Annual Service Equity Evaluation

August 2021 DRAFT

Metro Transit

Annual Service Equity Evaluation – September 2020

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Introduction

In 2020, Metro Transit experienced unprecedented shocks to its service delivery resulting from the COVID-19 pandemic and civil unrest following the death of George Floyd in May. Ridership demand patterns were disrupted by the pandemic response (Governor executive orders, Public Health guidance) and new operational requirements (such as enhanced cleaning protocols and capacity limits) were introduced. In response, service levels were adjusted several times throughout the year to keep pace.

Metro Transit is committed to delivering transit service that supports the Metropolitan Council's Thrive Equity outcome. To improve transparency of service-related decisions, the agency has committed to producing an annual report assessing service equity. This first annual report contains four main components:

- A description of service changes implemented throughout the COVID-19 pandemic
- A summary of ridership trends throughout the COVID-19 pandemic
- Results of the formal Title VI service equity analysis of 2020 service changes
- Description of the context and methods for disaggregating service-related metrics by race
- Summaries of new service-related equity metrics and results, which will form the core of future annual Service Equity Evaluations

Service changes through COVID-19

Metro Transit operated its full planned service levels throughout most of the first quarter of 2020. Since mid-March, a sequence of several service changes has been implemented in response to the COVID-19 pandemic.

Phase I – Initial service reduction

On March 17, overnight service between 11 p.m. and 4:30 a.m. was suspended to prevent the possible spread of COVID-19 among employees working in the 24-hour operations centers (Transit Control Center and Rail Control Center), and for time for enhanced vehicle cleaning.

When the governor's stay-at-home order was announced, Metro Transit made plans to transition to a reduced bus schedule effective March 25 in anticipation of significantly lower demand, maintaining a framework of service for essential travel. Weekday bus service was reduced to about 60% of base (2019) levels. Service reductions were greatest on commuter and express routes, reflecting anticipated reduced demand to downtown offices where most employees transitioned to working remotely. This service level was similar to what is typically operated on low-demand weekdays adjacent to holidays (i.e. the day after Thanksgiving).

- Most local routes operated Saturday schedules on weekdays
- Select commuter and express routes offered limited weekday service for key downtown work shifts
- 62 routes (mostly commuter and express) were suspended
- Saturday and Sunday schedules were unchanged

Service on the METRO Blue and Green lines was reduced to every 20 minutes, 6 a.m. to 9 p.m., seven days per week. Northstar Commuter Rail operated two a.m. inbound trips and two p.m. outbound trips each weekday and no weekend service.

Additionally, operational changes were made to encourage social distancing. Customers were asked to board and exit through the back door of buses whenever possible, fare collection was not enforced. Customers were asked to limit their trips to essential travel.

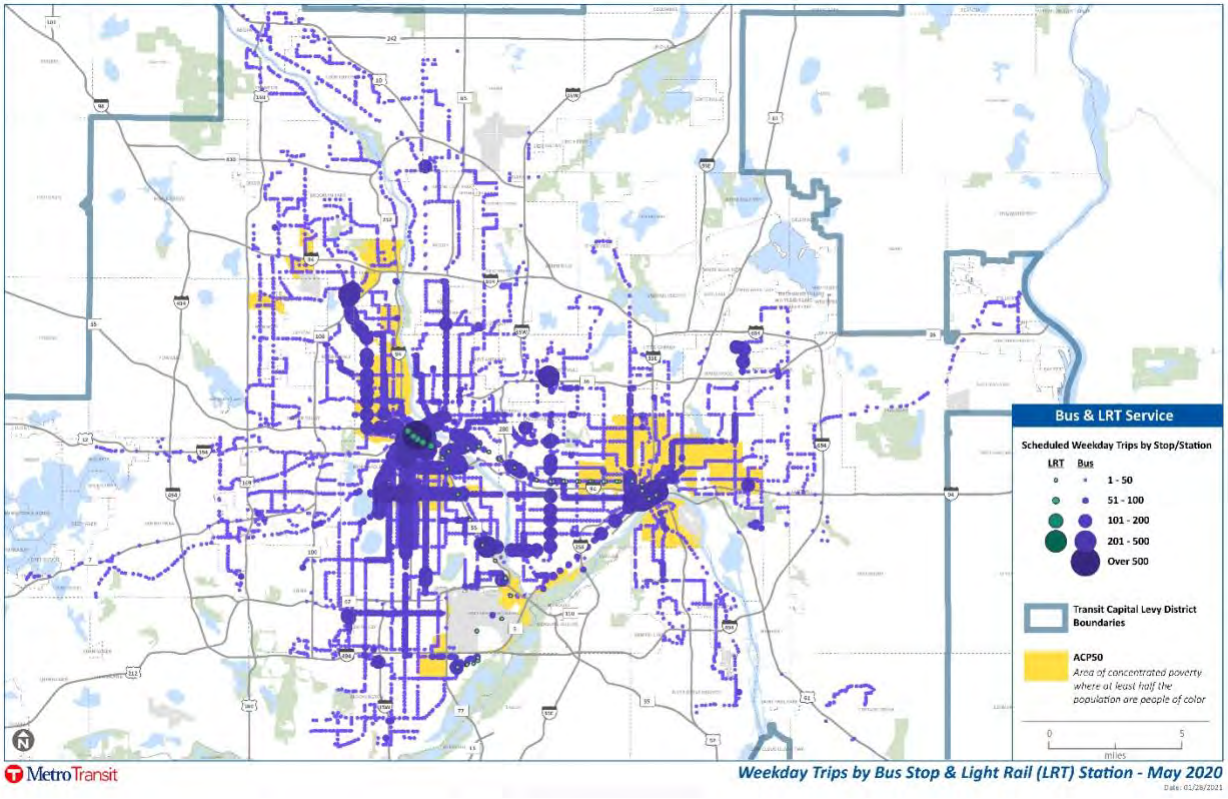

Figure 1. Phase I Service Map: Weekday Bus and LRT Trips by Bus Stop

Note: The Metropolitan Council has used the concept of ACP50 areas to incorporate spatial equity considerations in regional planning. ACP50 denotes residential areas of concentrated poverty where at least half the population are people of color.

Phase II – Service adjustments for loading/social distancing

Throughout spring and summer, new ridership patterns emerged that reflected essential trip making. Demand remained relatively higher on local routes, while ridership on service oriented to 9-5 commute trips (i.e. express bus and Northstar) fell by more than 95% from pre-pandemic levels.

In April, capacity limits of about 25% were introduced to provide health-related physical distance for customers:

- 10 passengers on 40-foot buses
- 15 passengers on 60-foot buses
- 16 passengers on each light rail train car

With capacity limits in place, larger, articulated buses were assigned to higher ridership routes and additional trips were provided during busy periods. Some extra trips were added to schedules, others were handled operationally, organized by the Transit Control Center. These changes were made as needed, with multiple adjustments April through July.

Effective June 13, bus service levels were maintained at the reduced level established March 25, with the addition of local bus trips to improve physical distancing for customers on buses Evening service was extended from 11 p.m. to 1 a.m. on routes that had such service prior to March 17. Select trips prior to 4:30 a.m. were added back to schedules for known travel patterns (i.e. early MSP airport shifts). Northstar Commuter Rail continued to two a.m. inbound trips and two p.m. outbound trips each weekday.

On June 27, service on the Blue and Green lines was improved to every 15 minutes, 5 a.m. to 11 p.m., seven days per week.

By late July, a state mask mandate was introduced and operator COVID barriers had been installed in every bus. Front-door boarding and fare collection on-board buses resumed Aug. 1.

