



ROCHESTER
public transit

Transit Development Plan 2017-2021

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SPECIAL EXCERPT: TITLE VI ANALYSIS



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Title VI of the Civil Rights Act of 1964 ensures that public transportation and other FTA-funded services to the public are provided without regard to race, color and national origin. To help us verify that, FTA issued Circular 4702.1A in 2007, which requires recipients of FTA funds to submit a Title VI Program every three years. Chapter IV of the circular explains the policies, practices and procedures that FTA recipients must document to constitute a Title VI Program. The full circular can be found online at: www.fta.dot.gov/circulars Please pay special attention to the requirements in Chapter IV.

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16 Title VI Analysis

As part of the 2017-2021 Transit Development Plan (TDP), Rochester Public Transit has proposed service changes to a number of its existing and several new fixed bus routes. At full build-out, in year five of the TDP, there would be 28 routes operating weekdays, evenings, and weekends. These changes will be referred to herein as the 5-Year Service Plan. Such would represent an approximate doubling of Rochester Public Transit revenue hours and include adding service to and restructuring current routes and introducing service to previously unserved areas. The 5-Year Service Plan would begin taking effect in 2017, with additional iterative service changes the four years following.

For transit agencies operating 50 or more fixed-route vehicles in peak-hour service in urbanized areas with a population of 200,000 or more, the Federal Transit Administration (FTA) requires the completion of Title VI Service Equity Analyses for proposed service changes that meet the agency's major service change threshold. Rochester Public Transit is currently below both of the thresholds requiring this analysis. However, due to the scale and scope of the proposed changes, the City of Rochester determined that a Service Equity Analysis would be appropriate to ensure that the benefits and burdens of the proposed changes are shared equitably between all population groups.

16.1 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.

16.1.1 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 (the “service change area”) is shown in Table 16-1.

16.1.2 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 guidelines are based on household size and the number of related children less than 18 years of age.

However, FTA Circular 4702.1B also allows for low-income populations to be defined using other established thresholds that are at least as inclusive as those developed by DHHS. Correspondingly, this analysis uses 2015 U.S. Census Bureau poverty thresholds, a more sophisticated measure of poverty that takes into account not only family size and the number of related children present, but also, for one- and two-person units, whether elderly or not. The U.S. Census Bureau’s poverty thresholds are used for statistical purposes, while DHHS’s poverty guidelines are used for administrative purposes.¹² The U.S. Census Bureau 2015 poverty thresholds by family size and presence of related children under 18 years are shown in Figure 16-1.

The distribution of low-income and non-low-income populations within one-quarter mile of the existing and proposed route alignments (the “service change area”), based on the above 2015 poverty thresholds, is shown in Figure 16-2.

