

Title VI Service Equity Analysis

West End and Route 9 Transit Study Concept Plan

Draft

Metro Transit



February 2017

SRF No. 9253

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Introduction

Metro Transit has proposed service changes to routes 9, 25, 604, 649, and 675. These changes will be referred to as the West End and Route 9 Transit Study Recommended Plan. The affected route areas include Route 9, Route 25 south of downtown Minneapolis, Route 604 east of the Louisiana Transit Center, Route 649, and Route 675 east of the Louisiana Transit Center. These changes would take effect in August 2017 and meet the threshold for a “major service change” as defines in Metro Transit’s Title VI Program Major Service Change Policy.

The Federal Transit Administration (FTA) requires recipients of federal funding, including Metro Transit, to conduct a Title VI Service Equity Analysis for any proposed service change that meets the agency’s major service change threshold. This analysis fulfills this requirement as it relates to the service changes and additions included in the proposed West End and Route 9 Transit Study Recommended Plan.

The West End and Route 9 Transit Study Concept Plan was the subject of a public comment period in September 2016. In that time, over 40 people attended each of the two scheduled public meetings and Metro Transit received 137 comments from 113 individuals. Modifications were made to the Concept Plan in response to this community feedback. This Service Equity Analysis takes into account changes reflected in the Recommended Plan.

Title VI Principles and Definitions

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs receiving federal financial assistance. Title VI states, “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”

In 1994, President Clinton issued Executive Order 12898, which states that each federal agency “shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” Through this Executive Order, Title VI was identified as one of several Federal laws that should be applied “to prevent minority communities and low-income communities from being subject to disproportionately high and adverse environmental effects.”

To provide direction to recipients of federal funding, the FTA issued Circular 4702.1B, *Title VI Requirements and Guidelines for Federal Transit Administration Recipients*, in 2012, which replaced Circular 4702.1A issued in 2007. This document outlines Title VI evaluation procedures for recipients of FTA-administered transit program funds and includes guidance for a variety of equity evaluations.

Minority

The FTA defines a minority person as one who self-identifies as American Indian/Alaska Native, Asian, Black or African American, Hispanic or Latino, and/or Native Hawaiian/Pacific Islander. For the purposes of this evaluation, non-minority persons were defined as those who self-identify as white and not Hispanic or Latino. All other persons, including those identifying as two or more races and/or ethnicities, were defined as minority persons. The distribution of minority populations within one-quarter mile of the existing and proposed route alignments is shown in Figure 1. Note that the service change area excludes portions of the route with non-stop service.

