HEALTH IMPACT ASSESSMENT

MARCH 9, 2020

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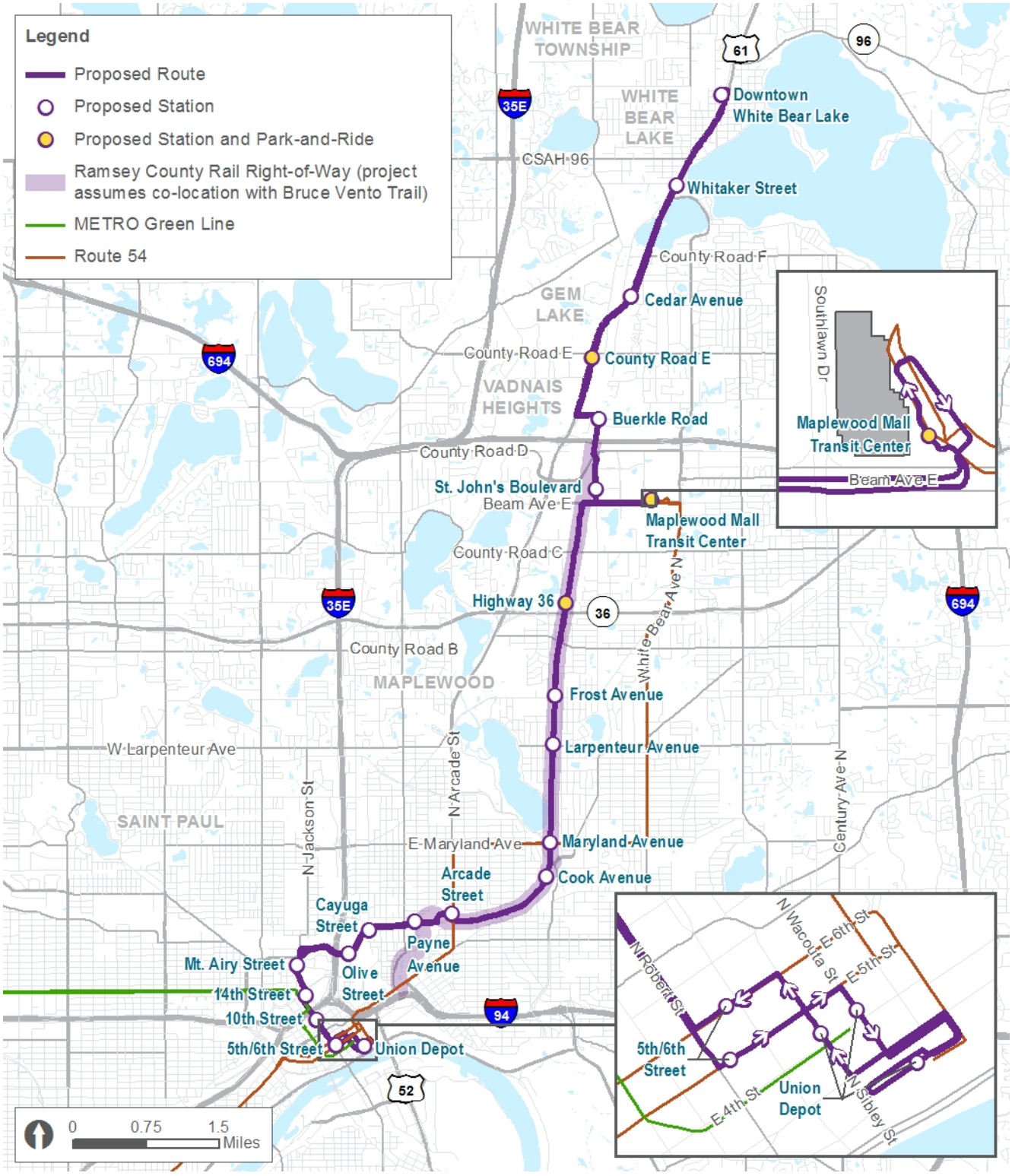


1. INTRODUCTION

The Rush Line Bus Rapid Transit (BRT) Project is a proposed 14-mile transit route connecting Union Depot in Saint Paul to the east side of Saint Paul and the communities of Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake, as shown in Figure 1. The Rush Line BRT Project is led by Ramsey County. Key project partners are municipalities, Metro Transit, the Metropolitan Council and the Minnesota Department of Transportation.

In early 2018 the Rush Line BRT Project entered the environmental analysis phase, which is the second phase of the federal bus rapid transit project process shown in Figure 2. This phase is expected to last through the middle of 2020. The purpose of the environmental analysis phase is to advance the project's design while seeking to maximize the potential benefits of the project and minimize potential social and environmental impacts along the route. During this phase, an Environmental Assessment will be completed.

Figure 2: Federal Transit Administration Process

Though the Environmental Assessment will assess impacts to health and the environment including noise, visual changes and traffic safety, a Health Impact Assessment can provide an in-depth exploration of a range of additional health impacts (positive and negative) potentially associated with the Rush Line BRT Project. A Health Impact Assessment acts as a tool that assists policymakers and other decision-makers in leveraging decisions to improve public health. These assessments provide an opportunity for communities to be involved in considering and addressing potential health impacts of plans, policies and projects (Oregon Health Authority, 2018).

1.1. HEALTH IMPACT ASSESSMENT FOR THE RUSH LINE BRT PROJECT

Prior to the initiation of the environmental analysis phase, Ramsey County determined that a health impact assessment would be of value to the project to maximize health benefits of the transit investment and promote health equity. A Health Impact Assessment is a combination of procedures, methods and tools by which a project or policy may be evaluated for its potential effects on a population and the distribution of those effects within the population. Health Impact Assessments may be used to improve the quality of decision-making through recommendations that aim to increase anticipated positive health impacts and minimize expected negative ones. The length of time to complete a Health Impact Assessment, and the methodology applied to the process, can differ considerably depending on time and resources available and timing of critical decisions. Within each type, there may be differences in approach that are reflective of the local context as well as available data and resources. The three types of Health Impact Assessment (rapid, intermediate and comprehensive) are summarized in Table 1. Ramsey County selected a Rapid Health Impact assessment for the Rush Line BRT Project based on available resources and the expected timeline for the Health Impact Assessment.

Table 1: Health Impact Assessment Spectrum

Rapid	Intermediate	Comprehensive
• Short timeline. • Tabletop Health Impact Assessment. • Based on literature review. • Some public engagement. • Primary research as needed. • Foundation for future analysis.	• Tabletop/partially engaged Health Impact Assessment. • Literature review and primary data collection. • Moderate public engagement. • Primary research: moderate.	• Long timeline. • Fully-engaged Health Impact Assessment. • Literature review and primary data collection. • Full public engagement. • Primary research: extensive.

This Health Impact Assessment evaluates existing demographic conditions in the study area, examines four areas where Rush Line BRT can positively affect health, makes recommendations for the project to achieve positive health outcomes and establishes a framework for monitoring the effect of the Health Impact Assessment on the project and its decision-making process.

The purpose of this Health Impact Assessment is to:

- Identify health indicators that may be affected by the Rush Line BRT Project.
- Identify potential adverse health impacts of the project, and options and strategies to minimize or mitigate potential adverse health impacts through plans, policy or design.
- Identify options and strategies to maximize benefits associated with the project through plans, policy or design.

The primary goals for this Health Impact Assessment are to:

- Create a tool to help educate policymakers and community members on the project's ability to achieve social equity, environmental and economic development goals.
- Build capacity among planners, engineers and public health officials in achieving positive health outcomes throughout the corridor.

Rush Line BRT Project staff coordinated with existing project advisory committees to streamline input in determining the scope of this document, as outlined in Section 2. The Health Impact Assessment will be used to inform decisions throughout the environmental analysis phase and in future phases, including project development, where the project is further refined. While there is no standard formula for a Health Impact Assessment, best practices provide a six-step framework for the process (Early-Alberts, Hamberg, & Haggerty, 2015), which are illustrated in Figure 3:

1. Screening.
    a. Determines the need for and potential value of a Health Impact Assessment.

2. Scoping.
    a. Identifies potential health impacts for study.

3. Assessment.
    a. Examines qualitative and quantitative data to evaluate the magnitude of anticipated benefits and impacts.

4. Recommendations.
    a. Presents evidence-based strategies for maximizing expected benefits as well as mitigation measures and strategies for any anticipated negative impacts.

5. Reporting.
    a. Delivers results to the general public, decision-makers and other stakeholders. The ultimate goal of reporting is to distribute a summary of the Health Impact Assessment in order to inform the decision-making process, which may require several different documents tailored to reach all audiences.

6. Monitoring.
    a. Evaluates the effects of the Health Impact Assessment on policy, planning and design decisions and critically reviews the Health Impact Assessment process.

Figure 3: Six-Step Framework for Health Impact Assessments

1.2. HEALTH INDICATORS

A health indicator is defined by the Centers for Disease Control and Prevention as a measurable characteristic that may describe:

- The health of a population (including life expectancy, mortality and disease incidence or prevalence);
- Determinants of health, including health behaviors, health risk factors, physical environments and socioeconomic environments; or
- Healthcare access, cost, quality and use.

Indicators may be defined for a specific population, place, political jurisdiction or geographic area. Health indicators commonly used in evaluating community development and infrastructure projects include physical and environmental factors such as health services and air quality within the study

area, along with demographic indicators such as age, race, and income. This Health Impact Assessment examines eleven health indicators to establish an understanding of the overall baseline health in the study area, as described in Section 4.

1.3. DETERMINANTS OF HEALTH

Determinants of health are commonly considered factors that determine a person's state of health. These factors can be biological, socioeconomic, psychosocial, behavioral or social in nature (World Health Organization, 2018). Primary determinants of health can be, but are not limited to, the following:

- Socioeconomic status.
  - Compared to more affluent people, people with low incomes, wealth and social status have less access to healthcare, health insurance and healthy food; typically have a lower level of educational attainment; experience greater levels of stress; and face other barriers, which can lead to significant disparities in both mental and physical health that ultimately affect life expectancy (American Psychological Association, 2017).
- Social support networks.
  - Many reports have indicated the importance of social support networks in maintaining physical and mental health. Social support has been seen to increase resilience to stress and overall well-being for individuals with genetic predispositions to stress and those experiencing environmental and social stress or trauma (Ozbay, et al., 2007). Individuals with low socioeconomic status may not obtain the same benefits of social support as those of a higher socioeconomic status, thus moderating the relationship between health and social support (Fagundes, et al., 2012)
- Employment and working conditions.
  - People with low incomes, wealth and social status are more likely to experience unhealthy employment and working conditions, contributing to health disparities as compared to more affluent people. Unhealthy employment and working conditions are those that increase exposure to potentially health-harming physical and psychosocial stressors. These include unsafe working environments and low wages which have been shown to negatively impact health over time (Burgard & Lin, 2013).
- Physical living environments.
  - Safe water, clean air and safe, comfortable housing all contribute to good health. Housing improvements positively impact mental and general health (Thomson, Thomas, Sellstrom, & Petticrew, 2009), while housing improvements that may lead to rising rent and displacement can negatively impact health (World Health Organization Health Evidence Network, 2005). People with low incomes, wealth and social status face greater exposure to air pollution (Bell & Ebisu, 2012) and are more likely to live in inadequate housing (Jacobs, 2011).
- Education.
  - Education plays a critical role in social and economic development and is a key indicator of the overall health of a population. Prevalence of chronic disease is higher,

and life expectancy lower, for individuals without a high-school education (Zimmerman, Woolf, & Haley, 2015). Education can create opportunities for better health by increasing income and access to resources, promoting healthy behaviors, forming healthier neighborhoods and by providing social and psychological benefits (Center on Society and Health, 2015).

- Biology and genetics.
  - Biology and genetics, including a person's age and biological sex, can drastically affect an individual's risk of being impacted by a variety of conditions including cardiovascular disease, hepatitis, diabetes and sickle cell anemia. For instance, cardiovascular disease is more prevalent among adult males than adult females, and young children are more susceptible to certain afflictions while older adults are prone to others (World Health Organization, 2010). Still, individual biology and genetics have only a small effect on the health of a population (Tarlov, 1999).
- Health services.
  - Access to comprehensive and quality healthcare services is crucial in the promotion and maintenance of health: to prevent and manage disease, to promote healthy habits and diets, to reduce premature death and to achieve health equity. Health equity has been defined as the "fair distribution of health determinants, outcomes and resources within and between segments of the population, regardless of social standing" (Brennan Ramirez, Baker, & Metzler, 2008).
  - Barriers to accessing health services, such as lack of transportation and culturally competent care, high cost of services and the lack of health services within a given area, all negatively impact health. Often, access to care disproportionately varies based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity and residential location (Agency for Healthcare Research and Quality, 2016).
- Personal health practices and coping skills.
  - Individual behavior can dramatically affect a person's health. Individual behavior determinants include diet, physical activity, alcohol use and smoking (Healthy People 2020, 2010). Factors influencing socioeconomic status also have an effect on personal health practices, including education, family background and social networks (Cutler & Lleras-Muney, 2010).

1.4. TRANSPORTATION AND HEALTH

The Transportation and Health Tool developed by the United States Department of Transportation aims to help users of the tool understand the interplay between transportation and health. According to the Department of Transportation, there are five primary pathways through which transportation influences health (U.S. Department of Transportation, 2015):

- Active transportation.
  - Research has found that levels of physical activity tend to be higher among transit users than among non-transit users because most people who use transit walk to or from stops and stations or make other trips by foot throughout the day (U.S.

Department of Transportation, 2015f). For these reasons, quality pedestrian and bicycle facilities are a critical aspect of a robust and successful transit system.

- Safety.
  - Motor vehicle crashes are a leading cause of unintentional death in the United States. In 2016 alone, more than 37,000 people were killed in motor vehicle crashes, comprising approximately one quarter of all accidental deaths for the year (National Highway Traffic Safety Administration, 2017) (National Center for Health Statistics, 2017). An additional 3.1 million people were injured in motor vehicle crashes in 2016 (National Highway Traffic Safety Administration, 2018). Transit agencies can play a role in reducing these deaths, as increased transit ridership is associated with decreases in traffic fatalities (American Public Transportation Association, 2018). Enhanced accessibility of desired destinations enables people to eliminate some motor vehicle trips and lessen their risk of being involved in a collision (U.S. Department of Transportation, 2015).
- Clean air.
  - In 2016, motor vehicles comprised nearly 25 percent of greenhouse gas emissions in the United States (Environmental Protection Administration Office of Transportation and Air Quality, 2018). These emissions impact human health, increasing risk for afflictions such as heart disease, lung cancer and asthma (World Health Organization, 2018). Transportation agencies can lessen pollutant emissions by developing and enhancing less-polluting travel options including frequent, high-quality public transportation and using “green fleet vehicles” such as hybrid and electric buses (U.S. Department of Transportation, 2015a).
- Connectivity.
  - Access to goods and services is crucial to improving and maintaining health. In an inclusive transportation system, access and accessibility depend on a well-connected, multimodal transportation system that enables people to “reach everyday destinations safely, reliably and conveniently” (U.S. Department of Transportation, 2015b). Measures that enhance connectivity include improved pedestrian and bicycle infrastructure and high-quality public transportation, which may have features such as signal prioritization and well-maintained, comfortable bus shelters.
- Equity.
  - Negative health effects of the transportation system and substandard infrastructure tend to have the greatest impact on vulnerable members of the community, including people of color, people with low incomes and wealth and people with disabilities (U.S. Department of Transportation, 2015c). Increasing public transportation service and addressing housing affordability are two strategies that would be expected to improve health outcomes in these areas.

1.5. HEALTH EQUITY

Health impact assessments provide an opportunity to support health equity in communities. The Minnesota Department of Health defines health equity as the opportunity for “all persons, regardless

of race, income, creed, sexual orientation, gender identification, age or gender have the opportunity to be as healthy as they can – to reach their full 'health potential'" (Minnesota Department of Health, 2014). Public health experts across the U.S. recognize that achieving health equity necessitates eliminating barriers to health such as poverty and racism and the consequences resulting from discrimination, including lack of access to quality education, housing, jobs and health care. Health inequity leads to disparities in health outcomes (Boston Public Health Commission, 2019).

The following sections provide an overview of health disparities in Minnesota and the United States as a whole, as well as existing demographic conditions in the study area. Though health data are typically not available below the county level, many of the demographic characteristics associated with health disparities are available at the block group level, allowing for the application of state- and nationwide trends to make inferences about health disparities within the study area.

1.5.1. Health Disparities

According to the Minnesota Department of Health Center for Health Equity, Minnesota ranks among the healthiest states in the nation, but has some of the greatest health disparities in the country (Minnesota Department of Health, 2014). The Minnesota Department of Health attributes these health disparities to the fact that Minnesota has significant inequalities between white people and people of color and Native Americans in areas such as income, education and homeownership.

Where people live, work and play also influences their health and well-being. Poor air quality can impact health and quality of life, especially for vulnerable populations in large metropolitan areas. This challenge is underscored by a report from the Minnesota Department of Health, which states that "asthma hospitalization rates among children living in the Twin Cities metropolitan area are 54 percent higher than among children living in greater Minnesota" (Minnesota Department of Health, 2014a).

Additionally, though people of color and people with low incomes tend to own fewer vehicles (National Equity Atlas, 2017), drive less (Von Haefen, Bento, Goulder, & Jacobsen, 2009) and use public transit more often than other groups (American Public Transportation Association, 2017), they are affected by poor air quality more so than white people and people with higher incomes. Communities of color and people with low incomes experience greater exposure to automotive and other forms of pollution than white communities (Bael, et al., 2015), and are disproportionately impacted by this pollution (Mikati, Benson, Luben, Sacks, & Richmond-Bryant, 2018).

