

MEETING OF THE TAC PLANNING COMMITTEE

Thursday | March 12, 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

February 13, 2020, meeting of the TAC Planning Committee [posted once available]

IV. INFORMATION

1. Transportation Policy Plan (TPP) Review of Other Chapters (Amy Vennewitz)
 - a. Ch. 3: Land Use and Local Planning
 - b. Ch. 4: Transportation Finance
 - c. Ch. 10: Equity and Environmental Justice
 - d. Ch. 11: Environment and Air Quality
 - e. Ch. 12: Congestion Management Process
 - f. Ch. 13: Performance Outcomes
 - g. Appendix E: Air Quality
2. Freeway System Interchange Study (Tony Fischer, Met Council & Michael Corbett, MnDOT)
3. UN Climate Change Conference Reflections (Eric Wojchik, Met Council Community Development)
4. Update on Regional STOPS Model (Jonathan Ehrlich)

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 (136 pages)

CHAPTER 3


LAND USE AND LOCAL PLANNING

Introduction

Transportation and land use play off each other. Transportation infrastructure gives value to land and influences its use. Land use, in turn, creates demand for transportation investment. Over time, this cycle has produced the development patterns we see in the region today. The transportation system provides access to land and development for people and freight. Land use and development patterns create the origins and destinations that directly affect the demand for travel and the relative attractiveness of different travel modes, whether auto, transit, bicycling, or walking. The demand for access and mobility will continue to grow and change, as will the region's land use over the next 30 years. How we provide that access and mobility will strongly influence the development patterns we leave for future generations.

An Illustrated History of Transportation and Land Development in the Twin Cities

Since the early beginnings of the Twin Cities region, transportation technology has changed the way we get around. The way we get around has also changed how we have developed the region, including the location of housing, retail, industry, and employment. (Note: the following maps show the major highway system as a reference point, though these highways were primarily developed in the 20th century.)



1860 Population: 52,000

Early development in our region was marked by the establishment of Fort Snelling in 1825, and the four major activity centers along the Minnesota, Mississippi, and St. Croix rivers – the region's first highways and power plants: Hastings, St. Anthony-Minneapolis, Saint Paul, and Stillwater.

Personal mobility was by walking, horse and buggy, ox cart, ferry, and train. Freight moved by river barge and train.

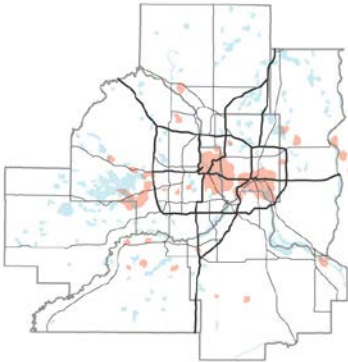


1900 Population: 492,000

In the late 1880s, the region's flour milling industries boomed and by 1900, Minneapolis and Saint Paul were dominant urban centers. Trolleys would eventually replace horse cars, and the popular line between the two major cities, which ran along University Avenue, carried more than 27 million rides in 1890. Annual streetcar ridership was 70 million by 1900, with a 100-square-mile network radiating from the central cities.

The Twin Cities region was also among the top 10 railroad centers with rail yards, warehousing, and manufacturing hubs radiating for 20 square miles outside the central cities.

Personal mobility was by walking, bicycle, horse and buggy, streetcar, ferry, and train. Freight moved by river barge and train.

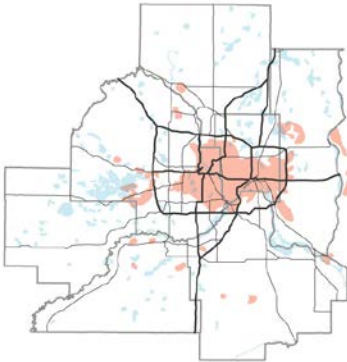


1920 Population: 761,000

By 1914, streetcars provided most public transit in the U.S. But the 1920s era would bring technology advancements with the personal automobile and air travel. In our region, first-ring suburbs with industry would emerge, providing a greater need for community connections beyond the central cities. White Bear Lake and Lake Minnetonka established as resort and summer home destinations.

The airfield that would eventually become Minneapolis-Saint Paul International Airport was established in 1920. The region boasted 523 miles of streetcars, carrying 292 million riders per year.

Personal mobility expanded; methods included walking, bicycling, streetcars, trains, motorbuses, cars, airplanes. Freight was moved by river barge, train, and truck.

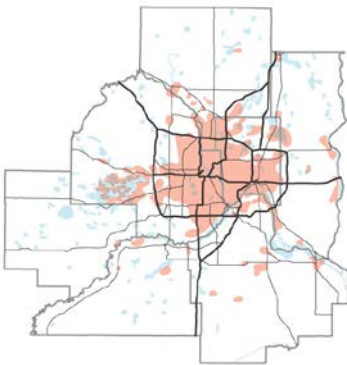


1940 Population: 987,000

By 1940, Minneapolis and Saint Paul have grown into a single urban center, and are beginning to be surrounded by suburban communities. Rural centers, including Anoka, Shakopee, and Stillwater are also beginning to grow.

As automobile use becomes the dominant form of personal transportation, walking, bicycling, and transit use decline. Public transit ridership had dropped to 128 million by 1940.

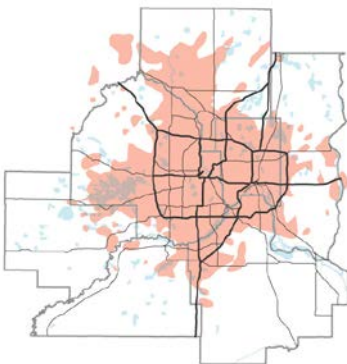
Personal mobility included walking, bicycling, streetcars, buses, trains, cars, airplanes. Freight moved by river barge, train, truck, and plane.



1960 Population: 1,590,000

Following World War II, the region's two-lane roads improve and expand. What began as two-lane roads extending about 10 miles from the urban center expanded, providing access to large tracts of undeveloped land. By 1960, the region had around 100 miles of freeway lane miles, leading to increased use of cars and continued decreased use of walking, bicycling, and transit. Transit ridership was 86 million annually in 1960.

Personal mobility included walking, bicycling, buses, trains, cars, airplanes. Freight moved by river barge, train, truck, and plane.

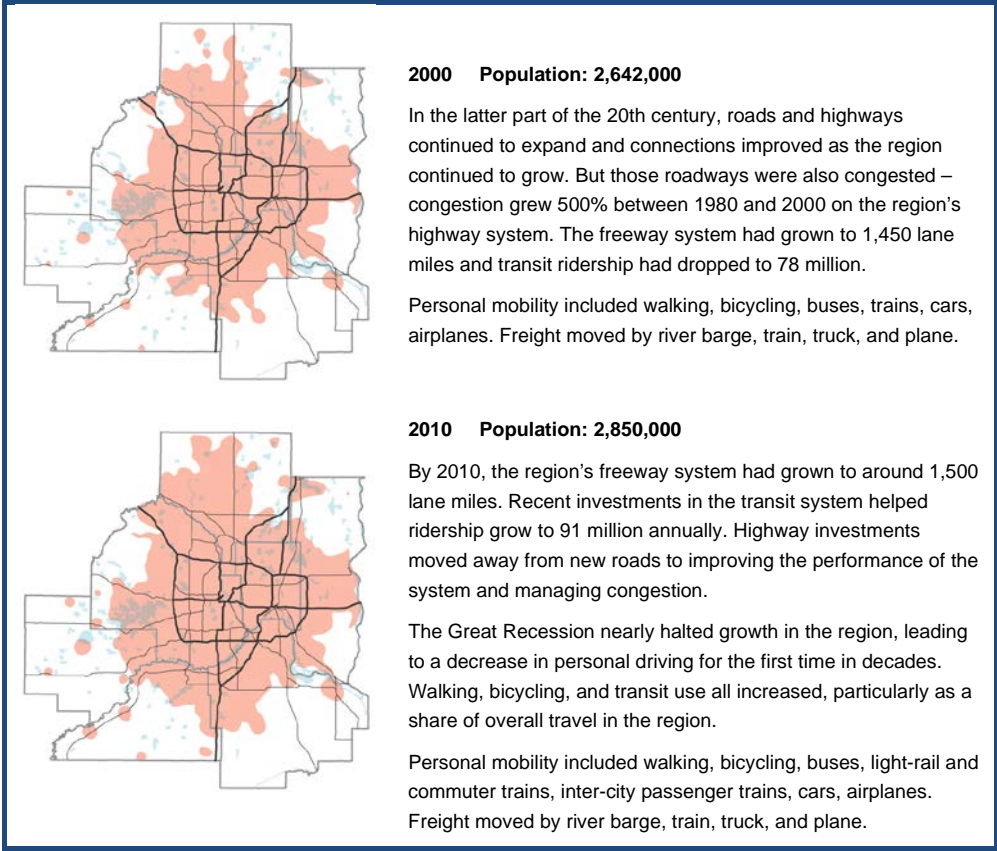


1980 Population: 1,985,000

By 1980, cars and trucks were the dominant form of transportation in the region. The energy crisis in the late 1970s triggered a brief spike in transit use; annual transit ridership was 93 million in 1980. The region's freeway system had grown to over 1,000 lane miles, and travel in the region increased significantly with more women in the workforce and jobs locating along highways outside the central cities.

A majority of the I-694 and I-494 freeway ring was completed by 1980 and growth quickly extended to and beyond this area.

Personal mobility included walking, bicycling, buses, trains, cars, airplanes. Freight moved by river barge, train, truck, and plane.



Before the 1950s, most of the region developed with streets and sidewalks centered on the streetcar. Beginning in the 1950s, the development of the region’s highway system and later the freeway system greatly accelerated geographic access to open land available for new development. Once there is access, an area develops relative to the availability of land for future development, its sewer capacity, and consumer demand and preferences. Essentially, demand for particular types of locations drives development patterns.

The post-1950s development patterns in the region consisted of large areas that developed at single-family home densities (about 3 to 5 units per acre), shaped, in part, by regional roadways and local street networks. As the reach of the urban area expanded, highways and arterial roads were extended and widened to serve the growing demand.

With the high priority given to expanding roadway capacity to serve new development, the needs of pedestrians, bicycles, and transit users received less attention during and after the 1950s. Once established, residential land use patterns evolve slowly, particularly in areas that remain stable for generations. Consequently, changing existing land uses to increase density and intensity depends largely on adding connections among parts of the street and pathway networks and accommodating alternative modes of travel.

In contrast, job-related land uses change more frequently. Over the more than 20-year planning horizon of Thrive MSP 2040 and the 2040 Transportation Policy Plan, many job-related properties will change or be replaced due to structural, functional or economic obsolescence, opening opportunities for new mixed land uses and increased residential and job-related densities. These trends underscore the importance of local governments as they exercise their key role in making decisions about land use patterns and the local transportation network linking to the regional system.

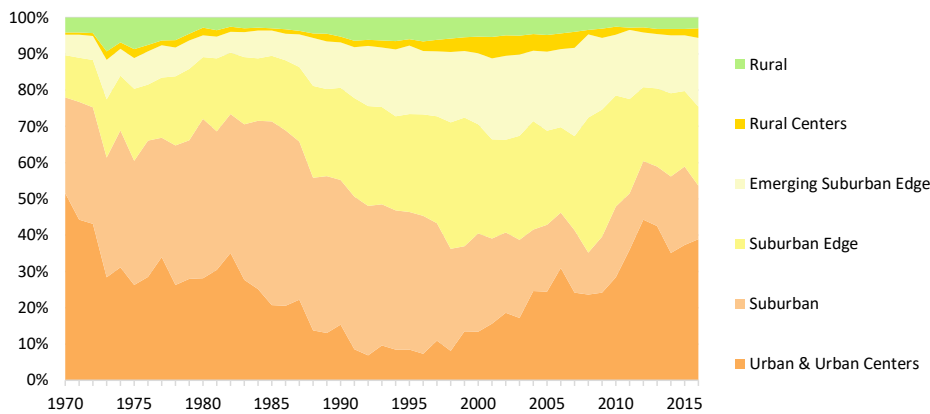
Recent Trends in Transportation and Land Development

New residential construction in the Twin Cities region has ebbed and flowed with economic conditions since 1970. The growth of the region stalled temporarily during the Great Recession beginning in 2008 and the housing crash contributed to a significant downturn in new construction. However, recent estimates indicate that the region has begun growing its housing stock again. Since 2009, new permitted housing units each year have grown steadily, approaching the average annual rates seen before the recession. The mix of new construction has also evolved. More than half of new housing units have been attached or multifamily units. Activity by Thrive MSP 2040 Community Designation has shifted toward more Urban Center development, but there is a balance of new development across the region as well. Metropolitan Council estimates of 2016 population also provide evidence of this trend, with nearly half the growth in regional population from 2010-2016 occurring in Urban Center and Urban communities (see figure 3-1).

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Figure 3-1: Location of Housing Units Built 1970-2016, by Year & Thrive Community Designation

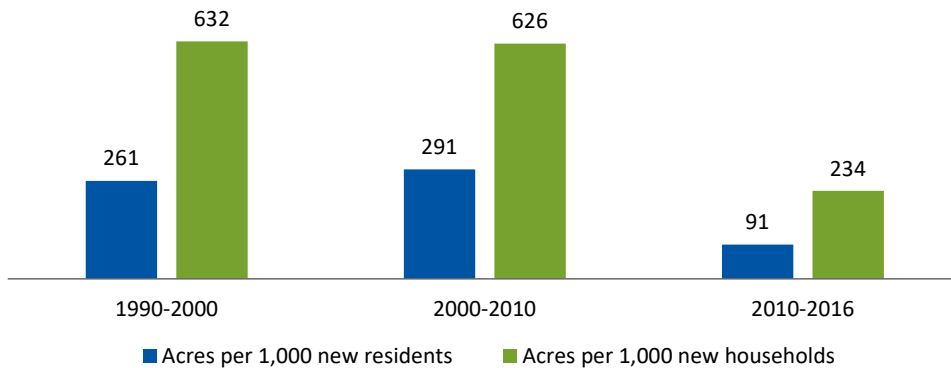
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Consistent with the above trends, the region is "doing more with less" in that land consumption to accommodate new population and household growth has required less acreage compared with previous years. This trend has mitigated the trend of net losses of other land use types, like agricultural land. From 2010-2016, the region consumed about 234 acres per 1,000 new households. This consumption rate is dramatically less than previous decades where rates were more than 600 acres per new 1,000 households (see figure 3-2).

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Figure 3-2: Newly Development Land, Per New Resident and New Household



The recent trends in growth illustrate the balanced growth of the region across community types. So, while developed land continues to expand outward, the Twin Cities region is seeing more existing uses of land to accommodate population and household growth with a smaller footprint. Development is

more likely to be on previously developed land than in previous decades. These trends also demonstrate the continued reversal of past out-migration from the developed area to the developing area to a more balanced trend of both newly developed land and redeveloped/infill developed land.

Transportation and Land Development Conclusions

The evolution of the region's growth over time illustrates several key relationships between transportation and land development:

- Until the 1940s, the region grew in a compact, traditional neighborhood urban form.
- The introduction of the automobile and freeways greatly increased mobility and access to affordable, developable land.
- The rapid expansion of the region's developed area in an auto-centric manner has resulted in longer average trips and the diminished attractiveness of non-auto modes as modes of regional travel.
- Congestion and a desire for convenient access to jobs, activities, and amenities are beginning to challenge the auto-centric development model and the region is growing in a more balanced way.

Anticipated growth will bring an estimated ~~880~~803,000 additional residents, ~~and 419~~329,000 additional households, and 472,000 additional jobs from 2010-2040, which present tremendous opportunities for the region. A related challenge is the necessary balance between the needs of those new residents, ~~and~~ households and jobs and the needs of residents, households, and businesses already in this region.

Future Opportunities for Transportation and Land Development

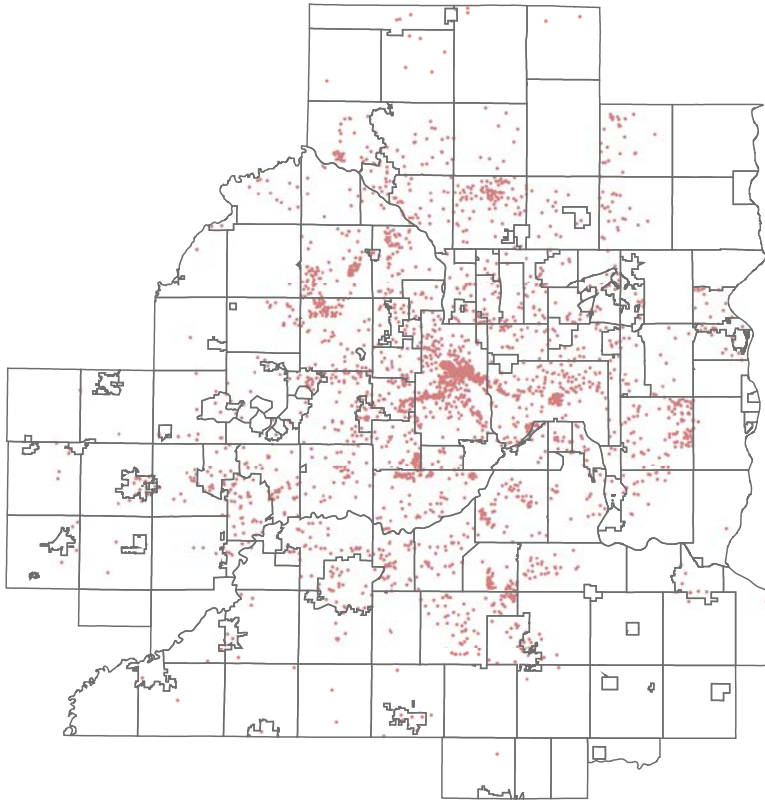
There are opportunities for all types of communities to strengthen connections between land uses and transportation as the region changes in coming years. Communities at the developing edge can look long-term to adopt transportation plans for interconnected networks of streets and pedestrian and bicycle pathways that meet current and future needs. Developed suburban communities with street patterns characterized by cul-de-sacs and a loosely connected street network can look for opportunities to retrofit their transportation networks to increase street connectivity. Transit service and pedestrian and bicycle pathways can support infill development and redevelopment of existing properties. Urban area communities that developed with a grid system can look for ways to use Complete Streets practices to serve infill and redevelopment opportunities and take advantage of their existing connected transportation networks.

The existing regional growth pattern and funding limitations do not make it possible to expand the highway system in a sustainable way and still address such issues as congestion, climate change, equity, and livability. Within the last decade, an increase in the value of locations in proximity to job concentrations and high-quality transitways has elevated the pace of private investment in the already developed parts of the region. The evidence is clearly visible along the METRO Blue Line light rail, which has been operating since 2004, the Northstar Commuter Rail (2009), the METRO Red Line bus

rapid transit (2013), and the METRO Green Line light rail (2014). Development interest and higher-intensity land uses are also showing up along future transit investments like the METRO Green Line and Blue Line extensions. On the local level, higher-intensity development and redevelopment is occurring throughout the already developed area and requires support with a multimodal network of local and collector streets, sidewalks, and bicycle paths (see Figure 3-3). New growth is occurring, and will continue to occur, in the Suburban Edge and Emerging Suburban Edge communities, where sewer-serviced land is available. As local governments accommodate densities discussed in Thrive MSP 2040, the resulting growth will continue to stress the regional highway system. Demand for additional highway capacity to relieve congestion and to serve the Suburban Edge and Emerging Suburban Edge communities is well beyond the available or realistic resources for transportation improvements. Consequently, this travel demand will require investments in arterial roads and strategic improvements to the regional highway system that address congestion and safety and provide reliable options. Planning by local governments will also need to focus on incorporating multimodal travel, including transit, walking and bicycling, into land use and design.

Figure 3-3: Net Household Growth, 2010-2016 (Each dot = 25 households added)

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Development can best support multimodal travel when communities plan their land use with knowledge of travel behavior and transportation infrastructure. Consistent with the land use policies identified in Thrive MSP 2040, this means:

- Supporting growth, particularly job growth, where job concentrations exist or in nodes along regional transportation corridors, either highway or transit.
- Improving local street connectivity and using design principles of Complete Streets during planning and designing.
- Planning for a complementary mix of land uses along corridors and in centers.

“Complete Streets” is an approach to road planning and design that considers and balances the needs of all transportation users.

- Locating medium-to-high density developments that include a mix of housing affordability at transit stations and along transit corridors.
- Implementing travel-demand management programs and parking policies that support pedestrian and transit-friendly environments in high-activity areas.
- Increasing overall density in nodes along corridors, in combination with the other strategies.

Another important consideration in coordinating transportation and land use is the needs of freight users. The freight system has evolved in ways similar to other aspects of regional growth, with a heavy reliance on highway and arterial road travel. These users need to be considered in implementing local land use policy.

Users of the river and rail freight system are particularly vulnerable to land use changes away from warehousing and industrial areas, especially in the already developed parts of the region. Many of these areas are evolving to serve the growing demand for housing and commercial development, but the river and freight rail systems are already in place and cannot move to other locations, even assuming alternatives were available. The issue is important because the region's economic competitiveness depends on preserving areas for freight operations that would be valuable assets in the future.

E-commerce, or the option of making consumer purchases through the Internet, is an established and growing trend that continues to impact local land use. It became a viable option soon after the Internet debuted in the mid-1990s, but has increased in recent years in overall volume and number of individuals participating. The global e-commerce market is projected to grow as much as 20% per year through 2025. With the expansion in economic globalization, consumers now have the ability to order direct from retailers anywhere in the world, which has changed supply chain dynamics considerably. Manufacturers and corporate retailers are developing warehouse distribution centers in numerous metropolitan centers in an attempt to meet the public's high and continually growing demand for overnight or expedited home deliveries. These centers require large parcels of land with efficient connections to major freeways and regional highways which tend to be more available in suburban areas. On the downside of this growth in e-commerce is the significant drop in retail activity at traditional regional and sub-regional shopping centers; evidence of this is easily seen in the frequent closings of major mall anchor stores, especially in the printed media and retail music industries. Cities will need to be innovative and flexible in planning for adaptive reuse of major stores (like the conversion of Macy's in downtown Saint Paul to the Minnesota Wild's hockey training facility) in downtown business districts and suburban shopping malls.

In addition, local governments need to plan for an adequate supply of land suitable for freight uses in the future and consider the connections, especially the "last mile" connections, that trucks sometimes need to make on local streets with potential design conflicts for freight movement. The region's airport system also creates unique challenges for local government land use planning (see Chapter 9, "Aviation Investment Direction and Plan," for more information).

Details about specific investments for the transportation system are discussed in Chapter 4, "Transportation Finance," as well all the mode-specific investment plans.

Role of Transportation Technology in Land Use and Development

“An Illustrated History of Transportation and Land Development in the Twin Cities” (at the start of this chapter) demonstrated how past changes in technology have shaped the growth of the region and how people and goods move. Many of these changes were relatively rapid (over a couple decades) and the implications were often difficult, if not impossible, to predict. The future impact of transportation technology on land use and development is still difficult to predict. However, it is important to acknowledge the ways in which transportation technology could impact land use and development in potentially transformative ways.

The world around us is becoming more “smart,” with the advent of smart phones, smart televisions, and smart power grids as a few examples. As the world around us becomes more “smart,” government agencies are also evolving and learning to become more “smart” themselves. The idea of smart cities includes things like integrated traffic management, real-time information, and dynamic pricing models. It could also include emerging concepts like solar street design, where the road itself generates power for the community. There are two related transportation technological advances that have the potential to create major impacts for land use and development: autonomous vehicles and electric vehicles.

While the timing is uncertain, the United States will likely see an increase in the number of electric vehicles and the propagation of autonomous vehicle technology in the coming decades. This raises questions about the relationship to land use and development and the role of local governments.

- Cars currently spend 95% of their life parked and 5% of their life being used¹. What are the implications for the abundance of space in urban areas devoted to parking cars? (Particularly at destinations outside of the home.) Will parking be concentrated in large storage facilities throughout the region, requiring land to be set aside for this?
- Parking is currently a significant cost to housing construction. Will residential development need to provide space for car storage if autonomous vehicles are a shared-use model?
- Regardless of whether autonomous vehicles are shared or privately owned, there is an expectation that they might not park at the traveler’s destination. This will create an abundance of pick-up/drop-off activity at destinations throughout the region. How and where should this activity be accommodated and how will it be regulated? On private land? In public right of way?
- There are many household implications for autonomous vehicles in terms of the perceived cost of travel/congestion (What if you can work in your car now?). Will autonomous vehicles have an impact on preferences for housing locations and types?

¹ <http://www.reinventingparking.org/2013/02/cars-are-parked-95-of-time-lets-check.html>

- The details of autonomous vehicle operation are not known, but there may be fiscal considerations for cities as well. Will their revenue sources change significantly?
 - Fees from parking meters, parking tickets, and municipal ramps/lots
 - Fuel tax distribution (in the case of electric vehicles)
 - Shared-use taxes and fees (under a shared-use autonomous vehicle model)
- What happens to traditional gasoline and diesel fueling stations when all cars are electric?
- With autonomous vehicles presumably reducing crashes, will collision, auto repair, and auto parts shops continue to exist in the same prevalence?
- How will the public street right-of-way evolve? Will more space be available for greening streets with boulevards and other amenities when they are not perceived as safety hazards? Will more land become available for development along major transportation corridors?

Government agencies will need to start thinking about these questions, and likely many more questions that emerge as technology disrupts the way transportation shapes cities in the future. The Metropolitan Council has a work program item (see Chapter 14, “Work Program”) to explore how connected and autonomous vehicles will impact the region’s future, including the roles various levels of government may play. The Metropolitan Council will convene stakeholders from all levels of government and take a lead role in advancing the regional conversation on these topics.

Coordinating Thrive MSP 2040 & Transportation Policy Plan

The coordination of planning for regional growth and for the region’s transportation systems is accomplished through the Metropolitan Council’s *Thrive MSP 2040* and this Transportation Policy Plan. The household, population, and job forecasts developed by the Metropolitan Council through *Thrive MSP 2040* provide the basis for regional planning for roads and highways, transit service, and wastewater infrastructure, and also inform planning for the Regional Parks System.

The household, population and job forecasts were developed in close coordination with the future transportation system described in the Transportation Policy Plan. The Metropolitan Council will update local forecasts as new land use and transportation policies emerge, and as new demographic data become available. The forecasts and *Thrive MSP 2040* policies and land use strategies also serve as the springboard for planning by each community for its local infrastructure and land use needs. The local comprehensive plans must coordinate key elements: forecasted growth, planned land use, residential and employment densities and infrastructure plans.

Thrive MSP 2040 sets out seven overarching land use policies:

1. Orderly and efficient land use
2. Natural resources protection
3. Water sustainability
4. Housing affordability and choice
5. Access, mobility, and transportation choice
6. Economic competitiveness
7. Building in resilience

More details on these policies can be found in *Thrive MSP 2040* Land Use Policy.

Decisions about how communities grow and the infrastructure to support them affect one another. Regional transportation and sewer investments help shape growth patterns, vice versa. The types, locations, affordability, and density of housing influence peoples' mobility options and their travel patterns.

The relationship between land use and transportation affects key outcomes established by *Thrive MSP 2040*. For instance, land use and development patterns have an enormous impact on the environment, including transportation's contribution to air pollution and climate change. Similarly, land use and development patterns affect the region's ability to be good stewards of transportation funding and put resources where they are most impactful toward regional outcomes. Also important is the overall, sustainable economic development of the region that provides prosperity for all parts of the region and all people in it. This section describes the important considerations for land use planning that impact the transportation system and local comprehensive planning for transportation.

Coordinating Regional & Local Comprehensive Planning

Local units of governments are on-the-ground partners with the Metropolitan Council in realizing the *Thrive MSP 2040* vision for growth and change, the *Thrive MSP 2040* Land Use Policy, and the Transportation Policy Plan. Under the Metropolitan Land Planning Act, local communities adopt comprehensive plans that conform to the Metropolitan Council's three metropolitan system plans – for transportation (including aviation), wastewater treatment, and regional parks and open space. Comprehensive plans must also be consistent with the Metropolitan Council's policies in *Thrive MSP 2040* and its policy plans, including the Regional Parks, Water Resources, and Housing Policy Plans.

The local comprehensive plan is used by the region as a key element in local and regional partnerships to plan for growth across the seven-county region. Local plans ensure that adequate regional systems are planned and developed to serve growth in an orderly and efficient manner. There are also differing requirements for the different types of local governments. The majority of comprehensive planning responsibilities fall under the direction of cities and townships. This section focuses primarily on those responsibilities. The unique requirements set forth in state statute for counties vary by county. State statute also applies solely to the seven-county Metropolitan Council jurisdiction and does not apply to the broader urbanized area that is covered by this plan under federal law.

Local comprehensive plans are reviewed by the Metropolitan Council for conformance with metropolitan system plans, consistency with Metropolitan Council policies, and compatibility with adjacent and affected governmental units (see statutory provisions below). Socioeconomic forecasts play an important role in the local and regional partnerships to accommodate growth and to see that adequate infrastructure is planned and developed. Table 3-1 is a summary of the conformance, consistency, and compatibility components of comprehensive plans that result from the Transportation Policy Plan.

Table 3-1: Local Comprehensive Planning: Summary of Conformance, Consistency, and Compatibility

Conformance: A local comprehensive plan will conform with the metropolitan system plans if the local plan does not have a substantial impact on or contain a substantial departure from a system plan, based on the following provisions:

- ❖ Accurately incorporates and integrates the components of the metropolitan system plans required by Minn. Stat. sec. 473.851 to 473.871:
 1. Local plan recognizes the land use and transportation opportunities and challenges related to the community's designation in the Thrive MSP 2040 Community Designations. Local plan accommodates growth forecasts at appropriate densities and numbers as articulated in adopted Thrive MSP 2040 Community Designations, and wastewater and transportation system policy plans.
 2. Local plan must identify transportation components and characteristics of the regional existing and planned multimodal system including road functional classification, transitways and transit facilities and corridors, park-and-ride facilities, regional trails and bikeways, and right-of-way preservation needs.
 3. Local plan must include airports, aviation facilities, noise and safety zones, and compatible land uses surrounding these features.
 4. Local plan must identify existing (current Average Daily Traffic) and forecasted traffic volumes, number of lanes on roadways (principal and minor arterials), allocation of Thrive MSP 2040 forecasts to transportation analysis zones (TAZs) and 2040 traffic forecasts for principal and minor arterials.
 5. Local plan must include adopted station-area planning for transitways and high-frequency transit corridors in service or in advanced planning stages, including density minimums, targets, and land use mix that addresses guidelines for minimum activity level.
 6. Local plans must include adopted access management guidelines for principal and "A" minor arterials.
- ❖ Integrates components of the local public facilities plan as described in Minn. Stat. sec. 473.859, subd. 3.

1. Local plan must integrate development policies, compatible land uses, forecasted growth allocated to Transportation Analysis Zones (TAZs) at appropriate densities specified in Thrive MSP 2040 for community designations and allocation of 2040 forecasts to TAZs for development and operation of the transit system to maximize the efficiency and effectiveness of the regional system.

Consistency: A local comprehensive plan will be consistent with Metropolitan Council policies and statutory requirements if the local plan:

- ❖ Addresses community role strategies for community designations contained in Thrive MSP 2040.
- ❖ Includes a plan for the implementation of an interconnected system of local streets, pedestrian, and bicycle facilities that is integrated with the regional system.
 1. Includes a plan for local roadway systems to minimize short trips on the regional highway system.
 2. Identifies needed local infrastructure (streets, pedestrian and bicycle facilities) to support connections to existing transitways and high-frequency bus corridors and those under project development.
 3. Identifies bicycle and pedestrian network needs and policies, including:
 - a. Descriptions and maps of Regional Bicycle Transportation Network corridors and alignments.
 - b. Existing and planned connections to the Regional Bicycle Transportation Network and regional trails.
 - c. Planned improvements at regional bicycle barrier crossing opportunity locations.
- ❖ Considers travel modes other than the car at all levels of development (site plan, subdivision, comprehensive planning) to better connect and integrate choices throughout all stages of planning. A Complete Streets policy is recommended to balance the needs of all users in transportation decision making.
- ❖ Addresses job concentrations, nodes along corridors, and locally important centers and their connection to the regional transportation system, including use of travel demand management initiatives.
- ❖ Addresses the linkage of local land uses to local and regional transportation systems including a mix of uses and increasing housing unit and employment densities in regional job concentrations, in transitway station areas, and along high-frequency bus corridors.
- ❖ Creates and preserves a mix of housing affordability in transitway station areas.

- ❖ Addresses the needs of freight movement in and through the community (roadway, rail and waterway). Addresses accessibility to freight terminals and facilities, especially “last mile” connections to freight facilities that are often provided by local streets.
- ❖ Includes an implementation plan that describes public programs, fiscal devices, and other specific actions for sequencing and staging the implementation of the comprehensive plan, to accommodate growth and change consistent with TAZ forecast allocations, and to ensure conformance with regional system plans, described in Minn. Stat. sec. 473.859, subd. 4.
- ❖ Addresses official controls: Includes a Capital Improvements Program (sewers, parks, transportation, water supply and open space) that accommodates planned growth and change consistent with TAZ forecast allocations.
- ❖ Addresses state and regional goals for reducing greenhouse gas and air pollutant emissions.

Compatibility: A local comprehensive plan is compatible with adjacent and affected governmental units, including appropriate interconnection of regional, county and local transportation networks of streets, bicycle pathways and pedestrian facilities, based on comments or concerns, or lack thereof, from these entities. A community should adequately document that it has acknowledged the concern(s) of all adjacent and affected governmental units.

- ❖ Addresses coordination of transitway station-area and high-frequency bus corridor planning with other communities along identified corridors.
- ❖ Addresses partners in communities, counties, and the region at large to coordinate transportation, pedestrian, on-street bicycle and off-road trail connections within and between jurisdictional boundaries.

The Foundation for Land Use and Transportation

The local transportation system is an essential component of the daily movement of people and freight. The foundation of the transportation system and its most basic component is the street. Streets (or roads, highways, freeways) are provided in a variety of ways to meet different needs in the region. While the Minnesota Department of Transportation is the primary provider and maintainer of major highways (or principal arterials), local governments are the primary providers and maintainers of minor arterials and other local roads. The relationship of land use access from roads as well as the function of and connection between different road types is discussed in Chapter 5, “Highway Investment Direction and Plan” and Appendices D and F.

Roads, rivers and ports, freight railroads, transit, sidewalks, trails, on-street bikeways, and airports make up our region’s transportation framework. Every community in the region may not have each of these transportation elements, but every community does have roads, even though their purpose will vary depending on a community’s stage and form of development. Since very early times, roads have supported our travel – whether by foot, horse-drawn wagon or buggy, or – in the 20th century –

automobile and truck. In recent history and today, roads have propagated auto-oriented travel and development patterns, but they also support the transport of freight and people traveling in buses, on bicycles, by foot, and in wheelchairs or other assistive technologies. The road provides the support for all of these people and freight, along with important supplementary facilities within the road right-of-way, such as sidewalks, bike lanes and/or adjacent trails.