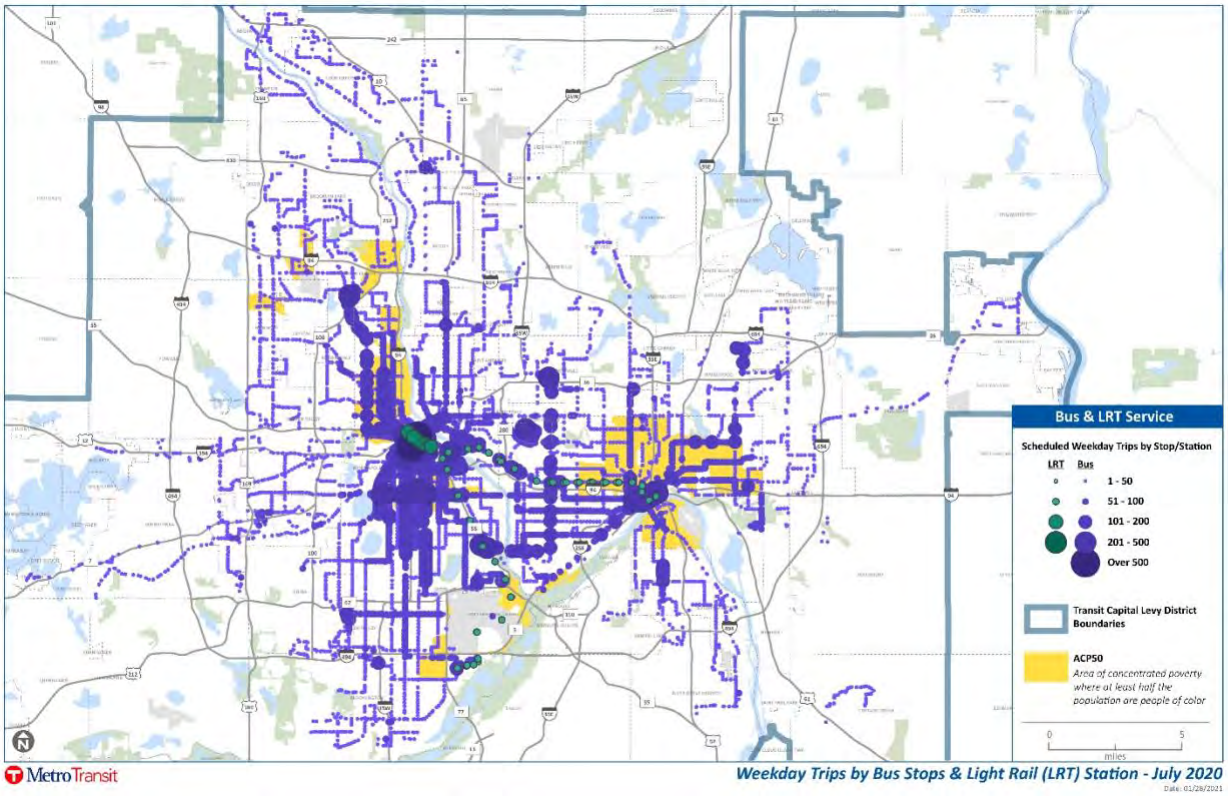

Figure 2. Phase II Service Map: Weekday Bus and LRT Trips by Bus Stop

Phase III – Restore service

Throughout the early summer, Metro Transit staff evaluated potential service adjustments for fall. While pandemic conditions changed day to day, planning considerations included:

- Current ridership and social distancing needs
- Equity
- Travel and commute trends, i.e.:
    - reduced demand to downtowns and other office locations
    - essential trip-making on local routes

Effective Sept. 12, service levels were increased on bus and LRT service.

METRO BRT lines and Local Bus

- METRO BRT lines and most local routes were returned to 90-100% of 2019 weekday service levels to accommodate higher ridership levels and social distancing
    - A few local routes continue to have extra trips added for social distancing
- Route 705, which had been suspended, was restored
- Some routes were adjusted to compensate for ongoing commuter and express route suspensions
    - i.e. On Central Avenue NE, trips were added on Route 10 to replace Route 59 (suspended peak-only limited-stop service)
- Trips specifically scheduled to meet demand for high schools and the University of Minnesota do not operate when in-person classes are not in session

Commuter and Express Bus

- Service was improved on all-day commuter routes in key corridors (i.e. Route 535 in the I-35W south corridor)
- Limited service on peak-only commuter and express service was maintained at summer service levels
- 51 routes remained suspended and three additional low-ridership routes were suspended

METRO Blue and Green lines

- Service improved to every 10 minutes for most hours, seven days per week
- Hours of service maintained at about 4:30 a.m. to 11 p.m.

Service on Northstar Commuter Rail continues to operate two a.m. inbound trips and two p.m. outbound trips each weekday, with no weekend service.

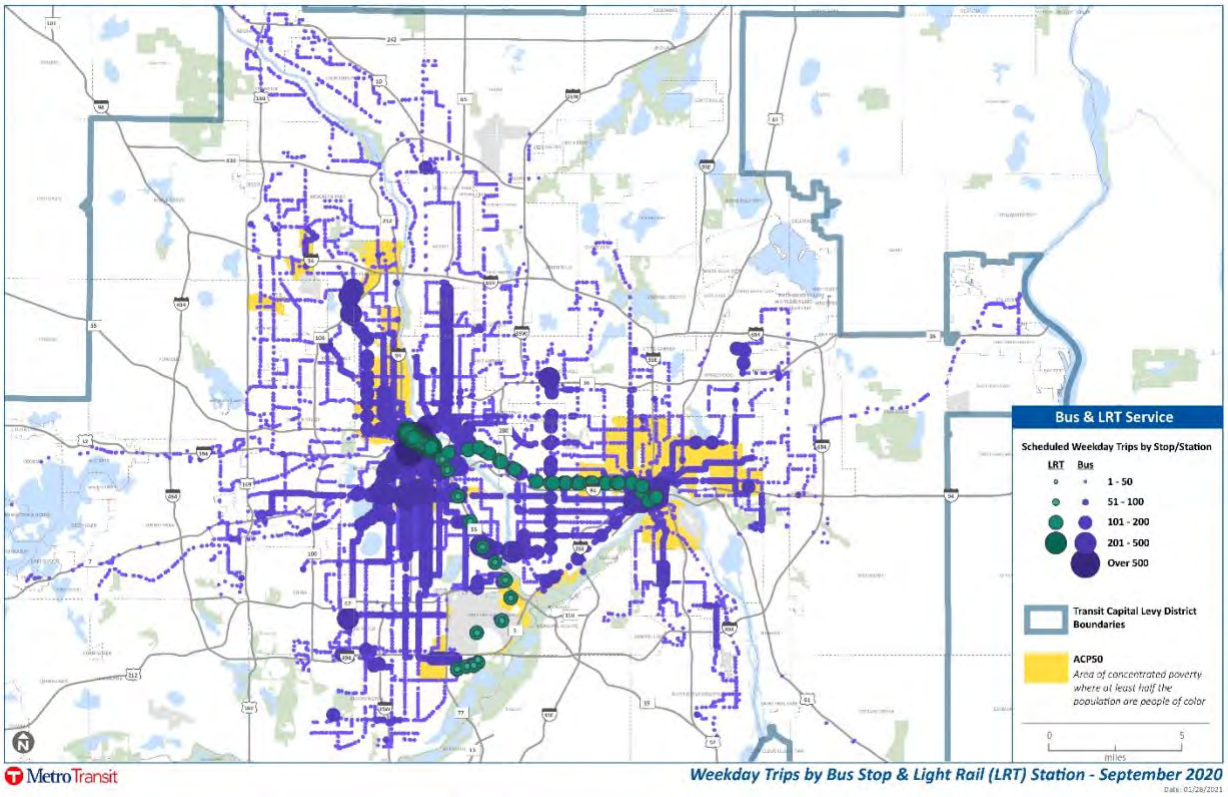

Figure 3. Phase III Service Map: Weekday Bus and LRT Trips by Bus Stop

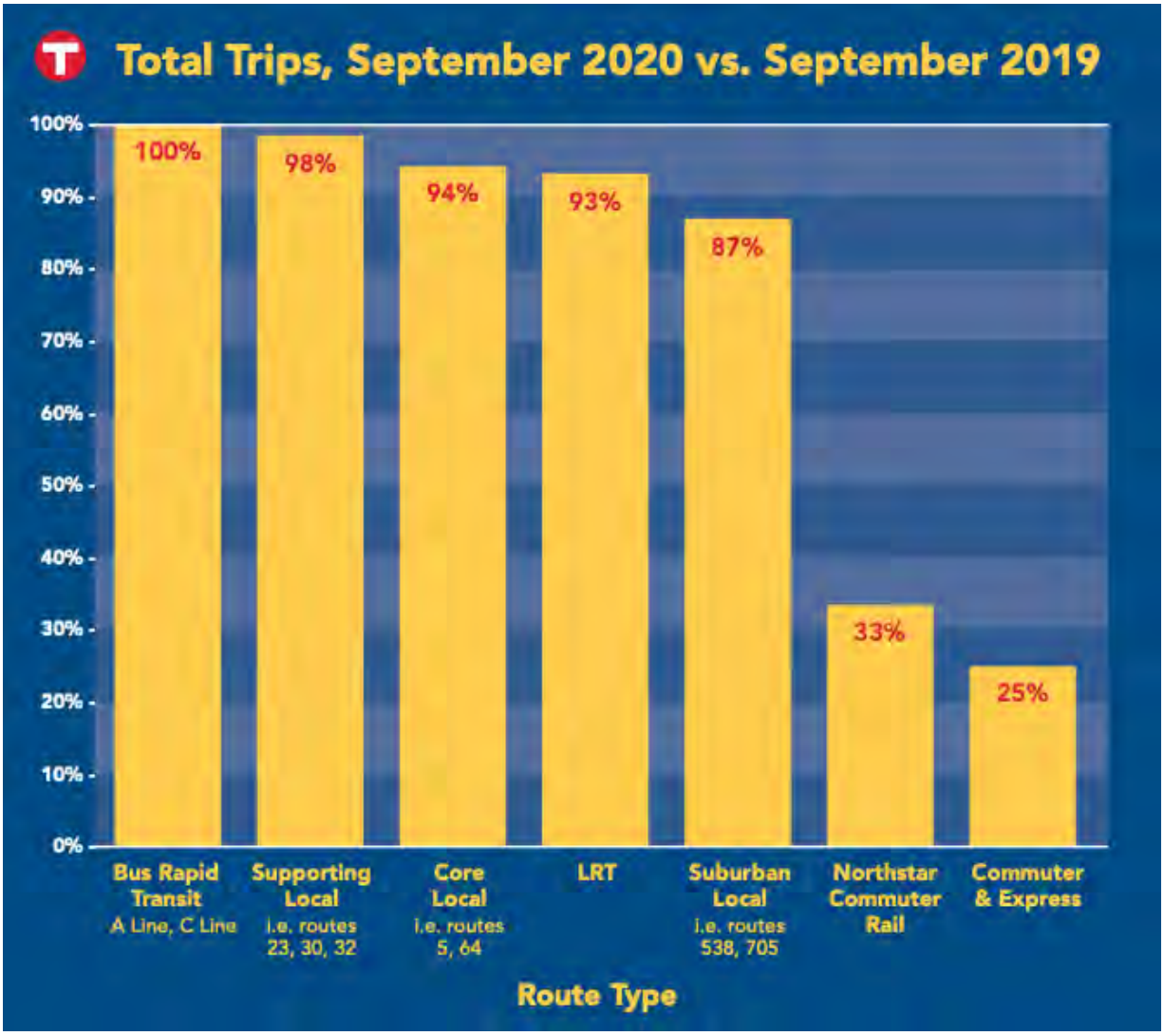

Figure 4. Total Trips by Route Type, Sept. 2020 vs. Sept. 2019

Fall 2020 bus service levels are expected to be maintained through mid 2021. Starting in March 2021, weekday LRT service will be slightly reduced to better match current ridership patterns. Further evaluation of service adjustments in 2021 will based on ridership market development and lifting of social distancing restrictions anticipated with downward trend of COVID-19 infection rates and distribution of vaccine.