A study of health inequities in the Twin Cities showed that though the life expectancy gap between the most and least affluent neighborhoods has narrowed, disparities in health outcomes continue (Wilder Research, 2012). The report states that "poorer health outcomes continue to be tied to both poverty and lower levels of education."

Several organizations and agencies are involved in efforts to improve the health of Minnesotans. In Ramsey County, one example of these efforts includes the Ramsey County 2014-2018 Community Health Improvement Plan. This plan identifies community priorities, goals and strategies to improve the health of Ramsey County residents. The vision for this work is a "healthy, equitable community for all people to live, work and play" (Saint Paul - Ramsey County Public Health, 2014). Integrating health in all policy is one of the overarching goals to "create social and physical environments that promote equity and good health for all people in Ramsey County".

1.5.2. Existing Demographic Conditions

The Rush Line BRT route stretches for 14 miles from Union Depot in downtown Saint Paul traveling north through the east side of Saint Paul and the communities of Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake. The diversity within and between these

municipalities influences public health in each community and in the study area. For this analysis, the study area is defined as all census block groups that intersect with or lie within a half-mile radius of the planned stations. For analysis purposes, the study area is split into four segments, shown in Figure 4:

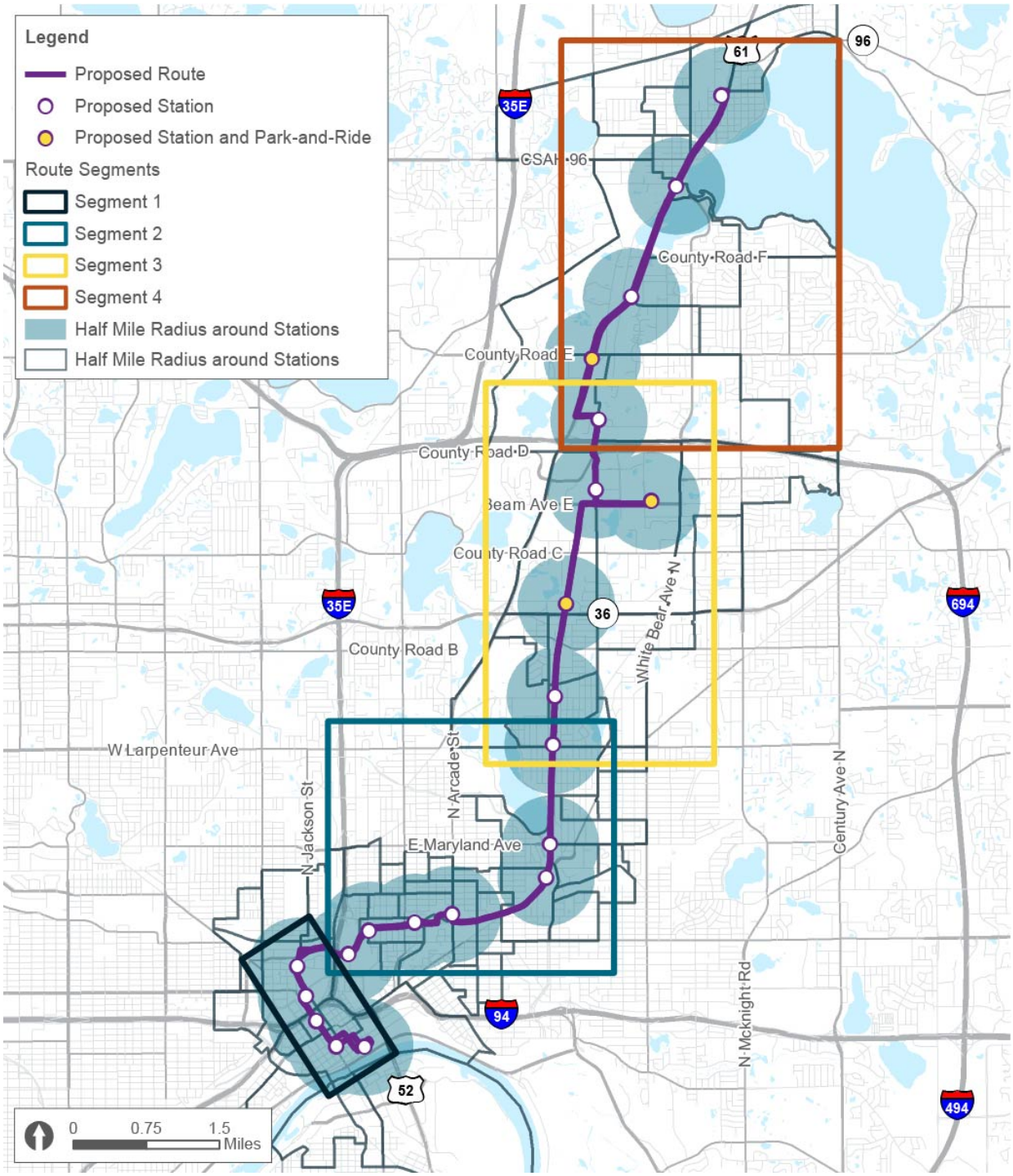
- Segment 1: Union Depot station to Mt. Airy station, encompassing downtown Saint Paul and the capitol area.
- Segment 2: Olive Street station to Larpenteur Avenue station, encompassing the East Side Saint Paul portion of the route.
- Segment 3: Larpenteur Avenue station to Buerkle Road station, encompassing parts of Maplewood, White Bear Township and Vadnais Heights.
- Segment 4: Buerkle Road station to Downtown White Bear Lake station, encompassing areas of White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake.

To gain a greater understanding of baseline health and to identify potential health disparities that may exist in the study area, data on the following health indicators were examined:

- Race and ethnicity.
- Vehicle ownership.
- Poverty rate.
- Population with limited English proficiency.
- Age distribution.
- Population with a disability.
- Educational attainment.
- Unemployment.
- Household income.
- Health services.
- Senior communities.

The source for this analysis is the 2012-2016 American Community Survey 5-year estimates dataset and is accurate to the census block group level. Because there is some overlap between segments, some parts of the population may be double counted.

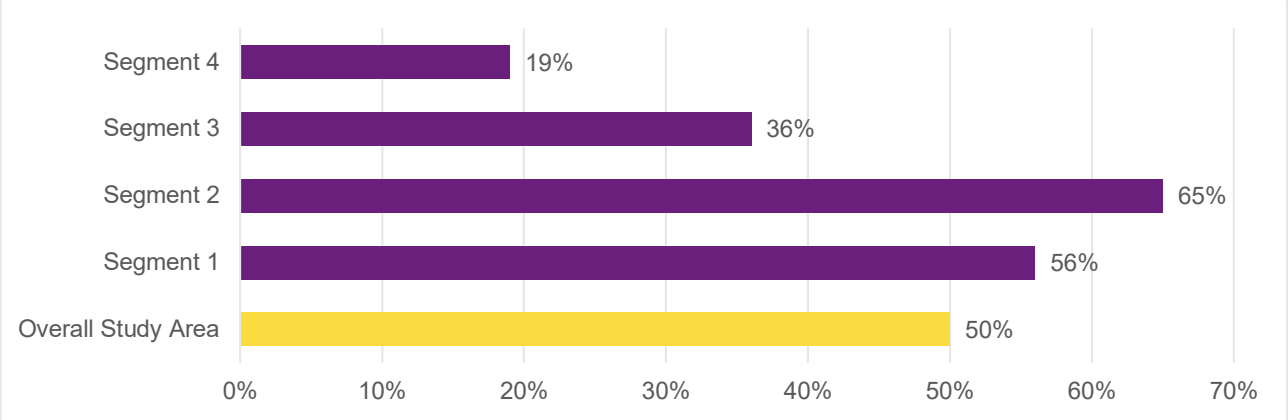
Figure 4: Rapid Health Impact Assessment Study Area



Figures 5 through 25 highlight demographic conditions in each segment of the study area, as well as in the study area overall. These demographics are also summarized in Table 2 on page 17.

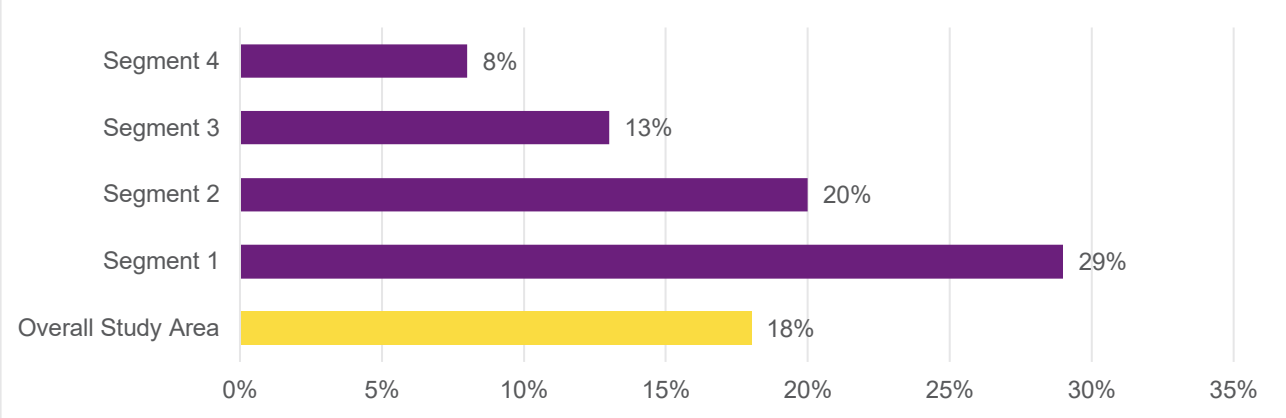
- People of color comprise a substantially greater proportion of the population in the southern portion of the study area than the northern portion, with higher percentages in Segments 1 (56%) and 2 (65%) than in Segment 4 (19%).

Figure 5: Percent People of Color in the Study Area by Segment



- Household vehicle ownership is higher in northern portions of the study area; the proportion of households with no vehicles is substantially higher in Segment 1 (29%) than in Segment 4 (8%).

Figure 6: Percent Households without a Vehicle by Segment



- The proportion of people experiencing poverty is highest in southern portions of the study area, including areas closest to downtown Saint Paul. The proportion of people experiencing poverty in Segment 1 of the study area is nearly 30 percent. Similarly, the average median household income (calculated as the average of the median household income for each block group within a segment) is lowest in Segment 1 and highest in Segment 4.

Figure 7: Percent of Population Experiencing Poverty by Segment

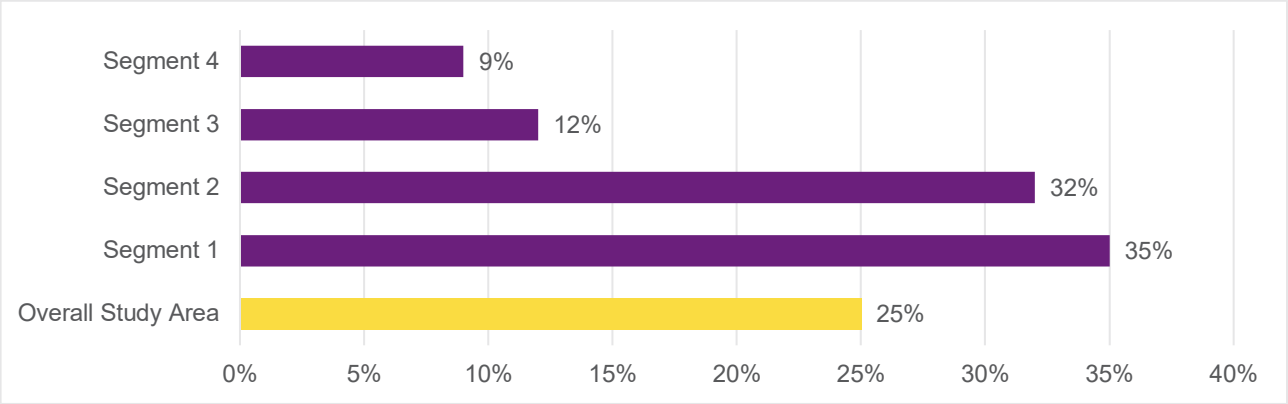
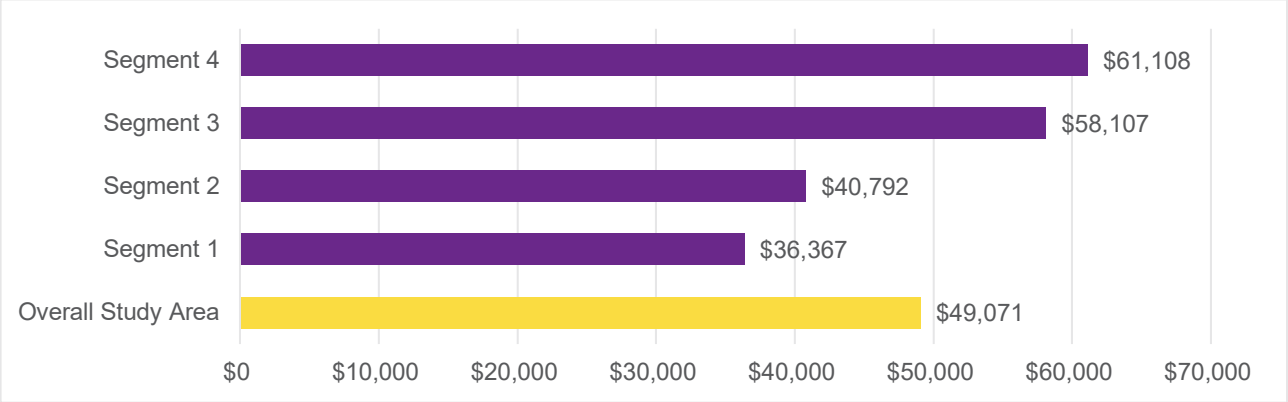
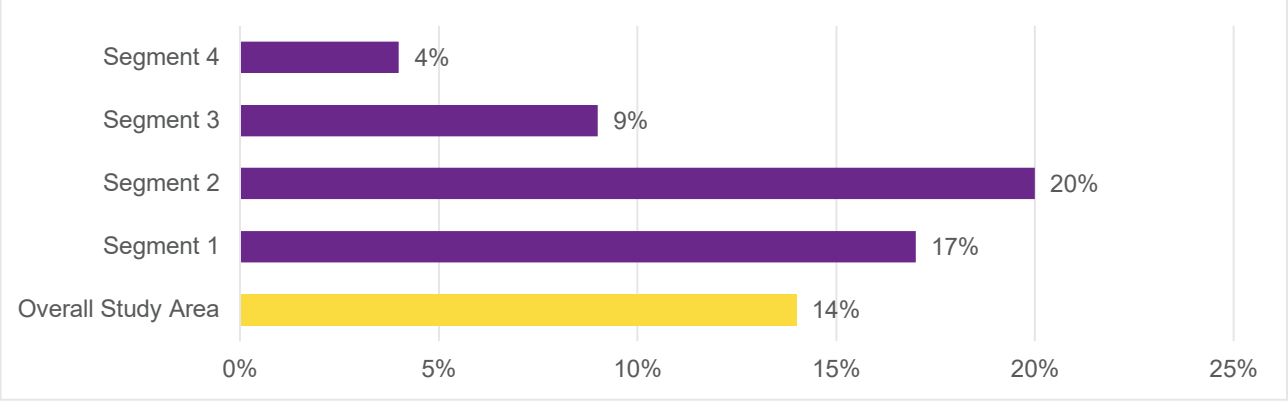


Figure 8: Average Median Household Income by Segment



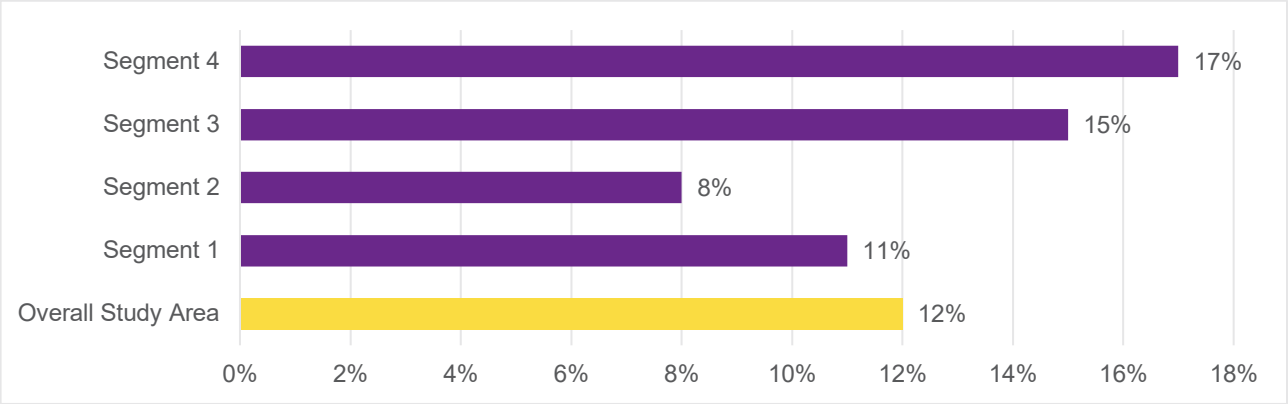
- The proportion of people with limited English proficiency is substantially higher in Segments 1 and 2, where between 17 and 20 percent of individuals speak limited English, compared to 4 percent in Segment 4.

