THE METROPOLITAN COUNCIL BUS SERVICE ALLOCATION STUDY

Final Report

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METROPOLITAN COUNCIL

Table of Contents

Table of Figures

1 INTRODUCTION

The market for transit in the Twin Cities region is changing. While downtown Minneapolis and St. Paul have been experiencing dramatic increases in density, much of the regional job growth has been occurring in suburban areas that are much more difficult to serve with transit.

The Metropolitan Council (Met Council) is responsible for developing policies and plans to guide the development of the region's transportation system. The region is currently served by multiple transit agencies, each with different missions, objectives, constituencies, and resources. Metro Transit, the largest, has traditionally concentrated on serving multiple core activity centers well with both bus service and high-capacity transit and has a very strong focus on ensuring that generating ridership is one of the primary results of any service investment. Over the past several years, Metro Transit has been a national model in implementing improvements to its core network, with new light rail and bus rapid transit corridors, as well as a well-defined frequent transit corridor network.

Outside the core urban areas, service from the regional transit agencies consists of a mix of delivery methods, including on-demand service, low-frequency fixed-route service, and commuter express services. A key regional question is the level and type of service investments that are appropriate and could be supported.

What is clear, however, is that there is a need for further transit investments. According to the Met Council's MetroStats, more than 500,000 new residents and almost 300,000 new jobs will be added in the Twin Cities region by 2040[1]. While much of this growth will occur in the core areas of St. Paul and Minneapolis, a large proportion will be in outlying areas where transit service levels are lower.

Like most metropolitan areas across the country, the Twin Cities region faces challenges in distributing transit dollars in a way that meets all needs. Metro Transit has been very focused on serving the highest demand, high density transit markets well, while suburban transit providers have focused on the job access market and providing service to their constituents, regardless of the ultimate ridership. Smaller agencies may have a very strong focus on commuter service into the urban core.

The goals of the Bus Service Allocation Study are to:

- Facilitate regional discussion with policymakers on transit priorities,
- Understand region-wide need for better mobility options,
- Develop and evaluate a series of expansion scenarios that reflect regional goals, and
- Document regional values to inform future service investment.

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[1] MetroStats: A growing and Changing Twin Cities Region: Regional Forecast to 2040, February 2014, https://metrocouncil.org/METC/files/6a/6a8c417a-4a85-4216-99e1-43016bef725c.pdf

This study is not meant to replace any agency specific guidelines or supplant provider service planning efforts (such as the Metro Transit's ongoing Network Next process), but instead be a regional construct about the opportunities and options available to regional stakeholders and elected officials.

The purpose of this report is to document how the study was able to achieve the above goals. The chapters in this report include:

1. **Introduction**
2. **Transit Provider Outreach:** A summary of initial outreach to each transit provider to understand the scope of their services and gain general input on the study.
3. **Family of Services:** A review of how the Met Council currently defines the region's levels of service and recommendations for a new regional family of services to help analyze how services fit various communities within the Twin Cities region and potential population groups.
4. **High-Level Assessment of Existing Services**: An overview of the level of passengers being carried by existing services, existing service allocation by service type and by day of week, and how well the existing network serves jobs, residential markets, and potential higher-need socioeconomic groups.
5. **Policymaker Workshops:** A summary the process and feedback received during the two policymaker workshops used to facilitate regional discussion on transit priorities in April and December of 2020.
6. **Expansion Scenarios:** An outline of the development and descriptions of the expansion scenarios that were created to evaluate different regional transit investment strategies
7. **Scenario Evaluation Framework:** A description of the evaluation criteria and methodology used to evaluate the performance of the expansion scenarios
8. **Scenario Evaluation Results:** A presentation of the results of the evaluation of the seven expansion scenarios.
9. **Key Takeaways:** Summarizes the findings of the Study's outreach and analysis in four major regional values for future service investments.

2 TRANSIT PROVIDER OUTREACH

The consultant team reached out to each transit provider serving the Twin Cities to understand the scope of their services and obtain general input on the study. In March and April of 2020, several video and tele-conferences were held with individuals responsible for service monitoring, planning, and allocation at each agency. The content of each meeting included the following topics:

- An overview of the Service Allocation Study.
- Initial feedback on work to date and potential successful outcomes.
- A summary of transit agencies' current services.
- How transit operating resources are allocated today:
  - How the agency currently approaches service allocation decisions.
  - What existing policies guide service expansion or reduction.
  - Any separate performance guidelines or goals for different types of service.
- Agency planning and service development priorities.

Interviews were conducted with Metro Transit, the Minnesota Valley Transit Authority, SouthWest Transit, the City of Plymouth, the City of Maple Grove, and Metropolitan Transportation Services. Prior to each stakeholder interview, the consultant team reviewed the transit services currently offered by each agency, as well as relevant survey results, internal procedures, and long-range planning documents provided for the purposes of this study. These documents were used to inform the in-meeting discussions, as well as the evaluation criteria, priorities, and conclusions found in this report.

KEY THEMES: SERVICE ALLOCATION AND MONITORING

With variations on specifics, all transit agencies use similar industry standard performance measures on service efficiency, revenue effectiveness, and cost effectiveness to aid in making service planning decisions. They also differentiate standards by transit mode (e.g., commuter express service vs. local service). Common measures include:

- Passengers per in-service hour
- Passengers per trip (express service)
- Operating ratio (farebox return)
- Operating cost per revenue hour

As the largest transit agency in the region, Metro Transit has the largest internal infrastructure (in terms of technology, data collection, and staffing) to monitor its service and implement planning decisions, typically performed on a quarterly basis coinciding with operator picks for work assignments involving multiple agency departments. Other agencies make service planning

decisions on a rolling basis, and smaller agencies make the decisions with local transit agency boards or city management on an irregular basis.

A common objective of several agencies was the desire to maintain minimum standards of service quality where there is the greatest potential for ridership. Examples of this include maintaining the highest levels of span and frequency on Metro Transit's High Frequency Network and maintaining express trip frequency and span at key transit centers and suburban park-and-rides.

Conversely, both small and large agencies have noted challenges in providing coverage-based service in areas of low ridership demand, especially given recent trends toward the suburbanization of low-income households and low-wage employment centers. These demographic shifts can make transit service essential to the livelihood of vulnerable populations, but the types of transit that are often most beneficial to these populations (including suburban local routes, reverse-commute routes, and demand-response services) may not perform well based on traditional transit performance metrics.

Though not all providers in the region have a consistent formal, written policy for service allocation or a documented process for evaluating and implementing service changes, every agency engages in service monitoring activities, in many cases using regional performance standards as specified in the Metropolitan Council's Transportation Policy Plan (TPP) and Appendix G of that document. However, multiple agencies expressed a need to incorporate measures of success beyond ridership and productivity, including access to jobs, housing, and other opportunities, as well as measures of equity. Some stakeholders also expressed interest in developing a more formalized process to coordinate, plan, and implement transit services across agency boundaries, with the goal of delivering a seamless experience to riders.

Detailed examples of service allocation methods are described in Appendix A. Additionally, transit agencies provided the consultant team with relevant survey results, internal procedures, and long-range planning documents. These materials are included in Appendix B.

TRANSIT PROVIDER ENGAGEMENT

In addition to work performed internally by agency staff, transit providers have completed various engagement efforts with policy makers, transit riders, and other members of the community to monitor transit system performance and identify service planning priorities. These efforts include the outreach related to Metro Transit's Network Next initiative (2019/in progress), Maple Grove Transit's Express Bus Customer Survey (2016), MVTA Strategic Plan (2018), and the SouthWest Transit Rider Survey (2018). These documents are included in various sections of Appendix B. In particular, Network Next and Maple Grove outreach efforts had elements relevant to the Service Allocation Study and key findings are summarized below.

Network Next

In 2019, Metro Transit conducted and extensive outreach and engagement process to gather feedback on the transit preferences of existing riders and community stakeholders to inform the development of the Network Next Guiding Framework. This process included a customer-focused preference survey, community-hosted engagement events, stakeholder presentations, and direct outreach to customers at major transit destinations.

Discussions and survey responses related to the core network design factors (frequency, span of service, and coverage) resulted in the following themes:

- Improve the weekday and weekend frequency of existing service
- Make it easier to take the bus places that are difficult or impossible to access today
- Target span improvements to ensure the availability of return rides

Discussions and survey responses related to route design and access factors (including transfers, route directness, and stop spacing) resulted in the following themes:

- Prioritize faster, more frequent service to reduce overall travel times
- Make investments to improve reliability of service
- Improve connections to key destinations in suburban areas

Discussions and survey responses related to service distribution (including the balance of local and express service, as well as geographic distribution) resulted in the following themes:

- Prioritize improved local service over specialized rush hour express service
- Generally, focus on improving service where people are more likely to ride the bus

During the outreach and engagement process, riders and community members also offered feedback on a number of other transit-related topics that are generally outside the scope of the Metropolitan Council's Service Allocation Study, such as the provision of transit information, bus stop condition and access, safety and the customer experience, and fares.

Maple Grove Transit

In Fall 2016, Maple Grove Transit partnered with National Research Center, Inc. to conduct a web-based survey of riders. A total of 332 riders completed the survey, and information was gathered on ridership patterns, customer preferences, and transit development priorities. When asked about service improvement priorities earlier afternoon bus trips to Maple Grove, later evening bus trips to Maple Grove and more mid-day buses to and from Minneapolis were seen by the most respondents as "very important" (33%, 36% and 39% of respondents, respectively) in a list of eight possible improvements. When asked to describe in their own words the single most important improvement Maple Grove transit could make, expanding capacity or adding trips at different times of day were options suggested by 34% of respondents. Convenience/customer service improvements were mentioned by 11% of respondents and 10% indicated they'd like to see more routes or locations. Full survey results with crosstabulations are included in Appendix B.

SERVICE PLANNING PRIORITIES

An inclusive account of agencies' service planning priorities is included in Appendix A: Meeting Records. Briefly, the following projects and items were cited among the region's service planning priorities as they relate to the Service Allocation Study:

- Serving the I-494 Corridor as a market for both express service and "microtransit" demand response service.
- Addressing service planning questions that go unanswered in the current TPP (new modes of transportation, updating transit market area definitions and recommendations)

- How to serve emerging concentrations of low-income individuals and new affordable housing developments in areas that are difficult to efficiently serve with transit
- Expanding more efficient types of demand-response transit
- Understanding how nonprofit operators (DARTS, Newtrax) can be a part of coverage-based services
- Efficiently connecting people to suburban job centers
- Continued development of service around planned transitways
- Acknowledging the realities of scarce and/or volatile funding sources and issues with bus operator shortages, etc. and how agencies can plan to be more resilient.

Overall, the Service Allocation Study was an opportunity to build a regional framework for transit service planning that better reflects the needs of transit providers and their customers. Throughout the initial outreach process, transit agency staff exhibited consistent approaches to transit service planning, including the need to balance ridership and productivity with a renewed focus on access and equity.

3 FAMILY OF SERVICES

To measure how well existing transit service in the region serves the current population and economy, the level of service available should be considered along with transit availability. Routes have different purposes, service times, and frequencies, leading to different levels of service. The Family of Services, or route classifications, considers both service frequency and type of transit. This chapter proposes a new family of services to help analyze how services fit various potential population groups. Proposed definitions are for the purposes of this analysis only and are not meant to replace or supplement the Met Council's existing definitions. The current Met Council existing service definitions can be seen in Appendix C.

Proposed Fixed-Route Family of Services

To quantify the approximate quality of service different population, employment, and socioeconomic groups were receiving in the planning area, a revised family of services was used for this study. The purpose of this route classification is not to supplant the Met Council's definitions, but to allow for a common understanding of how much of the region is served by very high-quality service all the way to no transit service. The proposed four (4) new service level classifications look primarily at the frequency of service for the purpose of measuring existing service distribution.

High-Frequency Transit

High-frequency transit provides riders with 15-minute or better frequencies throughout most of the day on weekdays and Saturdays. High-frequency service every 15-minutes or better is convenient enough for users to ride without depending on a schedule. Moreover, all-day high-frequency service caters to all trip purposes, including work, shopping, medical, and social trips, and facilitates mobility without the need for a car. The transit corridor segments in this category match those identified in Metro Transit's High Frequency Service Network, but also include light rail routes and bus rapid transit (BRT), including the Red Line, which does not operate as frequently.

Local Service

Local service provides riders with 30-minute or better frequencies throughout the day on weekdays. While service every 30-minutes does require a schedule, it is convenient enough to support most trips types, albeit with less flexibility and greater care with transfers. Market research has consistently shown that 30-minute service is the minimum frequency needed to attract discretionary trips. This service level includes many existing Core Local and Supporting Local bus routes.

Basic Service

Basic service includes corridors and flex services with more than 30-minute frequencies throughout the day. Basic services are designed for areas where there is a basic need for transportation, but demand levels are not high. These services serve generally as a means of transportation in automobile-oriented environments for those that are unable to or choose not to travel via private automobile. Frequencies are not conducive to convenient trip-making. This service level corresponds with many of the Suburban Local bus routes, which provide a basic level of transit coverage.

Commuter & Express Service

Commuter and express type services are designed to address longer-distance trips, and typically operate non-stop over longer distances to offer competitive travel times. Commuter and express services encompass 1) peak-only service into the two central business districts, 2) reverse commute service that targets suburban employers, and 3) all-day service with long-non-stop segments. Commuter and express trips may have a different fare structure.