- For Urban Center, Urban, and Suburban communities, as defined by *Thrive MSP 2040*, local governments will continue providing an interconnected system of streets, sidewalks, and trails that considers all users, appropriately connects to the regional highway system, and is supported by the regional system of highways and transit. These community types may vary in how they approach transportation, depending on their local vision and needs. However, these community types are all focused on adapting the already built environment and not substantially creating new neighborhoods.

In these communities, changes to the regional transportation system will focus on adaptive improvements that better support the growing demand for multimodal travel while acknowledging the continued role of automobiles and trucks. These communities, especially those developed around the automobile, may or may not choose to diversify land use to reduce community dependence on cars.

- For Suburban Edge and Emerging Suburban Edge communities, local governments and developers will invest in new systems of streets, sidewalks, and trails, considering all users – people and freight – from the start. This should include a more deliberate approach of designing infrastructure to the scale of people instead of the automobile. The resulting change in development form will be driven by market desirability of these locations, local transportation investment, and land use planning.
- Rural areas will invest in highways and streets that are flexible for a variety of uses and connect them with Rural Centers and the urban and suburban areas within the Metropolitan Urbans Service Area identified in *Thrive MSP 2040* and its policy plans. In rural areas, the emphasis will be on strengthening safe connections and less on large-scale transportation capacity.

In all areas, the accommodation of freight movements by truck will continue to be an essential need for local transportation system and land use plans. Transportation is essential to the economic vitality of the region, both to people and businesses. A well-designed, high-quality local transportation system directly benefits the functionality and affordability of freight. Also important will be the identification of important freight-accessible land that is vital for the region to protect and support. This Plan identifies regional truck corridors to help communities plan for the efficient movement of freight. More detail on this is available in Chapter 8, “Freight Investment Direction.”

In the Urban and Suburban areas and Rural Centers, a diversity of land uses and densities creates various transportation needs. This diversity currently makes these areas attractive to some lifestyles. However, these lifestyles can change over time, and it is imperative that local governments and

regional transportation providers balance their long-term approach by planning for an affordable, coordinated, multimodal transportation system.

The following sections focus on how growth can be directed toward nodes along corridors, resulting in orderly and more efficient land use patterns.

Density and Diversification of Job Concentrations and Nodes along Transportation Corridors

The Metropolitan Council's *Land Use and Planning Resources Report*, completed in 2011 in collaboration with local governments, identifies and assesses the effectiveness of local and regional planning strategies and process for:

- Reducing air pollution
- Mitigating congestion
- Reducing costs for operating, maintaining, or improving infrastructure

The report emphasizes approaches that reduce or manage travel demand through land use and development strategies and access to transportation options.

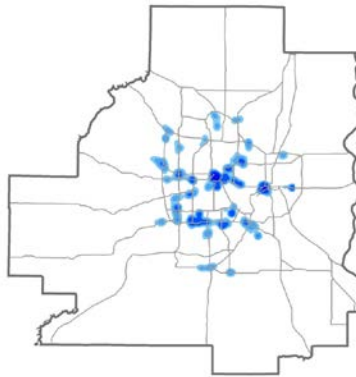
Local land use decisions can have a significant impact on travel behavior, congestion, air quality, greenhouse gases, and livability over time. Activity centers and their characteristics play an important role in this relationship. Several strategies were found to have the greatest impact on travel behavior:

- Access to activity centers along transportation corridors
- Street design and connectivity of transportation networks
- Mix of land uses
- High-quality transit
- Density combined with other strategies
- Transportation management and parking

Research concludes that density alone is not as effective as density combined with other strategies, such as connections to activity centers, a high-quality local transportation network, a mix of land uses, and transit.

This plan places increased emphasis on linking regional transportation investments to providing or improving access to regional job concentrations. Details about this strategy are found in the investment directions and plans. Local land use decisions related to job concentrations, nodes along corridors, and

Figure 3-4: Thrive MSP 2040 Illustrative Existing Job Concentrations



local centers can further support the *Thrive MSP 2040*'s outcomes of stewardship, prosperity, equity, livability, and sustainability.

What follows are local government strategies that will be supported through Metropolitan Council strategies to create opportunities that make the transportation-land use connection more productive.

Intensify and diversify land uses in regional job concentrations, nodes along transportation corridors, and local centers to enhance access for residents and businesses.

Increasing densities while diversifying the mix of land uses can strengthen accessibility and the efficiency of the region's transportation system. Regional job concentrations and nodes should be target areas for greater housing densities, including a mix of housing affordability, to balance the mix of job, housing, service, and retail activity in centers. An increased mix of land uses has been shown to decrease auto trips per capita relative to single-use districts, where auto travel is often the only option for people.

It will be challenging for the region to create freestanding centers of mixed-use activity that can support a level of intensity that is comparable to diversifying existing areas where jobs and activity are already concentrated. These areas have commercial or industrial uses that may be attractive for redevelopment and are often targets for planned mixed-use land uses. But the overall mix of uses in areas where jobs are concentrated and in nodes along corridors is more important than specifically supporting new mixed-use developments. Similar strategies can also be applied to local centers, whether in rural areas or as the focus of a local comprehensive plan.

Support density and a mix of uses with a mix of transportation strategies and a mix of urban design strategies.

Research has shown that without additional strategies that address the travel experience to, from, and within centers, density and a mix of land uses will not translate to positive benefits in travel behavior, congestion, greenhouse gases, and air quality. There are a number of key implementation considerations for local governments:

- Provide for a dense network of arterials, local streets, sidewalks, and trails that support narrower streets and smaller intersections by distributing traffic more broadly, and create more opportunities to walk and bike. This approach will discourage the development of "super blocks" that discourage community cohesion and connectivity. Policies aligned with Complete Streets techniques are an important component of this strategy. This includes considering how truck freight access can be accommodated in the street network design, since narrower streets can cause mobility problems for trucks.
- Manage the demand for driving by exploring policies such as parking pricing, on-street parking management, shared parking facilities, and the elimination of parking minimums in zoning codes that may be requiring oversupply relative to what the market demands. This strategy is supported by the other two strategies oriented toward providing attractive travel choices, like transit, biking, and walking.

- Foster and implement good urban design through code regulations and design standards. Good urban design includes public infrastructure, such as the streetscape and public spaces, and private development including building form, mass and scale, building materials, and parking design and location.

These land use tactics for local government can be applied to regional job concentrations, nodes along corridors, and areas identified as local centers in comprehensive plans. More details on these strategies and additional resources for local governments are available in the Metropolitan Council's *Land Use and Planning Resources Report*.

Local Government Land Use Policies Supporting Transit

In Chapter 6, "Transit Investment Direction and Plan," there is a description of the conditions needed to support an effective transit system. An essential part of this discussion focuses on development patterns that occur locally and are planned and regulated by local governments. The Transit Market Areas described there and in Appendix G demonstrate that the urban core is best suited for all-day, frequent bus service, but Transit Market Areas I and II represent only about 6% of the region's land area despite generating the majority of transit trips.

The intensity of land use drives the cost-effectiveness of transit investments...the region will need a strong partnership with local governments to support transitway success.

Much of the region developed around cars and is not well-suited to be served by local bus routes. So, the challenge in serving other regional communities will be shaping land use plans to align with the potential for future transit service. This section describes the elements of land use and development patterns that facilitate better transit service and describes how local governments should plan for these elements to set the stage for a positive market response that is leveraged to do more in response to transit investment and planning.

National experience has shown that development around transit must have both strong local government support and market demand to be successful. Land use and local development support are critical factors in prioritizing transitway investments, where the level of investment is substantial and long-lasting.

Local communities can plan for an efficient land use and development pattern that supports local transit or transitways. This is possible where local governments:

- Plan for density of population and activity.
- Design for a pedestrian-friendly environment.
- Encourage a mixed-use land use pattern.
- Develop an interconnected street network that maximizes pedestrian and bicycle access and simple route design.
- Support the development of housing affordability to populations likely to use transit.
- Support travel options that encourage or compliment using transit.

- Plan for linear growth in nodes along corridors.

In a similar way that shaping land use can support transit successfully, transitways and high-frequency bus corridors can transform land use. The intensity of land use drives the cost-effectiveness of transit investments, particularly the ongoing cost to operate service. Regional transitway investments will need a strong partnership with local governments to support transitway success. Local governments will need to set the vision for land use around high-frequency bus and transitways and guide development and local infrastructure to implement this vision. This partnership between local governments and agencies planning and implementing transit will ensure that transit funding is invested prudently. Every potential stop or station across a variety of communities in the region has unique opportunities, but they have to come together through corridor planning to ensure successful corridor investments. If local governments choose not to commit to transit-supportive development patterns, the Metropolitan Council's stewardship of regional resources may limit its funding share for such corridors in the current revenue scenario.

The vision and the commitment to this vision should be expressed in local comprehensive plans and station-area plans and supported by local government strategies and investments. Local governments

Density requirements for transit are focused on housing in expected "areas of change" identified in the local comprehensive plan, including areas identified for new development and redevelopment.

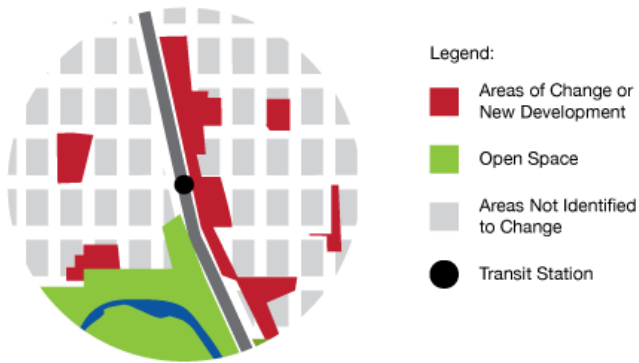
will also need to consider corridors and their relationship to adjacent communities, including potential extensions of existing high-frequency bus service.

Generally, these connections will be most feasible in areas within and adjacent to Transit Market Area II, as described in "Transit Investment Direction and Plan," although opportunities for suburb-to-suburb transit service could also be supported with strong local land use planning and implementation. An important factor for this type of service will be the focus on job concentrations.

Table 3-2 provides details on density expectations for new residential or mixed-use development around transit stations and around high-

frequency transit service identified in the current revenue scenario and using the community designations in *Thrive MSP 2040*. Densities are described as the minimum average across all areas planned for new development and redevelopment within a station area or bus corridor, expressed as housing units per net acre. As described in *Thrive MSP 2040*, setting minimum average densities for new development and redevelopment provides communities with the flexibility to determine which areas are best suited for higher or lower density development under the framework of meeting that overall minimum on available developable lands. An example of a typical station-area plan is provided in Figure 3-5, showing generalized land uses and areas of change. The table also provides an overview of other areas that local governments should be addressing through strategies that will support the density needed for transit, with more detail provided following the table. The Metropolitan Council will use various programs to support local governments in these efforts, as described later in this section.

Figure 3-5: Example Station-Area Plan



Local Government Land Use Planning Coordinated with Regional Transit Investments

Areas used to determine density requirements:

- Residential or mixed-use in areas of change or new development

Areas excluded from density requirements:

- Areas not identified to change including residential and non-residential areas
- Undevelopable land (transportation infrastructure, wetlands, public parks, steep grades, etc.)

Thrive MSP 2040 Community Designations

Residential Density Average near Transitway Stations Serving Light Rail, Commuter Rail, and Bus Rapid Transit – Density expectations represent average net densities near existing and new transit stations for areas of change that are identified for new development or redevelopment with some form of housing (housing or mixed-use).

Density for Transit Corridors Relative to Community Designation	Urban Center	Urban	Suburban	Suburban Edge or Emerging Suburban Edge
Minimum community-wide densities established in <i>Thrive MSP 2040</i>	20 units per acre	10 units per acre	5 units per acre	3-5 units per acre

Density for Transit Corridors Relative to Community Designation	Urban Center	Urban	Suburban	Suburban Edge or Emerging Suburban Edge
Density expectations for fixed or dedicated rights-of-way transitway station area (area within 10-minute walk or ½ mile)	Minimum: 50 units per acre Target: 75-150+ units per acre	Minimum: 25 units per acre Target: 50-100+ units per acre	Minimum: 20 units per acre Target: 40-75+ units per acre	Minimum: 15 units per acre Target: 40-75+ units per acre
Density expectations for highway BRT transitway station area (area within 10-minute walk or ½ mile)	Minimum: 25 units per acre Target: 40-75+ units per acre	Minimum: 12 units per acre Target: 25-50+ units per acre	Minimum: 10 units per acre Target: 20-40+ units per acre	Minimum: 8 units per acre Target: 20-40+ units per acre
Density expectations for arterial BRT station area (area within 5-minute walk or ¼ mile)	Minimum: 15 units per acre Target: 20-60+ units per acre	Minimum: 15 units per acre Target: 20-60+ units per acre	Minimum: 15 units per acre Target: 20-60+ units per acre	Minimum: 15 units per acre Target: 20-60+ units per acre

Residential Density Average near Transit Service along High-Frequency Bus Corridors –Density expectations represent average net densities for areas of change that are identified for new development or redevelopment with some form of housing (housing or mixed-use).

Density for Transit Corridors Relative to Community Designation	Urban Center	Urban	Suburban	Suburban Edge or Emerging Suburban Edge
3-5 units per acre	Minimum: 10 units per acre Target: 15-60+ units per acre	Minimum: 10 units per acre Target: 15-60+ units per acre	Minimum: 10 units per acre Target: 15-60+ units per acre	Minimum: 10 units per acre Target: 15-60+ units per acre

Diversity of Activity at and around Transit Station Areas – The Metropolitan Council will review comprehensive plans for conformance to residential unit density, but job and activity density is equally important along a corridor. The Metropolitan Council will review station-area plans for consistency with activity level guidelines.

Activity level of transitway station area (area within 10-minute walk or ½ mile)	Local governments should plan for a level of total “activity” near stations that is supportive of transitway investments. Activity can include residential units or residents, jobs, students, and retail and entertainment space that contribute to an overall level of activity. A guideline for minimum activity around a station would be 7,000 total residents, jobs, or students. In station areas with significant barriers or undevelopable land, this total can be adjusted proportionally (see discussion on Potential Constraints to Transit-Supportive Land Use).
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Other Land Use and Development Considerations near Transit and Transitway Stations – Density and activity are important, but there are other considerations in development patterns that are a part of the user experience in attracting transit riders to the system.

Best practices for land use and development planning and implementation	<ul style="list-style-type: none"> • Develop a walkable street network that maximizes pedestrian and bicycle access and includes facilities for all users. • Design for a pedestrian-friendly environment where streets foster an inviting experience on the way to transit. • Plan for a mixed-use development pattern at stations and in corridors that complements overall corridor development and accommodates freight movement. • Focus density in linear corridors and small areas and consider the relationship to adjacent communities and existing transit service. • Manage parking supply and provide for other options such as shared cars and bicycle facilities. • Create and preserve a mix of housing affordability. • Incorporate civic and public or semi-public spaces. • Protect and restore important natural resources in the station area. • Address barriers to private investment by using financing mechanisms for public infrastructure, site preparation, affordable housing, and other areas that require gap funding.
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The implementation of local land use planning will occur through a partnership of the Metropolitan Council, regional transit providers, and local (city and county) governments. Local governments may discover, through local comprehensive planning efforts, issues or concerns that will need to be addressed. The Metropolitan Council is committed to working with local governments to plan for land use that acknowledges the challenges that a local community is experiencing while respecting the need of the region to be good stewards of public investments.

Chapter 6, “Transit Investment Direction and Plan,” includes transitway investment factors that will consider how committed local governments are to these guidelines when determining investment priorities. These considerations are also an important factor in federal New Starts and Small Starts project evaluation. Additional information can be found in the resource list.

Strategies for Local Government Land Use Planning Coordinated with Regional Transit Investments

The greatest influence on corridor development and readiness for transit service is having a long-range vision, community buy-in, and early community identification of potential supportive changes to land use patterns. Local governments should be proactive in planning for transit service so that future development and public infrastructure support transit investment. To maximize the potential of station areas, local plans should address land use, urban design, market constraints, housing affordability, the needs of pedestrians and bicyclists, and public infrastructure. These plans provide the means to coordinate land use and transportation at the community level and with other communities served by the corridor. Development potential may be influenced by the local role set through a community vision and its role in regional economy. For example, a community may have two transit stations and determine that one station is best-suited for retail and high-density residential development and the other station is best-suited for office and other commercial uses. The strategies this community chooses to implement may vary based on their local vision for each station area, but this should also be considered in the context of the corridor and region.

Encourage population and activity density. Overall community density sets the stage for cost-effective transitway and high-frequency service and potential. Market demand will be an important factor in how much allowable development is realized and when. Minimum and target densities are adjusted for market conditions, as they vary by transit type and community designation. Minimum densities for new residential development ensure that the market for transit-supportive development is not precluded by other uses. The effect of the overall development pattern in a community and along corridors or in existing activity centers and small areas is the critical factor in the transit system’s success and financial sustainability. Effective density is also closely linked to a supportive local network of streets, sidewalks and bicycle pathways and to a mix of compatible uses.

Compact, high-density development supports the region’s investment in frequent transit service and a greater variety of routes, resulting in more transportation options, less time on the road, and alleviated traffic congestion. Expanded transportation choices can also reduce the combined cost of housing and transportation, allowing households to spend their income on other consumer needs (including housing costs). At the same time, well-designed compact development contributes to vibrant, economically

healthy neighborhoods that offer a variety of goods and services, social gathering places, recreation and entertainment opportunities, and attractive character. There are areas in the region where this development pattern already exists, particularly in *Thrive MSP 2040* Community Designations of urban center and urban. These areas are also highlighted as Transit Market Areas I and II in Chapter 6, “Transit Investment Direction and Plan,” and Appendix G. Each community along a transit corridor or future transit corridor needs to create its local vision for the shared corridor.

Plan for a mixed-use development pattern. Residential density alone cannot ensure the ridership needed to sustain investments in transitways. It is important for station areas to serve a diversity of uses, scaled to meet community needs and the station’s role in corridor development. Higher development intensity generates the most ridership if it is nearest the transit station, with density further from the station tapering off near the edges of the defined transit-oriented development area.

In addition to planning for density, local governments should plan for a level of total “activity” near stations that is supportive of transitway investments. Activity can include residential units, daytime population, jobs, students, and retail and entertainment space that contribute to an overall level of activity. A guideline for minimal activity is 7,000 total residents, jobs, or students.

Plan for transit-friendly land uses. Transit journeys begin or end with walking, so pedestrian-friendly station areas are necessary for every successful transitway. It is essential that local governments adopt measures in their comprehensive plans, station-area plans, and other local controls to guide land uses that support transit ridership and prevent new or significantly expanded uses and development forms that discourage transit and walking. Table 3-3 lists examples of uses and development forms that are generally considered to either support the goal of creating an active pedestrian environment that supports transit ridership, or lead to an auto-oriented less supportive of pedestrians and transit.² The types of uses and development forms (or similar) in Table 3-3 should be considered during the development of comprehensive plans, station-area plans, and other local land use controls that implement plans, especially for new standalone uses in the area immediately surrounding the transit station (within one block of stations). The Metropolitan Council expects local governments to guide transit-supportive uses and forms and prohibit the increase in auto-oriented uses or form around transitway station areas. Uses not supportive of transit should be located elsewhere in the community. A more complete discussion of transit-supportive uses and development form can be found in the Metropolitan Council’s Transit-oriented Development Guide.

² Pedestrian & Transit Oriented Design, Reid Ewing and Keith Bartholomew, Urban Land Institute, 2013. Figure 4-1, page 56.

Table 3-1: Examples of Station-Area Land Use and Development Form Controls Supporting an Active Pedestrian Environment and an Effective Transit System

Recommendation to Support Effective Transit	Uses	Development Characteristics
Include or Incentivize in Station-Area Plans	<ul style="list-style-type: none"> • Multifamily and higher density single-family residential units that support a mix of housing affordability • Office space • Hotels • Cultural and public institutions • Health care facilities and clinics • Retail, services, and restaurants • Entertainment facilities • Post-secondary education 	<ul style="list-style-type: none"> • Maximize building frontages and entrances on the street • Varied, human-scale building design, including transparent surfaces • Landscaping, pedestrian lighting, sidewalks
Restrict or Discourage as Standalone in Station-Area Plans Transit Stations	<ul style="list-style-type: none"> • Surface parking lots (excluding park-and-ride lots)¹ • Distribution warehouses • Personal storage facilities • Outdoor storage facilities • Salvage yards • Motor vehicle sales • Motor vehicle fueling, servicing and repairs, including car washes 	<ul style="list-style-type: none"> • Off-street parking and drive aisles located between the building and the sidewalk • Drive-thru facilities • Opaque, uninterrupted surfaces along the pedestrian right-of-way

¹While surface parking lots are included in the list of discourage standalone uses, surface park-and-ride lots near stations are acceptable as an interim use and structured parking may be acceptable as a long-term use near transit station areas.

All of the listed uses in Table 3-3 involve the provision of valuable goods and services. None of them are intrinsically “bad.” However, the traditional forms of discouraged uses make it difficult to contribute to the activity levels and pedestrian environment needed to support transit investments. An area with a good pedestrian experience will possess many other design features, which are discussed later in this section.

It is essential that local governments implement these minimum land use controls and standards in areas of change around transitway station areas as soon as the transit investments are identified. In most cases, station-area plans, and official controls should be developed and adopted during

transitway engineering. Alternately, an interim overlay zoning district is one way of protecting against the introduction of new uses, or the expansion of existing uses, until station-area plans, and official controls can be adopted. Examples of transit-oriented development overlay district language, as an example for local governments, can be found in the Metropolitan Council's Transit-oriented Development Guide. To facilitate the documentation of these plans, communities should identify "Transit Oriented Development Districts" or similar districts within the land use element of their comprehensive plans to identify the areas addressed through station-area planning. Ultimately, station area plans should directly inform or be incorporated by reference into a city's comprehensive plan.

Develop an interconnected street network that maximizes pedestrian and bicycle access and allows for simple route design. Local connectivity for pedestrians and bicycles, along with streetscape design, are important factors for serving housing and job densities. Implementation of a network of Complete Streets that are friendly to all modes with streetscape and street-level design standards or guidelines should be standard practice around stations and provide the necessary local system of access. Sidewalks, trails, and bicycle facilities are an important part of this local system. Transit riders need safe and convenient walking and bicycling routes. Pedestrians will typically walk up to about one-half mile (approximately 10-minutes) to get to and from transit, although recent studies have shown that people are willing to walk longer distances to access transit with higher levels of service, such as light rail. Station area and transit corridor planning should identify opportunities to create new connections.

Design for a pedestrian and bicycle-friendly environment. Street design guidelines should be adopted that improve the user experience and enhance safety for pedestrians and bicyclists by calming traffic, narrowing crossings, providing separation between pedestrians and bicycles when needed or safety, and improving the amenities and design of areas along and abutting the street. Communities should consider approaches like Complete Streets as part of planning and implementation. Design guidelines may also need to consider unique or flexible ways to accommodate freight traffic in and through these areas.

Accommodate freight movements. Station areas also need to accommodate trucks that bring freight and goods into walkable, mixed-use areas. Transit-oriented developments can be served without creating unsafe conditions for pedestrians and bicyclists by designing in "back-door" service areas and secondary streets and alleys to separate truck movements from the main flow of pedestrian traffic, and by designing specific streets to accommodate the appropriate controls and vehicles for the anticipated levels of truck traffic.

Manage parking supply and support travel options. While inclusive of the car, transit-oriented development is about combining compact development composed of a variety of uses and access modes. Surface parking can take up considerable land. It is very expensive, however, to build structured or underground parking. To improve the land use efficiency, cities should explore ways to reduce the demand for parking or more efficiently manage its use. Cities should consider cases where they might reduce or eliminate parking minimums (e.g., senior or affordable housing), require travel demand management programs for new development, and encourage the sharing of parking by uses with different peak periods of demand.

Create and preserve a mix of housing affordability. New transit service can result in an increase in property values and rents as areas become more attractive to residents, businesses, and developers. Improvements in transit, however, should benefit those who depend on it the most. Plans for station areas and stops that include residential uses should incorporate policies for mix of housing types and affordability. As station area and corridor plans evolve from vision and development concepts to formally adopted elements of the local comprehensive plan, each stage should develop strategies to create and/or preserve a mix of housing affordability and the inclusion of affordable units in new residential projects where necessary to provide the full range of housing options. Guidance on how to develop an effective mix of housing affordability is available in the *2040 Housing Policy Plan* and will be available in the Local Planning Handbook.

Incorporate civic and public spaces. Integrate and invest in public art and civic spaces and facilities that reflect community history and culture into station areas and include community gathering spaces use. Parks and green space are also important to include.

Protect and restore important natural resources. Important natural resources around a transit station or in transit corridors are important to protect or restore, especially when increased development intensity will put pressure on natural areas. Exploring increased density on developable land can help protect important natural resources while providing valuable access to green space in dense areas.

Address barriers to leverage private market investment. Local governments should consider using financing mechanisms for public infrastructure, site preparation, affordable housing, and other areas that require gap funding to support regional and local goals for station area development. Development incentives should be targeted toward areas of change and new development.

Council Programs Supporting Transit-Oriented Development

Metropolitan Council programs and policies can assist local governments in achieving the land use policies in *Thrive MSP 2040* and the Transportation Policy Plan. The Metropolitan Council's Livable Communities grant program is available to fund community investment that revitalizes economies, creates affordable housing, and links different land uses and transportation. The voluntary, incentive-based approach of the Livable Communities program leverages partnerships and shared resources to help communities achieve their regional and local goals. The Metropolitan Council awards grants through four categories:

- *Tax Base Revitalization Account:* Cleans up contaminated sites for redevelopment that creates jobs and/or produces affordable housing.
- *Livable Communities Demonstration Account:* Supports development and redevelopment that links housing, jobs, and services and demonstrates efficient and cost-effective use of land and infrastructure.
- *Local Housing Initiatives Account:* Produces and preserves affordable housing choices for low to moderate incomes.
- *Transit Oriented Development:* Catalyzes development around light rail, commuter rail, and high frequency bus stations.

More information on these grant programs is available on the Metropolitan Council's website (metro council.org).

The Metropolitan Council also created a Transit Oriented Development Policy that provides a framework for the Metropolitan Council to play a leadership role in planning and implementing transit-oriented development throughout the region. The Metropolitan Council's Transit-Oriented Development department supports the implementation of this policy.

Potential Constraints to Transit-Supportive Land Use

There are a number of potential constraints to development potential around transit investments. These constraints will need to be discussed in collaboration with local governments to the extent that they may inhibit the feasibility of planning for land use that supports transit. Examples of these constraints include:

Market Potential – Local governments and the region are able to set the stage for development by doing land use planning, making investments in infrastructure, and providing other forms of support. However, the most important component of land development is market potential, which takes into account a number of other factors beyond planning and infrastructure. Many of these factors cannot be controlled by government, although they can be influenced and shaped. It is helpful to consider these constraints when doing planning. Market studies that are community-specific, corridor-specific, or even broader, are encouraged.

Developable Land – The potential for transformation around station areas will be limited by the amount of land that can be developed or redeveloped. This may depend on site configurations and historical uses, barriers to transit access, external factors such as major utility lines or natural resources areas, or other potential constraints that will depend on local conditions.

This list of constraints is not exhaustive, nor do all the constraints exist throughout the region. They are potential considerations for the realistic implementation of the land use policies in the Transportation Policy Plan.

Transitway Commitments and the Timing of Land Use Planning

It is important to acknowledge that many communities will require significant retrofitting in order to achieve development results that are supportive of transit. Transitways require a substantial planning process that can leave local governments with uncertainty about specific project details, such as station locations, and the timing of investments. The process of planning land use and transit investments is iterative. However uncertain transit investments are, land use planning represents a long-term outlook that also informs transit planning. The following table describes the steps local governments can do prior to a transit commitment (such as a locally preferred alternative). Once a transitway or high-frequency route is in the current revenue scenario of the Transportation Policy Plan, the expectations become more explicit, as described in Table 3-4. Communities along corridors in the increased revenue scenario can still be proactive in land use planning, similar to the actions described prior to transit commitments in the current revenue scenario.

Consistent with the Metropolitan Council's vision, the Metropolitan Council will review planned transitways with considerations for a mix of housing affordability and access to employment in station areas. In addition, local governments along a transitway intending to apply for federal New Starts and Small Starts funding through the Federal Transit Administration should plan early to address the affordable housing components of the scoring evaluation criteria. The federal criteria assess the existing supply of legally binding affordable housing, as well as local plans and policies to preserve or increase affordable housing.

Table 3-2: Local Government Land Use Planning in Relation to Transit Commitment

Local Comprehensive Plan Element	Prior to Transit Commitment in Current Revenue Scenario	After Transit Commitment in Current Revenue Scenario
Land Use	<ul style="list-style-type: none"> • Set vision for potential/future transit corridors with goals for land use patterns that can grow into transit-supportive densities and nodes of activity. • Guide medium- and high-density housing that includes a mix of housing affordability and mixed-use development to areas along these corridors. • Consider potential transit alignments. • Work with agencies leading transit planning to identify important existing and planned transit opportunities. • Develop strategies to create and preserve a mix of housing affordability, particularly in areas where land values are likely to escalate after the transit commitment. 	<ul style="list-style-type: none"> • Adopt station area or corridor plans with an investment and regulatory framework to guide implementation. • Set density levels for new development that conform to minimums in the Transportation Policy Plan and opportunities for targeting higher densities. • Implement plans and policies to preserve and increase affordable housing within an overall mix of housing affordability. • Target property acquisition, rehabilitation, and development funding for a mix of housing affordability, including housing affordable to low- and moderate-income households, along the corridor.
Local Transportation	<ul style="list-style-type: none"> • Adopt community-wide policies for complete streets and pedestrian facilities and bicycle facilities. • Identify needed local transportation improvements to support land use vision in Comprehensive Plan. 	<ul style="list-style-type: none"> • Implement identified segments that provide an interconnected local transportation network serving the station or corridor. • Adopt transit-oriented development policies to guide development, including travel demand management.

This plan describes some general considerations for local governments, but the Metropolitan Council will provide more specific guidance through the *Transit-Oriented Development Guide*, the *Local Planning Handbook*, and other tools and resources. The following section includes some additional resources for planning around transit.

Resource List for Land Use Planning Around Transit

Transit-Oriented Development Planning Resources:

- *Guidelines for Land Use and Economic Development Effects for New Starts and Small Starts Projects*. Federal Transit Administration, August 2013. http://www.fta.dot.gov/documents/Land_Use_and_EconDev_Guidelines_August_2013.pdf
- *Transit-Oriented Development: TOD – Guides, Studies, and Articles; TOD and Market Forces; TOD Programs; TOD Plan and Ordinance Examples; Financing TOD*. Municipal Resource and Service Center of Washington. <http://www.mrsc.org/subjects/transpo/transitdev.aspx>
- *Growing Station Areas—The Variety and Potential of Transit Oriented Development in Metro Boston*. Metropolitan Planning Council. June 2012. <https://www.mapc.org/resource-library/growing-station-areas-the-variety-and-potential-of-tod/>
- *Planning for Transit-Oriented Development: A Practitioner's Guide*. Federal Transit Administration, June 2014. http://www.fta.dot.gov/16046_16042.html

Transit Overlay Zones (including parking requirement bonus reductions):

- *Housing Innovations Program. Featured Tool: Transit Development Overlays*. Puget Sound Regional Council. <https://www.psrc.org/transit-oriented-development-overlays>

Affordable Housing:

- *Mixed-Income Housing Near Transit—Increasing Affordability With Location Efficiency*. Center for Transit-Oriented Development. <http://reconnectingamerica.org/assets/Uploads/091030ra201mixedhousefinal.pdf>

Corridor Planning:

- TOD 203. *Transit Corridors and TOD—Connecting the Dots*. Center for Transit-Oriented Development. <http://reconnectingamerica.org/resource-center/browse-research/2010/tod-203-transit-corridors-and-tod/>

Parking Management:

- Shared Parking. Portland Metro. http://www.mapc.org/wpcontent/uploads/2017/10/PortlandMetro_sharedparkingreport.pdf
- Right Size Parking. King County Metro. <https://www.kingcounty.gov/depts/transportation/metro/programs-projects/transit-corridors-parking-and-facilities/right-size-parking.aspx>

Travel Demand Management:

- DRCOG *Regional TDM Short Range Plan* (2012-2016). Denver Regional Council of Governments, June 2012. <https://drcog.org/programs/transportation-planning/transportation-demand-management-program>

Complete Streets:

- *Urban Street Design Guide*. National Association of City Transportation Officials. <http://nacto.org/usdg/>

Bicycle and Pedestrian Planning

Bike and pedestrian infrastructure is most commonly provided by local governments and often integrated with local land use development. Local governments should consider the regional role of these local systems when doing comprehensive planning and implementing plans.

Bicycle Considerations

Bicycle infrastructure is an important consideration for both on-street and off-street options where bicycle travel is encouraged. Local governments should consider Complete Streets policies for all roads under their jurisdiction as a tool to include bicycles in the design of streets. In addition to serving local travel, local bicycle systems should provide important connections to regional systems, including:

- The Regional Bicycle Transportation Network
- Regional Parks and Trails
- High-frequency arterial transit corridors, transitway stations, transit centers, bus stops, and park-and-ride facilities

Bikeways can be made more user-friendly by providing wayfinding information along trails and on-street bikeways. Wayfinding is a system of signs designed to direct cyclists to important regional or local destinations, or to indicate distances to major road or trail intersections. When planning for local trail systems, and when implementing the Regional Bicycle Transportation Network, local agencies should consider including wayfinding systems to direct cyclists to important local destinations and regional destinations and activity clusters. Wayfinding can be especially effective where there are missing or unclear connections between cities or counties.

Local governments should also identify gaps and barriers in local bicycle networks through comprehensive planning and include possible solutions to address them. Bicycle parking and internal circulation may also need to be addressed at high-activity areas such as job concentrations, nodes, or local centers. The design, implementation, and maintenance of bicycle facilities should provide for safe, comfortable, and convenient travel options within communities. Specific regional barrier crossing opportunity locations, as identified in Chapter 7, “Bicycle and Pedestrian Investment Direction,” should be included in local bikeway network maps provided in comprehensive plans; in addition, any planned projects that may address the barriers at these critical crossing locations should be listed and/or described in local bicycle plans.

Pedestrian Considerations

Pedestrian connections are one of the most fundamental parts of a multimodal transportation system in the Urban and Suburban area as well as Rural Centers, where destinations and activity are located closer together than in the rural areas. Many people start and end their trips as pedestrians. As with bicycles, a potentially important planning consideration for pedestrians is adopting and putting into practice a Complete Streets policy. Planning for pedestrians is also integral to regional system planning. Local governments should provide and maintain pedestrian access to:

- Regional Parks and Trails
- High-frequency arterial transit corridors, transitway stations, transit centers, bus stops, and park-and-ride facilities
- Regional bicycle barrier crossing opportunity locations, where appropriate

A pedestrian-friendly environment is also a key strategy for successful dense, mixed-use areas, where pedestrian activity is often the highest.

