

Corridor G: River to River Phase One Existing Conditions

March 2025



Pittsburgh Regional Transit

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WHAT IS CORRIDOR G?

NEXTransit, the Long-Range Plan for Pittsburgh Regional Transit (PRT) adopted in September 2021, identified Corridor G: the East Central River to River Connection as the highest priority corridor for study. PRT applied for and was awarded funding by the Federal Transit Administration (FTA) as part of the Areas of Persistent Poverty (AoPP) program to fund this multi-phase study. As discussed in a later section, the majority of the Corridor G project study area is comprised of areas of persistent poverty, meaning poverty rates of 20 percent or more have existed for the past 30 years. The intention of the federal AoPP program is to award grants for planning, engineering, or development of technical or financing plans for projects that improve transit services in areas experiencing long-term economic distress.

The purpose of this corridor study is to evaluate modes, technologies, station locations, and alignments for a river-to-river transit connection linking the Strip District, the Hill District, Oakland, and Hazelwood in the City of Pittsburgh. The project focuses on addressing areas of persistent poverty along Corridor G, historically divided by transportation infrastructure and topographical challenges, and connecting disadvantaged communities to opportunities. The potential corridor could support future expansion south of the Monongahela River.

Phase One is a fact-finding and data discovery phase. A critical aspect of Corridor G: River to River is understanding the history of how the communities which comprise it came to be established and why community needs must play a leading role in project outcomes. The Corridor G Community Needs Framework section highlights the community-driven approach meant to guide this study, a "living" framework that will evolve alongside public engagement efforts in future phases. The Corridor Context and History section establishes a brief history for each of the four Corridor G district focus areas as well as their transportation context.

The Existing Conditions of the Corridor section documents the conditions of Corridor G, including as related to transportation safety, transit service and performance, the natural and built environment, air quality, and zoning and land use. This section, as well as the Origin-Destination Travel Pattern Analysis, establishes a baseline understanding of the current context of the Corridor G project area. The closing section discusses next steps and recommends how to use data in Phase One to inform future phases of the study.

OVERVIEW OF THE PROJECT STUDY AREA

The Strip District, the Hill District, Oakland, and Hazelwood were selected as focal points for Phase One due to public feedback captured during development of the NEXTransit Long-Range Plan, macro-level travel desire between them, overall growth trends, and a history of persistent poverty. These communities are among the most historically underinvested in Pittsburgh. As shown in **Figure 1**, residents in the Strip District, Hill District, Hazelwood, and Oakland are more likely to be Black, have lower incomes, and experience poverty than the rest of Pittsburgh.[1]

Figure 1: Demographics of Corridor G Districts and the City of Pittsburgh

	Corridor G Four Districts	City of Pittsburgh
Population	25,828	303,843
Race/Ethnicity (Top 3 Groups)	White (49%), Black (37%), Asian (8%)	White (63%), Black (23%), Asian (7%)
Average Household Income	$59,508	$95,084
Population under 150% of Federal Poverty Threshold	51%	26%
Proportion of Renters	82%	57%

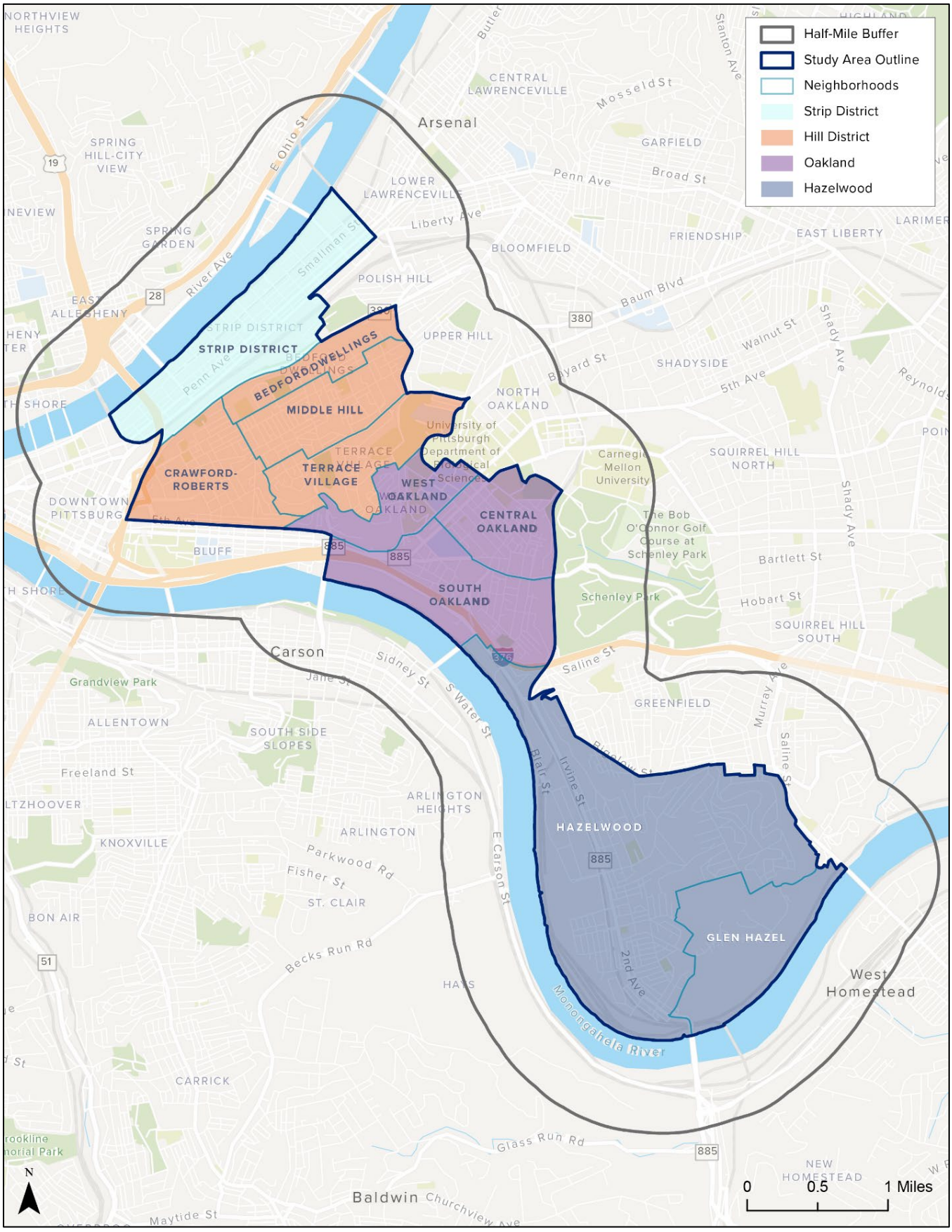
The corridor's analysis area was determined by a half-mile buffer added around the boundaries of the four districts. This ensured a broad enough analysis area that maintained flexibility for potential alignments of premium transit options. Some physical constraints of the corridor are also noted, including but not limited to hills, rivers, roads, railroads, and other barriers. Most of the maps in this Phase One report clip data to the half-mile project study area buffer. The travel pattern analysis section focuses solely on the four districts.

Figure 2 depicts the project study area with a thick, gray half-mile buffer around the four districts outlined in dark blue, as shown in the legend. The color-coded districts show thin blue outlines of the ten neighborhoods which comprise them, noted below:

- **The Strip District** stands alone as both a district and a neighborhood. Important to note is that the Strip District, while visually adjacent to the Hill District, sits at significantly lower elevation.
- **The Hill District** is comprised of Bedford Dwellings, Crawford-Roberts, the Middle Hill, and Terrace Village.
- **Oakland** is comprised of West Oakland, South Oakland, and Central Oakland.
- **Hazelwood** is comprised of Hazelwood and Glen Hazel.

[1] U.S. Census Bureau. (2022). 5-Year American Community Survey (ACS).

Figure 2: Corridor G Project Study Area Boundaries



POPULATION AND DENSITY

According to 2022 5-Year American Community Survey (ACS) data, the 88 census block groups which intersect the Corridor G project study area have a population of roughly 96,525 people. **Figure 3** below shows population density for these intersecting block groups, calculated by dividing population by area in square miles for each census block group. In this map only, the census blocks are preserved outside the half-mile buffer project study area to convey an accurate portrayal of population density by block group.

As indicated on the map, the most population dense areas include parts of North, Central, and South Oakland as well as the western part of Bluff. The Hill District, while less dense than Oakland, still has significant population density. The Upper Hill has density slightly higher than that of Polish Hill and Lower Lawrenceville. The least densely populated areas include Glen Hazel, Hazelwood, and the Strip District. However, parts of the Strip District are densely populated in recently constructed multi-family residential developments. Parts of Hazelwood, moving east from the Monongahela River, are a bit denser with population but still relatively low. North of Hazelwood, Greenfield has significant population density across its block groups.

In terms of alignment opportunities, transit tends to be more successful in areas where there is more population, constrained land use, and other factors encourage use of alternative transportation modes, such as walking, cycling, and taking transit. Transit is more efficient in densely developed communities because it attracts more riders in relation to capital costs and operating and maintenance costs. However, densely populated areas may also be more limited in available space for new construction.

INCOME AND POVERTY

Figure 4 below shows median household income by census tract (in the last 12 months) within Corridor G, according to 2022 5-Year ACS data. Lighter colors indicate lower median household income and darker colors indicate higher, as shown in the legend. The Hill District and Oakland immediately draw the eye as having some of the lowest median household income, under roughly $37,000. Bedford Dwellings has the lowest median household income at $12,740. Glen Hazel also has relatively low median household income at approximately $25,800, with neighboring Hazelwood's being roughly twice that of Glen Hazel. Bedford Dwellings and Glen Hazel mostly consist of public housing.

The Strip District, despite having relatively low population (approximately 3,235 in 2024 according to Strip District Neighbors), has one of the highest median household incomes in the study area at approximately $119,000. Additionally important to note is the growing popularity of the Strip District. According to the Strip District Neighbors Full State of the Strip 2024 Report, the area has witnessed 425% population growth since 2010 when the population was just 616.

Figure 5 shows individuals below 150% of the poverty level (in the last 12 months) by census tract within Corridor G, according to 2022 5-Year ACS data. Lighter colors indicate tracts with fewer individuals below 150% of the poverty level while darker colors indicate tracts with more such individuals. Immediately clear from the map is that Oakland (primarily Central and South Oakland) has the highest number of individuals (6,875) below this level of poverty.

Figure 3: Population Density (People per Square Mile) by Block Group Intersecting Corridor G