Figure 9: Percent Population with Limited English Proficiency by Segment



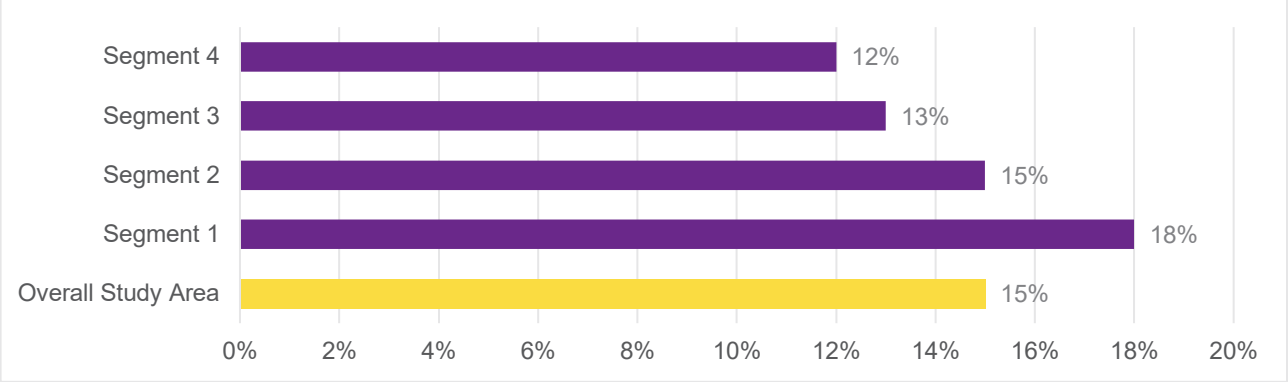
- The proportion of older residents is highest in northern portions of the study area, including Segments 3 and 4, where between 15 and 17 percent of individuals are over 65 years of age, compared to 8 percent in Segment 2.

Figure 10: Percent Population over Age 65 by Segment



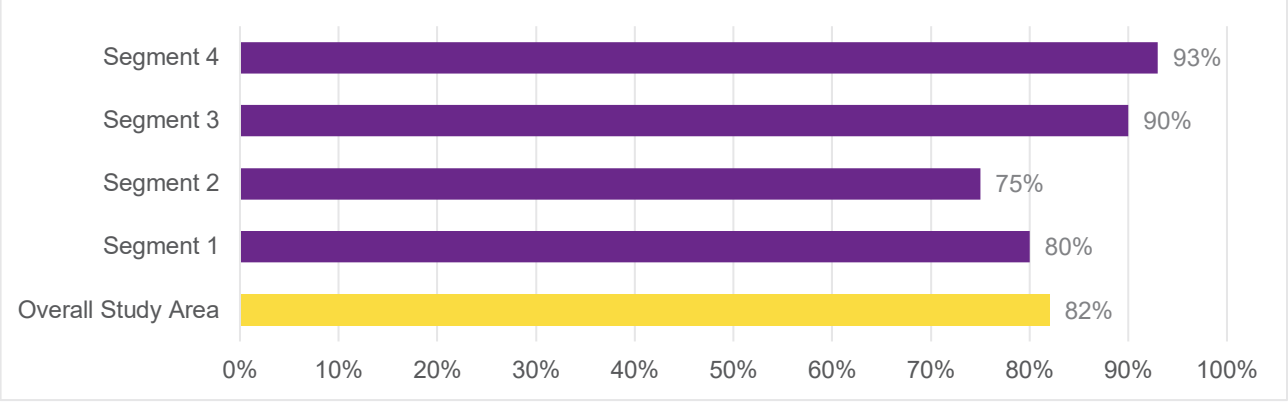
- The proportion of residents with a disability is higher in southern portions of the study area, including Segment 1, where an estimated 18 percent of individuals have a disability, as shown in Figure 11.

Figure 11: Percent Population with a Disability by Segment



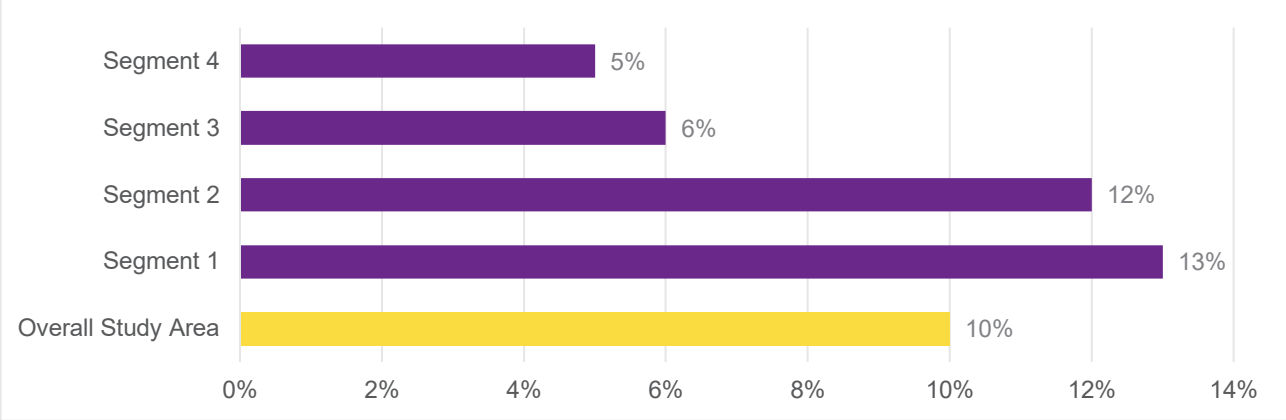
- Educational attainment varies across the study area. Segment 2 has the lowest percentage of adults with at least a high school diploma, at 75 percent, compared to at least 90 percent Segments 3 and 4, as shown in Figure 12.

Figure 12: Percent Population with at Least a High School Diploma by Segment



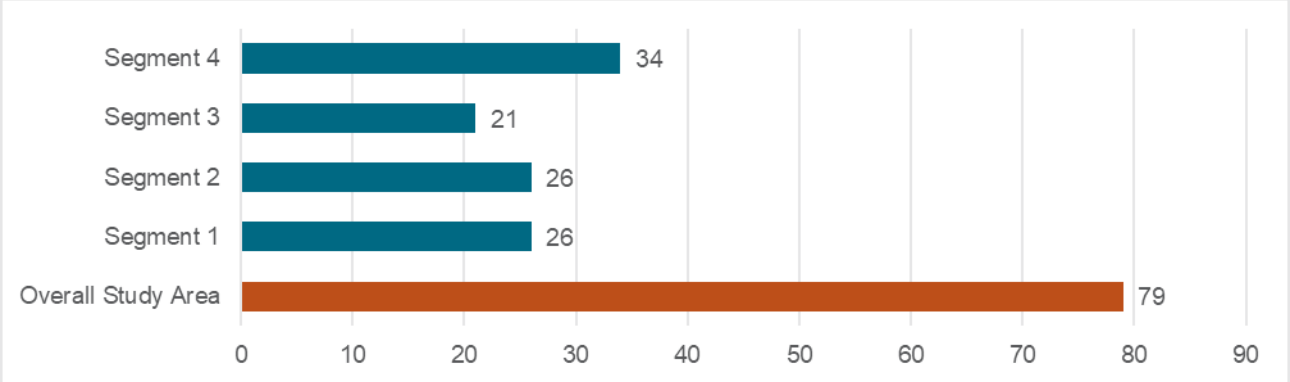
- Unemployment rates are highest in southern portions of the study area, with Segments 1 and 2 each having unemployment rates more than double those in Segments 3 and 4.

Figure 13: Percent Labor Force That is Unemployed



- The northern segments of the study area have more health services including hospitals, health clinics and dentists than the southern segments.

Figure 14: Health Services by Segment



- There are more senior communities in the northern segments of the study area than the southern segments.

Figure 15: Senior Communities by Segment

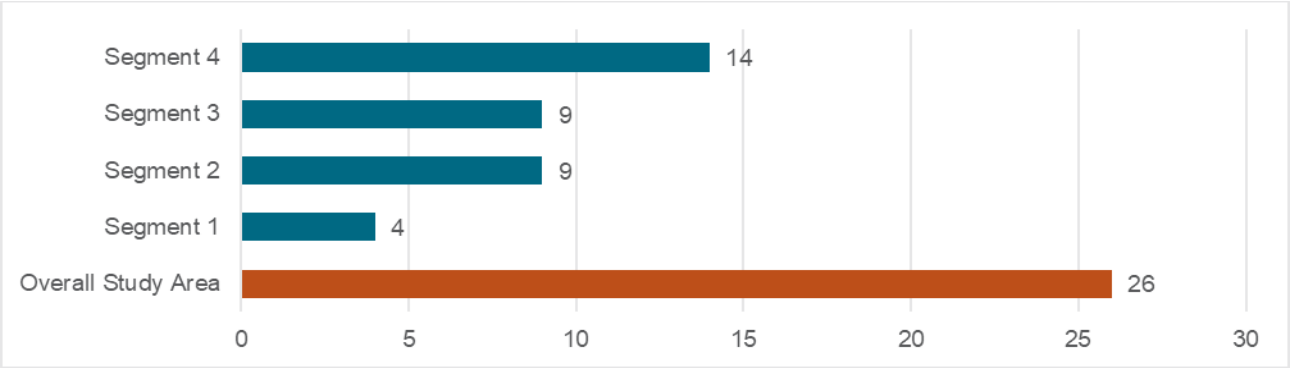


Table 2: Demographic Characteristics of the Study Area

Characteristic	Overall Study Area	Segment 1	Segment 2	Segment 3	Segment 4
Percent People of Color	50%	56%	65%	36%	19%
Percent Households with No Vehicles	18%	29%	20%	13%	8%
Percent Population Experiencing Poverty	25%	35%	32%	12%	9%
Percent Population that Speaks English “Not Well” or “Not at All”	14%	17%	20%	9%	4%
Percent Population Age 65 or Older	12%	11%	8%	15%	17%
Percent Population with a Disability	15%	18%	15%	13%	12%
Percent Population with at least High School Diploma	82%	80%	75%	90%	93%
Percent Population that is Unemployed	10%	13%	12%	6%	5%
Average Median Household Income	$49,071	$36,367	$40,792	$58,107	$61,108
Health Services in the Study Area	79	26	26	21	34
Senior Communities in the Study Area	26	4	9	9	14