Service Types Not Included in This Analysis

The analysis presented in this report only accounts for fixed-route service. Multiple service providers throughout the region operate on-demand services for the general public, including dial-a-ride, vanpool, microtransit, and flex services. These on-demand services provide mobility to people in areas and between origin-destination pairs that do not have sufficient demand to support fixed-route transit, as well as first/last mile service, and may require advance reservations or scheduling. Definitions for the below services have been adapted from a recent update of the 2040 Transportation Policy Plan [2].

Dial-A-Ride

Dial-a-ride service provides a public transit option for travel that is not served by the regular-route transit network. There are two types of dial-a-ride service in the region: general public dial-a-ride and Metro Mobility paratransit service mandated by state and federal law. The Met Council contracts with local governments and private companies to provide county-based general public dial-a-ride service, known as Transit Link. Although Transit Link is available to the general public, typical users are the elderly, people who do not own a car, people too young to drive, and persons with disabilities traveling outside the Metro Mobility service area. Some suburban transit providers also provide citywide dial-a-ride services with non-regional funds in place of regular-route service that would not be effective.

Vanpool

Commuter vanpools are made up of five or more people, including a volunteer driver, commuting to and from work at destinations throughout the region on a regular basis. The Metro Vanpool program provides financial assistance for vans serving locations or times not well served by the regular-route transit network.

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[2] Thrive MSP 2040: Transportation Policy Plan, Chapter 6: Transit Investment Direction and Plan, https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-Committee/TAC-Planning-Committee/2020/TAC-Planning-4-09-20/Chapter-6.aspx

Emerging Shared Mobility Technology

Recent advances in shared mobility technology provide new alternatives and complements to the regular route transit network. Shared mobility services such as ridesharing services and microtransit have been defined by their ability to leverage smart phone technology (though they are not needed to access service), providing on-demand service, and being dynamically routed to efficiently serve demand in real time. On-demand shared mobility services have the potential to more effectively serve low-density, auto-oriented areas that have proven difficult to serve with fixed-route service. Examples from regional transit providers include SouthWest Transit's SouthWest Prime, Plymouth Metrolink Dial-a-Ride, Maple Grove My Ride, and MVTA Connect.

Warrants for Coverage-Type Services

Met Council's service area encompasses seven counties, and much of the residential and population growth has been occurring in areas outside of the traditional urban core. There is continual pressure to add service in areas that either do not currently meet or are unlikely to meet established route productivity guidelines that serve as a threshold justification for adding service.

The Family of Services approach includes various service delivery methods suitable for coverage type services. The Bus Service Allocation Study developed conceptual Coverage Service Guidelines, intended to help Met Council define the purpose of a coverage route and describe a proposed approach for evaluating existing geographic and job-access coverage service. The proposed approach is based on factors including concentrations of low-income, BIPOC, and low-vehicle access residents served by geographic coverage routes, and concentrations of low-wage jobs served by job-access coverage routes.

The proposed Coverage Service Guidelines include an approach for determining whether new service in unserved areas may be warranted, and metrics that can help inform Met Council on prioritizing coverage-based investments.

A more detailed discussion of the Coverage Service Guidelines can be found in Appendix H.

4 HIGH-LEVEL ASSESSMENT OF EXISTING SERVICES

The purpose of the analysis of existing services presented in this chapter is to help define how transit resources are currently distributed in the region and to understand how the current network balances regional growth goals, existing ridership, social equity, and geographic coverage. This analysis is designed to help identify potential opportunities to improve the current service network and begin to understand what success might look like for the region's transit network.

One of the first steps in identifying potential service improvement opportunities is to understand how existing services are operating, who is currently riding transit, and how the existing network matches the potential socioeconomic and density service characteristics. This chapter provides a high-level overview of the level of passengers being carried by existing services, existing service allocation by service type and by day of week, and how well the existing network serves jobs, residential markets, and potential higher-need socioeconomic groups.

Ridership Production (Service Productivity)

Productivity looks at how efficient transit service is at serving the most rides, often measured as passengers per hour or passengers per trip. Currently, the Met Council measures productivity with the number of passengers per in-service hour. In the 2040 Transportation Policy Plan, the Met Council sets minimum productivity thresholds by route type, as well as a minimum passengers per service hour per trip (Figure 4-1).

This analysis documented the current service productivity by segment for Metro Transit routes[3] and by route for non-Metro Transit and Commuter and Express routes. For high frequency, local, and basic routes, productivity was measured using the Met Council measure of passengers per in-service hour. For commuter and express routes, productivity was measured using passengers per trip, to look at how the route performs on a trip level. This is consistent with national best practices.

Figure 4-2 and Figure 4-3 show 2018 service productivity throughout the region for all day service and commuter & express service, respectively. The most productive (more than 60 passengers per in-service hour) all-day transit corridors are centered in downtown Minneapolis and along arterial corridors to the north and south of the city, as well as some corridors in St. Paul. In general, all-day service segments are more productive the closer it is to either the St. Paul and Minneapolis urban centers, which is consistent with the definitions and expectations developed

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[3] Productivity for Metro Transit routes is not measured on a route level. Metro Transit has calculated the productivity of over 900 different route segments, which allows for a more refined assessment of where productivity levels vary. It also allows for seeing productivity on route branches.

for the Met Council's five Transit Market Areas. For commuter and express routes, the majority of routes carry over 20 passengers per trip.

Figure 4-1   Passengers per In-Service Hour

Route Type	Route Average*	Minimum per Trip**
Core Local Bus	≥ 20	≥ 15
Supporting Local Bus	≥ 15	≥ 10
Suburban Local Bus	≥ 10	≥ 5
Arterial BRT	≥ 25	≥ 5
Highway BRT	≥ 25	≥ 5
Light Rail	≥ 70	≥ 50
Commuter Express Bus	Peak ≥ 20; Off-peak ≥ 10	Peak ≥ 15; Off-peak ≥ 5
Commuter Rail	≥ 70	≥ 50
General Public Dial-a-Ride	≥ 2	N/A

* Route average represents the average passengers per in service hour over the entire day. Individual hours may fall below standard.

** Minimum per trip represents the minimum passengers per in service hour for individual trips on a route. Multivehicle trips, such as three-car trains, will be treated as a single trip.

Source: The Met Council, 2040 Transportation Policy Plan, Appendix G: Transit Design Guidelines

Figure 4-2   Productivity for High Frequency Transit (HFT), Local, and Basic Service
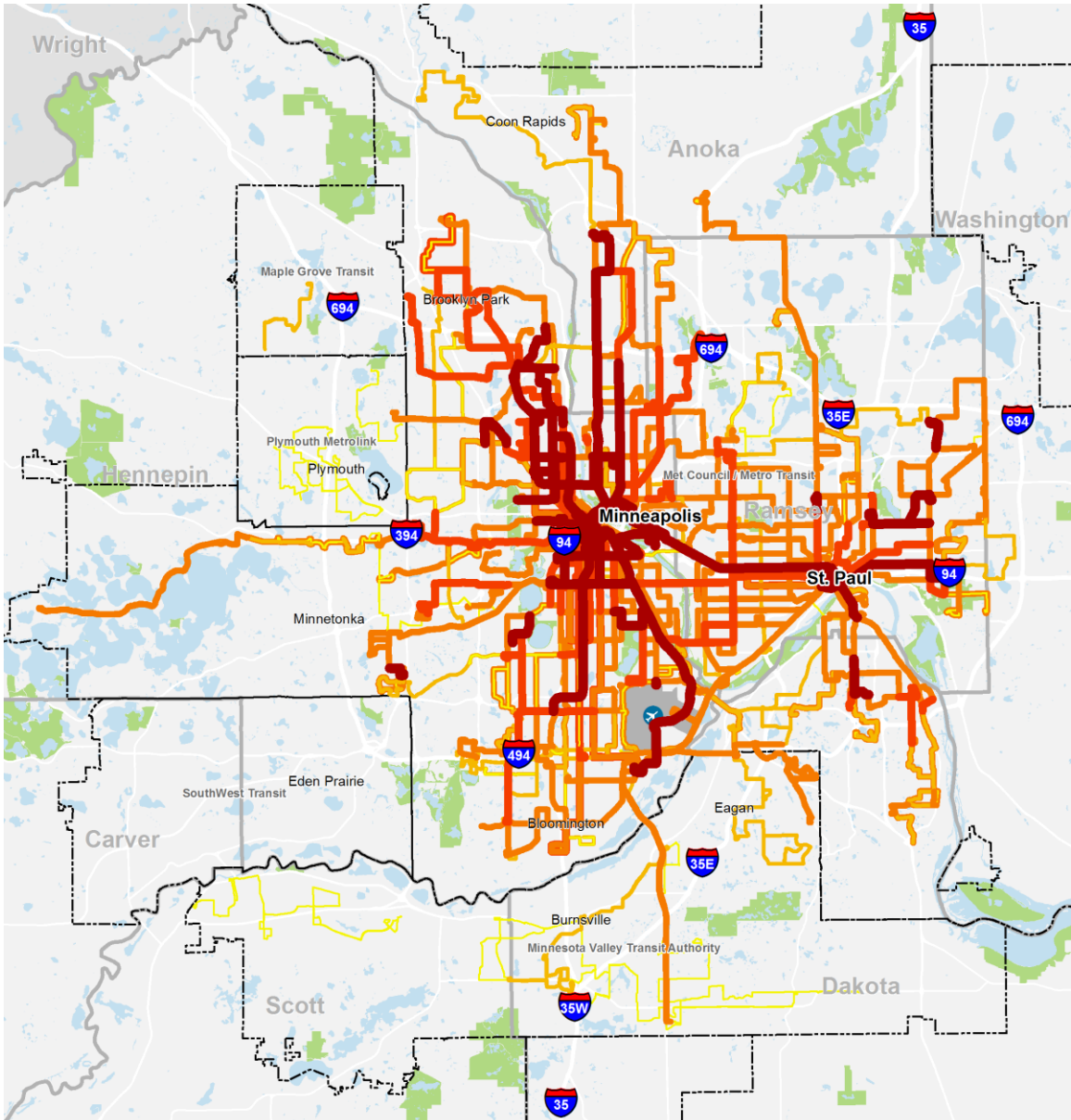
Productivity by Segment for High Frequency Transit, Local, and Basic Transit Service

Boardings per In Service Hour

- 10 or Less
- 11 - 20
- 21 - 40
- 41 - 60
- More than 60

Transit Authority Service Areas
County Boundary

Miles 0   2   4

Source: 2018 Segment- and Route-Level Ridership and Operations Data, The Met Council

Figure 4-3   Commuter and Express Service Productivity

Productivity by Route for Commuter & Express Transit

Boardings per Trip

- 10 or Less
- 11 - 20
- 21 - 40
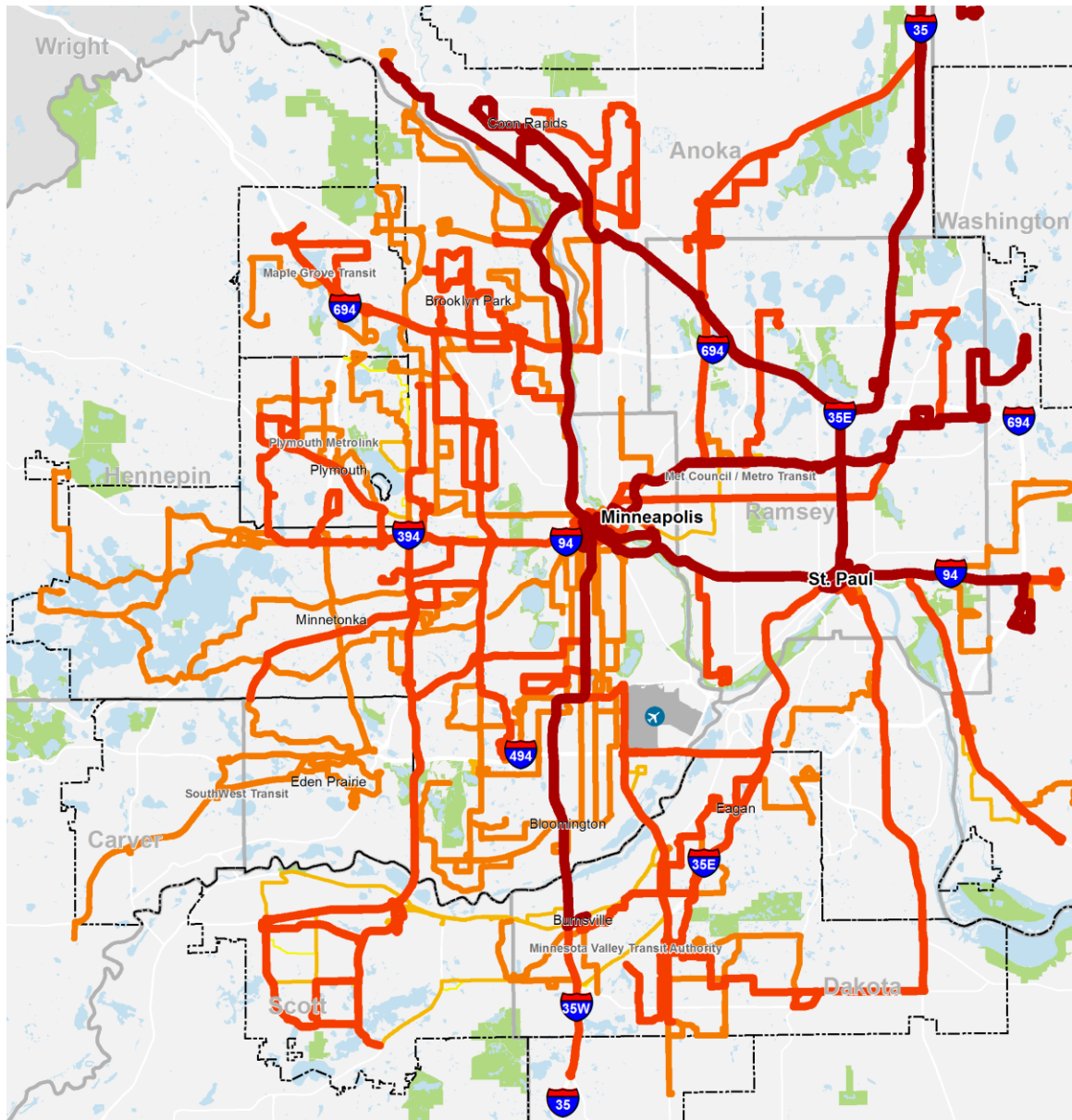- 41 - 60
- More than 60

- ⌐¬ Transit Authority Service Areas
- ☐ County Boundary

Miles 0   2   4

Source: 2018 Segment- and Route-Level Ridership and Operations Data, The Met Council

Existing Resource Allocation

This section looks at regional service priorities by analyzing how resources are currently allocated across the transit network. Figure 4-4 shows how service hours are distributed across the analysis service types, as well as the corresponding ridership proportion. Over half of all service hours are dedicated to local transit routes, which generates about 40% of all regional transit riders. Meanwhile, 20% of operating resources are spent on the high frequency transit network, which results in 44% of ridership. On the other hand, 10% of resources are spent on basic bus service, which generates only 3% of the region's ridership.