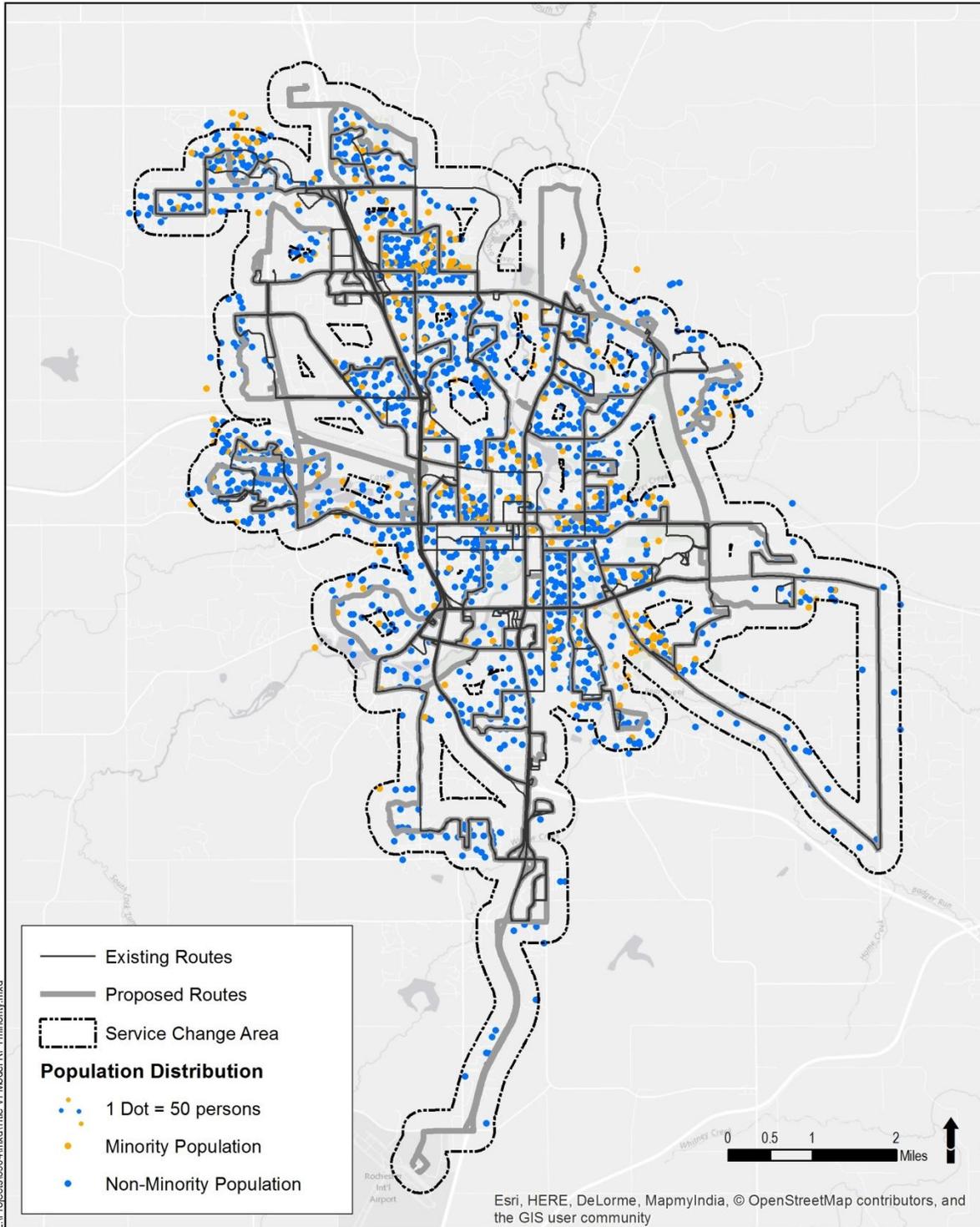
¹² The distinctions between poverty thresholds and poverty guidelines are described further at <https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty#programs>; and <http://www.irp.wisc.edu/faqs/faq1.htm>.

Table 16-1: U.S. Census Bureau Poverty Thresholds (in Dollars), 2015

Size of family unit	Weighted average poverty thresholds	Related children under 18 years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	12,082									
Under 65 years	12,331	12,331								
65 years and over	11,367	11,367								
Two people	15,391									
Householder under 65 years	15,952	15,871	16,337							
Householder 65 years and over	14,342	14,326	16,275							
Three people	18,871	18,540	19,078	19,096						
Four people	24,257	24,447	24,847	24,036	24,120					
Five people	28,741	29,482	29,911	28,995	28,286	27,853				
Six people	32,542	33,909	34,044	33,342	32,670	31,670	31,078			
Seven people	36,998	39,017	39,260	38,421	37,835	36,745	35,473	34,077		
Eight people	41,029	43,637	44,023	43,230	42,536	41,551	40,300	38,999	38,668	
Nine people or more	49,177	52,493	52,747	52,046	51,457	50,490	49,159	47,956	47,658	45,822