Community Outreach

Metropolitan Council procedure 2-2e (Public Involvement in Transportation Service Changes and Restructuring) requires a public hearing when major service changes are proposed. Changes made during an emergency are exempt from this requirement. Service decisions throughout 2020 were made under the Governor's Peacetime Emergency Declaration.

Even without formal outreach, transit staff sought to reflect community needs in decision-making through the following channels:

- Consultation with school districts, colleges and universities, and business leaders on their COVID-19 response plans and anticipated needs
- Ongoing review of customer comments submitted throughout the pandemic
- Incorporation of priorities from the summer Listening and Learning through Crisis survey, including:
    - Ensure adequate capacity of service
    - Promote service reliability
    - Listening and Learning through Crises (metrotransit.org)

Ridership Distribution and Trends

Ridership trends by mode

Immediately after pandemic-related restrictions were introduced in March, weekday transit ridership dropped significantly, by about 65% system-wide. Peak commuter-oriented service dropped by about 95%, while METRO and local bus services dropped 60-70%. Ridership has stayed relatively stable throughout the pandemic, with a slight rise over the summer and decline when fare collection was resumed in August.

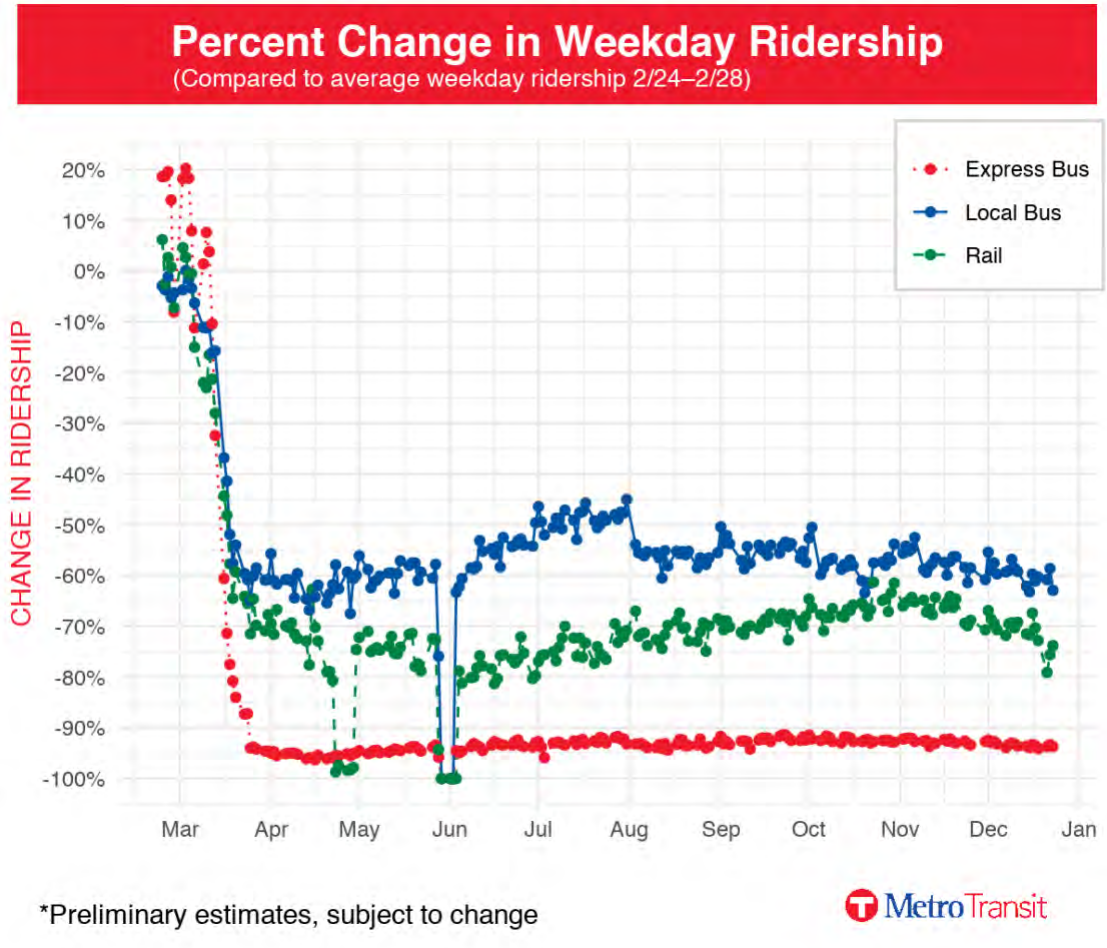

Figure 5. Percent Change in Weekday Ridership by Mode

Geographic distribution of ridership

Weekday bus boardings have remained strongest on key local and METRO corridors and at regional destinations and transfer points.

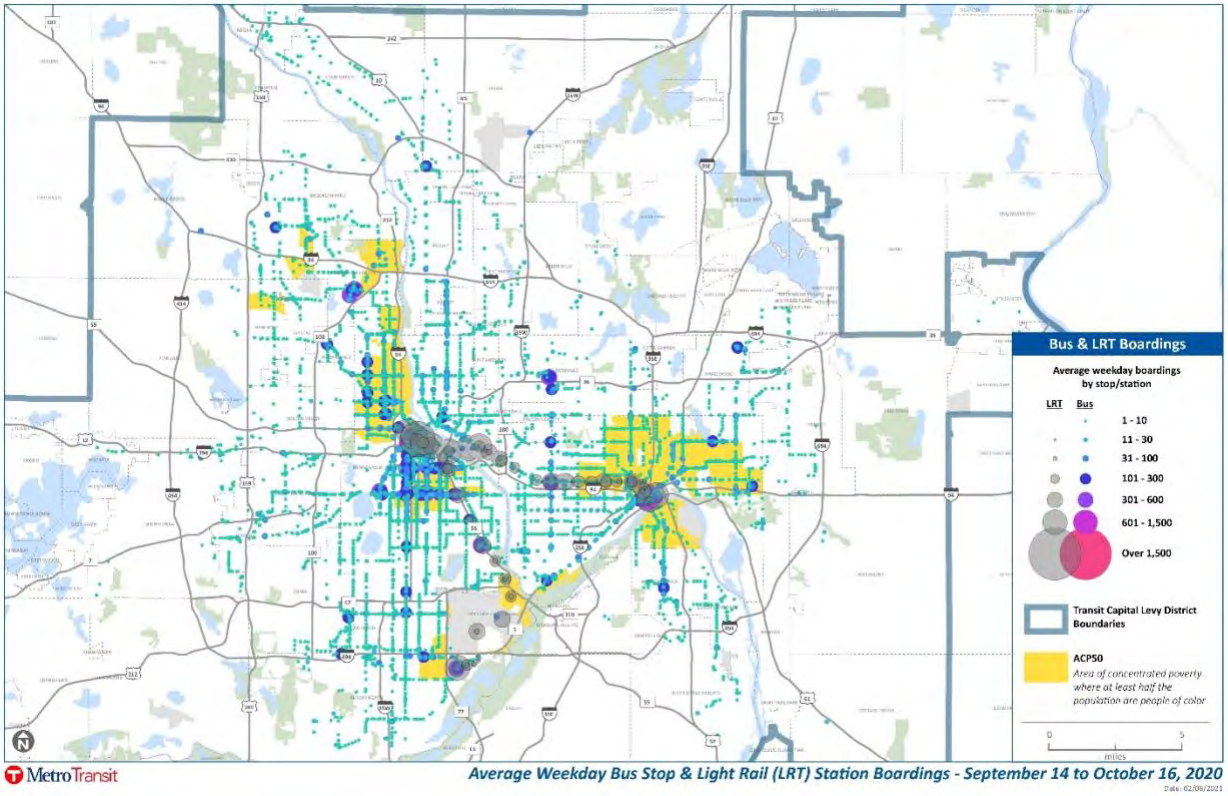

Figure 6. Average Weekday Bus and LRT Boardings, Fall 2020

Service Equity Metrics

George Floyd's death at the hands of the City of Minneapolis police officers on May 25, 2020, and the resulting civil unrest was another somber reminder of inequity in our region. Metro Transit's General Manager called for Equity Performance Metrics for internal and public audiences as well an integrated equity review into service changes. The development of service equity metrics is one of the ways Metro Transit intends to share the results of service changes and the analysis of who benefits from transit service. Additional review with public stakeholders is planned to ensure the initial metrics are aligned with community's needs and relevant performance goals are set. At this time, there are not explicit targets or a definition of 'equitable service' that has been reviewed by public stakeholders or part of Council policy.

