with conflicting priorities with limited resources. One role transit can play is serving a limited number of the highest demand corridors, where land use and development can support strong ridership. Another role transit can play is providing access to a large number of people and jobs across the region to provide an alternative to driving, regardless of the ridership potential. The transit system can be designed to address these two roles on opposing ends of a spectrum, maximizing efficiency or maximizing coverage. The Metropolitan Council will work with regional transit providers to conduct a study that will analyze how current transit service is allocated between service meant to maximize efficiency and service meant to increase transit coverage. The study will explore the trade-offs of the different approaches, identify a target balance of investment, and identify possible transit solutions to serve areas of the region that can't be effectively served with fixed-route service.

Microtransit and Shared Mobility Access to Transit

One of the major challenges facing the Twin Cities is improving accessibility to underserved employment opportunities; areas that are difficult to serve cost effectively with fixed-route transit. The plan states that new advances in mobility technology should be used to complement the fixed-route transit network. Emerging transportation technology has created new forms of "shared mobility", modes of transportation characterized by dynamic routing and the integration of improved user interaction with services. Examples of shared mobility modes include transportation network companies, bikeshare, and microtransit. The Metropolitan Council will work with regional transit providers, local governments, and regional employers to explore studies that fill in gaps in our knowledge of access to the regional transit system through emerging technologies and modes. Potential study areas include investment strategies for regional mobility hubs and microtransit needs assessments. The specifics of these studies will likely react to emerging technologies in shared mobility and will be identified as needs come up.

Downtown Transit Capacity and Transit Advantages Analysis

One of the goals in Chapter 6, “Transit Investment Direction and Plan,” is to improve access to destinations. Consequently, the strategies to do so include expanding the transitway and bus network that connects in downtown Minneapolis and downtown Saint Paul. There are 16 local bus routes that travel through downtown Minneapolis or Saint Paul and 16 local bus routes that terminate in either downtown along with the substantial number of peak period express bus routes. The Blue Line and Green Line will travel through downtown Minneapolis when the light rail extensions open. There are also several other transitways planned to serve downtown Minneapolis or downtown Saint Paul. The Marquette and 2nd Avenue express bus lanes provide a good example of adding transit advantages in downtown to address capacity, reliability, or travel time concerns. This analysis will consider strategies for maximizing transit capacity in downtown Minneapolis and potentially downtown Saint Paul, as well as strategies to increase reliability and speed of transit in or passing through the downtowns. The cities of Minneapolis and Saint Paul will be partners on this work and these efforts may be integrated into local planning efforts as opposed to a Metropolitan Council-led project.

Bicycle and Pedestrian Related Studies

Regional Bicycle Transportation Network (RBTN) Refinement and Concept Progression

To further refine the physical RBTN and to advance the overall RBTN concept, several ongoing and new efforts will need to be undertaken. The following items and issues will be addressed in collaboration with local and state agency stakeholders:

- Identify specific bikeway alignments within the broad RBTN corridors
- Review RBTN corridors and alignments to develop regional expectations for bicycle facility treatments and future spacing criteria for new corridors that vary across regional sub-areas.
- Investigate a range of RBTN on-road facility treatments within the context of roadway functional classification. This effort will evaluate and compare potential synergies and conflicts between bicycling and vehicular traffic.
- Develop a more structured process for local agencies and the Council to update RBTN corridors or alignments at interim points between TPP updates and during the TPP update process.

Bicycle Parking: Review of Land Use and Urban Design Best Practices

Many popular urban and neighborhood commercial districts have very limited bicycle parking facilities available to serve the growing numbers of people using bicycles for transportation to access jobs, school, parks, and entertainment centers. Met Council will conduct a review of cities in peer regions with respect to the application of zoning mechanisms, evaluation of bike parking demand, and urban design principles and best practices relating to the placement, orientation and design of bike parking stands, bike lockers, and large bicycle storage facilities to serve multiple businesses and employers.

These reviews will offer suggestions for how each “best practice” could be applied in the Twin Cities region.

Pedestrian Safety Action Plan

The Twin Cities area has almost 55% of Minnesota’s pedestrian fatalities from 2013-2015 compared to 26 percent of all traffic fatalities in the state. While walking trips are 6 percent of all trips made within the region, almost 17% of all traffic fatalities involve pedestrians. This project will include systemic crash data analysis to identify crash characteristics and risk factors for pedestrians, as well as working with regional stakeholders on identifying countermeasures and program recommendations, including inclusion in the regional solicitation. This analysis would also include looking at crashes in areas with higher percentages of people of color or people with low incomes; other studies done throughout the nation show disproportionate numbers of high-severity crashes in neighborhoods with environmental justice populations.