Planning for a pedestrian friendly environment goes further than just providing access and infrastructure. The pedestrian environment is integrated with design. Good pedestrian facilities incorporate best practices that provide for a safe, comfortable, and convenient space to walk. When people are walking, they experience the streetscape in a different way than faster moving modes such as a car or bus. Local governments should consider the design and form of buildings that are adjacent to the pedestrian system, the need for street greening and shade with trees and planters, lighting and other safety elements, the proximity and speed of adjacent auto traffic, crossing facilities, signage, and other relevant elements identified through local planning.

Another element for local agencies to consider when planning for areas of high pedestrian activity is wayfinding – the system of signs used to direct pedestrians to important points of interest. Local planners should consider planning and implementing wayfinding systems where there are high levels of pedestrian traffic (for example, a local or regional trail, public plazas, historic districts) and clusters of highly visited destinations. Routing through wayfinding systems can be especially effective in directing pedestrians from a prominent trail to a commercial district, neighborhood center, or areas of entertainment or special interest.

Elements of a Good Pedestrian Experience:

Well-designed, well-maintained, safe, and secure pedestrian facilities – Sidewalks are the key building block of a local pedestrian system. They should be well-designed with appropriate widths, buffered with either parking, trees, or landscaping/grass, and maintained and kept clear of debris, snow, and ice. Also important are quality lighting, connections to land use (“eyes on the street”), traffic calming considerations including reduced turning speeds of vehicles, and traffic signals that are well-timed with considerations for pedestrians. Accessibility for all users should be integral in the design of these facilities.

Access to a mix of destinations and uses – Diverse environments attract people on foot. A successful pedestrian environment provides access to a mix of complementary uses that can include

housing, neighborhood services and shopping, offices and jobs, schools, libraries, parks and civic space, and recreational facilities. This can also include connections to other modes, including bicycle facilities, transit, and well-connected parking facilities.

Manageable walking distances and crossings – A comfortable walking distance is 5 to 10 minutes or about ¼ to ½ mile (1,250 feet to 2,500 feet). The distance a person will walk varies based on the street pattern and presence of natural or man-made barriers. Wide streets and infrequent safe crossings are some of the most common barriers for pedestrians to navigate. A successful pedestrian environment addresses crossing distances by shortening them through design (for example, narrower streets, curb extensions), providing comfortable median refuges and curbside waiting areas, and creating a visual connection across the street through pavement markings, signs, or other design elements. Safe crossings can be provided at midblock locations, where appropriate, to support direct connections for pedestrians.

A human-scale and visually interesting environment – Pedestrians experience their environment at a slower, more human-scale pace than drivers. A visually interesting and inviting pedestrian environment can increase pedestrian activity. Some key elements of a human-scale environment include landscaping, signs, and benches. However, building design and open space have the largest impact on pedestrian scaled environments. Good pedestrian design includes quality architecture and varied facades (for example, number of doors and windows, architectural elements), buildings that face the street and line the sidewalk with minimal setbacks, parking located to the back or side, connections to public art and civic and open space.

Protection from climate and environment – A successful pedestrian environment recognizes that the pedestrian is exposed to the elements. This can be softened by providing trees for shade and protection from rain and wind. Buildings can be oriented and located closer to the sidewalk and design elements can provide refuge for pedestrians. A buffer between pedestrians and auto traffic reduces the impacts of noise, pollution, and dirt.

Freight and Land Use Planning

Chapter 8, “Freight Investment Direction,” includes additional information on planning for land uses that are adjacent to freight corridors or facilities. The section also discusses the importance of planning for the long-term preservation of freight facilities through planning and considering the needs of freight as land uses change over time, particularly last-mile access to mixed-use or commercial areas.

Airport and Land Use Compatibility Planning

Most of the land surrounding the system airports now consists of built up areas or land zoned for urban uses. Lake Elmo and Airlake are the only airports that have adjacent rural land use areas. There has been a rapid transition of urban development which is enveloping land around Anoka County-Blaine and Forest Lake airports.

The Metropolitan Council has implemented land use compatibility guidelines for aircraft noise as a preventative measure to help communities control expanded development of sensitive land uses

around airports. Communities use corrective land use measures to help mitigate noise in areas with existing development that is incompatible with designated noise levels. The definition and application of the guidelines are found in Appendix L, along with revised noise contours for each airport.

Additional details on land use compatibility planning with respect to airports and airspace considerations are provided in Chapter 9, "Aviation Investment Direction and Plan."

CHAPTER 4

TRANSPORTATION FINANCE

Introduction

This section examines the sources of funding that will be available for transportation investments within the region in the coming years and the general areas of expenditure for those revenues. In particular, this section identifies the revenues that can reasonably be expected to be available and investment spending that will occur under what is known as the "Current Revenue Scenario" and identifies an "Increased Revenue Scenario" under which a realistic amount of additional revenue might be available.

As identified in past Transportation Policy Plans, an inadequate level of transportation funding continues to be a major issue facing the region. Under the Current Revenue Scenario, expectations are that performance measures related to preservation of the highway system pavements and bridges will begin to decline, and that highway congestion will continue to grow. And while the preservation needs of the existing transit system are estimated to be largely met, the important regional goal of growing and improving the bus system cannot be achieved without additional revenues. The Increased Revenue Scenario provides an estimate of a higher level of revenues that might be realistically attainable, and that would move the region in a direction closer to achieving the outcomes envisioned by *Thrive MSP 2040* and the transportation goals in this plan.

Financial Risks

This plan depends heavily on historical experience to forecast future revenues and expenditures. While this is the best guide available to produce an estimate of what to expect in the future, we also know that changes are likely over the twenty-year planning timeframe that could cause large movements away from these estimates. These potential changes are not accounted for in these estimates because their timing, scale and specific impacts are uncertain now.

Many of the uncertainties in the transportation financial outlook in our region are due to emerging technologies. Traditional gasoline and diesel fuel vehicles on the road today travel more miles per gallon of fuel than ever, and hybrid electric and fully electric vehicles are becoming more common, further reducing fuel consumption. Each of these trends will produce important benefits to our environment and reduce our reliance on foreign energy, however each also reduces the amount of fuel taxes collected and dedicated to transportation. Motor fuel taxes have been the largest contributor to the state funding provided for transportation purposes and these revenues support both state and local roadways.

There is broad uncertainty around autonomous vehicles - particularly the timing of development, market adoption and impacts on travel. However, the level of private investment and development activity taking place makes it clear that autonomous vehicles will be part of our medium to long term future. One likely impact is that the number of vehicles purchased and owned in the region and state will

decline as adoption rates of autonomous vehicles increase due to increased vehicle sharing. Fewer total vehicles would reduce both the revenues collected through the state motor vehicle registration tax and the motor vehicle sales tax. These revenues are used by the state, region and local agencies for both roadway and transit purposes.

More traditional financial concerns also pose a challenge in forecasting future transportation revenues. Specific assumptions are documented in this chapter for estimated annual increases in revenues and costs (i.e. inflation). Fluctuations from these assumptions can have significant impacts on the buying power of anticipated revenues and our region's ability to meet performance targets.

There are large uncertainties in transportation finance over the time covered by this Plan. It is important to note that many changes will not follow a linear pattern but may begin slowly and accelerate over time. It is critical that our region continues to monitor these trends and to discuss their implications so that, as stewards of the transportation system, we can make timely decisions in our region's best interests.

Two Funding Scenarios

This Transportation Policy Plan considers two funding scenarios; one representing the investments that can be funded under current estimated revenues, and a second representing a scenario in which new revenues are obtained.

- The Current Revenue Scenario assumes revenues that the region can reasonably expect to be available, based on experience, and current laws and allocation formulas. Under federal regulations, this scenario is called "fiscally constrained." If increases in state or local taxes, or the availability of competitive funds are assumed within the Current Revenue Scenario, the assumptions must be based on the region's history and experiences. The Current Revenue Scenario in this plan assumes that current revenue sources will continue along with inflationary growth. This plan incorporates recently enacted increases in local county sales taxes and wheelage taxes for transportation purposes and new trunk highway fund revenues provided in the 2017 legislative session. No other increases in local, state or federal tax rates are assumed.
- The Increased Revenue Scenario assumes revenues that the region might reasonably attain through policy changes, laws or decisions that increase local, state or federal funding sources, and that could provide for investment in an illustrative set of prioritized projects and programs. Under federal regulations, the programs or projects in the Increased Revenue Scenario are illustrative of what might be achieved with additional revenues, but the projects are not considered part of the approved plan.

The regional transportation revenues and spending generally fall into three primary categories: state highways, transit and local transportation.

- The state highways category includes revenues and spending on the state highway system owned and operated by MnDOT in the metropolitan area.

- The transit category includes revenues and spending by all regional transit providers, the counties and other local governments for the regional bus and transitway systems.
- Local transportation includes revenues and spending by the counties and cities on the local transportation system including six principal arterials, A-minor arterials owned by the counties and cities, all other local roads and the local bicycle and pedestrian systems.

The general revenue and spending assumptions for each scenario and each transportation category (state highways, transit and local transportation) are contained in this section, while the specific state highway and transit investments that can be accomplished within each scenario are detailed in Chapter 5, "Highway Investment Direction and Plan," and Chapter 6, "Transit Investment Direction and Plan," of this Transportation Policy Plan. The local transportation projects that can be accomplished under each scenario are identified by each city and county under their individual decision-making processes and are documented in local plans. Regionally significant local projects that have been identified by the counties and cities are noted in the Current Revenue Scenario project list in Appendix C.

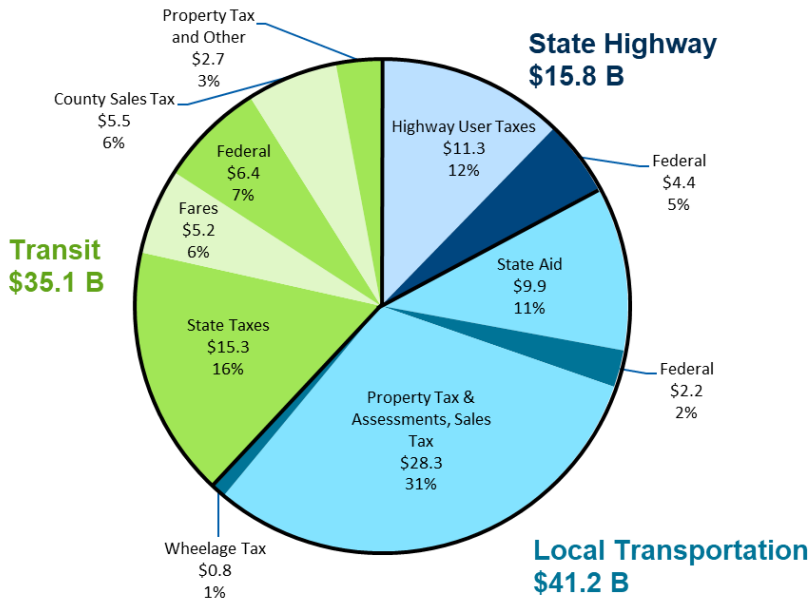
Assumptions of Current Revenue Scenario

The funding assumptions used for the Current Revenue Scenario were developed cooperatively with MnDOT and Metro Transit using existing financial resources and documents where possible. Information on local transportation revenues were obtained from state-aid allocation reports, state auditor data and averaging past federal allocations.

The pie chart in Figure 4-1 shows the total regional transportation revenues, estimated at \$92 billion, expected to be available to the region over the 26-year period of this plan (2015-2040). This is shown in year-of-expenditure dollars. Each of the major transportation categories (state highways, transit and local transportation) will receive funding from federal, state, regional and local funding sources. The revenue sources and assumptions used for each are detailed in the following sections and are shown in Table 4-2, "Metropolitan Area Projected Revenues, 2015-2040."

Commented [VA1]: Will increase to over \$93 B with Riverview added in. Still developing exact numbers

Figure 4-1: Regional Transportation Revenue 2015-2040 \$92B Current Revenue Scenario (Billions)



Commented [VA2]: Being updated with new Transit numbers. Transit will increase due to addition of Riverview and other updated numbers

It is important to note that due to constitutional dedications and specific federal and state allocation formulas, the vast majority of the transportation revenues expected to be available to the region are dedicated funds that cannot be moved from one spending category to another, i.e. state highway revenues cannot be spent on transit and transit revenues are not available for expenditure on the state highway system.

One source of “flexible” funding available to the region is through the allocation of federal funds by the region’s Transportation Advisory Board (TAB) through the Regional Solicitation process, described in the Overview of this Transportation Policy Plan. This competitive process can provide funds to all the regional transportation categories; state highways, transit and local transportation, including local roadways, and bicycle and pedestrian projects. Under adopted Transportation Advisory Board (TAB) policy, the freeway principal arterials are not eligible for use of these funds. Over the time of this plan approximately \$2.7 billion of “flexible” federal funding is expected to be available through the Regional Solicitation (excluding the regional Highways Safety Improvement Program funds which are dedicated to roadway safety projects). This represents approximately 3% of the transportation funds that will be available in the region.

State Highway Revenues

State highway revenues are the revenues used by MnDOT for the state highway system in the metropolitan area, which includes most of the region's principal arterials and 20 percent of the region's A-minor arterials. MnDOT's primary sources of revenues are the state highway user tax revenues and federal revenues as described below.

Highway User Tax Revenues

In Minnesota, revenues from the state gas tax, vehicle registration tax and up to 60% of the motor vehicle sales tax are constitutionally dedicated to highway purposes and are collectively referred to as highway user tax revenues. The Minnesota Constitution also provides that after taking 5% off the top for the non-state aid highway network, the remaining dedicated highway user tax revenues are divided 62% to state highways, 29% to county state-aid roads and 9% to city state-aid streets.

MnDOT is responsible for tracking the highway user tax revenues and forecasting revenue into the future. The long-range estimates for highway user tax revenues were updated by MnDOT in 2016 as part of its work on the *Minnesota State Highway Investment Plan (MnSHIP)* adopted January 2017. In predicting future highway user tax revenues MnDOT considered factors such as improvements to vehicle fuel efficiency, increases in the number of electric and hybrid vehicles and flattening levels of per capita vehicle miles traveled. MnDOT anticipates gas tax collections will slightly decrease over the time period of this plan (averaging -0.7% annually), while vehicle registration taxes and motor vehicle sales taxes will annually increase (averaging 2.2% and 3.4% respectively). Taken together, the three state highway user taxes are expected to increase by an annual average of 2.0% through 2040.

As part of the 2017 MnSHIP, MnDOT prepared the estimate of highway user tax revenues that would be allocated for construction and operations purposes to the MnDOT Metro District. In past plans, the construction funding to the Metro District was typically in the range of 42-41% - 43% of MnDOT's total construction funding. However, due to a new statewide shift towards prioritizing preservation of the state's pavements and bridges, and a lack of adequate highway revenues, the Metro District will begin to receive a declining share of the total statewide highway user tax revenues available for state construction purposes under the MnSHIP revenue forecast. Within MnSHIP, the Metro district's share of total statewide construction revenues between 2018- 2021 will be at approximately 41%; from 2022 – 2027 the Metro share is forecast at approximately 40% of statewide construction revenues and, from 2028-2037, the Metro share will fall to approximately 30% of statewide construction revenues.

MnDOT and Metropolitan Council staff have been discussing potential options for mitigating this future decline and identified a short-term action that is incorporated into the highway revenue assumptions in this plan. The revenue estimates for the state highway mobility investment category in this plan include an additional \$9 - \$30 million annually for lower cost high benefit mobility projects beginning in 2022, or about an additional \$450 million over the period of the plan that was not allocated in MnSHIP. Additionally, MnDOT reallocated \$50 million each year from 2024 to 2026 from statewide pavement to mobility in the metro area. Approximately two-thirds of this is new money to this region. While important and beneficial, this level of funding does not off-set the expected declining share of total statewide

Commented [PS3]: Update to 2020?

Commented [VA4]: MnDOT is reviewing this language. The numbers are on the high side but MnSHIP has not been updated so may be the best published source of information we have.

highway funding to the Metro area predicted within MnSHIP, but it allows time for the state and Metropolitan Council to determine how this issue will be addressed.

Approximately 25% of the statewide revenues available for state highways operations purposes are allocated to the Metro District, these are estimated at \$88 million in 2018 and \$2.9 billion from 2015-2040.

In 2018, the total highway user taxes estimated to be available to MnDOT's Metro District for both capital and operating purposes are \$315 million. From 2015 to 2040, it is estimated that the Metro District will receive approximately \$11 billion from the state highway user tax revenues.

As noted at the outset of this chapter, the Current Revenue Scenario estimates are based primarily on those revenues that are on-going, and estimates are based on experience, current laws, and allocation formulas. This plan also includes special one-time funding of \$530 million from the state's Corridors of Commerce program provided in both the 2017 and 2018 legislative sessions and the new 2017 base revenues that were authorized by the 2017 Legislature.

Federal Highway Revenues for MnDOT

Federal transportation revenues are generated through a federal fuel tax. The revenues are deposited in the federal highway trust fund, about 85% of which are deposited in the highway account and about 15% in the transit account. At the time this Transportation Policy Plan was adopted, the federal law in place to distribute the federal revenues was known as the Fixing America's Surface Transportation Act, or FAST Act, passed in 2015. The FAST Act contains five primary highway funding programs through which the state receives revenues:

- National Highway Performance Program (NHPP),
- Surface Transportation Program Block Grant (STPBG) program (which includes a set-aside of 7% of the funding for transportation alternative modes),
- Congestion Mitigation/Air Quality (CMAQ) program,
- National Highway Freight program, and
- Highway Safety Improvement Program (HSIP).

To align with the MnSHIP forecasts, all federal revenues covered by this plan are forecast to grow by an annual average rate of 2.2%.

In Minnesota, the state's NHPP funds and half of the STPBG funds are allocated to MnDOT for the state highway construction program. MnDOT's federal NHPP and STPBG funds are then allocated to the MnDOT districts along with the available state highway user tax revenues. The Metro District's share of these federal highway funds is included in the overall revenue estimates provided by MnDOT.

MnDOT receives approximately \$25 million annually for the National Highway Freight Program, which it allocates through a competitive process. In 2017, the process allocated approximately \$100 million for 2019-2022. Metro area projects were successful in obtaining 80% of this funding, about \$20 million annually. This plan assumes this level of freight funding will continue to MnDOT through 2040.

The remaining half of the state's STPBG funds, along with the state's CMAQ funds and half of the state HSIP federal funds are allocated to local Area Transportation Partnerships throughout the state, which involve local elected officials and members representing various modes to help determine expenditure of the funds. In the metropolitan area, the Metropolitan Council and Transportation Advisory Board (TAB) together serve as the Area Transportation Partnership and are responsible for allocating the regionally available federal funds. These funds are distributed every-two-years through a process known as the Regional Solicitation, which is described in a later section of this chapter.

Transit Revenues

Transit revenues are generated by several sources, most which are available only for specific transit operating or capital purposes. The three major sources of transit funding are state taxes, the state motor vehicles sales tax and state general funds provided through state law and appropriations, and federal funds provided through formula appropriations. These revenues, along with fares, are largely used by the Metropolitan Council (Metro Transit, Metro Mobility, and contracted transit services) and suburban transit providers to operate, maintain and improve the existing bus and transitway systems. Additional competitive revenues are also available through the federal Capital Investment Grants (e.g. New Starts and Small Starts) program, the Regional Solicitation and from local county sales tax funds to expand the transit system, as described below.

Transit Motor Vehicle Sales Tax Revenue

Forty percent of the state's motor vehicles sales tax (MVST) revenues are dedicated to statewide transit purposes, with the Metropolitan Council receiving 36% of the MVST revenues for metropolitan area transit. The state provides a four-year forecast of expected MVST revenues. The February ~~2017~~ 2020 forecast was used as the basis for the MVST revenue estimates in this plan. After the state forecast years, transit MVST revenues are forecast to increase at an annual average of 3.4% (consistent with the highway MVST forecast by MnDOT under the MnSHIP plan) over the time period of this plan. MVST revenues are primarily used for transit operating purposes but can also be used for transit capital. In 2018, the metropolitan area transit share of MVST revenues ~~are estimated~~ were at \$~~291.82~~ million. From 2015-2040, approximately \$10.~~63~~ billion is estimated to be available from the transit MVST revenues.

Commented [VA5]: Transit forecasts are being updated with the February 2020 forecast numbers.

State General Fund and Bond Appropriations

The state has historically provided a general fund appropriation for transit operating purposes. These revenues are ~~in large part~~ allocated to Metro Mobility operations and for the state's 50% share of transitway operations. For the plan's current revenue forecasts, the state general fund appropriation is assumed to grow to meet the amount needed for these two transit operating purposes. In 2018, the state general fund appropriation for transit operations ~~was approximately~~ \$132 million. From 2015-2040, the total amount of transit revenue from the state general fund is estimated at approximately \$~~5.0~~ billion.

Commented [VA6]: Being updated

The state also periodically allocates revenues from state general obligation bonds for transit capital purposes. Historically, the Metropolitan Council has received bond appropriations for transitway development, both for New Starts/Small Starts projects and other transitway projects. The past plans have included an assumption that future state bond funding would be available for transitway development. Over time, this assumption proved to be unreliable and actual experience was that the assumed state share was often the final unfunded amount needed for a major transitway project. Therefore, this plan (and the 2018 plan) recognizes only existing state bond allocations – it does not assume any future state bond allocations, though it is anticipated the Metropolitan Council and local partners will continue to make requests for bond funding for major capital projects such as bus garages and arterial bus rapid transit development and bus garages. The formerly assumed 10% state bond share of transitways funded through the federal Capital Investment Grants program (e.g. New Starts/Small Starts) has been replaced with assumed county sales tax funds.

Transit Fares

Transit fare revenues are used primarily for transit operating purposes. The transit fare recovery ratio is a measure used nationally that compares the level of fare revenue received to the total operating costs of a transit system. A fare recovery ratio of 28% would indicate that 28% of the total operating costs are paid through passenger fares. Transit fare recovery ratios can vary significantly across transit service types, with services such as light rail typically recovering in the range of 30-40% of the operating costs, regular-route bus service recovering 20-30% of costs and Americans with Disabilities Act services such as Metro Mobility recovering a much smaller percentage, on the order of 10-15% of costs.

The Metropolitan Council periodically implements fare increases so that the system-wide fare recovery ratio remains stable as a percent of the total system costs—currently at about 25% of system-wide costs. This plan assumes that, over time, fares will continue to grow (approximately 2.5% annually) to maintain a constant system-wide fare recovery ratio over time. This plan estimates total transit fare revenues at approximately \$121 million in 2018 and a total of \$5.2 billion from 2015–2040.

Commented [VA7]: Replace with updated numbers

Federal Transit Revenues

Under the FAST Act, the region receives federal formula transit revenues through two primary programs—Urbanized Area Formula Grants (section 5307) and State of Good Repair Grants (section 5337). These programs provide formula funds for the region to use for transit capital asset management and improvement. For the purposes of forecasting the plan revenues, these programs are expected to continue in a similar form under any new federal law in the future and to grow at an annual average similar to the federal highway funds at 2.2%. In 2018 the region's federal transit formula funds are estimated at approximately \$112 million, totaling \$3.3 billion from 2015-2040.

As indicated earlier, the region also receives federal CMAQ funds that are distributed by the TAB and Metropolitan Council through the Regional Solicitation. CMAQ funds must be allocated to transportation projects that improve air quality. Historically, the region has allocated approximately 80-90% of the available regional CMAQ funds to transit and travel demand management (TDM) projects, with the remaining CMAQ funds supporting roadway traffic management activities. The revenue forecasts in this

plan assume this historic allocation of federal funds to transit projects through the Regional Solicitation will continue and that, similar to other federal revenue, these funds grow at a rate of 2.2% annually. In 2018 the Regional Solicitation funds for transit are estimated at \$24 million and will total about \$750 million over the life of the plan.

The largest competitive federal transit program is the Capital Investment Grants (CIG) program (e.g. New Starts/Small Starts), which can provide a significant share of the capital costs for major transitway projects. In the past, the region has received a 50% federal cost share for the construction of the Blue Line, Green Line and Northstar commuter rail. This plan assumes a similar federal funding contribution to future CIG projects will continue, including the Orange Line (I-35W South BRT), Green Line extension (Southwest light rail), Blue Line extension (Bottineau light rail), Gold Line dedicated BRT (Gateway corridor), Rush Line dedicated BRT and ~~any future CIG projects~~ Riverview LRT. The federal share may vary by project – this plan assumes about a 50% federal share for all CIG projects. The federal CIG funding through 2027 of the plan totals almost \$2.3 billion or about \$200 million annually in the first 12 years of the plan (with the assumption that the region may use grant anticipation financing if the federal contribution lags the project expenditures). As described in the Transit Investment Direction and Plan, the region will aggressively pursue federal funding to allow for the accelerated development of the regional transitway system. However, there is a level of risk associated with the development of each project, whether CIG funding will be available nationally, and whether the project will successfully compete for the funding.

Commented [VA8]: Update with Riverview assumption. Total will be about \$3.3 B.

Transit Property Tax and Other Revenues

Two sources of local property tax revenues are used for transit purposes - the Metropolitan Council levies for general transit capital purposes and Regional Railroad Authorities levy for a portion of the county share of transitway development. The Metropolitan Council levies a property tax to pay for the debt service on transit bonds known as Regional Transit Capital (RTC). The Metropolitan Council can issue RTC bonds only when authorized by the state legislature to do so. Typically, these bonds are authorized on an annual or biannual basis. The RTC funds are used to pay the capital expenses of maintaining the existing system and to provide the 20% required match to federal formula, CMAQ and other competitive federal funds. The revenue forecasts in this plan assume RTC funds will continue to be authorized at the existing level (approximately \$44 million in 2018) and will grow at a rate of 3.3% annually. RTC revenues are estimated at \$1.8 billion from 2015 to 2040.

County Regional Railroad Authorities (RRAs) are authorized to levy a property tax for the purpose of developing regional transitways. Typically, RRA funds provide 10% of the capital costs for constructing transitways. This plan assumes that RRA property tax funds will provide the 10% amount needed for development of new transitways excluding arterial BRT. Local property tax contributions to transitways are estimated at approximately \$500 million from 2015 to 2040.

Commented [VA9]: Update with Riverview amount included.

The Metropolitan Council also receives other revenue used for transit operations from sources including advertising, investment income, and from Wright and Sherburne counties and MnDOT to pay the Greater Minnesota share of operating the Northstar commuter rail. Other revenues are estimated at approximately \$400 million from 2015-2040.

County Sales Tax Revenues for Transit

In 2008, the legislature allowed the metropolitan counties to pass a 1/4 cent sales tax for transitway expansion and operating purposes. Five of the metropolitan counties (Anoka, Dakota, Hennepin, Ramsey and Washington) formed the Counties Transit Improvement Board (CTIB) and jointly implemented the sales tax. Through 2017, CTIB provided funding for up to 30% of a transitway's capital costs and 50% of the net costs of operating the light rail and Northstar commuter rail system. ~~Past plans also included an assumption that state bond funds would be used to cover 10% of the capital costs of major transitway development.~~

In 2015, state law was changed to allow metropolitan counties that were not levying the 1/4-cent sales tax to levy up to a half cent sales tax for transportation purposes. In 2015, Scott county implemented a half cent tax for transportation purposes that allows up to \$1.0 million annually for transit. In 2017, Carver county also implemented the sales tax but has not indicated that any amount of it will be used for transit purposes. In 2017, the five CTIB counties determined that it would be more advantageous to disband the Board and for each county to levy its own transportation sales tax. This action went into effect on June 30, 2017 and the individual counties each implemented a county transportation sales tax starting October 1, 2017. Each county is responsible for passing resolutions to identify the projects that will be funded through its sales tax revenues. Hennepin and Ramsey counties have indicated ~~all~~ the majority of their sales tax revenues will be used for transitway capital and operating purposes. Anoka, Dakota, and Washington will use the sales tax revenues for transportation purposes that include transit and other modes.

This plan assumes the county sales tax revenues will be used to cover CTIB's former 30% share of transitway capital costs and 50% share of operating costs, and the 10% share of transitway capital costs formerly assumed to be provided through state bonds. This plan identifies approximately \$5.5 billion of sales tax revenues for transitway use from 2015-2040, with \$3.8 billion allocated to specific transitway capital and operating projects and an additional \$1.7 billion in as yet undesignated sales tax revenues from Hennepin and Ramsey counties, likely to include the cost of the Riverview corridor transitway development.

Local Transportation Revenues

Federal transportation planning regulations require the plan to account for all transportation revenues and spending expected to occur in the region over the period of the plan, including revenues used by local units of government (cities and counties) on the local road, bicycle and pedestrian systems. The local road system includes local streets, collectors, A-minor and other minor arterials and select principal arterials owned by some local units of government. Because most of local transportation spending occurs on the local system, the local transportation revenues and spending are generally not covered in the regional plan in detail. Only those local projects using federal funds received through the Regional Solicitation process, HSIP, other competitive federal funds, or that are regionally significant projects (expansion projects with a potential impact on air quality) are shown in the plan in Appendix B: Transportation Improvement Program, Appendix C: Regional Project list, and Appendix E: Air Quality Information.

Commented [VA10]: Update with Riverview shift of sales tax from undesignated to designated to Riverview.

Local transportation revenues come from the following primary sources: local property taxes, local bonding, assessments, fees or other special taxing districts established for transportation purposes; local transportation sales tax and wheelage tax revenues; county and city state-aid allocations from the state highway user tax revenues; federal revenues distributed through the Regional Solicitation process and HSIP federal funds.

As described in the transit revenues section, the Counties Transit Improvement Board disbanded in 2017 allowing the CTIB counties along with the other state counties to implement a local transportation sales tax of up to one-half percent. Hennepin and Ramsey counties chose to implement a half cent sales tax primarily for transitway purposes and Anoka, Dakota and Washington counties implemented a quarter cent sales tax for all transportation purposes. In 2017, Carver, Scott, Sherburne and Wright # County (which was not part of CTIB) have also also implemented a half cent sales taxes for transportation purposes, and Scott county had previously implemented a half cent sales tax in 2015. These local sales tax revenues will provide significant funding for the local roadway, transitway, and if the counties so choose, MnDOT's state highway system, and bicycle and pedestrian projects. Projects must be identified for funding through resolutions passed by the county boards. This plan estimates that from 2015-2040 approximately \$6.3 billion in local sales tax revenues will be available for transportation purposes including \$5.5 billion already identified by the counties for transitway specific purposes and \$850 million still to be designated by the counties likely for specific local transportation or state highway projects.

Commented [VA11]: Update figures

Under state law, cCounties can levy a wheelage tax of up to \$20 per vehicle for roadway purposes, which six of the metro counties (Carver, Dakota, Hennepin, Ramsey, Scott, and Washington) have implemented. Dakota, Hennepin, Scott and Sherburne and Washington counties currently collect a \$10 per vehicle fee and Carver, Hennepin, and Ramsey and Washington collect a \$20 per vehicle fee. Anoka and Wright counties do not collect the wheelage tax. Also, under state statute, five of the metropolitan counties (Anoka, Carver, Dakota, Scott and Washington) receive an annual distribution from the state motor vehicle lease tax. The wheelage tax and motor vehicle lease tax revenues total approximately \$800 million and \$1.2 billion from 2015-2040 respectively.

Most local transportation revenue is provided through local property taxes or local assessments, fees or other special taxing districts established for transportation purposes. Frequently when a new housing development is proposed, negotiations between the developer and city can result in all or a portion of the new local roadways being provided either directly by the developer or through related fees. These types of revenues are not estimated for this plan but are generally included in the local property tax category.

As shown in Figure 4-1, approximately \$30 billion or about 71%, of the \$41 billion estimated to be spent over the life of this plan for local transportation purposes will come from local property taxes, assessments, sales taxes, wheelage taxes or other local sources. The remaining 29% of local transportation revenue is derived from state highway user taxes and federal competitive funds.

Total local transportation property tax revenue data was calculated from information submitted by the local units of government to the state auditor and published annually. These reports include the annual reporting of transportation operating and capital expenditures for each local unit of government. Recognizing that these local transportation expenditures can vary significantly from year to year, a

base-expenditure year was established by averaging calendar years 2011 through 2015 expenditures and inflating the average at a rate of 2% annually over the plan period. The local property tax revenue amounts were calculated by subtracting the known revenue contributions from the state highway user taxes, vehicle lease tax and federal revenue from the known total local transportation spending.

Both cities and counties receive highway user tax revenues based on a statutory formula that accounts for factors such as lane mileage, construction needs, vehicle registrations and population. The state highway user taxes must be used on the designated county and municipal state-aid systems. The local highway user tax revenue estimates in this plan are derived from historical MnDOT state-aid allocation data inflated annually at a rate of 2%, similar to the inflation rate used in MnSHIP for state highway user tax revenues. Highway user tax revenues estimated to be available for the metropolitan area county and municipal state-aid systems in 2018 is \$308 million and will total approximately \$10 billion from 2015 to 2040.

The federal revenue available for local transportation purposes is allocated through the Regional Solicitation process (described in the following section). The local federal funding is assumed to be approximately equal to the historical levels of STP (including allocations for both roadway and bicycle and pedestrian projects) and HSIP revenues that have been available to the region, as these sources of funding have primarily been awarded for local projects. The federal Regional Solicitation revenues were inflated annually by 2.2%, like all federal revenues. The Regional Solicitation federal funds assumed to be available for local transportation will total \$2.2 billion over the time period of the plan, including \$1.9 billion of federal funds for roadway, and bicycle and pedestrian projects, and \$0.3 billion of HSIP funds.

Regional Solicitation Process

From 2015 to 2040, total federal funds allocated to the metro region are estimated to total \$3 billion, including \$1.95 billion of Surface Transportation Block Grant (STPBG) program funds, \$750 million of Congestion Mitigation Air Quality (CMAQ) program funds and \$300 million of Highway Safety Improvement Program (HSIP) funds. STPBG and CMAQ funds are allocated through a competitive process, the Regional Solicitation, which is overseen by the region's Transportation Advisory Board (TAB) and approved by the Metropolitan Council. The HSIP funds, while also approved by the TAB and Metropolitan Council, are allocated through a competitive process that is overseen by MnDOT's Metro District and Office of Traffic Safety.

The Regional Solicitation process is a long-standing competitive process used to award regionally available federal transportation funds to roadway, transit and bicycle and pedestrian projects in the metropolitan area. The process uses a detailed system of establishing important transportation criteria and measures to score projects submitted in modal application categories. In 2014, the criteria, measures and overall process ~~was re-evaluated~~ went through a major re-evaluation and revision by the Transportation Advisory Board to assure that the process reflected new federal guidance and regional transportation goals. In addition, after each Regional Solicitation, the TAB reviews the process and outcomes and makes adjustments for the next solicitation. These regional outcomes and goals are defined through *Thrive MSP 2040*, the regional development framework for the metropolitan area and

through the region's long-range transportation plan, the *2040 Transportation Policy Plan (TPP)*. The Regional Solicitation funds are intended to help the region achieve the outcomes and goals envisioned in the transportation plan and to address transportation problems identified in local comprehensive plans.