Figure 16: Percent People of Color by Block Group

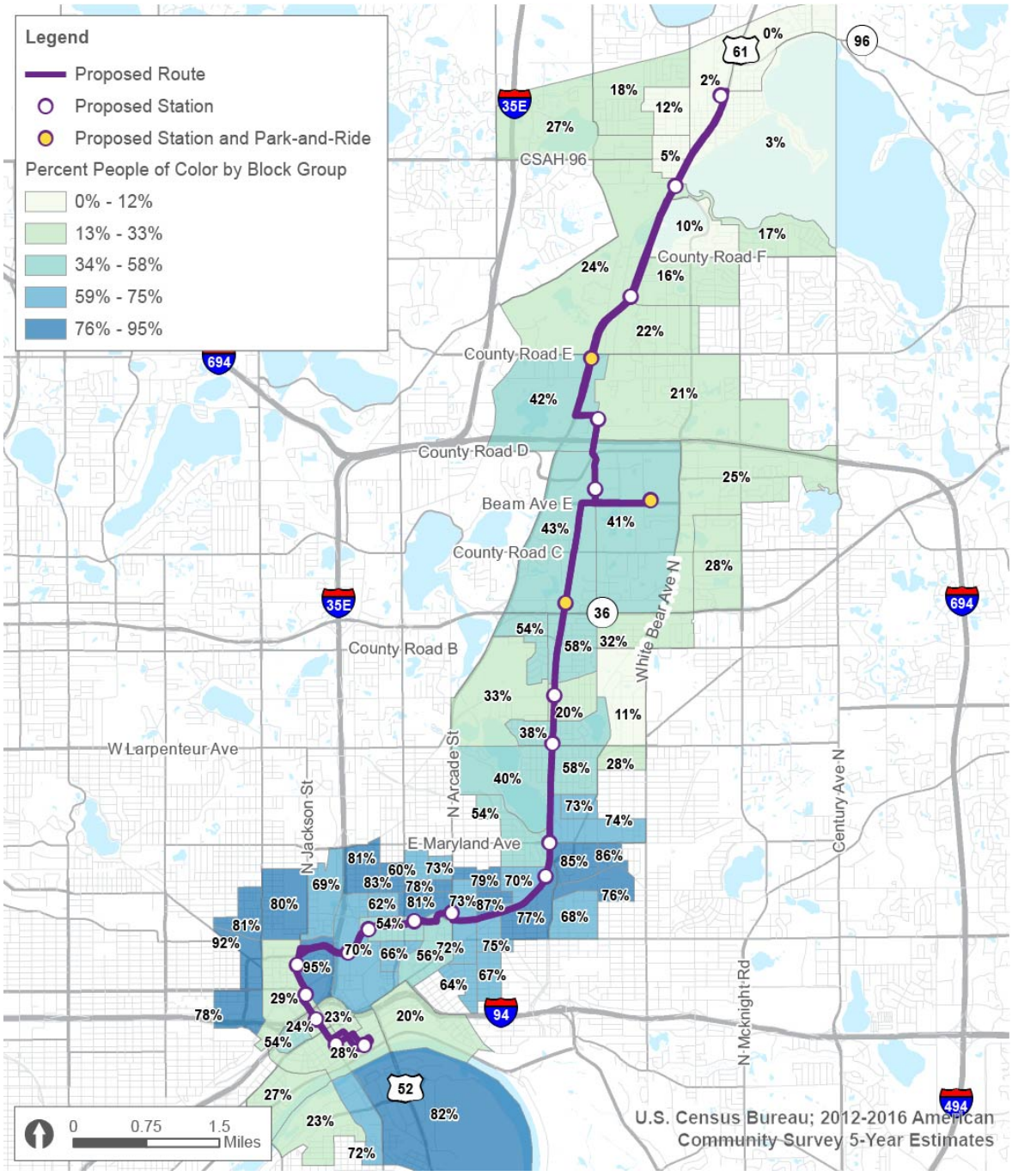


Figure 17: Percent Households without a Vehicle by Block Group

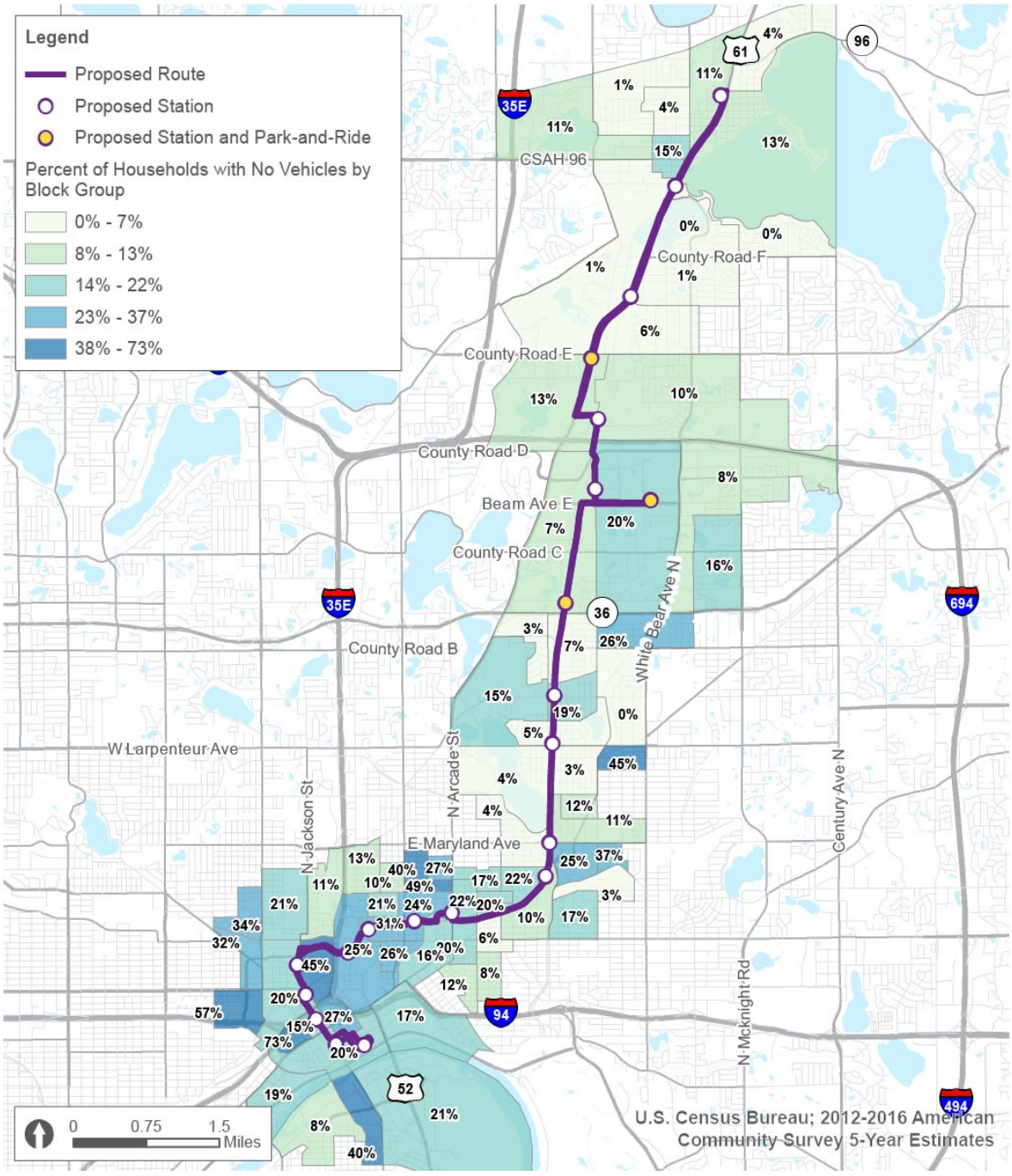


Figure 18: Percent Population Experiencing Poverty by Block Group

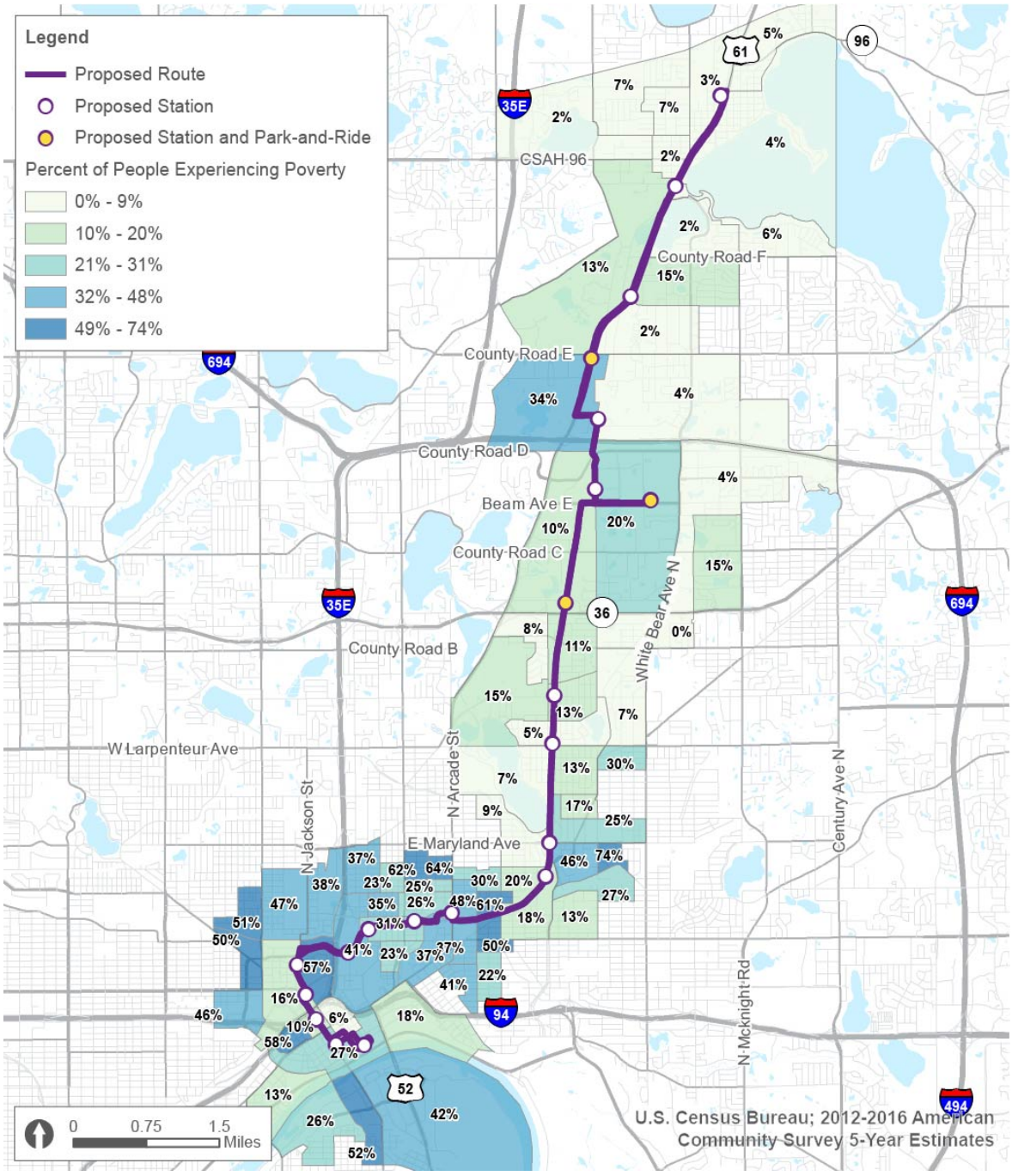


Figure 19: Percent Population with Limited English Proficiency by Block Group

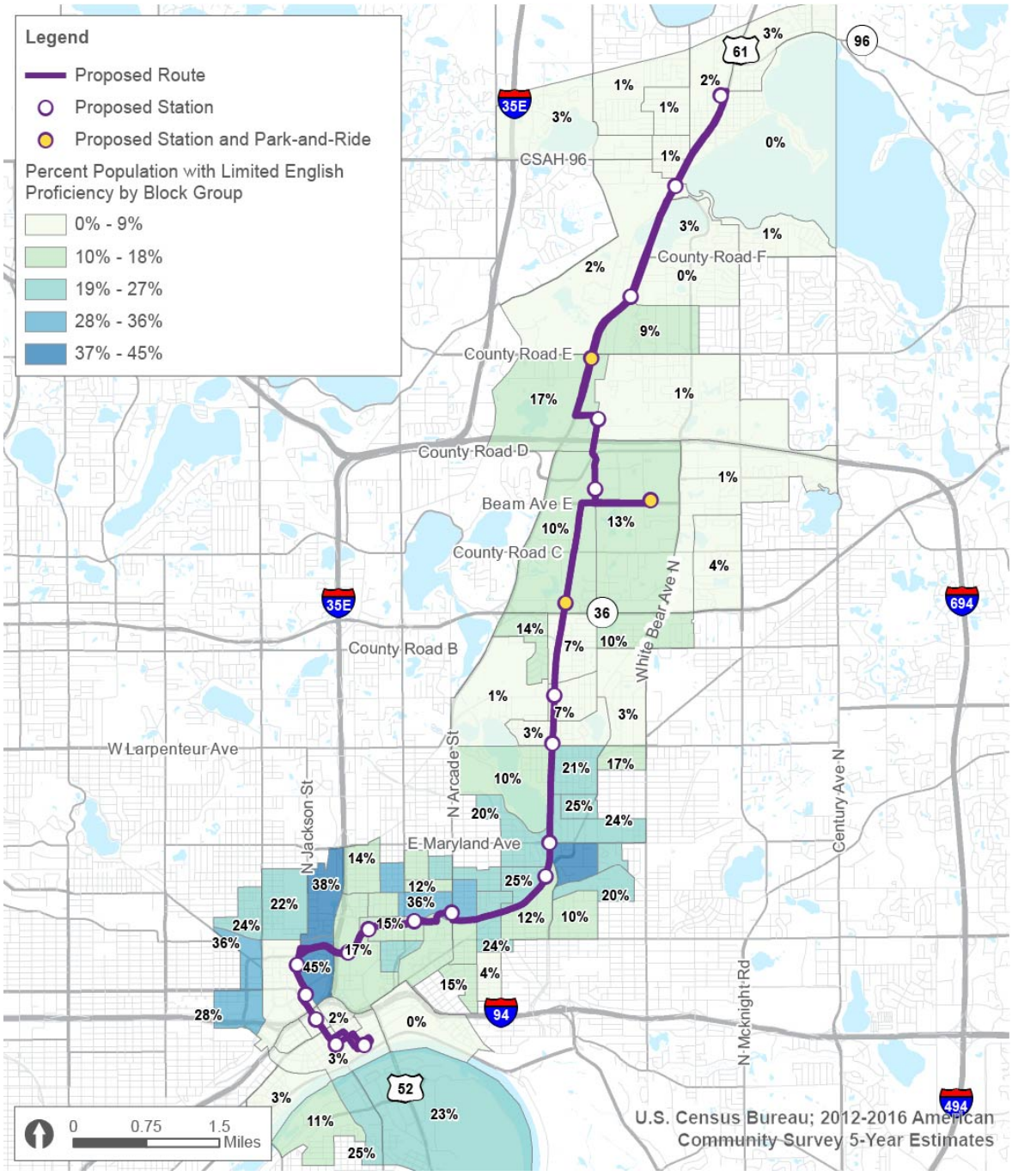


Figure 20: Percent Population Age 65 and Older by Block Group

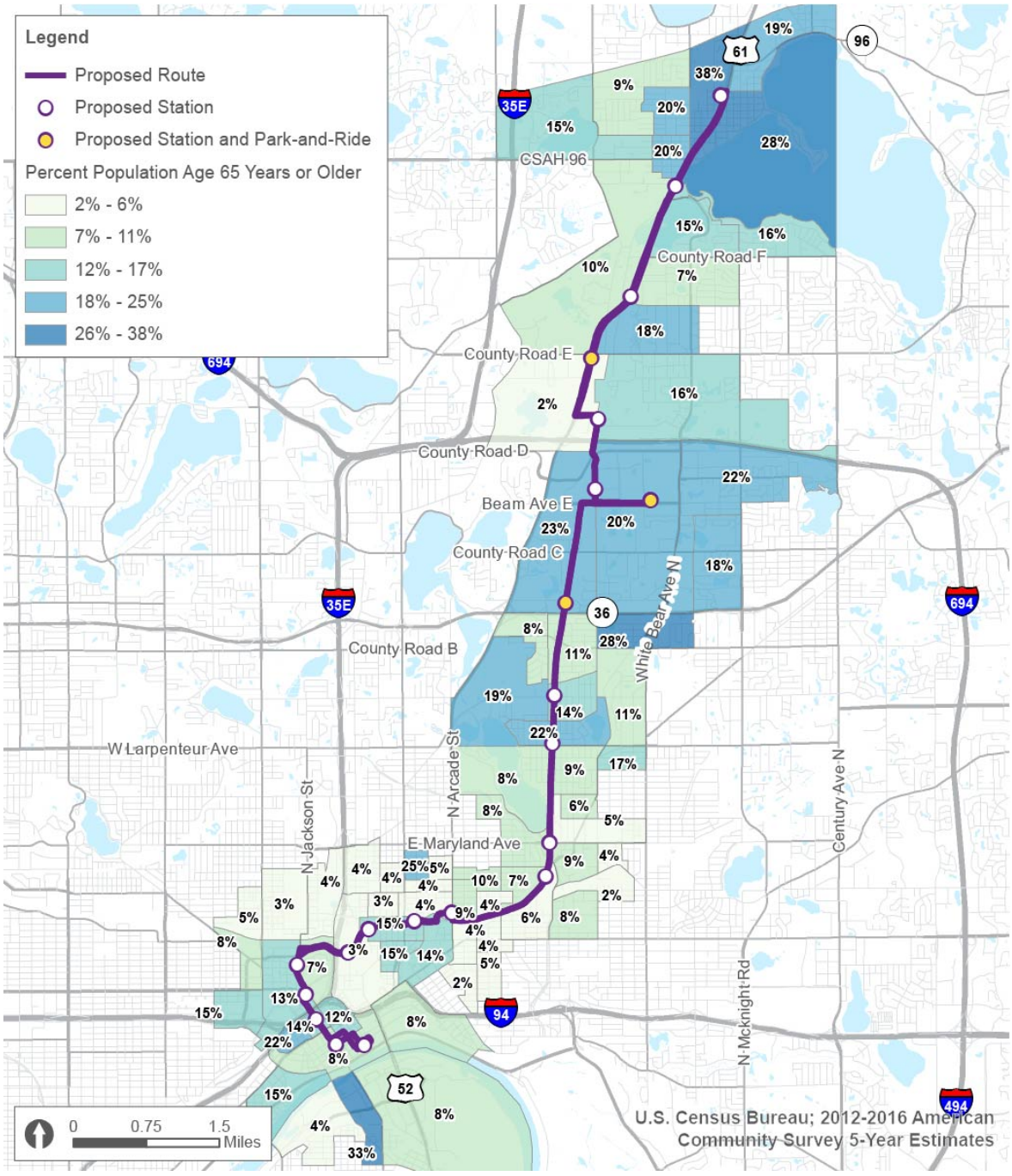


Figure 21: Percent Population with a Disability by Census Tract

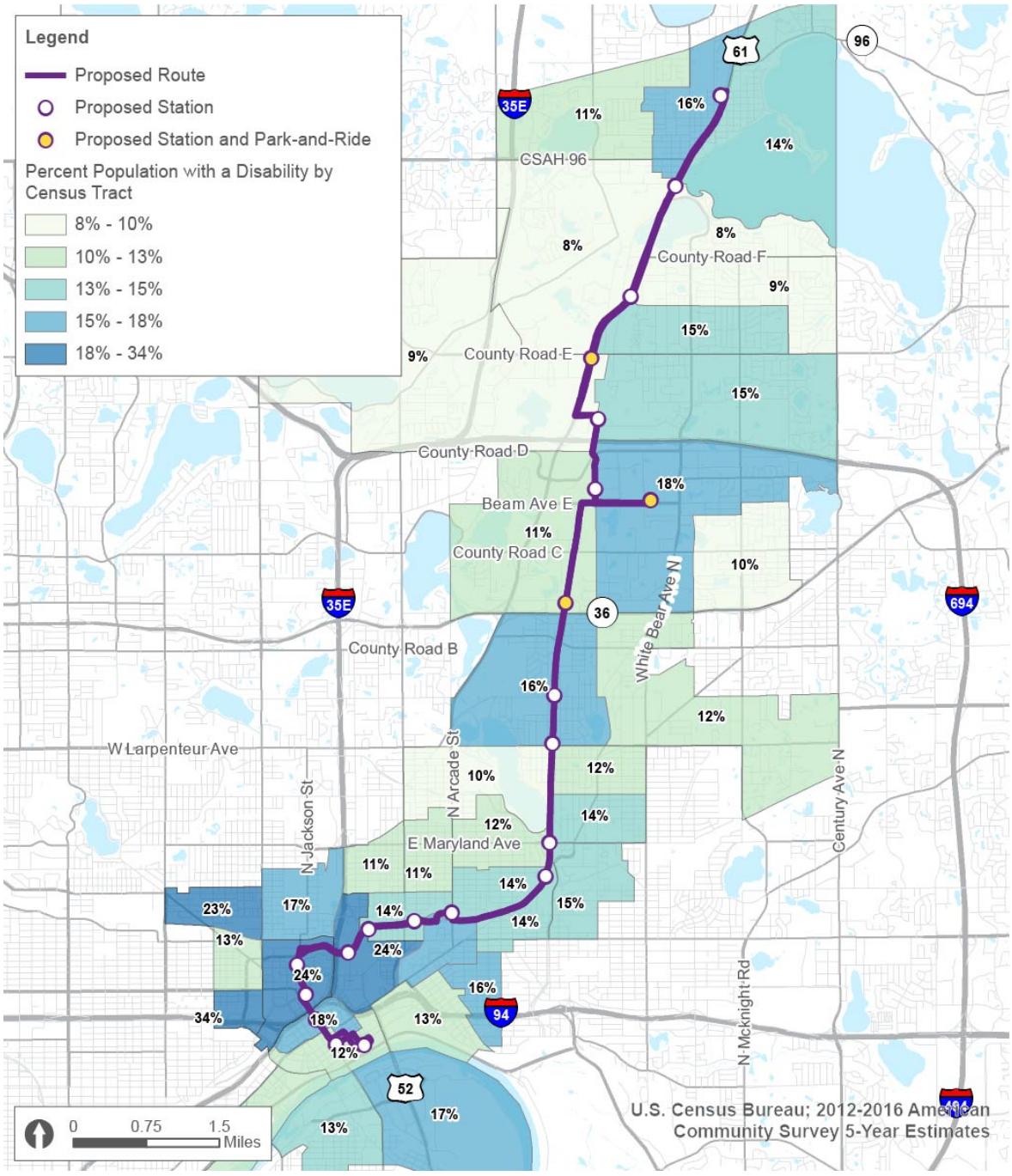


Figure 22: Percent Population with at Least a High School Diploma by Block Group

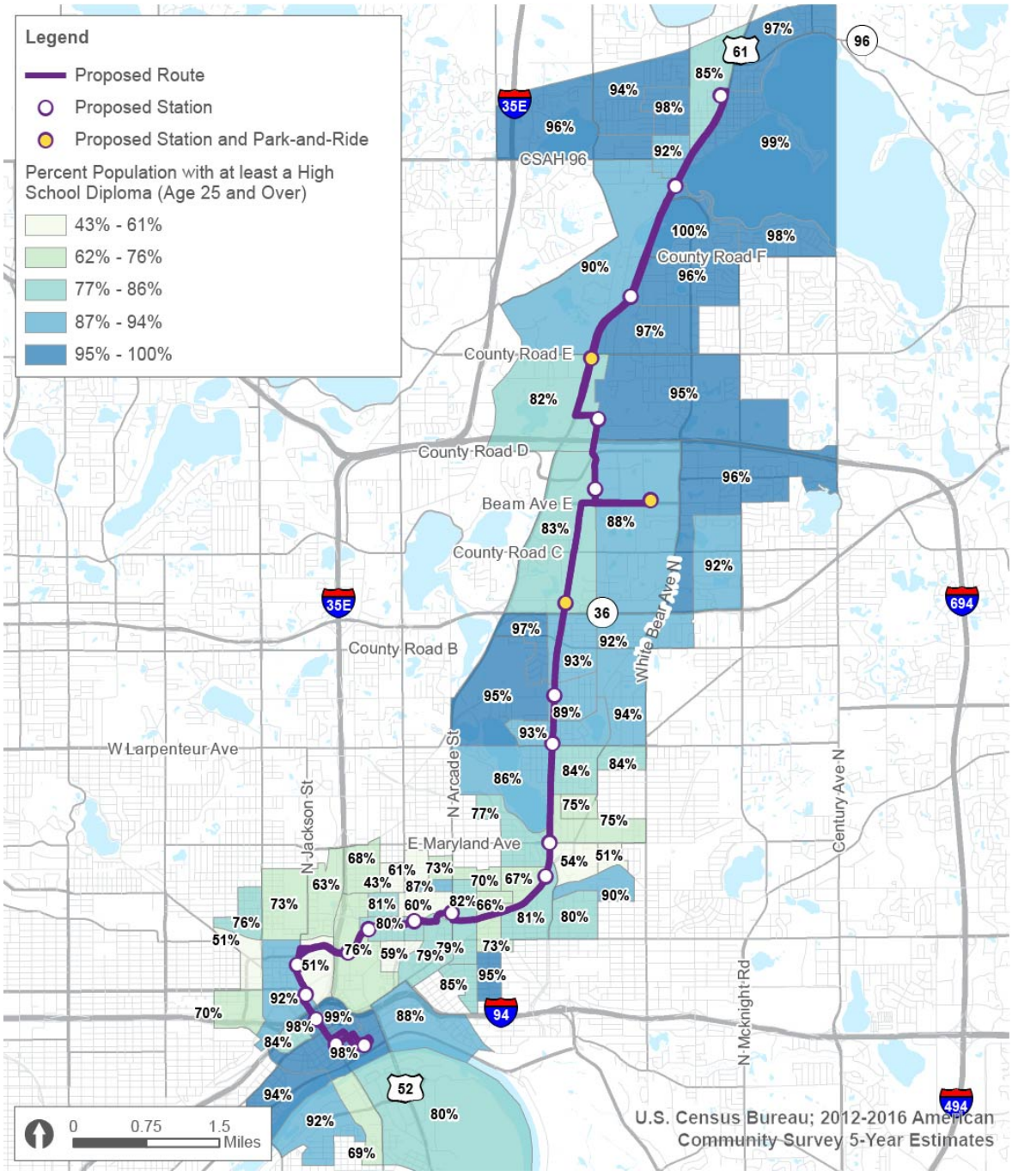


Figure 23: Unemployment Rate by Block Group

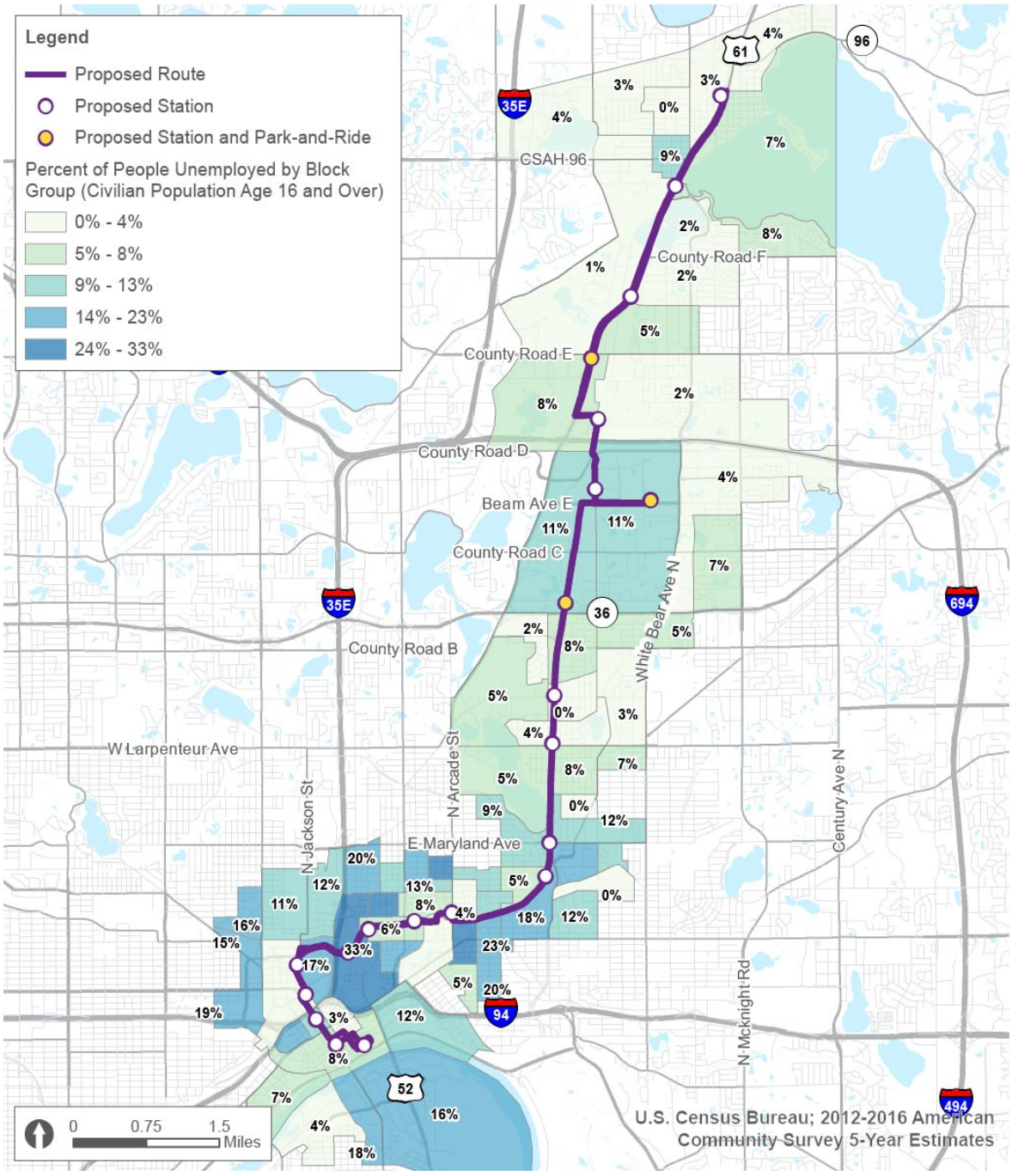


Figure 24: Median Household Income by Block Group

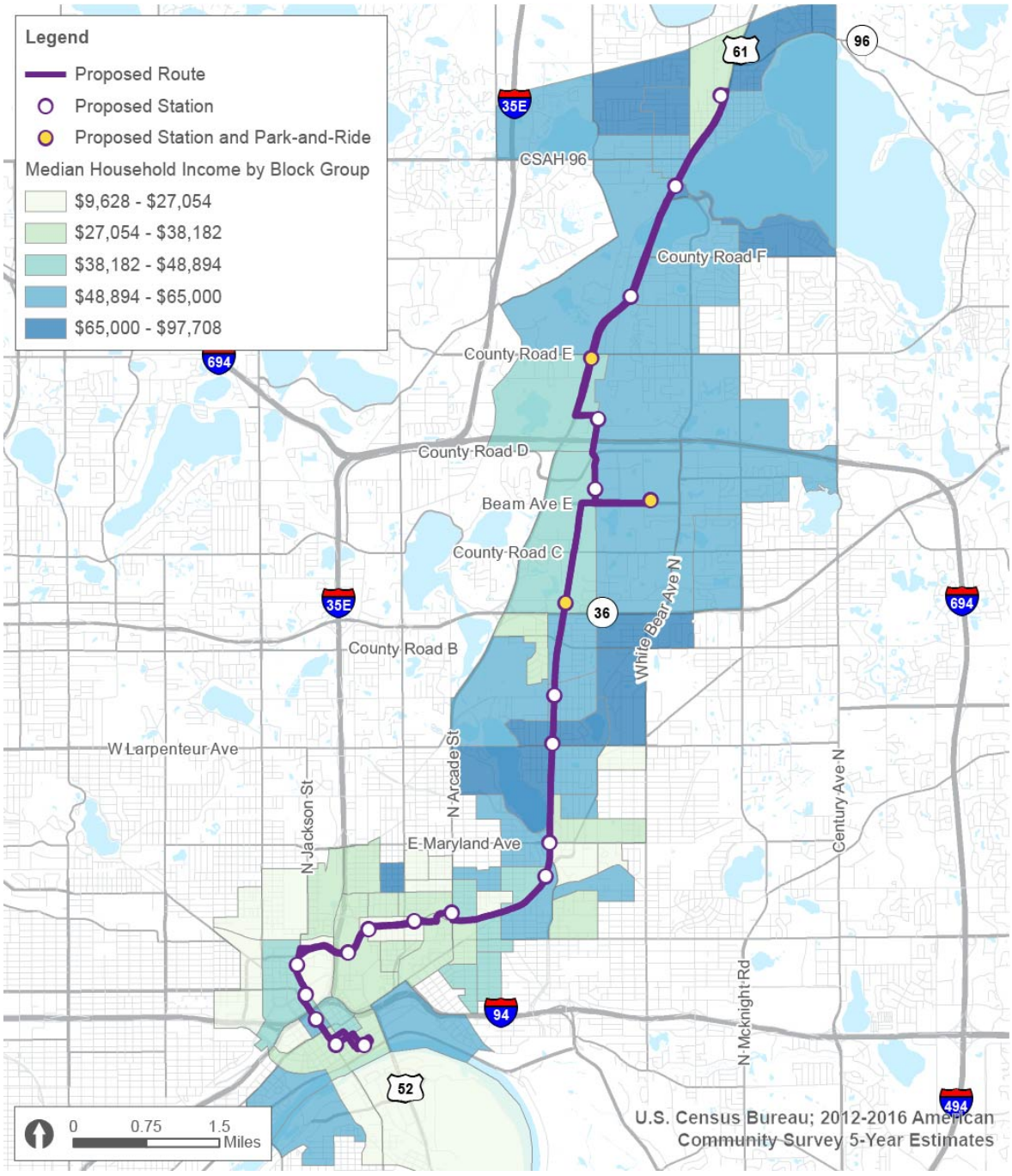
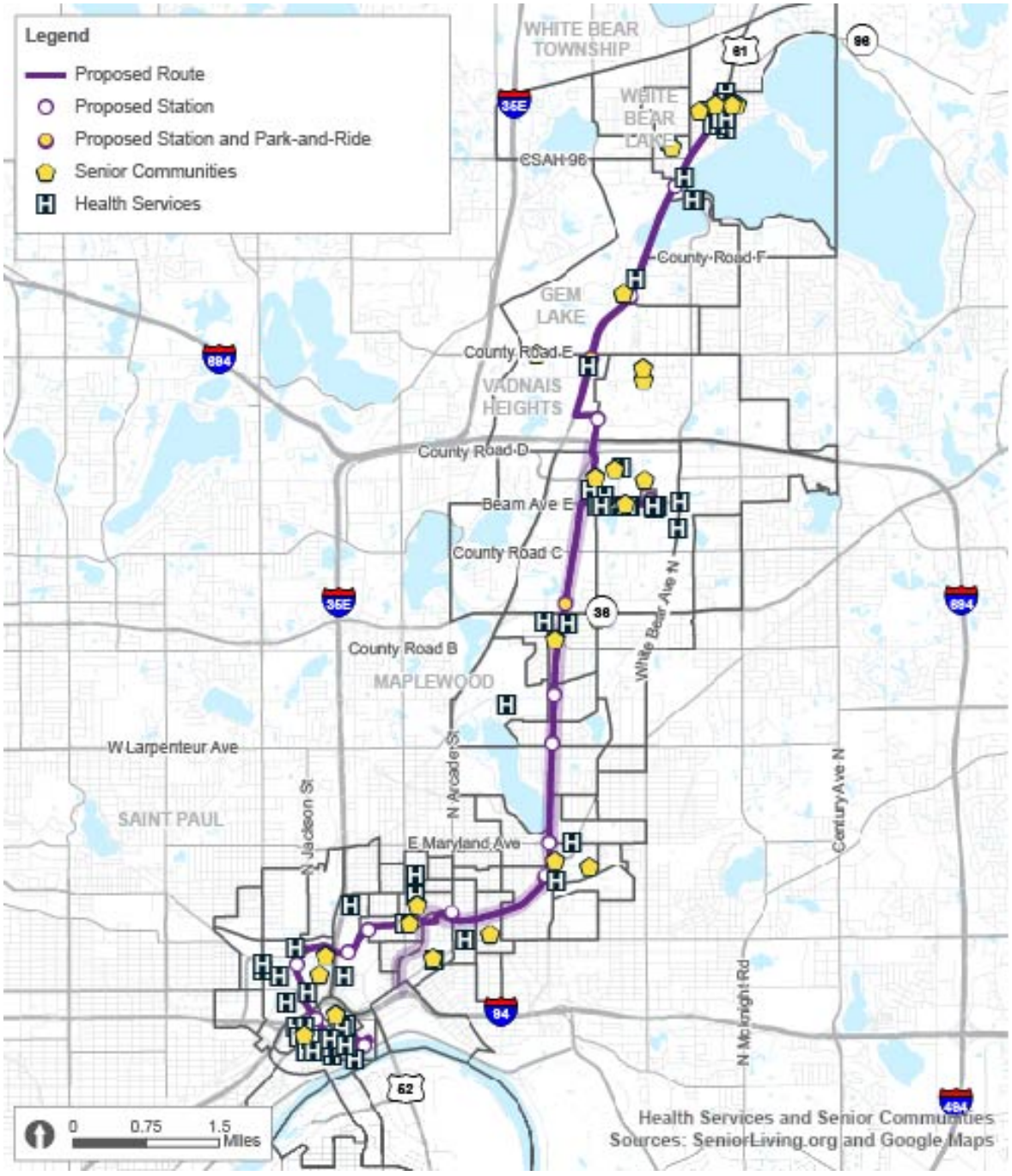


Figure 25: Health Services and Senior Communities in the Study Area



2. SCOPE

On October 30, 2018, Ramsey County facilitated a workshop to determine the scope of the Rapid Health Impact Assessment. Workshop attendees included members of the Project Advisory Committees (Community, Policy and Technical), staff from project area communities and staff from Saint Paul-Ramsey County Public Health and Active Living Ramsey Communities. At the workshop, participants reviewed data and discussed the following:

- Demographics throughout the study area, which is defined as all census block groups that are fully or partially located within half a mile of a planned station.
- How demographic characteristics differ geographically throughout the study area.
- Population differences that could influence health.
- Health equity and existing inequities in Minnesota health outcomes.
- Ways the project could support improved health, including:
    - Better access to walking, recreational trails, active transportation, healthcare and jobs.
    - Increased social cohesion.
    - Enhanced ability to age in place.
    - Greater connectivity and mobility.
    - Decreased auto-dependency and emissions leading to improved air quality.

Some themes that arose from group discussions include:

- Observations regarding the distribution of poverty and affluence.
- Education levels, English language proficiency and unemployment levels vary greatly throughout the study area.
- Language as a potential barrier to opportunities (where there is limited English proficiency).
- Opportunities to identify areas where employers are experiencing labor shortages and connect potential employees who have skill sets matching those labor needs.