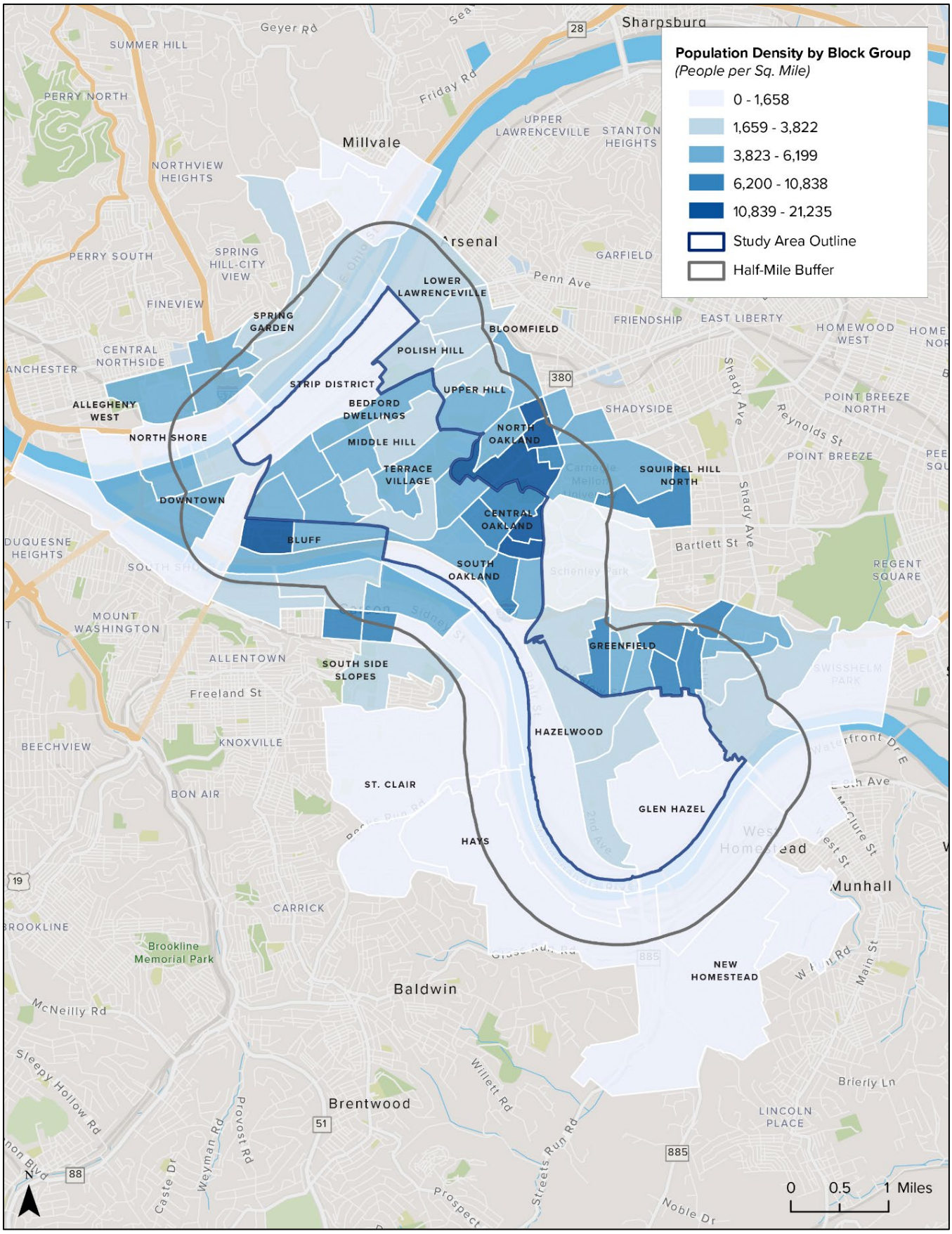


Figure 4: Median Household Income by Census Tract within Corridor G

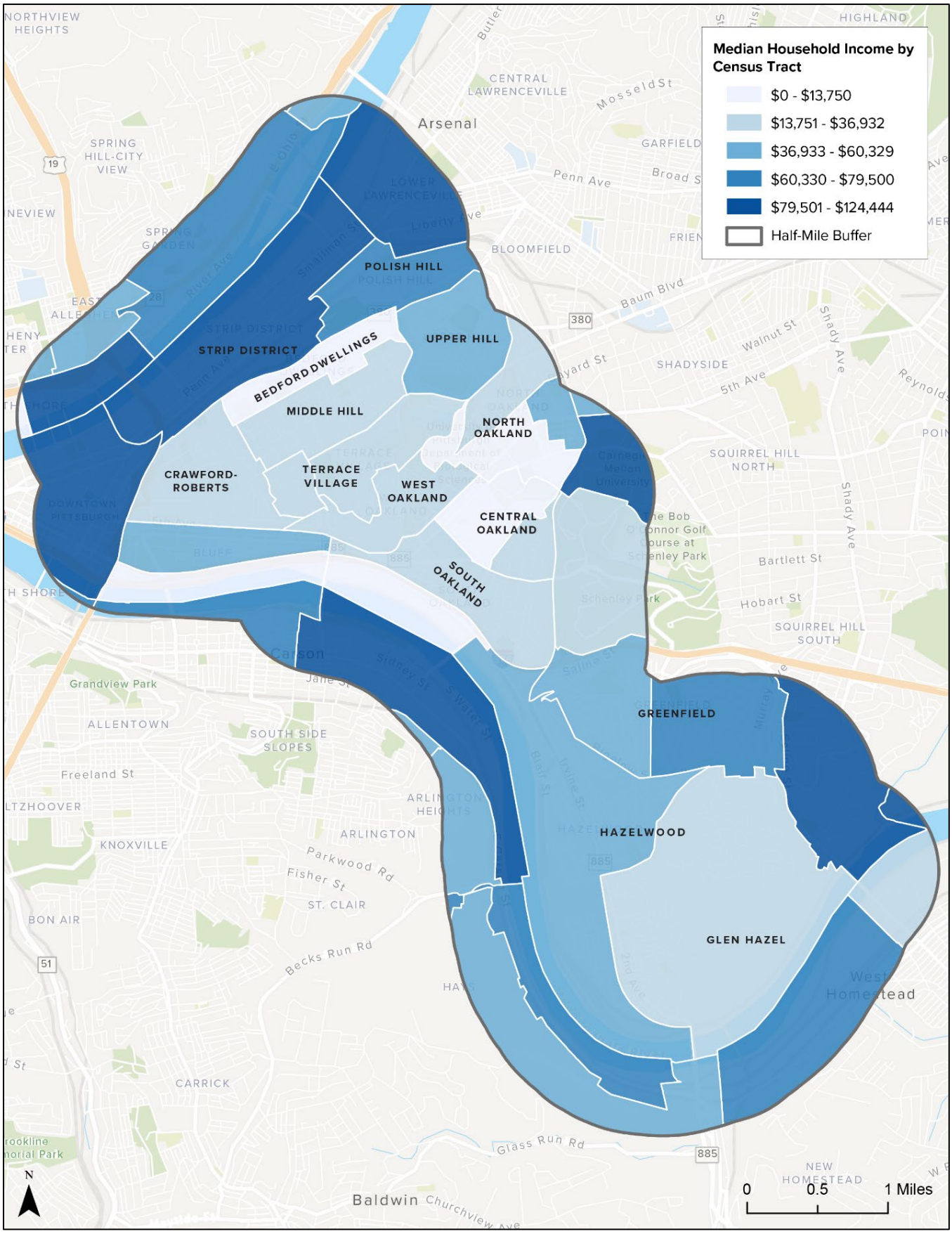
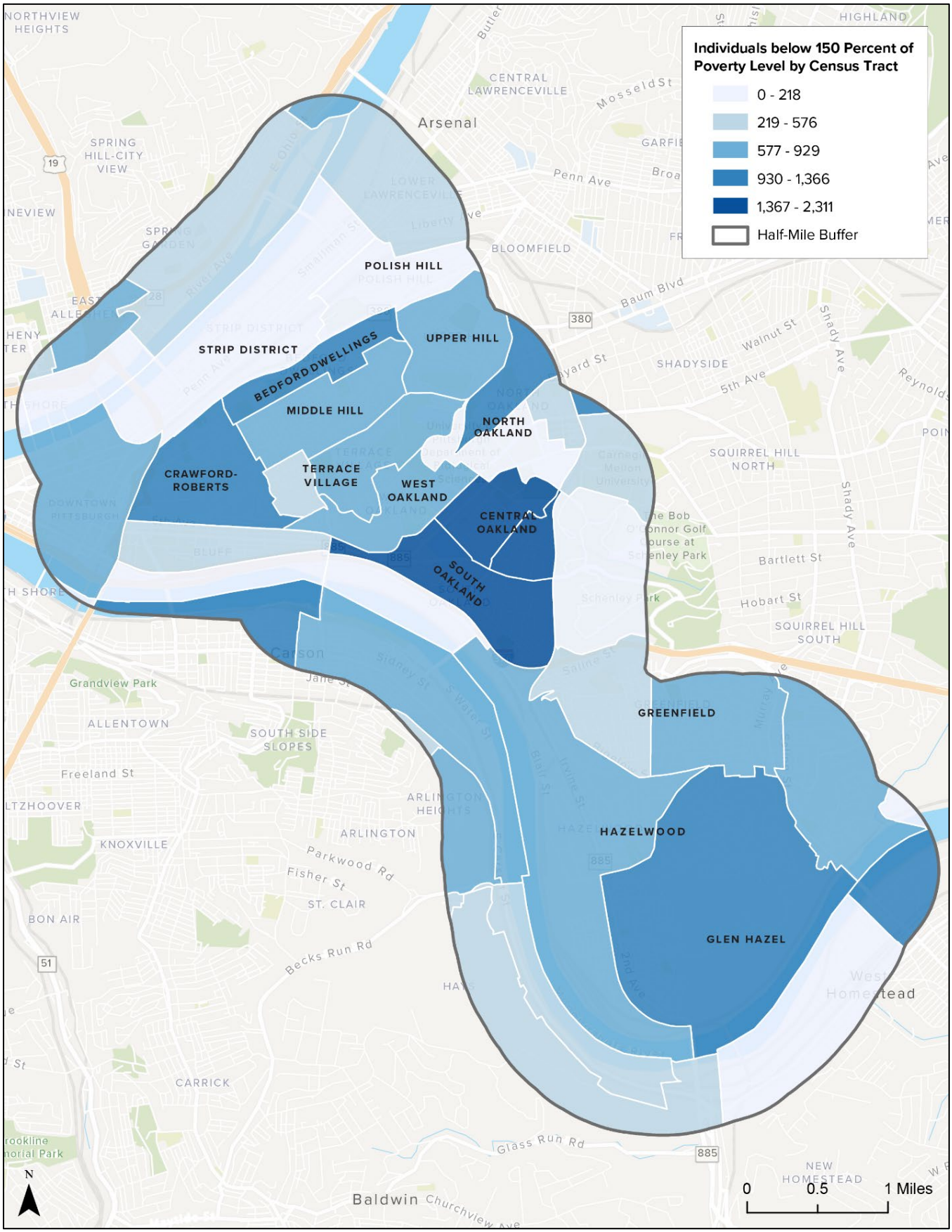


Figure 5: Individuals below 150 Percent of Poverty Level by Census Tract within Corridor G



Hazelwood and the Hill District also have relatively more individuals below 150% of the poverty level. Combined, Hazlewood and Glen Hazel have approximately 2,000 individuals and the Hill District tracts together have roughly 4,000 individuals. The Strip District again shows up on the lower end of the spectrum, with only 130 individuals below poverty level.

HISTORICALLY DISADVANTAGED CENSUS TRACTS

Approximately 5.83 square miles (or about 44%) of the roughly 12.83 square mile Corridor G project study area have been designated as historically transportation disadvantaged communities by USDOT.

Transportation disadvantaged generally refers to populations such as persons with disabilities, older adults, and people with low incomes who depend on public transportation to access crucial services like healthcare, employment, grocery stores, and more. Transportation investment in communities such as these has been historically overlooked by transportation organizations despite having the highest need. **Figure 6** indicates the 2010 census tracts within the project study area that are designated as transportation disadvantaged, shown with a dark blue fill.

As shown, the entirety of the Hill District, parts of Oakland, and all of Hazelwood and Glen Hazel are considered transportation disadvantaged. The Strip District and South Oakland are not. Data for 2010 disadvantaged census tracts in Allegheny County came from the USDOT Grant Project Location Verification Tool.

AREAS OF PERSISTENT POVERTY

Approximately 10.61 square miles (or about 83%) of the roughly 12.83 square mile Corridor G project study area have been designated as AoPP by the USDOT, meaning they maintained poverty rates of 20 percent or more for the past 30 years. **Figure 7** indicates the 2020 census tracts within the project study area that are designated AoPP. Data for 2020 areas of persistent poverty census tracts in Allegheny County came from the USDOT Grant Project Location Verification Tool.

INDEX OF TRANSIT NEED

PRT's Index of Transit Need highlights areas that have a higher proportion of disadvantaged populations or populations that traditionally have greater mobility needs. Metrics include people with disabilities, people in poverty, minority race and ethnicity persons, households without vehicles, older adults, persons under age 18, persons with limited English proficiency, and female heads of house.

Figure 8 shows the transit need score by census block group in the study area, with darker colors indicating areas with more mobility need and lighter colors indicating areas with less mobility need. The Index of Transit Need is a comparison of all the block groups in Allegheny County plus a 3-mile buffer and has been updated with 2023 5-Year ACS data. Within Corridor G, the Hazelwood and Glen Hazel area (and particularly the block group separating the two) has the greatest mobility need. Mobility needs are also high throughout the Hill District but relatively low in the Strip District.

WHERE WORKERS WORK AND LIVE

Figure 9 shows the distribution of where workers work (in blue) against where they live (in yellow). The larger the circle, the higher the number of people working and/or living in that block. In general, there is more variety in the locations of where people live versus where they work, which is to be expected because jobs tend to be more concentrated geographically than housing.

Downtown tends to have higher job than housing clusters, and the locations of housing tend to be in specific areas with higher numbers of people. This is to be expected for residential distribution in dense urban areas like Downtown Pittsburgh. Beyond the Golden Triangle, dense job clusters tend to be in specific areas (such as the Strip District and around the universities). The Strip District also has significantly more jobs dispersed throughout than housing clusters. Otherwise, the distribution of jobs is typical of neighborhood and community commercial development, located in areas dominated by housing or mixed-use development.

While workers tend to live in more or less equal numbers throughout the Uptown (Bluff), Oakland, and Hill District communities, the distribution of where workers live narrows south of I-376. Notably, one can see specific concentrations in Greenfield and Summerset that are consistent with patterns of higher-density residential land uses and zoning. Additionally, the distribution of both jobs and housing in Hazelwood reflects the small-lot, low-density nature of that neighborhood as well as the boundaries that prevent additional residential growth, like the Hazelwood Greenway and industrial riverfront along the Monongahela. Data on where workers work and live (2021) comes from Longitudinal Employer-Household Dynamics (LEHD) data from the U.S. Census Bureau OnTheMap platform.

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Figure 6: Transportation Disadvantaged Census Tracts (2010) within Corridor G