In October 2020, Metro Transit staff presented initial equity performance metrics to the Committee of the Whole. The metrics were designed to explore the equity of service distribution, access, and quality throughout Metro Transit's service area. The context, methods, and metric results are described below.

Context: Demographics of Metro Transit customers

Metro Transit collaborates with the Met Council MTS Transportation Planning division to regularly conduct a comprehensive transit onboard survey as part of the Travel Behavior Inventory program. This survey is conducted using proportional intercept sampling and is weighted to ridership by route, making it a very robust sample of origin and destination, trip purpose, and demographics of transit customers in the region. The last survey was conducted in fall 2016, and planning has begun for a 2021-2022 transit onboard survey.

One of the most important aspects of evaluating equity of transit service is understanding how the people who use transit differ from the population as a whole, if at all. For instance, by comparing the race and ethnicity of transit users in the onboard survey, compared with the population as a whole as enumerated by the US Census American Community Survey program, we can quantify how transit users are much more likely to be people of color.

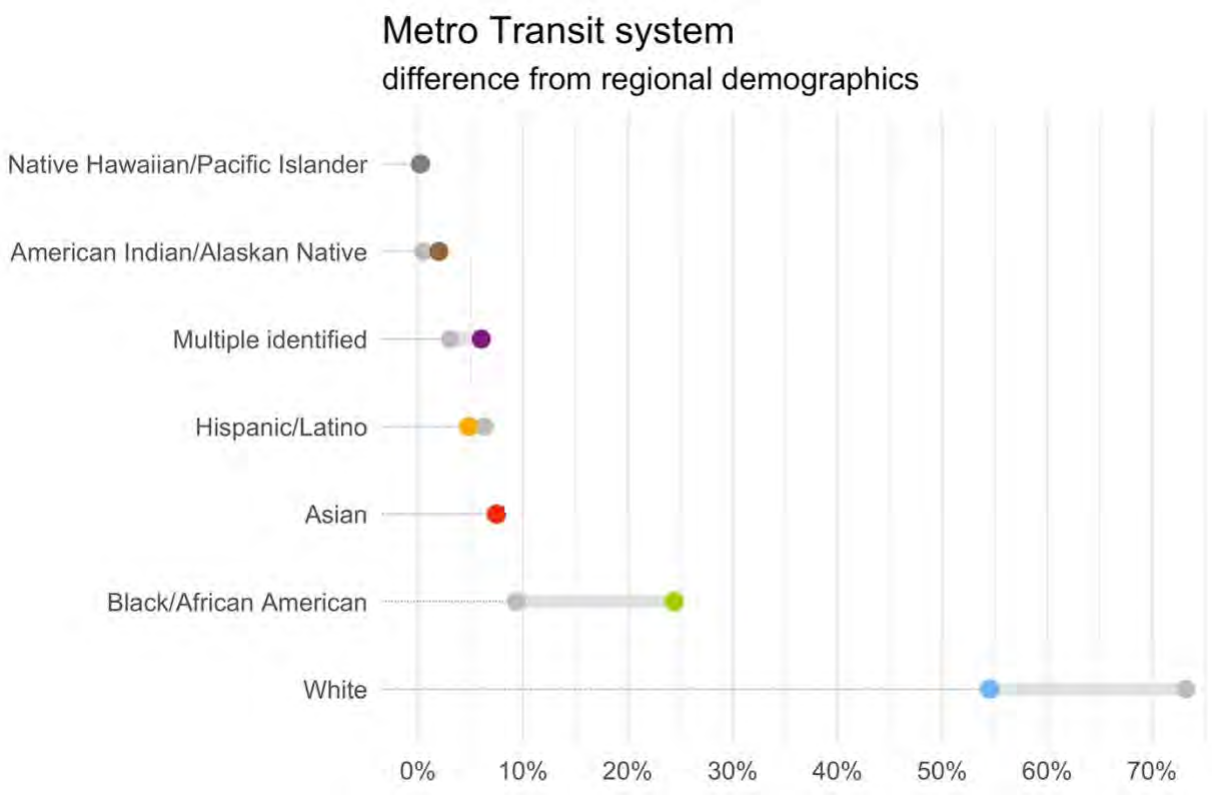

Figure 7. Points represent % identifying as each race/ethnicity in Census ACS for 7-county Met Council area (gray points) or in TBI onboard survey (colored points). Gray bars indicate size of differential between regional population and onboard population.

The differences between regional and onboard populations are not uniform within the transit system, instead there are predictable differences across the types of service in terms of race and ethnicity.

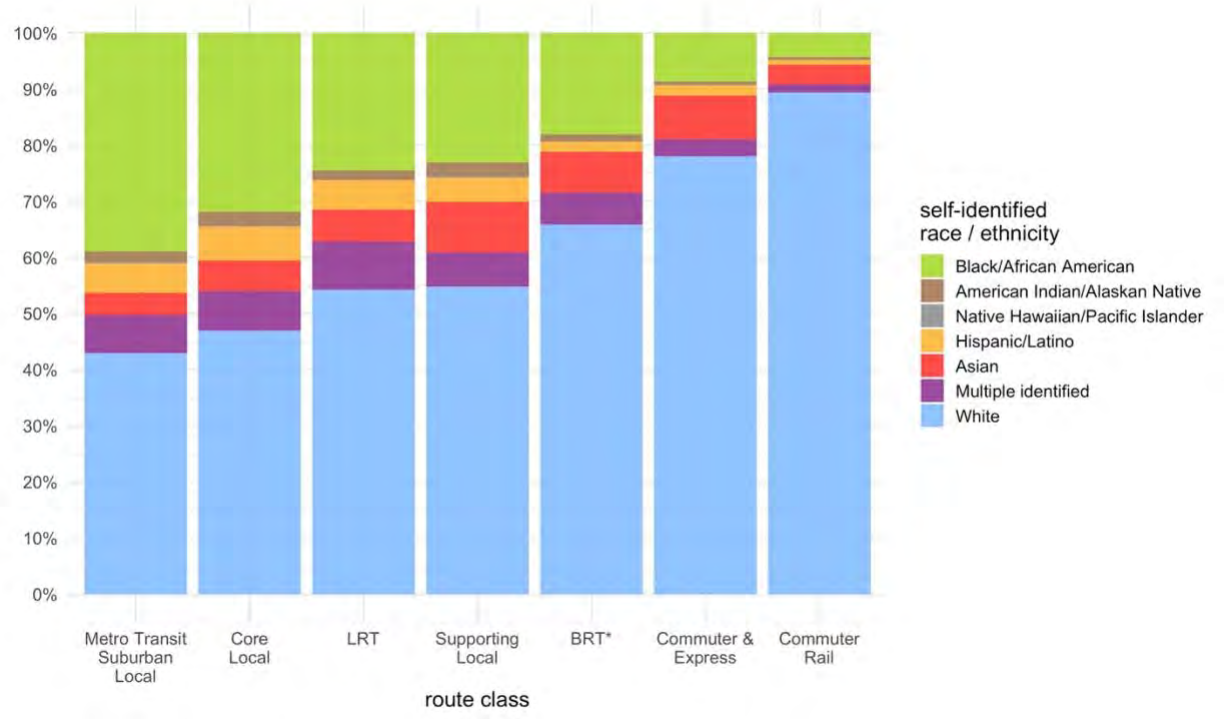

Figure 8. 2016 Transit onboard data on how customers classify their race/ethnicity, by route class. Local bus service (core and suburban) is majority Black, Indigenous, and people of color (BIPOC); commuter express routes, and commuter rail customers overwhelmingly identify as white alone.

These data and additional detail and discussion of the characteristics of transit customers was presented to the Met Council as part of a discussion on equity[1] in fall 2020.

Method: Approach to disaggregation of performance by race

To determine equity impacts of our service we need to understand and compare the race of our customer, and potential customers. These are estimated from travel surveys and US Census estimates. As described above there can be differences between who lives in an area and who has chosen to use transit. Some performance metrics describe the quality of service *made available*, for example, "access to high frequency service" describes a useful feature of service that might determine if someone who can access the service chooses to use it. The impacts for these metrics are ascribed to the population near the transit service who could use it, whether they choose to or not. Other metrics, describe aspects of the *experience of using the service* that apply primarily to users of the service. For those metrics we use demographics of customers, as measured by the TBI transit onboard survey. For both sources of demographic data we summarize the metric as a population-weighted description. For example, if 50 people have access to 500 trips per day and 1,000 people have access to 10 trips per day, the population weighted trips per day is ((50 * 500) + (1000 * 10)) / (50 + 1000), or 33.3 trips per day.