While there are national goals for the region's transportation system, including the implementation of a performance-based planning approach to selecting investments, federal legislation requires metropolitan areas to set their own goals. Projects funded through the Regional Solicitation do not need to be specifically named in the TPP because they prove consistency with regional goals and policies during the qualifying, scoring and selection process. The goals of the TPP are strongly reflected in the prioritizing criteria used to select projects as shown in the following table.

Table 4-1: Regional Solicitation Connection to Regional Policy

Prioritizing Criteria	Thrive Outcomes	TPP Goals
Role in the Regional Transportation System and Economy	<ul style="list-style-type: none"> Prosperity Livability 	<ul style="list-style-type: none"> Access to Destinations Competitive Economy
Usage	<ul style="list-style-type: none"> Livability Prosperity 	<ul style="list-style-type: none"> Access to Destinations Competitive Economy
Equity and Housing Performance	<ul style="list-style-type: none"> Equity Livability 	<ul style="list-style-type: none"> Access to Destinations Leveraging Transportation Investments to Guide Land Use
Infrastructure Age	<ul style="list-style-type: none"> Stewardship Sustainability 	<ul style="list-style-type: none"> Transportation System Stewardship
Congestion Reduction/Air Quality	<ul style="list-style-type: none"> Prosperity Livability 	<ul style="list-style-type: none"> Healthy Environment Competitive Economy
Safety	<ul style="list-style-type: none"> Livability Sustainability 	<ul style="list-style-type: none"> Safety and Security
Multimodal Facilities and Existing Connections	<ul style="list-style-type: none"> Prosperity Equity Livability Sustainability 	<ul style="list-style-type: none"> Access to Destinations Transportation and Land Use Competitive Economy
Risk Assessment	<ul style="list-style-type: none"> Stewardship 	<ul style="list-style-type: none"> Transportation System Stewardship
Cost Effectiveness	<ul style="list-style-type: none"> Stewardship 	<ul style="list-style-type: none"> Transportation System Stewardship

The region has directed use of the Regional Solicitation funds available for roadway purposes to the A-minor arterials and the non-freeway principal arterials owned by MnDOT, counties and cities. While non-freeway principal arterials and A-minors owned by MnDOT are eligible for the Regional Solicitation revenues, historically most of the regional federal revenues have been allocated to local transportation (roadway, bike and pedestrian) projects and transit projects. For simplicity, the financial analysis for this plan assumes that none of the federal revenues available through the Regional Solicitation will be allocated to MnDOT. The Regional Solicitation federal revenues are fully accounted for within the Transit and Local Transportation revenues and spending categories. The HSIP funds are allocated only to the city and county roadway system and are accounted for within the Local Transportation revenue and spending category.

Table 4-2: Metropolitan Area Projected Revenues, 2015-2040 (year of expenditure)

REVENUE SOURCES	Ongoing or Project Specific Funding	2018 Annual Amount	Total Current Revenue Scenario 2015-2040
State Highway Revenues			
Highway User Taxes	Ongoing	315M	11.43B
Federal	Ongoing	124M	4.4B
Subtotal State Highway Revenues		\$439 M	\$15.8 B
Transit Revenues			
Motor Vehicle Sales Tax	Ongoing	282M 291M	10.63B
State General Fund/Bonds	Ongoing	132M	5.0B
Fares	Ongoing	121M	5.2B
Federal Regional Solicitation	Ongoing	24M	750M 8B
Federal Formula (5307, 5340)	Ongoing	112M	3.3B
Fed. Capital Investment Grants (CIG)	Project-Specific	0	2.3 3B
County Sales Tax	Project-Specific	328M	5.5B
Property Tax and Other	Project-Specific	131M	2.875 B
Subtotal Transit Revenues		\$1.1 B	\$35.436.5 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

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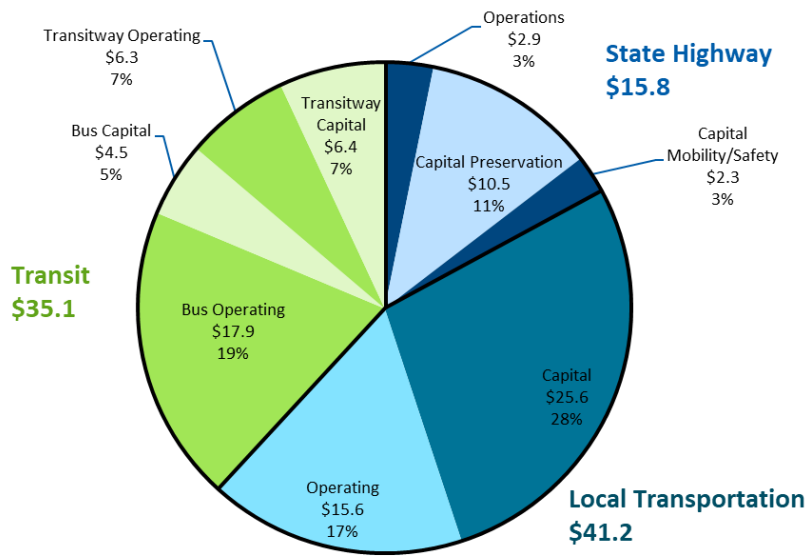
REVENUE SOURCES	Ongoing or Project Specific Funding	2018 Annual Amount	Total Current Revenue Scenario 2015-2040
Subtotal Local Transportation Revenues		\$1.3 B	\$41.2 B
TOTAL REVENUES		\$2.9 B	\$92,493.5B

Spending under Current Revenue Scenario

The sections below describe the high-level results for state highways, transit, and local transportation spending under the Current Revenue Scenario over the period of the plan, reflecting the estimated level of revenues previously described. The total estimated spending, \$93.52 billion, is shown in the pie chart in Figure 4-2, "Regional Transportation Spending, 2015-2040." The detail for planned spending under the Current Revenue Scenario can be found in the Chapter 5, "Highway Investment Direction and Plan," and Chapter 6, "Transit Investment Direction and Plan." In addition, Table 4-3 shows the summary of current revenue scenario spending for state highways, transit and local transportation, broken into the general categories of operations and capital spending.

Figure 4-2: Regional Transportation Spending, 2015-2040 \$92B Current Revenue Scenario (Billions)

Commented [VA12]: Update with new spending including Riverview



It should be noted that in comparing highway and transit spending, operations activities for transit are very different from roadway activities. Transit operations spending includes the costs of the daily operations of the transit system and the necessary vehicle, driver and maintenance costs associated with running these daily services. For roadways, these types of operational expenses are typically borne by private vehicle drivers and do not appear as public expenditures. Examples of this would include the purchase costs of the private vehicles, gasoline and diesel costs, insurance and vehicle maintenance costs. If accounted for, these private costs of owning and operating a vehicle would significantly outweigh the public roadway expenditures.

State Highways Spending

The high-level expectations for spending on state highways within the Current Revenue Scenario over the time period of the plan are as follows.

- Total state highways spending from 2015-2040 is estimated at \$15.8 billion, split approximately 20% to system operations and 80% to capital spending.
- Annual growth of the highway user tax revenues and federal revenues, estimated at 2.0% and 2.2% respectively, will not keep pace with inflationary pressures on operations and capital spending, estimated at 3.2% and 4.5% respectively.

- In the first 10 years of the plan, MnDOT is largely able to meet its needs for system operations and capital asset preservation but has very limited funding for mobility (expansion) projects, approximately \$1.4 billion, or about \$140 M annually. After 2026, MnDOT will have even less revenues available for mobility projects, approximately \$30 to \$50 million annually from 2027-2040. However, even in the later years, MnDOT is still well positioned to meet the asset preservation performance requirements of federal law.
- Over time, operations spending decreases as a percent of the Metro District's total highway spending, at the same time as operations needs are increasing due to reduced capital asset preservation spending. As a result, MnDOT will concentrate available resources on the National Highway System and less on the non-National Highway System.

Transit Spending

The high-level expectations for spending on transit through 2040 are as described below.

Bus and Support System Spending

- Funding needs for existing bus system operations are met. This is largely due to expected growth in MVST, fares and general fund revenues, which are assumed to keep pace with the inflationary growth of current transit spending.
- Funding needs for existing bus and support system capital preservation are estimated to be met, primarily relying on funds from the federal transit formula programs and regional transit property taxes, which are assumed to grow with inflation.
- No funding is estimated to be available to expand bus system operations, though transit providers may choose to reinvest existing revenues in new services by cutting or reducing spending on existing services.
- A limited amount of funding will be available for bus system capital modernization and expansion, primarily using federal funding allocated through the Regional Solicitation, approximately \$750 million. It is expected that this funding will be directed to capital projects that improve the customer experience, result in reduced operating costs, or for capital expansion projects that do not require new operations funding or can rely on reinvestment of existing operating funds. Regional solicitation funding may also be used for transitway projects, such as portions of arterial BRT projects, additional stations, or expanded park-and-ride facilities.

Transitway Spending

- Funding needs for existing transitway operations and capital preservation (METRO Blue Line, Green Line, Red Line, Northstar commuter rail) are fully funded using fares, state general funds, county sales tax revenues for transitway operations, federal formula funds and regional property tax revenues for transitway capital preservation. (Operations costs for the A and C lines are included in the existing bus operations costs.)

- Funding for transitway capital and operations expansion is available from several sources including the county sales tax, regional railroad authority property taxes, state funds and federal CIG or other competitive program sources. The capital and operating expansion costs of the Green Line Extension (Southwest light rail), Blue Line Extension (Bottineau light rail), Orange Line (I-35W South BRT), Gold Line (Gateway dedicated BRT), Rush Line dedicated BRT, Riverview LRT and ~~one two~~ new arterial BRT projects (DC line)and a yet to be named arterial BRT project through the Regional Solicitation can be fully funded. ~~Three Two~~ additional new arterial BRT projects have partial funding identified in the plan but are not fully funded (B and E lines). There is also some undesignated funding available in the later years of the plan from the county sales tax revenues and Regional Solicitation to develop additional transitway corridors. ~~The Riverview Corridor has been identified as a priority by Ramsey and Hennepin counties for a substantial portion of their undesignated funding.~~

Local Transportation Spending

Spending for local transportation operations and capital projects is expected to grow with inflation over the time period of the plan. Two of the primary local transportation revenue sources – highway user tax revenues and federal revenues – are estimated to grow at a rate less than the rate of operations and construction costs (2% and 2.2% respectively compared to expected operations and construction inflation of 3.2% and 4.5% respectively). Consequently, local governments will be faced with the option of either increasing property taxes and other local revenue contributions to keep transportation spending at past levels, or reduce transportation spending levels as inflationary pressures reduce the buying power of the state and federal revenues. The revenue and expenditure numbers shown in the figures and tables in this chapter assume local transportation spending will keep pace with inflation and that local property taxes and other local funding sources will provide the increased share.

As indicated previously, local transportation spending decisions are primarily made at the local level and identified through local comprehensive and capital planning efforts. Details on local transportation spending are not included in this plan, though the regional transportation system goals, objectives and strategies are meant to help guide local transportation planning and decision-making efforts. Local transportation projects that receive federal funding through the Regional Solicitation are included in Appendix B Transportation Improvement Program and regionally significant projects are included in Appendix C Long Range Highway and Transit Project Lists as they become known and funded.

Table 4-3: Metropolitan Area Projected Transportation Spending, 2015-2040 (year of expenditure)

EXPENSES	2018 Annual	Current Revenue Scenario 2015-2040
<u>State Highways Expenses</u>		
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
<u>Transit - Bus and Support System</u>		
Operations	438M	17.9B
Capital	65M	3.875B
Regional Solicitation	24M	.8B750M
Subtotal Bus and Support System	527M	22.54B
<u>Transit - Transitway System</u>		
Operations	97M	5.5B
Capital	408M	5.5B
Locally designated to future projects	-	1.7B
Subtotal Transitway System	505M	14.042.7B
Subtotal Transit Expenses	\$1.0B	\$35.1B36.5B
<u>Local Transportation Expenses</u>		
Operating	496M	15.6B
Capital	813M	25.6B
Subtotal Local Transportation Expenses	\$1.3B	41.2 B
TOTAL EXPENSES	\$2.8 B	\$92.1 B

Commented [VA13]: Numbers being updated

Revenue in Table 4-1 and spending shown in Table 4-3 do not necessarily equal in 2018 due to bond financing and other financial tools used to balance revenues and spending on a year-to-year basis. Over the course of the plan, 2015-2040, revenues and spending are generally balanced.

Increased Revenue Scenario

The Increased Revenue Scenario is meant to provide a context for the level of transportation revenues and spending that would be needed to move the region closer to achieving the outcomes identified in Thrive MSP 2040 and the transportation goals and objectives of this plan. The Increased Revenue Scenario in the TPP adopted in 2015 was largely based on the work of the 2012 Governor's Transportation Finance Advisory Committee (TFAC). Appointed by Governor Mark Dayton, this committee was charged with developing recommendations to reverse the decline of investment in the state's highways, roads, bridges, public transit systems and other transportation systems.

The TFAC mission was to identify investment opportunities to support a thriving economy and high quality of life for Minnesotans over the next 20 years. TFAC concluded that to maintain what we have, and position Minnesota to be competitive for the future, the state needs to invest in its transportation infrastructure. Its goal was to identify a level of revenues that would support a transportation system that:

- Will help Minnesota businesses access labor, move products, prosper and stay in Minnesota.
- Will help Minnesota compete for jobs, talent and economic growth with other states and regions that are investing in their transportation systems.
- Is designed to handle Minnesota's growing and changing population.
- Is modern and better than ever before.
- Will be funded through balanced and sustainable means.

Since the TFAC work, no comprehensive analysis of metropolitan area transportation needs has been undertaken. However, MnDOT has completed an update to the Minnesota State Highway Investment Plan (MnSHIP). This looked at unfunded highway needs within each of its investment categories. The Metropolitan Council and MnDOT have also completed a number of investment prioritization studies that have identified high and medium priority investments that are not funded within the Current Revenue Scenario of this plan. In addition, several transit and highway corridor studies have been completed or are underway to identify a preferred alternative and the associated project costs within a corridor. The highway and transit projects prioritized by these studies are described in detail in Chapter 5, "Highway Investment Direction and Plan," and Chapter 6, "Transit Investment Direction and Plan."

State Highways Increased Revenue Scenario

The most recent comprehensive look at unfunded highway needs was through MnDOT's 2017⁶ update to MnSHIP which indicated a statewide highway investment need of over \$39 billion in its 14 highway investment categories. MnSHIP forecast that only \$21 billion in identified revenues are available in the fiscally constrained plan, resulting in a statewide unfunded highway need of \$18 billion (through 2037). One of the investment categories included in MnSHIP is the Twin Cities Mobility investment category. The unfunded need in this category alone is estimated at \$4.5 billion. While MnSHIP's other investment categories did not specify a specific metro area need, if the metro area share of approximately 30% - 40% of total revenues as contained in the plan is applied to the remaining unfunded statewide need of

\$13.5 billion, this would result in unfunded needs of approximately \$4 to \$5.5 billion for asset preservation and the other capital investment categories. In addition, in order to keep state highway operations spending on pace with inflation, additional funding in the range of \$500 million to \$1 billion from 2015 to 2040 would be required. MnDOT's funding gap in the region is further demonstrated by the increasing frequency of local agencies leading and contributing significant funds to trunk highway improvements.

The total increased funding need for metropolitan area state highways is estimated at approximately \$9 to \$11 billion over the time period of the plan. This level of funding would require approximately a 70% increase in the state highway funding in the metro area given that only \$15.4 billion is estimated to be available for state highways under the Current Revenue Scenario. While this level of funding need is based upon a general high-level analysis, it likely represents a realistic funding gap and will require significant funding increases and policy changes to meet this level of need.

Transit Increased Revenue Scenario

In 2012, the TFAC work estimated that the increased funding need for metropolitan area transit was approximately \$4.2 to \$5.7 billion over a 20-year period or about \$210 million to \$285 million annually. This level of funding need was based upon the goal of creating an expanded bus and transitway system and accelerating the rate at which this expansion would occur. The key goals of the TFAC plan continue to be carried forward in the region's vision for transit expansion that can be found in Chapter 6, "Transit Investment Direction and Plan." Both the Current Revenue and Increased Revenue scenarios are based on the overall goal of maintaining, modernizing, and expanding the bus and support system, and building and operating an expanded interconnected network of bus and rail transitways. The Increased Revenue Scenario in this plan continues to basically use the TFAC level of financial need as a starting point, but also includes consideration of changes in revenues, such as the new county sales tax, and project development work that has occurred since the TFAC analysis.

For the bus and support system, the region has a vision of expanding service by at least 1% per year or about a 25% increase in service from 2015 to 2040. This service increase would include new routes and facilities and increased frequency of service and improved facilities on existing routes. It would include growing service to better serve the current population and job base and also meet the needs of the growing population and job base within the region. From 2015 to 2040, growing the bus system by 1% annually could require an additional \$1.8 to \$2.2 billion. More details on the types of bus improvements and the processes used to develop bus expansion concepts can be found in the Transit Investment Direction and Plan.

Transitways in the Increased Revenue Scenario represent a vision of corridors throughout the region that could be explored with additional revenues. Because the details of each corridor are not known until a corridor planning process has been completed, the revenue needs for this scenario are not complete. However, as corridor planning progresses, the details in the TPP can be updated to illustrate a more comprehensive revenue vision. There are currently a number of potential projects in the Increased Revenue Scenario that have completed corridor planning but are not able to be funded with

current revenues. A list of these projects can be found in Chapter 6, “Transit Investment Direction and Plan.”

Local Transportation Increased Revenue Needs

The increased revenue needs for local transportation have not been comprehensively determined as part of the analysis for this plan. This analysis would require a significant amount of effort to identify the specific needs and funding gaps of each local governmental unit and, in general, local transportation projects are not the focus of this plan. Local transportation funding needs are primarily identified through the local comprehensive planning and capital planning processes. However, it is known that the unmet transportation needs at the local level are significant and cannot be met through increases in local property taxes alone.

Counties and cities own and operate 80% of the A-minor arterial system and a part of the principal arterial system. The A-minor arterials along with the principal arterials make up the regional highway system. Needs on the locally owned and operated part of the regional highway system include preservation, safety and mobility improvements not unlike MnDOT’s system. Competitive funding sources available to the region such as the Regional solicitation see applications that frequently total multiples of the available funding. These needs have been further demonstrated by counties who have recently raised their own sales and wheelage taxes to provide additional funding for the local transportation system and if they so choose, also to improve MnDOT’s system.

In 2018, the County Arterial Preservation study documented current pavement conditions on the A-minor arterial system as largely in good to fair condition. Pavement management is a complex undertaking that must consider current surface conditions, the varying structure of roads, estimates of future deterioration, a wide range of possible preservation strategies, agency priorities and fiscal constraints. Using some basic data and stylized representations of preservation cycles, this study estimated that absent inflation this region is well positioned to maintain its pavement condition. However, inflation has outpaced revenue growth in the past and is expected to do so in the future. Inflation could lead to a large unmet need based on current policies and funding levels. The study estimated a funding need in pavement preservation from 2018 to 2040 of between \$800 million and \$4 billion for the metro area A-minor system entirely due to expectations that inflation will exceed the growth in revenue. The study documented a number of ways that this need could be addressed including shifting more resources towards preservation and away from other needs, and continued improvement in preservation practices and technologies.

Additional revenue will need to be considered. The region will grow by more than 800,000 people between 2015 and 2040 and it is important that local transportation funding needs are considered as part of any transportation funding proposal that moves forward at the state legislature. Local funding needs go beyond pavement preservation and must also consider local bridge replacement, expansion needs and other infrastructure needs including the additional of intelligent transportation system technologies.



CHAPTER 10

EQUITY AND ENVIRONMENTAL JUSTICE

Introduction

An important consideration for the 2040 Transportation Policy Plan is its impact on all populations in the Minneapolis-Saint Paul region, particularly those who have been historically underrepresented in regional planning efforts, including communities of color, low-income households, people with disabilities, and people with limited English proficiency. Past plans were required to adhere to federal requirements for environmental justice; this plan further responds to additional aspirations for equity set forth in Thrive MSP 2040. This section describes the plan's responses to both federal requirements and regional aspirations.

Federal guidance for evaluating impacts is derived from Title VI of the Civil Rights Act of 1964 as well as Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-income Populations. Under the executive order, transportation plans and programs (1) must provide a fully inclusive public outreach program; (2) should not disproportionately impact minority and low-income communities, and (3) must assure the receipt of benefits by minority and low-income populations. The TPP addresses these three principles and they were considered throughout the decision-making process. The analysis section of this chapter discusses these in more detail. These principles must also be considered in the project design and implementation phases for future specific projects.

Regional guidance for pursuing equity is outlined in Thrive MSP 2040, the Metropolitan Development Guide required by Minn. Stat. 473.145. Thrive elevates equity to one of five fundamental outcomes of the regional vision. Equity connects all residents to opportunity and creates viable housing, transportation, and recreation options for people of all races, ethnicities, incomes, and abilities so that all communities share the opportunities and challenges of growth and change. For our region to reach its full economic potential, all of our residents must be able to access opportunity. Our region is stronger when all people live in communities that provide them access to opportunities for success, prosperity, and quality of life.

In the following pages, the terms "people of color" and "low-income households" are used to address the federal environmental justice requirements for "minority and low-income." Where regional approaches to pursuing equity are discussed, broader language is used, such as "all races, ethnicities, incomes and abilities."

Identification of Populations

Thrive MSP 2040 identifies equity to extend across people of all races, ethnicities, incomes, and abilities. It identifies Areas of Concentrated Poverty, defined as contiguous census tracts where at least 40% of residents live in households with incomes below 185% of the federal poverty line. It further

identifies, as particularly vulnerable, Areas of Concentrated Poverty where at least 50% of the residents are people of color.

Federal guidance on Environmental Justice applies to low-income households and people of color. This guidance defines people of color as all persons who are not white/non-Latino. While Environmental Justice applies regardless of population size, identifying concentrations of potentially affected populations is useful for application to system-level planning.

For the purposes of regional analysis, regional percentages were calculated at the Census tract level for low-income households and people of color using the 2012-2016 American Community Survey. Under this analysis, 25.2% of the region's population are people of color, 10.2% of the region's population live with incomes below 100% of the federal poverty level, and 21.5% of the region's population live with incomes below 185% of the federal poverty level. These regional percentages are used to identify Census tracts with populations above the regional percentage.

Commented [SH1]: This paragraph will be updated with the map updates

Analysis of Plan Investments and Strategies

Qualitative

Specific strategies and investments identified in the Transportation Policy Plan serve to create benefits or mitigate impacts to historically underrepresented populations, including communities of color, low-income households, people with disabilities, and people with limited English proficiency. This section highlights the specific plan strategies that support these groups of people. The discussion of strategies focuses on topical areas that relate to the plan's goals. Following the discussion of plan strategies, a series of maps show the location of plan investments in relation to people of color and people with low-incomes in the region.

Public Engagement

The 2040 Transportation Policy Plan was prepared under the Metropolitan Council's Public Participation Plan for Transportation Planning, which meets requirements of 23CFR§450.316 and federal guidance on Environmental Justice. The TPP has built upon the extensive outreach and engagement, including targeted community engagement with historical underrepresented communities that informed Thrive MSP 2040. Over the course of two years, the Metropolitan Council engaged with thousands of the region's residents, staff, and elected officials about their vision for the region. In 2015, the Metropolitan Council developed a Public Engagement Plan that establishes policy for all Metropolitan Council engagement activities. The plan outlines how the Metropolitan Council will work collaboratively with constituencies to assess and plan community engagement by setting shared outcomes and expectations. Metropolitan Council staff and funding will support these processes to assure access for all identified constituencies, but particularly those that are traditionally underrepresented in regional and local planning efforts. When possible and appropriate, the Metropolitan Council may support community organization work with financial resources to engage appropriate constituencies. Each engagement project will require a tailored process, but the Public Engagement Plan established principles that will be consistently applied across the Metropolitan

Council. The eight principles of engagement in the plan are: equity; respect; transparency; relevance; accountability; collaboration; inclusion; and cultural competence. Transportation Policy Plan Healthy and Equitable Communities strategy E6 commits the Metropolitan Council and its regional transportation partners to foster public engagement in systems planning and in project development.

Healthy and Equitable Communities

Historically, transportation investment decisions that encroached upon, divided, or displaced neighborhoods, and cut off access to the regional transportation system or blocked multimodal options have done great harm to communities of color and low-income households. Healthy and Equitable Communities strategies E3, E4, E6, and E7, and Access to Destinations strategies C4 and C17 require regional transportation partners to consider the needs of all users, promote cohesive communities, protect and enhance the cultural and built environment, and avoid adverse impacts on communities of color and low-income households. Air pollution concentrations are disproportionately higher in many lower-income neighborhoods. Healthy and Equitable Communities strategies E1 and E2 continue the region's commitment to reduce air pollutant emissions and their impact on human health.

Safety and Security

It is important to note that not everyone has the same experience using the region's transportation system; analyses of enforcement data show that people of color experience disproportionate traffic stops or enforcement on transit. The [2003 Minnesota Statewide Racial Profiling Study](#), done by the University of Minnesota Law School at the request of the state legislature, found that "drivers of color are over-represented among those stopped; over-represented among those searched; and under-represented among those found to have contraband on their person or in their vehicle as a result of being searched." In 2015, [Metro Transit analyzed its police incident data by race](#) and found disparities in its treatment of people of color. Recent Metro Transit data indicates these disparities have been reduced after changes to training and procedures. Because Minnesota does not require local police departments to collect traffic stop data, there is currently no consistent database to use for routine analysis on potential racial disparities across jurisdictions, although individual cities may track their traffic stop data and include race. Safety and security strategy B8 addresses the need for regional transportation partners to ensure that police and public safety agency enforcement programs and actions do not create or perpetuate racial inequities.

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 (according to 2010 TBI data) and are more likely to be vulnerable when they are traveling. Safety and security strategies B5 and B6 focus on safety and security of the transit system and pedestrians, which will benefit these populations. Strategy B8 calls for ensuring that police and public safety agency actions on the transportation system do not create or perpetuate racial inequities.

Provision of Options

Key to the philosophy of the Transportation Policy Plan is the provision of modal options. Since low-income residents are less likely to own or have reliable access to automobiles (according to 2008-12 American Community Survey data) and the expense of owning a personal vehicle can create a higher cost burden, expansion of travel options, such as walking, transit and bicycling, that provide access to employment and other opportunities is especially important to these residents. Access to Destinations strategies C1, C2, C3, Competitive Economy strategies D3, Healthy and Equitable Communities strategy E3, and Transportation and Land Use strategies F3, F4, F5, F6 all emphasize the multimodal nature of the system and the importance of connections.

The TPP calls for significant expansion of the transitway system. Important prioritizing criteria for transitways include providing access to regional jobs and activity centers throughout the region, including historically underrepresented communities and promoting equity through increased access to opportunity.

A major focus of highway investments in the TPP is the expansion of the MnPASS system (Access to Destinations strategy C5). The priced managed lanes on the MnPASS system give all users, including low-income users, a potential option to avoid severe congestion. Survey data from existing MnPASS lanes shows that they are broadly supported and used by users of all income levels. Despite the price, MnPASS can provide high-value travel time insurance which can be especially valuable to more vulnerable populations. The provision of MnPASS lanes as well as bus-only shoulders provides transit users greater access to employment and other opportunities.

The TPP calls for the implementation of more pedestrian access, particularly in job concentrations through Access to Destinations strategies C2, C4, C16, C17, Healthy and Equitable Communities strategy E3, and Transportation and Land Use strategies F5 and F6.

Focus on Preservation

The TPP emphasizes preservation and maintenance of the existing system through Transportation System Stewardship strategies A1 and A2. While an equity assessment of historical preservation and maintenance investments and system condition has not been performed, higher concentrations of low-income households and people of color can be found in older areas of the region which would benefit from an increased focus on preservation.

Transit Service Planning

Many of the TPP's strategies are aimed at preserving and improving the transit system in the core of the region, where the highest concentrations of low-income households and communities of color can be found. Transportation System Stewardship strategy A3 calls for transit service to be aligned with Transit Market Areas; vehicle availability is a component of the definition of Transit Market Areas. Access to Destinations strategies C13 and C14 call for continued provision of paratransit and dial-a-ride service to benefit people with disabilities and those without access to vehicles throughout the region. Equity is a factor in bus expansion prioritization in the Regional Service Improvement Plan. In

compliance with federal Title VI and Environmental Justice guidance, transit providers perform equity analysis of any major service or fare changes on people of color, low-income residents, and people with limited English proficiency.

Spatial Analysis of Investments

The following series of figures (10-1 through 10-5) identifies the populations of color and low-income residents in the Twin Cities region, as well as the highway, bicycle system and transit investments within those areas. Analysis of the location of projects relative to historically underrepresented communities, as well as the location of their positive benefits and negative impacts is also recommended at the local and project level.

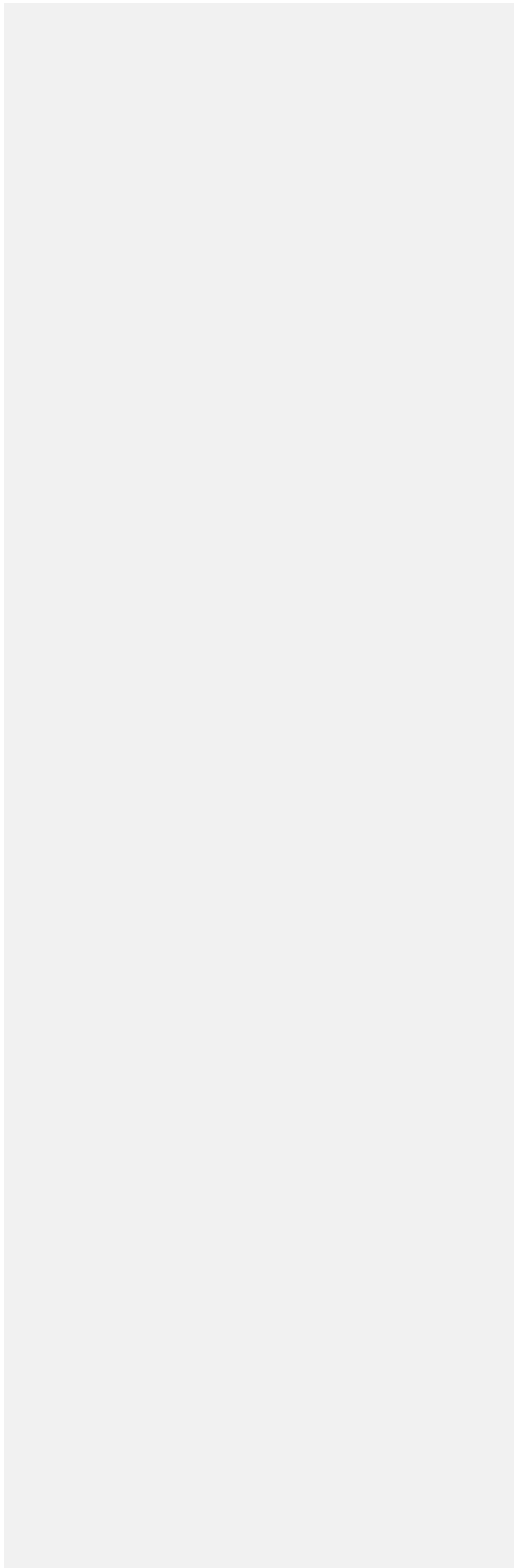
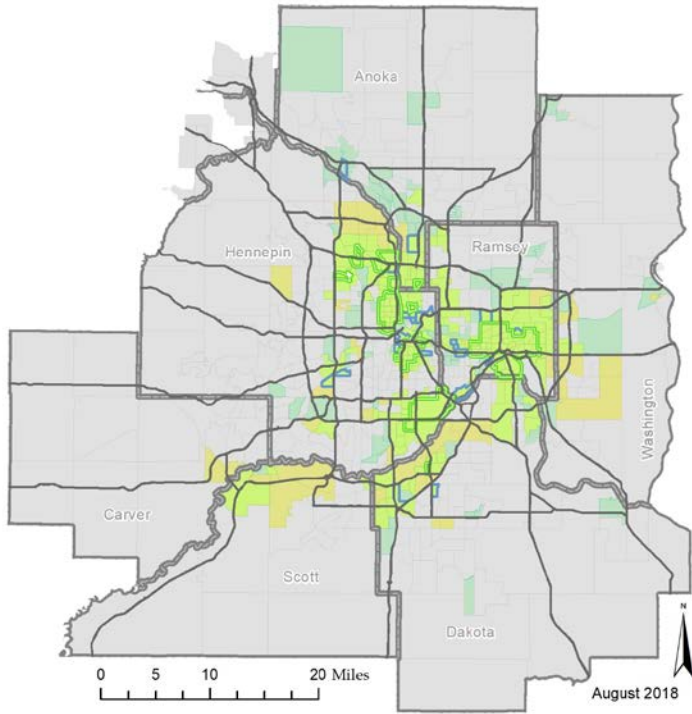


Figure 10-1: Population and Existing Highway System

Commented [SH2]: To be updated



Principal Arterial Highways

Populations of Color / People in Poverty

- Areas of Concentrated Poverty where 50% or more of residents are people of color
- Areas of Concentrated Poverty (40% or more in poverty)

Regional Percentage by Tract

- Both Poverty + Pop. of Color Below Regional %
- Both Poverty + Pop. of Color Above Regional %
- Pop. of Color Above Regional %
- Individual Poverty Above Regional %

People in Poverty

The census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional percentages at either level.