Figure 4-5 shows how region-wide service hours are allocated across weekdays, Saturdays, and Sundays and the corresponding ridership levels. Saturday ridership is 44% less than weekday ridership, while the number of hours operated are 43% less. On Sundays, 55% fewer hours are operated, and ridership is 64% less than on weekdays. Productivity for all day types is about equal at 40 passengers per service hour.

Figure 4-4   Annual Service Hours and Ridership by Proposed Family of Services
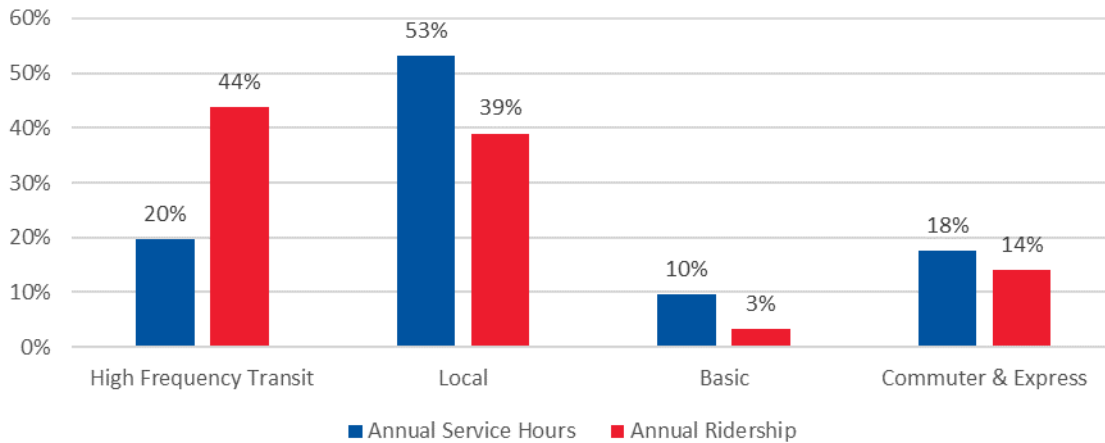
Source: 2018 Route-Level Ridership and Operations Data, The Met Council

Figure 4-5   Average Daily Service Hours and Ridership by Day Type

Who is Riding Transit?

An analysis of who is currently riding transit in the Twin Cities region provides insight into how well the transit agencies are serving the region's various residents. To do this, rider profiles were developed for high-capacity transit riders (light rail and BRT routes), local transit riders (core local, supporting local, and suburban local) and commuter & express riders (commuter and express bus and commuter rail). The data points in this section were pulled from a 2016 On-Board Survey done by the Met Council as part of their Travel Behavior Inventory (TBI)[4]. The accompanying charts can be seen in Appendix C.

Figure 4-6   On-Board Survey Rider Profile Comparison by Service Type

Data	High-Capacity Transit Users	Local Transit Users	Commuter & Express Transit Users
Income	**About 40%** of high capacity transit riders earned less than $35,000.	**About 50%** of local riders earn less than $35,000 per year.	**Nearly 40%** of Commuter & Express riders earn more than $100,000 per year.
Race/Ethnicity	**More than half (57%)** of the riders were White and one-quarter were African American.	**Half** of all local riders are non-white. Nearly one-third are Black/African American.	**A large majority (78%)** of Commuter & Express riders are White.
Access to a Vehicle	**Majority of the riders (66%)** have access to a vehicle that they could have used for their transit trip.	**About 50%** of local riders have access to a vehicle that they could have used for their transit trip.	**An overwhelming majority (87%)** of the riders have access to a vehicle that they could have used for their transit trip.
Trip Purpose	**Less than half (45%)** of riders were making a trip to or from work. Other top trip purposes include social and personal trips (16%), as well as trips to or from school (13%).	**45%** of riders were taking a trip to or from work. Social, personal, and school trips were also common trip purposes.	**About 90%** of Commuter & Express riders were traveling for work or school (6%).

Source: 2016 On-Board Survey, The Met Council

Existing Service Distribution

This section examines how the region's current transit network serves various portions of the travel market and begins to identify areas of opportunity for potential service expansion. Areas of opportunity are areas that may show a higher propensity for supporting transit use based on measurable demographic or built-environment density characteristics.

It should be noted that the results of the service distribution analysis do not implicitly suggest that there is a sustainable market for transit in any given area. Any results should be considered in context of other demand estimating tools. An area that has higher concentrations of a potential

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[4] Travel Behavior Inventory On-Board Survey 2016, https://metrotransitmn.shinyapps.io/TravelBehaviorInventory/

higher need population may have land use characteristics or a road network that is unsuited for cost-effective service provision.

Methodology

For this analysis, the proportion of regional population and employment served by the current transit network was measured across a variety of socioeconomic and demographic variables. Overall population and employment were considered, along with disadvantaged and transportation marginalized population groups. This chapter only shows the results for combined population and employment, total population, and total employment. A deeper look into the geographic coverage and areas of opportunity of specific population and employment groups can be seen in Appendix C.

Geographic Distribution Results

The proportion of the population and employment groups served by each of the four route types within each market is shown in this section. Overall, the existing transit network covers the large majority of Market Areas 1 and 2. In Market Area 1, about 95% of the population and employment groups are covered by at least local, 30-minute weekday service. In Market Area 2, about 85% of all population and employment groups are served by local transit service. In the more suburban areas of the region (Market Areas 3, 4, and 5), because only stop walksheds were calculated, it can be assumed that a greater proportion of residents and jobs would have access to commuter and express transit if drivesheds from park-and-rides had been used.

For each socioeconomic group, this analysis shows the geographic distribution of the areas of opportunity within the region. Four maps are included for each of the population and employment groups[5], showing: the densest areas within the region, the areas not served by high-frequency transit, the areas not served by local transit, the areas not served by basic transit.
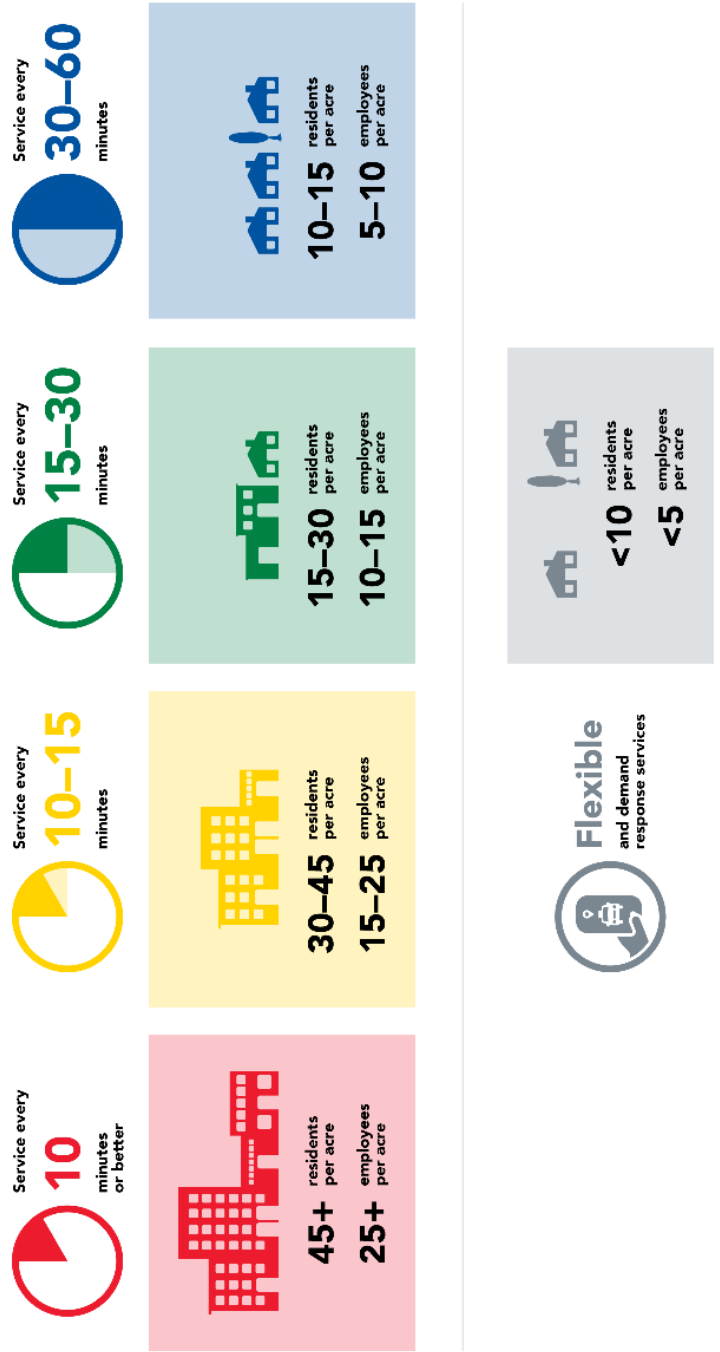
Employment and Population Density

For fixed-route transit to be the most productive, it must be direct, frequent, easy to access, reliable, and available when people need it. More than any other factors, population and employment density determines whether this is possible. Transit needs to serve sufficiently high volumes of travelers to be cost effective, and the density of development in an area determines the overall size of the travel market. The reach of transit is generally limited to within one-quarter to one-half mile of the transit line or station; therefore, the size of the travel market is directly related to the density of development in that area. Transit service frequencies are closely related to market size. Bigger markets support more frequent service, while smaller markets support less frequent service. To attract travelers who have other options, such as automobiles, transit must be relatively frequent—at least every 30 minutes. Below that, transit can be expected to serve only those who do not or cannot drive. Suggested transit service frequency in relation to population and employment densities is shown in Figure 4-7 and Figure 4-8[6].

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[5] Maps were not created to exclusively slow the distribution of population density throughout the region, but instead the data is presented along with employment density in Figure 4-8.

[6] Suggested transit frequencies may not account for every single major employment node in a large block group. They should be used as guidelines.

Figure 4-7   Land Use and Transit Demand

Service every **30–60** minutes
10–15 residents per acre
5–10 employees per acre

Service every **15–30** minutes
15–30 residents per acre
10–15 employees per acre

Service every **10–15** minutes
30–45 residents per acre
15–25 employees per acre

Service every **10** minutes or better
45+ residents per acre
25+ employees per acre

<10 residents per acre
<5 employees per acre

Flexible and demand response services

Source: Thresholds are based on research by Nelson\Nygaard.