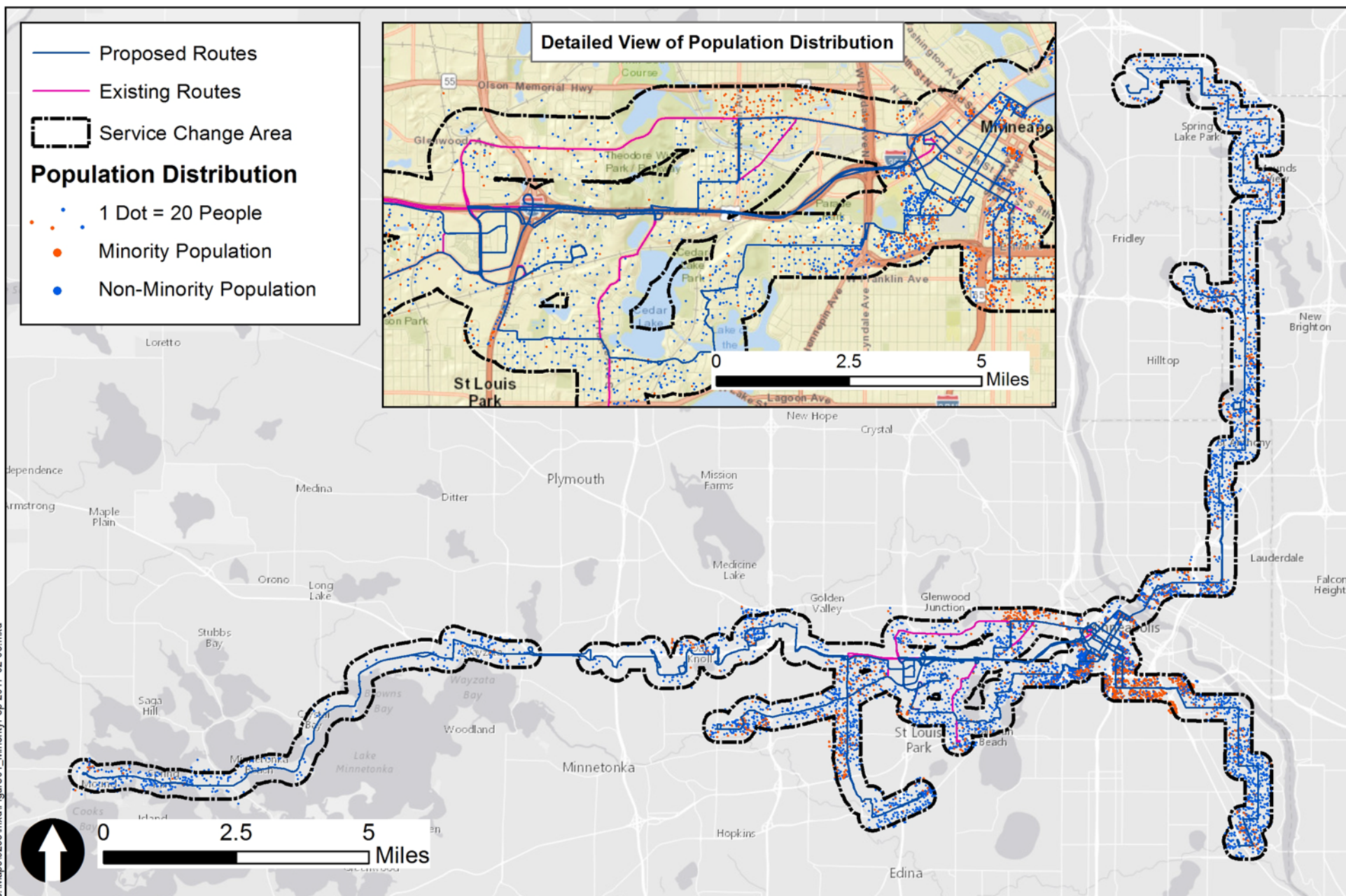
Low-Income

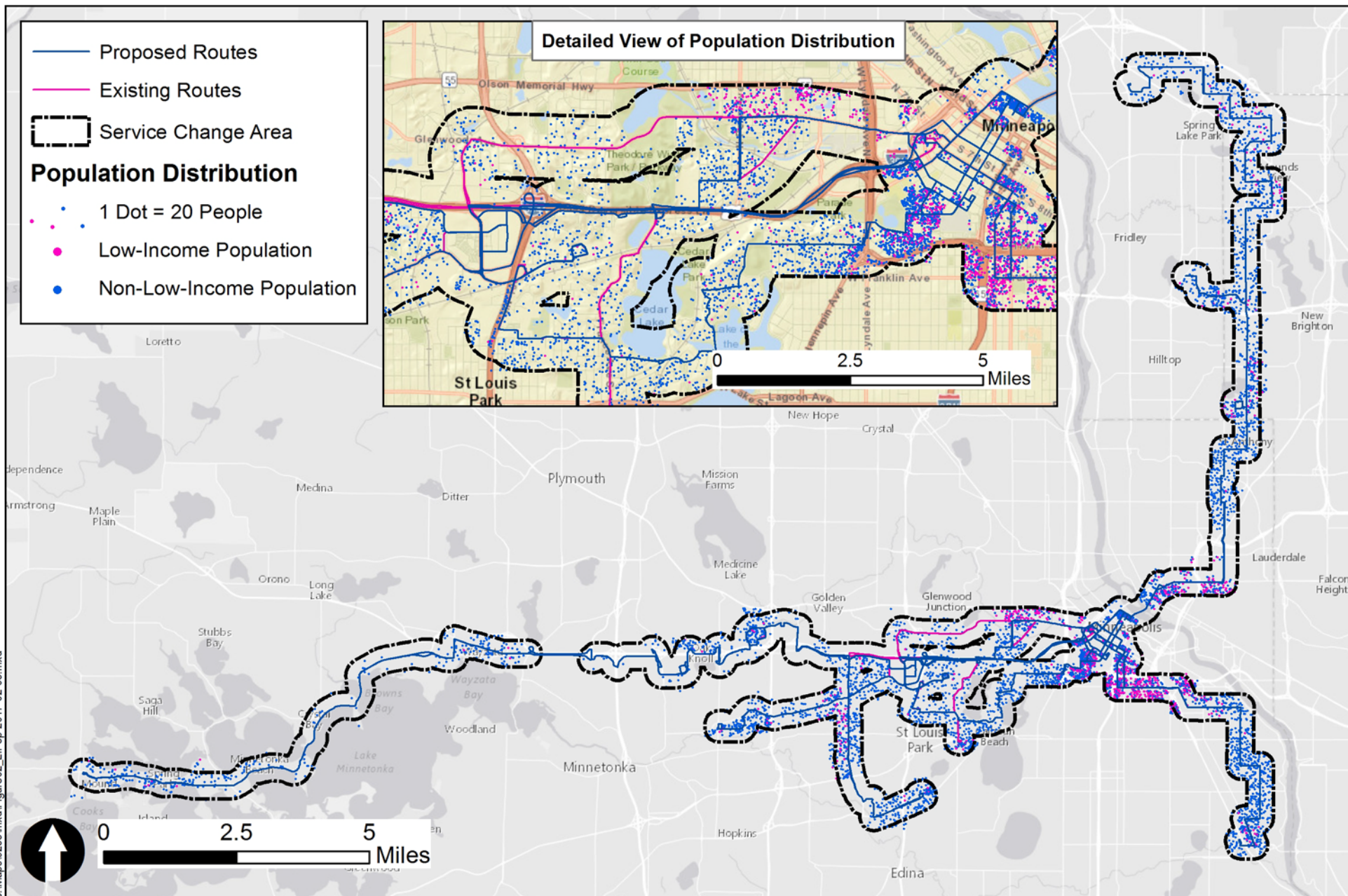
While low-income populations are not an explicitly protected class under Title VI, the FTA recognizes the inherent overlap between Title VI and Environmental Justice principles and requires transit providers to evaluate the impact of service and fare changes to low-income populations and to identify any disproportionate burden placed on those populations by the proposed changes. The FTA defines a low-income person as one whose household income is at or below the poverty guidelines set by the Department of Health and Human Services (DHHS). DHHS poverty thresholds are based on household size and the number of related children less than 18 years of age. The 2014 poverty thresholds used for the data in this evaluation are summarized in Table 1. The distribution of low-income and non-low-income populations within the service change area is shown in Figure 2. Note that the service change area excludes portions of the route with non-stop service.

Table 1. 2014 DHHS Poverty Guidelines

Persons in Family	Threshold for 48 Contiguous States and D.C.
1	\$11,670
2	\$15,730
3	\$19,790
4	\$23,850
5	\$27,910
6	\$31,970
7	\$36,030
8	\$40,090
For each additional person, add	\$4,060

Source: U.S. Department of Health and Human Services (<https://aspe.hhs.gov/2014-poverty-guidelines>)





Disparate Impact, Disproportionate Burden, and the Four-Fifths Threshold

The Federal Transit Administration defines “disparate impacts” as facially neutral policies or practices that disproportionately affect members of a group identified by race, color, or national origin, and the recipient’s policy or practice lacks a substantial legitimate justification. If the results of the analysis indicate a potential for disparate impacts, further investigation is required. Metro Transit has defined its disparate impact threshold using the “four-fifths rule.” The four-fifths rule states that there may be evidence of disparate impacts if:

- Benefits are being provided to minority populations at a rate less than 80 percent (four-fifths) of the benefits being provided to non-minority populations, or
- Adverse effects are being borne by non-minority populations at a rate less than 80 percent (four-fifths) of the adverse effects being borne by minority populations.