- Concern with the potential loss of affordable housing within the corridor.
- Importance of access to and from stations.

Items that will be evaluated in the Environmental Assessment were briefly discussed. Workshop attendees discussed various resources in and attributes of the study area, including:

- Air quality.
- Noise.
- Land use and zoning.
- Community facilities.
- Parks and recreational facilities.

After providing background information on health indicators and discussing determinants of health, Ramsey County asked workshop attendees to prioritize topics for study based on the timing, duration and magnitude of effects and impacts, the geographic boundaries of the assessment and the population groups that would be affected. Using this framework, workshop attendees narrowed the priority topics for assessment to:

- Connectivity.

    - A broad topic area that may include physical connections in the transportation network, social connections and neighborhood cohesion.
- Access and accessibility.
    - Includes the ability to reach desired goods and services including parks and open space, healthcare and jobs.
- Employment and jobs.
    - Unemployment as a barrier to health.
    - Areas where jobs are available and labor is needed.
    - Potential opportunities to evaluate jobs, skills and language needs and match with potential workers.
    - Potential to maximize transit benefits to improve job access for limited English proficiency households.
- Affordable housing.
    - Housing as a factor affecting stress and health.

A copy of the presentation given at the workshop can be found in Appendix A. A full workshop summary can be found in Appendix B.

3. ASSESSMENT

3.1. ACCESS AND ACCESSIBILITY

Access and accessibility refer to a person's ability to reach desired goods or destinations, such as health care, education, employment or open space. In a transit planning context, a customer's ability to travel to these goods and destinations within a reasonable amount of time depends heavily on the transportation modes available, including the speed, frequency and connectivity of transit service.

The link between accessibility and health has been established through research in both transportation and public health. A Federal Highway Administration study completed in 2013 reported that fewer non-auto transportation options could lead to increased transportation costs and inequitable access to employment, housing, and healthy foods (Raynault & Christopher, 2013). For people who do not own a car, access to destinations via walking, bicycling and transit is critical to carrying out daily household activities.