Figure 4-8   Population and Employment Density
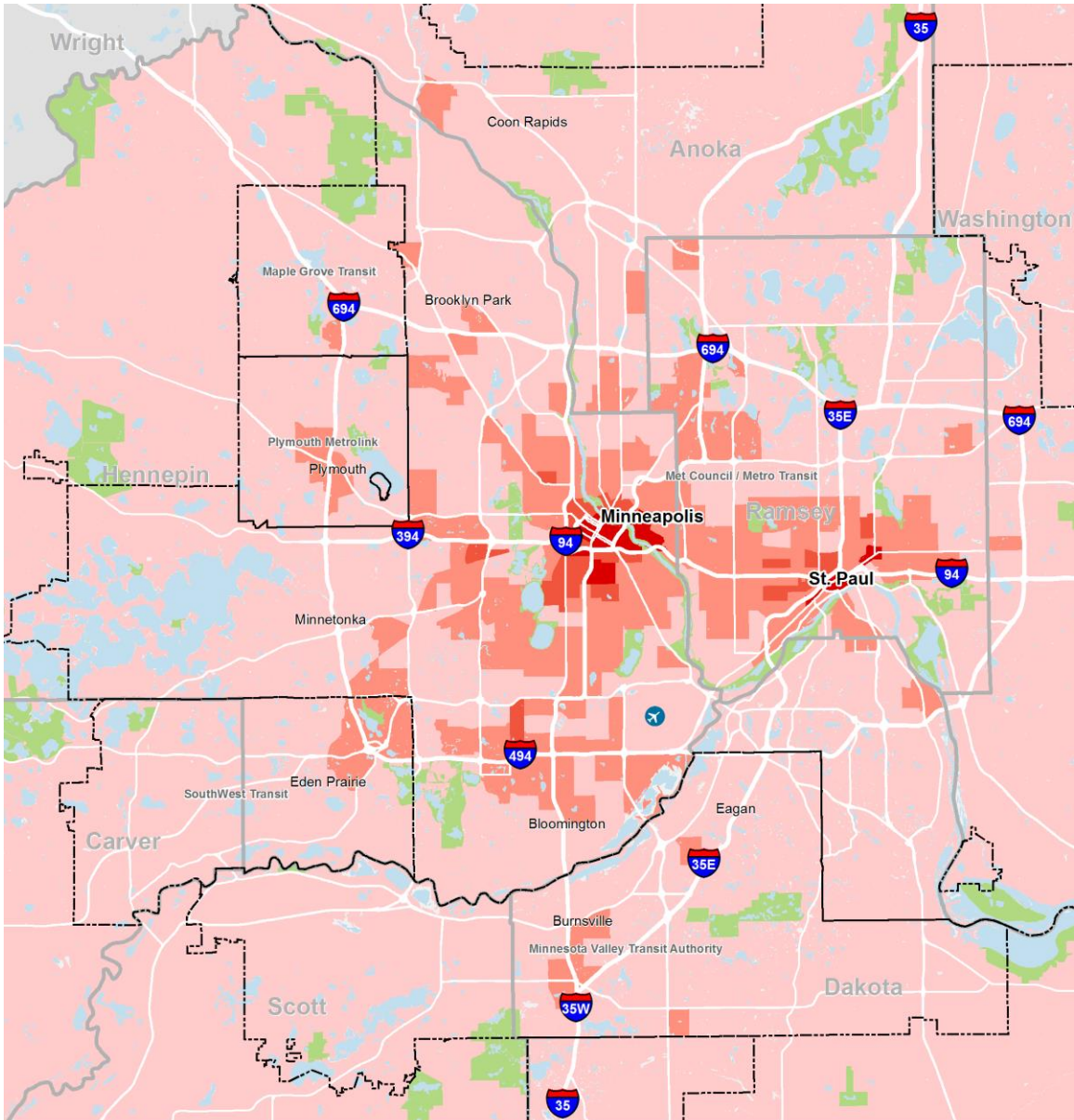
Population and Employment Density

Residents and jobs per acre (service frequency supported)

- Less than 10 (flexible and demand response services)
- 10 - 25 (service every 30 - 60 minutes)
- 25 - 45 (service every 15 - 30 minutes)
- More than 45 (service every 15 minutes or better)

Transit Authority Service Areas
County Boundary

Miles 0   2   4

Source: The Met Council, 2018 ACS 5-year estimates, 2017 LEHD

Total Population

One of the primary drivers of demand for transit service is the population base of an area. The population density of a place can indicate what kind of transit service may be appropriate and how frequently it should operate; an area with higher population density can support more frequent transit service.

Geographic Coverage

A large majority of the total population in both Market Areas 1 and 2 have access to 30-minute transit service or better (Figure 4-9). In Market Area 1, two-thirds of the area's population have access to high-frequency transit and just short of 100% have access to local service. The population in Market Area 2 has less access to high frequency transit, but over three-quarters can reach local service. In areas of the region where there is less population density, just over 40% of the population in Market Area 3 and about 15% in Market Area 4 have access to at least basic transit services. Market Area 4's population densities are too low to support all-day transit service but can support commuter and express services to the region's largest employment centers.

Figure 4-9   Total Population Served by Transit Service Level and Market Area

Service Level	Market Area 1	Market Area 2	Market Area 3	Market Area 4	Market Area 5
High-Frequency and High-Capacity Transit (<15-min frequency)	72%	25%	1%	0%	0%
Local Service (<30-min frequency)	97%	86%	25%	<1%	0%
Basic Service (>30-min frequency)	97%	87%	41%	6%	<1%
Commuter and Express Transit	97%	89%	57%	16%	1%
No Transit Access	3%	11%	43%	84%	99%

Source: The Met Council, ACS 2018 5-Year Estimates

Total Employment

The concentration of jobs in an area is also an indication of the level of transit service that may be demanded. Like population density, generally, the underlying demand for transit grows with an increase in employment density. Understanding where there is a concentration of jobs is important when thinking about transit service because in many places, transit services are largely supporting trips to and from work.

Geographic Coverage

In Market Area 1, over three-quarters of all jobs are within walking distance of high-frequency transit and nearly 100% within access of local service (Figure 4-10). A large majority of jobs in Market Area 2 are within reach of local service, while less than half of those within Market Area 3 are within range of basic service.

Figure 4-10   Total Employment Served by Transit Service Level and Market Area

Service Level	Market Area 1	Market Area 2	Market Area 3	Market Area 4	Market Area 5
High-Frequency and High-Capacity Transit (<15-min frequency)	80%	21%	2%	0%	0%
Local Service (<30-min frequency)	96%	81%	24%	<1%	0%
Basic Service (>30-min frequency)	96%	82%	43%	14%	1%
Commuter and Express Transit	97%	85%	59%	23%	3%
No Transit Access	3%	15%	41%	77%	97%

Source: The Met Council, 2017 LEHD

5 POLICYMAKER WORKSHOPS

This chapter summarizes the process and feedback received during the two policymaker workshops used to facilitate regional discussion on transit priorities in April and December of 2020. The purpose of the two workshops were to present study findings, facilitate a conversation on the regionwide need for better mobility options, solicit feedback on regional goals for transit prioritization to inform future service investment, and get feedback on potential expansion scenarios.

Figure 5-1 shows the number of attendees at each workshop by agency or organization. The workshop attendees represented a variety of regional interests.

Figure 5-1   Workshop Attendance by Agency or Organization

Agency / Organization	Number of April Workshop Attendees	Number of December Workshop Attendees
Alliance for Metropolitan Stability	1	0
Carver County	1	1
Center for Economic Inclusion	0	1
Citizens League	1	0
City of Apple Valley	1	0
City of Chaska	1	0
City of Cottage Grove	1	0
City of Eagan	1	1
City of Minneapolis	2	0
City of New Hope	1	0
City of Saint Paul	0	1
City of Saint Paul Public Works	1	0
City of Woodbury	1	0
Dakota County	1	1
Dakota County Chamber of Commerce	0	1
District 8	1	1
East Metro Strong	1	1
Ever-Green Energy	0	1
Hennepin County	3	1

Metro Cities	1	0
Metropolitan Council	10	10
Metropolitan Interfaith Council on Affordable Housing	1	0
Minneapolis Public Schools	0	1
MnDOT	1	1
Move Minneapolis	1	1
Ramsey County	3	2
Scott County	0	1
Shakopee Mdewakanton Sioux Community	0	1
Suburban Transit Association	0	1
TAB Citizen Member	3	1
TAB Coordinator	1	0
TAB Freight Member	0	1
TAB Non-Motorized Member	1	1
TAB Transit Member	2	2
University of Minnesota	4	2
Washington County	1	1
Total Attendees	**47**	**36**

APRIL 2020 WORKSHOP

The purpose of the first policymaker workshop was to present existing conditions findings from the Bus Service Allocation Study and to solicit feedback from regional policymakers on priorities and values for future transit service allocation. This workshop was held on April 22, 2020 on the Zoom video conferencing platform and had an estimated 47 participants made up of regional policymakers and their support staff. Those not able to attend the workshop were given a copy of the presentation and an opportunity to provide feedback via Mentimeter polling software survey also used during the workshop.

Methodology

To share study findings and connect with policymakers, an online Zoom workshop was organized in place of in-person workshops due to the Minnesota COVID-19 stay-at-home order. The workshop was planned and hosted by a consultant team from Nelson\Nygaard and SRF Consulting in collaboration with staff from the Met Council.

The workshop invitee list included Council Members and staff from the Met Council, representatives from the Transportation Advisory Board (TAB), regional stakeholders from advocacy, business, educational, and cultural organizations, and support staff from the region's transit agencies and local governments. The invite list was intended to balance geography and unique perspectives on transit (e.g., cultural or business interests). The list of invitees, RSVPs, and attendees can be found in Appendix D. Email invitations were sent out in advance of the

meeting with instructions for downloading the Zoom video conferencing application and joining the online workshop. A copy of the presentation and a list of expected attendees were also sent out prior to the meeting.

Prior to the meeting, workshop planning staff consulted with the Technical Advisory Committee (TAC) on the existing conditions analysis and the contents of the workshop. The TAC is made up of members from the region's counties, cities, and transit agencies, as well as the Minnesota Department of Transportation staff. Feedback from the TAC was integrated into the materials presented at the workshop.

The format of the workshop consisted of a presentation by Thomas Wittmann, Principal at Nelson\Nygaard, and Cole Hiniker, Multimodal Transportation Planning Manager at the Met Council and Study Project Manager, an interactive polling exercise, and small group discussions.

Key Findings

- Workshop attendees and survey respondents prioritized improving existing routes over adding new routes, service frequency over expanding service span, and funding local and high frequency service over commuter and basic routes.
- Regional transit success looks different for different policymakers. Some themes from small group discussions include increasing ridership, connecting people to destinations, neighborhood coverage, serving high-need communities, and matching service with land use. Providing service to those who need it most was a top priority for measuring success.
- A top value for future service allocation was serving low-income and serving minority neighborhoods. Additional priorities included reverse commuting and providing suburb to suburb job access.
- When evaluating future service expansion scenarios, reaching low-income populations and providing access to jobs and major destinations were the top priorities

The feedback received during this workshop was integrated into the scenario evaluation. More information on this process can be found in Chapter 7 and 8.

A more detailed summary of the April 2020 workshop can be found in Appendix D.

DECEMBER 2020 WORKSHOP

A second policymaker workshop presented the evaluation findings of two future service investment strategies. The workshop was held on December 3, 2020 on the Zoom video conferencing platform. In total, 36 regional stakeholders participated, including 10 Council members and 8 TAB members. Those not able to attend the workshop were given a copy of the presentation and an opportunity to provide feedback via Mentimeter polling software survey also used during the workshop.

Methodology

As with the first policymaker workshop, an online meeting was held via Zoom in place of in-person workshops due ongoing precautions related to COVID-19 in Minnesota. The workshop was planned and hosted by a consultant team from Nelson\Nygaard and SRF Consulting in collaboration with staff from the Met Council.

The workshop invitee list included Council Members and staff from the Met Council, representatives from the Transportation Advisory Board (TAB), regional stakeholders from advocacy, business, educational, and cultural organizations, and support staff from the region's transit agencies and local governments. The invite list was intended to balance geography and unique perspectives on transit (e.g., cultural or business interests). Email invitations were sent out in advance of the meeting with instructions for registering for the meeting via the Zoom video conferencing application. A copy of the presentation and a list of expected attendees were also sent out prior to the meeting.

Prior to the meeting, the project team created two service expansion scenarios that reflected different investment priorities and evaluated the two scenarios. The scenario evaluation results are presented in Chapter 8. Workshop planning staff consulted with the Technical Advisory Committee (TAC) on the scenario evaluation results and the contents of the workshop. Feedback from the TAC was integrated into the materials presented at the workshop.

The format of the workshop consisted of a presentation by Thomas Wittmann and Mariel Kirschen of Nelson\Nygaard, as well as interactive polling exercises and small group discussions.

Key Takeaways

- Regional policymakers express consistent support for transit service improvements that prioritize equity, including service to low-income populations and communities of color.
- Regional policymakers express a moderate preference for improving transit service frequency over expanding geographic coverage.
- In small-group discussions, participants indicated they recognize the ridership benefits and accessibility improvements of Scenario 1 (which focused more on improving service in Market Areas 1 and 2). However, they also noted a need to expand the areas of region where all-day service is offered, as well as to look other modes beyond fixed-route transit—both strengths of Scenario 2 (which focused more on geographic coverage and improving service in outlying Market Areas).
- With respect to COVID-19, participants indicated a desire to explore transit service that meets the needs of people who rely on transit the most, including for non-work trips.
- When evaluating future transit expansion options, the region's planning and funding structures should be resilient in a range of possible future travel conditions.
- While most participants prefer a balanced scenario of some sort, the group expressed a moderate preference for Scenario 1 compared to Scenario 2.

The feedback received during this workshop was integrated into the development of the five intermediate expansion scenarios that reflected a balance between the two scenarios. More information on this process can be found in Chapter 8.

A more detailed summary of the December 2020 workshop can be found in Appendix E.

6 EXPANSION SCENARIOS

This chapter provides a summary of the development and descriptions of the expansion scenarios that were created to evaluate different regional transit investment strategies. The two primary scenarios were developed to measure the performance of two disparate strategies: one more focused on geographic coverage and one more focused on improving service in Market Areas 1 and 2. The results of the evaluation of the two primary scenarios was presented to the policymakers during the December 2020 Workshop.

