CHAPTER 14
WORK PROGRAM

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

Highway Related Studies

Congestion Management Process (CMP) Plan

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

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

The Metropolitan Council will also assess the thresholds for determining if a roadway is congested, particularly on the minor arterial network. ~~Different ways~~Means in which to disseminate this information to the public and effectively communicate to policymakers will continue to be developed. This includes the development of a performance dashboard and an evaluation of the region's transportation system in relation to peer regions. ~~to measure, display, and communicate congestion to the public will also be further explored.~~

In addition, the Council will develop a detailed ~~The~~ handbook of the corridor analysis methodology, which will ~~also be documented and presented in~~contain sufficient detail ~~in a handbook~~ to allow~~so that~~ stakeholders such as MnDOT, the cities, and counties ~~can~~to conduct CMP corridor analyses in a consistent manner.

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

~~Freeway System Interchange Study~~

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

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

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

~~Prioritize Bridge Replacement~~

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

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

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

Highways Performance Measures and Funding Decisions

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

The study will also examine ~~other performance measures, such as~~ and develop performance measures for regional mobility~~,~~ to see how they might play a role in MnDOT funding decisions. The goal is to identify a mobility need monetary value based upon performance measures and targets that can then be incorporated into the next Minnesota State Highway Investment Plan (MnSHIP) Update.

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

Assessment of Regional Congestion Mitigation Philosophy

This effort will include a public conversation about the ~~MPO's~~region's current approach to highway congestion mitigation and ~~if this philosophy makes sense moving forward~~building understanding, agreement and refinement as to how the region invests in congestion mitigation.~~.~~ The review will ~~be~~ focus~~es~~ on policymaker input but will also include other technical stakeholders and the general public. Context on the issue will be provided through data on existing and future congestion, funding availability~~le~~, and the trade-offs of pursuing different approaches moving forward. As part of the discussion, technology solutions, spot improvements, strategic capacity investments and the trade-offs between MnPASS and ~~general purpose~~other lane expansion will be discussed. The results of this pubic discussion will ~~either reaffirm~~ refine or change the ~~current philosophy or change its~~regional highway investment direction for inclusion in the 2050 TPP.

Regional Solicitation Projects Before and After Analyses

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

~~Connected~~ Connected and Autonomous Vehicles

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

Collaboration among state, regional, local, and corporate stakeholders will be necessary to address the myriad of issues in how legislation, regulation, policy, and planning tools address issues across all transportation modes resulting from connected and autonomous vehicle adoption. The Metropolitan Council, with MnDOT, will work together on developing regional collaboration among all transportation

stakeholders on connected and autonomous vehicle technology, deployment, policy, and planning. The collaboration may take the form of a new committee, a set of workshops, and dedication of staff resources.

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

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

~~Connection to TPP Goals and Objectives, Issue Analysis~~

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

Scenario Development and Performance Measurement

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

Integration into Congestion Management Process

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

Emerging Truck Technologies

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

~~Forecasting and Investment Assessment~~

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

Regional Transportation Research and Modeling

Travel Behavior Inventory Program

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

~~Travel Behavior Inventory Program~~

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

Regional Travel Demand Model

Work will continue on implementing and enhancing the Activity Based Model that has been ~~released~~ implemented over the past couple of years. Several projects to add analytical components to the model, in coordination with planning needs and to update the model in light of new survey data, will occur over the next five years including: implementing ActivitySim an open-sourced activity-based modeling software; implementing the federal STOPS modeling software for transitway corridor modeling; a~~.~~nd improving the current Tourcast~~ist~~ modeling software which serves as the backbone of the current activity-based travel demand model.

Transit Related Studies

Comprehensive Transit Financial Report

Minnesota Statute requires the Metropolitan Council to work with regional transit providers and funders to prepare a comprehensive report on metropolitan area transit finance every two years, starting with the first report submitted in 2018. The report will provide a catalog of all funding sources and expenditures related to transit in the metropolitan area. The report will include a section summarizing

the status of “guideway” and “busway” projects (referred to as transitways in this plan) in the metropolitan area, including past and projected expenditures for each project and updates on project status. The report ~~will~~ also includes an analysis of the performance of the transit network at the route and line level, ~~an analysis that is largely already prepared every year. A new requirement for this analysis will require the development of~~along with reporting on performance standards including for farebox recovery~~ and the identification of routes not meeting those standards, which may impact Appendix G: Regional Transit Design Guidelines and Performance Standards~~.