Bicycle and Pedestrian Count Program

Metropolitan Council will seek consulting assistance to identify requirements and locations for a regional count program for use in regional pedestrian and bicycle planning. MnDOT’s Bicycle and Pedestrian Counting Initiative started to institutionalize bicycle and pedestrian counts by providing annual training for local partners in how to conduct counts; the installation of permanent monitoring stations throughout the state, including the Twin Cities region; and a MnDOT district-based portable counting equipment loan program to support local partners in conducting bicycle and pedestrian counts. Metropolitan Council will work with MnDOT to maximize the use of their portable counting equipment within the region and identify any needs for additional counting capacity.

Review of Best Practices for Walkable Neighborhoods and Connections to Transit

Metropolitan Council staff will review best practices for infrastructure treatments supporting walkable neighborhoods and enabling better pedestrian connections to transit in different types of communities. For the majority of transit trips, riders reach their stops by walking. Identifying best practices can help to address gaps in the pedestrian system and its connection to transit.

Regional Sidewalk Inventory Development

The lack of consistently available sidewalk data hinders planning for walking, including in relation to transit in the region. In 2018, Metropolitan Council’s GIS department initiated discussions about collecting this data and found that data is inconsistently available and in varied formats that create additional work to convert for regional network use. Based on this research, creating the network data was the preferred option. Other large MPOs in regions such as Philadelphia, Chicago, and Houston have created regional sidewalk datasets and could serve as models for this work. The Council would work in partnership with local communities in identifying the needed characteristics for routable network data.

Freight Related Studies

Regional Truck Data Collection Framework

In collaboration with MnDOT, the Metropolitan Council will develop a framework for collecting truck classification data on regional truck freight corridors that responds to short-term and long-term data needs. Development of the framework will include:

- Coordination with MnDOT and County highway departments to review existing and planned data collection efforts for the Twin Cities metro area relevant to truck volumes and regional trip patterns on principal and minor arterials.
- Contacting staff from peer state DOTs and regional MPOs to determine the most promising truck data collection methods and technologies to employ in this region.

Aviation Related Studies

Regional Aviation System Plan

The 2009 aviation system technical report, (Regional Aviation System Plan) should be updated before the adoption of the next Transportation Policy Plan. The update will include an analysis of the system changes and improvements since 2009, system performance evaluation, and local and national system forecasts and trends. This study will also look at the impacts of the recent Long-Term Comprehensive Plans that will have been adopted by the Metropolitan Council for the regional aviation system. This study will also look at the impacts of the Unmanned Aerial Systems (UAS) on the regional system as well as the effects of the evolution of Light Sport Aircraft. This study could be financed in part through a planning grant from the Federal Aviation Administration.

General System Planning

Safety Planning and Priorities in the Region

Significant safety planning has been done in the region through MnDOT's Toward Zero Deaths initiative and development of an updated statewide Strategic Highway Safety Plan expected in early 2021. MnDOT also partnered with each county in the state to develop County Road Safety Plans and has piloted plans for cities. To assist with the goal of improving safety for all users of the system in the region, the Metropolitan Council will review statewide and local safety plans, crash data, and other safety planning efforts to identify safety needs and priorities for all modes within the region, in coordination with other local partners.

Equity Analysis for Transportation

The Metropolitan Council's *Choice, Place and Opportunity: An Equity Assessment of the Twin Cities Region* (2014) analyzed the region and its investments to understand patterns of need and opportunities. To fully integrate equity into the transportation planning process, the Metropolitan Council will conduct additional analysis on transportation-related issues. Two potential areas for study are

safety outcomes by race and income and spending on preservation and maintenance and condition of transportation facilities by race and income. Putting an equity lens into operation throughout transportation planning decision making is another step in ensuring that transportation policies, practices, and procedures advance equity rather than create barriers to equity. The use of such a lens should be done in combination with using disaggregated data when possible and leveraging existing assets to make any necessary changes to transportation policies, practices, and procedures.

Electric Vehicle Planning Study

As metropolitan regions begin to shift to connected and autonomous vehicles and implement shared mobility options, there is a general consensus that both public and private vehicle fleets will become electrified. Electric vehicles in fact widely exist on the market. Although few in numbers, widespread use may proceed what is often thought of as a connected and autonomous future. Fleet electrification can have many positive environmental benefits but may also require substantial changes in the regional electric grid and where and how vehicles are charged. This study on vehicle electrification is to plan a network of charging stations to support and encourage electric vehicle (EV) purchase and use in the Twin Cities. This study would summarize the role EVs can play in local climate mitigation, the hurdles to widespread EV adoption, current and planned energy production capacity and greenhouse gas mix, the capital and operating costs of EVs as compared to internal combustion engine vehicles and, national and local best practices and resources.