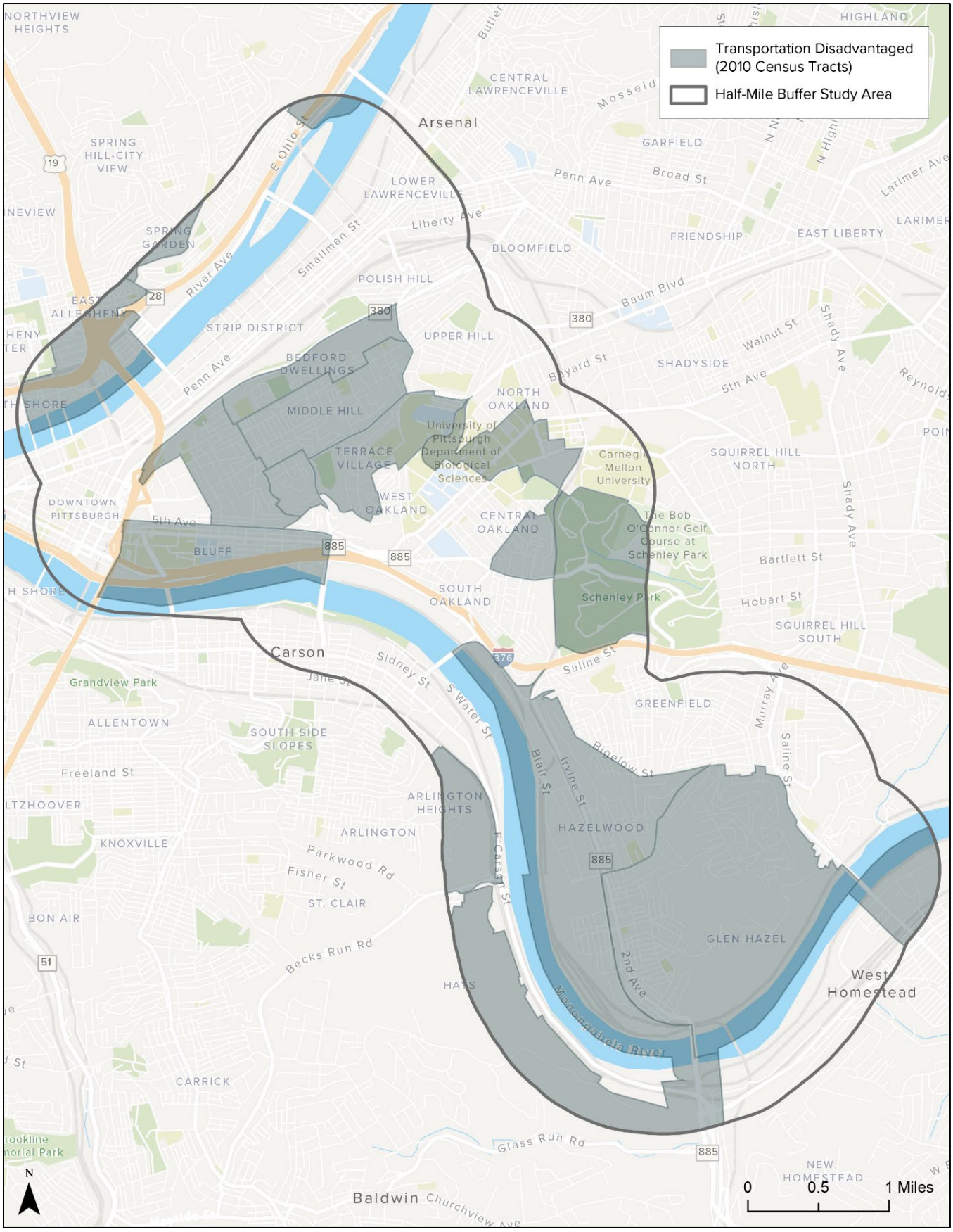


Figure 7: Areas of Persistent Poverty Census Tracts (2020) within Corridor G

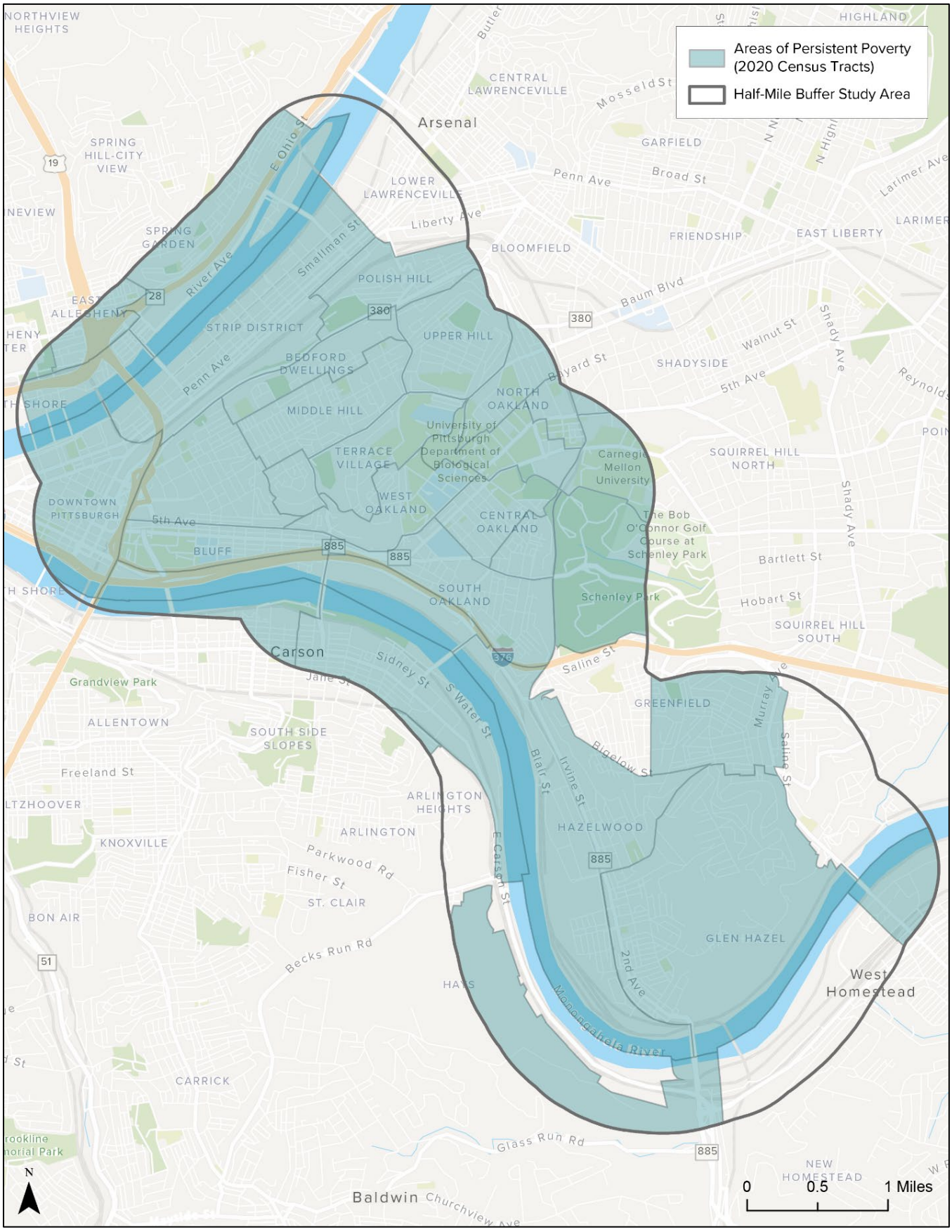


Figure 8: Index of Transit Need by Block Group within Corridor G

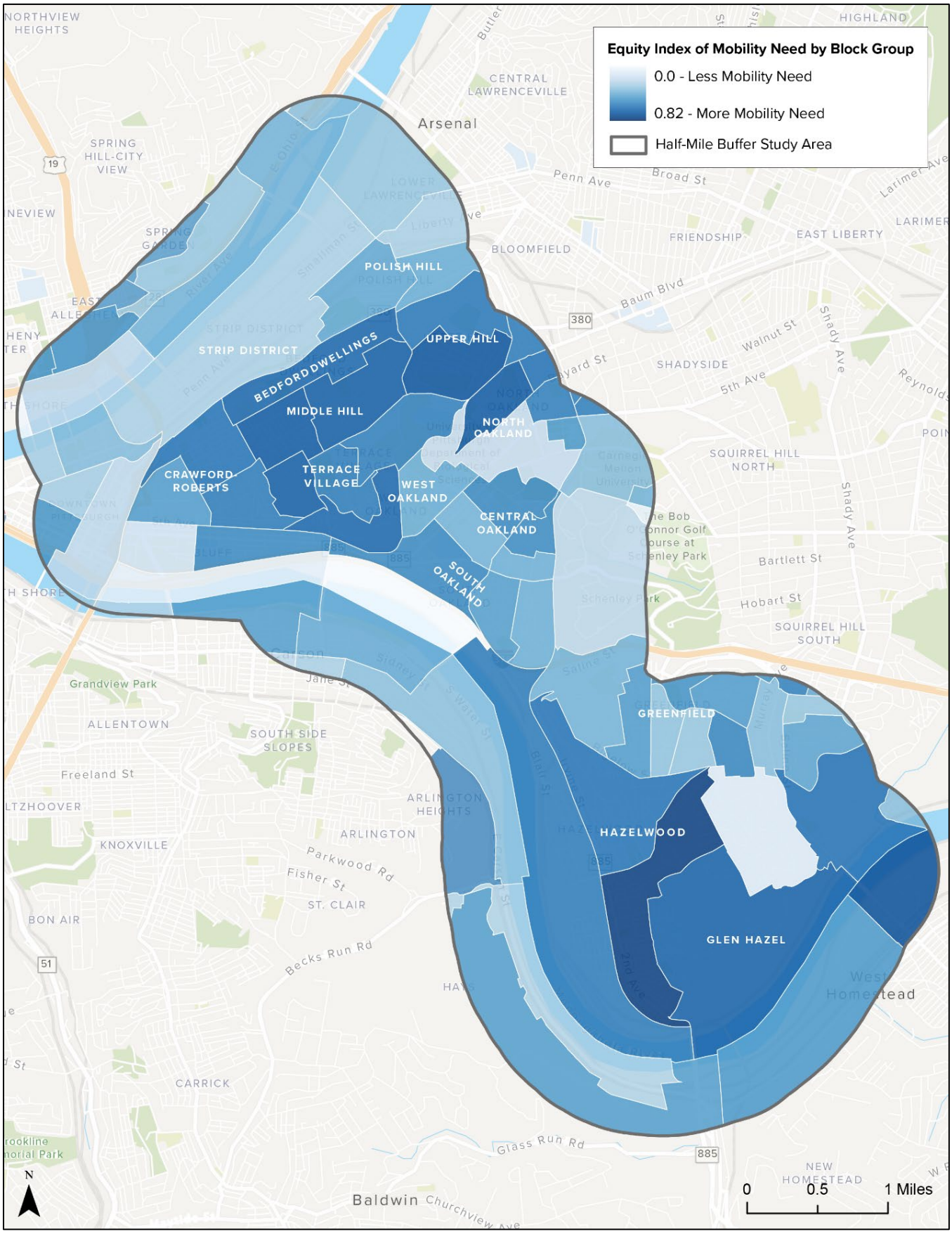
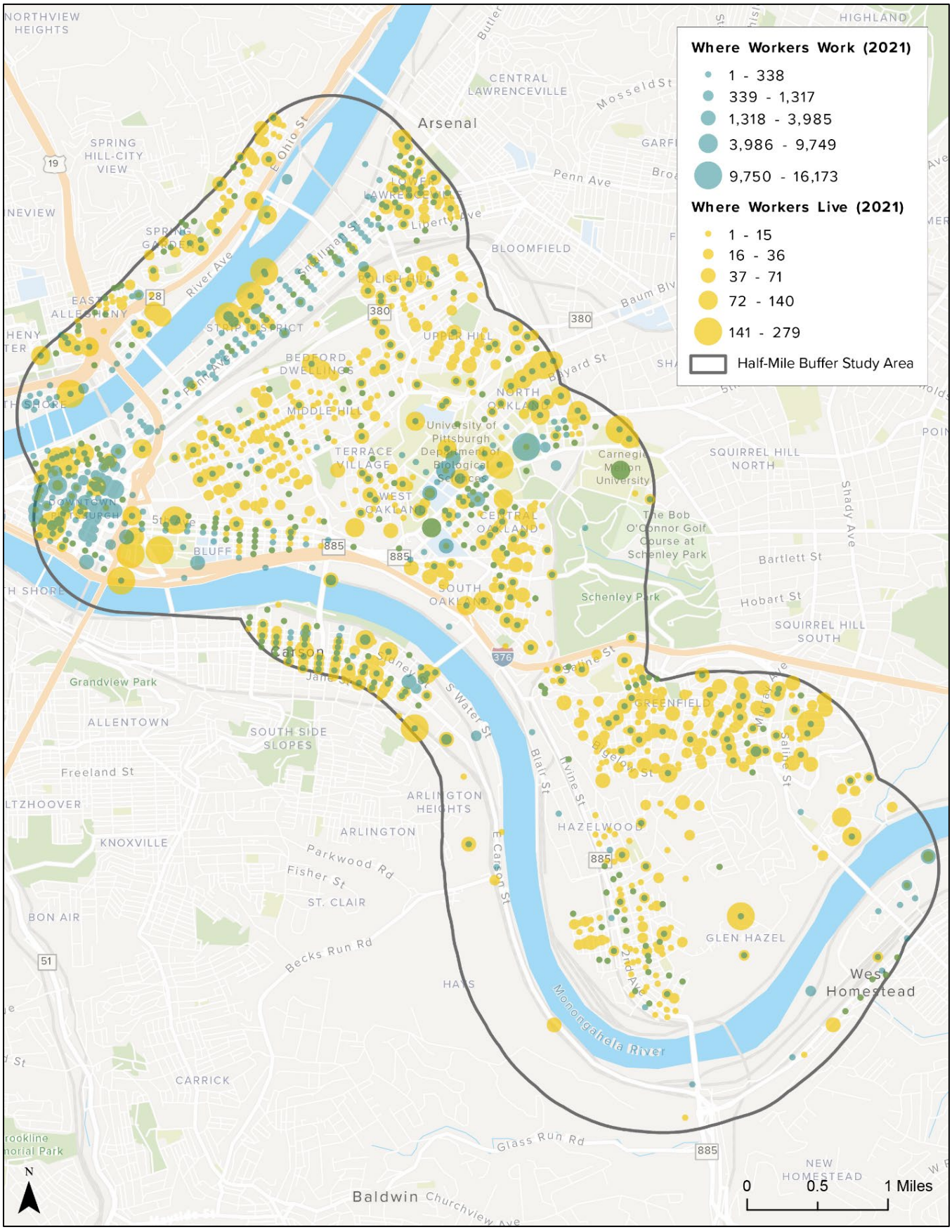


Figure 9: Where Workers Work and Where Workers Live (2021) within Corridor G



COMMUNITY NEEDS FRAMEWORK

Corridor G is composed of four neighborhoods—the Strip District, the Hill District, Oakland, and Hazelwood—each with distinct histories and contexts important to understand for planning and implementation of a major transit investment. These communities have been a focal point of persistent poverty due to disinvestment and past urban renewal policies, which have limited access to social and economic opportunities for residents. The purpose of the Corridor G Community Needs Framework is to provide guidance that ensures each task of the Corridor G project is carried out to ensure that the benefits of the project accrue to the communities, residents, and business who have been historically disadvantaged.

The Community Needs Framework is intended to be a guiding resource for current and future project teams and key stakeholders to ensure community-based decision-making and outcomes. It is also intended to be a living document, one that evolves to changing contexts and new strategies over time, as large-scale corridor projects can take decades to fully realize. Some of the guidance may already be part of federal or local grant requirements but are still documented since these requirements may change with different administrations. The initial framework, created at the start of the project, provides guidance on six components:

1. **Baseline Understanding** – level-setting on the definition of community need and current PRT community-facing initiatives
2. **Corridor Context and History** – an overview of each of the four corridor neighborhoods, their histories, demographics, and transportation contexts
3. **Goals and Objectives** – draft goals and objectives and example metrics
4. **Community and Stakeholder Engagement** – principles and strategies for engagement that is meaningful, inclusive, and community-driven
5. **Transparency and Accountability** – strategies for creating feedback loops and conducting a transparent and accountable project over a long timeline
6. **Implementation and Benchmarking** – strategies and considerations for implementing and tracking progress on a major corridor project

The Community NeedsCommunity Needs framework provides guidance to the entire project timeline of Corridor G, though some of the six components may be more relevant to some tasks than others. The initial phase of this study includes this framework, plus tasks setting up the project management structure for the study and analyzing the background of the corridor. This first phase and the Community Needs Framework 1.0 will set the foundation for future project phases and is conducted primarily within PRT and its consultant team.

The following sections are components of the framework developed for Corridor G: River to River Phase One; please refer to the Community Needs Framework 1.0 full document for more details.

DRAFT COMMUNITY NEEDS GOALS

Specific draft goals were created for the Corridor G project. The intent is for these goals to be initially drafted by PRT before being vetted by organizations and stakeholders in the impacted communities and other experts in the region. Developing goals that are explicitly focused on advancing community need strengthens PRT's commitment and ensures that community priorities are integrated into every part of the project decision-making.

The following draft goals were developed based on discussions with project team staff during the community solutions framework workshop held at the start of the project.

1. **Develop community understanding, support, and ownership of the project.** PRT and the project team should work to create engagement strategies that are inclusive of a diverse range of corridor residents, workers, and other stakeholders while prioritizing those who rely on transit the most. For engagement to be meaningful, the feedback must be used to inform project decision-making, and the purpose and results of the engagement effort must be clearly communicated to those engaged or impacted. Building community ownership of the project will ensure more successful implementation that better addresses transit needs and supports community development and redevelopment, including housing needs.
2. **Improve access to social and economic opportunities for corridor residents.** Transit connects neighborhoods to key destinations, but the corridor's topography and historic underinvestment in transportation options (e.g., rapid transit, funiculars) has limited the effectiveness of public transportation along the corridor. A major goal for Corridor G is to improve transit access to jobs, education, healthcare, grocery stores, and social services, especially for priority communities.
3. **Mitigate and prevent displacement from project implementation.** A major concern expressed by community members on past efforts in this corridor and current project staff is the risk of displacement caused by major investments. Displacement can apply to both residents and businesses and occur through construction impacts, rising rents and property values, and other factors. Setting a goal of limiting displacement risk from the start of the project helps to ensure that residents and business owners currently in the corridor can benefit from the transit investment in the corridor.

CORRIDOR CONTEXT AND HISTORY

When planning in a corridor, it is important to look at its history, social and economic disparities, and changes in transit patterns and its impacts. While a transportation project like Corridor G will not be able to remedy all socioeconomic disparities in the corridor, a well-designed transit system can help alleviate some of the pressures caused by non-transportation issues. Additionally, the acknowledgement of personal lived experiences and the inclusion of successful and failed project approaches are embraced as valuable lessons.

Corridor G neighborhoods are a focal point of persistent poverty and economic successes and downtowns in Pittsburgh's rich history. Community members in these neighborhoods are historically and currently facing the following issues[2]:

- **Housing and Displacement:** Among the earliest residents of the corridor were middle-class free Black people whose population began to swell as a result of the Great Migration, a national phenomenon that led to around 21,000 new Pittsburghers[3], and a policy of redlining in the City that limited the areas in which they could live. Discriminatory policies and urban renewal disproportionately affected Black communities, particularly in the Hill District. In addition to redlining, major city redevelopment projects resulted in the demolition of housing in corridor neighborhoods. More recently, the Lower Hill District Development and Hazelwood Green development in Pittsburgh represent critical inflection points in the city's urban renewal history, as they aim to revitalize formerly industrial areas and foster economic growth.
- **Economic Disinvestment:** The collapse of the steel industry region-wide led to widespread unemployment, loss in property taxes, increase of large tracts of vacant lots, reduced access to jobs due to industry shifts, and a decrease in low-wage and steel-based trade and labor jobs available. For most of the 20th century, the major steel facilities in Corridor G were the Jones & Laughlin (later LTV) Eliza Furnace and the coke works in Hazelwood. Some of the corridor's residents may have traveled further to other areas to work in the steel mills. Conversely, many the Hazelwood steel mill employees commuted from areas outside of Corridor G.