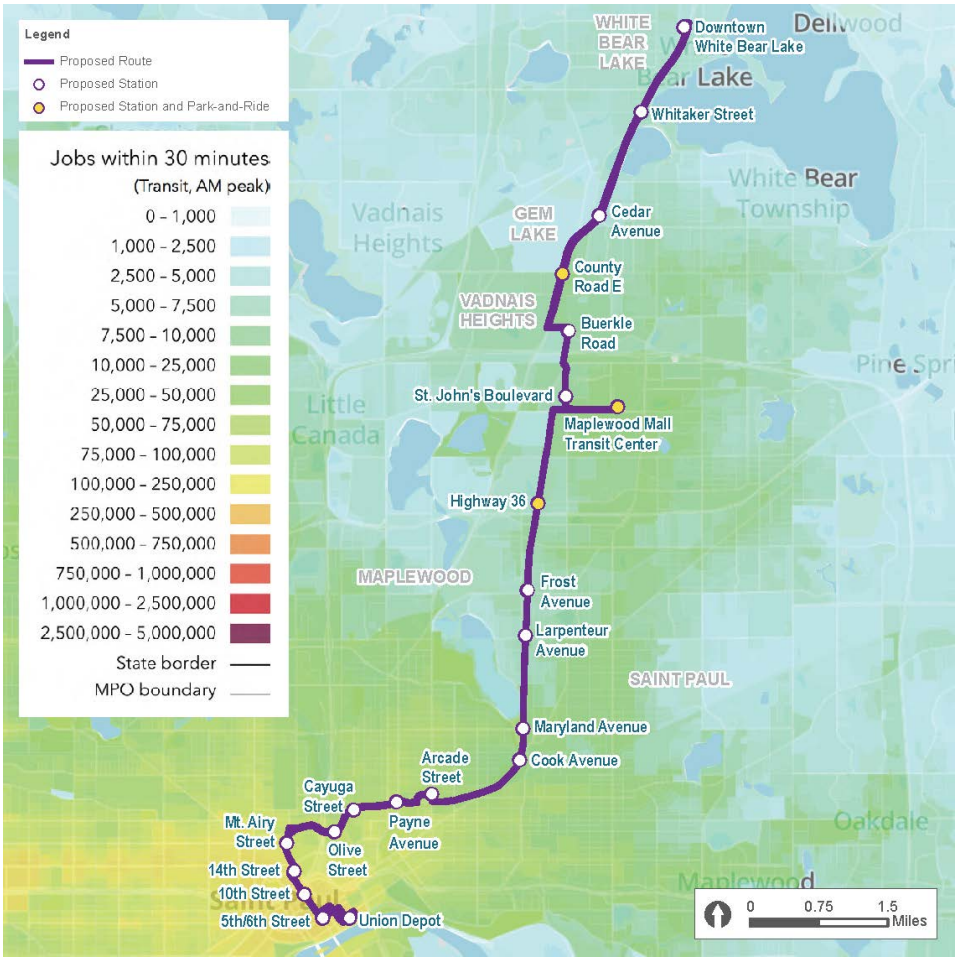
The use of non-auto transportation modes can also have a direct impact on health. A study published in American Journal of Preventative Medicine found that 29 percent of people using transit to get to work met their daily requirements for physical activity via walking (Besser & Dannenberg, 2005). On a community-wide scale, increasing the proportion of the population that can conveniently reach daily destinations via transit has the potential to improve the physical well-being of residents.

The Rush Line BRT project will itself improve access to jobs, education, healthcare and open space along the project corridor by reducing transit travel times to major destinations, including downtown Saint Paul, major hospitals, institutions of higher education and regional parks. In order to maximize these benefits, Metro Transit, Ramsey County and city governments can pursue policies that further enhance transit access and/or promote development of employment and community resources near transit.

3.1.1. Employment and Jobs

Figure 26 shows the number of jobs currently accessible within a 30-minute transit ride for residents of the Rush Line BRT study area and surrounding communities during the morning rush hour, according to 2017 data from the Accessibility Observatory, a program of the Center for Transportation Studies at the University of Minnesota. Residents of downtown Saint Paul and the University Avenue corridor have access to at least 100,000 jobs within 30 minutes via transit, while many residents of northeast metro communities can reach fewer than 10,000. Rush Line BRT would improve access to employment by connecting residents of the northeast metro with major job centers in downtown Saint Paul and beyond, and by extending the span of service compared to existing rush-hour express routes currently serving White Bear Lake and other study area communities.

Figure 26: Existing Job Accessibility Via Transit (Morning Peak)



3.1.2. Healthcare

As shown in Figure 25 (page 26), there are nearly 80 healthcare facilities located within the Rush Line BRT study area, including Regions Hospital, St. Joseph's Hospital and Bethesda Hospital in downtown Saint Paul, St. John's Hospital in Maplewood, and a number of smaller clinics, physicians' offices and specialty health facilities in each community. Several healthcare facilities located within the study area are well connected to proposed Rush Line BRT station areas via existing sidewalk infrastructure and will be easily reached via transit once Rush Line BRT is constructed. However, opportunities may exist to improve access or safety of pedestrian routes to some facilities as part of sidewalk or road reconstruction projects completed by local governments in the future.

3.1.3. Parks and Open Space

The Rush Line BRT study area includes a number of regional and local parks, including Mears Park, Pedro Park, Swede Hollow Park and Phalen Regional Park in Saint Paul; Kohlman Creek Preserve, Gloster Park, Harvest Park and Hazelwood Park in Maplewood; the Vadnais Sports Center; and Willow Marsh Reserve, Lions Park, Veterans Memorial Park, Railroad Park and Matoska Park in White Bear Lake. Many of these parks are located within walking distance of proposed Rush Line BRT stations, which will provide enhanced access to parks for transit users in the corridor.

3.1.4. Educational Opportunities

The Rush Line BRT study area is home to a variety of educational facilities, including a large number of elementary, middle and high schools, as well as the College of St. Scholastica in downtown Saint Paul. Two English Language Learner facilities are also located in Saint Paul, one in the Summit-University neighborhood and the other in the Eastview neighborhood. Additionally, there is a variety of colleges and universities throughout the metro area including the University of Minnesota, Century College, Metro State University and Hamline University.

Currently, residents along the Rush Line BRT route have relatively poor transit access to these institutions. Though Rush Line BRT will not directly connect to many of these institutions, it will improve transit access to these and other higher education institutions throughout the metro by adding high-frequency service with convenient connections to the METRO Green Line and planned METRO Gold Line along with several local transit routes.

3.2. CONNECTIVITY

Connectivity is a broad topic area that refers to physical connections in the transportation network, as well as social connections and neighborhood cohesion. Each aspect of connectivity can influence how people interact with their communities and with the transportation system.

3.2.1. Physical Connectivity

Transportation and design decisions influence how people perceive distances to destinations, their willingness and ability to get to a location, and their perceived and actual safety when traveling. Key components of connectivity are a complete and well-maintained sidewalk system, on-street and off-street bicycle routes, and a well-integrated transit system that connects residents and neighborhoods with regional destinations.

Consistent with the Metropolitan Council's THRIVE MSP 2040 Transportation Policy Plan, the Rush Line BRT will provide enhanced transit connections between Northeast Metro communities and downtown Saint Paul. In addition, Rush Line BRT is intended to enable convenient connections to other transit and transportation options, including local bus routes, as well as existing and future METRO BRT and light rail services.

Along with Rush Line BRT implementation, Metro Transit will coordinate revisions to the existing local bus network to increase efficiency and offer improved connections to Rush Line BRT itself. Communities along Rush Line BRT, as well as Ramsey County, can enhance multimodal connectivity by improving bicycle and pedestrian connections and wayfinding where possible and by promoting transit-oriented development patterns.

3.2.2. Social Connections and Neighborhood Cohesion

Connectivity across multiple transportation modes has the potential to benefit the social fabric of communities. Neighborhood social cohesion has been found to be associated with lower levels of stress, higher positive mood and fewer physical health symptoms (Robinette, Charles, Mogle, & Almeida, 2013), as well as a lower incidence of heart attacks (Kim, Hawes, & Smith, 2014). These findings suggest that neighborhood-level interventions designed to promote social cohesion may improve physical and mental health and help reduce the risk of adverse health events.

The Rush Line BRT Project will operate almost entirely in existing public right-of-way and is expected to improve rather than negatively impact neighborhood and community cohesion. For all communities within the project area, Rush Line BRT will bring enhanced access to high-frequency transit, as well

as associated pedestrian and bicycle infrastructure, while minimizing the impact on existing residents, businesses and community facilities.

To leverage the enhanced transportation access that Rush Line BRT will deliver, Metro Transit, Ramsey County and local communities can focus other projects and programs around Rush Line BRT station areas and nearby neighborhoods while minimizing existing features that present challenges to pedestrians, cyclists and transit riders. For example, parking lots or vacant properties near Rush Line BRT stations could increase the perceived distance that transit riders must walk to reach destinations and may also have an impact on safety. To improve neighborhood cohesion and enhance transit ridership, communities could focus on redeveloping and/or adding programming to underutilized properties near Rush Line BRT, thereby making transit a more central and positive feature of the neighborhoods it serves.

3.3. EMPLOYMENT AND JOBS

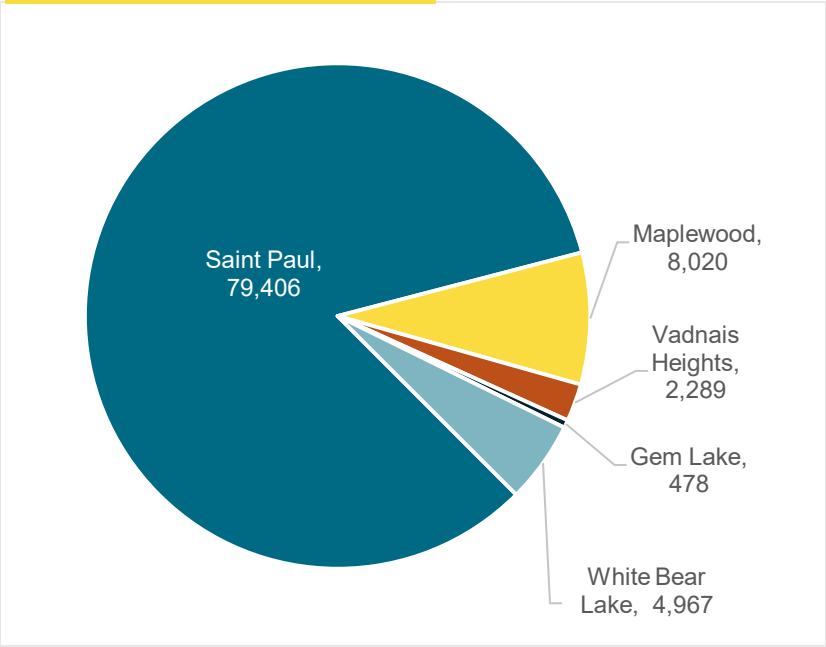
Steady employment has a direct positive impact on health. A well-paying job makes it easier for workers to live in healthier neighborhoods, provide quality education for their children, secure childcare services and buy nutritious food. Stable employment leads to higher incomes and people with higher incomes are less likely to be in fair or poor health. In contrast, those who are unemployed are more likely to develop stress-related conditions such as stroke, heart attack, heart disease or arthritis. Similar links are present for mental health conditions. Moreover, unemployed and underemployed people are more likely to delay seeking medical care, including preventive care, thus prolonging health conditions (How Does Transportation Affect Public Health?, 2013). Those who are employed but unable to purchase health insurance or otherwise access medical care have similar health challenges.

3.3.1. Job Locations and Accessibility

Most of the 95,418 jobs within the study area are located in Saint Paul, as shown in Figure 27. Saint Paul is the seat of Ramsey County and the capital of the state of Minnesota, which contributes to the status of Public Administration as its top employment industry, with 17,236 jobs in the study area in 2015. Saint Paul is also home to a number of financial services and related companies; thus, Management of Companies and Enterprises is a close second with 16,545 jobs in Saint Paul in 2015.

Jobs in these two industries also comprise the majority of jobs in the study area that pay more than $3,333 per month. Of the 66,368 jobs with monthly wages above this threshold, 33,781 are in the Public Administration and Management of Companies and Enterprises sectors.

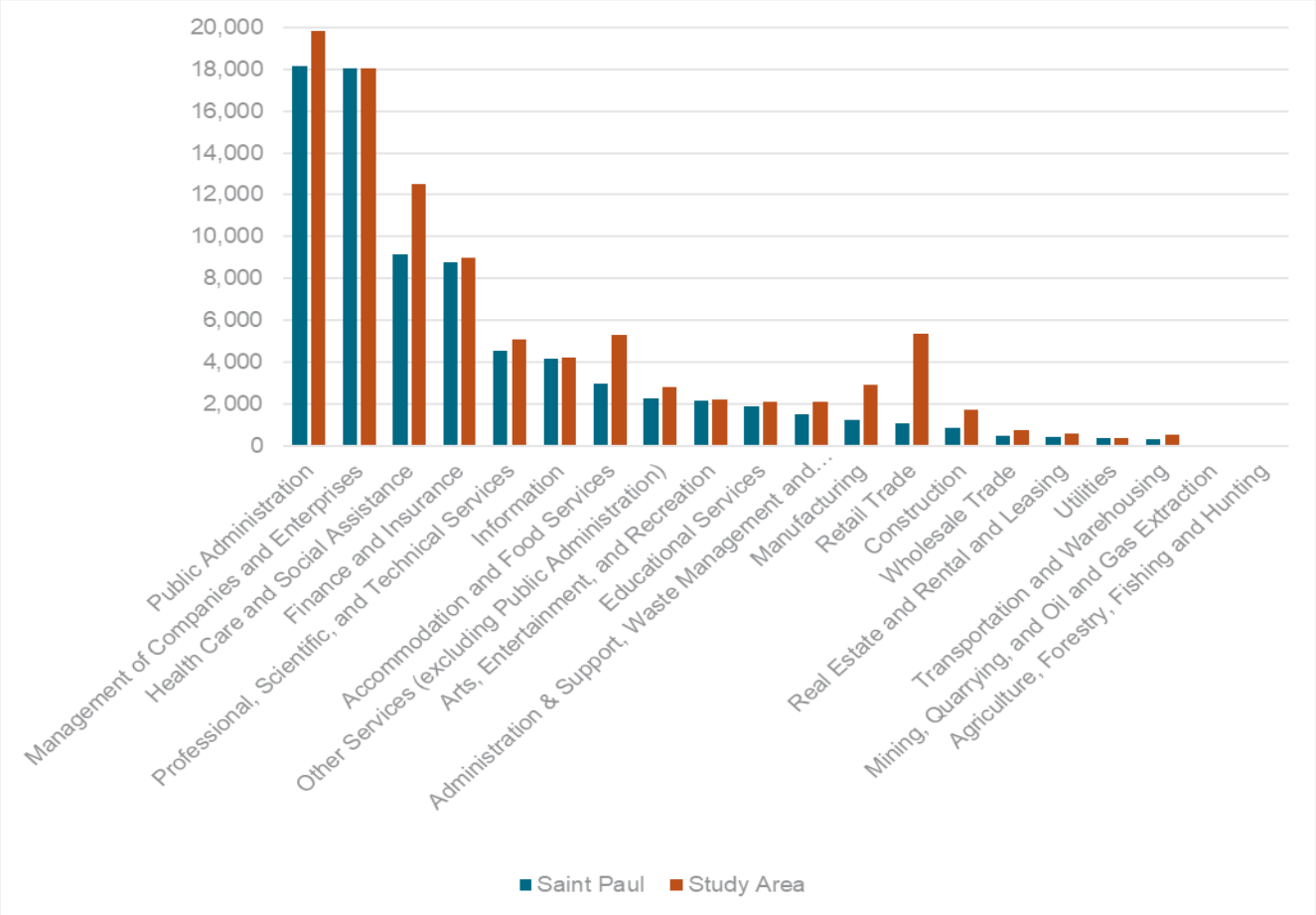
Figure 27: Employment by City



Source: U.S. Census Bureau 2015 LODES Data

Improving workers' ability to travel away from home for work opens up different types of work that are more skill-appropriate and better-paying than employment opportunities near their homes. Many neighborhoods are only in proximity to low-skilled retail and service industry jobs; connecting residents elsewhere in the study area to Saint Paul will help them find work in any number of Saint Paul's vibrant industries, such as Public Administration, Accommodation and Food Services, Health Care and Social Assistance, and Management of Companies and Enterprises. The distribution of jobs across all industries in the Saint Paul section of the study area as compared to the study area overall is shown in Figure 28.