Network Next

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

- **Local Bus Speed and Reliability Improvements** The plan’s strategies address the need to work collaboratively as a region to build transit advantages that provide fast and reliability transit as an alternative to single-occupant vehicles. Chapter 6, “Transit Investment Direction and Plan,” describes the extensive network of highway transitway advantages and transitways, but there is not a significant discussion of transit advantages or other strategies for providing faster, more reliable service on the local bus network. This ~~initiative~~component of Network Next will assess the performance of routes and implement improvements to the local bus network (excluding corridors already examined, such as the arterial bus rapid transit corridors) to address reliability and speed issues. The results of this initiative, particularly the evaluation of implemented strategies on select local routes, will provide a better understanding of the impact of specific strategies that could be implemented on additional routes. This initiative may inform strategies in the Plan and Regional Transit Design Guidelines in Appendix G. The initiative will include collaborations with local municipalities and other stakeholders for implementation, since many options may involve changes to roadway design or operations. As the region’s transit network continues to grow, the Metropolitan Council can also use this information to help local governments plan for effective transit service in their community.
- **Arterial Bus Rapid Transit Network Update** Successful implementation and operation of the A and C Lines has created significant interest in identifying and selecting new arterial bus rapid transit corridors. Metro Transit plans to include an evaluation of arterial BRT corridors in Network Next that will go beyond the five lines currently in development. The study will re-evaluate corridors previously studied and will identify and evaluate new corridors for potential arterial BRT service. In partnership with agencies and local communities, an evaluation framework will include technical performance and corridor readiness factors. Study results are

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

Bus Service Allocation Study

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

~~Employment Last Mile Transit Connection Study~~Microtransit and Shared Mobility Access to Transit

One of the major challenges facing the Twin Cities is improving accessibility to ~~suburban~~ underserved employment opportunities; ~~these~~ areas that are difficult to serve cost effectively with fixed-~~-~~route transit. The plan states that new advances in mobility technology should be used to complement the fixed-route transit network. Emerging transportation technology has created new forms of "shared mobility", modes of transportation characterized by dynamic routing and the integration of improved user interaction with services. Examples of shared mobility modes include transportation network companies, bikeshare, and microtransit. The Metropolitan Council will work with regional transit providers, local governments, and regional employers to explore ~~and analyze options for completing last mile gaps~~studies that fill in gaps in our knowledge of access to ~~in~~ the regional transit system ~~that could connect riders to suburban employment opportunities~~through emerging technologies and modes. ~~The study will evaluate potential market areas and service delivery models that could lead to the launch of a pilot project providing last-mile transit connections.~~Potential study areas include defining a role for shared mobility in the transportation system and how it can contribute to the plan's goals and objectives. The specifics of these studies will likely react to emerging technologies in shared mobility and will be identified as needs come up.

Mobility Hub Planning Guide

This project will develop a planning guide for regional stakeholders involved in the development of mobility hubs -- places where travelers can easily access and connect among multiple transportation options (including public transit, shared vehicles, and other modes). The project will document the

various mobility hub design and implementation options and provide specific guidance for both regional and local stakeholders as they plan, design, implement, and manage mobility hubs within the different contexts they are being considered. The planning guide is needed to ensure a consistent and successful customer experience for mobility hubs across different jurisdictions and in different contexts. The project will also deliver an analysis of local land use and transportation contexts where mobility hubs are best supported. The guide will also include an analysis of existing transportation services, land use, demographics and other factors in order to highlight areas with the highest need for and the most benefit from mobility hubs.

~~Local Bus Speed and Reliability Initiative~~

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

~~Setting Regional Transitway Priorities – Data Coordination~~

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

Downtown Transit Capacity and Transit Advantages Analysis

One of the goals in Chapter 6, "Transit Investment Direction and Plan," is to improve access to destinations. Consequently, the strategies to do so include expanding the transitway and bus network that connects in downtown Minneapolis and downtown Saint Paul. There are 16 local bus routes that travel through downtown Minneapolis or Saint Paul and 16 local bus routes that terminate in either downtown along with the substantial number of peak period express bus routes. The Blue Line and Green Line will travel through downtown Minneapolis when the light rail extensions open. There are also several other transitways planned to serve downtown Minneapolis or downtown Saint Paul. The

Marquette and 2nd Avenue express bus lanes provide a good example of adding transit advantages in downtown to address capacity, reliability, or travel time concerns. This analysis will consider strategies for maximizing transit capacity in downtown Minneapolis and potentially downtown Saint Paul, as well as strategies to increase reliability and speed of transit in or passing through the downtowns. The cities of Minneapolis and Saint Paul will be partners on this work and these efforts may be integrated into local planning efforts as opposed to a Metropolitan Council-led project.