[1] Metro Transit Equity Update (metrocouncil.org)

Method: Race of residents living near transit service

Most customers walk to their transit stop – in the 2016 onboard survey, close to 90% of transit trips were accessed by walking. To determine the racial demographics of potential customers, we look at who can access a transit stop by walking to it. For every transit stop we determine the area that can reach the stop within a ¼ mile (bus) or ½ mile (train) walk, or the walk-shed. We compare the walk-shed to the US Census block-group geographies. We scale the population in each race in each census block-group by the area of the block-group within the walk-shed. For example, if half of a block-group A is in a walk-shed and block-group A contains 40 white residents and 60 black residents, then block-group A contributes half of those residents to the walk-shed, or 20 white residents and 30 black residents. We add the contributions of each Census block-group within the walk-shed to get the total number of residents of each race who are within walking distance of the transit stop.

Method: Race of transit customers

For metrics that mostly describe the on-vehicle experience we use the 2016 TBI survey, which includes demographics of customers by route. For metrics that are calculated by stop, they are first summarized to the route level and then applied to the TBI based customer demographics for the route.

Service metrics and results

Most initial equity metrics are analyzed with respect to the schedule and performance data from COVID-19 service in Fall 2020; exceptions are noted. Goals for service equity need to be established to ensure we use the right set of metrics as well as set meaningful targets. Our intent is to assess our agency's performance over time compared to goals and outcomes embraced by our community, policymakers, and agency.

Service availability (trip count)

Metric: the average number of trips serving a stop, disaggregated by race of residents living near transit service

Result: Black and Native American/American Indian residents living near transit service have more trips available, on average, compared to the regional average (all races). The plot below shows the average number of trips available to residents.

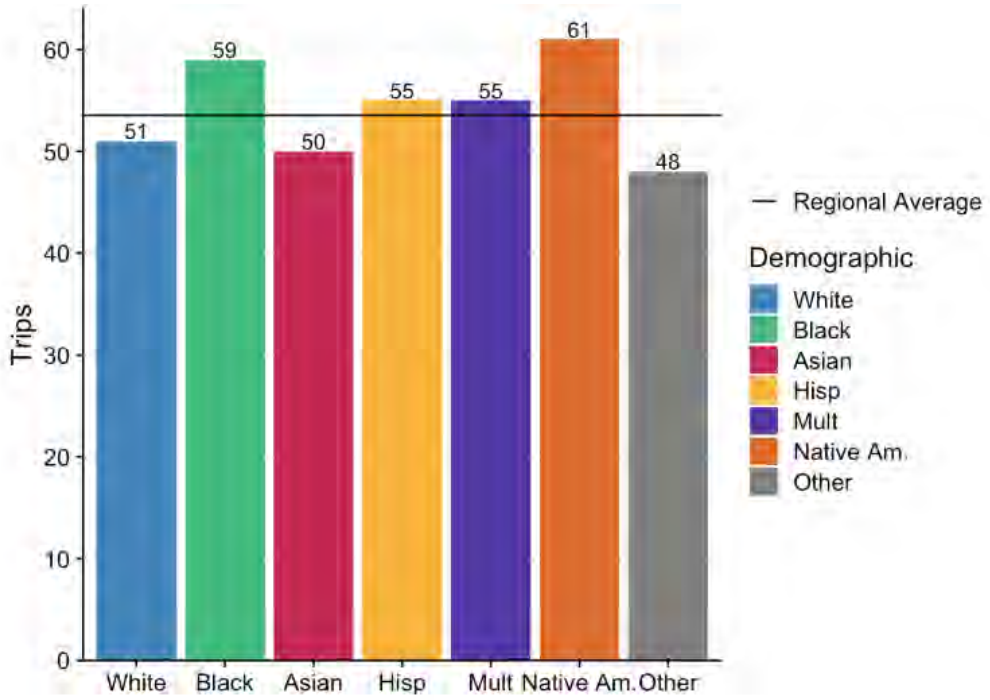

Figure 9. Average number of trips

Access to frequent service

Metric: the percent of residents that have access to high frequency service (defined as High Frequency network or METRO network), disaggregated by race of residents living near transit service

Result: Black and Native American/American Indian residents living near transit service have more access to high frequency service, on average, compared to the regional average (all races). The plot below shows the percent of residents with access to high-frequency service. For examples, 18% of white residents living near transit service have access to high-frequency service.

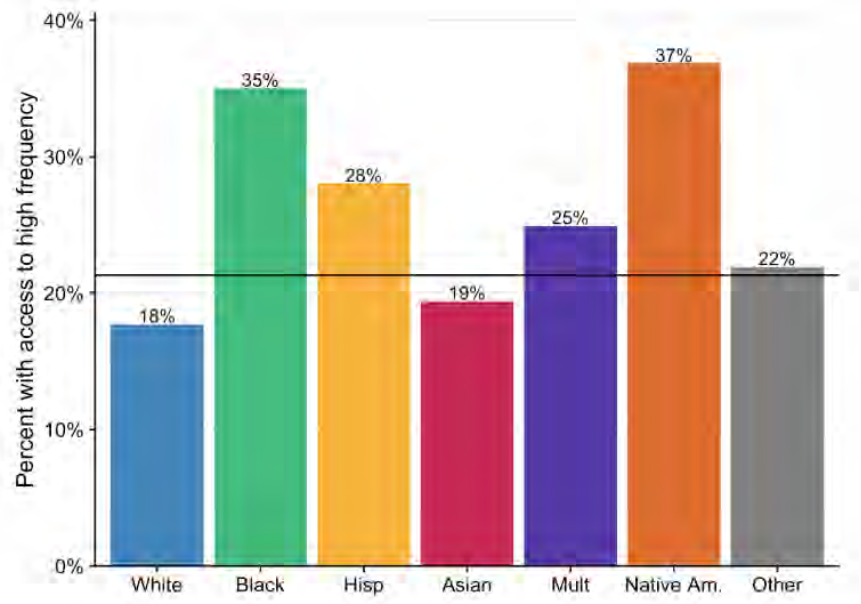

Figure 10. Population with access to high-frequency service

Access to all-day service

Metric: the percent of residents that have access to all-day service (defined as the continuous availability of at least hourly service for at least 14 contiguous hours), disaggregated by race of residents living near transit service

Result: While the regional average is 64% of residents living near transit service have access to all-day service, disaggregation by race shows a divergence between access available to white residents versus BIPOC residents. Specifically, more than 80% of the region's Native American/American Indian residents and 78% of the region's Black/African American resident living near transit service have access to all-day service. Note: this report used Dec. 2020 schedule data.

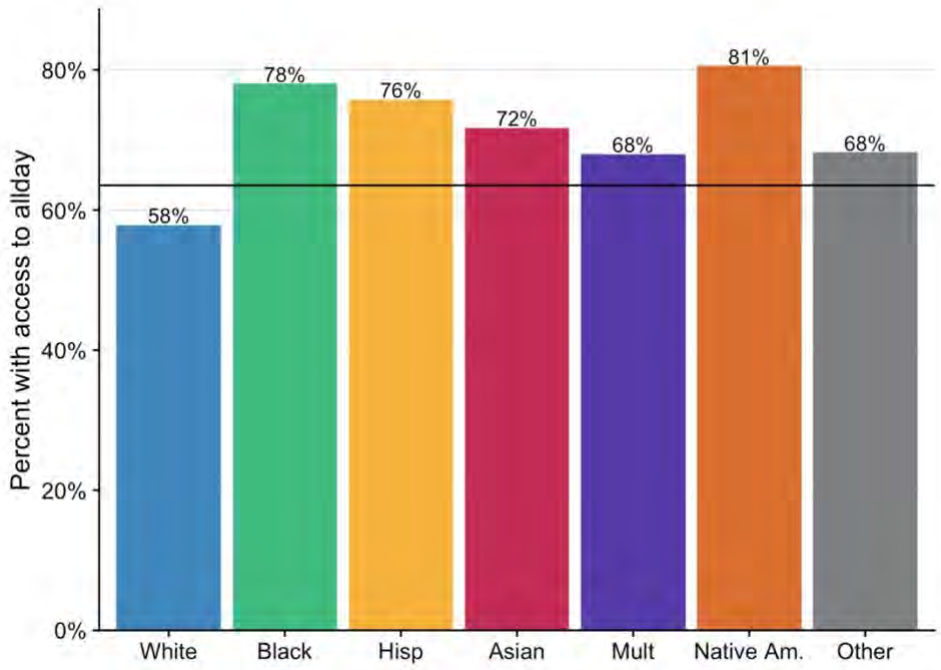

Figure 11. Population with access to all-day service

Job accessibility

Metric: the number of jobs accessible by transit within 45 minutes, disaggregated by race of residents within the Met Council/Metro Transit service area

Result: Accessibility to jobs is higher for BIPOC residents than white residents. This is largely the effect of the high concentration of jobs in downtown Minneapolis and the concentration of frequent service in neighborhoods near downtown with high proportions of BIPOC residents. Weekday midday accessibility is used here as a stand-in for travel to destinations of interest, which may or may not include a work commute. The average accessibility may be higher for white residents when including peak, commuter-oriented service which is known to be utilized by a higher percentage of white customers.