[2] Reviewed resources include: Rivers of Steel Oakland and Hill History; Heinz History Center: Crossroads of the World: How Urban Renewal Changed the Hill; Hill Community Development Corp. The History of the Hill; Wohlwill, D. (PRT) - Corridor G Review Studies Plans Actions; Pittsburgh Beautiful A Brief History of Hazelwood; Schwartz, W. Pittsburgh Quarterly The Studied Neglect of the Hill District; Foretek, J. National Trust for Historic Preservation: The Story Of The Pittsburgh Neighborhood That Inspired "Fences"; Hill District Digital History: The Pittsburgh Courier; Pittsburgh Courier Exploring the Hill District's rich history and vibrant future; Pittsburgh Beautiful The Inclines of Pittsburgh

[3] Trotter, Joe W., "Reflections on the Great Migration to Western Pennsylvania." Western Pennsylvania History (1995)

- **Health Disparities:** Corridor residents are prone to health issues due to inadequate housing and effects from industrial pollution. Residents of the corridor neighborhoods face significant health disparities due to lack of health care access as well as ongoing environmental issues.
- **Education Gaps:** Segregation and unequal property tax funding have affected the quality of education, resources, and workforce development opportunities available in corridor neighborhoods. Population decline and low enrollment have led to several public-school closures in corridor neighborhoods, including Schenley High School, Gladstone School, and the Holmes School. Students in these neighborhoods are forced to travel long distances by school bus and PRT buses to other schools in the city.
- **Transportation Disadvantage:** Portions of the study area have lower levels of transit service compared to other corridors in PRT service area. Challenging topography significantly impacts bus routing within and between the corridor's neighborhoods, resulting in fewer direct transit routes and longer commute times. Significant population decline in the Hill District and Hazelwood has led to transit service reductions that many residents continue to struggle with. An aging population combined with hilly conditions makes traveling by foot challenging for many residents. Hill District residents use jitneys as a transportation option as well which can be costly for riders.

The following sections provide more details for each of the four corridor neighborhoods.

STRIP DISTRICT

The Strip District is a historic industrial neighborhood that is geologically bound by the Allegheny River to the north and a steep hillside to the south. The neighborhood's major throughway is Liberty Avenue, an urban arterial road connecting Downtown Pittsburgh to Lawrenceville, two neighborhoods that have seen significant growth and investment in the last 20 years. Within the neighborhood, the topography is largely flat, allowing for a flourishing walkable commercial area.

BRIEF HISTORY

The present-day Strip District was once known as "Shannopin's Town" and belonged to the Lenape Tribe of the Delaware Native Americans.[4] The neighborhood had been used as farmland and steadily grew into an industrial hub for mills and warehouses beginning with its annexation into the city in 1837[5] and lasting until the 1930s. The Strip District's proximity to Pittsburgh's Downtown, gentle topography, and the emergence of railway lines made this neighborhood a natural choice for companies like U.S. Steel, Westinghouse, and the Pittsburgh Reduction Company (ALCOA) in the late 19th century.

The Pennsylvania Railroad established its presence in the Strip District in 1852 when it entered Pittsburgh with the construction of its line from the east. In the following decades, its presence became more prominent with the construction of passenger and freight stations,

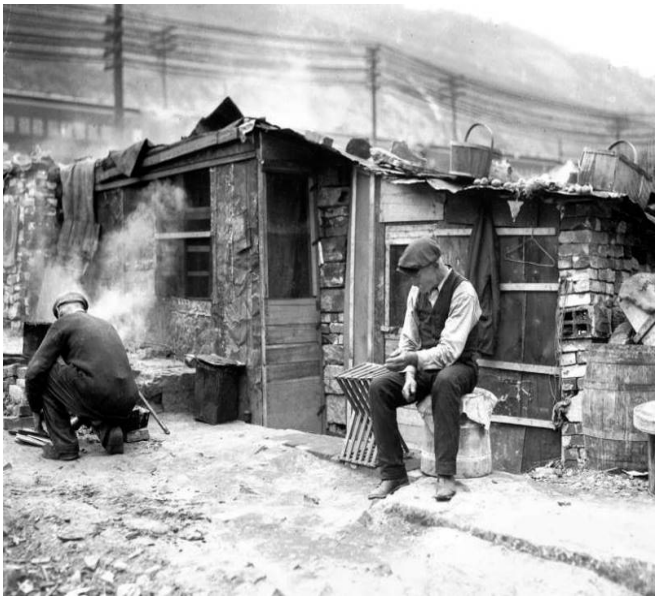
[4] Jonathan Klemens, FSA Scot, BS Pharm, MSLBE, "Indian Towns And Trading Posts Of The Ohio Forks"

[5] Neighborhoods for Living Center, **Pittsburgh Neighborhoods** ([Pittsburgh]: [City of Pittsburgh], 1981), 88

passenger car and freight car yards, and locomotive servicing facilities. Additionally, the railroad established the transportation corridor now also used for the Martin Luther King, Jr. East Busway.

As the railroad and steel industries declined in Pittsburgh, food markets began taking over the old warehouses, marking another transition in the Strip from an industrial center into a commercial center. There are still remnants of the Strips District's manufacturing past as structures that were left have been repurposed as arts related institutions like the Heinz History Center, Pittsburgh Opera House, Pittsburgh Ballet Theater and 31st Street Studios. There has been an influx of new businesses and residents who find value in the historic architecture, walkable network, and proximity to community and cultural services. New residential developments along the riverfront have allowed the neighborhood to transition into a choice location for people seeking a walkable community in an urban location.

Image 1: Strip District Shantytown (1930-1934)



TRANSPORTATION CONTEXT

While the Strip District has great connectivity within the neighborhood, topographical features make connections to surrounding neighborhoods, namely the Hill District, difficult. Historically, the neighborhood was connected to neighbors to the south via one of Pittsburgh's seventeen historic inclines, two of which still operate today but none in Corridor G. The Penn Incline, also known as the 17th Street Incline, crossed over Bigelow Boulevard to Liberty Avenue, from Ledlie Street to 17th Street. It featured 20-ton cars that hauled coal, freight, and passengers.

Today, almost the entire neighborhood has access to frequent transit service as defined by PRT. This currently includes 5 local lines that stop in the Strip District including the 54, 86, 87, 88, and 91 routes. The East Busway also runs through the neighborhood but with its position on the hillside, and stations just outside each end of the neighborhood, access to this transit asset is difficult; City and PRT plans have recommended a station be added in between. Although the network of railroad lines has contracted, the Strip District is still served by the Allegheny Valley Railroad along Railroad Street up until 21st Street where it transitions into a pedestrianized street as it enters Downtown. Additionally, the original Pennsylvania Railroad corridor (now Norfolk Southern's Pittsburgh line) located along the north edge of the East Busway continues to be used by freight and passenger trains. Regional interest in a more public serving riverfront has also led to the development of over a mile of bike trails along the Allegheny River.

The City of Pittsburgh Department of Mobility and Infrastructure (DOMI) is also currently contracted, right sizing Penn Avenue through the Strip District to improve safety conditions, calm traffic, and provide better mobility access for all road users by reducing the number of travel lanes to better match the utility of the road.

HILL DISTRICT

The City of Pittsburgh recognizes five neighborhoods comprising the Hill District: Crawford-Roberts (a.k.a. Lower Hill), Bedford Dwellings, Middle Hill, Terrace Village, and Upper Hill, all of which are in the primary Corridor G study area except for Upper Hill, which is in the study area's half-mile buffer. Crawford Street, Dinwiddie Street, and Kirkpatrick Street serve as the main north-south urban corridors that all connect to Bluff, commonly known as Uptown. Robinson Street, which is at the eastern edge of the project area, connects to both Polish Hill and South Oakland. Centre Avenue is one of two key east-west urban streets connecting the Hill District's commercial corridor to the PPG Paints Arena, Downtown Pittsburgh, and the North Oakland, Bloomfield, Shadyside, and East Liberty neighborhoods.

BRIEF HISTORY

Its position on a plateau just outside of Downtown and sitting above the Monongahela and Allegheny Rivers made the Hill District a prime location for settlers who wished for a higher quality of life as early as 1796.[6] After the Lenape people living in Shannopin's Town in the 18th century were displaced by the time Fort Duquesne was built in 1754[7], the first groups to migrate to the Hill District were Jewish, Italian, Greek, Syrian, Polish, and Black people in the early 20th century,[8] with free Black people among the earliest settlers in the area.

Once World War I began, the increased demand for industrial workers spurred a Great Migration to cities like Pittsburgh in the 1910s, and Black migrants began to congregate in the Hill District due to housing segregation. The Black population shot up by 93% between 1910 and 1930.[9] Following this period of growth the Hill District grew into a cultural center of Black life in the city and a major center of jazz and Black Mecca from the 1930s to the 1950s.[10]

It cannot be understated that many economic development and urban renewal initiatives undertaken during the second half of the Twentieth Century were notorious for their severely negative impacts on the Hill District and resulting contentious history with its residents. In the 1950s, Pittsburgh was the first major city to implement a modern urban-renewal program, which eradicated historically under-maintained and under-employed neighborhoods across the nation in the name of progress. In 1961, the City displaced over 8,000 families through eminent domain to build the Civic Arena, which failed to deliver its promise for Black employment. Also in the early 1960s, the Crosstown Expressway project effectively cut off the neighborhood from Downtown.

Relative to other parts of the city, the Hill District was less of an employment center and better known as "the Crossroad of the World" for its nationally recognized musical culture for over 40-years.[11] During its heyday, Wiley Avenue was the Hill District's main street, representing the heart of the neighborhood. [12] Today, Centre Ave is the primary commercial

[6] Carnegie Mellon University, "The Hill District Community Collaborative: An Oral History"
[7] Shannopin's Town, Ohio History Central, Ohio Historical Society
[8] Maddie Gaw, "The Hill District: A Melting Pot at the Turn of the Century" Marin Theatre
[9] Kamilah Bush, "The Hill District" Portland Center Stage at the Armory
[10] David S. Rotenstein, "Erased and Forgotten Sports History in Pittsburgh's Crossroads of the World" The Metropole
[11] Klein, Barbara (Winter 2015). "Taking its Bow". Carnegie: 423–25.
[12] WQED, The Pittsburgh History Series; Wiley Avenue Days, 1991 https://americanarchive.org/catalog/cpb-aacip-120-31qfv097

corridor. The Elsie H. Hillman Auditorium, the Kaufmann Center, and the Granada Theater are often highlighted for their architectural significance and the legacy of community focus on the programming and ownership of these spaces. The other east-west connections run parallel to Centre, to the north. Bedford Avenue connects local assets like the Energy Innovation Center, historic August Wilson House, Miller Elementary School, Macedonia Church, and the Hill Dance Academy Theater to Downtown and Polish Hill neighborhoods.

TRANSPORTATION CONTEXT

The Hill District is a historic residential hillside and was a source of workers for the steel mills downtown during industrialization. While its location sits above two active riverfront communities (the Strip District and Oakland), steep slopes have resulted in a neighborhood that is built around a few strong east-west corridors rather than a centralized district. Hill District residents addressed their need for mobility and access through using the city steps, informal taxi services (known as "jitneys"), and a streetcar system that was later replaced by buses in the 1950s and 1960s.

The hillsides flatten in the south-western edge of the community where the Hill District meets Uptown (a.k.a. Bluff). This part of the neighborhood has also been designated by PRT as a Frequent Service Walkshed, being served by Routes 81, 82, and 83 along Centre Avenue, the community's major throughway, until Kirkpatrick Street. All three routes converge between Roberts Street and Dinwiddie where the Hill District's Centre Avenue corridor begins.

No routes currently connect the Hill District to Uptown. Additionally, until 1953, the Hill District was connected to the Strip District via the Penn Incline, also known as the 17th Street Incline, which stretched from Ledlie Street to 17th Street.

Streetscape improvements that support pedestrian safety have been made along Centre Avenue on a parcel-by-parcel basis as new developments have come online in the community, but there are no existing protected bike lanes that run through the Hill. Additional sidewalk and intersection improvements are planned as a result planning undertaken with a RAISE grant.

Image 2: View of the Irene Kaufmann Settlement (Left) and the Soap Box Derby Winner (Right)





OAKLAND

The City of Pittsburgh recognizes four neighborhoods comprising Oakland: West Oakland, North Oakland, Central Oakland, and South Oakland. These neighborhoods are in the Corridor G primary study area except for North Oakland, which is in the half-mile buffer surrounding the primary study area. Many of the city's largest medical and educational institutions sit in the north and west portions of the Oakland area. Oakland is known for its long vibrant history of innovation and creativity, supported by major employers like the University of Pittsburgh (Pitt) and its Medical Centers (UPMC), as well as Carnegie Mellon University (CMU) that sits just outside of the neighborhood boundary in Squirrel Hill North.

BRIEF HISTORY

Although indigenous tribes would often migrate to other areas, the Shawnee, Lenape, and Senecabut would visit Oakland and were among the people European settlers found when they first arrived.[13] After being pushed out of the city, many settled in reservations in Oklahoma while others moved to western Pennsylvania where they organized into the Council of Three Rivers American Indian Center, which still has a connection with the Oakland community.[14]

Present day Oakland was eventually owned by a few landowners and businessmen, including Neville B. Craig, the editor of the Pittsburgh Gazette.[15] Although the neighborhood was settled by German and Irish immigrants initially, people from Central Italy settled in Panther Hollow, becoming one of Pittsburgh's first Italian neighborhoods.[16]

The University of Pittsburgh, rooted in the Pittsburgh Academy established in 1787, moved to Oakland in 1909. The Oakland district, developed in the late 19th century, thrived due to the cable car line and later, electric trolley lines, population growth, and favorable economic conditions, and it remains intact today.[17]

Image 3: Fifth Avenue at Atwood Street (circa 1910) (University of Pittsburgh)



TRANSPORTATION CONTEXT

What began as predominantly rural farmland for European settlers in 1840 quickly became a suburban destination after the Great Fire of 1845 in Downtown Pittsburgh.[18] While the neighborhood technically touches the Monongahela River, most of the neighborhood is located on a plateau just above and separated from the river by steep hillsides and the Parkway East (I-376). The road network that has developed because of the topography has made connections to many of the adjacent communities difficult, like Greenfield to the east, Uptown to the west, and the Hill District

[13] Emma Hannan, "Native American history remains present throughout Pitt's campus" The Pitt News (2023)
[14] Ibid.
[15] University Center for Urban Research, "An Atlas of Oakland Neighborhood of Pittsburgh" (1977)
[16] Carlino Giampolo, "Panther Hollow A Pittsburgh Little Italy" La Nostra Voce (2019)
[17] Wikipedia, "Oakland (Pittsburgh)"
[18] Don Bindyke, "Aerial View of Oakland" Historical Pittsburgh

to the north. The Boulevard of the Allies is one of the few connections that bridges these valleys, connecting the neighborhood to Uptown and the Squirrel Hill commercial district on Forbes Avenue and Murray Avenue.

Oakland has many transit services that connect to the Hill District, Uptown, Squirrel Hill and other east end communities. Frequent transit runs along the 5th Avenue and Forbes Avenue Corridors with service on Routes 28X, 54, 58, 61A, 61B, 61C, 61D, 67, 69, 71A, 71B, 71C, 71D, 75, 81, 83, 93, and P3. South Oakland, in contrast, has fewer bus services and is topographically more challenging to serve. Additionally, Oakland is well served by an extensive pedestrian network that connects UPMC Magee-Women's Hospital to the University of Pittsburgh and Carnegie Mellon University campuses. Several institutions operate shuttle services which are largely redundant with PRT service.