~~Public Transit and Human Services Transportation Coordinated Action Plan Update~~

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

~~Arterial Bus Rapid Transit Corridor Study~~

~~Successful implementation and operation of the A and C Lines has created significant interest in identifying and selecting new arterial bus rapid transit corridors. In 2019, Metro Transit plans to conduct an evaluation of arterial BRT corridors beyond the five lines currently in development. The study will re-evaluate seven corridors previously studied and will identify and evaluate new corridors for potential arterial BRT service. In partnership with agencies and local communities, an evaluation framework will include technical performance and corridor readiness factors. Study results are anticipated to guide prioritization and selection of the region's next arterial BRT lines. This study will advance in coordination with Metro Transit's Service Improvement Plan update. The Metropolitan Council will work closely with local communities, transit riders, and the public to conduct this corridor evaluation.~~

Bicycle and Pedestrian Related Studies

~~Regional Bicycle Transportation Network (RBTN) Refinement and Concept Progression~~

RBTN Bikeway Facility Guidelines and ~~Quantitative~~ Measures ~~Study~~

The previous 2040 TPP describes a range of appropriate bikeway facility types for the Regional Bicycle Transportation Network (RBTN), but stops short of offering guidance as to where in the region, or along which roadway categories, specific treatment types may be preferred. In addition, ~~agency~~ requests for adding new corridors or alignments to the RBTN have been evaluated using a set of mostly qualitative regional bikeway guiding principles. Reviews have also looked conceptually at how new alignments would alter the existing spacing and route directness of RBTN alignments and corridors. As the RBTN is ~~will be~~ expected to expand to serve ~~cities in the region as they continue to grow~~regional growth, ~~it is desired that~~ formalized measures for evaluating corridor spacing and route directness ~~will be~~

~~developed~~are needed to improve regional network planning and to supplement the review process for future RBTN additions. This ~~S~~study will be conducted to fulfill two primary purposes:

1. ~~To p~~Provide recommendations for preferred facility treatments on RBTN alignments in urban, suburban, and rural areas hosting the RBTN, and
1. ~~To d~~Develop recommended guidelines for applying quantifiable measures when evaluating potential RBTN corridors and alignments

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

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

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

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

~~NEW~~

~~Regional Bicycle System Inventory Update~~

Regional Bicycle System Inventory Update

The~~The~~ Regional Bicycle System Inventory was first compiled by the seven metro counties in collaboration with Met Council in 2016; the purpose of the inventory is to assist local planning agencies when developing local bike plans or reviewing adjacent jurisdiction plans. Building on current activities by the Metro GIS Collaborative in regional facilities data aggregation, the regional bicycle system inventory will be updated to include agencies with newly adopted bicycle plans and to expand the list of facility types implemented in city plans. A process will be developed for coordinating regular system inventory updates.~~Regional Bicycle System Inventory was first compiled by the seven metro counties in collaboration with Met Council in 2016; the purpose of the inventory is to assist local planning agencies when developing local bike plans or reviewing adjacent jurisdiction plans. Building on current activities by the Metro GIS Collaborative in regional facilities data aggregation, the regional bicycle system inventory will be updated to include agencies with newly adopted bicycle plans and to expand the list of facility types implemented in city plans. A process will be developed for coordinating regular system inventory updates.~~

Pedestrian ~~Crash Data Analysis~~Safety Action Plan

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

Bicycle and Pedestrian Count Program

Metropolitan Council will seek~~etropolitan Council staff will procure automated counters for pedestrians and bicyclists to use with local partners to collect standard count data and~~ consulting assistance to identify requirements and locations for~~develop~~ a regional count program for use in regional pedestrian