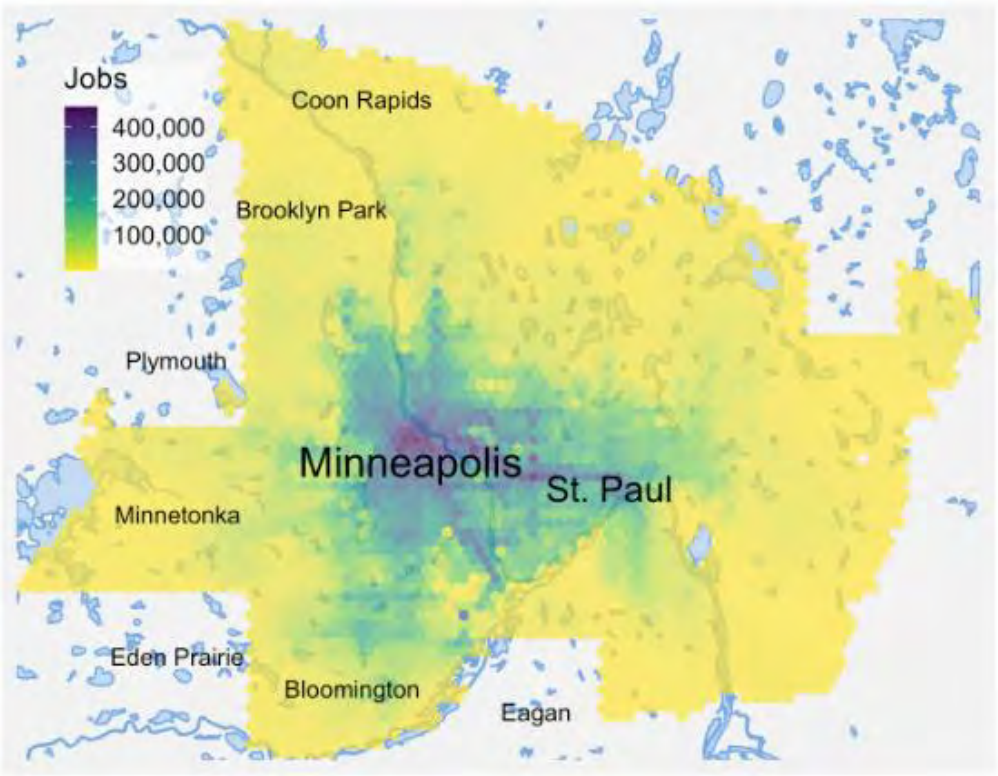

Figure 12. Map of number of jobs available within a 45-minute journey on transit using weekday midday service schedules, September 2020.

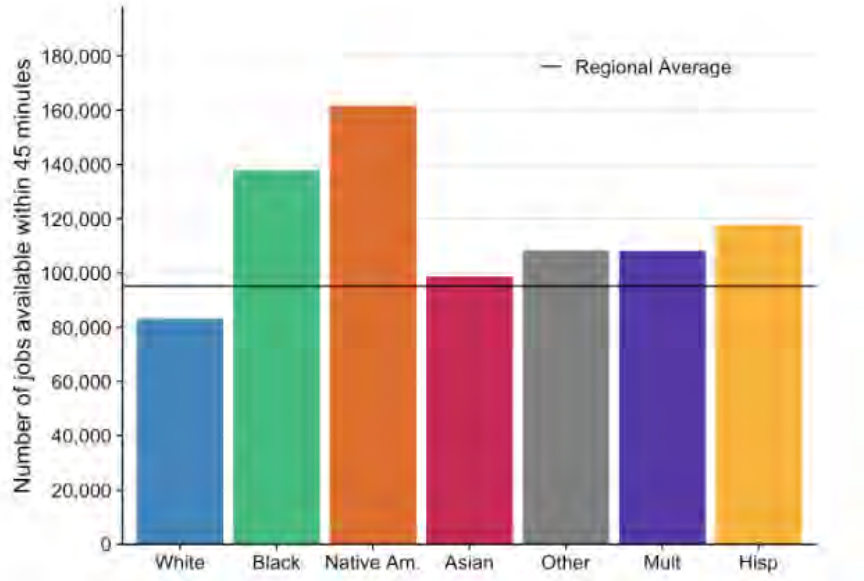

Figure 13. Number of jobs available within a 45-minute journey on transit using weekday midday service schedules in September 2020

On-time performance

Metric: on-time performance, disaggregated by race of residents living near transit service

Result: Overall, there is no evidence that Black residents living near transit service experience worse on-time performance than white customers living near transit service in 2020. Overall, there is very little variability in on-time performance disaggregated by race; 2019 results are similar except that on-time performance is overall lower. On-time performance in 2020 is higher due to significant decreases in traffic volume.

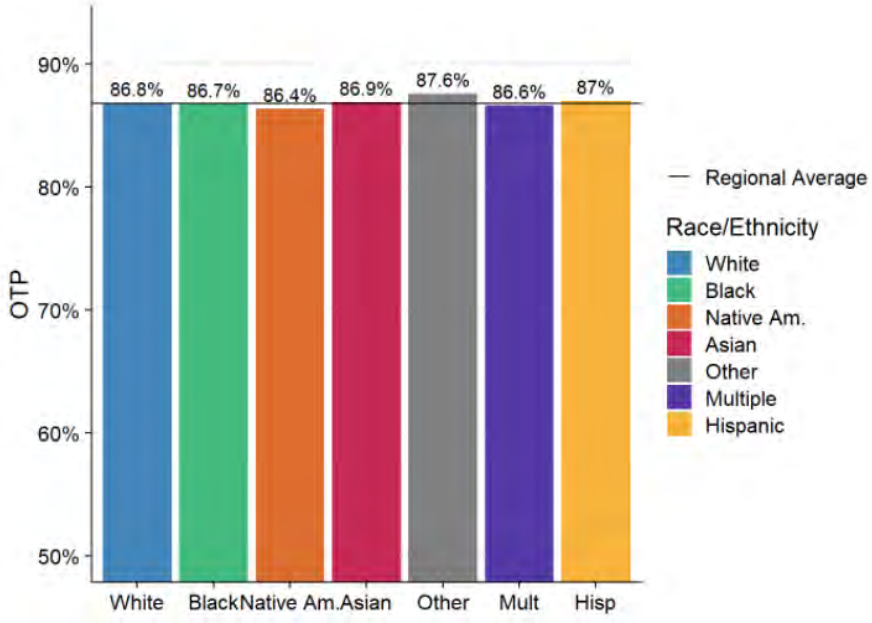

Figure 14. Fall 2020 On-time performance

Crowded buses in 2019 and 2020 (COVID-19 standards)

Metric: the percent of passenger time spent riding on a bus with standees in 2019, disaggregated by race of customers (2016 TBI survey)

Result: Buses with standees are considered productive and efficient (high ridership trips) but can be considered less attractive if a seat is not available. There is evidence that white and Asian customers are more likely, on average, to spend time on a bus with standees in 2019. BIPOC customers, as a group, spend less time on a bus with standees relative to white customers.

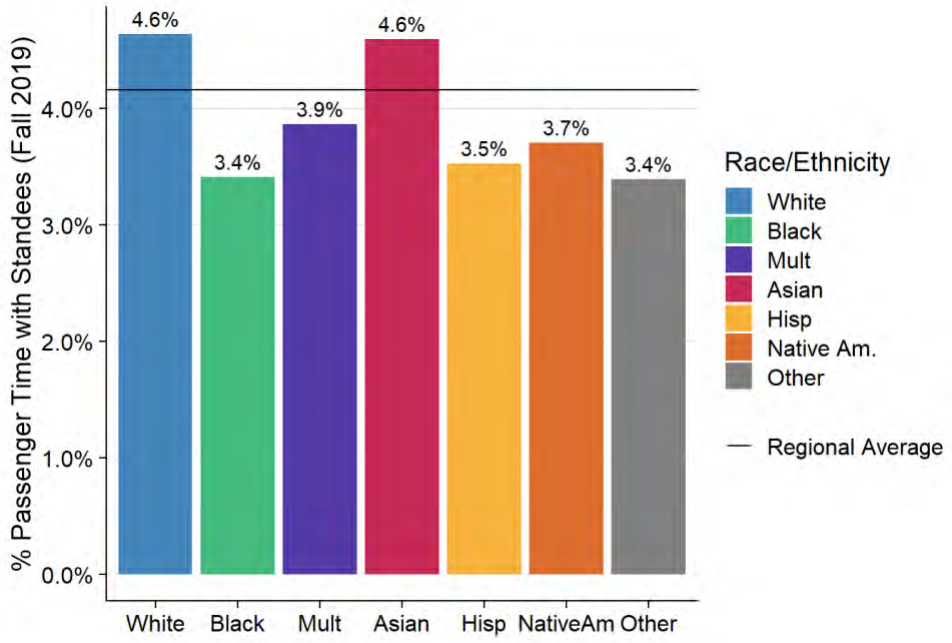

Figure 15. Percent passenger time with standees in Fall 2019

Metric: the percent of passenger time spent riding on a bus exceeding COVID-19 load standard in 2020, disaggregated by race of customers (2016 TBI survey)

Result: In 2020, bus capacity standards were set to limit the spread of COVID-19 by allowing proper social distancing on buses (10 passengers for a 40' bus, 15 passengers for a 60' bus). There is evidence that white and Asian customers are less likely, on average, to spend time on a bus exceeding COVID-19 standards in Fall 2020. Black customers spend more time on a bus exceeding COVID-19 standard relative to white customers.