100% poverty regional percentage is 10.2%
 185% poverty regional percentage is 21.5%

Population of Color

Population of Color is defined as all persons not classified as White, Non-Latino

Regional percentage is 25.2% People of Color

Tracts are marked above (higher than 25.2%) or below (less than 25.2%) the regional percentage

Data Source: 2012-2016 ACS by Tract

Figure 10-2: Population and Existing Transit System

Commented [SH3]: To be updated

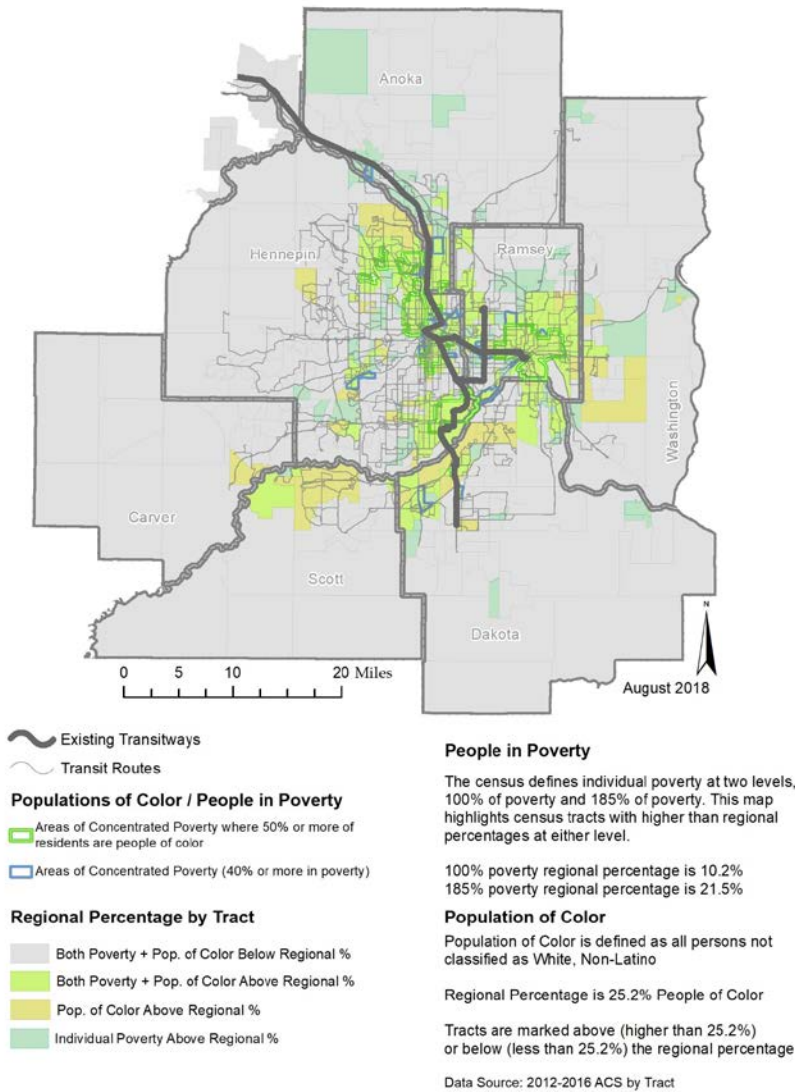
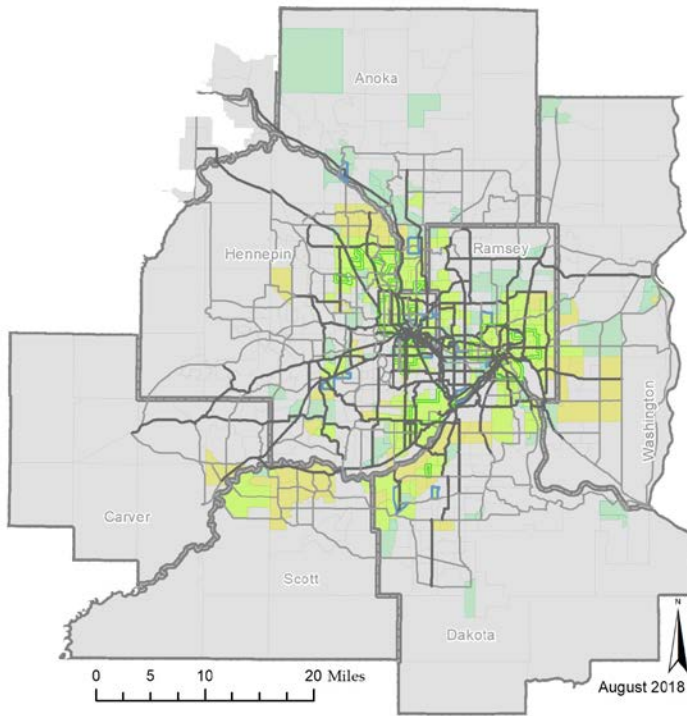


Figure 10-3: Population and Regional Priority Corridors for Bicycle Infrastructure

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Regional Bicycle Transportation Network (RBTN)

- Tier 1: Priority Alignments & Corridors
- Tier 2: Alignments & Corridors

Populations of Color / People in Poverty

- Areas of Concentrated Poverty where 50% or more of residents are people of color
- Areas of Concentrated Poverty (40% or more in poverty)

Regional Percentage by Tract

- Both Poverty + Pop. of Color Below Regional %
- Both Poverty + Pop. of Color Above Regional %
- Pop. of Color Above Regional %
- Individual Poverty Above Regional %

People in Poverty

The census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional percentages at either level.

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185% poverty regional percentage is 21.5%

Population of Color

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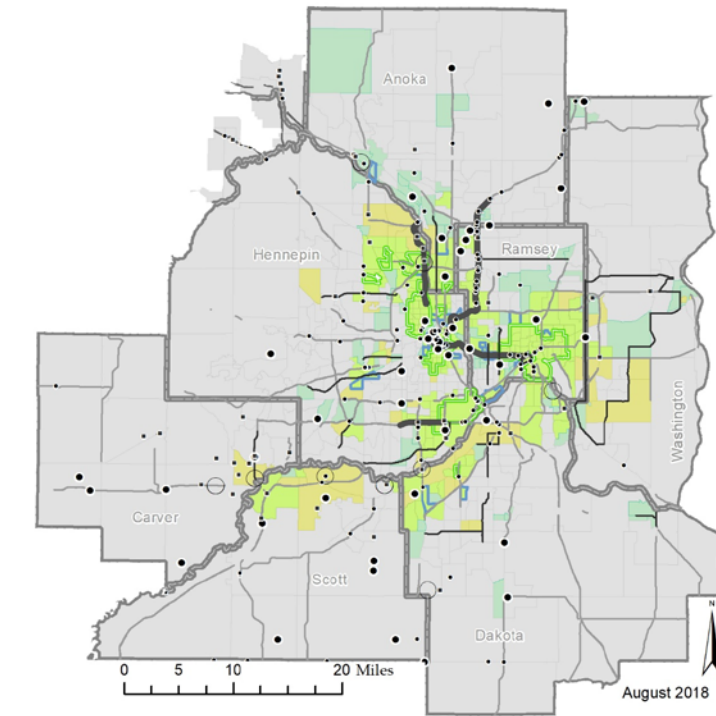
Regional Percentage is 25.2% People of Color

Tracts are marked above (higher than 25.2%) or below (less than 25.2%) the regional percentage

Data Source: 2012-2016 ACS by Tract

Figure 10-4: Population and 2040 Highway Investments (Current Revenue Scenario)

Commented [SH5]: To be updated



Current Revenue Highway Projects
see Figure 5-8

- ▬ Mobility Projects
- ▲ Preservation Projects
- ⦿ MndOT Tier 1 MnPASS
- ⦿ Pavement
- Safety
- Freight

Populations of Color / People in Poverty

- Areas of Concentrated Poverty where 50% or more of residents are people of color
- Areas of Concentrated Poverty (40% or more in poverty)

Regional Percentage by Tract

- Both Poverty + Pop. of Color Below Regional %
- Both Poverty + Pop. of Color Above Regional %
- Pop. of Color Above Regional %
- Individual Poverty Above Regional %

People in Poverty

The census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional percentages at either level.

100% poverty regional percentage is 10.2%
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Population of Color

Population of Color is defined as all persons not classified as White, Non-Latino

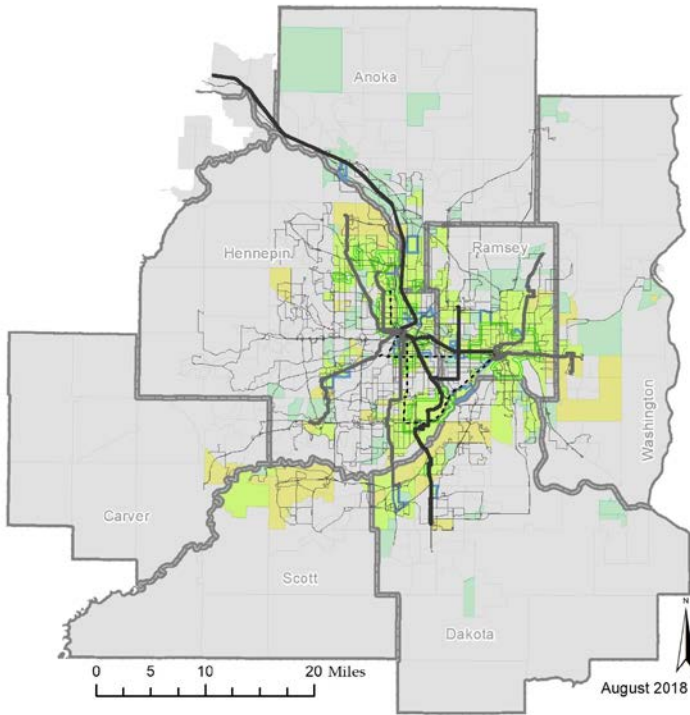
Regional percentage is 25.2% People of Color

Tracts are marked above (higher than 25.2%) or below (less than 25.2%) the regional percentage

Data Source: 2012-2016 ACS by Tract

Figure 10-5: Population and 2040 Transit Investments (Current Revenue Scenario)

Commented [SH6]: To be updated



- Existing Transitways
- Funded Expansion Transitways
- Potential Transitway Projects
- Existing Bus Routes

Populations of Color / People in Poverty

- Areas of Concentrated Poverty where 50% or more of residents are people of color
- Areas of Concentrated Poverty (40% or more in poverty)

Regional Percentage by Tract

- Both Poverty + Pop. of Color Below Regional %
- Both Poverty + Pop. of Color Above Regional %
- Pop. of Color Above Regional %
- Individual Poverty Above Regional %

People in Poverty

The census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional percentages at either level.

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Population of Color

Population of Color is defined as all persons not classified as White, Non-Latino

Regional percentage is 25.2% People of Color

Tracts are marked above (higher than 25.2%) or below (less than 25.2%) the regional percentage

Data Source: 2012-2016 ACS by Tract

Quantitative Analysis of Plan Investments and Strategies

A spatial analysis reveals where projects are located. Highway and transit investments provide benefits to people living well beyond the immediate area of the project, and in some cases provide little benefit to people living immediately alongside. One way of capturing the benefits is through accessibility, in this case measuring cumulative access to employment within a reasonable time period for the general population, for people of color, and for low-income households. To quantify benefits of the plan's highway and transit investments, an accessibility analysis was done using the regional model for employment and other community amenities.

Highway and Transit Accessibility

The number of jobs reachable within 20 minutes from home by each household in the region was calculated by the regional model, and this was aggregated across the region for the general population and for people of color. While the overall population of color will increase from 24% to 39% by 2040 and the distribution will change as well, data limitations required that this analysis be performed assuming existing distributions of population by race/ethnicity. Low-income households will be included in future analysis due to current technical challenges with the model.

To examine accessibility to jobs and other community amenities, such as colleges and universities, hospitals, shopping centers, and libraries, the number of each type of destination within 20-minute access by driving or by riding transit was totaled. The total number was multiplied by the number of people of color within each Transportation Analysis Zone (TAZ) and totaled for all TAZs, then divided by the total number of people of color within the region. This provides a weighted average across the region of the number of amenities that can be reached within 20 minutes. The same methodology was used for total population within the region as a comparison. Accessibility was compared between the no build scenario, which is the existing transportation system with future populations, and the current revenue scenario, which is fiscally constrained.

Table 10-1: Accessibility Changes with 2040 Highway and Transit Investments (Current Revenue Scenario Compared to No Build) [to be updated after model run]

	People of Color	Total Population
Total Jobs		
Drive	2.9%	3.1%
Transit	8.0%	6.0%
Retail Jobs/Shopping Opportunities		
Drive	2.9%	3.0%
Transit	8.3%	5.8%

		People of Color	Total Population
Colleges & Universities	Drive	2.4%	3.0%
	Transit	4.1%	2.1%
Hospitals	Drive	3.0%	3.1%
	Transit	11.6%	10.5%
Shopping Centers	Drive	2.9%	2.9%
	Transit	75.2%	58.4%
Libraries	Drive	2.8%	2.9%
	Transit	2.9%	1.9%

The 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. Percent increases in accessibility by automobile were similar 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.

Commented [SH7]: To be updated after model run and analysis

Populations in Proximity to the Regional Highway System

In the 20-Year Minnesota State Highway Investment Plan, MnDOT analyzed environmental justice populations near the state highway system. For the region, the Regional Highway System includes highways designated as principal arterials, which also make up the federally-designated National Highway System (NHS), and A-minor arterial roadways. Principal arterials are generally limited-access highways and freeways. A-minor arterial roadways support and supplement principal arterials and provide access to jobs and education.

To determine if there were more environmental justice populations in proximity to the Regional Highway System, these populations within a quarter-mile of principal arterials and A-minor arterials were compared to their overall percentages of population within the region. As shown in Table 10-2, environmental justice populations have slightly higher concentrations near principal arterials compared to A-minor arterials.

Commented [SH8]: To be updated when mapping is done

Table 10-2: Environmental Justice Populations Near the Regional Highway System

Population	Within ¼ Mile of Principal Arterials	Within ¼ Mile of A-Minor Arterials	Region
Persons below the poverty level	10.8%	10.2%	10.0%
Total populations of color	26.6%	25.5%	25.2%
White Alone	73.4%	74.5%	74.8%
Black Alone	9.3%	8.7%	8.6%
American Indian & Alaska Native Alone	0.5%	0.5%	0.5%
Asian Alone	7.3%	7.1%	7.0%
Native Hawaiian or Other Pacific Islander Alone	0.0%	0.0%	0.0%
Some Other Race Alone	0.2%	0.2%	0.2%
Two or More Races	3.0%	3.0%	3.0%
Hispanic	6.3%	6.1%	6.0%

Source: U.S. Census, 2012-2016 American Community Survey 5-Year Estimates, Block Group Level

In 2015, the Minnesota Pollution Control Agency released the report *Life and Breath: How Air Pollution Affects Public Health in the Twin Cities*. Done in collaboration with the Minnesota Department of Health, the report found that people of color and people living in poverty are among the population groups most affected by air pollution. Considering that vehicle traffic is a major source of air pollution, the slightly higher concentrations of people of color and people living in poverty within a quarter-mile of principal arterials could be experiencing health impacts from transportation-related air pollution.

Statement of Environmental Justice Compliance

After analyzing the distribution of programs, strategies, and projects identified in the 2040 Transportation Policy Plan, and the location of historically underrepresented populations in the region, it can be concluded that any benefits or adverse effects associated with implementing the plan are not distributed to these populations in a manner significantly different than to the region's population as a whole.

During the project selection and project development processes, individual programs and projects will be further evaluated for potential disproportionate and adverse effects on these population groups.

Commented [SH9]: Will use updated ACS data in update

Commented [SH10]: To be updated after model run and analysis

Inclusion in Regional Solicitation

In 2014, the Transportation Advisory Board and the Metropolitan Council completed an evaluation and redesign of how the region distributes federal transportation funding through its competitive process. Based on Thrive MSP 2040 and the Transportation Policy Plan, equity, including affordable housing, was included in the 2014 solicitation as part of the prioritization criteria. This criterion has continued to be used with some refinement for the [2018-2020](#) solicitation. [In November 2019, the Council hosted workshops for potential applicants on engaging underrepresented populations.](#)

Title VI Compliance

Title VI of the Civil Rights Act of 1964 provides that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Federal guidance on Title VI implementation requires that MPOs submit a Title VI report that includes:

- A demographic profile of the metropolitan area that includes identification of the locations of minority populations in the aggregate
- A description of the procedures by which the mobility needs of minority populations are identified and considered within the planning process
- Demographic maps that overlay the percent minority and non-minority populations as identified by Census or ACS data, at Census tract or block group level, and charts that analyze the impacts of the distribution of state and federal funds in the aggregate for public transportation purposes, including federal funds managed by the MPO as a designated recipient
- An analysis of impacts that identifies any disparate impacts on the basis of race, color, or national origin, and, if so, determines whether there is a substantial legitimate justification for the policy that resulted in the disparate impacts, and if there are alternatives that could be employed that would have a less discriminatory impact

These items are included in the Metropolitan Council's [Title VI Compliance and Implementation Plan](#), adopted on January ~~11, 2017~~^{22, 2020}.

Work Program Items

While Environmental Justice analysis has been required in regional transportation planning for decades, new federal guidance as well as the adoption of Thrive MSP 2040 has elevated equity and the role of transportation planning in advancing equity.

Some work in this arena has already begun. 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 possibilities. Continuing work by regional partners such as the Partnership for Regional Opportunity

are moving ahead to address equity problems in a broad collaboration. The Metropolitan Council will continue to participate in such activities to inform strategic use of its investments.

More work will be required to fully integrate equity analysis into the center of the planning process. Toward this end, the Metropolitan Council will engage in the following activities:

- Implement the ~~new~~ Public ~~Engagement-Participation~~ Plan
- ~~Study potential disparities in preservation and maintenance spending and transportation facility condition by race/ethnicity and income~~
- ~~Study potential disparities in safety outcomes by race/ethnicity and income~~
- Continue to advance the understanding and role of transportation in achieving equity in the region by collaboration with public, private and non-profit partners
- Operationalize the use of an equity lens throughout transportation decision making to help ensure that transportation policies, practices, and procedures advance equity rather than create barriers to equity
- Working in partnership with MnDOT, analyze appropriate TPP performance measures with an equity lens to determine and track if there are disparities in status based on race, ethnicity, income, or ability, where possible
- Study potential disparities in preservation and maintenance spending and transportation facility condition by race/ethnicity and income
- Study potential disparities in safety outcomes by race/ethnicity and income
- Re-evaluate methodologies used for population identification and environmental justice analysis, and identify methods for including people with low incomes in future accessibility analyses
- Ensure work relating to emerging technologies addresses equity

CHAPTER 11

ENVIRONMENT AND AIR QUALITY

Chapter 11 of the 2040 Transportation Policy Plan responds to federal planning requirements related to the environment and air quality contained in the Fixing America's Surface Transportation (FAST) Act legislation and other requirements for transportation planning in federal statute, regulation, or guidance and provides references to other sections in this policy plan or to other Council documents that address the requirements. Portions of this section respond to guidance from other sources, including, but not limited to, the air quality discussion as directed by the Minnesota Pollution Control Agency (MPCA).

Air Quality

Clean Air Act Conformity Determination

The Minneapolis-Saint Paul region is within an Environmental Protection Agency (EPA)-designated limited maintenance attainment area for carbon monoxide (CO). A map of this area, which for air quality conformity analysis purposes includes the seven-county Metropolitan Council jurisdiction plus Wright County and the City of New Prague, is included in Appendix E. The term "maintenance" reflects to the fact that regional CO emissions were unacceptably high in the 1970s when the National Ambient Air Quality Standards (NAAQS) were introduced, but were subsequently brought under control. A second 10-year maintenance plan was approved by EPA on November 8, 2010, as a "limited maintenance plan." A small portion of the region, mapped in Appendix E, is designated as a maintenance area for coarse particulate matter (PM₁₀). The term "maintenance" reflects the fact that PM₁₀ emissions in this area were unacceptably high in the past and subsequently brought under control. A 20 year maintenance plan was approved by EPA on Sept 24, 2002 and expires on XXXX, 2022, as which point the entire region will be in attainment for all transportation-related pollutants regulated by the Clean Air Act

Every Transportation Policy Plan (TPP) or Transportation Improvement Program (TIP) approved by the Council must be analyzed using specific criteria and procedures defined in the Federal Transportation Conformity Rule to verify that it does not result in emissions exceeding this a current regional CO-PM₁₀ budget. (The U.S. Environmental Protection Agency's 40 CFR Parts 51 and 93 are referred to together with all applicable amendments as the "Conformity Rule.") A conforming TIP and TPP must be in place in order for any federally funded transportation program or project phase to receive federal approval.

The analysis described in Appendix E has resulted in a Conformity Determination that the projects included in the 2040 Transportation Policy Plan meet all relevant regional emissions analysis and budget tests as described herein. The 2040 Transportation Policy Plan conforms to the relevant sections of the Federal Conformity Rule and to the applicable sections of Minnesota State Implementation Plan for air quality.

More details on specific federal requirements of a conformity determination can be found in Appendix E.

Public Involvement & Interagency Consultation Process

The Council remains committed to a proactive public involvement process used in the development and adoption of the plan as required by the Council's [Public Participation Plan for Transportation Planning](#).

An interagency consultation process was used to develop the Transportation Policy Plan. Consultation continues throughout the public comment period to respond to comments and concerns raised by the public and agencies prior to final adoption by the Council. The Council, MPCA, and MnDOT confer on the application of the latest air quality emission models, the review and selection of projects exempted from a conformity air quality analysis, and regionally significant projects that must be included in the conformity analysis of the plan. An interagency conformity work group provides a forum for interagency consultation on technical conformity issues, and has met in person and electronically over the course of the development of the 2040 Transportation Policy Plan.

Project Lists & Assumptions

As required by the Conformity Rule, projects listed in the plan were reviewed and categorized through the interagency process to identify projects exempt from a regional air quality analysis as well as regionally significant projects. Regionally significant projects were identified according to the definition in the Conformity Rule: "Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel." Junction improvements and upgraded segments on non-principal arterials less than one mile in length are not considered to be regionally significant, although they are otherwise not exempt. The exempt air quality classification codes used in the "AQ" column of project tables of the TIP are listed in Appendix E along with additional requirements for exemption. A complete list of regionally significant projects included in the 2040 ~~Transportation~~ [Transportation](#) Policy Plan, including projects in the ~~202018-23~~ [2024-23](#) TIP and regionally significant local projects, can be found in Appendix E.

Emissions Test

~~On December 5, 2019, EPA provided guidance to FHWA, MnDOT, and the Council on transportation conformity determinations for PM₁₀. In this guidance, EPA determined in 2010, the EPA approved a limited maintenance plan for the maintenance area. A limited maintenance plan is available to former non-attainment areas that demonstrate monitored concentrations of CO remain below 85% of the eight-hour NAAQS for eight consecutive quarters. MPCA monitoring data for CO shows that eight-hour~~

concentrations have been below 70% of the NAAQS since 1998 and below 30% of the NAAQS since 2004.

Under a limited maintenance plan, the EPA has determined that there is no requirement to project emissions over the maintenance period and that “an emissions budget may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result.”¹¹ No regional modeling analysis is required; however, federally funded projects are still subject to “hot spot” analysis requirements.

The limited maintenance plan adopted in 2010-2002 determines that the level of carbon monoxide/PM₁₀ emissions and resulting ambient concentrations continue to demonstrate attainment of the PM₁₀ carbon monoxide NAAQS in the maintenance area. The following additional programs will also have a beneficial impact on carbon monoxide/PM₁₀ emissions and ambient concentrations:

- ~~Ongoing implementation of an oxygenated gasoline program as reflected in the modeling assumptions used in the State Implementation Plan.~~
- A regional commitment to continue capital investments to maintain and improve the operational efficiencies of highway and transit systems.
- Adoption of *Thrive MSP 2040*, which supports land use patterns that efficiently connect housing, jobs, retail centers, and transit-oriented development along transit corridors.
- The continued involvement of local government units in the regional 3C transportation planning process, which allows the region to address local congestion, effectively manage available capacities in the transportation system, and promote transit supportive land uses as part of a coordinated regional growth management strategy.
- The increased numbers of people walking and bicycling and the growing use of electric and hybrid vehicles.

For all of these reasons, the Ramsey County-Twin Cities PM₁₀ carbon monoxide maintenance areas will continue to attain the PM₁₀ carbon monoxide standard for the duration of this Transportation Policy Plan next 10 years.

Transportation Control Measures

Pursuant to the Conformity Rule, the Council certifies that the 2040 Transportation Policy Plan conforms to the State Improvement Plan and does not conflict with its implementation. All Transportation System Management (TSM) strategies that were the adopted Transportation Control Measures (TCM) for the region have been implemented or are ongoing and funded. There are no TSM projects remaining to be completed. There are no fully adopted regulatory new TCMs, nor any fully funded non-regulatory TCMs that will be implemented during the programming period of the TIP. There are no prior TCMs that were adopted since November 15, 1990, nor any prior TCMs that have been amended since that date. Details on the status of adopted Transportation Control Measures can be found in Appendix E.

Compliance with National Ambient Air Quality Standards

The Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six pollutants known to cause harm to human health and the environment, known as criteria pollutants. Criteria pollutants are particulate matter, lead, ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide. The pollutants, along with other pollutants known as air toxics, are monitored by the Minnesota Pollution Control Agency. The following sections list the region's compliance status for regulated pollutants in ~~2017~~2019. The region is currently in compliance with all National Ambient Air Quality Standards.

Particulate Matter

Highest measured annual average fine particulate matter concentrations were ~~7.98~~7 $\mu\text{g}/\text{m}^3$, ~~667~~66% of the federal standard of 12 $\mu\text{g}/\text{m}^3$. Daily concentrations were ~~21~~21 $\mu\text{g}/\text{m}^3$, or ~~60~~60% of the federal standard of 35 $\mu\text{g}/\text{m}^3$. Daily coarse particulate matter concentrations are ~~150~~150 $\mu\text{g}/\text{m}^3$, or ~~100~~100% of the federal standard of 150 $\mu\text{g}/\text{m}^3$. [This high value is due to the Northern Metal Recycling Facility in Minneapolis, which has been permanently shut down per settlement with MPCA in September 2019. More information regarding the settlement process and results is available on the MPCA's website at <https://www.pca.state.mn.us/air/north-minneapolis-air-monitoring-project/>.](#) The region meets federal standards for particulate matter. However, the EPA periodically revises its standards and, if they are tightened, the region may be at risk of exceeding standards.

Lead

Highest measured lead concentrations in the region were 0.1~~13~~13 $\mu\text{g}/\text{m}^3$, or ~~87~~87% of the federal standard of 0.15 $\mu\text{g}/\text{m}^3$. This is due to non-transportation sources at one location; elsewhere concentrations are much lower.

Ozone

Highest measured 8-hour ground level ozone concentrations were 63 ppb, or 90% of the federal standard of 70 ppb. The region meets federal standards for ozone. However, the EPA periodically revises its standards and if they are tightened, the region may be at risk of exceeding standards.

Nitrogen Oxides

Highest measured annual nitrogen dioxide concentrations were 13 ppb, or 25% of the federal standard of 53 ppb. One-hour concentrations were ~~47~~47 ppb, or ~~47~~47% of the federal standard of 100 ppb. The region meets federal standards for nitrogen oxides. However, the EPA has released a new standard for near-road concentrations. The Minnesota Pollution Control Agency is currently monitoring, but data on compliance with federal standards is not yet available.

Sulfur Dioxide

Highest measured one-hour sulfur dioxide concentrations were ~~16~~16 ppb, or ~~21~~21% of the federal standard of 75 ppb. The region meets federal standards for sulfur dioxide.

Carbon Monoxide

Highest measured one-hour carbon monoxide concentrations were 2.317.9 ppm, or 517% of the federal standard of 35 ppm. Eight-hour concentrations were 3.94.7 ppm, or 4349% of the federal standard of 9 ppb. The region meets federal standards for carbon monoxide.

Volkswagen Settlement and Minnesota's Beneficiary Mitigation Plan

Minnesota will receive approximately \$47 million between 2018 and 2027 from a \$2.9 billion environmental mitigation trust fund established as part of a federal court settlement with Volkswagen in 2016. Proceeds from this trust fund will be distributed to states and tribes. Volkswagen agreed to the settlement in response to allegations that it violated the federal Clean Air Act by selling vehicles that emitted more nitrogen oxides (NOx) than is allowed under federal emission limits and by cheating on federal emission tests to conceal the higher emissions. Funds available to the states from this trust fund can be used toward replacing older heavy-duty diesel vehicles and equipment or installing charging stations to support electric vehicles to help mitigate the extra pollution caused by these VW vehicles. In Minnesota, the Minnesota Pollution Control Agency (MPCA) is the designated agency that will oversee and plan for the use of the funds that will be available to the state.

To develop the required Beneficiary Mitigation Plan for the state that will guide the use of these funds for each of the three phases, the MPCA held public meetings and meetings with stakeholders across the state, in addition to collecting comments and conducting online surveys from residents and stakeholders. The MPCA released a draft Phase 1 (2018-2019) plan for comment during February and March of 2018 and held public meetings across the state to provide information about the draft plan and seek input. The MPCA finalized the state Phase 1 plan and submitted it to the national Trustee on April 11, 2018. Phase 1 funding was anticipated to be \$11.75 million of grants for five different project categories. Projects funded through Phase 1 are described on the MPCA's web site at www.pca.state.mn.us/vw. Phase 2 of the plan covers 2020-2023 and is expected to include \$23.5 million of funding for six funding categories of projects. The Phase 2 plan followed a similar public process as the Phase 1 plan with gathering stakeholder input and presenting a draft plan for review and comment before finalizing the plan. The MPCA submitted the Phase 2 plan to the Trustee in February 2020. In Phase 2, The plan addresses the first phase (2018-2019) of funding and sets up five grant programs for investing the funds. In the plan, the MPCA commits to offering grants in five-six categories during phase 4: electric school buses; clean heavy-duty on-road vehicles (transit buses and class 4-8 trucks); clean heavy-duty off-road equipment (switcher locomotives, ferries, tug boats, construction equipment, etc.); heavy-duty electric vehicles; school bus replacements with diesel, propane, or natural gas; and electric vehicle charging stations. In the first three categories, applicants are eligible to replace their old diesel equipment with equipment that runs on diesel, propane, natural gas, or electricity. In Summer 2018, the MPCA began releasing Requests for Proposals for the first grant programs, with project evaluation and selection in Fall 2018. The MPCA will released Requests for Proposals for the remaining grant programs throughout in 2018 and 2019.

Environmental Streamlining – Planning and Environment Linkages

Early integration of project planning and the environmental review and approval process improves the likelihood that projects and services can be implemented in a timely and environmentally sensitive manner. The FAST Act stresses the need for integrating the planning and environmental process and promotes a streamlined process for reviews and permitting.

Thrive MSP 2040 and other policy documents of the Council strongly support protection and enhancement of the environment. In developing the *2040 Transportation Policy Plan* and other system plans, the Council closely followed the direction established in *Thrive MSP 2040*.

The integration of the planning and development process will vary for projects included in the *2040 Transportation Policy Plan* and for those already in the design phase. For many projects, the planning and environmental processes have progressed to such a stage that little will change based on this update.

Almost all highway projects and most transitway projects are on existing roadway or railroad rights-of-way. Environmental approvals will be necessary but are significantly different than if the projects were proposed on new rights-of-way.

Many of the corridors included in this plan are already undergoing detailed analysis and environmental review, and in some corridors, environmental documentation has already been completed.

Environmental Mitigation

Thrive MSP 2040 emphasizes the protection and enhancement of environmental quality through its outcomes of stewardship, livability, and sustainability. The Council supports work toward this end through the application of the Natural Resource Inventory, which provides comprehensive information about environmental resources throughout the seven-county metropolitan area.

The Transportation Policy Plan emphasizes environmental mitigation and enhancement through its Healthy Environment goal. In particular, strategy E4, "Regional transportation partners will protect, enhance and mitigate impacts on natural resources when planning, constructing, and operating transportation systems. This will include management of air and water quality and identification of priority natural resources through the Council/DNR Natural Resources Inventory," commits transportation partners to protecting and enhancing the natural environment. Strategy E5, "Transportation partners will protect, enhance and mitigate impacts on the cultural and built environments when planning, constructing, and operating transportation systems," commits to protecting and enhancing the cultural and built environment. Other strategies emphasize the importance of reductions in transportation-related air emissions, and in the central role of environmental justice in transportation planning.

Implementation of all projects in this plan will be accompanied by appropriate project-level environmental review and mitigation. Potential mitigation should be considered at the beginning of environmental work.

To provide a higher level review of potential impacts to environmentally sensitive areas or historical sites, highway and transit projects in the current revenue scenarios were mapped to compare with natural wetlands and historic inventories. These regional maps follow as Figures 11-1 through 11-4. The historic inventory includes locations that are on the National Register of Historic Places, as well as those that have been formally or informally identified as eligible for the National Register. Because of the level of information included at the regional level, additional analysis is needed to identify potential issues and needed mitigation at the project level. Potential mitigation generally includes avoiding, minimizing, rectifying, reducing, or compensating for any impacts.