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

Review of Best Practices for Walkable Neighborhoods and Connections to Transit

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

Regional Sidewalk Inventory Development

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

Freight Related Studies

Regional Truck Data Collection Framework

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

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

Industrial Land Atlas Mapping Tool

The Industrial Land Inventory was assembled in response to the Thrive MSP 2040 Plan commitment to developing a region-wide inventory of industrial land, thus enabling analysis of industrial land with freight access; it also addressed the region's interest in how industrial sites relate to the freight transportation system. As a continuation of that effort, an Industrial Land Atlas will be developed as an interactive on-line mapping tool for accessing the Industrial Land Inventory database. The inventory and interactive on-line tool will allow economic developers and private sector planners to assess industrial land options and to prioritize sites for future development. These will also enable local governments to understand the region's supply of industrial land and to identify where industrial land preservation may need to be prioritized.

Aviation Related Studies

Regional Aviation System S~~Plan~~tudy

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

General ~~Performance Measures and Data-Related Studies~~System Planning

Safety Planning and Priorities in the Region

Significant safety planning has been done in the region through MnDOT's Toward Zero Deaths initiative and development of an updated statewide Strategic Highway Safety Plan ~~2014-2019 that was finalized in 2014~~expected in early 2021. MnDOT also partnered with each county in the state to develop County Road Safety Plans and has piloted plans for cities. To assist with the goal of improving safety for all users of the system in the region, the Metropolitan Council will review statewide and local safety plans, crash data, and other safety planning efforts to identify safety needs and priorities for all modes within the region, in coordination with other local partners.

~~Congestion Mitigation and Air Quality Performance Plan~~

~~The federal law MAP-21 established requirements for a Congestion Management/Air Quality performance (CMAQ) plan, which applies to metropolitan planning organizations with a population of~~

~~over one million in air-quality nonattainment or maintenance areas. The Metropolitan Council will work with MnDOT on this plan as well as their annual CMAQ report to the USDOT. Performance measures and target setting for emissions and traffic congestion reduction for the CMAQ program will be established through rulemaking, which is tentatively scheduled for late 2015. Results from rulemaking are expected to include the following:~~

~~Completion and updates expected biennially~~

~~Baseline levels for traffic congestion and on-road mobile source emissions~~

~~A progress report on achievements in reaching performance targets described in 23 U.S.C. 150(d)~~

~~A description of the projects identified for CMAQ funding and a projection of how these projects will contribute to achieving the emission and traffic congestion reduction targets pursuant to 23 U.S.C. 150(d)~~

~~A separate report assessing the progress of the projects under the previous plan in achieving the air quality and congestion targets of the previous plan~~

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

~~Equity~~

Equity Analysis for Transportation

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

Electric Vehicle Planning Study

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

capital and operating costs of EVs as compared to internal combustion engine vehicles and, national and local best practices and resources.

~~Land use and transportation p~~Planning S~~s~~cenarios for G~~g~~reenhouse G~~g~~as E~~e~~missions

Metropolitan Council Community Development is creating web-based tools for the region, counties, cities and townships to help build land use and transportation planning scenarios for mitigating greenhouse gas emissions. Transportation is one of Minnesota's largest sources of greenhouse gas emissions.

Research shows that compact, mixed-use neighborhoods make it easier to reduce these emissions. People living in compact neighborhoods drive less and the buildings, like duplexes and small apartments, have higher energy efficiency. Electric vehicles will also play a large role in mitigating climate change. What remains uncertain is how emerging trends like telecommuting, automated ~~and electric~~ vehicles, ridehailing apps, and micromobility, like bikeshare and scooters, will impact transportation and land use scenarios. These scenarios are built around adopting a specific policy and ~~must~~will look at both the economic and equity impacts in the area. The intent of these tools is to support local governments as they consider how to mitigate the effects of climate change.

~~The Met Council hired the Sustainable Healthy Cities Network to produce prototype scenarios for the region, counties, cities and townships. These prototypes can then be replicated and included in the Met Council's new suite of climate mitigation tools. This project brings together a set of transportation policy experts including Kara M. Kockelman, Ph.D., P.E. at the University of Texas at Austin and Frank Douma Research Fellow at the University of Minnesota. The scope centers around local government stakeholder engagement to determine what type of scenarios would best match the vision and values of communities. It also builds on Thrive MSP 2040's baseline forecast of Vehicle Miles Traveled. The web-based tools are scheduled to be complete by the Fall of 2021.~~