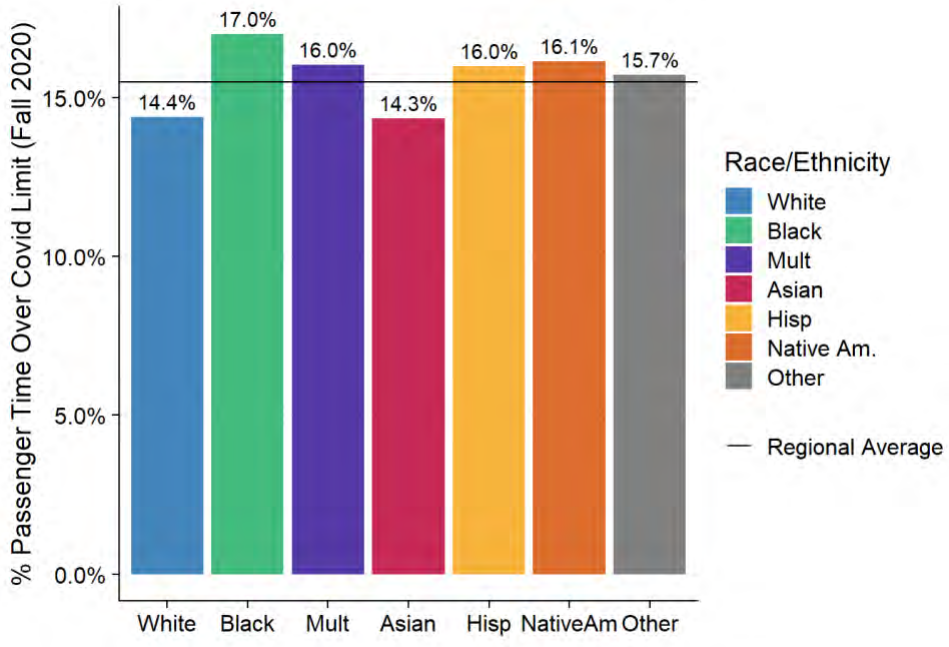

Figure 16. Percent passenger time exceeding the COVID-19 in Fall 2020

Title VI Equity Analysis

This analysis reviewed the impact of systemwide service changes implemented in September 2020. Although no formal Title VI service equity analysis is required at for these changes, given their emergency nature and the Governor's Peacetime Emergency declaration, Metro Transit chose to review these changes using its service equity framework and methodology to ensure there have been no disparate impacts or disproportionate burden on groups protected by Title VI.

A note on the language and terminology used in this report: The FTA Title VI Circular and other federal guidance use the term "minority," which is not consistent with efforts by Metro Transit and the Metropolitan Council to use respectful and inclusive language. Throughout this section, alternate language has been substituted.

This Title VI service equity analysis explored the potential for disparate impact to BIPOC populations and disproportionate burden to low-income people resulting from the September 2020 service changes under two scenarios:

1. September 2020 compared to September 2019: Assessing impacts from service beginning Sept. 12, 2020, relative to seasonally adjusted, pre-COVID-19 service levels from September 2019.
    - On average, service reductions have a greater impact on white and non-low-income residents.
    - The average BIPOC resident experienced service reductions at 60% the rate experienced by the average white resident (-15.3% vs. -25.6%).
    - The average low-income resident experienced service reductions at 54% the rate experienced by the average non-low-income resident (-12.6% vs. -23.5%).

2. September 2020 compared to June 2020: Assessing impacts from service beginning Sept. 12, 2020, relative to the current service levels, which began June 2020 and continue until Sept. 11, 2020.
    - On average, service increases were about equal for the average resident, regardless of race, ethnicity, or low-income status.
    - The average BIPOC resident experienced service increases at 96% the rate experienced by the average white resident (12.9% vs. 13.4%).
    - The average low-income resident experienced service increases at 101% the rate experienced by the average non-low-income resident (13.2% vs. 13.1%).

Upon conducting the technical analysis and applying Metro Transit's Title VI policies in accordance with the Metropolitan Council's Title VI Program, this review finds that the service changes have not resulted in disparate impact to BIPOC populations or disproportionate burden to low-income populations under either scenario – September 2020 compared to September 2019 or September 2020 compared to June 2020.

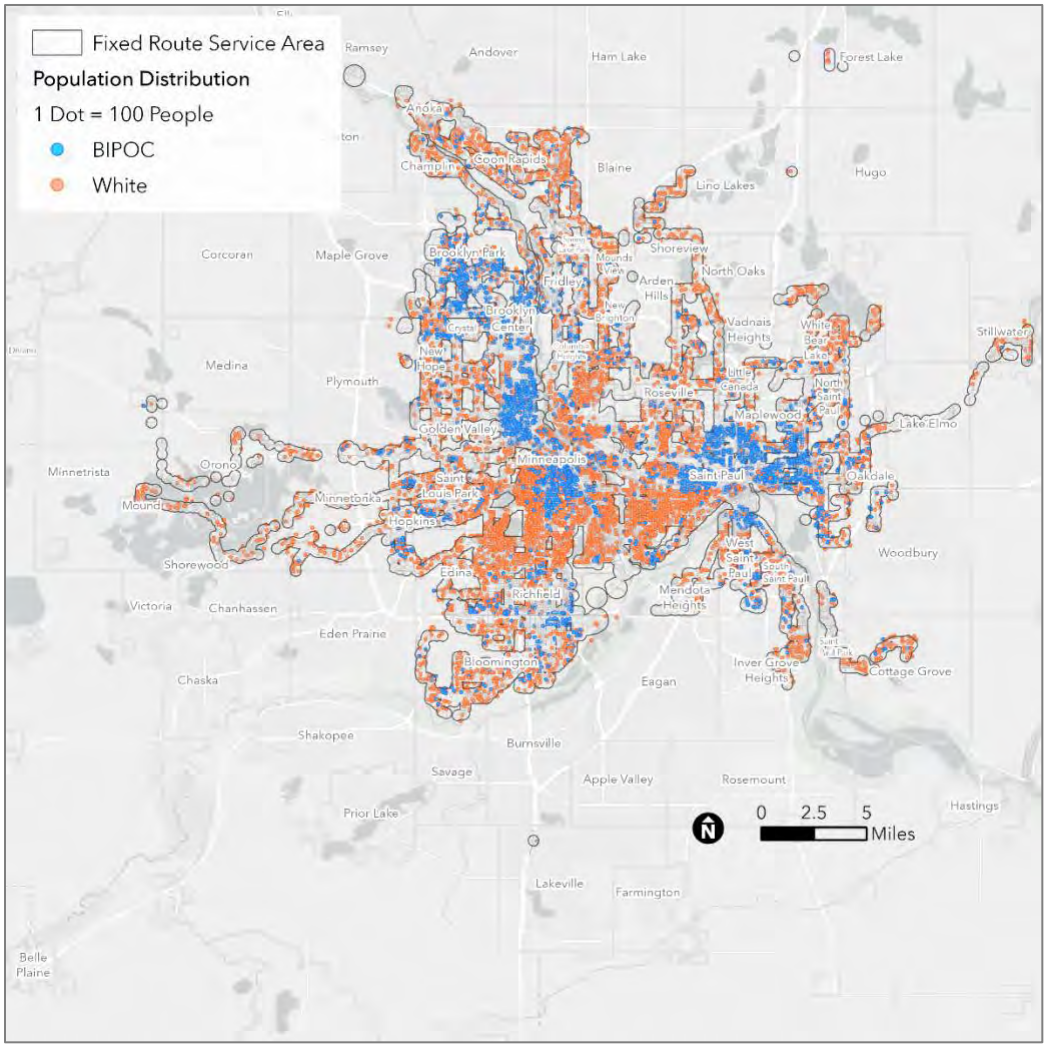

Figure 17. BIPOC Population within the service change area (Sept. 2019 to Sept. 2020 Scenario)