Currently under construction is the University Line Bus Rapid Transit (BRT) that will improve the frequency and reliability of service traveling through Oakland.

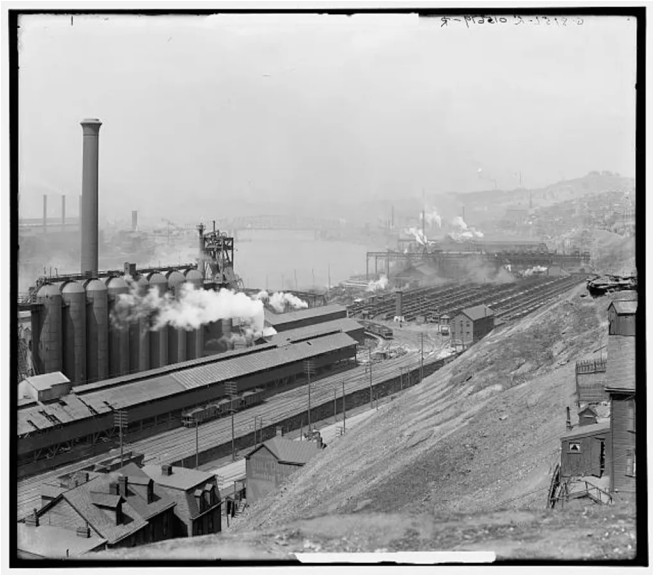
HAZELWOOD

Located along the Monongahela River with a significant amount of adjacent flat land, Hazelwood is a neighborhood with an extensive industrial history. Glen Hazel, also part of the study area, is a neighborhood within Hazelwood with a high proportion of low-income and senior housing. The primary commercial corridor, Second Avenue, has community destinations such as the Spartan Community Center, Community Kitchen, La Gourmandine, the Woods House, and the Carnegie Library of Pittsburgh. Development on the neighboring Hazelwood Green site currently includes One Valley at the Roundhouse, Mill 19, and Motional AD.

BRIEF HISTORY

The Hazelwood neighborhood has a rich migration history beginning with the Stanwix Treaty in 1758, which led to settlement by Scottish immigrants in an area called Scotch Bottom.[19] In 1784, John Woods built "Hazel Hill," named for the area's hazelnut trees, which still stands today as Pittsburgh's second oldest stone building. In the 1880s, an influx of Eastern European immigrants followed the expansion of the Jones & Laughlin Steel Company, turning Hazelwood into an industrial hub after the arrival of the Pittsburgh and Connellsville Railroad in 1861.[20] [21] [22] [23]

Image 4: The Jones & Laughlin Steel mills (circa 1900 to 1915) on site now called Hazelwood Green



[19] Peter Marshall, "Sir William Johnson and the Treaty of Fort Stanwix, 1768." Journal of American Studies (1967) 1#2 pp 149–179.

[20] University of Pittsburgh Center for Urban Research, "An Atlas of the Hazelwood and Glen Hazel Heights Neighborhoods of Pittsburgh 1977" pp 2

[21] Jerry Vondas, "Hazelwood Once Known As Scotch Bottom" Carnegie Magazine (1972)

[22] Newman-Schmidt Studios, "Hazelwood Parklet" Historic Pittsburgh

[23] Almono, "Hazelwood Green"

Hazelwood is the prime example of a legacy community whose story is intimately tied to its relationship with heavy industry. By the time it was annexed into the City of Pittsburgh in 1869, this community became a prime location for steel production, railroads, river trade, and boat building.[24] The area produced so much steel that, during World War II, the Hot Metal Bridge at the northernmost end of the community was the second most heavily guarded piece of infrastructure in the U.S.[25] Since the decline in steel, the community has struggled to build back an economy that would support the residents that had been left behind.

It was not until the Civic Arena was constructed that African American families began to make the community their home. However, the steel industry's decline in the from the late 1970s through the 1990s, marked by the closure of major plants like the Eliza Furnace and LTV Coke Works (the City's last steel mill) in 1998, led to significant population loss and disinvestment.[26] In 2002, Almono LP acquired a 178-acre brownfield site to promote revitalization efforts in the community, focusing on housing improvements and site redevelopment. The area once boasted a bustling streetcar line in the 1880s, underscoring its historical importance in transportation and industry.[27]

TRANSPORTATION CONTEXT

Hazelwood is made up of green hillsides in the east and bottomlands in the west. Even though Hazelwood is physically close to Greenfield and parts of South Oakland, its location and topography make it very difficult to feel connected to other areas of Pittsburgh.

Due to these topographical challenges, Second Avenue, where the commercial district is located, is the only major throughway that passes through the community; it connects across the Monongahela into the Hays community. Hazelwood Avenue and Johnston Avenue are both secondary roads that connect Hazelwood to the edge of Squirrel Hill and Browns Hill Road, leading to Munhall across the river.

All of the bus routes that serve the neighborhood converge on 2nd Avenue, including Routes 56, 57, and 93. While most of the neighborhood's industrial past is now gone, the Allegheny Valley Railroad (that runs along the river's edge) and CSX (next to 2nd Avenue) continue to operate freight rail service through Hazelwood. In preparation for future development, Hazelwood has updated 1.5 miles of its riverfront into walkable, bikeable public trails.

[24] Pittsburgh Beautiful, "Pittsburgh Neighborhoods: History of Hazelwood"
[25] Almono, "Hazelwood Green"
[26] Emma Folts and Eric Jankiewicz, "They're calling it 'bio valley,' but Hazelwood residents want to know what it means for them" Public Source
[27] Brian O'Neill, "A game plan to help Hazelwood rebound" Pittsburgh Post Gazette

EXISTING CONDITIONS

An analysis of the Corridor G project study area existing conditions helps to establish a baseline of factors and variables that may impact potential transit alignment options and/or the future siting of proposed stations. As mentioned at the outset of this document, the analysis area for the maps in this section include a half-mile buffer around the four districts: the Strip District, the Hill District, Oakland, and Hazelwood. This additional buffer was included to ensure a broad enough analysis area to maintain flexibility for possible alignments of premium transit options, as will be explored in future phases.

The existing conditions documented below are related to transportation safety, transit service and performance, the natural and built environment, air quality, and zoning and land use. Please note that all maps use the ESRI Community basemap; data sources for the layers in each are noted within their respective subsections.

TRANSPORTATION SAFETY

The safety of the transportation network shows the barriers that people face when opting for certain modes of transportation. This section will document bicycle and pedestrian crashes, the high injury network, the sidewalk network, the ratio of sidewalks to streets, and the bicycle network, trails, and facilities within Corridor G.

CRASHES AND THE HIGH INJURY NETWORK

Crash data from 2014 to 2023 was pulled from the Pennsylvania Crash Information Tool (PCIT) website using the custom query tool and filtered to focus solely on serious injury and fatal crashes. Crash data was further filtered to two categories: fatal crashes and suspected serious injuries. All data was then clipped to the Corridor G Phase One project study area to determine overall fatal and suspected serious injury crashes within the study area from 2014 to 2023 (see **Figure 12**). The clipped data was further filtered to determine the number and location of crashes involving pedestrians and cyclists.

As depicted in **Figure 10**, between 2014 and 2023 61 fatal crashes occurred within the project study area, 21 of which (about 34%) involved pedestrians and two of which (about 3%) involved cyclists. For the same ten-year period and geographic area, 290 suspected serious injury crashes occurred; of those, 95 (about 33%) involved pedestrians and 11 (about 4%) involved cyclists.

Replica travel pattern data and land use data (covered in later sections) both support the fact that significant numbers of people walk as a means of transportation within the project study area. People walking and cycling are considered vulnerable road users when it comes to conflicts with vehicles. **Figure 11** indicates how the speed of a vehicle impacts a pedestrian's ability to survive a collision. As shown, a person hit by a vehicle going 20 MPH has a 95% chance of survival but at 30 MPH that chance drops to 55% and at 40 MPH it drops to just 15%.

Figure 10: Fatal and Serious Injury Crashes within Corridor G (2014-2023)

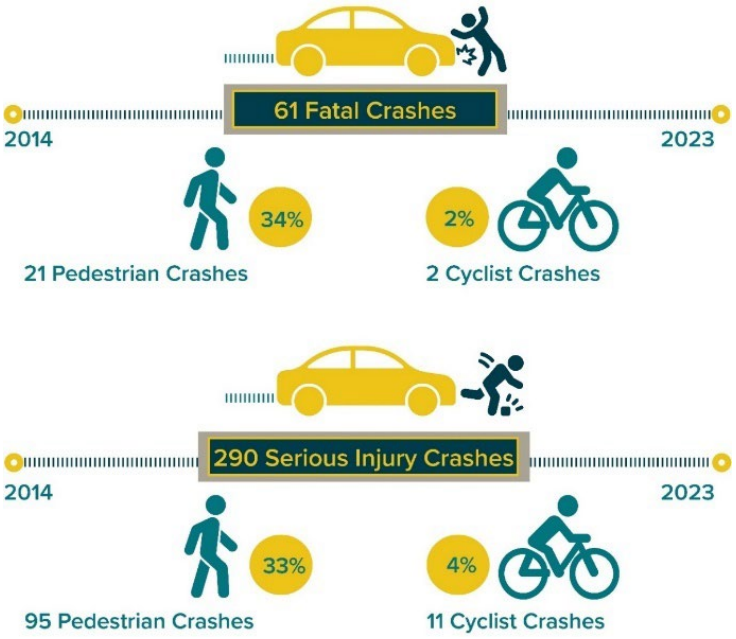
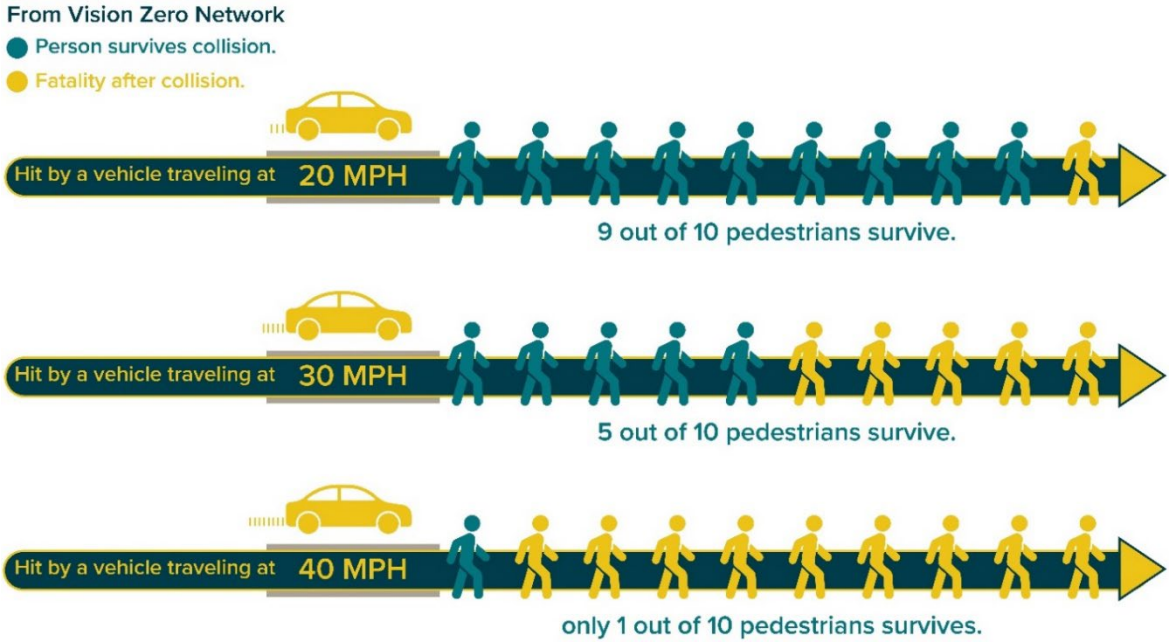


Figure 11: Vehicular Speeding Impacts on Vulnerable Road Users



The High Injury Network (HIN) identifies roadways with high frequencies of traffic-related injuries and fatalities between 2018 and 2022. The City of Pittsburgh identified these corridors to increase road safety and focus resources and improvements in these areas. HIN development is a crucial factor in Vision Zero plans, which set a goal of zero fatalities and severe injuries on roadways.

These HIN corridor patterns can be seen in the data displayed in **Figure 12**, which also shows crash fatalities and serious injuries in the study area across a 10-year span, from 2014 to 2023. Liberty Avenue, where a pedestrian died near 22nd Street in 2017, and Penn Avenue within the Strip District are part of the HIN and overlap many of the crash locations in this area.

Interesting to note is that in the last ten years the Hill District has had few bike/ped crashes and no fatalities aside from one in 2015 near its edge with the Upper Hill and Oakland. The Hill District's topography likely leads to reduced pedestrian activity and lower speeds on neighborhood streets. In Hazelwood, two pedestrian fatalities from 2015 and 2022 occurred within close proximity on the same stretch of SR 885 (also known as 2nd Avenue), which is part of the HIN. In Glen Hazel, a cyclist was killed near Johnston Ave in 2022, which is not part of the HIN.

Overall, the crashes in the HIN appear to be responsible for the majority of bike/ped fatalities and serious injuries within Corridor G over the last ten years. This means safety improvements for people walking and cycling on these roadways is likely to save lives, as could a new mode of transit which reduces people-vehicle conflicts.

SIDEWALKS

Figure 13 shows all sidewalks located within Corridor G and is overlayed above sidewalk to street "walkability" ratios by block group. As indicated in the map legend, a ratio higher than one means sidewalk linear feet exceeds street linear feet in that block group. The ratio of sidewalks to streets highlights where the sidewalk network lacks cohesion. Hazelwood, Glen Hazel, and the Strip District show a low ratio of sidewalks to streets. This can highlight the need for pedestrian facilities to help promote connections to housing and local businesses within these neighborhoods. Even though the rest of the corridor may have a higher ratio of sidewalks to streets, it does not mean that the sidewalk network lacks critical gaps or is of high quality. An in-depth analysis of certain areas of the sidewalk network would need to be completed to see the extent of the sidewalk network that needs repair or expansion, to make any alternative valid.

Sidewalk data (2024) via the SPC GIS hub. The sidewalk to street "walkability" ratio data (2021), from WPRDC, was joined to 2020 block group geographies and clipped to the study area.

BICYCLE NETWORK

The bicycle network throughout the study area has a few high-quality bicycle facilities, but they are fragmented. The cycle tracks on Penn Avenue and Schenley Drive to Panther Hollow Road and the Three Rivers Heritage Trail (along the riverbanks) and Junction Hollow Trail (west of Schenley Park, running north-south) shared use paths provide a low stress biking experience across Pittsburgh. Unfortunately, there is a lack of bicycle facilities that connect this high-quality part of the network to more neighborhoods, shops, and jobs. As highlighted in **Figure 14,** anyone who wishes to travel from Hazelwood to the Strip District by bicycle (or by bus) must first make a long detour either in downtown, Oakland, or East Liberty. However, given the steep topography throughout much of the corridor, it is difficult to say how attractive cycling would be if north-south facilities did exist.