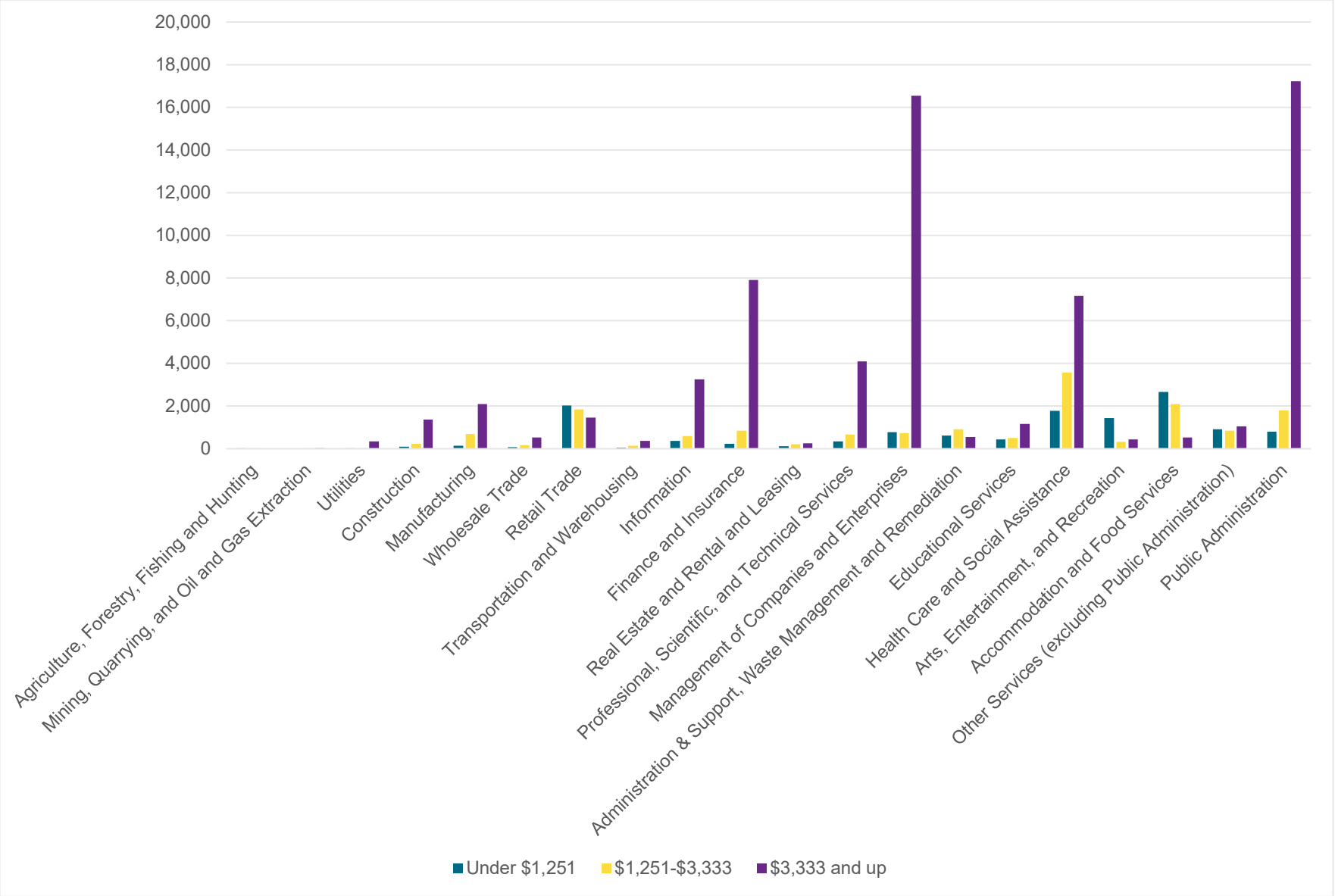
Figure 28: Employment by Industry (Saint Paul and Study Area)



Source: U.S. Census Bureau 2015 LODES Data

Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES) use three strata to classify monthly wage rates: $1,250 per month or less, $1,251 to $3,333 per month, and more than $3,333 per month. The majority the jobs in the top income bracket of this classification (with pay totaling approximately $40,000 or more per year) found in the study area are in the industries that dominate the jobs found in Saint Paul and that typically require postsecondary education, namely Public Administration, Management of Companies and Enterprises, and Finance and Insurance, as shown in Figure 29. Meanwhile, those that pay $1,250 per month or less (approximately 75 percent of the federal poverty threshold of $1,731 per month for a family of four) are predominantly in the Retail, Accommodation and Food Services, and Health Care and Social Assistance industries.

Figure 29: Monthly Wages by Industry



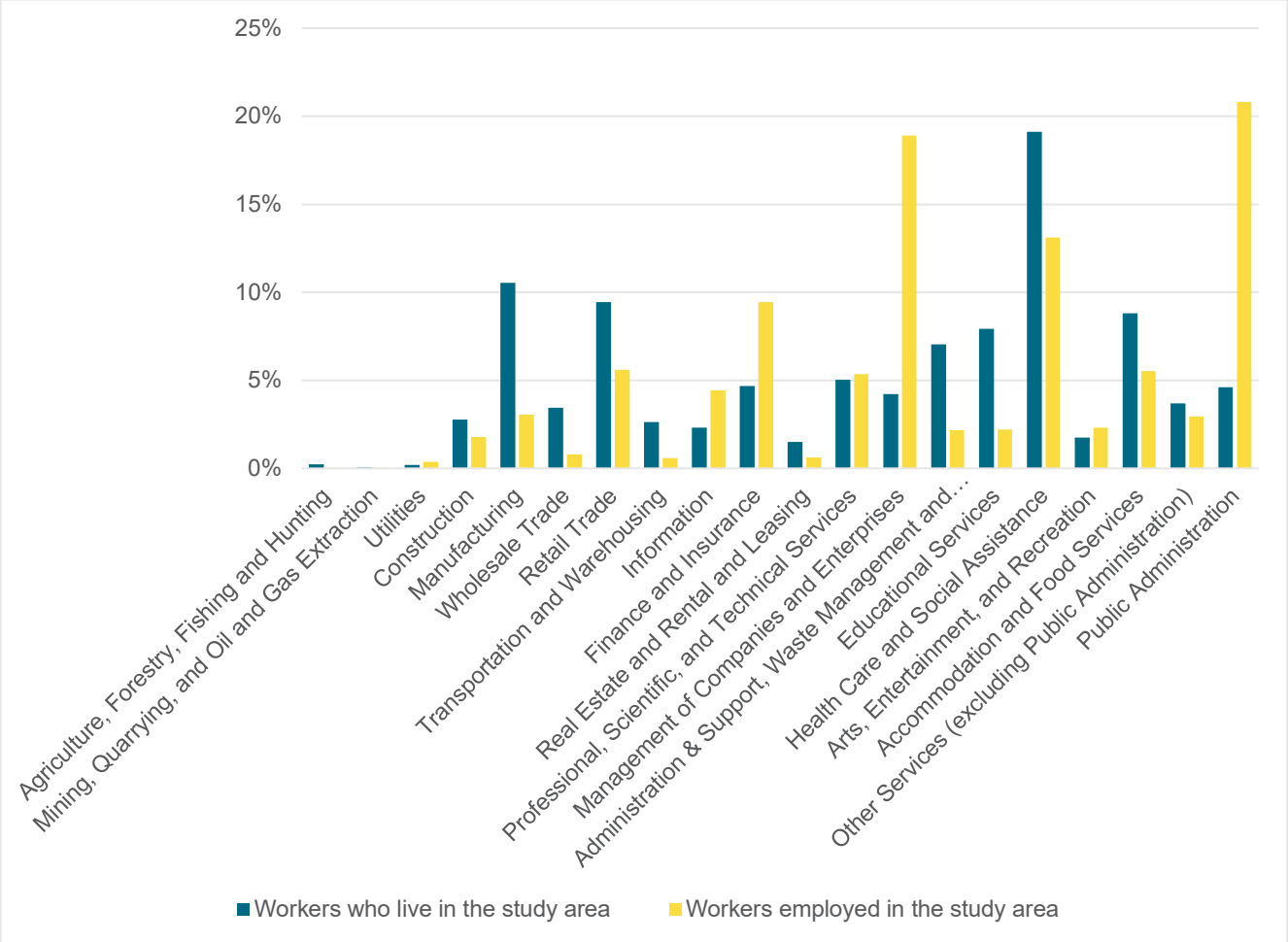
Source: U.S. Census Bureau 2015 LODES Data

3.3.2. Residents and Workers in the Study Area

A mismatch between workers' skills and available jobs, typically called the "skills mismatch", is perceived as a barrier impeding achievement of full employment, across the country and within the study area in particular. While research on the existence of the skills mismatch is inconclusive (Handel, 2003) (Weaver & Osterman, 2016) (Adalet McGowan & Andrews, 2017), there are clear differences between residents of the study area who work outside the study area ("outflow"), workers employed in the study area who live elsewhere ("inflow"), and workers who both live and work in the study area ("internal").

There are 25,165 workers who live in the study area. Compared to those who work in the study area and live elsewhere, these workers are more likely to work in lower-wage industries including Health Care and Social Assistance, Manufacturing, Retail Trade, and Accommodation and Food Services than workers who are employed in the study area and live elsewhere, as shown in Figure 30. Workers who live in the study area and work elsewhere are also younger, have less education and earn a lower income, on average, than those who live elsewhere and work in the study area, as shown in Figures 31, 32 and 33.

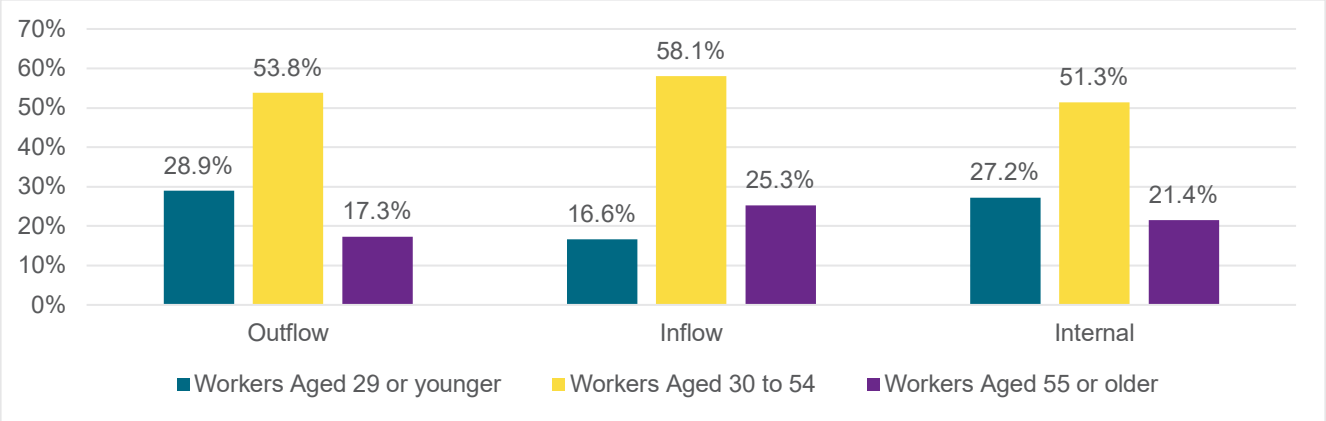
Figure 30: Industry of Employment for Workers Living in the Study Area and for Workers Employed in the Study Area



Source: U.S. Census Bureau 2015 LODES Data

Though people aged 30 to 54 dominate the workforce among outflow, inflow and internal workers, workers aged 29 or younger comprise a much larger portion of those who live in the study area than those who live elsewhere and work in the study area; likewise, workers aged 55 or older comprise a much larger portion of inflow workers than they do outflow or internal workers.

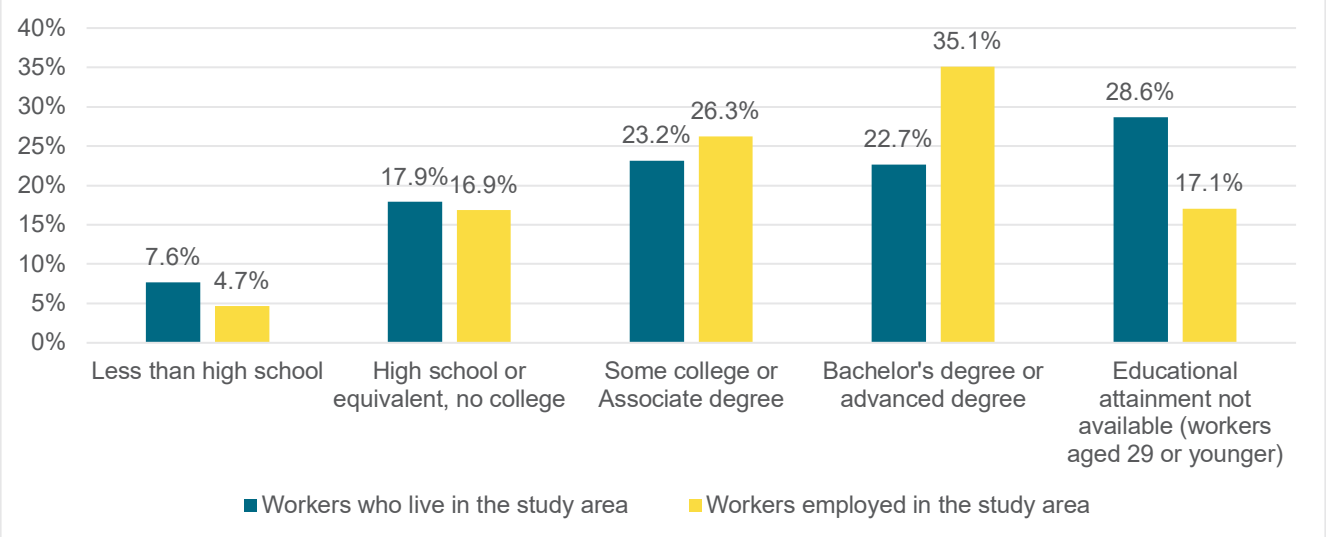
Figure 31: Age Group Composition of Outflow, Inflow and Internal Workers



Source: U.S. Census Bureau 2015 LODES Data

Among workers for whom educational attainment data is available, those who work in the study area have achieved higher levels of education at greater rates than workers who live in the study area. While a similar proportion of both groups finished high school without attending college, workers who live in the study area have less than a high school education at a higher rate than those who work in the study area. Correspondingly, those who work in the study area attended some college or earned a degree at higher rates than those who live in the study area.

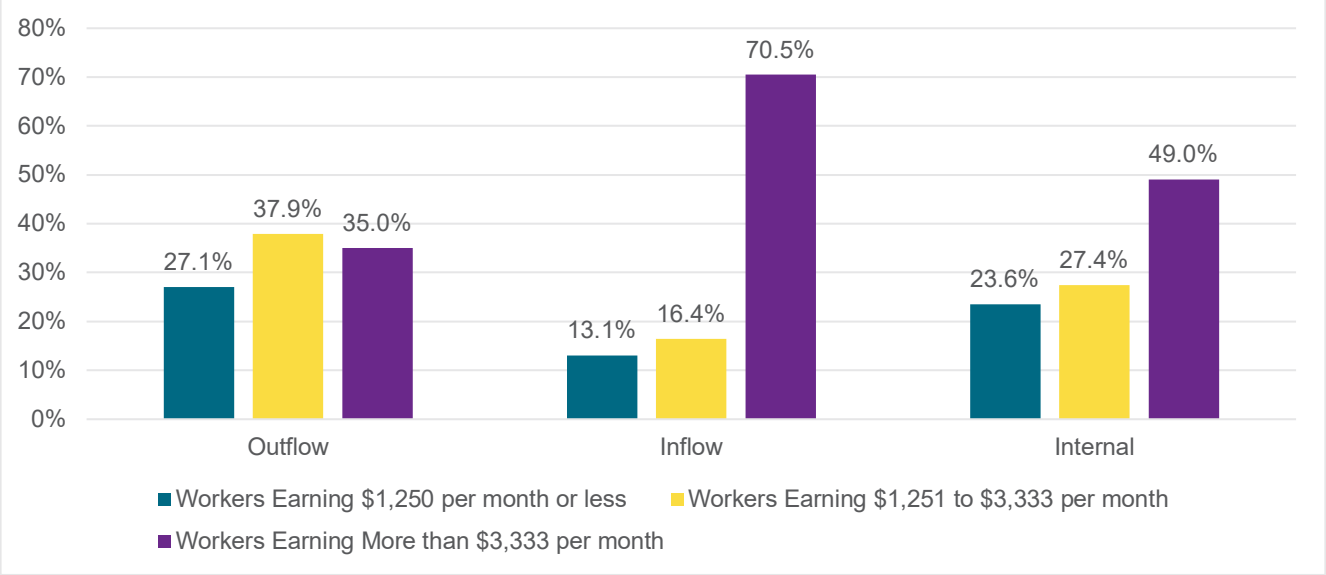
Figure 32: Educational Attainment of Workers Employed in and Residing in the Study Area



Source: U.S. Census Bureau 2015 LODES Data

In a similar trend, workers employed in the study area earn more than $3,333 per month at nearly twice the rate that workers who live in the study area do, and workers who live in the study area earn less than $1,251 per month at nearly twice the rate that workers employed in the study area do.

Figure 33: Income of Workers Residing in and Workers Employed in the Study Area



Source: U.S. Census Bureau 2015 LODES Data

These differences illustrate a mismatch between the skills of workers who live in the study area and the jobs that are available near them. Implementation of Rush Line BRT will present a unique opportunity for project area communities, Ramsey County and Metro Transit to leverage this investment to improve employment and therefore health outcomes for those living in the study area. Recommendations for maximizing these benefits are outlined in Section 4.

3.4. AFFORDABLE HOUSING

The availability and affordability of housing for people of all ages, levels of income and lifestyles supports healthy communities. Households paying a larger portion of their income for housing often do not have enough money remaining to meet other essential needs. These households may be forced to decide between paying their mortgage or rent and buying food, medical insurance and health care. Lacking resources to afford housing can lead to unstable conditions, including frequent moves, living in shared spaces, eviction, foreclosure and even homelessness (Enterprise Community Partners, 2014). This sort of unstable housing situation can negatively affect mental and physical health (Sandel, et al., 2018). An area can also be unaffordable if getting to goods and services requires high transportation costs.

According to the Center for Neighborhood Technology, planners, lenders and most consumers consider housing affordable if the cost is 30 percent or less of household income. Research done by the Center for Neighborhood Technology across metro areas of varying sizes has found that spending 15 percent of income or less on transportation is affordable. Therefore, locations where combined housing and transportation costs are less than 45 percent of median household income are considered affordable to the typical household. This amount, known as the Housing + Transportation Affordability Index (H+T Index), shows housing and transportation costs as a percentage of area

median income—the median divides income distribution into equal parts with half falling below the median and half above the median—for the census blocks located near a location.