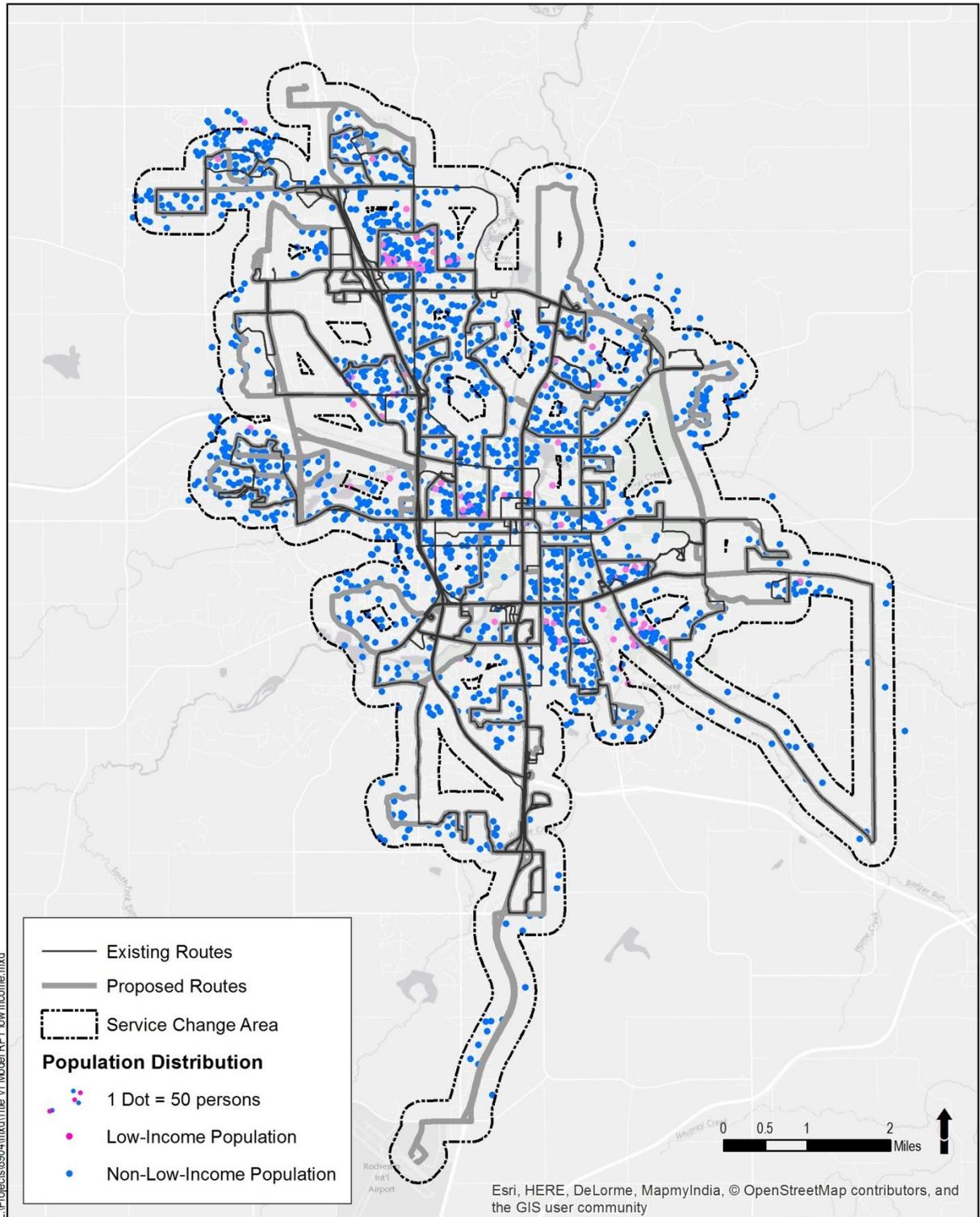
Source: U.S. Census Bureau, 2015.