The two scenarios presented in this report are:

- **Scenario 1: Invest additional resources in improving transit that serves all trip types**
    - More focused on improving service in Market Areas 1 and 2
- **Scenario 2: Invest additional resources in increasing regional access to transit**
    - More focused on geographic coverage

SCENARIO DEVELOPMENT

To evaluate and compare the respective benefits of the expansion scenarios, a consistent base network was developed to reflect a starting point for a 2040 network. The base network is comprised of:

- The March 2020 networks for all the regional service providers–Maple Grove Transit, Metro Transit, Minnesota Valley Transit Authority (MVTA), Plymouth MetroLink, SW Transit, and University of Minnesota Transit. The March 2020 schedule was chosen because it was the most recent schedule developed prior to any schedule reductions related to the COVID-19 pandemic. The evaluation team assumed that regional service would be restored to pre-COVID-19 levels in the 20-year expansion period.
- The Met Council funded expansion transitways as outlined in the 2040 Transportation Policy Plan–D Line Arterial BRT; Gold Line and Rush Line Dedicated BRTs; Orange Line Highway BRT; Blue Line Extension and Green Line Extension Light Rail; and Riverview Streetcar. Existing routes that overlap with funded transitways were excluded from service increase in both scenario networks. Additionally, any added service was intended to complement, but not overlap, planned transitway services.

To create an equal comparison between the scenarios, all were developed under the assumption that there would be sufficient regional transit funding to support a 25% increase in bus service by 2040, not including the funding allotted for the funded transitways.

The scenario descriptions and the methodology used to develop each scenario were created using feedback and input from regional policymakers and regional transit providers. Each scenario strives to achieve a different goal and is intended to be different from the other. The

networks, however, are not mutually exclusive. Some improvements are included in both scenarios because they serve the intent of both scenarios. A summary of the improvements in each of the two scenarios can be seen in Figure 6-1. It should be noted that these scenarios are meant to be illustrative and not a perspective set of route recommendations so specific route improvements are not shown in this report.

Figure 6-1   Scenario Summary

Improvement Type	Scenario 1	Scenario 2
High-frequency routes improved	15	-
Local routes improved to high frequency	12	-
Basic routes improved to local	5	20
Commuter routes improved	-	2
New reverse commute and suburb-to-suburb routes	-	4
New local routes	5	30
New commuter routes	-	2
Expanded on-demand service	-	Yes

Scenario 1: Invest additional resources in improving transit that serves all trip types

The goal of Scenario 1 is to expand the geographic range of communities where it is possible to live without a car. The focus will be on increasing the amount of service that is convenient and can be depended on for all trip types—high-frequency, all-day, all-week service. This scenario prioritizes expanding service to areas of highest transit use potential and maximizing ridership. Service distribution will use an equity lens to distribute expanded services to communities of color and low-income populations.

The process for choosing existing bus routes and future expansion routes to receive increased service involved 1) selecting the most productive bus routes in the existing network, 2) selecting routes that serve the areas of highest transit potential, communities of color, and areas of concentrated poverty, and 3) upgrading existing routes and extending service to provide frequent connections to funded transitways.

- **Step One: Increase frequency on most productive routes**

  The first step targets the most productive local transit bus routes in the region for increased service. Productivity values were calculated with 2018 route level data. Additionally, planned B Line and E Line Arterial BRT routes were included in this step, as they have significant overlap with Routes 21 and 6, which fall within the top productive routes in the region.

- **Step Two: Increase frequency to areas of highest transit potential, communities of color, and areas of concentrated poverty**

  This second step upgrades high frequency transit and local routes in areas where socio-economic factors suggested higher ridership potential. High transit potential areas include

census tracts with high concentrations of affordable housing units, low vehicle access, and seniors. Communities of color were defined densities of census tracts with high proportions of black, indigenous, and people of color. Areas of concentrated poverty are defined by the Met Council as census tracts where more than 40% of the population lives in households that earn less than 185% of the federal poverty level. Socio-economic data was provided by the Met Council. Due to route branching, increased service was focused on the branches that best serve the target areas.

- **Step Three: Expand connecting bus service with planned transitways**

  This last step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways.

Scenario 2: Invest additional resources in increasing regional access to transit

The goal of Scenario 2 is to strengthen connections to suburban jobs and opportunities throughout the fixed-route transit service area. The scenario prioritizes suburb-to-suburb transit access, reverse commute services, and job access for suburban residents. Expanding service to areas of highest transit use potential will be a secondary priority.

The process for choosing existing bus routes and future expansion routes to receive increased service involved 1) identifying expansion priorities identified by transit providers, 2) identifying most productive basic transit routes, 3) identifying reverse commute and suburb-to-suburb connections, 4) expanding connecting bus service with planned transitways, and 5) expanding coverage services.

- **Step One: Upgrade or provide service to expansion priorities identified by transit providers**

  This first step increased frequency, added trips, or expanded services on routes and to areas identified during transit provider outreach in March and April 2020.

- **Step Two: Increase frequency on basic routes**

  This second step aims to provide local service (30-minute frequency) on routes that have sufficient productivity to support fixed-route transit (assume to be more than 10 passengers per service hour).

- **Step Three: Identify reverse commute and suburb-to-suburb connections**

  Suburban job centers are growing and some of them currently require circuitous, lengthy trips on transit. This third step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes, new all-day reverse commute services, and suburb to suburb connections.

- **Step Four: Expand connecting bus service with planned transitways**

  Similar to Step Three in Scenario 1, this fourth step extends and upgrades bus service to provide frequent connections to funded transitways.

- **Step Five: Expand coverage services**

  This last step looks at additional opportunities across the region to provide all-day fixed route services to populations outside of the fixed-route service network, as well as where to expand on-demand and alternative services that are better suited for lower productivity markets.

7 SCENARIO EVALUATION FRAMEWORK

This chapter describes the evaluation criteria and methodology used to evaluate the performance of the expansion scenarios. The evaluation criteria were designed to measure how well each network addresses potential needs of the region identified by Met Council staff in consultation with the TAC. The criteria were informed by feedback from Met Council staff, area transit providers, regional policymakers, key stakeholders, and national experience.

EVALUATION CRITERIA

To evaluate how well each of the two scenario networks address the potential needs of the region, the measures were calculated under the following categories.

Access to Transit

Improved Transit Service

This measure calculates how many people and jobs benefit from the improved and expanded transit service in both scenarios, whether they live or work in an area that has increased service or live or work in an area that did not have service before. This measure includes any person or job with added service, regardless of the type of improvement. As an example, someone who currently has access to 15-minute high-frequency service and would now have access to 10-minute high-frequency service in a scenario would be counted under this metric.

Change in Access to Transit by Service Level:

As a way to quantify the access to improvements by service frequency, this measure focuses on the number of people at each level of service that have received an upgraded level of service or access to new transit service for each scenario. In other words, a person who currently lives within walking distance of "basic transit" route that is upgraded to "local transit" in Scenario 1 is counted, along with someone who does not have access to any "local transit" now and is within walking distance of a new "local transit" route in Scenario 1. People and jobs that currently have access to the "high-frequency" transit network and receive additional frequencies in Scenario 1 are not counted in this measure because their service level has not been upgraded (their level of service is "high-frequency transit" in both the base and in the scenario).

The levels of service included in this analysis are[7]:

- High-frequency transit: 15-minute or better frequencies throughout most of the day on weekdays and Saturdays

- Local transit: 30-minute or better frequencies throughout the day on weekdays

- Basic transit: corridors and flex services with more than 30-minute frequencies throughout the day. *Note: No basic service routes were added to either scenario.*

- Commuter & express service: peak-only service into the two central business districts, peak-only reverse commute service that targets suburban employers, all-day service with long, non-stop segments.

Access to New All-Day Transit

This measure calculates the percentage and number of people and jobs with access to new all-day transit service, or service that runs with regular frequency on weekdays. This classification encompasses high-frequency, local, and basic transit services. Unlike the Improved Transit Service or Change in Access to Transit by Service Level measures, this measure only captures the number of people and jobs that are provided with access to all-day transit in each scenario that do not have access to all-day transit in the base network.

Population and Employment Analysis

For the three Access to Transit measures, the following population and employment groups were broken out in the analysis to measure how many people are jobs benefit from the two scenarios:

Population

- *Total population*
- *Black, indigenous, and people of color (BIPOC)*
- *Low-income population* (individuals with an individual or family income below 185% of the federal poverty threshold)
- *Affordable housing units* (housing units for households with an income below 30% of the Area Median Income)
- *Population without auto access* (individuals aged 16 or older without access to an automobile)
- *Older population* (individuals aged 65 or older)

Employment

- *Total employment*
- *Low-wage employment* (jobs earning less than $40,000 per year)
- *High-wage employment* (jobs earning more than $40,000 per year)

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[7] On-demand type services provide mobility to people in areas and between origin-destination pairs that do not have sufficient demand to support fixed-route transit, as well as first/last mile service. While Scenario 2 includes additional funding for demand response and alternative services, this service type is not included fully in the scenario evaluation. Currently, the entire region has access to some form of on-demand services through Metro Mobility, so would not be reflect in any increase from the scenarios. The service family is included in the Improved Access to Transit evaluation.

Demographic and socio-economic data was pulled from data provided by the Met Council, the 2018 American Community Survey (ACS) 5-Year Estimates, and 2017 Longitudinal Employer-Household Dynamics (LEHD) employment data.

Network Access to Employment

The percent change in the number of jobs the average regional resident has access to within a 45-minute trip on the transit network in each scenario compared to the base network.

Ridership Potential

An estimate of the relative impact each scenario would have on increasing the number of regional trips taken on transit.

8 SCENARIO EVALUATION RESULTS

This chapter presents the high-level results of the evaluation of the expansion scenarios. The full evaluation results can be found in Appendix H.

SCENARIO RESULTS

Access to Transit

The three different access to transit criteria are described below.

Improved Transit Service

The results are presented in terms of improved access to regional population and employment.

Total population served

The scenario values in Figure 8-1 represent the percentage of the Twin Cities regional total of population with increased service (both improvements to existing service and expanded service) and the number of people with improved service.

Overall, Scenario 1 improves fixed-route access to more people than Scenario 2. In Scenario 1, over one-third of the region's population experience improved or expanded transit service. In Scenario 2, just over one-quarter of the region's population are exposed to improved fixed route transit service.

Total population with improved transit within each of the region's Transit Market Areas for each Scenario is shown in

Figure 8-2 and Figure 8-3. In Scenario 1, most of the regional improved access for population occurs in Market Areas 1 and 2. Scenario 2, which focused on improvements in the more suburban areas of the region, has a greater influence on the population in Market Areas 2 and 3.