A heat map of the bicycle racks and purple dots of bikeshare stations within Corridor G can be seen in **Figure 14**. There are clusters of bicycle racks around places like the Hazelwood business district, Oakland, and the Strip District. POGOH is the provider of the bikeshare stations throughout the City of Pittsburgh, which allow residents and visitors to rent bicycles in half hour increments. The cluster of POGOH stations follows a similar pattern as the bicycle racks but does also extend to portions of the Hill District and some residential areas. POGOH is planning to increase the number of bikeshare stations in their Phase 3 POGOH Expansion.

Figure 12: Fatal and Serious Injury Crashes (2014 to 2023) and the High Injury Network within Corridor G

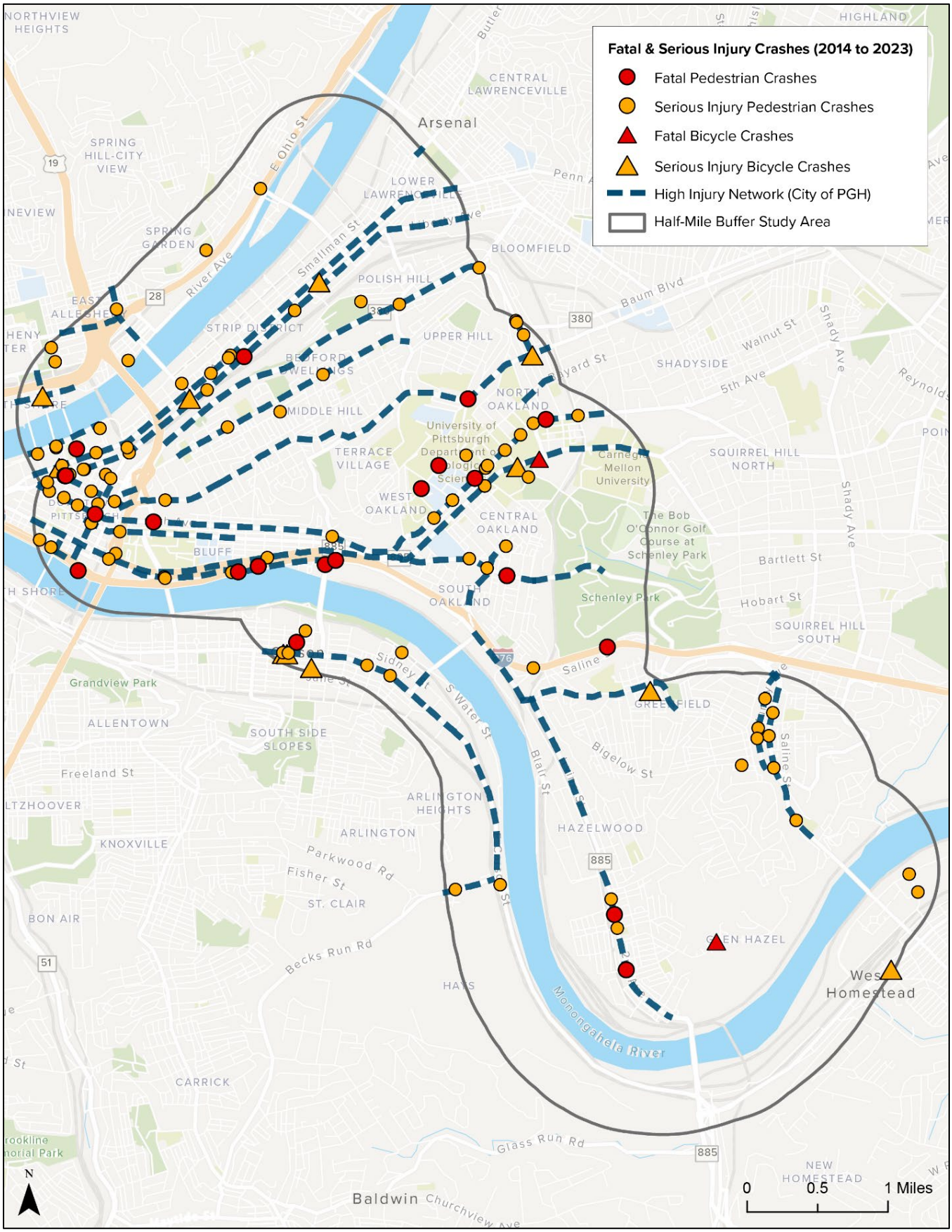


Figure 13: Sidewalk to Street Ratio by Block Group (2021) and Sidewalks within Corridor G

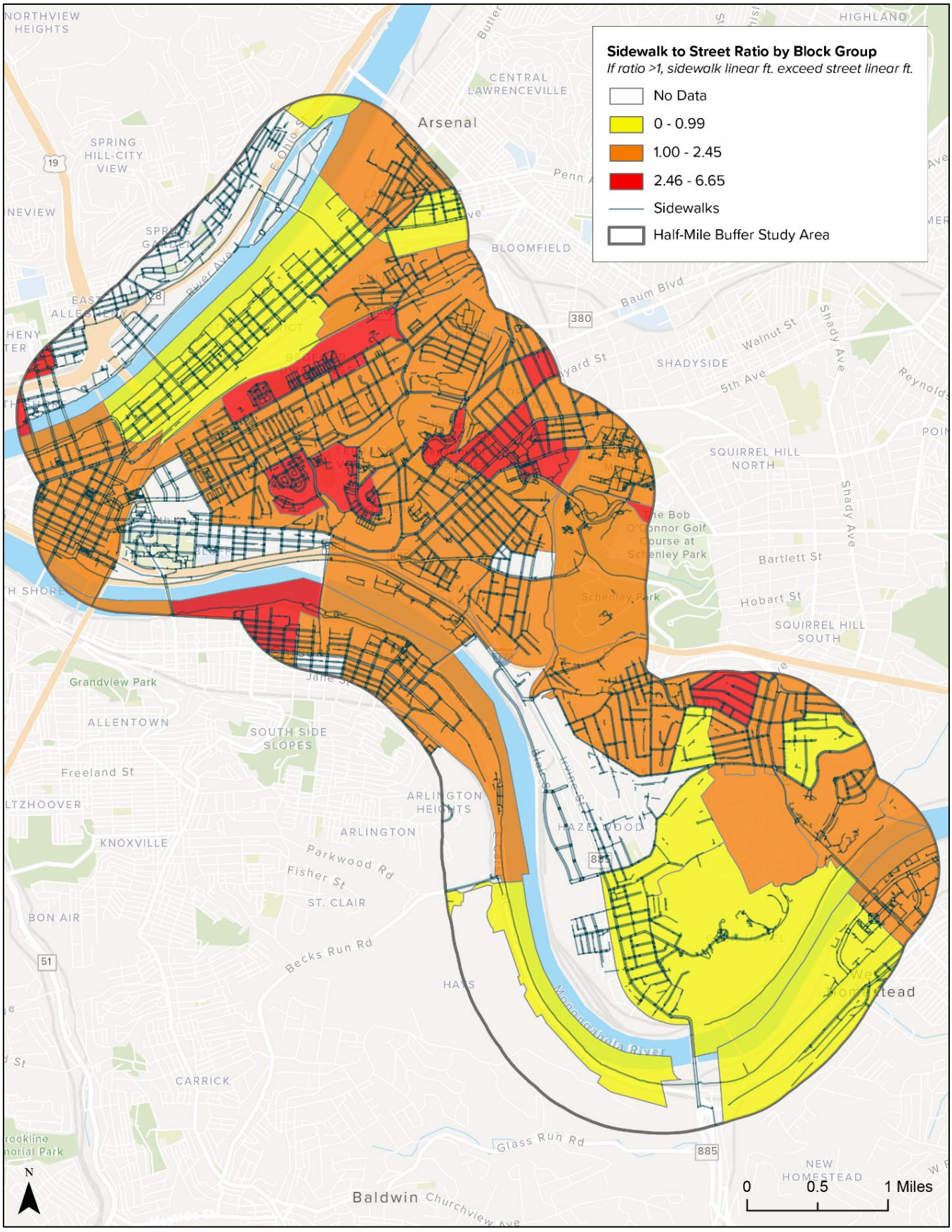
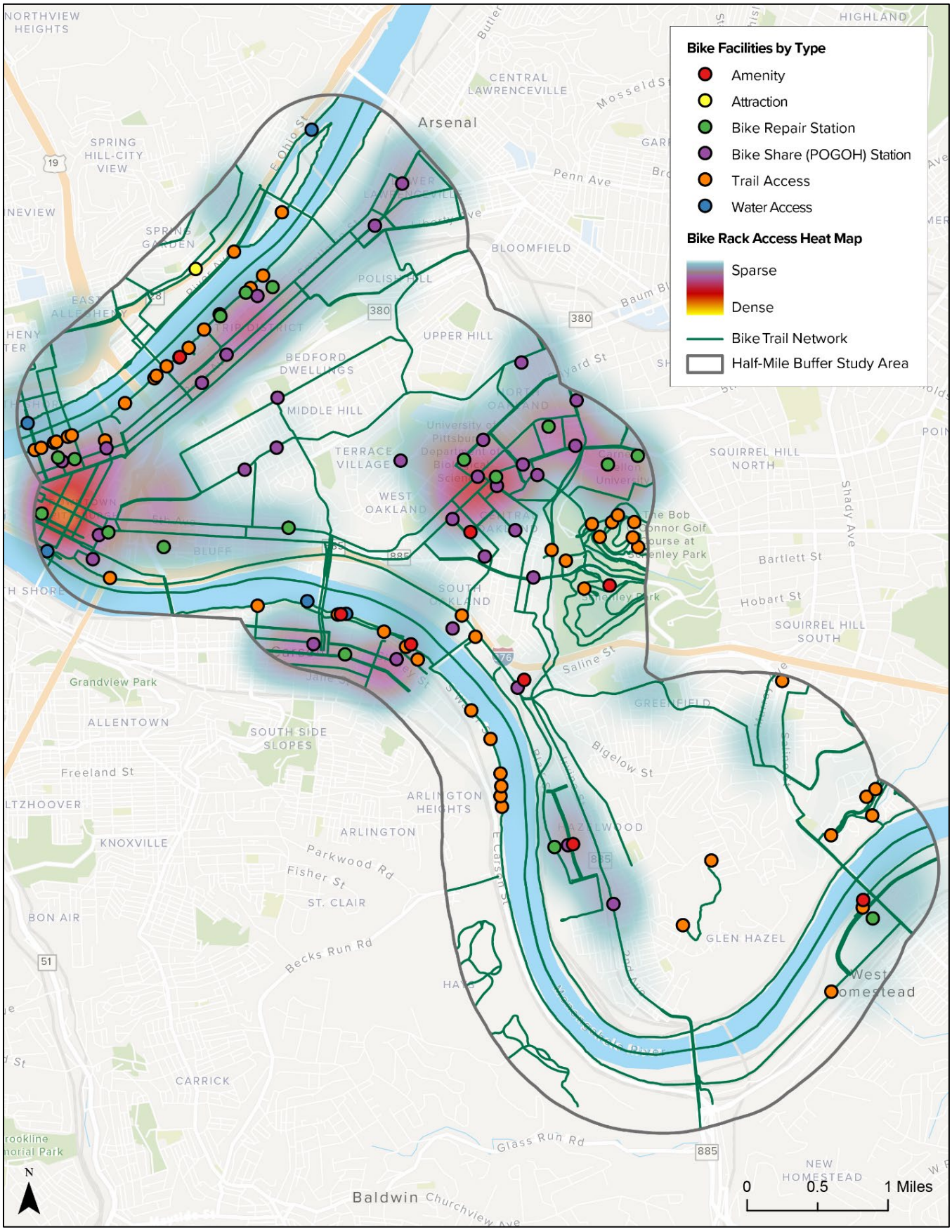


Figure 14: Bicycle Facilities, Bike Rack Access, and the Bike Trail Network within Corridor G



There are several areas within the project study area with plans for major bicycle corridors, which can be seen by the dashed lines in **Figure 15**. As shown, an on-street bicycle facility is planned along Fifth Avenue from Downtown, through Uptown, and ending in Oakland, which matches the alignment for the University Line BRT project currently under construction. A shared use path is proposed to go through Hazelwood to help connect the Three Rivers Heritage Trail and the Junction Hollow Trail to the business district of Hazelwood. Through these proposed bicycle facilities, a more connected network will be formed with major corridors wrapping from Hazelwood to the Strip District by passing through downtown with dedicated, high-quality bicycle infrastructure. Data for bicycle and trail facilities, the bicycle and trail network, and bike racks (all 2024) came from the SPC ArcGIS Hub. Data for existing and proposed bicycle facilities came directly from the City of Pittsburgh via e-mail.

TRANSIT SERVICE AND PERFORMANCE

This section of the existing conditions report highlights the transit services PRT operates within Corridor G as well as documents some aspects of how transit is performing in the study area.

OVERVIEW

PRT is the primary provider of transit services within the Corridor G project study area, operating light rail, bus, and paratransit. Pitt and CMU in Oakland each have their own on-campus transportation available only to university students, faculty, and staff. UPMC also operates shuttle buses for its Oakland facilities' staff.

Within the half-mile buffer of the project study area, PRT has 678 stations and stops, six bus layovers, three light rail lines (downtown only), 78 weekday bus routes, and 53 weekend bus routes. The two busway stations within Corridor G are Penn Station and Herron Station in the Strip District. First Avenue Station, Wood Street Station, and Steel Plaza Station in Downtown Pittsburgh are the three light rail stations within Corridor G. All light rail lines, Blue, Silver, and Red, can be accessed from any of these stations.

Figure 16 provides a visual overview of stations, stops, routes, and bus layovers within Corridor G. As the map shows, there are no north-south bus routes that connect the Strip District to the Hill District. Currently, riders in the Hill District trying to reach the Strip District (and vice versa) must first travel to Downtown Pittsburgh or Oakland and transfer to reach their destination. Examined later in this report, topographic differences between these two areas prevent traditional bus transit from providing a north-south option because there are no north-south roads. The goal of the Corridor G: River to River Phase One project is to consider possible transit alternatives that would effectively overcome the elevation differences within the study area.

TRANSIT PERFORMANCE

It is important to remember that the Corridor G study area was largely developed before most people owned and operated a personal vehicle. This means that many of the roads are older and narrower than what is typically built today and cannot always support the turning radii or weight of a 40' bus. PRT operates transit in a topographically unforgiving environment which can impact services, travel times, and speeds for its riders.