The four-fifths rule originates from employment law, but is applied in this setting to compare the distribution of benefits and/or adverse impacts among various population groups. The four-fifths rule suggests that a selection rate for any racial, ethnic, or gender group that is less than four-fifths or 80 percent of the rate for the group with the highest selection rate will be regarded as evidence of adverse impact. Although it is a “rule of thumb” and not a legal definition, it is a practical way for identifying adverse impacts that require mitigation or avoidance.

If the quantitative results indicate that the service changes in the West End and Route 9 Transit Study Recommended Plan show evidence of adverse effects to minority populations, this could be evidence of a disparate impact and would require additional analysis. A service change that results in a disparate impact may only be implemented if:

- There is a substantial legitimate justification for the proposed service change, and
- There are no alternatives that would have a less disparate impact while still accomplishing the transit provider’s legitimate program goals.

Metro Transit uses a similar approach when comparing the distribution of benefits and adverse impacts for low-income and non-low-income populations. However, when the distributions for low-income populations fall outside of the four-fifths threshold, this is referred to as a disproportionate burden rather than a disparate impact.

Service Equity Analysis Methodology

A geographic information systems (GIS)-based approach was employed in this analysis to measure the location and magnitude of proposed service changes and compare the distribution of impacts and benefits to minority, non-minority, low-income, and non-low-income populations. The analysis consists of five steps:

1. Model current and proposed service levels.
2. Spatially allocate current and proposed transit service levels to population groups based on intersection between service buffer and census block centroid.
3. Calculate the percent change in service between the current and proposed service levels for each census block.
4. Calculate the average percent change in service for all minority/low-income and non-minority/non-low-income populations within the service area buffer for the current and proposed transit service.
5. Determine whether the proposed service will result in disparate impacts by applying the disparate impact and disproportionate burden policies.

This analysis used the number of trips available to each census block as a measure of overall transit service levels. Common improvements to transit service, such as increased frequency and increased span of service, will result in an increase in the number of trips available. The addition of service to a new area will also result in an increase in the number of trips available to the surrounding areas.

Modeling Current and Proposed Service Levels

Two networks were modeled to represent the current service levels and the proposed service levels. The current service level network represents the conditions as of June 2016 for those routes undergoing a proposed service change. The proposed service level network represents the conditions after the service changes proposed in the West End and Route 9 Recommended Plan are implemented in August 2017. A high-level summary of the proposed changes is included below. Note that the models of current and proposed service include the full extents of each route noted below, not just the portion of those routes experiencing service changes.

- **Route 9:** Eliminate service on Cedar Lake Road between Glenwood Avenue and Penn Avenue, on B branch west of Penn Avenue, and on the H branch south of Wayzata Boulevard. Add new peak-only deviation via Cedar Lake Road east of Highway 100 to serve Cedar Trails Condominiums. Reduce span of 20-minute peak period frequency.

- **Route 25:** Eliminate reverse commute trips between Lake Street and downtown Minneapolis. Reroute service from Lake Street/France Avenue to serve Cedar Trails Condominiums via 26th Street, Highway 100 East Service Road, and Cedar Lake Road.
- **Route 604:** Eliminate service between the Louisiana Transit Center and Park Place Boulevard/Wayzata Boulevard. Eliminated service will be replaced by new Route 645. Expand weekday span of service to serve 7 a.m. work starts and 5 p.m. work ends at Methodist Hospital.
- **Route 649:** Eliminate route. Service replaced by Route 9 and new Route 645.
- **Route 675 (New Route 645):** Extend all trips to travel a local routing between Louisiana Transit Center and Park Place Boulevard via Wayzata Boulevard, Zarthan Avenue, and 16th Street.