Figure 16-1: Distribution of Minority and Non-Minority Population



SRI Consulting Group, Inc. **Distribution of Minority and Non-Minority Population**
 Transit Development Plan: 5-Year Service Plan
 Rochester Public Transit

Figure 16-2: Distribution of Low-Income and Non-Low Income Population



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Distribution of Low-Income and Non-Low-Income Population

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16.2 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 area 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 quarter-mile service area buffer for the current and proposed transit service.
5. Compare the average percent changes for each population group to determine the relative level of impact.

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.

16.2.1 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 January 2017. The proposed service level network represents the conditions after the service changes proposed in the 5-Year Service Plan are fully implemented at the end of 2021.

16.2.2 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 2015 American Community Survey (ACS) 5-year Estimates. Census block groups and census 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 2015 ACS data and 2010 Decennial Census data. The 2015 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

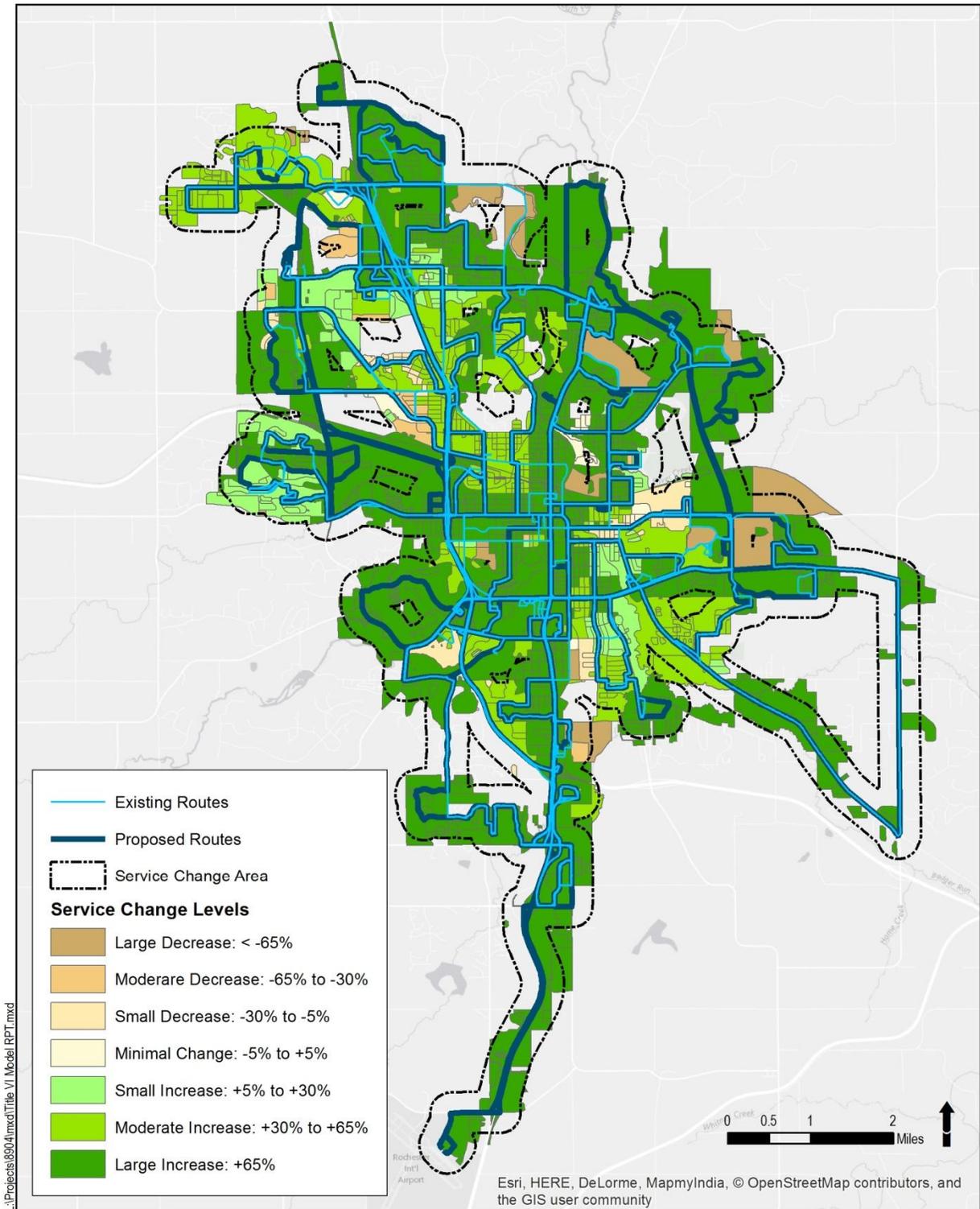
population within its parent block group, it was assumed that this block contains 10 percent of the minority and low-income populations estimated in the 2015 data. While this approach assumes that the percentage of minority and low-income populations are uniform throughout the block group, it allows 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.