Figure 11-1: Highway Current Revenue Scenario Projects and Wetlands Inventory

Commented [SH1]: To be updated

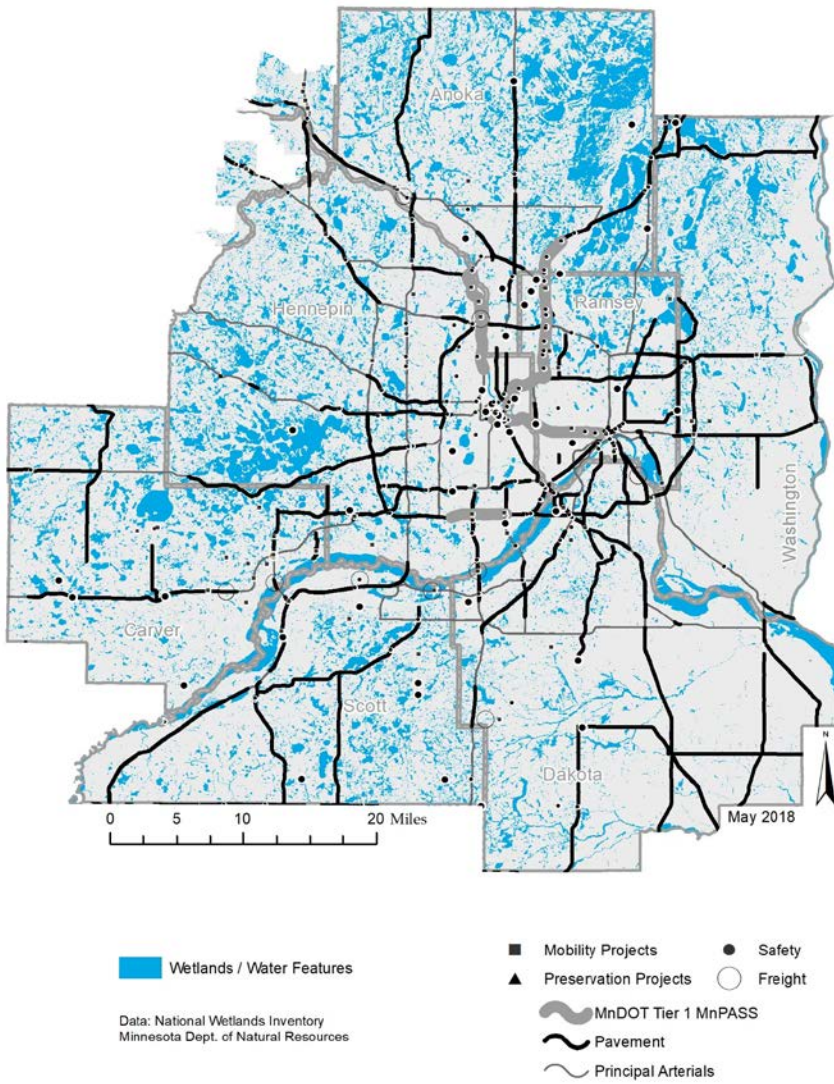


Figure 11-2: Highway Current Revenue Scenario Projects and Historically Significant Places

Commented [SH2]: To be updated

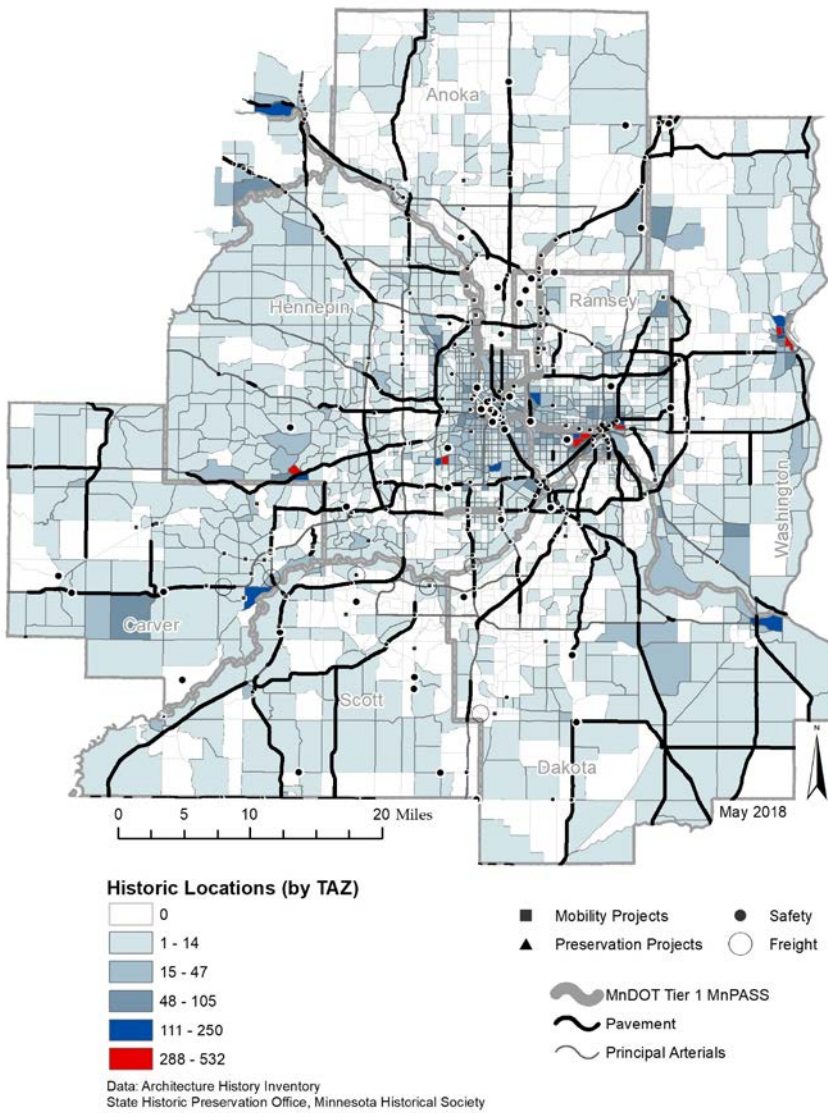
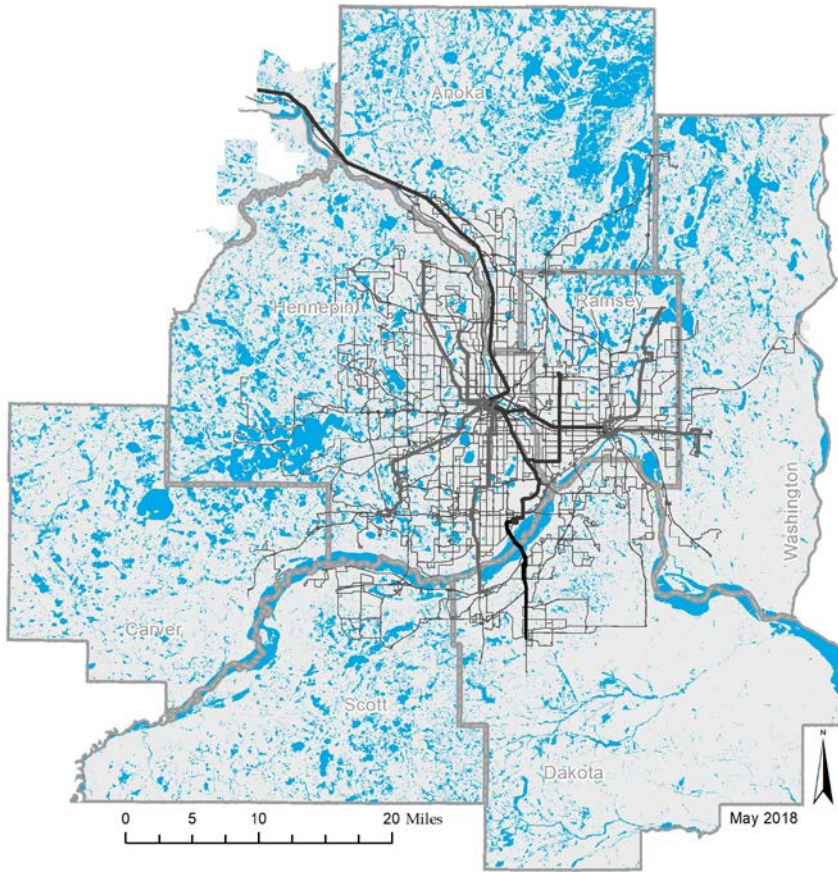


Figure 11-3: Transit Current Revenue Scenario Projects and Wetlands Inventory

Commented [SH3]: To be updated



Wetlands / Water Features

Data: National Wetlands Inventory
Minnesota Dept. of Natural Resources

Existing Transitways

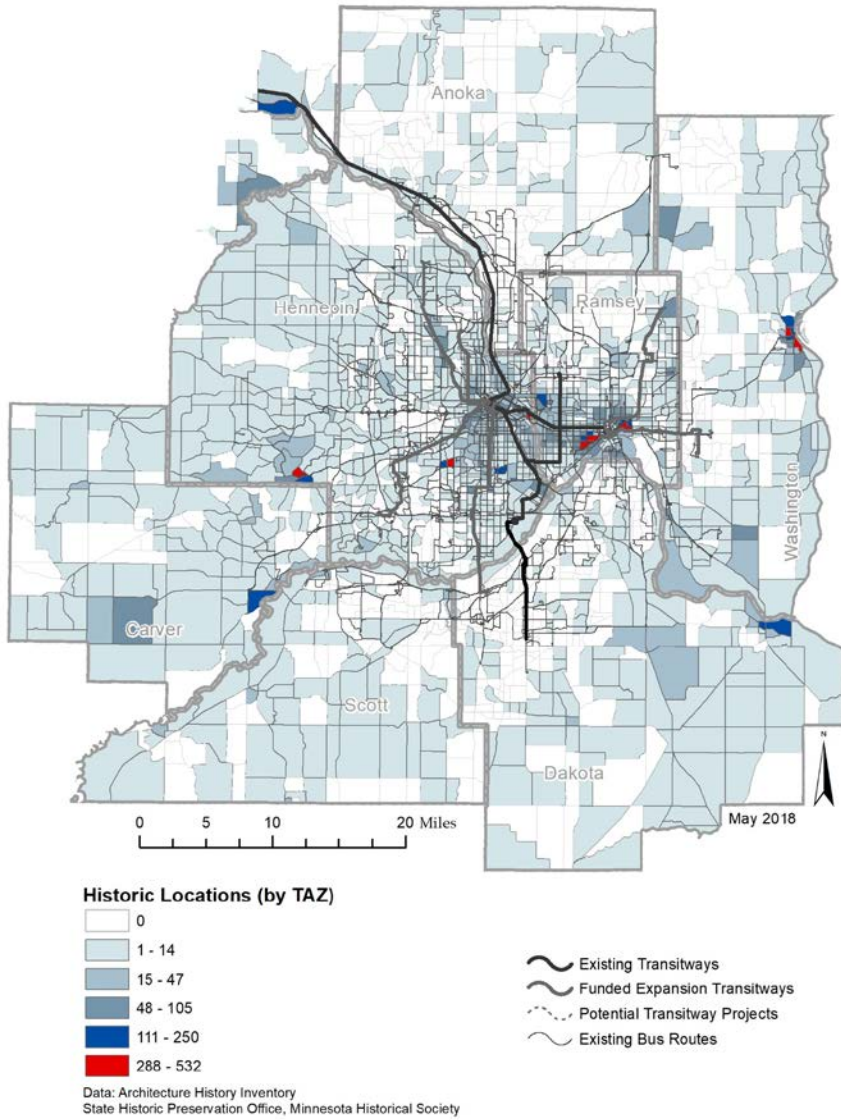
Funded Expansion Transitways

Potential Transitway Projects

Existing Bus Routes

Figure 11-4: Transit Current Revenue Scenario Projects and Historically Significant Places

Commented [SH4]: To be updated



CHAPTER 12

CONGESTION MANAGEMENT PROCESS

Introduction

The Congestion Management Process (CMP) is a systematic, data-driven, and regionally accepted approach that aims to improve the performance of the transportation network by mitigating congestion and ensuring the reliable movement of people and goods. The CMP evaluates congestion at a system-level and includes the identification, application, and evaluation of a number of strategies used to achieve regional congestion management objectives. The strategies and objectives addressed by the CMP are based upon a data-driven approach, which is shared and communicated throughout the region. It serves as a valuable tool to address the region's transportation system performance in a manner that prioritizes cost-effective and easy-to-implement solutions. The solutions and strategies identified as part of the CMP are ultimately implemented by the Metropolitan Council, MnDOT, transit providers and local governments as they select projects for funding and implementation and as they operate their systems.

A CMP is required for all Transportation Management Areas (TMAs) i.e. metropolitan areas with a population exceeding 200,000. It is an on-going, continuous process that includes coordination and the sharing of data and information between regional stakeholders and partners. This defined process provides a framework for guiding the various activities of the Metropolitan Council, MnDOT, transit providers, and metro-area cities and counties to collectively make decisions aimed at increasing efficiency of the multimodal transportation system and reducing vehicle use by providing alternatives to driving alone. The CMP ensures that the key objective of mitigating congestion impacts is achieved and that congestion mitigation investments are properly monitored and evaluated. This interactive and on-going process of monitoring and evaluation of the impacts allows for the chosen strategies to be adjusted or eliminated over time should they not have the intended effect or another strategy proves to provide a better solution to mitigating congestion.

Given limited transportation resources, the existing transportation system must be managed and optimized to the greatest extent possible. Thus, the CMP prioritizes strategies that manage system demand, improve the operation of the existing system, and provide for multi-modal travel options. This vision is consistent with the overall goals of the 2040 Transportation Policy Plan of allocating limited resources to projects that provide the most system-wide benefit.

This chapter of the Transportation Policy Plan provides an overview of the region's Congestion Management Process and how it links to the investment decision-making within the region. In 2019 the Metropolitan Council produced an independent document that more fully detailed the regional Congestion Management Process and identified work tasks to be accomplished to improve the process. The stand-alone document, the Congestion Management Process Plan, was developed in cooperation with the Metropolitan Council's Congestion Management Process Advisory Committee and reflects recent efforts to ensure the CMP more fully addresses the defined CMP network.

Overview of the Congestion Management Process

The CMP is an ongoing process consisting of the following eight action steps:

1. Develop Regional Objectives for Congestion Management
2. Define the CMP Network
3. Develop Multimodal Performance Measures
4. Collect Data and Monitor System Performance
5. Analyze Congestion Problems and Needs
6. Identify and Assess Strategies
7. Program and Implement Strategies
8. Evaluate Strategy Effectiveness

This chapter is not intended to provide a detailed summary of the Metropolitan Council's approach and current status in regard to each of these actions. Rather, those are refined and expanded upon in the CMP Plan. Instead, what follows is an overview of the linkages between the TPP and CMP, a summary of recent CMP-related activities, and an outline of future activities and areas that need further refinement.

TPP Framework for the Congestion Management Process

The Transportation System Vision and Performance-Based Planning chapter of the Transportation Policy Plan outlines a number of regional transportation goals and objectives that define the overall vision for the future of transportation within the metro area. While all of the goals relate in some manner to congestion management, the Access to Destinations goal (goal C) in particular provides a framework that tangibly connects the TPP with the Congestion Management Process. As described in the Transportation Policy Plan Strategies chapter, this goal strives to ensure that people and businesses prosper by using a reliable, affordable, and efficient multimodal transportation system that connects them to destinations throughout the region and beyond. The Congestion Management Process goes hand-in-hand with this goal, as the CMP is squarely aimed at ensuring the transportation system provides reliable, efficient, and multimodal connections throughout the region. Such connections greatly affect every resident of the region as they commute to work, travel to shopping centers, and perform other daily tasks.

Chapter 2, "Transportation Strategies," includes strategies or actions that the region and its transportation partners will use to work towards achieving the regional transportation goals and objectives. Many of the TPP strategies are linked to congestion mitigation related actions and will also be reflected in the strategies outlined in the CMP Plan. In essence, the existing TPP strategies serve as the framework for defining the direction of the overall CMP and become the basis for the implementation of a coordinated regional approach to mitigating congestion.

A separate document was developed that better defines the objectives identified by the CMP Advisory Committee in more detail, and specifically structured these objectives using SMART (specific, measurable, agreed, realistic, and time-bound) performance-based planning approaches. However, a number of goals, objectives, and strategies outlined within the Transportation Policy Plan Strategies

chapter of the Transportation Policy Plan reflect the overall vision and priorities of the region in regard to the Congestion Management Process. The following TPP objectives and strategies provide the basis for Congestion Management Process objectives and strategies that are further refined and reported upon in the CMP Plan:

1. Goal C, Objective A: Increase the availability of multimodal travel options, especially in congested highway corridors
2. Goal C, Objective B: Increase travel time reliability and predictability for travel on highway and transit systems
3. Goal C, Objective D: Mode share: increase transit ridership and the share of trips taken using transit, bicycling, and walking
4. Strategy C5: Initiate travel demand alternatives that reduce the number of single-occupancy vehicles travelling in the region, specifically by supporting the adoption and implementation of MnPASS lanes and transit advantages that support fast, reliable alternatives along congested highway corridors
5. Strategy C7: Manage and optimize the performance of the principal arterial system as measured by person throughput
6. Strategy C9: support investments in A-minor arterials that build, manage, or improve the system's ability to supplement the capacity of the principal arterial system and support access to the region's job, activity, and industrial and manufacturing concentrations
7. Strategy C10: Manage access to principal and A-minor arterials to preserve and enhance their safety and capacity
8. Strategy C12: Invest in an expanded network of transitways, including bus-rapid transit, light rail, and commuter rail
9. Strategy C15: Focus investments on completing priority Regional Bicycle Transportation Network alignments and eliminating system gaps
10. Strategy D5: Identify the impacts of highway congestion on freight movement and identify cost-effective mitigation

Recent Council Activities that Support the Process

Based upon guidance from the Federal Highway Administration (FHWA) and the Metropolitan Council's ongoing mission to improve the congestion management process, the Metropolitan Council has performed the following activities that support the CMP. The following pages highlight some of the recent and on-going efforts undertaken by the Metropolitan Council that directly benefit the Congestion Management Process.

Peer Review of the Council's Congestion Management Process

As part of the 2016 Transportation Management Area Planning Certification Review, the USDOT proposed a work plan to assist the Metropolitan Council in improving the Congestion Management Process. The work plan included a peer exchange, hosted by the FHWA and the Metropolitan Council in May 2017. This peer exchange included Congestion Management Process experts from MPOs in St.

Louis, Portland, Salt Lake City, and Wilmington (Delaware). The peer exchange provided a number of representative “best practices” from across the country and allowed Metropolitan Council staff to better understand how other TMAs are approaching the Congestion Management Process. In particular, the peer exchange addressed the following items:

- Performance measures used by peer regions to both identify congested corridors and measure whether the implemented projects led to congestion improvement
- Investment strategies that peer regions have used to help mitigate congestion on key corridors
- Data collection processes and potential sources for key datasets
- Congestion management strategies and the process in which they were developed
- Methods for implementing congestion management strategies to prioritize projects for funding

This peer exchange was particularly useful in providing a number of specific methods for developing a fully realized CMP for the Twin Cities metro area. A clear message from the exchange is that there are a number of ways in which a region may successfully implement a CMP; that is, it must be specific to the region and developed with extensive input from regional stakeholders. In particular, Metropolitan Council staff and stakeholders were introduced to examples of visualization techniques that graphically depict congestion in a manner which is easily digested and understood by policy-makers and the public. Over time, these techniques may develop into a “dashboard,” which could be produced annually and used to track the performance of key congestion indicators from year-to-year. Other key take-aways from the peer exchange include an understanding of how peer regions are incorporating CMP strategies into the project programming process; key data sets that can be utilized to define, measure, and track congestion; and a number of examples of multimodal performance measures that have been utilized by other regions.

Establishment of the Congestion Management Process Advisory Committee

Based in part on the peer exchange and in order to comply with federal requirements, the Metropolitan Council established a Congestion Management Process Advisory Committee in 2017. This committee is comprised of technical experts and other stakeholders representing the entire metropolitan planning area. The committee will ensure the Metropolitan Council is developing CMP objectives that represent the goals and priorities of the region and serve as a critical resource for:

- Identifying corridors of concern
- Defining the regional CMP network
- Steering the direction of regional performance measures
- Developing a regional data collection and sharing program
- Developing specific CMP strategies

The CMP Advisory Committee was instrumental in the development of the Congestion Management Plan and was provided with regular updates to provide feedback on the plan. In addition, and consistent to the Metropolitan Council’s vision and federal requirements, the CMP Advisory Committee serves as

the body that guides the region's Congestion Management Process long-term. The committee continues to meet at least quarterly after the Plan is developed to direct the CMP and carry out various roles relative to implementing the strategies as well as recalibrating and adjusting existing strategies to meet the region's CMP objectives.

Defining the Congestion Management Process Network

As the MPO for the Twin Cities metropolitan area, the Metropolitan Council evaluates the transportation network within the Metropolitan Planning Area Boundary. This boundary includes the seven metropolitan area counties as well as parts of Sherburne and Wright counties. Per guidance from the CMP Advisory Committee, the Metropolitan Council included all principal arterials and A-minor arterials in the region in the CMP network. The A-minor arterial network is primarily operated and maintained by the counties, who are responsible for 70% of the total A-minor network. MnDOT and individual cities are responsible for 20% and 10% of the A-minor network, respectively.

The Metropolitan Council's model network extends beyond this boundary to include several counties outside of the 7-county region. An expanded model network allows for a more accurate analysis of the metro area's transportation system. This network provides the base foundation from which further analyses of transportation facilities are performed in order to identify corridors that comprise the CMP network.

The Metropolitan Council, in cooperation with MnDOT, has performed several analyses on the region's principal arterial system. The freeway portions of this system is generally covered by the Regional Transportation Management Center, which utilizes a number of traffic control and intelligent transportation system devices. While the freeway portion of the principal arterial system is well-defined, the minor arterial system has not been examined in as great of detail. This is a significant gap in the Metropolitan Council's efforts to define the conditions of the regional CMP network. In order to address this gap, the Metropolitan Council has committed to a number of initiatives to identify the existing conditions and congestion on the A-minor arterial system, including the following:

- The use of a pilot StreetLight InSight subscription to measure peak-hour and free-flow speeds on the non-MnDOT A-minor network. This effort utilizes the same methodology developed by MnDOT Metro District to define congestion on the MnDOT-owned minor arterial system. The analysis provides a much more thorough understanding of the entire metro area network and provides the Metropolitan Council the ability to allocate resources to address the identified problem areas. This analysis is also being used as a scoring measure to help select projects in the Regional Solicitation to receive federal flexible funding.
- The Metropolitan Council programmed 2018 federal planning funds for the CMP plan and listed this effort in the approved Unified Planning Work Program. The CMP plan included analyses to identify problem areas and congested corridors along the locally-owned system.
- In cooperation with the CMP Advisory Committee, the Metropolitan Council will work with regional experts to establish a metro-wide subset of high-priority roadway corridors. These corridors will be evaluated in greater detail and identified as CMP corridors.

Performance-Based Planning Program Efforts

The strategic vision of the Metropolitan Council, as outlined in this Transportation Policy Plan, includes a number of strategies aimed at reducing vehicle miles travelled during peak periods and improving accessibility to areas with a high concentration of jobs. A specific work plan for implementing these strategies, however, has not yet been developed. In order to provide greater clarity to how the strategies are articulated through the planning and programming processes, the Metropolitan Council's Congestion Management Process Plan accomplishes the following:

- Develop performance measures to define the three major dimensions of congestion; that is the intensity, duration, and extent of congestion; variability of congestion is developed only for the National Highway System (NHS) roadways
- Further refine regional strategies to reduce vehicle miles traveled during peak commuting hours, and improve connections between areas with high concentrations of jobs and low-income households
- Identify programs and services that support access to jobs within the region
- Identify projects and programs that mitigate congestion to the greatest extent feasible and increase accessibility to jobs

These efforts will be formalized in the continuing development of a series of multimodal performance measures and targets, as well as a formal data collection and sharing plan. These performance measures will be used to:

- Track progress towards meeting regional congestion-related objectives
- Identify specific corridors which require additional data collection and analytical efforts
- Assess congestion mitigation strategies, programs, and projects
- Better communicate system performance using visualization techniques that are understandable to policy makers, the public, and the Metropolitan Council's partner agencies

All of the performance measures under development will meet federal requirements, local priorities, and utilize a "SMART" approach to performance-based planning. These measures, in turn, will be used to evaluate the performance of the Metropolitan Council's investment strategies towards meeting regional goals. These strategies will be integrated into the CMP Plan and the connection between these strategies and the planning and programming processes will be made more transparent.

The Metropolitan Council has historically tracked a number of performance measures that are related to system congestion and reliability. These were reported, in part, in previous iterations of the TPP and in the Metropolitan Council's Transportation System Performance Evaluation, the latest version completed in 2020. While the Metropolitan Council intends to continue to track many of these measures, all previous performance measures will be evaluated and vetted through the CMP Advisory Committee, and, if selected, evolve into CMP objectives using a SMART approach. The CMP Plan outlined these new performance measures, which will continue to be tracked, monitored, and reported upon on a regular basis.

Pursuant to the performance-based planning legislation established in the Moving Ahead for Progress in the 21st Century (MAP-21) and Fixing America's Surface Transportation (FAST) acts, the Metropolitan Council has been working with MnDOT and regional stakeholders to establish short-term regional performance targets for the federally-mandated congestion-related performance measures. State-wide targets were established by MnDOT by May 20, 2018. The Metropolitan Council had 180 days after the adoption of the MnDOT targets to either support the targets to establish different targets for the metro area. [Targets adopted by the Metropolitan Council are reported in chapter 13:](#)

[Performance Outcomes.](#) The following performance measures require 2 and/or 4-year targets:

- Travel time reliability on the Interstate and non-Interstate National Highway System (NHS). Defined as the ratio of longer travel times (80th percentile) to a "normal" travel time (50th percentile). This is measured as the percent of person-miles travelled that are reliable.
- The percent of interstate system mileage providing for reliable truck travel time.
- Peak hour excessive delay. This will be measured by the annual hour of peak hour excessive delay per capita on the NHS. Per federal rules, the threshold for excessive delay will be travel time which is below 20 miles per hour or 60% of the posted speed limit, whichever is greater, during peak travel times.
- Non-single occupancy vehicle (SOV) travel. This measure will be used to set a target for the percent of travel within the region which does not utilize single-occupancy vehicles.

Recent Studies and Ongoing Strategies that Support the Congestion Management Process

CMSP IV Study

The Congestion Management Safety Plan 4 (CMSP 4), completed in 2017, is a funding program that addresses congestion and safety concerns through a process and criteria which identifies and prioritizes lower-cost/high-benefit highway construction projects on the MnDOT Metro District highway system. The CMSP 4 is the fourth iteration of CMSP process, and includes a number of refinements based upon an extensive before and after analysis of the effectiveness of previously-implemented solutions. The solutions identified in the CMSP are typically lower in cost and smaller in scope than traditional highway capacity expansion investments, and can be delivered quickly, simply, and with less disruption to traffic along the corridor.

Phase 4 of the CMSP reflects the changes to the MnDOT Metro District highway system over recent years. It includes travel time reliability, the variability of travel time for system users, as a key performance measure for evaluating projects. The CMSP 4 recommended, in particular, that the Metropolitan Council focus more attention on potential projects on non-freeway routes to take pressure off the principal arterial system. This coincides with continuing efforts to gain more rigorous data and better understand congestion patterns on the A-minor arterial system.

Principal Arterial Intersection Conversion Study

This study, completed in February of 2017, examined over 370 intersections along the region's non-freeway principal arterial network in order to determine those that are the highest priority for potential grade-separation projects. Of all the intersections, a selection of 91 at-grade intersections were identified and subsequently classified into three tiers – high, medium, and low – for investment prioritization. The identified intersections, and in particular the 34 high-priority intersections, will be incorporated into the Metropolitan Council's transportation planning and programming efforts. Additional information on this study is included in the Highways chapter of this document.

The results of this study directly support the CMP by providing a region-wide analysis of interchange conversions that would have the greatest positive impact on relieving system congestion. The intersection priorities have been incorporated as a scoring criterion for the Regional Solicitation and will support other MnDOT and Metropolitan Council funding programs.

MnPASS System Study Phase 3

The MnPASS System Study Phase 3 is a study which outlines the region's MnPASS system vision and determines a prioritized list of corridors for which to incorporate MnPASS lanes. It examines person throughput, travel-time reliability, vehicle speed, VMT, and the cost/benefit analysis of potential MnPASS lane construction, in order to identify the corridors that would benefit the region most.

The MnPASS System Study directly supports the Metropolitan Council's CMP efforts by promoting high-occupancy vehicle travel; reducing congestion during peak travel periods; and incorporating greater reliability into the regional transportation network. MnPASS provides a reliable alternative to congested travel for transit, high-occupancy vehicles, and those willing to pay.

Travel Behavior Inventory

The Travel Behavior Inventory is a program of travel behavior research and transportation model improvement. The program includes a biennial regional household travel survey, which will enable tracking of person-based performance measures, including mode share. Future improvements to the regional model will be targeted to improve the ability to forecast key CMP performance measures.

Highway Systems Management

Highway systems management (freeway management system) is a broad term used to describe the infrastructure and traffic operation technologies that are used to improve mobility and reduce congestion within the metro area. A freeway management system and an arterial traffic management system are important to achieving the most safety and mobility benefits for users from the large capital investments agencies have made in highways.

A freeway management system can include monitoring traffic conditions, relaying real-time information to travelers and more direct action on the efficiency of highways. Monitoring of traffic is often done through cameras and various types of automated measurement tools. Providing real time information to travelers can be done through dynamic signs, websites and in-vehicle alerts. Directly acting to improve

the efficiency of highways can be accomplished through tools such as ramp meters, emergency response capabilities, coordinating information and activities with various emergency responders, and through planning work zone activities with traffic demands in mind.

An arterial traffic management system might use similar monitoring of traffic conditions and relaying of real-time information to travelers however the direct actions that can aid efficiency differ in some ways. Similarly work zone planning, emergency response and coordinating with first responders can be effective but coordinating traffic signals is fundamental on arterials. The newest technologies support constant monitoring and almost constant updates to signal timing for maximum efficiency at all times.

2018 Regional Solicitation

Specific changes were made to the 2018 Regional Solicitation that further the existing CMP include the following:

- Integrated the results of regional prioritization efforts into the project scoring including the following:
 - Principal Arterial Intersection Conversion Study
 - Congestion Management and Safety Plan IV
 - Highway Truck Corridor Study
- Increased the maximum federal award for Travel Demand Management (TDM) projects to enhance the potential impact of these investments
- Evaluated projects using Streetlight InSight's speed data to measure congestion levels on the non-freeway principal arterial and A-minor arterial networks

All of the aforementioned studies and strategies illustrate a regional, systematic, and data-driven approach in cooperatively assessing the region's needs and collectively coordinating on areas of the transportation system with significant mobility issues. In short, these studies and strategies directly support the Congestion Management Process, and their outcomes and recommendations were incorporated into the CMP Plan by assisting in defining the CMP network, developing regional objectives, and ultimately utilized in programming and implementing projects which support the region's CMP strategies.

Next Steps and Future Council-Led Activities

As previously noted, this chapter of the Transportation Policy Plan provides a broad overview of some of the CMP-related activities the Metropolitan Council performs, while simultaneously outlining the current short-comings and how these were addressed. While much of this was determined cooperatively with regional partners through the CMP Advisory Committee, other improvements were developed internally and communicated with greater transparency and detail in both the Congestion Management Process (CMP) Plan and other future documents. Outlined below are the specific steps the Metropolitan Council will take over the course of 2018-2020 to develop a more comprehensive and robust Congestion Management Process.

Develop a Regional Definition of Congestion

Presently, there is no universally agreed-upon definition for congestion within the metro area. Both the Metropolitan Council and MnDOT have typically defined congestion as peak travel time speeds that are either less than 45 miles-per-hour or 60% or less than the posted speed limit on the freeway system. However, other congestion measures have been used in various reports and studies performed by the Metropolitan Council and by MnDOT. While all of these measures are appropriate and valid mechanisms for measuring congestion, it is essential that the region mutually agree to and define a universal methodology for defining congestion within the entire Twin Cities metro area. The definition of congestion will likely differ based upon the context and the unique operating characteristics of the roadway; for example, the threshold for congestion will be different for a freeway compared to an A-minor arterial. While no one measure is perfect, the Metropolitan Council and its stakeholders must agree to a congestion measure that is appropriate for the unique context of the region.

By jointly agreeing to a regional definition of congestion, the Metropolitan Council and its regional partners will be able to evaluate the entire roadway system in a universal manner and gain a true understanding of priority corridors. This will allow the region to agree upon what is “unacceptable congestion” and set appropriate objectives to mitigate congestion in key corridors.

Develop Regional Congestion Performance Measures

Previous iterations of the plan have outlined a number of performance measures the Metropolitan Council proposed using in order to identify congested corridors and monitor system performance. Many of these were developed prior to MAP-21 guidance, which provides specific congestion performance measures. Due to the release of the final rule regarding congestion performance measures and the inconsistent use of proposed congestion-related performance measures, the Metropolitan Council worked in conjunction with the CMP Advisory Committee to develop regional multimodal CMP performance measures for the CMP Plan.

The performance measures:

- Are based on SMART objectives
- Address the four dimensions of congestion (as described in the Performance-Based Planning Program Efforts section of this chapter)
- Focus on the movement of persons and goods instead of vehicles
- Are selected based on their ability to effectively communicate system performance to the Metropolitan Council’s stakeholders and the public

The performance measures are included within the CMP Plan.

Assess Congestion Management Process Strategies

In order to more effectively manage congestion and optimize solutions, the Metropolitan Council needs to more thoroughly evaluate whether the region’s CMP strategies have had the intended positive impact on congestion. This includes an analysis of not only project-level impacts of strategies, but also an evaluation of whether alternative strategies could have had a greater impact and/or a better benefit-

to-cost ratio. The Metropolitan Council, via the Congestion Management Plan, developed a data-driven mechanism to quantify and better assess strategy effectiveness. The Metropolitan Council also recognizes that the CMP strategies need to be more effectively communicated with regional stakeholders and the public, which will be accomplished via the CMP Advisory Committee and the Congestion Management Plan.

~~In 2018, the Metropolitan Council will also start a project to assess the effectiveness of past funded Regional Solicitation projects. The results of this effort will help the region better track the performance of these investments over time. It will also allow the region to adjust prioritization measures used to select projects. Finally, the study will provide insights as to the project types that lead to the outcomes through performance targets that are desired by the region.~~

Integrating Congestion Management Process Activities into the Project Prioritization and Selection Processes

While the Metropolitan Council has traditionally integrated congestion into the project selection process, more transparency is needed to show how the CMP factors into project selection. The Metropolitan Council recently included a number of criteria that will specifically prioritize projects with CMP-elements within the 2018 Regional Solicitation update. The specific linkage between projects that directly support congestion mitigation and how these are integrated into the overall programming process is not expressly defined at present. This will be a key topic to be addressed in detail in a future CMP Plan and will be a priority issue to be discussed with the CMP Advisory Committee.

CHAPTER 13

PERFORMANCE OUTCOMES

Overview

As discussed in Chapter 1, this document incorporates a performance-based planning approach that includes a strategic vision and direction and a process to evaluate the effectiveness of the plan's implementation. This chapter provides detail on the process and outcomes of performance measures used to evaluate the plan.

The performance measures outlined in this chapter are organized by the six overarching goals of the Transportation Policy Plan, detailed in Chapter 1, which are:

- Transportation System Stewardship
- Safety and Security
- Access to Destinations
- Competitive Economy
- Healthy and Equitable Communities
- Leveraging Transportation Investments to Guide Land Use

These six goals are supported by 20 regional objectives listed in Chapter 1. Objectives are more specific and achievable in the short term than goals and give direction to how the goals may ultimately be achieved. Objectives are also used to inform the specific Strategies and Actions the Metropolitan Council and its partners will employ to achieve the Transportation Policy Plan Goals and Objectives. The strategies are listed in Chapter 2. Performance measures are intended to be clear, quantifiable metrics that convey whether the region is achieving its goals, and which goals are not being fully met, and therefore need additional emphasis and resources.

The performance measures included in this chapter can be broadly characterized as fitting into one of the following two categories:

- **Required federal performance measures** that are tracked and must be reported upon on a regular basis. The Metropolitan Council is required to set short-term performance targets for these performance measures. The results of these measures are primarily concerned with the overall trend and whether this trend is meeting the desired expectations. These performance measures are important in that if a measure is not trending towards achieving the target, federal funds may need to be re-directed to address the problem.
- **Regional performance measures** that directly support the Transportation Policy Plan's goals and objectives. These measures are tracked regularly to ensure they are consistent with the desired outcomes as defined by the goals and objectives. Additionally, many of these performance measures are modeled for 2040 conditions and provide a tool to guide the actions the region could take to achieve the desired system vision. The establishment of

specific, quantifiable targets for these measures is included as a future work program item for the Metropolitan Council.

The specifics of both the federally required performance measures and the regional performance measures are outlined in the following sections.

Federally Required Performance Measures

Federal law (23 CFP 490.29) requires all state Departments of Transportation and Metropolitan Planning Organizations (MPOs) to adopt a performance-based program to measure system performance and set performance targets that monitor progress toward achieving the plan's goals. The federally required performance measures are divided into the following ~~four~~ five categories:

- Safety Performance Measures (PM1)
- Pavement/Bridge Performance Measures (PM2)
- System Performance Measures and Congestion Mitigation and Air Quality- (PM3); ~~and~~
- Transit Asset Management (TAM); and
- Transit Safety Performance.

For each of the non-transit performance measures, the state (through the Minnesota Department of Transportation) has a required deadline to set a statewide target. After the state sets a performance target, the MPO has 180 days to either concur with the DOT's statewide target or set a different target that is specific for its region. Targets for the safety performance measures ~~and transit asset management~~ are set annually, while ~~all~~ other targets are set ~~on a four-year basis with the option to adjust after two years~~ on different schedules. Table 13-1 details the regional, ~~federal~~ targets adopted by the Metropolitan Council for the federal performance measures.