Assigning Transit Trips to Census Blocks

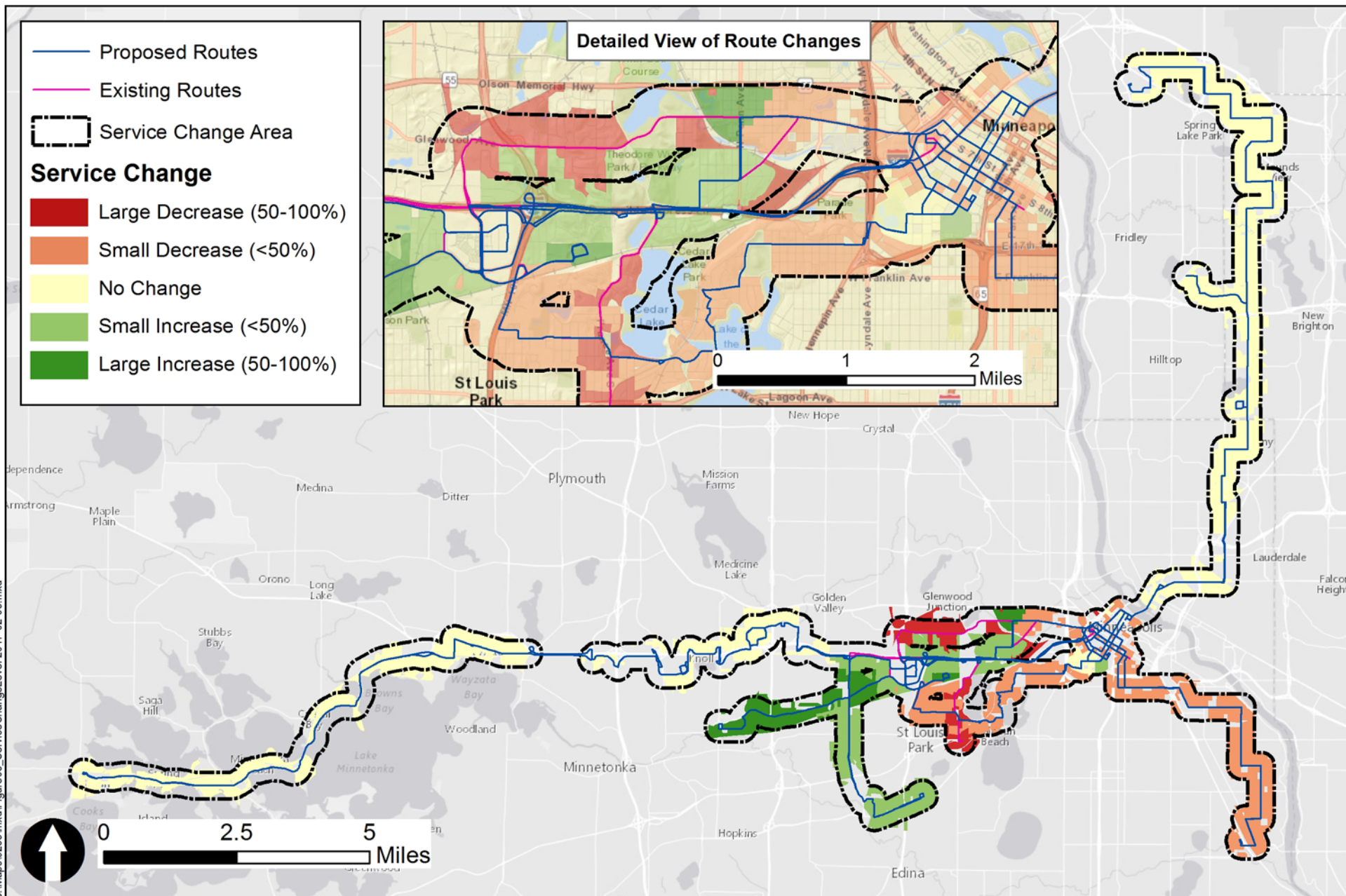
Demographic information is available at the census block level from the 2010 U.S. Decennial Census. However, demographic information is available only at the census block group level from the 2014 American Community Survey (ACS) 5-year Estimates. Census block groups and blocks differ in their geographic makeup. Census blocks are the smallest geographic unit used by the U.S. Census Bureau and are bounded by roadways or water features in urban areas. A census block group is typically made up of a cluster of approximately 40 blocks. Due to their size, it can be difficult to identify location-specific impacts using only block group data.

In order to provide more granularity and detail to the analysis, minority and low-income populations were estimated at the census block level using a combination of 2014 ACS data and 2010 Decennial Census data. The 2014 ACS populations for each block group were allocated to their corresponding blocks using the proportion of total population for that block and block group found in the 2010 Decennial Census. For example, if the 2010 data showed that a block contained 10 percent of the total population within its parent block group, it was assumed that this block contains 10 percent of the minority and low-income populations estimated in the 2014 data. While this approach assumes that the percentage of minority and low-income populations are uniform throughout the block group, it allows for a more precise analysis than using the block groups as a whole. This approach also allows for the identification of zero-population areas within each block group and is consistent with the methodology used in previous Metro Transit Title VI evaluations.