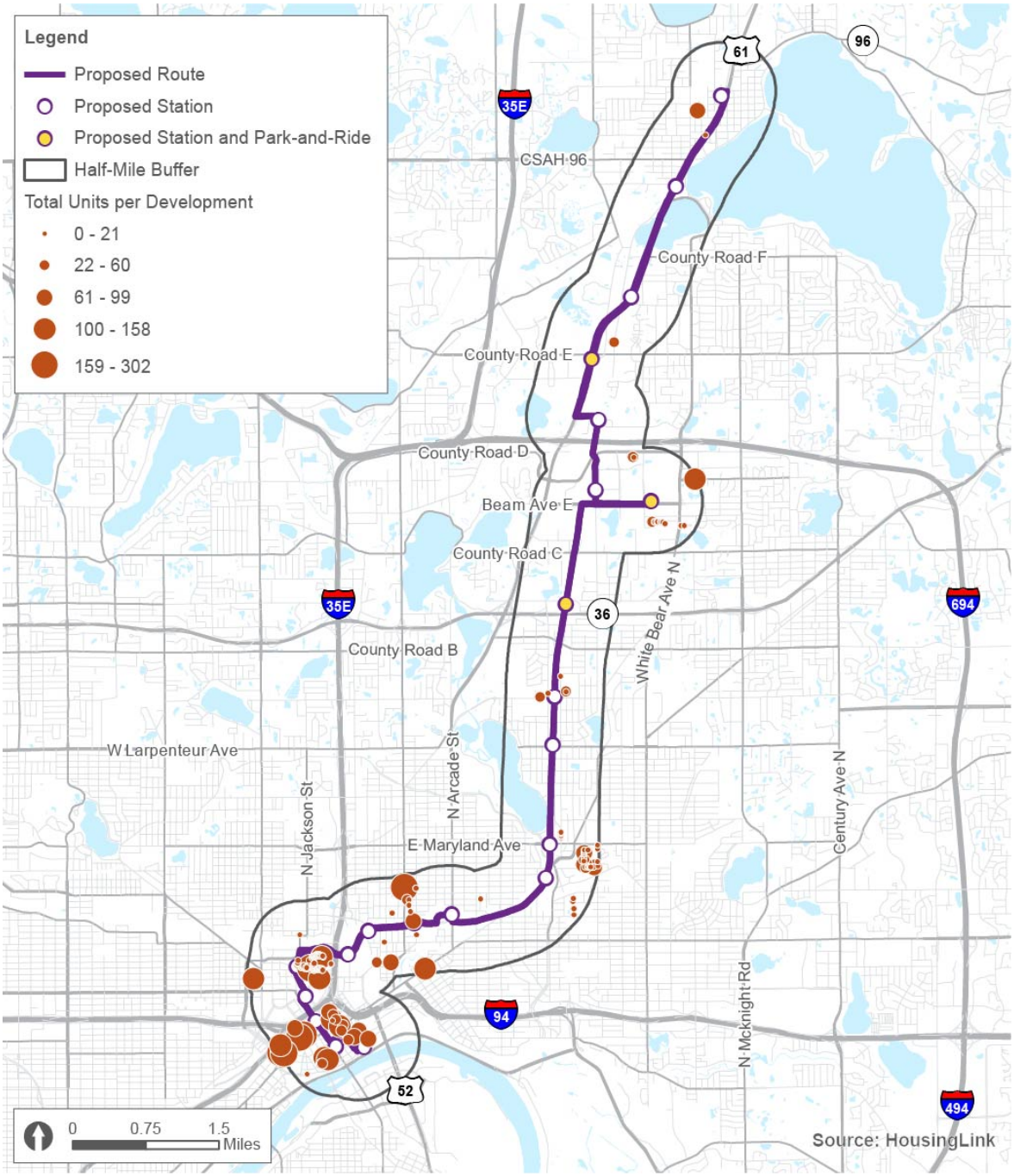
Research has shown that new transit investments can lead to increased land values and greater housing demand around the stations. This increased demand encourages builders to develop new housing near stations, bringing in new residents to the area. As more people move into an area, existing residents, including those who are low-income or elderly, may not be able to afford housing in the area and thus may be displaced. Affordable housing policies can help prevent displacement of lower-income residents by preventing drastic rent increases accompanying increases in property values. In 2014, the Metropolitan Council adopted the 2040 Housing Policy Plan as a part of Thrive MSP, the long-range plan that sets a vision for the Twin Cities region over the period from its 2014 adoption through 2040. This plan outlines existing and projected affordable housing needs and creates an implementation program for communities to "encourage, incent and even directly create affordable housing opportunities" (Metropolitan Council, 2014). It also establishes benchmarks for affordable housing development based on each community's housing needs and anticipated growth.

Within the study area, existing legally-binding affordable housing is currently concentrated in Saint Paul around the downtown and Mt. Airy Street stations. Legally-binding affordable housing is housing that has its cost restricted by a legal tool such as a lien or deed of trust. This housing must be affordable to renters and/or owners with incomes below a certain level of the area median income for a defined period of time. Legally-binding affordable housing includes, but is not limited to, state- or federally-supported public housing and housing owned by organizations dedicated to providing affordable housing.

These parts of the study area are also the most susceptible to gentrification because the existing populations are lower-income than those in other parts of the study area and they have greater proportions of people of color, as described in Section 1.5.2. Additionally, the proximity of these homes to downtown destinations including grocery stores, healthcare facilities, restaurants and other transit routes may make them more desirable to higher-income people with the ability to choose where to live as investment in these areas increases. Thus, legally-binding affordable housing is especially important in transit station areas, so that residents who cannot afford market-rate housing may still enjoy transit accessibility and its accompanying benefits. Existing legally-binding affordable housing in the Rush Line BRT study area is shown in Figure 34 on the following page.

In addition to legally-binding affordable housing, naturally occurring affordable housing plays an important role in the overall landscape of affordable housing. Naturally occurring affordable housing is housing that is affordable for low- to moderate-income households without subsidies. This housing is often older and lacking in amenities. Though data on the availability of naturally occurring affordable housing is limited, a recent study by the Minnesota Department of Housing found that each year, approximately 1,300 affordable rental units are losing their affordability after being sold to a new owner (Minnesota Department of Housing, 2018). This trend makes the preservation of existing naturally occurring affordable housing especially critical and time-sensitive.

Figure 34: Legally-Binding Affordable Housing Units in the Study Area, 2017



4. RECOMMENDATIONS

Sections 4.1 through 4.3 describe recommended actions that study area cities, Ramsey County and Metro Transit can take to enhance the Rush Line's positive impact on health in surrounding communities. Recommendations are organized first by the responsible entity (cities, Ramsey County and Metro Transit), and then by the four assessment categories: Access and Accessibility, Connectivity, Employment and Jobs, and Affordable Housing.

To the greatest extent possible, this report aims to help local governments identify programs, policies and tools that are already in place and can be revised or targeted to deliver greater positive impacts within transit-accessible areas, including the communities that will be served by Rush Line BRT. Agencies should develop strategies for monitoring and evaluating progress related to the recommendations that pertain to them and seek out opportunities to partner with researchers (at universities, for example) to measure the impact of the Rush Line BRT Project on indicators related to health. Potential questions for consideration are listed in Section 4.4.

4.1. CITIES

4.1.1. Access and Accessibility

Employment and Jobs

- Encourage employment growth and economic development in transit-accessible areas (including within Rush Line BRT station areas and along connecting transit routes).
- Create and/or promote workforce development programs targeted toward the needs and skills of residents in high-unemployment areas, especially neighborhoods with access to transit.

Healthcare

- Encourage the development of healthcare facilities and programs in transit-accessible areas (including within Rush Line BRT station areas and along connecting transit routes).

Parks and Open Space

- Promote access to parks via active transportation (walking, biking and transit) by improving bicycle and pedestrian connections between transit stops and parks.
- Encourage and/or require developers to include programmed public spaces in new developments near transit.

Educational Opportunities

- Promote access to existing schools and educational facilities via active transportation by implementing Safe Routes to School Plans and making other improvements to bicycle and pedestrian facilities between educational institutions and transit stops/surrounding neighborhoods.
- Prioritize new educational facilities in areas accessible via transit and incorporate multimodal connections where possible.

4.1.2. Connectivity

Complete Streets / Multimodal Connectivity

- Connect streets where possible to create a more complete street grid. Minimize the distance between intersections and/or pedestrian crossings.

- Develop a well-connected network of sidewalks and pedestrian facilities that connect to BRT stations and offer pedestrians direct access to transit and nearby amenities.
- When areas are being redeveloped, implement grid layouts for new streets as possible to create additional routes between destinations. If new streets are difficult to connect, provide pedestrian and bicycle-only connections instead.
- Prioritize improving pedestrian and bicycle infrastructure during street reconstruction and pavement rehabilitation projects near planned stations.

Adjacent Development

- Revise existing zoning or permitting processes to prioritize transit-oriented development on parcels near Rush Line BRT stations.
- Consider requiring bicycle parking in new multifamily and/or mixed-use developments near transit.
- Plan for development surrounding Rush Line BRT stations to minimize setbacks between buildings and the street and prioritize pedestrian and bicycle access.
- Examine the impact of lighting, parking and public space on the safety and attractiveness of pedestrian and bicycle routes.
- Consider updating local plans to accommodate more activity around Rush Line BRT stations and build out streets and the walking environment in a transit-supportive manner.

Wayfinding

- Add wayfinding signage to help people navigate between stations and important destinations including jobs, healthcare, recreational facilities, open space and other desirable destinations.
    - Include information accessible to non-native English speakers and people with visual or auditory impairments.
    - Include wayfinding symbols to serve people with low literacy.
- Develop walking and bicycling visions around each station. Encourage decision-makers to walk and bike in today's environment to enhance their understanding of challenges and barriers to access and to shape a vision for accessible station areas.

Parking

- Seek opportunities to repurpose existing parking for new uses.
- Explore shared parking or district-wide parking scenarios in station areas to make more efficient use of parking supply.
- Reduce or eliminate off-street parking requirements for residential and commercial properties in station areas. Cities could accomplish this through transit-oriented development overlay districts or amendments to existing zoning classifications.
- As new developments are constructed, consolidate parking into structures and place new buildings as close to the Rush Line BRT station as possible. Consider requiring parking lots to be placed at the rear of buildings in Rush Line BRT station areas. Further explore the idea of reducing parking requirements in station areas and when bicycle or shared parking is available.
- For park-and-ride facilities, implement appropriate pedestrian and bicycle accommodations so users without vehicles also have convenient access to stations.

4.1.3. Employment and Jobs

- Consider creating incentives for businesses with jobs accessible to study area residents to locate near proposed Rush Line BRT stations.
- Create a strategy to help businesses located in transit-accessible areas grow.
- Conduct outreach with employers located near transit to raise awareness of available transit options.
- Coordinate with employers located in station areas to help promote transit use among employees and use transit access in recruitment efforts.

4.1.4. Affordable Housing

- Encourage multifamily and affordable housing in Rush Line BRT station areas. Consider density bonuses and reducing parking requirements for developments that include affordable housing.
- Support efforts to stabilize and preserve naturally occurring affordable housing in the Rush Line BRT project area and in the study area in particular. For example, the City of Saint Paul recently expanded eligibility for the state-authorized "4D" property tax discounts to all landlords who keep at least 20 percent of their units affordable to low- to-moderate income households. These and other policies to incentivize the preservation of existing housing that is affordable to low-income households can be explored in all study area communities, with particular outreach and attention to Rush Line BRT station areas.
- Consider coordinating with local housing-focused nonprofits to capitalize on opportunities to provide housing for people with low to moderate incomes, focusing on the study area in particular.
- Create revolving loan funds to offer low-interest financing and/or deferred payment loans to low- and moderate-income households conducting basic and necessary home improvements (roof replacement, furnace/HVAC replacement, energy conservation, lead abatement, etc.). The City of Saint Paul offers similar loans through the Saint Paul Home Loan Fund. While the primary function of these programs would likely be to stabilize naturally occurring affordable housing where it currently exists, targeted promotion and awareness within the study area could help minimize the potential for displacement.

4.2. RAMSEY COUNTY

4.2.1. Access and Accessibility

Employment and Jobs

- Encourage employment growth and economic development in transit-accessible areas (including along the Rush Line and connecting services).
- Create and/or promote workforce development programs targeted toward the needs and skills of residents in high-unemployment areas, especially neighborhoods with access to transit.

Healthcare

- Encourage the development of healthcare facilities and programs in transit-accessible areas (including along the Rush Line and connecting services).

Parks and Open Space

- Promote access to parks via active transportation (walking, biking and transit), such as by implementing bicycle and pedestrian improvements on county roads that provide access to parks.

Educational Opportunities

- Prioritize new educational facilities in areas accessible via transit and incorporate multimodal connections where possible.

4.2.2. Connectivity

Complete Streets / Multimodal Connectivity

- Consistent with the Ramsey County 2040 Plan, continue to implement the County's "All Abilities Transportation Network" policy.
- Prioritize pedestrian and bicycle infrastructure on county roads, especially those that serve Rush Line BRT and other transit routes.
- Prioritize improving pedestrian and bicycle infrastructure during street reconstruction and pavement rehabilitation projects near planned stations.

4.2.3. Employment and Jobs

- Improve promotion and language accessibility of employment programs such as the Ramsey County Resource Room and Adult Employment Program for residents who have limited English proficiency.
- Expand promotion and awareness of Ramsey County employment programs to increase participation, particularly in the study area.

4.2.4. Affordable Housing

- Explore ways to support the development and preservation of affordable housing near transit, including targeting existing resources such as revenue bonds or 501(c)(3) bonds for high-opportunity sites. Revenue bonds are municipal bonds that are repaid via revenue from a specific source, such as usage fees generated by new water and wastewater utilities. 501(c)(3) bonds are tax-exempt bonds that municipal and state agencies issue on behalf of a nonprofit organization to finance a capital project, such as rehabilitation of a housing development owned and maintained by a nonprofit.
- Continue to support developers in creating affordable rental units through the Ramsey County Multi-Family Development Program. To the extent possible, prioritize transit-accessible sites in the award of competitive grant funding and loans through the Community Development Block Grant and HOME programs.
- Participate in regional partnerships to improve access to affordable housing.
- Assist developers in accessing regional and/or federal funding and financing tools, including the Metropolitan Council's Local Housing Incentives Account, Local Communities Demonstration Account and Transit-Oriented Development programs.

4.3. METRO TRANSIT

4.3.1. Access and Accessibility

- Consider augmenting connecting bus service to Rush Line BRT stations.
- Provide travel training assistance to Metro Mobility customers interested in using Rush Line BRT. The pedestrian improvements and faster travel times associated with Rush Line BRT may provide fixed-route transit service that is useful to some customers who currently rely on ADA paratransit service.
- Continue to provide language assistance in accordance with Metro Transit's Limited English Proficiency Language Access Plan.
- Participate in local and regional workforce development efforts to offer guidance on accessing jobs via transit.

4.3.2. Connectivity

- Explore adjusting local bus routes to maximize transfer opportunities at Rush Line BRT stations.
- Explore increasing frequency and/or improving the span of service on routes that connect to Rush Line BRT.
- Explore transit priority treatments for routes connecting to Rush Line BRT.

4.3.3. Employment and Jobs

- Host job fairs and target other recruitment efforts in transit-accessible locations in the study area to promote hiring from these areas.
- Evaluate Metro Transit hiring requirements to make sure they do not create unnecessary barriers for job seekers.
- Coordinate with project area cities, Ramsey County and study area employers to inform employees and job seekers of available transit options including Rush Line BRT.

4.3.4. Affordable Housing

- Explore opportunities to support affordable housing development on land owned by Metro Transit, including near major transit stations.

4.4. ONGOING ASSESSMENT QUESTIONS

4.4.1. Access and Accessibility

- How has access to resources including grocery stores, healthcare facilities, parks and educational facilities improved? Are travel times reduced?
- Have new resources and amenities, such as healthcare facilities, been developed in the study area?
- Has language assistance been expanded?

4.4.2. Connectivity

- How has connectivity improved for pedestrians and bicyclists? What additions and/or improvements have been made to the pedestrian and bicycle networks?
- Has connecting transit service in the study area improved in terms of frequency and/or span of service?

4.4.3. Employment and Jobs

- How do residents of the study area compare to employees in the study area in terms of age, educational attainment, income and other key characteristics? Have discrepancies in these characteristics been reduced?
- How have jobs available in the study area changed since completion of the Health Impact Assessment? Are there more jobs that match the skills and education of people who live in the study area? Are more people who live in the study area employed in the study area?
- Have municipalities implemented programs to improve employment outcomes in the study area?

4.4.4. Affordable Housing

- How has the amount of affordable housing in the study area changed since completion of the Health Impact Assessment?
- How has the location of affordable housing in the study area changed? Is it more proximate to quality employment and other resources and amenities? Is there more affordable housing located near transit hubs?
- Has existing affordable housing in the study area been preserved?

5. CONCLUSION AND NEXT STEPS

This Health Impact Assessment is intended to document baseline conditions for potential health impacts of the Rush Line BRT Project and to identify opportunities for proactive planning and development actions that will maximize health benefits to study area communities. Overall, the Rush Line BRT Project is expected to have positive overall health impacts on surrounding communities. Nevertheless, ongoing public engagement and collaboration among municipalities, Ramsey County, Metro Transit and other regional partners will enhance the project's opportunity for success and ensure that benefits are broadly shared across diverse populations both within the study area and across the Twin Cities metropolitan region.

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