The federally required performance measures have been woven into the TPP's goals, objectives, and strategies framework and are incorporated into the performance measures included within this chapter. Each measure directly supports one or more of the goals and objectives of the plan, and the recent trends corresponding with the specific measure have been included in the tables of this chapter. The following table details the performance measures required for the four federal performance monitoring programs and the applicable targets.

Table 13-1 – Federal Performance Measures and Adopted Targets

PM1

Final rule	Measures	Adopted targets – 20192020
Safety Performance Measures/HSIP	1. Number of fatalities	Number of fatalities: 108 106
	2. Rate of fatalities (per 100 million VMT)	Fatality rate: 0.34 per 100 million VMT
	3. Number of serious injuries	Number of serious injuries: 748 738
	4. Rate of serious injuries (per 100 million VMT)	Serious injury rate: 2.3 7 6 per 100 million VMT
	5. Number of non-motorized fatalities and serious injuries	Non-motorized fatalities/serious injuries: 190 181 total (27 fatalities; 163 serious injuries)

Annual reporting and target setting

PM2

Final rule	Measures	Adopted targets 2020	Adopted targets 2022
Bridge / Pavement Performance Measures	1. % NHS bridges by deck area in good condition	>50%	>50%
	2. % NHS bridges by deck area in poor condition	<4%	<4%
	3. % of interstate pavement in good condition	No target	>55%
	4. % of interstate pavement in poor condition	No target	<2%
	5. % of non-interstate NHS pavement in good condition	>50%	>50%
	6. % of non-interstate NHS pavement in poor condition	<4%	<4%

2- and 4- year targets

PM3 – Non-CMAQ

Final rule	Measures	Adopted targets 2020	Adopted targets 2022
<u>System Performance</u>	1. % of reliable person-miles traveled on the interstate	>70%	>70%
	2. % of reliable person-miles traveled on non-interstate NHS	>75%	>75%
	3. % of interstate system mileage providing for reliable truck travel time	<2.20	<2.20

2- and 4-year targets for interstate

4 year targets for non-interstate

PM3

Final rule	Measures	Adopted targets 2020	Adopted targets 2022
<u>CMAQ (Metro Area Only)</u>	1. On-road Mobile Source Emissions measure. Sum of emissions reductions of pollutants, in kilograms per day, for all projects funded with CMAQ funds.	>6,800	>6,800
	2. Non-Single Occupancy Vehicle measure. Percent of regional travel by non-SOV modes.	>25%	>25%
	3. <u>Peak-Hour Excessive Delay. Measurement of annual hours of excessive delay per capita. Excessive delay is defined as travel below 20 miles-per-hour or 60 percent of the posted speed limit during peak travel hours (6 a.m. to 10 a.m. and 3 p.m. to 7 p.m.</u>	no target	<8.5

2- and 4- year targets while designated nonattainment/maintenance.

Only 4-year if in attainment – anticipated in November of 2019

TAM

Final rule	Measures	Adopted targets – 2019
Transit Asset Management	1. Rolling Stock (revenue vehicles): % exceeding useful life, by vehicle type	Rolling Stock: % Exceeding Useful Life 1. Articulated bus: 8% 2. Bus: 2.4% 3. Cutaway: 14% 4. Light Rail Vehicle: 0%
	2. Equipment (non-revenue): % exceeding useful life, by vehicle type	Equipment: % Exceeding Useful Life 1. Automobiles: 42% 2. Trucks/other rubber tire vehicles: 38%
	3. Facility: % rated below a 3 on condition scale, by facility type	Facility: % Rated Below 3 on Condition Scale 1. Passenger/parking facilities: 0% 2. Administrative/maintenance facilities: 0%
	4. Infrastructure: % of track with performance restrictions	Infrastructure: % of Track with Performance Restrictions 1. Light Rail: 1%

Annual Reporting and Target Setting Required for Transit Providers

<u>Final rule</u>	<u>Measures</u>	<u>Adopted targets</u>
<u>Transit Safety Performance</u>	<u>1. Total number of fatalities</u>	<u>Target adoption required for MPO by 2021</u>
	<u>2. Rate of fatalities per total vehicle revenue miles</u>	<u>Target adoption required for MPO by 2021</u>
	<u>3. Total number of injuries</u>	<u>Target adoption required for MPO by 2021</u>
	<u>4. Rate of fatalities per total vehicle revenue miles</u>	<u>Target adoption required for MPO by 2021</u>
	<u>5. Total number of safety events</u>	<u>Target adoption required for MPO by 2021</u>

<u>Final rule</u>	<u>Measures</u>	<u>Adopted targets</u>
	<u>6. Rate of safety events per total vehicle revenue miles</u>	<u>Target adoption required for MPO by 2021</u>
	<u>7. Reliability: mean distance between major mechanical failures by mode</u>	<u>Target adoption required for MPO by 2021</u>

Per federal requirements, the TPP should include an evaluation of how the system has performed, including the identification of performance trends and the implications. The following sections discuss the current metro area performance for ~~each of the~~ the performance measure categories and, as applicable, how performance is trending.

Safety Performance Measures

The region has implemented a number of strategies to improve safety for ~~all~~ users of all modes within the metro area. The strategies include a commitment to aggressively reduce the number of fatal and serious injury crashes annually, with an aspirational goal of achieving zero fatal and serious injury crashes sometime in the future.

Pursuant to federal requirements, the Council must adopt short-range annual highway safety performance targets that are both reasonable and achievable. The Council thus adopted ~~2019-2020~~ targets that reflect an annual reduction from the base-year data for fatal and serious injury crashes, as shown in Table 13-1. ~~While the methodology used to determine the targets is the same as that employed by MnDOT for the state as a whole, it~~ For 2020, the Council is applied a reduction from the 2019 targets for the metro area in order to produce ~~a targets~~ that is specific and meaningful for the region.

~~Between 2015 and 2016 there was a significant change in the way that serious injury crashes were reported. In 2015 and all years prior, only confirmed serious injuries were recorded and included in the serious injury crash total. This changed in 2016, where the definition of serious injury crashes was expanded to include both confirmed serious injuries and suspected serious injuries. As a result, the number of bike/ped serious injuries reported in the metro area increased by 63% between 2015 and 2017. Critically, the 2018 metro-area bike/ped targets were based upon the lower 2015 data, which only included confirmed serious injuries. The 2019 bike/ped targets reflected the new definition for serious injury crashes and included both confirmed and suspected serious injuries. As a result, the metro area's bike/ped target increased from 2018 to 2019. This is anticipated to be one-time adjustment, as moving forward the definition of serious injury crashes will continue to include both suspected and confirmed serious injuries.~~

The ~~2019-2020~~ non-motorized targets ~~s~~ reflect s a 5% annualized reduction in fatalities from the 2017 base-year data and a 6% annualized reduction in serious injuries from the 2017 base-year data. In total, there were 214 non-motorized serious injuries and fatalities in the metro area in 2017, ~~30 of which were fatalities and 184 of which were serious injuries.~~ This contrasts sharply with the 2015 base-

year data in which the 2018 targets were set, when there was a total of 131 combined non-motorized serious injury crashes and fatalities in the metro area.

Overall, there are significantly fewer fatal and serious injury crashes per capita and a lower crash rate in the metro than in Greater Minnesota. The fatal crash rate in the metro area is approximately half of that of Greater Minnesota, while the serious injury rate is approximately 35% lower.

From ~~2018-2017~~ to ~~2019~~2018, the total number of fatal crashes, serious injuries, and non-motorized fatalities and serious injuries ~~increased~~decreased within the metro area. Similarly, the rate of fatal and serious injury crashes, which accounts for vehicle miles travelled, also ~~increased~~decreased. The Council will continue to monitor and report upon these safety measures on an annual basis, which ~~should~~will assist in determining whether these changes prove to be ~~increase was~~ an outlier or part of a larger trend.

Pavement and Bridge Performance Measures

The Council chose to concur with MnDOT and apply the statewide bridge and pavement targets in the metro area. The targets were adopted for the first time in 2018 and coordinated closely with MnDOT. Overall, performance for the bridge and pavement measures was similar in the metro area to Greater Minnesota as a whole.

Currently, the percent of NHS bridges whose deck area is in good condition is lower in the metro area than the adopted 2020 and 2022 targets. This is offset, however, by the state-wide condition, which is on track to meet the established targets. Bridge deck condition can fluctuate significantly from year to year, and one major bridge project has the potential to skew the overall performance. While this is likely the case within the metro area, the existing performance will be closely monitored and may indicate a need to place a greater emphasis on bridge deck condition within the region over the coming years.

Regarding pavement, while Interstate pavement condition within the metro area is performing at a level greater than the targets, non-Interstate NHS pavement is not performing ~~at the same level~~as well. This may indicate a need to focus more explicitly on non-Interstate NHS facilities in the future in an effort to ensure the region continues to be on track to meet the 2020 and 2022 targets.

System Performance Measures

Due to the more urbanized nature of the metro area as opposed to the more rural character of Greater Minnesota, the Council adopted system performance measures for system reliability that are specific to the region. The existing metro area performance for the percent of reliable person-miles traveled on the interstate system is approximately 69%. MnDOT established a state-wide target of greater than 80%, which would likely be unattainable for the near-term future within the metro area. Instead, the Council has adopted a 2020 and 2022 target of greater than 70%. This target is appropriate in that it still aspires to be better than current conditions, but is more attainable than the statewide target of 80%.

In addition to the interstate reliable person-miles target, the Council has also elected to adopt targets that are different than MnDOT for the truck travel time reliability index measure. This is due to the fact

that the reliability of truck travel is lower in the metro area than in Greater Minnesota as a whole. The adopted MnDOT target of less than 1.5 would be very difficult to attain given the traffic levels in the metro area as compared to Greater Minnesota.

All of the adopted reliability targets aim for improvement over the existing conditions, and as such may be considered aspirational given recent trends. There is, however, no consequence to the region for not meeting these targets, and the State of Minnesota as a whole is likely to meet the statewide adopted targets. The Council has chosen these targets as a mechanism to work towards improvement in both the near- and long- term future.

Congestion Mitigation and Air Quality (CMAQ) Performance Measures

CMAQ measures are unique in that they only apply to areas which are not in full air quality attainment and the targets must be jointly agreed to by both the Council and MnDOT. As such, the Council worked closely with MnDOT staff to set the 2020 and 2022 CMAQ measures shown- in Table 13-1.

On-road mobile source emissions reductions can vary considerably from year to year, as they reflect the result of projects programmed in the Transportation Improvement Plan. Given this, MnDOT and the Council set a target that is similar to the most current year's performance.

The percent of regional travel by non-single occupancy vehicles has been gradually increasing over the past several years, with more residents choosing to carpool, walk, bike, or take transit to and from work. A 2020 and 2022 target of greater than 25 percent will be difficult for the region to attain, but reflects the TPP's vision of travel via multiple modes and decreased single-occupancy vehicle use.

Peak-hour excessive delay measures "excessive delay," or delay in which vehicles are travelling at either less than 20 miles per hour or less than 60% of the posted speed limit. Excessive delay is a significant mobility concern within the metro area and affects the Access to Destinations goal of the TPP, among others. The most recent metro area performance showed that there was an average of 8.65 annual hours of excessive delay for each resident of the metro area. The adopted target was set to improve upon this number, with no more than 8.5 hours of peak hour excessive delay per capita in both 2020 and 2022.

Transit Asset Management Performance Measures

Transit asset management (TAM), a best practice and a requirement under federal law, is a business model that prioritizes funding decisions based on the condition of transit assets. Transit providers are required to assess, track, and report on their assets to FTA, and develop annual targets for asset management to ensure a state of good repair. Transit providers also develop transit asset management plans that document implementation actions for asset management within their transit systems. [Initial TAM targets](#) must be coordinated with the Council, which is the region's MPO. The four FTA-required performance measures for transit asset management are:

- Rolling stock (buses and train used for serving customers): The percentage of revenue vehicles (by type) that exceed the useful life benchmark.

- Equipment (vehicles used in a support role): The percentage of non-revenue service vehicles (by type) that exceed the useful life benchmark.
- Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the [Transit Economic Requirements Model \(TERM\) Scale](#).
- Infrastructure: The percentage of rail track segments (by mode) that have performance restrictions. Track segments are measured to the nearest one-hundredth of a mile.

The region's transit operators officially established 2018 performance targets on April 1 of 2018, which are shown in Table 13-1. These targets were consequently adopted by the Council, [serving as the region's MPO](#), in October of 2018. [The Federal Transit Administration \(FTA\) does not require MPOs to adopt regional TAM targets on an annual basis.](#)

The TPP outlines the goals, objectives, and strategies that are used to set transit investment priorities for the region. These factors, in turn, directly guide the investment plan and transit projects programmed and ultimately built. The TPP guides transit investments through the following objectives and strategies:

- Efficiently preserve and maintain the regional transit system in a state of good repair;
- Manage the regional transit network and respond to demand as deemed appropriate based on the Transit Market Area;
- Provide transit police services and coordinate with other public safety agencies to ensure the safety and security of the transit system;
- Promote alternatives to single occupant vehicles and ensure transit services reach major job and commercial activity centers;
- Expand and modernize transit service, facilities, systems, and technology to meet demand, improve customer experience, and increase transit access to destinations.

Regional Performance Measures

As [previously](#) noted, in addition to the federally required measures, the performance measures within this chapter also include several measures to evaluate the desired outcomes of this Transportation Policy Plan. These performance measures reflect the long-term vision for the region and serve as indicators to track the region's progress towards achieving the goals and objectives of this Plan. Some of the performance measures can be evaluated using horizon year 2040 model outputs for the revenue scenarios outlined in this Transportation Policy Plan, while others are intended to reflect and track current conditions and assess whether the region is making progress towards meeting the 2040 system vision.

The regional performance measures were chosen after meetings and input from Metropolitan Council stakeholders and the public. ~~The P~~[previous versions of the](#) 2040 Transportation Policy Plan, ~~adopted in 2015, included~~ [include](#) a work item with the task of refining the planning and programming performance measures. Comments received from the public outreach process for that plan indicated that the plan goals, objectives and strategies, their inter-relationship, and the related performance measures needed further review.

This work item was implemented through the formation of five modal work groups: highway, transit, freight, aviation, and bicycle/pedestrian. Membership in these work groups included representatives from cities, counties, MnDOT, transit providers, the University of Minnesota, the Minnesota Department of Health, the Metropolitan Airports Commission, and Metropolitan Council staff. The work groups also included representatives of advocacy groups such as Saint Paul Smart Trips, Minneapolis Bicycle Coalition, Transportation Accessibility Advisory Committee (TAAC), the American Trucking Association, and Transit for Livable Communities.

These modal work groups met throughout 2015 to develop recommendations for the performance measures to be used in the 2040 Transportation Policy Plan. Their task was to develop additional or replacement plan performance measures. In recommending performance measures, the work groups considered the availability of data and other factors. The groups developed a list of measures, which were prioritized based on their relationship to the plan's goals and objectives. Those performance measures with strong relationships are used in this plan and outlined in this chapter.

Modeling Process

Where possible, and for those performance measures where a long-term result was desired, the process utilized the regional travel demand model to provide estimates for the expected 2040 results under two different investment scenarios, as well as a “no build” scenario. The scenarios are described below.

- **Current Revenue Scenario.** This scenario accounts for the assumption that all revenues that the region can reasonably expect to be available will continue to be available at the same level (accounting for inflation) until the horizon year of 2040. It is a fiscally constrained scenario that is based on historical funding levels, current laws, and current allocation formulas. The estimated revenues available under this scenario total approximately \$92.1 billion dollars.
- **Increased Revenue Scenario.** This scenario is premised on the region adopting policy changes, laws, or decisions that increase local, state, or federal funding levels. It is a scenario based on plausible reason and illustrates what may be achieved with additional revenues. While the projects are not considered part of the approved plan, this scenario provides context for the level of transportation revenues and investments needed to move the region closer to achieving the transportation goals and objectives of this plan.
- **“No Build” Scenario.** This scenario presents the modeled conditions of the region under the assumption that no projects are built after the 2015 base-year condition. This represents the expected conditions should no transportation improvement be made from 2015 to 2040.

All future scenarios assume the same assumptions for demographic growth in the region, with population in the region increasing from 2,973,000 in 2015 to ~~3,640,000~~3,653,000 in 2040 and total employment increasing from 1,620,000 to ~~2,070,000~~2,016,000. This represents a total increase of ~~232%~~248% increase in population and employment, respectively. Note that the demographic forecasts used for the travel demand modeling process differ slightly from the Metropolitan Council's

regional forecast for 2040. The demographic projections used for the travel demand model are based upon the local forecasts and summed for all traffic analysis zones (TAZs) in the metro area.

Performance Measure Outcomes

The following tables, which are categorized by the overall goals of this Transportation Policy Plan, list each performance measure chosen for this plan and, if applicable, their modeled outcomes based upon the three scenarios. The tables include the following information:

- The performance measure
- A description of the performance measure
- The applicable geography or transportation network that is being measured
- The existing performance
- The 2040 outcomes for each model scenario, if applicable

Note that not all performance measures have associated model outputs. In these cases, the table includes an outcomes column that provides additional information pertaining to the desired long-term outcomes.

Transportation System Stewardship

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 in working order and maximize its potential in terms of effectively and efficiently moving people and freight. Keeping up a well-maintained, functional transportation system is at the core of transportation investment.

Table 13-2: Transportation System Stewardship Performance Measures

Performance Measure	Description	Existing Performance	Outcomes
Roadway Pavement Condition	<p>Percentage of pavement with a ride quality in good and poor condition</p> <ul style="list-style-type: none"> Interstate System – Good Interstate System – Poor Non-Interstate NHS – Good Non-Interstate NHS – Poor 	<p>63%</p> <p>1.4%</p> <p>51%</p> <p>3.2%</p>	Federally_-required short term targets. Council has work program item to develop long-term outcomes with MnDOT.
Bridge Condition	<p>Percentage of bridges (expressed in deck area) in good and poor condition</p> <ul style="list-style-type: none"> Interstate and NHS – Good Interstate and NHS - Poor 	<p>46%</p> <p>1.3%</p>	Federally_-required short term targets. Council has work program item to develop long-term outcomes with MnDOT.
MnPASS Reliability	<p>Percent of time MnPASS lanes are operating at 45 mph or greater</p>	<p>93.3%</p>	Will be managed to be as close to 100% as possible
Transit State of Good Repair	<p>Percent of assets in good repair</p> <ul style="list-style-type: none"> Rolling Stock: Revenue Vehicles Equipment: Service Vehicles Facilities: Customer and Maintenance/Administrative Infrastructure: Rail Track 	<p>Annual targets set in accordance with adopted asset replacement policies</p>	<p>Federally required annual targets.</p> <p>Long-term outcomes will not be developed for this measure</p>

Transportation System Stewardship Outcomes Summary

Three of the four performance measures included under this goal are federally mandated, with the Council required to set performance targets (or concur with ~~the~~-MnDOT or transit provider -targets) and report upon the trends toward that target on a regular basis. These performance measures and their

applicable targets will be included in the next update to the Transportation Policy Plan, per the schedule for federal requirements.

The Federal Highway Administration has set minimum performance requirements for both pavement and bridge condition at the state level. For roadway pavement condition, this minimum standard is that no greater than 5% of the total state-wide interstate system should be in poor condition. There is no performance threshold for the non-Interstate portion of the National Highway System (NHS). The minimum standard for bridge condition (including both Interstate and non-Interstate NHS) is no greater than 10% should be in poor condition.

Overall, the State of Minnesota's Interstate pavement condition is currently about 60% good and 1% poor. The state's non-Interstate NHS condition, meanwhile, is approximately 53% good and 2.5% poor. When compared to the state as a whole, the metro area has less non-Interstate pavement in good condition, and more non-interstate pavement in poor condition. In contrast, the state-wide interstate pavement condition is slightly worse than the metro area's.

The metro area's bridge condition performance, which is defined as the total deck area of bridges along Interstate and NHS systems in good and poor condition, closely mirrors the overall state performance. This is in large part due to the fact that ~~since~~ approximately 75% of the total bridge deck area in Minnesota is located within the metro area. The metro area's overall bridge condition is 46% in good condition and 1.3% in poor condition. The state, by contrast, is approximately 47% in good condition and 1.5% in poor condition.

The MnPASS system continues to operate efficiently, with the system speed historically averaging greater than 45 miles per hour over 93~~5~~% of the time. This is a key metric to continue to track in the future, given the reality of limited resources for roadway expansion and the importance of the MnPASS system to providing a reliable alternative to congestion. MnPASS lanes are anticipated to continue to operate reliably, as the region can set prices in order to control volume and ensure the lanes operate at a consistent speed.

Transit asset management targets are set on an annual basis by regional transit providers and must be officially adopted by the MPO 180 days after the initial~~se~~ targets are set. These targets reflect the expected conditions of transit assets by the conclusion of the year when they are set. ~~For example, the 2018 targets are based on a reasonable expectation of the state of the system at the end of 2018.~~

Safety and Security

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 users of the system. Every investment in the transportation system should strive to make it safer and more secure for the user.

Table 13-3: Safety and Security Performance Measures

Performance Measure	Description	Existing Conditions	Outcomes
Crashes with Fatal or Serious Injuries	Number of Fatal or Serious Injury Crashes		
	<ul style="list-style-type: none"> Fatal Crashes Serious Injury Crashes 	<p style="text-align: right;"><u>141</u></p> <p style="text-align: right;"><u>825</u></p>	
Fatal and Serious Injury Crash Rate	Rate of Crashes per 100 million vehicle miles traveled		Federally required 2018-2020 targets shown in Table 13-1. Long-term outcomes cannot be reasonably developed for these measures.
	<ul style="list-style-type: none"> Fatal Crashes Serious Injury Crashes 	<p style="text-align: right;"><u>0.49</u></p> <p style="text-align: right;"><u>2.88</u></p>	
Bicycle/Pedestrian Fatal or Serious Injury Crashes	Number of Fatal or Serious Injury Crashes	<u>184</u>	

Safety and Security Outcomes Summary

The measures in Table 13-3 outline the federally required measures and the current performance for the metro area.

The metro area’s rate of fatal and serious injury crashes is ~~significantly~~ lower than that of the state as a whole. In ~~2015~~2018, the metro area’s rate of fatal crashes was 0.49 crashes per 100 million vehicle miles travelled. The State of Minnesota’s rate (including the metro area) was 0.63 per 100 million vehicle miles travelled, ~~nearly double that of the region~~. Serious injury crash rates were similarly disproportional, with the metro area rate significantly lower than the state as a whole.

Recent serious injury and fatal accident rates have been ~~notably~~ lower than in past decades. This can likely be attributed to safety improvements to automobiles as well as continued safety engineering improvements to the roadway system.

~~Unlike overall fatal and serious crashes, n~~Non-motorized crash trends ~~have been fairly stable over the past few decades,~~ have been increasing within the metro area within recent years, with a significant spike since 2015, with some fluctuations from year-to-year. This is due in large part, however, to the change in the definition of “serious injury” crashes, which changed between 2015 and 2016. Previously, only confirmed serious injuries were reported. Starting in 2016, the definition changed to encompass both confirmed and suspected serious injury crashes. Nonetheless, the Council will

continue to proactively monitor, develop solutions, and program projects that help to increase the safety of pedestrians and bicyclists.

Crashes involving pedestrians represent the majority of non-motorized crashes, both within the metro area and nationally. Although recent trends indicate increased travel by pedestrians and bicyclists, the lack of a significant reduction in fatal or serious injury crashes involving these travelers is a cause for concern, given the reductions seen for overall fatal and serious injury crashes. The region will need to continue to improve bicycle and pedestrian safety as these modes continue to grow in use.

Given the many uncertainties surrounding future technologies (e.g. the potential introduction of automated vehicles), it’s not plausible to accurately forecast 2040 conditions for these measures. Research strongly suggests that that safety conditions will continue to improve by 2040 due to technological improvements, roadway geometry improvements, and other factors.

Access to Destinations

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 need 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, -comfort, and safety of the trip. Travel preferences can vary widely across people and transportation modes.

Table 13-4: Access to Destinations Performance Measures

Performance Measure	Description	Existing Performance	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Access to Jobs	Number of jobs accessible within 30 minutes and percent increase compared to “2040 No Build”				
	• Driving	1,038,957	1,229,954	1,261,075 1,257,141	1,283,115
	• Percent Increase	N/A	N/A	2.25%	4.2%
	• Transit	24,574	29,121	32,008 950	32,733
	• Percent Increase	N/A	N/A	9.79%	12.4%

Performance Measure	Description	Existing Performance	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
MnPASS Usage	Average daily number of people in MnPASS lanes	93,000	99,000	288,000 300,496	614,000
Percent Non-Single-Occupant Vehicle Travel	Percent of all trips using modes other than non-single occupancy vehicles	23%	TBD*		
Transit Ridership	Increase in daily transit ridership	315,000	+74,000	+145,000	+185,000
Modal Participation Rate	Percent of people who use these modes at least once on a typical day <ul style="list-style-type: none"> Transit Bicycle Walk 	6.2%	TBD*		
		3.6%	TBD*		
		11.2%	Ongoing tracking by the Travel Behavior Inventory		
Travel time Reliability	Ratio of longer to normal travel times <u>Percentage of person-miles traveled in reliable conditions, in percent of total person-miles travelled</u> <ul style="list-style-type: none"> Interstate Non-Interstate NHS 	68.8 69.5%	Ongoing tracking and reporting		
		79.6 66.5%			
Peak Hour Excessive Delay	Number of hours of excessive delay (travel at less than 20 MPH or 60% of posted speed limit) per capita	8.65	Federally required short-term target Ongoing tracking and reporting		

Performance Measure	Description	Existing Performance	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Aviation Performance	Average aircraft delay per operation at MSP International Airport (minutes)	4.3		Ongoing tracking and reporting	
Regional Bicycle Transportation Network (RBTN) Implementation	Percent of RBTN with fully constructed facilities	47%		Ongoing tracking and reporting	

* A methodology for calculating this measure will continue to be developed and these outcomes will be included in future plans.

Access to Destinations Outcomes Summary

The Access to Destinations goal features a number of performance measures, all of which are important indicators for the overall effectiveness of the transportation network in helping to provide reliable, affordable, and efficient travel options for a diverse range of metro area residents. This goal also contains many performance measures in which 2040 outcomes for the three investment scenarios have been developed. This allows the region to better understand the tangible impacts investment decisions may have on the regional transportation network.

The ability for residents to access jobs in a timely manner is a key for a healthy and competitive economic environment. Currently, just over 1 million jobs are located within a 30-minute drive for the typical resident. Without any additional investments, this number will increase to approximately 1.2 million by 2040 based on the addition and location of forecasted job growth. Job access within a 30-minute drive in 2040 would increase by 2.25% for the current revenue scenario and 4.2% for the increased revenue scenario compared to the no build scenario. The number of jobs accessible within 30 minutes by transit is anticipated to increase by a higher percentage, 9.97% for the current revenue scenario and 12.4% for the increased revenue scenario, though the overall number of jobs accessible within a 30-minute transit trip is still far less than driving. The increase in access to jobs can be attributed not only to a more robust transportation network, but also due to changes in the distribution of people and jobs over the next few decades.

The results of modeled MnPASS use vary considerably depending on the investment scenario. The current revenue scenario forecasts a significant increase in MnPASS usage as compared to the no-build scenario, with daily person through-put nearly doubling. Under the increased revenue scenario, MnPASS usage increases greatly over 900% from the no-build scenario. This suggests that the construction of additional MnPASS lanes dramatically affects usage within the region.

Transit ridership is anticipated to rise under both the current and increased revenue scenarios. Under the current revenue scenario, transit ridership would increase by 74,000 over the no build scenario. The

increased revenue scenario would show an even more dramatic rise, with approximately 185,000 additional daily trips representing 250% growth from current conditions.

The remaining performance measures shown in Table 13-4 do not have calculated model outputs because most of these measures are dependent on economic or other variables that cannot be predicted at this time by the travel demand model. As indicated, these performance measures will be tracked on a regular basis to ensure the region’s investment and transportation priorities are having their intended effect.

Competitive Economy

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

A well-developed and functioning 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.

Table 13-5: Competitive Economy Performance Measures

Performance Measure	Description	Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Air Travel	Fee per passenger that airlines pay MAC to use MSP	\$6.3217		Ongoing tracking and reporting	
Access to Transit	Population that lives within 1/2 mile to high-frequency transit corridors				
	<ul style="list-style-type: none"> Population within 1/2 mile Percent of total population 	569,000 17%	658,000 18%	904,000 25%	1,107,000 30%
Freight Reliability	Truck travel time reliability on the Interstate System	2.23		Federally required short term target Ongoing tracking and reporting	

Competitive Economy Outcomes Summary

The fee per passenger at MSP International Airport is an important indicator to track to ensure the metro area remains competitive with peer regions. It has been relatively consistent over time and compares favorably to other U.S.-based airports of a similar size.

Access to transit is a way of assessing how the region is improving opportunity for residents and providing a transit system that can attract and retain businesses and residents. A more robust transit system allows the metro area to compete with other regions across the nation. High-frequency transit is a very attractive option that is convenient for potential users of the system, particularly users who believe transit to be integral to their economic prosperity. Currently, about 17% of people live near the high-frequency transit network of buses and light rail. By 2040, the no build scenario would see additional individuals living near high-frequency transit service. This is due to people moving closer to current high-frequency transit service lines. In both the current and increased revenue scenarios, more people are served due to not only the clustering of people near existing lines, but also the construction of new lines serving areas of the region not currently supported by high-frequency transit service.

Freight reliability, the percent of the Interstate system that provides for reliable truck travel time, is both a federally required measure and a key indicator for ensuring the metro area’s transportation network is sufficiently accommodating the movement of freight. This measure is calculated by comparing the ratio of longer travel times to “normal” travel times for 5 different time periods over 24 hours. The existing conditions have been relatively stable over time, though freight reliability is worse in the metro area than in greater Minnesota.

Healthy and Equitable Communities

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. The transportation system needs to contribute to the health and vitality of all communities, including protecting and enhancing existing communities and their cultures as well as future communities and cultures.

Performance Measure	Description	Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Bike and Pedestrian Miles Travelled	Total miles travelled				
	<ul style="list-style-type: none"> Bicycle Pedestrian 	384,250			Not currently forecastable

Performance Measure	Description	Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Vehicle Miles Travelled Per Capita	Daily average vehicle miles travelled for a metro area resident	23.9	23.43	23.3	23.5
On-Road Mobile Source Emissions	Amount of CO2, nitrogen, sulfur dioxide, VOCs, and CO emissions				
	CO (pounds)	718,000	293,000	288,000	304,000
	Nitrogen Oxides (pounds)	85,000	16,700	16,500	17,400
	Sulfur Dioxide (pounds)	474	354	340	355
	VOCs (pounds)	19,410	6,100	5,800	6,100
	CO2 Equivalent (pounds)	68,930,000	51,100,000	49,000,000	51,200,000

Healthy and Equitable Communities Outcomes Summary

The total bicycle and pedestrian miles travelled are an important indicator for the overall livability and sustainability of the region as well as contributing to the health of the region’s residents. The data also sheds light on the accessibility of the region’s bicycle and pedestrian network to individuals within the region. The data in Table 13-5 is from 2010 and trend data for the region is not yet available, but it will be updated with more current data once available. This measure is important to track on a regular basis but cannot be forecasted for 2040.

Analysis on vehicle miles travelled (VMT) per capita is a way of understanding how the region’s investments and development patterns are impacting overall livability. When people are driving further, there are implications for the environment (beyond just air quality), the economic viability of travel and related equity of access, the potential for fatal and serious crashes, and wear and tear on the region’s transportation infrastructure. For these reasons, VMT per capita can be a proxy for measures in other goals that cannot be forecasted through the regional travel demand model.

VMT per capita decreases slightly from current conditions under all three modeled scenarios, with the increased revenue scenario showing the region with the highest VMT levels. However, due to the increase in population and assuming similar single-occupancy vehicle rates, this would likely lead to more vehicles on the roadways. This would have an effect on congestion and reliability in the no build scenario, as the possible lack of capacity expansion to handle the increased number of vehicles could potentially overwhelm the existing roadway system.

The increased revenue scenario has a higher overall VMT per capita due in part to the investment in MnPASS lanes. The efficiency provided by the MnPASS system leads to greater usage of the system,

consequently increasing the region’s VMT per capita. However, the substantial investment in MnPASS lanes increases system capacity and efficiency, likely leading to reduced congestion and greater mobility than in the no build and current revenue scenarios.

Federal law requires regions in non-attainment or maintenance for air quality report upon on-road mobile source emissions. The monitoring and reporting of air quality is essential in ensuring the air quality within the region is not adversely affecting residents. Total emissions have declined in recent decades, in part due to improved vehicle and bus efficiency and technological improvements to newer vehicles that result in greatly reduced emissions. By 2040, the air quality within the region is anticipated to improve. This is in large part due to a rollover of older vehicles to these newer vehicles with reduced emissions.

Leveraging Transportation Investments to Guide Land Use

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 13-7: Leveraging Transportation Investments to Guide Land Use Performance Measures

Performance Measure	Description	Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Freight Land Use	Total acreage of land zoned as industrial and located on riverfront or with rail access	11,839	Ongoing tracking and reporting		
Population and Job Growth Near High-Frequency Transit Service Areas	Percent of forecasted growth projected to occur within 1/2 mile of high-frequency transit corridors <ul style="list-style-type: none"> Percent Population Increase 	N/A	13%	19%	23%
		N/A	24%	34%	44%

Performance Measure	Description	Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
	<ul style="list-style-type: none"> Percent Job Increase 				
Transit-Supportive Policies in Local Comprehensive Plans	Number of communities with comprehensive plans that include transit supportive policies or strategies	Will develop evaluation process as 2018 comprehensive plan update process concludes		Ongoing tracking and reporting	

Leveraging Transportation Investments to Guide Land Use Outcomes Summary

The freight land use measure is important to track in order to ensure that the region is preserving sufficient land for freight-focused development adjacent to freight infrastructure. Increasingly, land which has historically been zoned as industrial and vital to the region’s freight activities has been converted to residential and commercial uses. This has caused a need for trucks to travel longer distances from distribution centers and freight yards, leading to increased congestion, less efficiency, and greater amounts of on-road mobile source emissions.

As discussed under the competitive economy outcomes summary, high-frequency transit provides a unique option for residents and businesses to access opportunity and talent. In this context, the region is investing in an expanded transit system to provide for more options for residents and businesses, both existing and future. Measuring the growth of jobs and population near high-frequency transit is a way of assessing how much the future will be supported by multimodal options. Current forecasts indicate that 13% of new people and 24% of new jobs would be located near the existing high-frequency transit system by 2040. Building the current revenue scenario would increase this to 19% of new people and 34% of new jobs by 2040, and the increased revenue scenario would increase this to 23% and 44%, respectively.