Figure 8-1   Population with improved transit service

Legend: 👤 = 10,000 jobs

Figure 8-2   Population with improved transit service by Transit Market Area – Charts
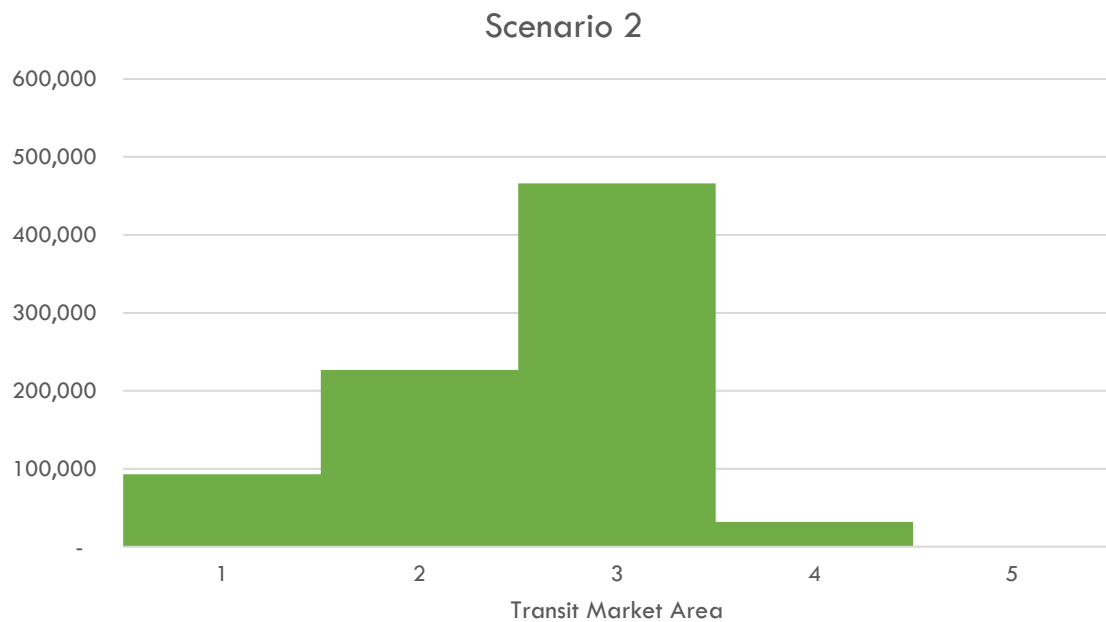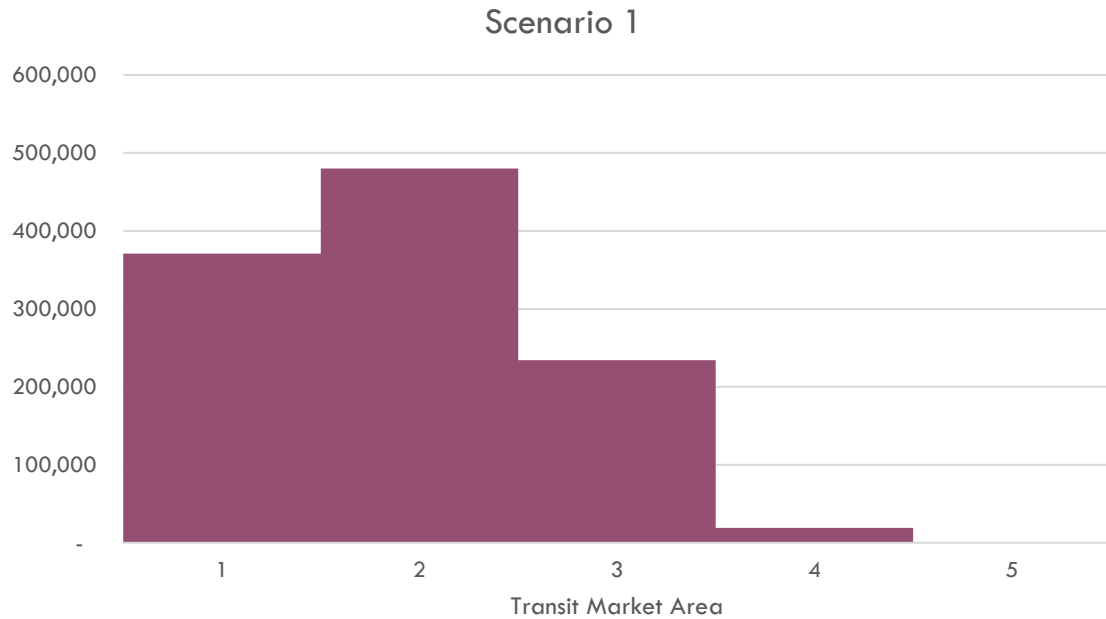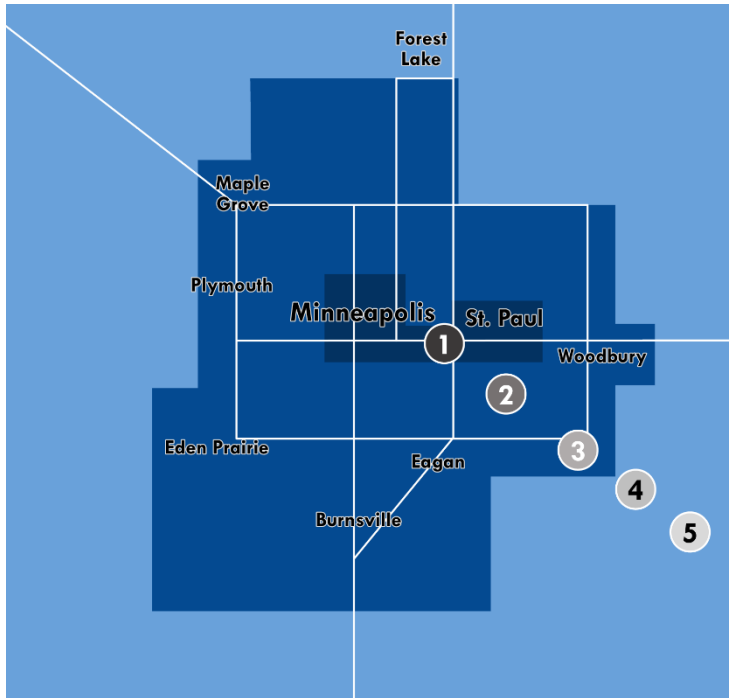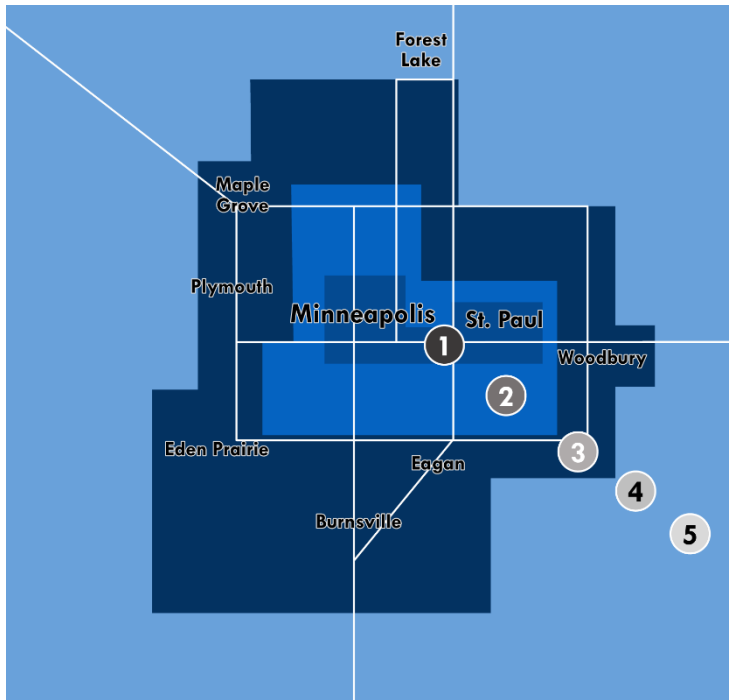
Figure 8-3   Population with improved transit service by Transit Market Area – Maps
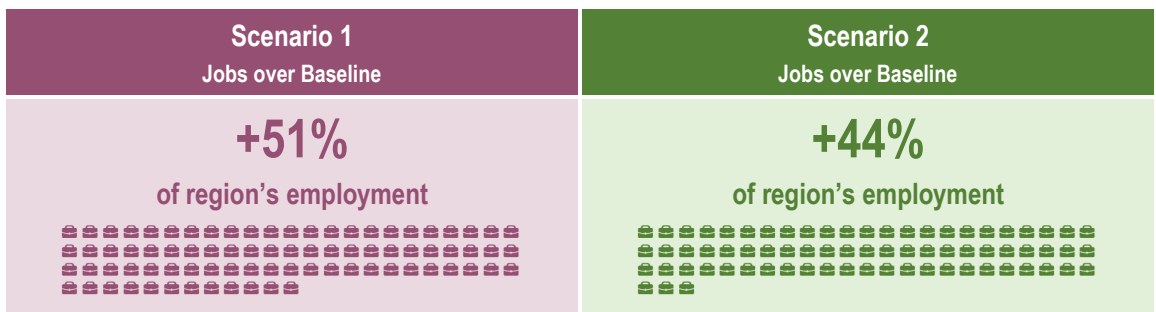
Scenario 1

Scenario 2

Total employment served

The scenario values in Figure 8-4 represent the percentage of the Twin Cities regional total of employment with increased service (both improvements to existing service and expanded service) and the number of jobs with improved service.

Overall, Scenario 1 improves fixed-route access to more jobs than Scenario 2. In Scenario 1, over one-half of the region's employment experience improved or expanded transit service. In Scenario 2, over 40% of the region's employment are exposed to improved fixed route transit service.

Total employment with improved transit within each of the region's Transit Market Areas for each Scenario 1s shown in Figure 8-5 and Figure 8-6. In Scenario 1, most of the regional improved access for employment occurs in Market Areas 1 and 2. Scenario 2, which focused on improvements in the more suburban areas of the region, has a greater influence on the employment in Market Areas 2 and 3.

Figure 8-4   Employment with improved transit service

Scenario 1 Jobs over Baseline	Scenario 2 Jobs over Baseline
+51% of region's employment	**+44%** of region's employment

Legend: 💼 = 10,000 jobs

Figure 8-5   Employment with improved transit service by Transit Market Area – Charts
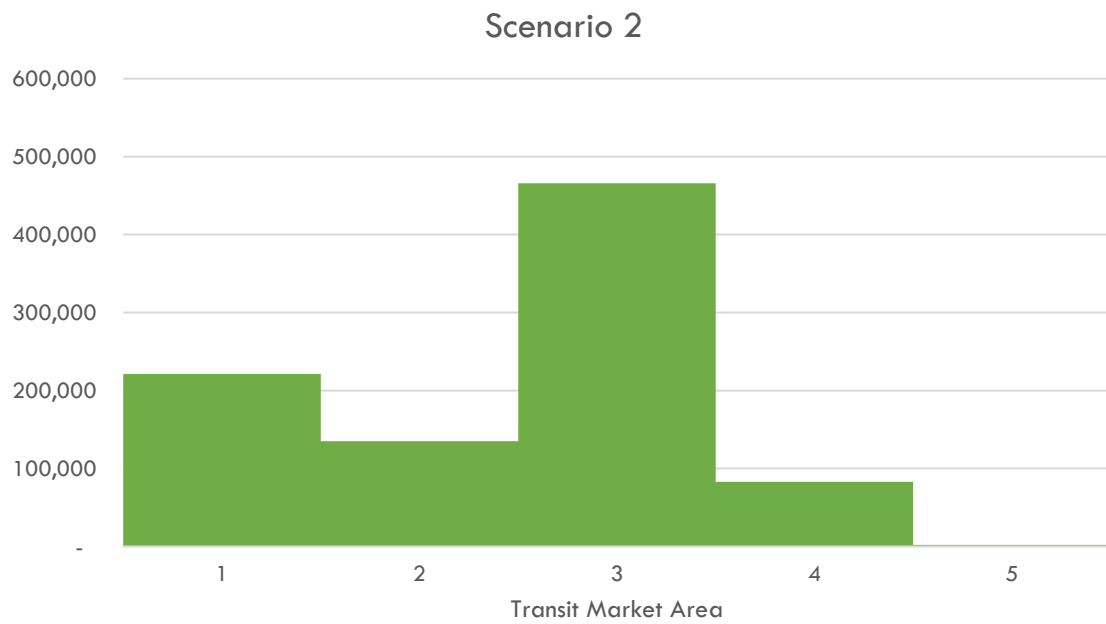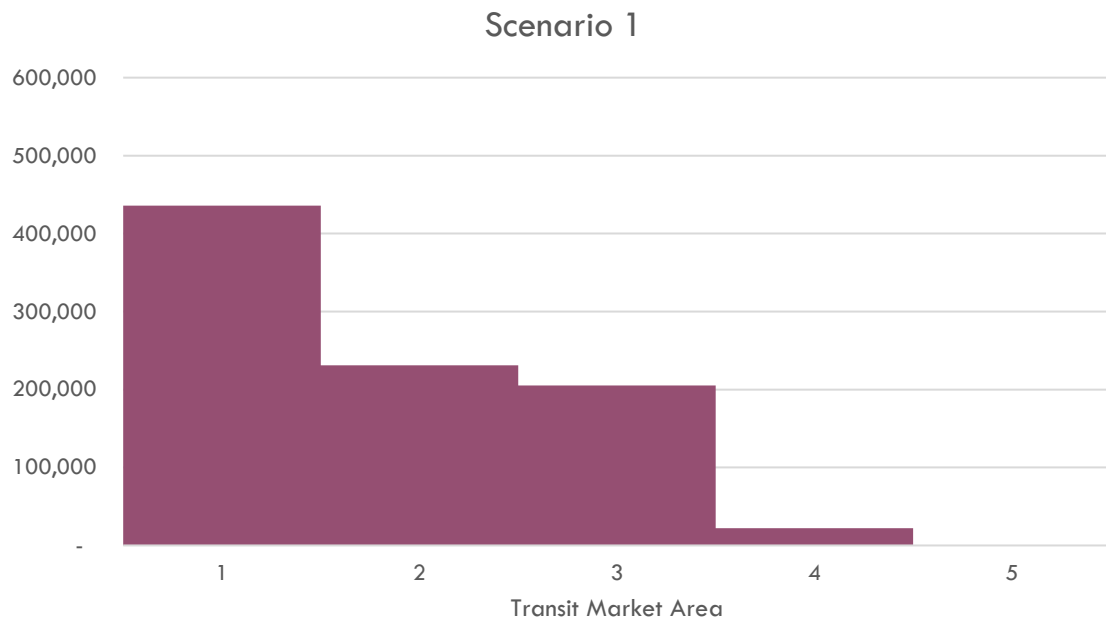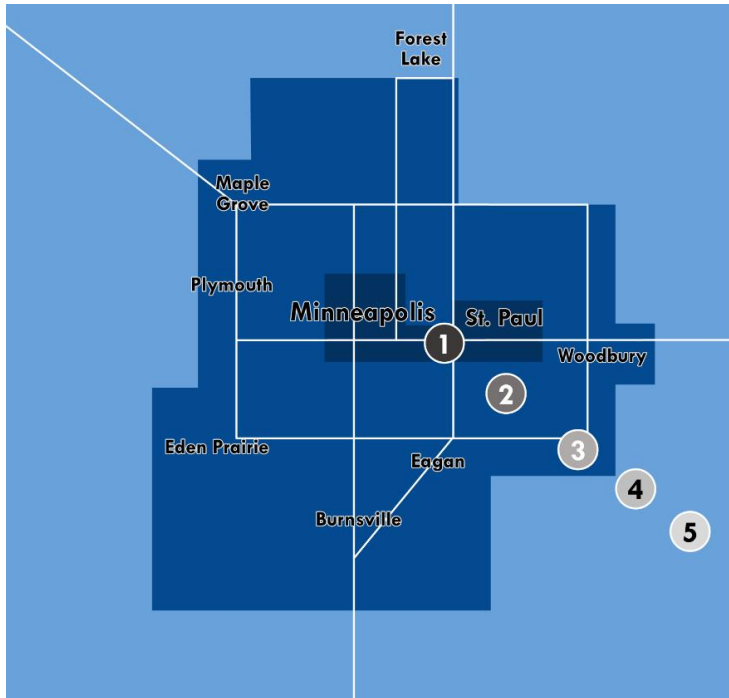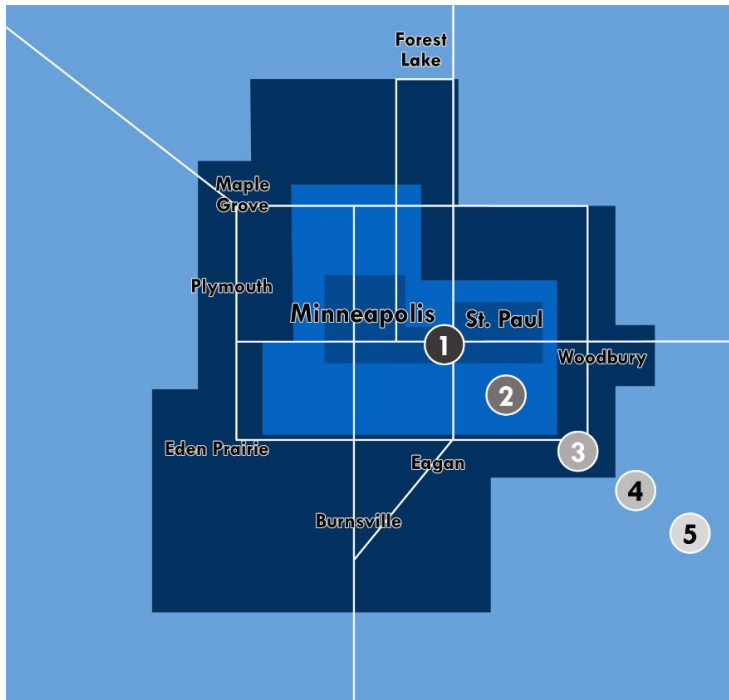