Figure 15: City of Pittsburgh Proposed and Existing Bicycle Facilities by Type within Corridor G

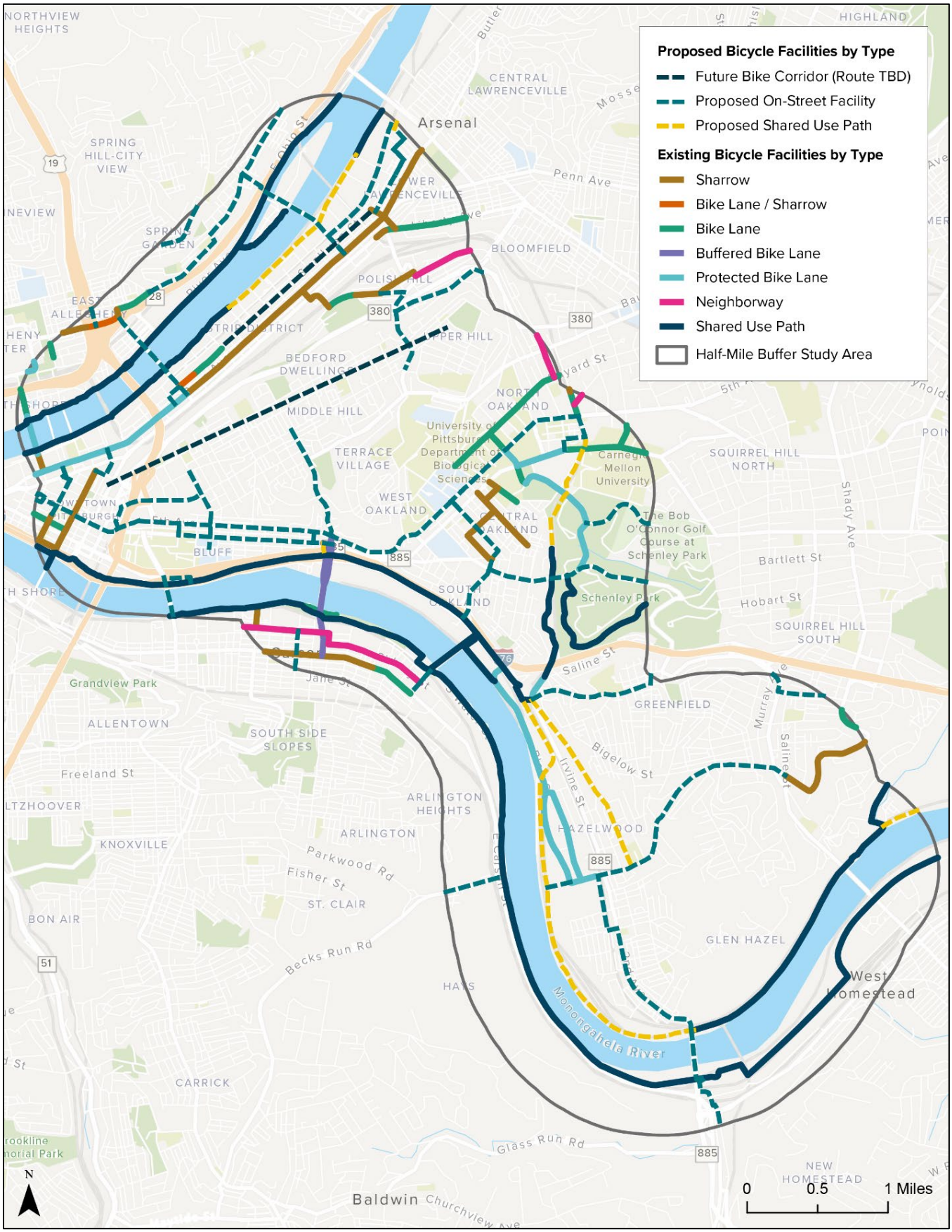
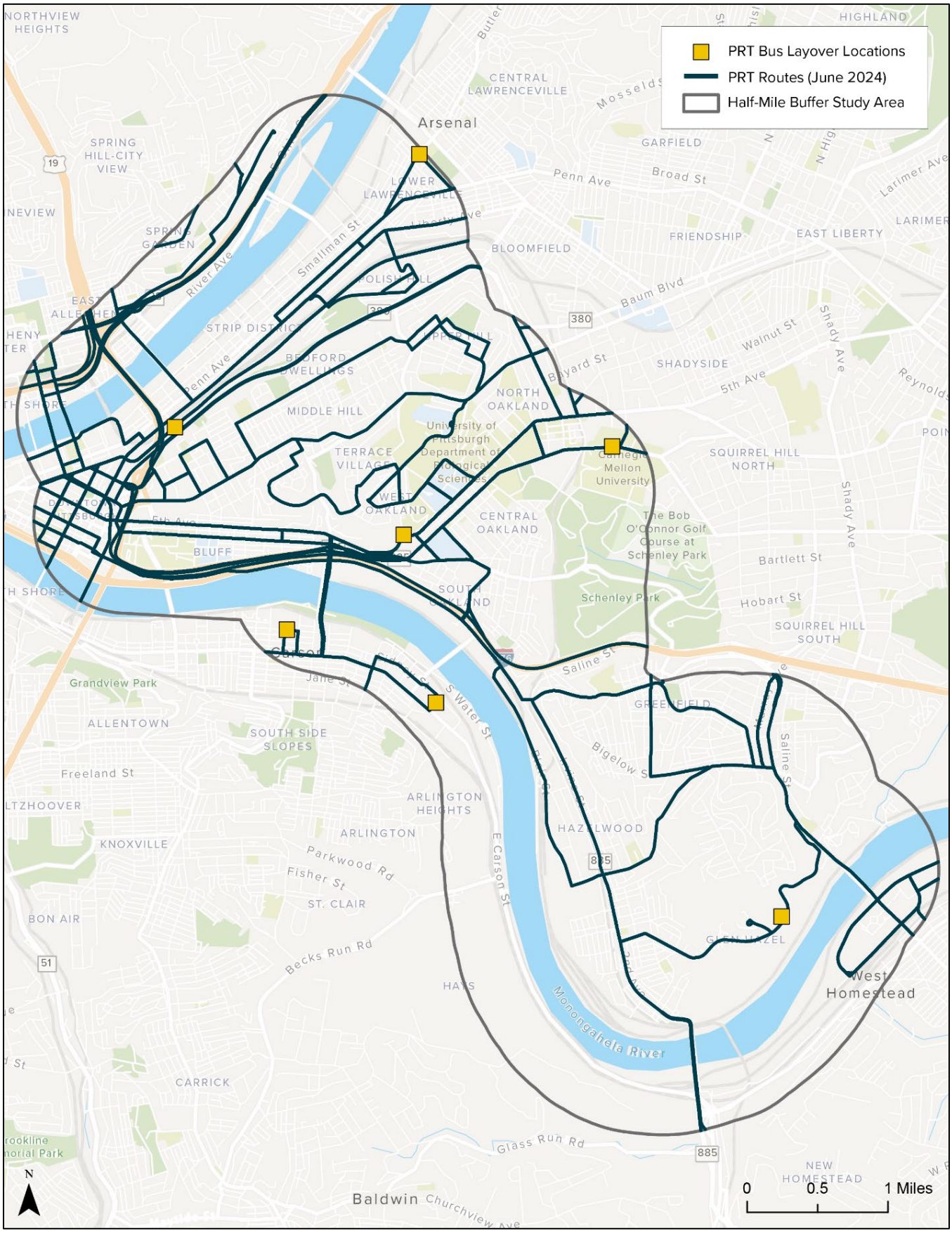


Figure 16: PRT Bus Layover Locations and Routes within Corridor G



BUS SPEEDS BY SEGMENT

As part of PRT's Bus Line Redesign State of the System report from January 2024, average bus speeds were captured and aggregated by segment for the entire PRT bus network (see **Figure 17**). Speed data comes from GPS systems that track each bus along its route. Many routes overlap one another, share the same roadways, or are bidirectional. To determine bus speeds on a given segment of roadway, the data for each bus and route was averaged and aggregated to provide a bidirectional snapshot of speed by roadway segment.

In **Figure 17**, the eye is immediately drawn to Downtown Pittsburgh and its network of slower average bus speeds which makes sense given the vehicular congestion and limited space there. While not as slow as downtown, Oakland is another area indicating slower bus speeds, with Forbes Avenue and Fifth Avenue having an average speed of 14 miles or slower. Some slower speed segments, such as in the Upper Hill, are likely due to the bus's need to turn left across traffic, slow down to make a sharp turn, or to go up or downhill. The routes that serve Hazelwood and Glen Hazel are some of the fastest, especially along Blair Street and Johnston Avenue.

AVERAGE RIDERSHIP BY BUS STOP

Figure 18 shows average ridership by bus stop, calculated by summing average boardings and alightings for fiscal year (FY) 2024. Immediately obvious is the high ridership density in Oakland, especially along Fifth Ave and Forbes Ave, and Downtown Pittsburgh. Average ridership in Hazelwood and Glen Hazel is among the lowest of the project study area, with Greenfield indicating slightly more ridership than Hazelwood. Ridership in the Hill District is cumulatively significant, especially from stops along Centre Ave in Crawford-Roberts, as is ridership in East Carson Street, south of the Monongahela River. Overall, Downtown Pittsburgh and Oakland are the obvious attractors and generators of transit ridership.

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Figure 17: Average Aggregate PRT Bus Speeds by Segment within Corridor G

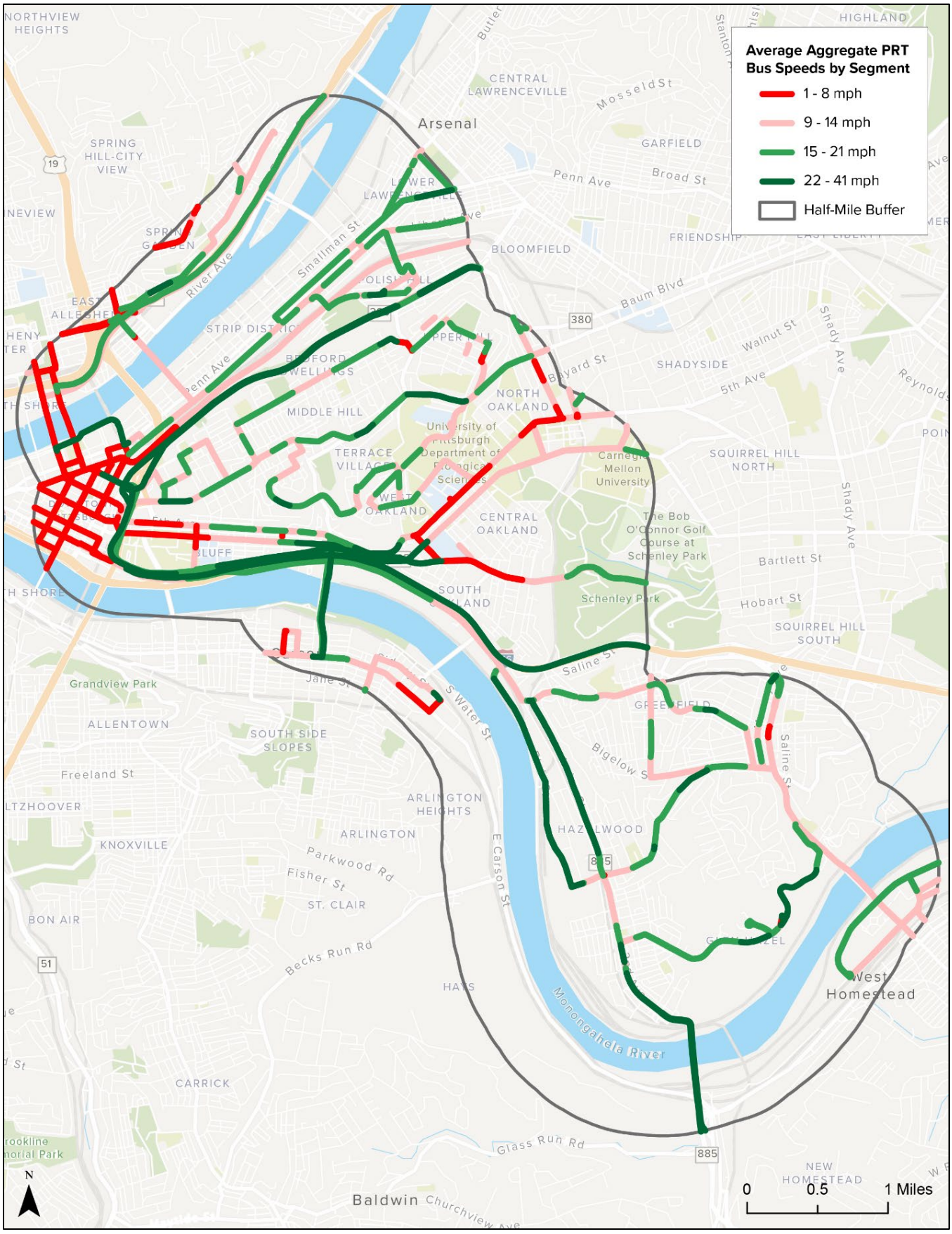
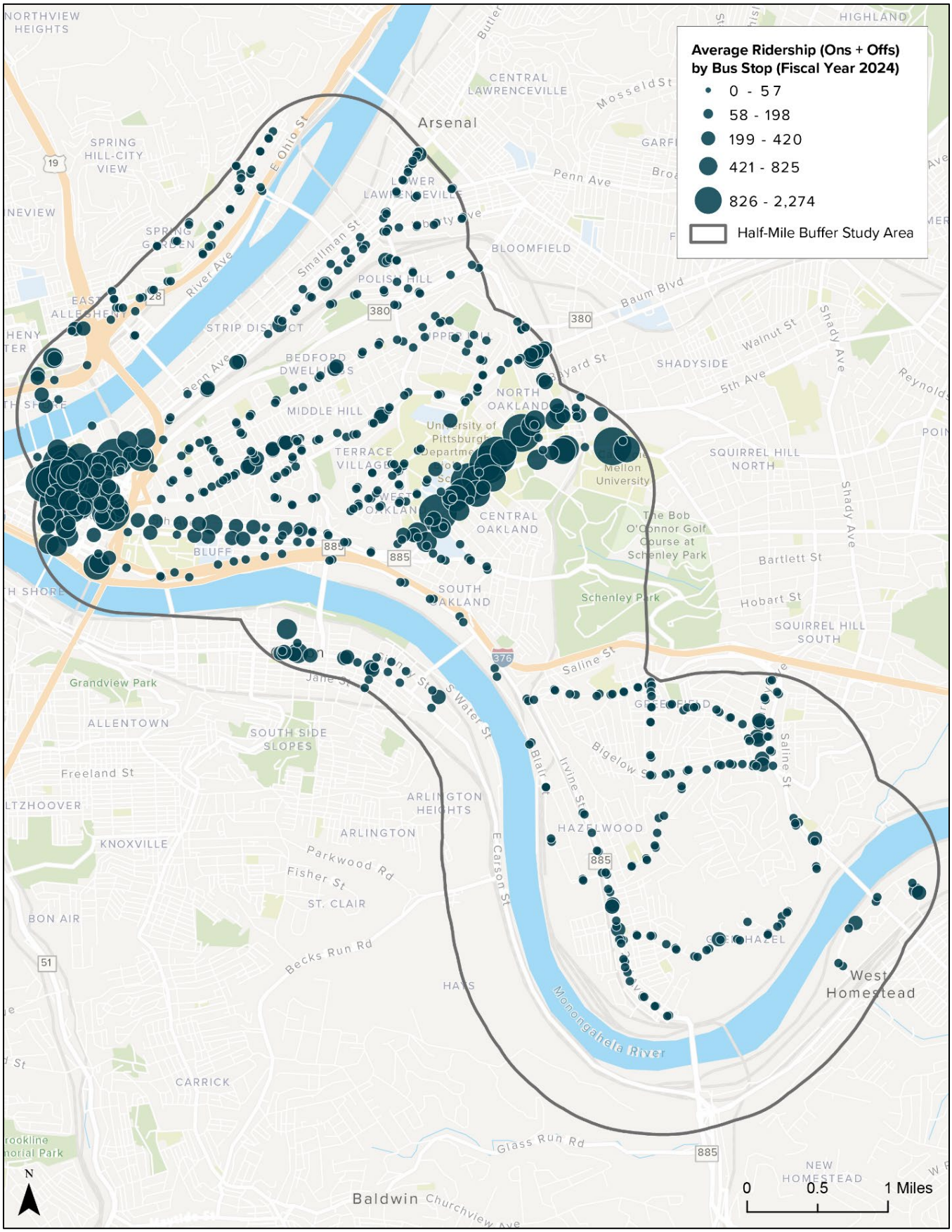


Figure 18: Average Ridership (Ons + Offs, FY 2024) by Bus Stop within Corridor G



NATURAL AND BUILT ENVIRONMENT

Pittsburgh faces many geographic challenges from flood zones to steep terrain that impact the way people travel within the city, especially within the Corridor G project study area. A network of city-wide steps and very steep roads are a few examples of ways to overcome some of these mobility issues. To successfully implement a new mode of transit that is effective and efficient despite the natural and built environment, it is vital to first understand the challenges that exist. This section will document existing conditions within Corridor G related to topography, the location of city steps, flood zones, landslide prone and undermined areas, soil types, land use, parks and recreation trails, the location of city trees, historic resources, and public property.