There are several factors that can affect where growth by 2040 is distributed in the region. The region’s local forecasts were developed based on historical data and previous comprehensive plans. The forecasts are also a product of discussions with local communities. It is a challenge for any forecast to capture shifting market trends. For example, from 2010-2015 the region observed 53% of added housing units and 57% of the permit value for commercial and industrial development on previously developed land. When communities were assessing their initial 2040 forecasts, this market trend for redevelopment was unforeseen in some communities. The region will be assessing and updating forecasts as more recent data becomes available. Local governments are also in the process of updating their 2040 comprehensive plans to reflect Thrive MSP 2040 and its policy plans, which often results to changes in the location and intensity of growth in a community. These factors affect the

existing and future conditions and thus, it is important to track how this measure changes over time for both existing conditions and forecasted plan outcomes.

The Council has made a commitment to monitor the incorporation of transit-supportive development policies and strategies in comprehensive plans throughout the metro area. To accomplish this, the Council will evaluate comprehensive plans submitted during the 2018 planning cycle for transit-supportive elements and track how this evolves over time through amendments and future planning cycles.

Summary of Major Outcomes of Three Scenarios

No build

The no-build scenario presents the outcomes of the region's transportation conditions should no improvements be made to the system between 2015 conditions to 2040. In this scenario, while the region continues to experience population and job growth, the lack of investment in system mobility has clear effects on the level of congestion, access to jobs, transit usage, and system reliability in general. The system is unable to keep pace with the increased level of demand and threatens to affect freight reliability and residents' access to destinations; commute times; and overall quality of life.

Under the no build scenario, transit ridership and the ability to access jobs within 30 minutes do increase, but this is due to increased population density and a predicted development pattern where more individuals settle closer to the urban core of the metro than in existing conditions. The modeled results of MnPASS usage under the no build scenario indicates that the capacity of the existing system is limited in its ability to handle the increased volume of traffic expected by 2040. This would likely cause a policy discussion to increase the maximum MnPASS fee for single-occupancy vehicles. The lack of MnPASS expansion, coupled with per capita VMT figures consistent with current levels, points to a roadway system with rising levels of congestion, lower travel time reliability, and overall reduced mobility for residents of the region.

Current Revenue

Under the current revenue scenario, the region experiences investments in the transit system and the development of MnPASS lanes, leading to an increase in the number of people utilizing these facilities. As a result, system congestion and reliability are predicted to be better than in the no-build scenario, and overall access to the transit system leads to a greater percentage of the population living near high-frequency transit corridors and increased accessibility to jobs. The results of the current revenue scenario indicate that investments to the transportation system make a difference and improve the quality of life for residents living within the metro area.

Compared to the no-build scenario, the current revenue scenario experiences nearly double the transit ridership increase, approximately 10 percent more jobs are accessible within 30 minutes, and over 250,000 more people are located close to a high-frequency transit corridor. Forecasted population and job growth within high-frequency transit corridors consequently increases by six and 10 percent over the no build scenario, respectively.

The investment in the MnPASS system under the current revenue scenario, from 71 to 121 miles, leads to an increase of nearly over 200,000 users over the present conditions. The effect of this investment is likely to lead to greater reliability and reduced travel times for these users. Overall the investments made in the current revenue scenario improve upon the conditions presented in the no build scenario and depict a transportation network that better addresses the increased demand.

Increased Revenue

The increased revenue scenario shows- greater positive trends than those illustrated in the current revenue scenario, with increased transit accessibility and a substantial increase in the number of MnPASS lane users. All the trends summarized in the current revenue scenario are further increased, showing that more investment on the transportation network equates to a greater overall impact.

MnPASS lanes receive substantial investment in the increased revenue scenario, with a total of 295 miles of MnPASS lanes in the region. This leads to usage patterns over six times greater than present conditions and double those of the current revenue scenario. This results in slightly higher VMT in the metro area, but also an increase in accessibility to jobs. Daily transit ridership is anticipated to increase by 40,000 over the current revenue scenario and the number of individuals within a half mile of a high-frequency transit route increases over 200,000.

The overall results of the increased revenue scenario reveal a region with reduced congestion, greater accessibility and reliability, and a more efficient transportation network than in the no build and current revenue scenarios. Again, the outcomes show that investments impact many facets of the transportation network, and the more investment the region puts into the network, the greater the impact will be.

APPENDIX E: ADDITIONAL AIR QUALITY INFORMATION

This appendix contains additional background information supporting the Metropolitan Council's determination in Part 3, Section D that the 2040 Transportation Policy Plan conforms to the requirements of the Clean Air Act.

Attainment History

The U.S. Environmental Protection Agency's (EPA) 40 CFR Parts 51 and 93, referred to together with all applicable amendments as the "Conformity Rule," requires the Metropolitan Council to prepare a conformity analysis of the region's Transportation Policy Plan. Based on an air quality analysis, the Metropolitan Council must determine whether the Transportation Policy Plan conforms to the requirements of the 1990 Clean Air Act Amendments with regard to National Ambient Air Quality Standards (NAAQS) for mobile source criteria pollutants. Under consultation procedures developed by the Minnesota Interagency and Transportation Planning Committee, the MPCA reviews the Metropolitan Council's conformity analysis before the Plan is approved for public review; a letter describing the MPCA's review is on page 6 of this appendix.

Specifically, the Minneapolis/Saint Paul Metropolitan Area is within an EPA-designated carbon monoxide ~~limited maintenance~~attainment area. ~~A map of this area, which for air quality analysis purposes includes the seven-county Metropolitan Council jurisdiction plus Wright County and the City of New Prague, is shown below. A small portion of the region (mapped below) is designated as a~~ maintenance area for coarse particulate matter (PM10). The term "maintenance" reflects the fact that PM10 regional carbon monoxide emissions in this area were unacceptably high in the ~~past 1970s when the NAAQS were introduced. The emissions were~~ and subsequently brought under control ~~through a metro-area Vehicle Inspection and Maintenance Program completed in the 1990s. The EPA then re-designated the area as in attainment of the NAAQS for carbon monoxide in 1999 and approved a "maintenance plan" containing a technical rationale and actions designed to keep emissions below a set region-wide budget. The maintenance plan was updated in 2005, when changes to the emissions rates approved by EPA necessitated an update of the approved carbon monoxide budget as well. A second 10-year maintenance plan was approved by EPA on Nov. 8, 2010, as a "limited maintenance plan." A 20-year maintenance plan was approved by EPA on Sept 24, 2002 and expires on XXXX, 2022, as which point the entire region will be in attainment for all transportation-related pollutants regulated by the Clean Air Act. Every Transportation Policy Plan or Transportation Improvement Program approved by the Metropolitan Council must be analyzed using specific criteria and procedures defined in the Conformity Rule.~~

Federal Requirements

The 2040 Transportation Policy Plan meets the following Conformity Rule requirements:

Inter-agency consultation: The Minnesota Pollution Control Agency (MPCA), Minnesota Department of Transportation (MnDOT), Environmental Protection Agency (EPA), and Federal Highway Administration (FHWA) were consulted during the preparation of the Plan and its conformity review and documentation. The "Transportation Conformity Procedures for Minnesota" handbook provides guidelines for agreed-upon roles and responsibilities and inter-agency consultation procedures in the conformity process.

Regionally significant and exempt projects: The analysis includes all known federal and nonfederal regionally significant projects. Exempt projects not included in the regional air quality analysis were identified by the inter-agency consultation group and classified.

~~Donut areas: No regionally significant projects are planned or programmed for the City of New Prague. No regionally significant projects were identified for Wright County to be built within the analyses period of the Plan and incorporated into the conformity analysis.~~

Latest planning assumptions: The published source of socioeconomic data for this region is the Metropolitan Council's Thrive MSP 2040. The latest update to these forecasts was published in ~~June~~ [December 2017](#) ~~2020~~.

Public Participation: The Transportation Policy Plan was prepared in accordance with the Transportation Public Participation Plan, adopted by the Metropolitan Council on July 26, 2017. This process satisfies federal requirements for public involvement and public consultation.

Fiscal Constraint: The Transportation Policy Plan addresses the fiscal constraint requirements of the Conformity Rule. Chapter 4 of the plan documents the consistency of proposed transportation investments with already available and projected sources of revenue.

The Metropolitan Council certifies that the plan does not conflict with the implementation of the State Implementation Plan and conforms to the requirement to implement the Transportation System Management Strategies, which are the adopted Transportation Control Measures (TCMs) for the region. All of the adopted TCMs have been implemented.

The Transportation Policy Plan includes the ~~2020~~ ~~2018~~-~~2023~~ ~~2014~~ Transportation Improvement Program projects. Moreover, any Transportation Improvement Program projects that are not specifically listed in the plan are consistent with the policies and purposes of the plan and will not interfere with other projects specifically included in the plan.

There are no projects which have received NEPA approval and have not progressed within three years.

~~Although a small portion of the Twin Cities Metropolitan Area is a maintenance area for PM 10, the designation is due to non-transportation sources, and therefore is not analyzed herein.~~

List of Regionally Significant Projects

Pursuant to the Conformity Rule, the projects listed in the Transportation Policy Plan (see Appendix C) were reviewed and categorized using the following determinations to identify projects that are exempt from a regional air quality analysis, as well as regionally significant projects to be included in the

analysis. The classification process used to identify exempt and regionally significant projects was developed through an interagency consultation process involving the MPCA, EPA, FHWA, the Metropolitan Council and MnDOT. Regionally significant projects were selected according to the definition in Section 93.101 of the Conformity Rules:

"Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel."

Junction improvements and upgraded segments less than one mile in length are not normally coded into the Regional Travel Demand Forecast Model, and therefore are not considered to be regionally significant, although they are otherwise not exempt. The exempt air quality classification codes used in the "AQ" column of project tables of the Transportation Improvement Program are listed at the end of this appendix. Projects which are classified as exempt must meet the following requirements:

- The project does not interfere with the implementation of transportation control measures.
- The project is exempt if it falls within one of the categories listed in Section 93.126 in the Conformity Rule. Projects identified as exempt by their nature do not affect the outcome of the regional emissions analyses and add no substance to the analyses. These projects are determined to be within the four major categories described in the conformity rule.

The inter-agency consultation group, including representatives from MnDOT, FHWA, MPCA, EPA, and the Metropolitan Council, reviewed list of projects to be completed by 2040 including the following:

- Existing regionally significant highway or transit facilities, services, and activities
 - Regionally significant projects (regardless of funding sources) which currently meet one of the following:
 - Under construction or undergoing right-of-way acquisition
 - Come from the first year of a previously conforming Transportation Improvement Program
 - Have completed the NEPA process
 - Listed in the ~~2015-2023~~ 2020-2030 Transportation Improvement Program
 - Listed in the Transportation Policy Plan (Appendix C)
- ← Identified for Wright County

Each project was assigned to a horizon year (open by January of 2020, 2030 or 2040) and categorized in terms of potential regional significance and air quality analysis exemption as per Sections 93.126 and 93.127 of the Conformity Rule, using the codes listed in this appendix. The resulting list of regionally significant projects for ~~2015-2020~~, 2030, and 2040 is shown below.

Horizon Year 2020

Strategic Capacity Enhancements

- ~~I-494 – westbound lane from Concord Street through 7th Avenue~~
- ~~MN 41 – 2 to 4 lane expansion from US 212 to Pioneer Trail~~
- ~~Carver County 14 – new 2 lane divided highway from Carver County 43 to Carver County 11 in Victoria~~
- ~~Wright County 39 – 2 to 4 lane expansion from Parish Ocean Avenue to Wright County 42 in Otsego~~
- ~~070-596-013: US 169 at MN 41/Scott County 78 – new interchange~~
- 070-596-013: US 169 at Scott County 14 – new interchange
- 082-596-005: MN 36 at Hadley Avenue – new interchange
- 086-619-034: Wright County 19 – 2 to 4 lane expansion from Lamplight Dr to 70th St
- MN 97 at I-35 – expanding MN 97 through interchange area
- ~~US 10 – expanding to a 2-lane exit from southbound I-35W and adding an auxiliary lane along eastbound US 10 to the exit to Ramsey County 96~~
- 082-613-035: Washington County 13 – add southbound 3rd lane from 3rd Street to Hudson Road
- 002-678-022: Anoka County 78 – 2 to 4 lane expansion from 139th Lane NW to Anoka County 18
- 027-681-035: Hennepin County 81 – 4 to 6 lane expansion from 71st Avenue to 83rd Avenue
- ~~196-010-017/1008-87: MN 41 – 4 to 3 lane conversion from Minnesota River to East 5th Street~~
- 019-670-013/019-670-013F: Dakota County 70 – 2 to 4 lane expansion from east of I-35, east of Kenrick Avenue to Cedar Avenue/Dakota County 50

Transitway System

- ~~METRO Orange Line~~
- ~~Arterial BRT along Penn Ave in Brooklyn Center and Minneapolis~~

Horizon Year 2030

MnPASS Investments

- I-35W – construct a MnPASS lane southbound from downtown Minneapolis to 46th Street
- I-35W – construct MnPASS Lanes from MN 36 to Lexington Avenue
- I-94 – construct MnPASS Lanes from Cedar Avenue to Marion Street
- I-494 – add a MnPASS lane along eastbound from France Avenue to MN 77 and westbound from MN 77 to I-35W
- I-35W – add a southbound MnPASS lane from MN 36 through University Avenue SE

Strategic Capacity Enhancements

- I-494 – construct a directional ramp to serve northbound I-35W to westbound I-494
- US 169 – convert arterial to freeway from US 10 to 197th Avenue
- MN 252/I-94 – convert MN 252 from an arterial to a freeway and add lanes where necessary to reach 2 general purpose and MnPASS in each direction, add MnPASS lanes in each direction along I-94 from I-694 to Dowling Avenue
- I-94 – expand from 4 to 6 lanes between TH 41 and Wright County 19 include interchange improvements at MN 241, Wright County 37 and Wright County 19
- I-35W – northbound lane from Cliff Road to north of Mississippi River
- I-694 – southbound lane from 10th St to westbound I-694 in Oakdale
- I-494 – southbound lane from eastbound I-94 to Tamarack Road in Woodbury
- I-94 – added lanes from MN 610 to Brockton Avenue
- US 212 – 2 to 4 lane expansion from Carver County 11 to Carver County 36
- MN 51 – lane add northbound from CR B2 through Lydia Street
- Carver County 10 – 2 to 4 lane expansion from Clover Ridge Drive to Carver County 11 in Chaska
- Carver County 10 – 2 to 4 lane expansion from MN 41 to US 212
- Carver County 10 – 2 to 4 lane expansion from Carver County 11 to Carver County 43
- Carver County 11 – 2 to 4 lane expansion from 6th Street to US 212 in the City of Carver
- Carver County 18 – new 2-lane arterial from Bavaria Road to MN 41
- East Waconia Bypass – new 2-lane arterial from Carver County 10 to MN 5
- Dakota County 26 – 2 to 4 lane expansion from MN 55 to MN 3
- ~~019-670-013/019-670-013F: Dakota County 70 – 2 to 4 lane expansion from east of I-35, east of Kenrick Avenue to Cedar Avenue/Dakota County 50~~
- Scott County 27 – 2 to 4 lane expansion from Scott County 21 to Scott County 44
- Scott County 42 – 2 to 4 lane expansion from Scott County 17 to Scott County 83
- I-94 at Brockton Avenue – replace overpass with interchange in Maple Grove
- US 169 at 101st Avenue – new interchange in Brooklyn Park
- US 10 at Fairoak Avenue – new underpass in the City of Anoka
- US 10 at Thurston Avenue – new interchange in the City of Anoka
- US 212 at Carver County 44 – new ramps to and from the north at an existing overpass
- MN 13 – new interchange at Dakota Avenue
- MN 252/66th Avenue – new interchange in Brooklyn Center
- MN 36 at Manning Avenue – new interchange in Grant and Lake Elmo
- [157-108-035: MN 77 at 77th Street – new underpass in Richfield](#)
- [MN 252 at CSAH 109 in Brooklyn Park – grade separation, retaining walls](#)
- [CSAH 26 from TH 55 in Eagan to MN 3 in Inver Grove Heights – expand from 2-lane to divided 4-lane roadway](#)
- [CSAH 51 from Shepard Road to West 7th St in St. Paul – Lexington Parkway extension](#)

- [CSAH 610 from CSAH 30 to MN 610 in Maple Grove – construct new four-lane divided highway \(CSAH 610\), new bridge over I-94](#)
- [CSAH 103 from 85th Ave to 93rd Ave in Brooklyn Park – reconstruct, 2-lane to 4- lane conversion, turn lanes](#)
- [US 10 from Anoka/Ramsey city limits to Cutters Ln and Thurston Ave in Anoka- Grade Separation](#)
- [196-010-017/1008-87: MN 41 – 4 to 3 lane conversion from Minnesota River to East 5th Street](#)
- [196-010-017/1008-87: MN 41 – 4 to 3 lane conversion from Minnesota River to East 5th Street](#)

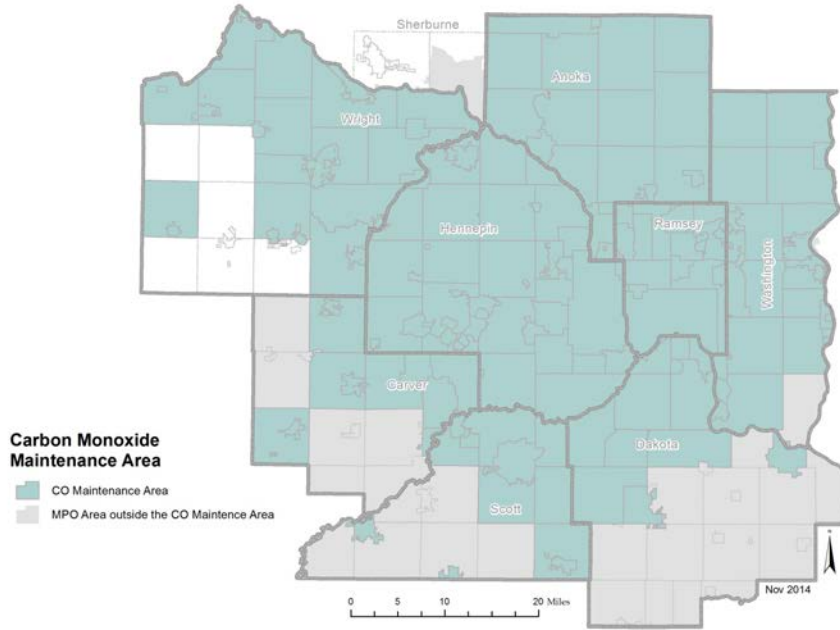
Transitway System

- [METRO Orange Line](#)
- METRO Green Line extension
- METRO Blue Line extension
- METRO Gold Line dedicated BRT
- METRO Rush Line dedicated BRT

Horizon Year 2040

- No projects identified

Figure E-1: ~~PM₁₀~~ Carbon Monoxide Maintenance Area



Commented [EJ1]: Replace with PM 10 Map



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May 31, 2018

Amy Vennewitz
Assistant Director
Metropolitan Transportation Services
Metropolitan Council
390 North Robert Street
St. Paul, MN 55101

RE: Air Quality Conformity Analysis for the 2040 Transportation Policy Plan Update

Dear Amy Vennewitz:

The Minnesota Pollution Control Agency (MPCA) has completed its review of Appendix E (Air Quality Conformity Analysis) for the 2018 update to the 2040 Transportation Policy Plan (Plan) submitted by the Metropolitan Council (Council). The Minnesota Interagency Air Quality Conformity Consultation Committee, with representatives from the MPCA, Council, Minnesota Department of Transportation, Federal Highway Administration and the U.S. Environmental Protection Agency (EPA), were consulted during the preparation of the Plan. Several ongoing communications also occurred along with periodic meetings, draft reports, emails, and phone calls.

On November 8, 2010, the EPA approved a Limited Maintenance Plan for the Twin Cities maintenance area. Under a Limited Maintenance Plan, the EPA has determined that there is no requirement to project emissions over the maintenance period and that "an emissions budget may be treated as essentially not constraining for the length of the maintenance period." The EPA made this determination because it is unreasonable to expect that the Twin Cities maintenance area would experience so much growth in that period that a violation of the CO National Ambient Air Quality Standards would result. No regional modeling analysis is required; however, federally-funded projects are still subject to "hot spot" analysis requirements.

I have examined the document for conformity with a checklist of requirements from the joint Federal Transportation Conformity Rule of the EPA and the U.S. Department of Transportation. Based on this information, the MPCA has determined that the projects included in the 2040 Plan update meet all relevant regional emissions analysis and budget tests as required by the Conformity Rule.

Therefore, the 2040 Plan update fully meets and conforms to the relevant sections of the Federal Transportation Conformity Rule and to the applicable sections of the Minnesota State Implementation Plan for Air Quality.

The MPCA appreciates the opportunity given to review this document as part of the EPA's Transportation Conformity Rule consultation process, and for the great work done by the Council's staff in completing this analysis in a timely fashion. The MPCA also appreciates the cooperation of the interagency consultation group with their immediate assistance in resolving all policy and technical issues with respect to the Plan's Air Quality Conformity determination.

Commented [EJ2]: Replace with current letter from MPCA

Amy Vennewitz
Page 2
May 31, 2018

If you have any questions, please contact me at 651-757-2347 or by email at innocent.eyoh@state.mn.us.

Sincerely,



Innocent Eyoh
Planner Principal
Air Assessment Section
Environmental Analysis and Outcomes Division

IE:ds

cc: Jonathan Ehrlich, Metropolitan Council
Elaine Koutsoukos, Metropolitan Council
Lisa Freese, Technical Advisory Committee Chair
Paul Oehme, Technical Advisory Committee Funding and Programing Committee Chair
Jan Lucke, Technical Advisory Committee Planning Chair
Brian Isaacson, MnDOT
Andrew Emanuele, FHWA
Michael Leslie, EPA
J. David Thornton, MPCA
Todd Biewen, MPCA
Frank Kohlasch, MPCA
Mary Jean Fenske, MPCA
Amanda Smith, MPCA

Status of Transportation Control Measures

Pursuant to the Conformity Rule, the Metropolitan Council reviewed the Transportation ~~Improvement Policy Plan Program~~ and certifies that the Transportation ~~Improvement Policy Plan Program~~ conforms to the State Implementation Plan and does not conflict with its implementation. All transportation system management strategies that were the adopted transportation control measures for the region have been implemented or are ongoing and funded. There are no transportation management strategy projects remaining to be completed. There are neither fully adopted new regulatory transportation control measures nor fully funded non-regulatory measures that will be implemented during the programming period of the Transportation Improvement Program. There are no prior control measures that were adopted since Nov. 15, 1990, nor any prior measures that have been amended since that date.

A list of officially adopted transportation control measures for the region may be found in the Nov. 27, 1979, Federal Register notice for EPA approval of the Minneapolis-St. Paul Carbon Monoxide Maintenance Plan, based on the 1980 Air Quality Control Plan for Transportation, which in turn cites transit strategies in the 1978-1983 Transportation Systems Management Plan. It is anticipated that the Transportation Air Quality Control Plan will be revised in the near future. The following lists the summary and status of the currently adopted transportation control measures:

Vehicle Inspection and Maintenance Program (listed in the Transportation Control Plan as a potential strategy for hydrocarbon control with carbon monoxide benefits). This program became operational in July 1991 and was terminated in December 1999.

I-35W Bus/Metered Freeway Project. Metered freeway access locations have bus and carpool bypass lanes at strategic intersections on I-35W. A revised metering program became operational in March 2002. The 2040 Transportation Policy Plan calls for the implementation of Bus Rapid Transit in the I-35W corridor. As part of the Urban Partnership Agreement (UPA) additional transit lanes were added to Marquette and 2nd Ave in Minneapolis, and transit capacity in the I-35W corridor has been enhanced through MnPASS lanes.

Traffic Management Improvements (multiple; includes State Implementation Plan amendments):

Minneapolis Computerized Traffic Management System. The Minneapolis system is installed. New hardware and software installation were completed in 1992. The system has been significantly extended since 1995 using CMAQ funding. Traffic signal improvements were made to the downtown street system to provide daily enhanced preferred treatment for bus and LRT transit vehicles in 2009.

St. Paul Computerized Traffic Management System. St. Paul system completed in 1991.

University and Snelling Avenues, St. Paul. Improvements were completed in 1990 and became fully operational in 1991.

Fringe Parking Programs. Minneapolis and St. Paul implement ongoing programs for fringe parking and incentives to encourage carpooling through their respective traffic management organizations.

Stricter Enforcement of Traffic Ordinances. Ongoing enforcement of parking idling and other traffic ordinances is being aggressively pursued by Minneapolis and St. Paul.

Public Transit Strategies (from the 1983 Transportation Systems Management Plan):

Reduced Transit Fares. Current transit fares include discounts for off-peak and intra-CBD travel. Reduced fares are also offered to seniors, youth, Medicare card holders, and persons with disabilities.

Transit Downtown Fare Zone. All transit passengers can ride either the Minneapolis or Saint Paul fare zones for 50 cents. Passengers can ride Nicollet Mall buses for free within the downtown zone.

Community-Centered Transit. The Metropolitan Council is authorized by legislation to enter into and administer financial assistance agreements with local transit providers in the metropolitan region, including community-based dial-a-ride systems. A regional restructuring of dial-a-ride service, now called Transit Link, occurred in 2010.

Flexible Transit. Several routes in the region are operated offering flexible, on-demand stops. Also, Metro Mobility, as well as the dial-a-ride services mentioned above, operates with flexible routes catered to riders' special needs.

Total Commuter Service. The non-CBD employee commuter vanpool matching services provided by this demonstration project, mentioned in the 1983 Transportation Systems Management Plan as well as the Transportation Control Plan, are now administered by the Metro Vanpool program, a service of the Metropolitan Council.

Elderly and Handicapped Service. ADA Paratransit Service is available for people who are unable to use regular route transit service (or have extreme difficulty doing so) because of a disability or health condition. ADA Paratransit Service provides "first-door-through-first-door" transportation in 89 communities throughout the metropolitan area for persons who are ADA-certified. In addition, every regular-route bus has a wheelchair lift, and drivers are trained to help customers use the lift and secure their wheelchairs safely. LRT trains offer step-free boarding, and are equipped with designated sections for customers using wheelchairs. In addition, all station platforms are fully accessible.

Responsiveness in Routing and Scheduling. Metro Transit conducted a series of Transit Redesign "sector studies" to reconfigure service to better meet the range of needs based on these identified transit market areas. Service is now re-evaluated as needed.

Central Business Districts Parking Shuttles. The downtown fare zones mentioned above provide fast, low-cost, convenient service to and from parking locations around the central business districts.

Simplified Fare Collection. The fare zone system in place at the time of the Transportation Systems Management Plan has since been eliminated. Instead, a simplified fare structure based on time (peak vs. off-peak) and type (local vs. express) of service has been implemented, with discounts for select patrons (e.g. elderly, youth). Convenient electronic fare passes are also available, improving the ease of fare collection.

Bus Shelters. Metro Transit coordinates bus shelter construction and maintenance throughout the region. Shelter types include standard covered wind barrier structures as well as lighted and heated transit centers at major transfer points and light rail stations.

Rider Information. Rider information services have been greatly improved since the 1983 Transportation Systems Management Plan was created. Schedules and maps have been re-designed for improved clarity and readability, and are now available for download on Metro Transit's website, which also offers a custom trip planner to help riders choose the combination of routes that best serve their needs. Bus arrival and departure times are posted in all shelters. Schedule and real time information is available through the NexTrip mobile, web, or SMS app and is shared with third party developers.

Transit Marketing. Metro Commuter Services, under the direction of Metro Transit, coordinates all transit and rideshare marketing activities for the region, including the work by five Transportation Management Organizations (TMOs) that actively promote alternatives to driving alone through employer outreach, commuter fairs and other programs. Metro Commuter Services also conducts an annual Commuter Challenge, which is a contest encouraging commuters to pledge to travel by other means than driving alone.

Cost Accounting and Performance-Based Funding. Key criteria in the aforementioned Transit Redesign process includes service efficiency (subsidy per passenger) and service effectiveness (passengers per revenue hour). Metro Transit uses these metrics to evaluate route cost-effectiveness and performance and determine which routes are kept, re-tuned or eliminated.

“Real-Time” Monitoring of Bus Operations. The regional Transit Operations Center permits centralized monitoring and control of all vehicles in the transit system.

Park and Ride. The 2030 Park-and-Ride Plan provides guidelines intended for use in planning, designing, and evaluating proposed park-and-ride facilities served by regular route bus transit. The guidelines can also be used for park-and-ride lots without bus service and at rail stations. The Metropolitan Council administers capital funding to transit operating agencies building, operating and maintaining park-and-ride facilities. In 2016, the region served 109 park-and-ride facilities with a capacity of 34,172. Average usage in 2013 was 55 percent.

Hennepin and First Avenue One-Way Pair. These streets in downtown Minneapolis were re-configured subsequent to the 1980 Air Quality Control Plan for Transportation to address a local carbon monoxide hot-spot issue that has since been resolved. The streets reverted to a two-way configuration in 2009.

The above list includes two transportation control measures that are traffic flow amendments to the State Implementation Plan. The MPCA added them to the State Implementation Plan since its original adoption. These include, in St. Paul, a carbon monoxide Traffic Management System at the Snelling and University Avenue.

While not control measures, the MPCA added two additional revisions to the State Implementation Plan that reduce carbon monoxide: A vehicle emissions inspection/maintenance program, implemented in

1991, to correct the region-wide carbon monoxide problem; and a federally mandated four-month oxygenated gasoline program implemented in November 1992. In December 1999 the vehicle emissions inspection/maintenance program was eliminated.

The MPCA requested that the USEPA add a third revision to the State Implementation Plan, a contingency measure consisting of a year-round oxygenated gasoline program if the carbon monoxide standards were violated after 1995. The USEPA approved the proposal. Because of current state law that remains in effect, the Twin Cities area has a state mandate year-round program that started in 1995. The program will remain regardless of any EPA rulemaking.

Exempt Projects

Certain transportation projects eligible for funding under Title 23 U.S.C. have no impact on regional emissions. These are "exempt" projects that, because of their nature, will not affect the outcome of any regional emissions analyses and add no substance to those analyses. These projects (as listed in Section 93.126 of the Conformity Rules) are excluded from the regional emissions analyses required in order to determine conformity of the Transportation Policy Plan and Transportation Improvement Programs.

The following is a list of "exempt" projects and their corresponding codes used in column "AQ" of the Transportation Improvement Program. Except for projects given an "A" code, the categories listed under Air Quality should be viewed as advisory in nature, and relate to project specific requirements rather than to the air quality conformity requirements. Ultimate responsibility for determining the need for a hot-spot analysis for a project rests with the U.S. Department of Transportation. The Metropolitan Council has provided the categorization as a guide to possible conformity requirements.

Projects that Do Not Impact Regional Emissions

Safety

- S-1: Railroad/highway crossing
- S-2: Hazard elimination program
- S-3: Safer non-federal-aid system roads
- S-4: Shoulder improvements
- S-5: Increasing sight distance
- S-6: Safety improvement program
- S-7: Traffic control devices and operating assistance other than signalization projects
- S-8: Railroad/highway crossing warning devices
- S-9: Guardrails, median barriers, crash cushions
- S-10: Pavement resurfacing and/or rehabilitation
- S-11: Pavement marking demonstration
- S-12: Emergency relief (23 U.S.C. 125)
- S-13: Fencing

- S-14: Skid treatments
- S-15: Safety roadside rest areas
- S-16: Adding medians
- S-17: Truck climbing lanes outside the urbanized area
- S-18: Lighting improvements
- S-19: Widening narrow pavements or reconstructing bridges (no additional travel lanes)
- S-20: Emergency truck pullovers

Transit

- T-1: Operating assistance to transit agencies
- T-2: Purchase of support vehicles
- T-3: Rehabilitation of transit vehicles
- T-4: Purchase of office, shop, and operating equipment for existing facilities
- T-5: Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.)
- T-6: Construction or renovation of power, signal and communications systems
- T-7: Construction of small passenger shelters and information kiosks
- T-8: Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals and ancillary structures)
- T-9: Rehabilitation or reconstruction of track structures, track and trackbed in existing rights-of-way
- T-10: Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet
- T-11: Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR 771

Air Quality

- AQ-1: Continuation of ridesharing and vanpooling promotion activities at current levels
- AQ-2: Bicycle and pedestrian facilities

Other

- O-1: Specific activities that do not involve or lead directly to construction, such as planning and technical studies, grants for training and research programs, planning activities conducted pursuant to titles 23 and 49 U.S.C., and Federal-aid systems revisions
- O-2: Engineering to assess social, economic and environmental effects of the proposed action or alternatives to that action
- O-3: Noise attenuation
- O-4: Advance land acquisitions (23 CFR 712 or 23 CFR 771)
- O-5: Acquisition of scenic easements
- O-6: Plantings, landscaping, etc.

- O-7: Sign removal
- O-8: Directional and informational signs
- O-9: Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures or facilities)
- O-10: Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

Projects Exempt from Regional Emissions Analyses that May Require Further Air Quality Analysis

The local effects of these projects with respect to carbon monoxide concentrations must be considered to determine if a "hot-spot" type of an analysis is required prior to making a project-level conformity determination. These projects may then proceed to the project development process even in the absence of a conforming transportation plan and Transportation Improvement Program. A particular action of the type listed below is not exempt from regional emissions analysis if the MPO in consultation with the MPCA, MnDOT, EPA, and FHWA (in the case of a highway project) or FTA (in the case of a transit project) concur that it has potential regional impacts for any reason.

Channelization projects include left and right turn lanes and continuous left turn lanes as well as those turn movements that are physically separated. Signalization projects include reconstruction of existing signals as well as installation of new signals. Signal preemption projects are exempt from hot-spot analysis. A final determination of the intersections that require an analysis by the project applicant rests with the U.S. DOT as part of its conformity determination for an individual project.

Projects Exempt from Regional Emissions Analyses

- E-1: Intersection channelization projects
- E-2: Intersection signalization projects at individual intersections
- E-3: Interchange reconfiguration projects
- E-4: Changes in vertical and horizontal alignment
- E-5: Truck size and weight inspection stations
- E-6: Bus terminals and transfer points

Non-Classifiable Projects

Certain unique projects cannot be classified, as denoted by "NC." These projects were evaluated through an interagency consultation process and determined not to fit into any exempt or intersection-level analysis category, but they are clearly not of a nature that would require inclusion in a regional air quality analysis.

Traffic Signal Synchronization

Traffic signal synchronization projects (Sec. 83.128 of the Conformity Rules) may be approved, funded and implemented without satisfying the requirements of this subpart. However, all subsequent regional

emissions analysis required by subparts 93.118 and 93.119 for transportation plans, Transportation Improvement Programs, or projects not from a conforming plan and Transportation Improvement Program, must include such regionally significant traffic signal synchronization projects.

Regionally Significant Projects

The following codes identify the projects included in the "action" scenarios of the air quality analysis:

- A-20: Action Year 2020
- A-30: Action Year 2030
- A-40: Action Year 2040