Calculating Change in Service Level by Census Block

The absolute change in service level was calculated for each census block by subtracting the current number of weekly trips available from the proposed number of weekly trips available. After the absolute change was calculated, the percent change in service was calculated by dividing the change in weekly trips by the existing number of weekly trips. To minimize artificial skewing from newly served areas, all percent changes greater than 100 percent, including those that are in calculable due to zero existing service, were adjusted to a maximum value of 100 percent.

The percent change in service level by census block is shown in Figure 3. Areas with zero population are excluded from the figure.



Determining Average Percent Change in Service

The average percent change in service for each target population was calculated by weighting the percent change in each census block by the target population served in that census block. For example, the average percent change in service for minority populations was completed by multiplying each census block's minority population by the percent change in service for that block, summing the results for the blocks in the service change area, and dividing that sum by the total minority population for the blocks in the service change area.

The formula used for these analyses is shown below:

$$Avg \% \Delta = \frac{\sum Population_i \times Percent Change_i}{\sum Population_i}$$

Where:

Population_i = Target population of census block *i*.

Percent Change_i = Percent change in service levels for census block *i*.

In this manner, the weighted percent change was calculated individually for the total population, minority population, non-minority population, low-income population, and non-low-income population. Using this method, the impacts of the service changes for each census block are proportionate to both the demographics of the census blocks and the degree of service level change.

Evaluation of Impacts

In total, 137,325 people live in census blocks within the area that is experiencing a change in service. This population includes 37,640 minority persons, 99,685 non-minority persons, 22,780 low-income persons, and 110,422 non-low-income persons. It should be noted that the ACS cannot determine low-income status for persons residing in group quarters. These include, but are not limited to, populations living in dormitories, group homes, nursing facilities, and correctional facilities. For this reason, the combined total of low-income and non-low-income populations is 133,202, slightly less than that estimated population as a whole. The average percent change in service levels for each target population group is summarized in Table 2.

Table 2. Average Service Level Change by Population Group

Population Group	Population of Service Change Area	Average Percent Service Change	Four-Fifths Threshold (Minimum)
Minority	37,640	-0.7%	-2.9%
Non-Minority	99,685	-3.6%	-
Low-Income	22,780	-1.5%	-2.2%
Non-Low-Income	110,422	-2.8%	-
Total	137,325	-2.8%	-

The proposed service changes result in an overall slight decrease in transit service availability for all population groups. The average individual in the service change area experiences a 2.8 percent decrease in transit service.

The average minority individual in the service change area experiences a 0.7 percent decrease in transit service. This value is higher than the average decrease of 3.6 percent for non-minority individuals. Therefore, this analysis identifies no potential for disparate impact to minority populations as a result of the proposed service changes.

The average low-income individual in the service change area experiences a 1.5 percent decrease in transit service. This value is higher than the average decrease of 2.8 percent for non-low-income individuals. Therefore, this analysis identifies no potential for disproportionate burdens to low-income populations as a result of the proposed service changes.

Summary and Next Steps

Under the guidance of FTA Circular 4702.1B, federal funding recipients such as Metro Transit are required to conduct a Title VI Service Equity Analysis prior to the implementation of any service change that meets the transit agency's major service change threshold. This analysis reviewed the impacts of the proposed service changes outlined in the West End and Route 9 Transit Study Recommended Plan on minority and low-income populations.

This review finds that the recommended service changes will not result in disparate impacts to minority populations or disproportionate burdens to low-income populations. The West End and Route 9 Transit Study Concept Plan was the subject of a public comment period in September 2016, during which Metro Transit received 137 comments from 113 individuals. The implementation date was moved from March to August 2017 in order to more carefully consider community feedback. The West End and Route 9 Transit Study Recommended Plan, including the results of this Service Equity Analysis, will be presented for approval to the Metropolitan Council in April 2017.