Scenario 1

Scenario 2

Figure 8-6   Employment with improved transit service by Transit Market Area – Maps
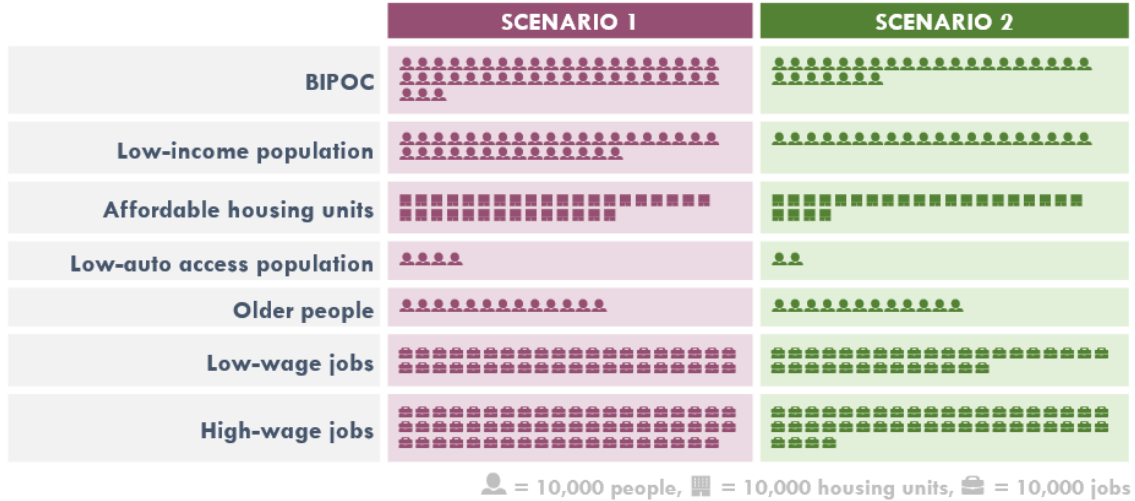
Scenario 1

Scenario 2

Population and employment groups served

Like with total population and employment, Scenario 1 better serves all of the social equity population and employment groups with access to improved or expanded transit service than Scenario 2, particularly among BIPOC and low-income residents (Figure 8-7).

Figure 8-7   Social equity population and employment groups with improved transit service

Change in Access to Transit by Service Level

The two scenarios were designed to focus service improvements to different levels of service and to different parts of the region. This measure looks at how many more people and jobs have access to the four levels of fixed-route transit. The scenario values show the number of people and jobs served by upgraded and expanded service for each service level over the base scenario. It should be noted that there was no basic transit service added to either scenario, so the tables below show no change in access for basic service.

Total population served

Scenario 1 reaches more of the population with upgraded or expanded service than Scenario 2. Scenario 1, which upgraded many local transit routes in the Twin Cities to high frequency service, significantly expands access to the high frequency transit network, as well as local transit.

Scenario 2 focused on expanding the local service network to the suburban areas of the region and, as a result, provides more local transit service. Figure 8-9 breaks down the increase in access to transit for each of the region's 5 Transit Market Areas. Scenario 1 significantly improves the population's access to high frequency and local transit in Market Areas 2 and 3. Scenario 2 has little effect on Market Areas 1 and 2, but nearly doubles access to local transit in Market Area 3.

Figure 8-8 Population with access to a route that has an upgraded service level or to a new route by service type

Figure 8-9 Population with access to a route that has an upgraded service level or to a new route by service type within each Transit Market Area
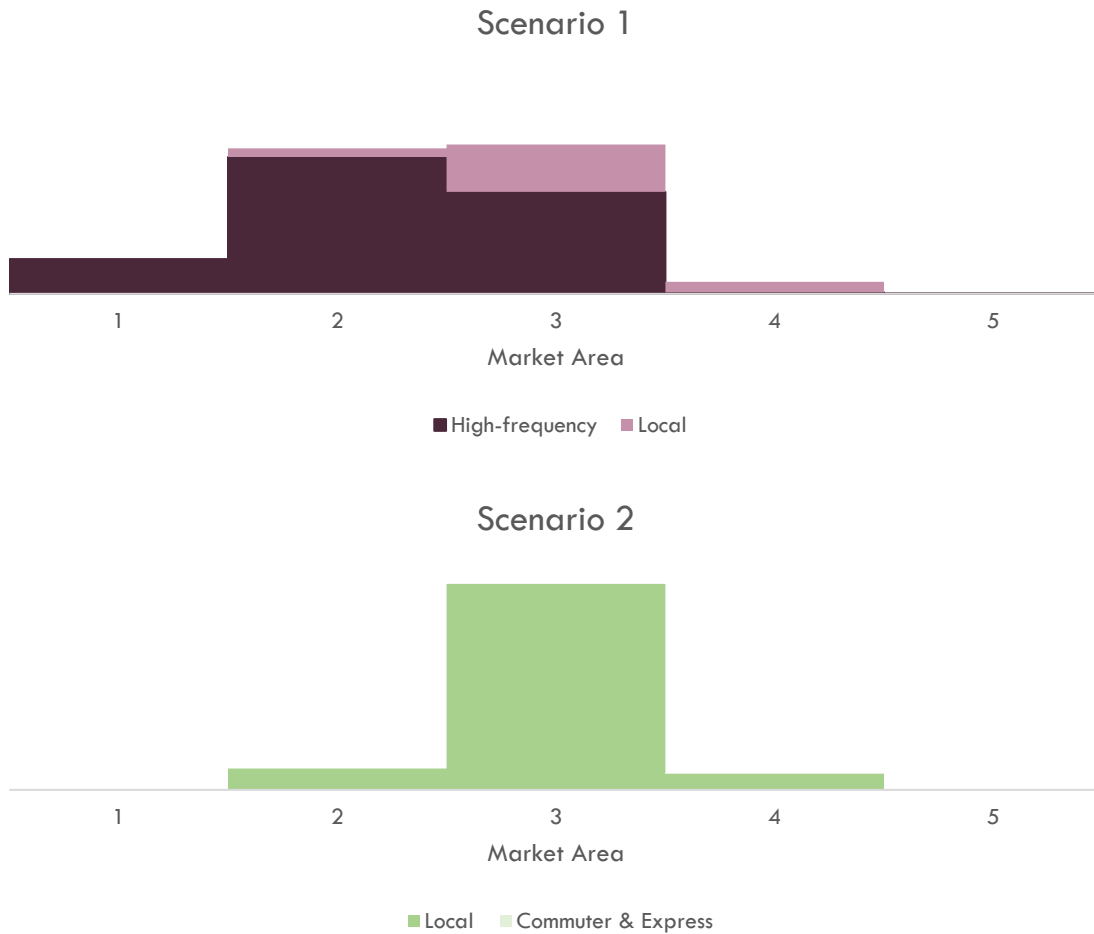
Total employment served

Both scenarios benefit a similar number of jobs with upgraded or expanded service, with Scenario 1 benefiting more jobs with high-frequency access, as well as local access, and Scenario 2 benefiting more jobs with just local transit access (Figure 8-10).

Figure 8-11 breaks down the increase in employment access to transit for each of the region's 5 Transit Market Areas. The majority of the change and expansion of high frequency transit employment access occurs in Market Area 2 and 3. Scenario 2 has a large impact on the employment access to local transit in Market Area 3.

Figure 8-10   Employment with access to a route that has an upgraded service level or to a new route by service type
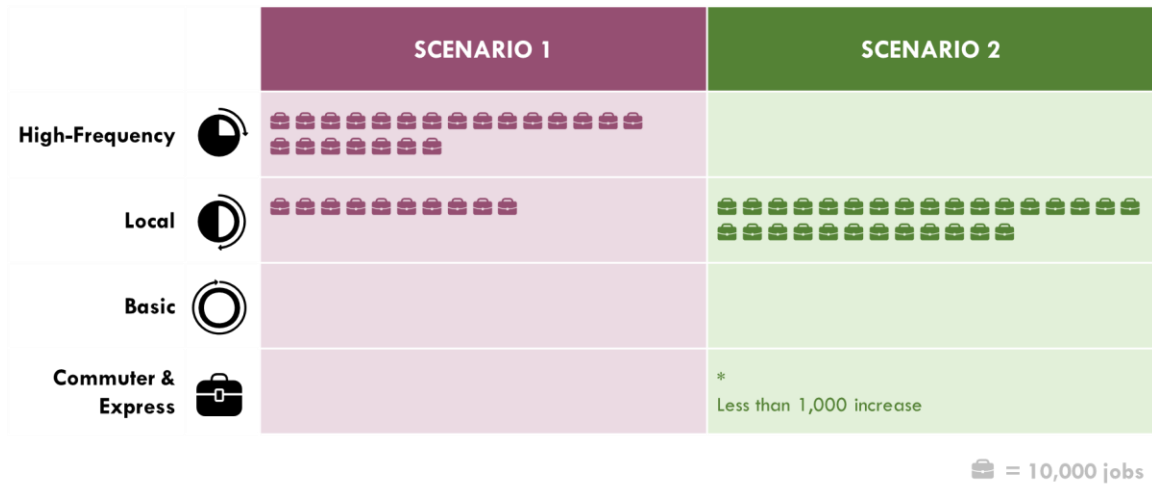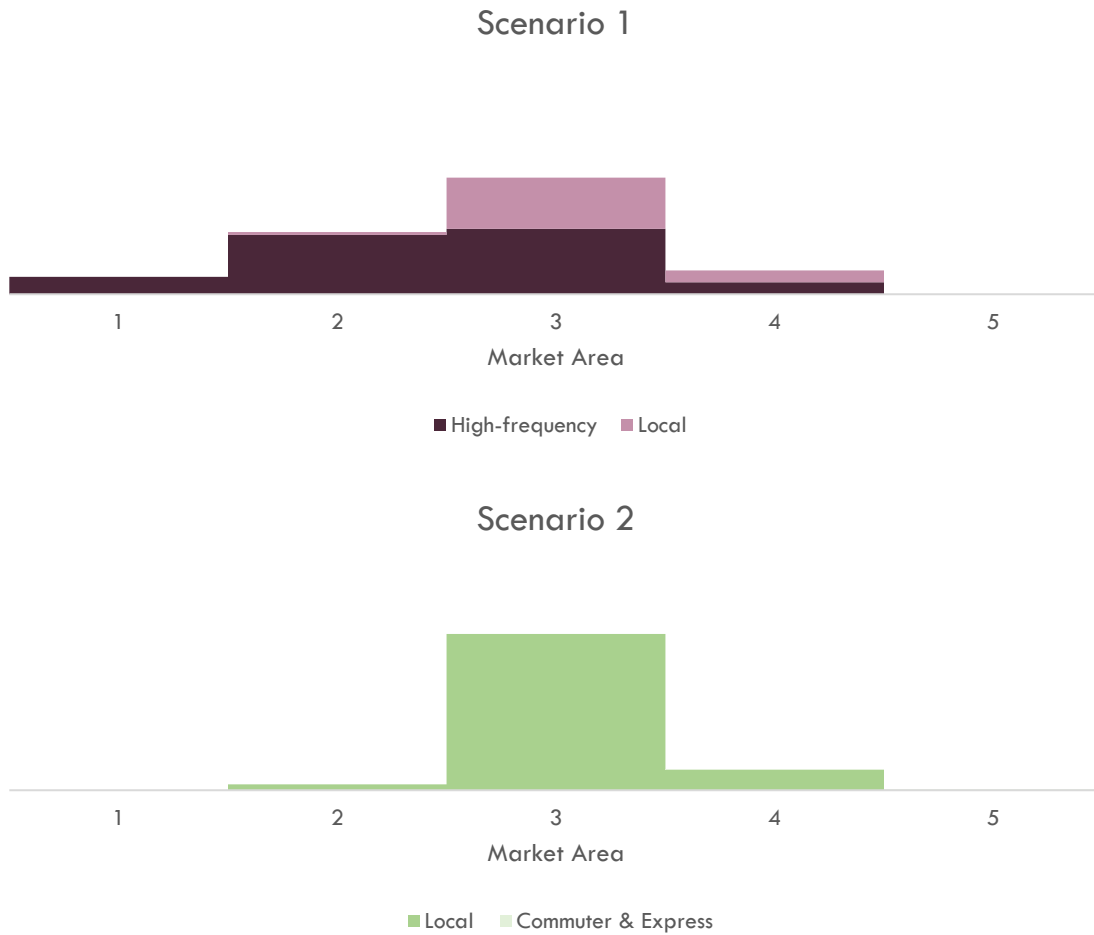
Figure 8-11   Population with access to a route that has an upgraded service level or to a new route by service type within each Transit Market Area

Scenario 1

Scenario 2

Access to New All-Day Transit

This measure looks at the population and employment with access to the new all-day transit network, which includes high-frequency, local, and basic transit. Because Scenario 2 provides more coverage, local transit service across the region, it outperforms Scenario 1 by serving more people and jobs across all of the population and employment groups (Figure 8-12 and Figure 8-13).