16.2.3 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 incalculable 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 16-3. Areas with zero population are excluded from the figure. Moreover, census blocks whose centroid does not intersect the service area are not shown.

Figure 16-3: Service Level Change Impacts



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Change in Existing Level of Service

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Rochester Public Transit

16.2.4 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.

16.2.5 Comparing the Change in Service for each Population Group

The final step of the evaluation process was to calculate a comparison index by taking the ratio between the average percent change for minority/low-income populations and the average percent change for non-minority/non-low-income populations. In this case, a comparison index value below 1.0 indicates that minority/low-income populations experience a smaller increase in service than non-minority/non-low-income populations.

The determination of the threshold at which a comparison index value shows a potential disparate impact or disproportionate burden is defined individually by each transit agency. As noted previously, Rochester Public Transit does not meet the thresholds requiring the establishment of this threshold. However, many transit agencies across the country use a variation of the "four-fifths rule." This generally states that the benefits distributed to the minority/low-income populations should be at least 80 percent of the benefits distributed to the non-minority/non-low-income populations. Using this approach as guidance, a comparison index of 0.80 or less was used as the threshold for potential disparate impacts or disproportionate burdens.

16.2.6 Evaluation of Impacts

In total, 99,154 people live in census blocks within the area that is experiencing a change in service. This population includes 21,781 minority persons, 77,373 non-minority persons, 10,517 low-income persons, and 86,517 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 97,034, slightly less than that estimated population as a whole. The average percent change in service levels for each target population group and a comparison index showing the relative change between groups is summarized in Table 16-2.

Table 16-2: Average Service Level Change by Population Group

Population Group	Population of Service Change Area	Average Percent Service Change	Comparison Index
Minority	21,781	64.0%	0.99
Non-Minority	77,373	64.8%	
Low-Income	10,517	63.2%	0.97
Non-Low-Income	86,517	65.1%	
Total	99,154	64.6%	-

The proposed service changes result in an overall increase in transit service availability for all population groups. The average individual in the service change area experiences a 64.6 percent increase in transit service.

The average minority individual in the service change area experiences a 64.0 percent increase in transit service. This value is slightly lower than the average increase of 64.8 percent for non-minority individuals, resulting in a comparison index of 0.99. This result is higher than the common threshold value of 0.80. 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 63.2 percent increase in transit service. This value is lower than the average increase of 65.1 percent for non-low-income individuals, resulting in a comparison index of 0.97. This result is higher than the common threshold value of 0.80. Therefore, this analysis identifies no potential for disproportionate burdens to low-income populations as a result of the proposed service changes.

16.3 Summary and Next Steps

Federal funding recipients such as Rochester Public Transit are required to follow the guidance and requirements under FTA Circular 4702.1B to ensure an equitable distribution of benefits and burdens to protected and non-protected populations groups. While the completion of service equity analyses for major service changes are not strictly required for Rochester Public Transit, it was determined that it would be appropriate to conduct a service equity analysis for the proposed changes outlined in the 5-

Year Service Plan. This review finds that the proposed service changes will not result in disparate impacts to minority populations or disproportionate burdens to low-income populations based on thresholds commonly used by other transit agencies.