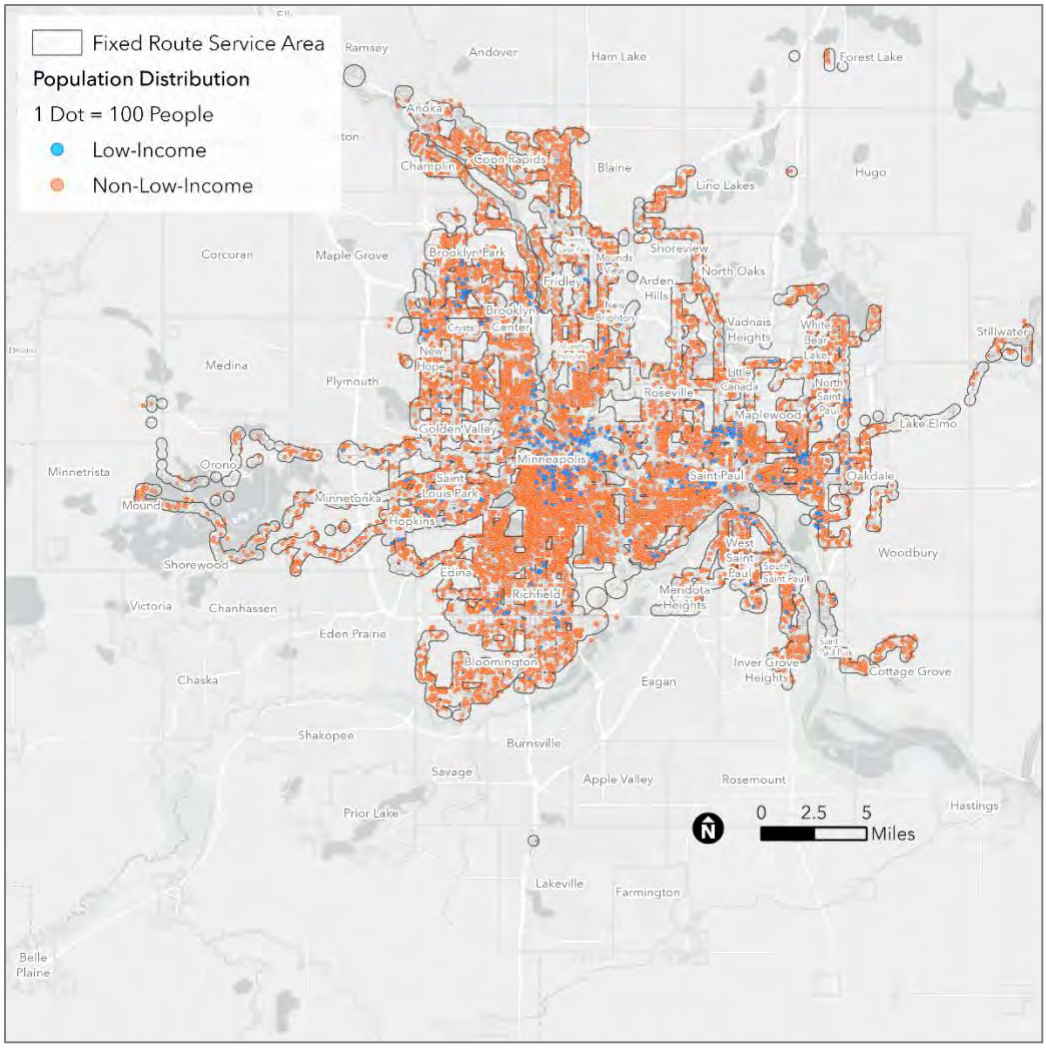

Figure 18. Low-Income Population within the service change area (Sept. 2019 to Sept. 2020 Scenario)

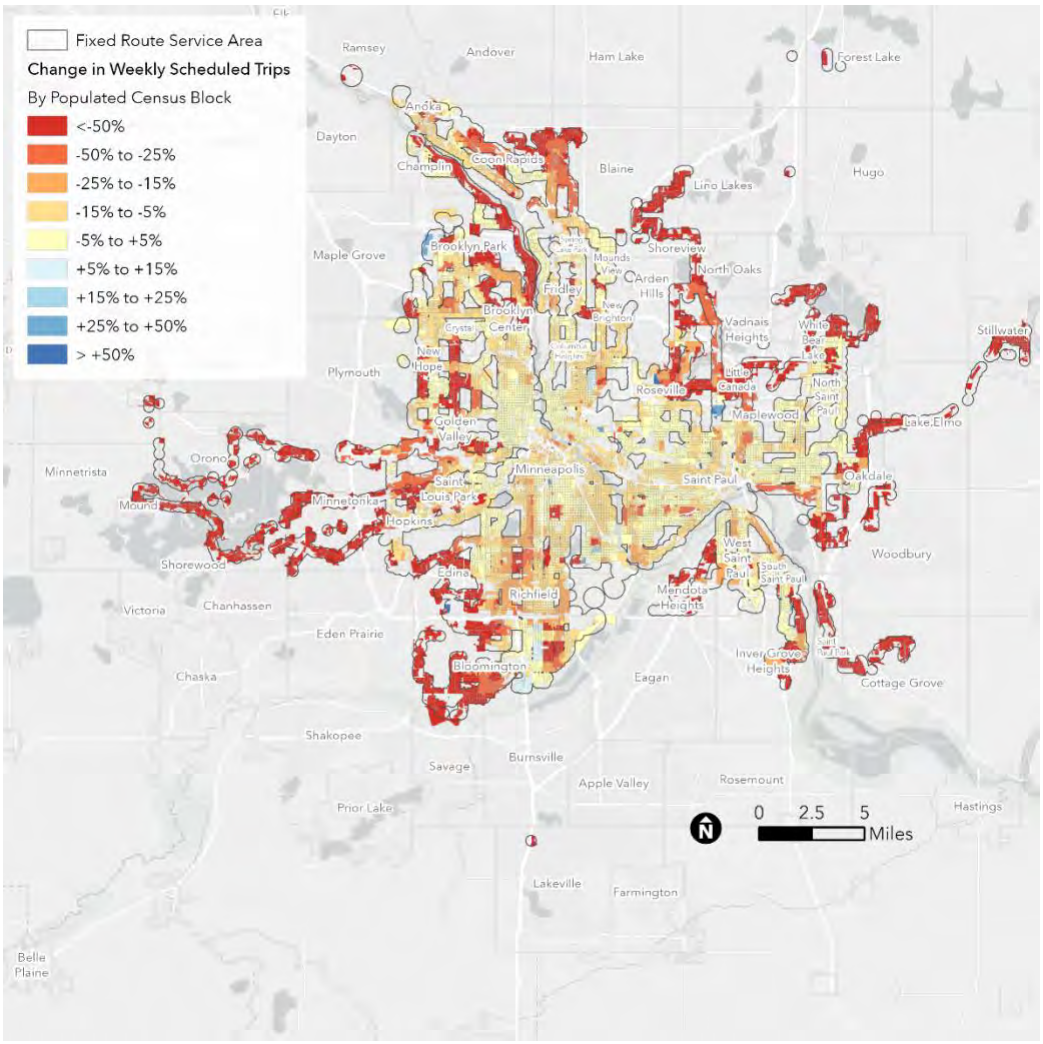

Figure 19. Service Level Change by Census Block: Sept. 2019 to Sept. 2020

Appendix I: List of suspended routes as of September 2020

Provider	Route Classification	Route Number	Mitigation
Metro Transit	Supporting Local	39	
Metro Transit	Commuter and Express	53	
Metro Transit	Core Local	59	Route 10 trips added
Metro Transit	Commuter and Express	111	
Metro Transit	Commuter and Express	113	
Metro Transit	Commuter and Express	114	
Metro Transit	Commuter and Express	115	
Met Council	Commuter and Express	118	
Metro Transit	Supporting Local	129	
Metro Transit	Commuter and Express	133	
Metro Transit	Commuter and Express	135	
Metro Transit	Core Local	141	Route 4 trips extended
Metro Transit	Commuter and Express	146	
Metro Transit	Commuter and Express	156	
Met Council	Suburban Local	223	
Metro Transit	Commuter and Express	252	
Metro Transit	Commuter and Express	261	
Metro Transit	Core Local	262	
Metro Transit	Commuter and Express	263	Route 270 modified to serve park and rides
Metro Transit	Commuter and Express	265	
Metro Transit	Commuter and Express	272	
Metro Transit	Commuter and Express	275	
Metro Transit	Commuter and Express	288	
Met Council	Commuter and Express	350	
Metro Transit	Commuter and Express	351	Route 353 is alternative
Metro Transit	Commuter and Express	355	Route 353 is alternative
Metro Transit	Commuter and Express	361	Route 363 is alternative
Met Council	Commuter and Express	364	
Metro Transit	Commuter and Express	365	Route 363 is alternative
Metro Transit	Commuter and Express	375	

Met Council	Suburban Local	415	
Met Council	Commuter and Express	417	
Met Council	Commuter and Express	452	
Metro Transit	Commuter and Express	467	
Met Council	Suburban Local	537	
Met Council	Suburban Local	542	
Metro Transit	Commuter and Express	552	
Metro Transit	Commuter and Express	554	Route 18 trips extended
Metro Transit	Commuter and Express	558	
Metro Transit	Commuter and Express	579	
Metro Transit	Commuter and Express	587	
Metro Transit	Commuter and Express	588	
Metro Transit	Commuter and Express	589	
Metro Transit	Commuter and Express	643	
Metro Transit	Commuter and Express	652	
Metro Transit	Commuter and Express	668	
Met Council	Commuter and Express	671	
Metro Transit	Commuter and Express	672	
Metro Transit	Commuter and Express	673	
Metro Transit	Commuter and Express	677	
Metro Transit	Commuter and Express	679	
Metro Transit	Commuter and Express	758	
Met Council	Commuter and Express	762	
Metro Transit	Commuter and Express	765	
Metro Transit	Commuter and Express	767	
Maple Grove	Commuter and Express	780	
Maple Grove	Commuter and Express	782	
Maple Grove	Commuter and Express	783	
Maple Grove	Commuter and Express	785	Service to resume March 2021
Maple Grove	Commuter and Express	789	Service to resume March 2021
Metro Transit	Core Local	825	
Metro Transit	Commuter and Express	854	
Metro Transit	Commuter and Express	860	
Metro Transit	Commuter and Express	865	