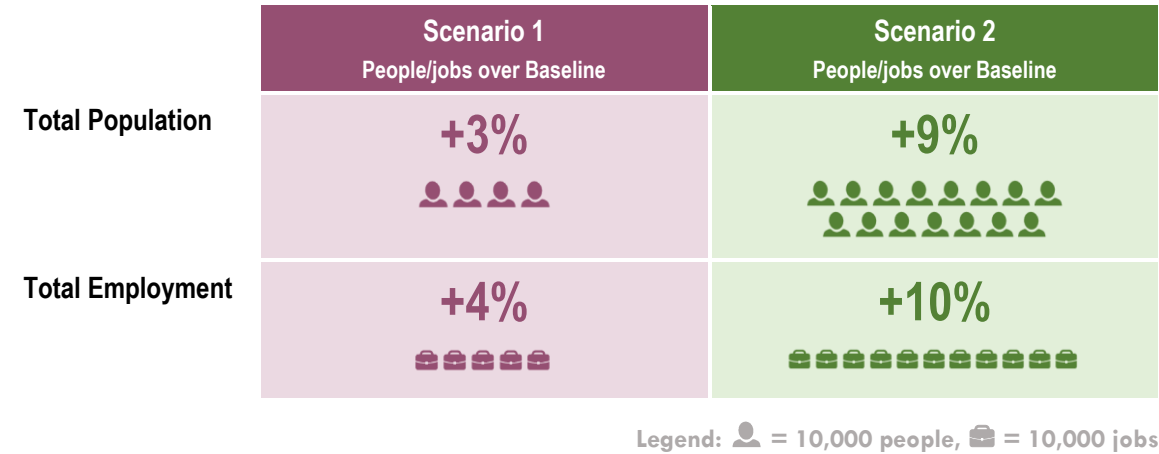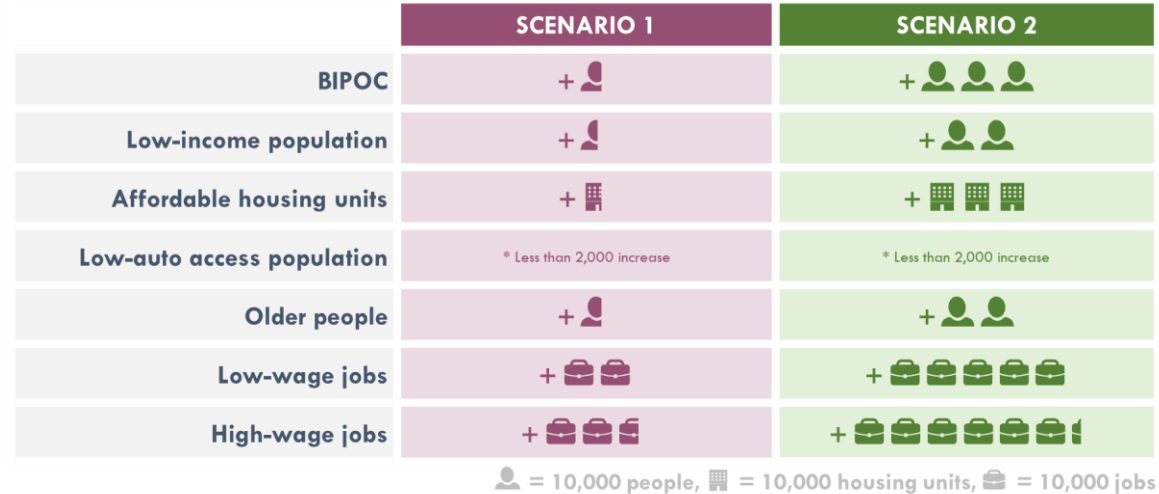**Figure 8-12   Population and employment with access to new all-day transit**

Figure 8-13   Social equity population and employment groups with access to new all-day transit

Network Access to Employment

summarizes the results of this analysis, averaged over the worker population in the Twin Cities metropolitan area. Overall, Scenario 1 provides greater job access improvements to current workers in the area within 30-minutes, 45-minutes, and 60-minutes (between 2 and 7 times). Scenario 2 shows the greatest job access improvement for 60-minute trips.

Figure 8-14 summarizes the results of this analysis, averaged over the worker population in the Twin Cities metropolitan area. Overall, Scenario 1 provides greater job access improvements to

current workers in the area within 30-minutes, 45-minutes, and 60-minutes (between 2 and 7 times). Scenario 2 shows the greatest job access improvement for 60-minute trips.

Figure 8-14   Jobs Access Impact – Seven-County Metro Area

|	SCENARIO 1 OVER BASELINE	SCENARIO 2 OVER BASELINE	RELATIVE CHANGE SCENARIO 1 OVER SCENARIO 2
30-minute transit trip	●	•	7x
45-minute transit trip	●	●	3x
60-minute transit trip	●	●	2x

Source: Accessibility Impacts of Bus Service Allocation Study, Accessibility Observatory at the University of Minnesota

Ridership Potential

As outlined in the methodology section, estimating potential ridership impacts is a largely qualitative exercise. It is a planning-level estimate of potential impacts and is not based on a more robust ridership model.

With that caveat, both scenarios will generate additional ridership. However, even with varying assumptions, Scenario 1 is likely to produce between 30 and 40 percent more ridership than Scenario 2 (Figure 8-15).

Figure 8-15   Potential Ridership Increases
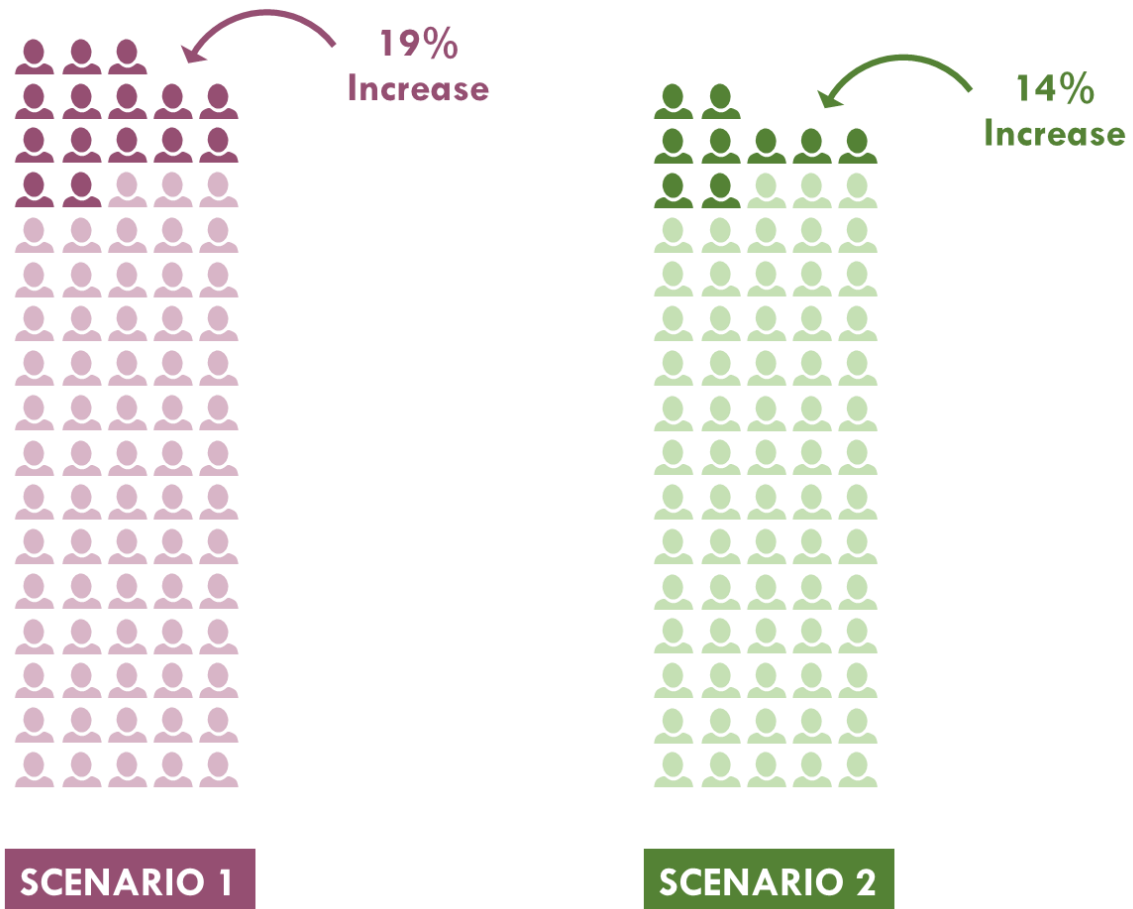
SUMMARY OF RESULTS

The following table shows a summary of the benefits of each of the two scenarios.

Figure 8-16   Summary of Scenario Benefits

Scenario 1	Scenario 2
Ridership Estimate ▪ Will generate between 30-40% more additional ridership than Scenario 2 **Improved Transit Service** ▪ Improves service for 37% of the region's population and 51% of the region's employment vs. Scenario 2's 27% of the population and 44% of employment ▪ Improves service for 280,000 more people than Scenario 2, 150,000 of which are low-income people and 160,000 are BIPOC ▪ Improves service for 120,000 more jobs than Scenario 2, including 60,000 low-wage jobs **Change in Access to Transit by Service Level** ▪ Provides 400,000 additional people and 220,000 additional jobs with access to high-frequency transit ▪ Most people and jobs with a change in access are in Market Areas 1 and 2 **Network Access to Jobs** ▪ Scenario 1 expands access to between 2-7 times more jobs for the average resident than Scenario 2	**Expanded Access to All-Day Transit** ▪ Scenario 2 provides 110,000 more people with access to all-day service, and 20,000 more affordable housing units than Scenario 1 ▪ Scenario 2 provides all-day access to 60,000 more jobs, of which 30,000 are low-income, than Scenario 1 **Change in Access to Transit by Service Level** ▪ Provides 380,000 additional people and 290,000 additional jobs with access to local transit ▪ Most people and jobs with a change in access are in Market Area 3

9   KEY TAKEAWAYS

This study has explored regional transit provider priorities in service allocation and monitoring, assessed existing service performance and availability, summarized the feedback from two policymaker workshops, described the development of and evaluation of two expansion scenarios that reflect regional goals, and proposed a set of guidelines to help the region prioritize existing and future coverage services.

Based on the findings and results from each of the study's various phases, four major regional values, or priorities, stand out as guidelines for future service investment:

1. Providing equitable transit service is important for supporting historically underserved and underrepresented populations, including BIPOC and low-income residents. Serving these populations should be used to prioritize future service investment.

2. Increasing job access should be an important consideration in expanding the regional transit network. A variety of job types should be considered, including essential jobs and jobs with alternate shift times. Focus should be placed on connecting people to suburban job centers, both from the regional population centers and from other suburbs.

3. Future service investment should be coordinated with the continued development of planned transitways, as well as evolving land use patterns.

4. Service improvements should prioritize providing high-quality and frequent transit service to both increase ridership and provide the region's population with reliable and sustainable mobility options.

The scenario testing showed that a balance of the four major regional values can lead to region-wide improvements in mobility and transit.

One of the other key takeaways was that a balance of investment strategies should be examined. Using feedback regarding priorities from the policymaker workshops, five intermediate scenarios were developed to illustrate the balance between the coverage and core service improvements. The evaluation of the intermediate scenarios was provided to the Met Council in the Intermediate Scenario Development and Evaluation Memo for future use but are not summarized in this document.