TOPOGRAPHY

Pittsburgh is a notably hilly city, with many neighborhood names referencing their geography (the South Side Slopes, Mount Washington, Squirrel Hill, Troy Hill, Brighton Heights, etc.). One of the biggest challenges for the Corridor G: River to River project is overcoming the significant topographical changes within the project study area, as visualized by the hillside shading in **Figure 19**. According to the 2022 Greater Hill District Master Plan Update, many parts of the Hill District have streets with slopes that exceed a 5% grade, which make walking, rolling, and cycling challenging and less attractive modes of travel. There is a very steep elevation change between the Strip District and the Hill District, which explains why there are no north-south roadways between the two areas. The Penn Incline, also known as the 17th Street Incline, measured 840 feet in length with a vertical rise of 330 feet and connected the Strip and Hill Districts from 1883 to 1953 (see image).[28] [29]



Image 5: The Penn Incline (circa 1883 to 1953)

Oakland, compared to the Hill District, is flatter but still hilly, especially in South Oakland adjacent to Schenley Park. Additionally, a very steep hill extends from the north side of Fifth Avenue in Oakland. Hazelwood along the Monongahela River is flat compared to Glen Hazel which appears to have significant elevation changes throughout, with Calvary Cemetery sitting above surrounding residential areas. Greenfield to the north is also exceptionally hilly and many roads have steep slopes. Across the river, Arlington Heights and Hays sit atop considerable elevation. The dramatic elevation changes within the project study area requires a mode of transit that is specifically designed to overcome this issue and can best meet the needs of the community, such as an aerial tram or a series of inclines. Topographic LiDAR data (2017) is from Allegheny County via PASDA.

[28] Historic Pittsburgh. (2024). Penn Incline.
[29] The Street Railway Journal Souvenir. (1891). The Inclined Planes (p. 38-39).

CITY STEPS

To overcome steep elevation changes, stairways were developed in many Pittsburgh neighborhoods. The City of Pittsburgh's extensive network of city steps is shown in **Figure 19**. Orange represents segments with 141-277 steps, of which most are in Hazelwood and Troy Hill, north of the Allegheny River. Some sets have as few as four steps. There are approximately 144 segments of stairs totaling 9,211 steps within Corridor G. Many city steps are in disrepair or lead to areas that no longer have amenities for pedestrians, such as sidewalks or crosswalks.

It is important to note that while steps are a solution for those who are able-bodied, people with disabilities or who travel in a wheelchair are unable to use this mobility option. The lack of an accessible alternative for this facet of the community reinforces the need for a new transit option that can overcome topographic challenges while remaining accessible for all. City steps data (2021) comes from the City of Pittsburgh ArcGIS Hub.

FLOOD ZONES

As depicted in **Figure 20**, a small portion of the Corridor G study area is impacted by special flood hazard areas. Of the flood zones present, all are considered Special Flood Zone Hazard Areas by FEMA, meaning there is a 1% annual chance of flood.[30] Over 95% of the flood zones in the map are part of the floodway for the Allegheny River to the north or the Monongahela River to the south. Areas where Zone AE encroaches beyond the floodway indicate that annual flooding in parts of the Strip District and Downtown Pittsburgh along the river is possible.

However, the rest of the project study area, thanks to comparatively steep elevation differences, is not part of a flood zone. Additionally, steep slopes exist along the banks of both rivers, meaning that there would have to be a significant amount of rain in a flood event to cause flooding. Upriver on the Allegheny near Highland Park, there is also a dam that helps control river water levels, as needed. In terms of premium transit investments in the project area, flooding impacts are not a critical concern, especially if the mode, such as an incline or an aerial tram, is elevated. Flood zone data is from 2014 and came from the City of Pittsburgh ArcGIS Hub.

[30] FEMA. (2020). Glossary: Flood Zones.

Figure 19: City Steps and Topographic Changes within Corridor G

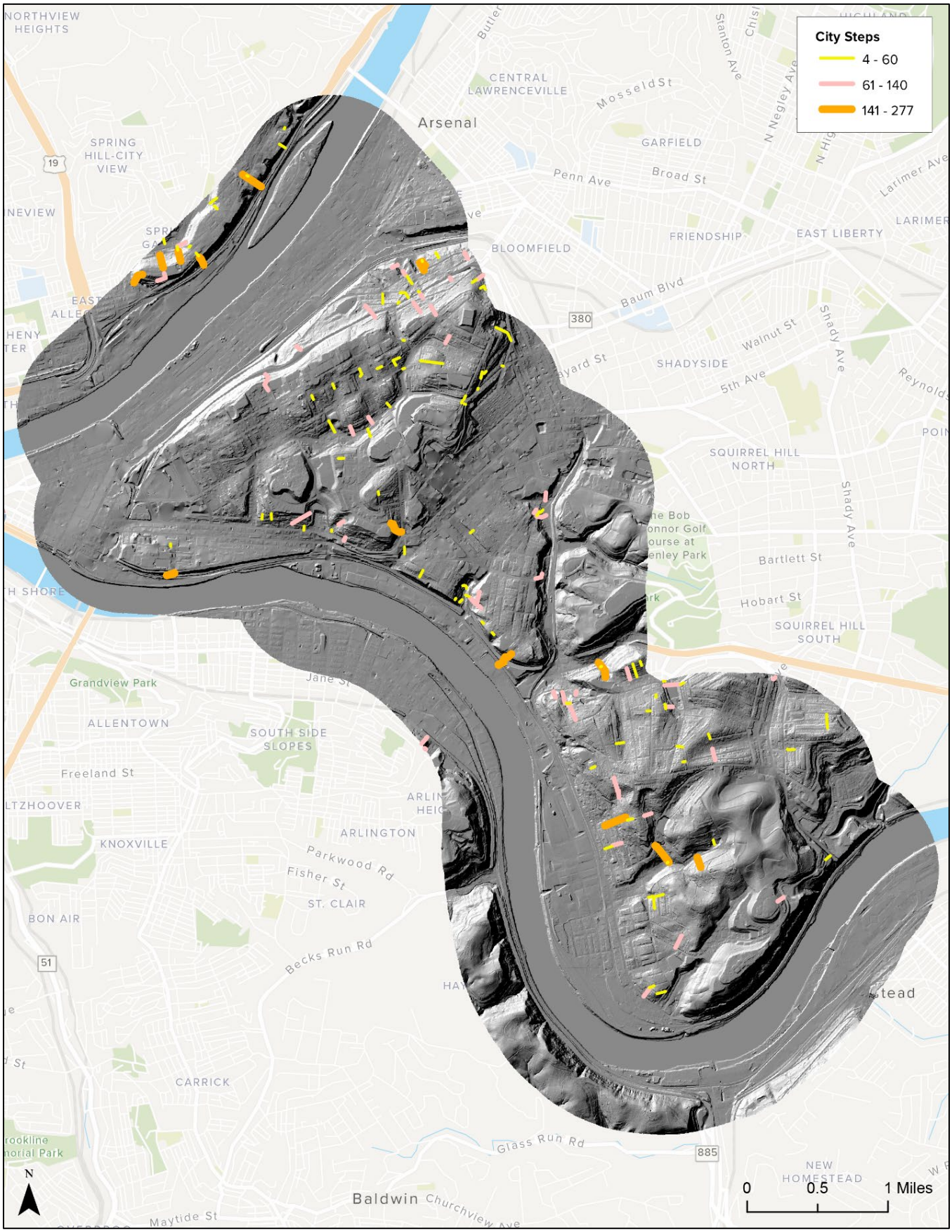
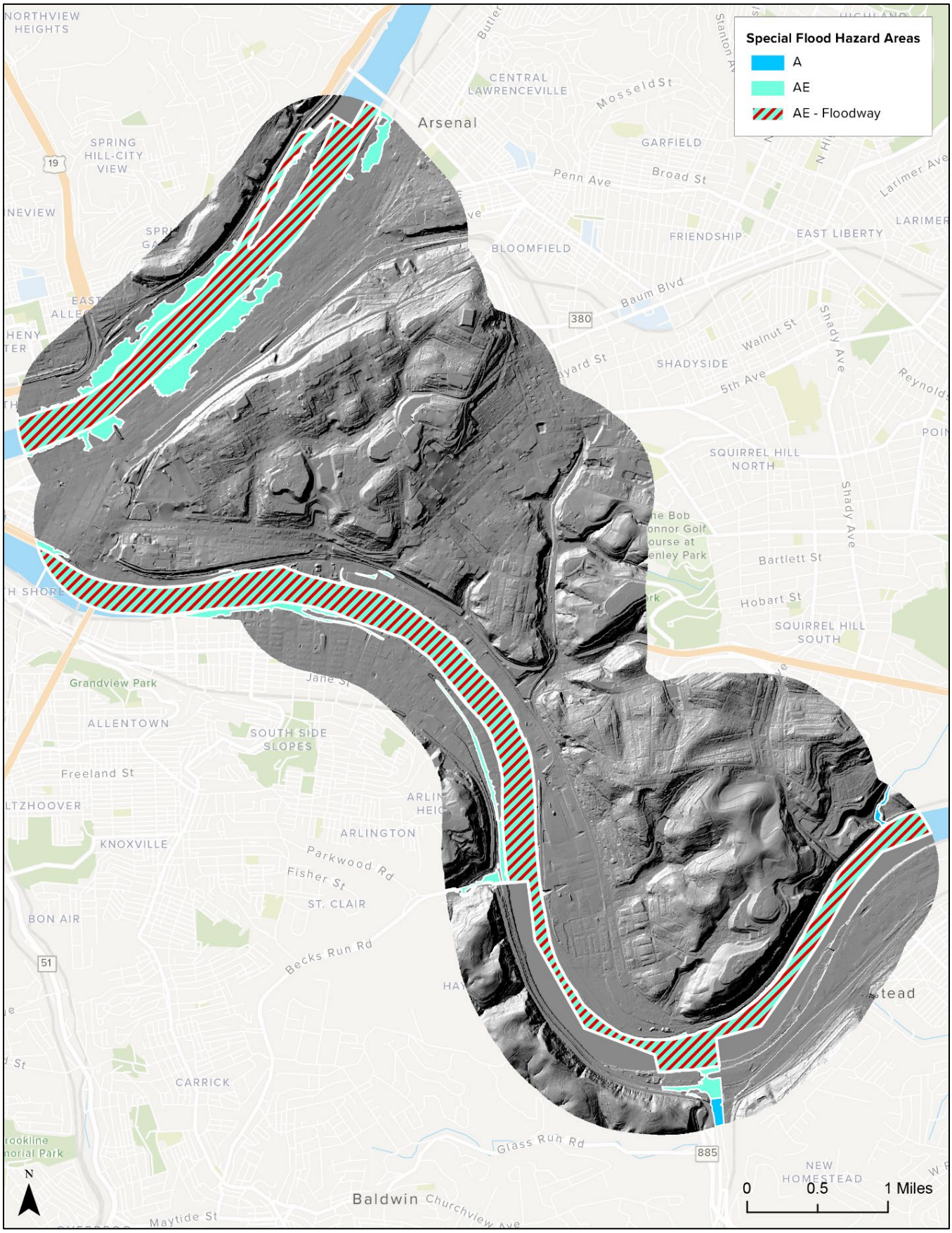


Figure 20: Special Flood Hazard Areas and Topographic Changes within Corridor G



LANDSLIDE PRONE AND UNDERMINED AREAS

Coal was once mined in the City of Pittsburgh, including in the Corridor G communities. **Figure 21** depicts landslide prone areas and undermined areas within the project study area. The steeper edges of the Hill District, Oakland, and Hazelwood indicate landslide prone areas, in turquoise blue. Undermined areas, in dark blue, exist mostly in the eastern half of the Hill District, especially within Bedford Dwellings, the Upper Hill, and Terrace Village; northern Glen Hazel leading up to Greenfield (the majority of which belongs to the Calvary Cemetery); and in both Arlington Heights and Hays, across the Monongahela River. Any transit mode alignment proposed within Corridor G will have to avoid these landslide prone and undermined areas or expend significant effort and resources to mitigate these issues. Landslide prone areas data (2018) and undermined areas data (2018) via the City of Pittsburgh ArcGIS Hub.

SOILS

Soils within Corridor G help to tell the story of the steepness of the project study area, as each soil survey area (aside from dumps, urban land, and water) differentiates itself by slope. **Figure 22** indicates that most of the project study area is considered to have urban land that is either gently sloping, moderately steep, or steep. The dark purple urban land category does not reference slope but generally covers flatter areas of Corridor G. Gently sloping urban land is shown in yellow and is mostly adjacent to moderately steep urban land shown in brown. Light blue urban land with Culleoka complex is considered steep, and its presence throughout Glen Hazel and parts of Greenfield and the Hill District are consistent with the earlier section on topography. In the Hill District, dark red urban land with Wharton complex indicates moderately steep areas while the lighter red areas indicate gently sloping urban land. Bright orange areas between the Strip District and the Hill District and along I-376 between Bluff and South Oakland are incredibly steep, indicating Weikert-Rock outcrop complex with slopes of 25-80%. The Strip District, parts of Spring Garden, and the majority of Oakland have gently sloping soil known as urban land-Rainsboro complex. Future phases of Corridor G will need to look in-depth at the soil types within the study area to determine which are better foundations for new construction, especially if the mode will be elevated. Data for soil survey areas (2024) came from USDA's Natural Resources Conservation Service Web Soil Survey application.

PARKS AND RECREATION TRAILS

As **Figure 23** shows public parks within the study area. Altogether, the data indicates 78 local, City of Pittsburgh parks. The Hill District has approximately 12 of these parks, many of which are along Bedford Ave in Bedford Dwellings. The portion of Hays Woods Park (roughly 620 acres) and Schenley Park (about 417 acres) within the project study area comprise the most park space.

In terms of recreation trails, Schenley Park has the most and all three types are present there: multi-use, park pathway, and pedestrian paths. Hazelwood Greenway is the biggest park in the Hazelwood district and has a multi-use trail. Herron Hill Park in the Upper Hill has multi-use trails and park pathways. Along most of both riverbanks, on both sides of the river, are a span of multi-use paths known as the Three Rivers Heritage Trail. Depending on how big the parks are and their location in proximity to other popular uses, some of these could be potential sites for a transit alignment. However, where possible, transit alignments should avoid parks, otherwise there may be substantial community opposition as well as a Section 4(f) environmental impact issue. Parks data (2024) comes from SPC and trails data (2023) comes from the City of Pittsburgh.

Figure 21: Landslide Prone and Undermined Areas within Corridor G

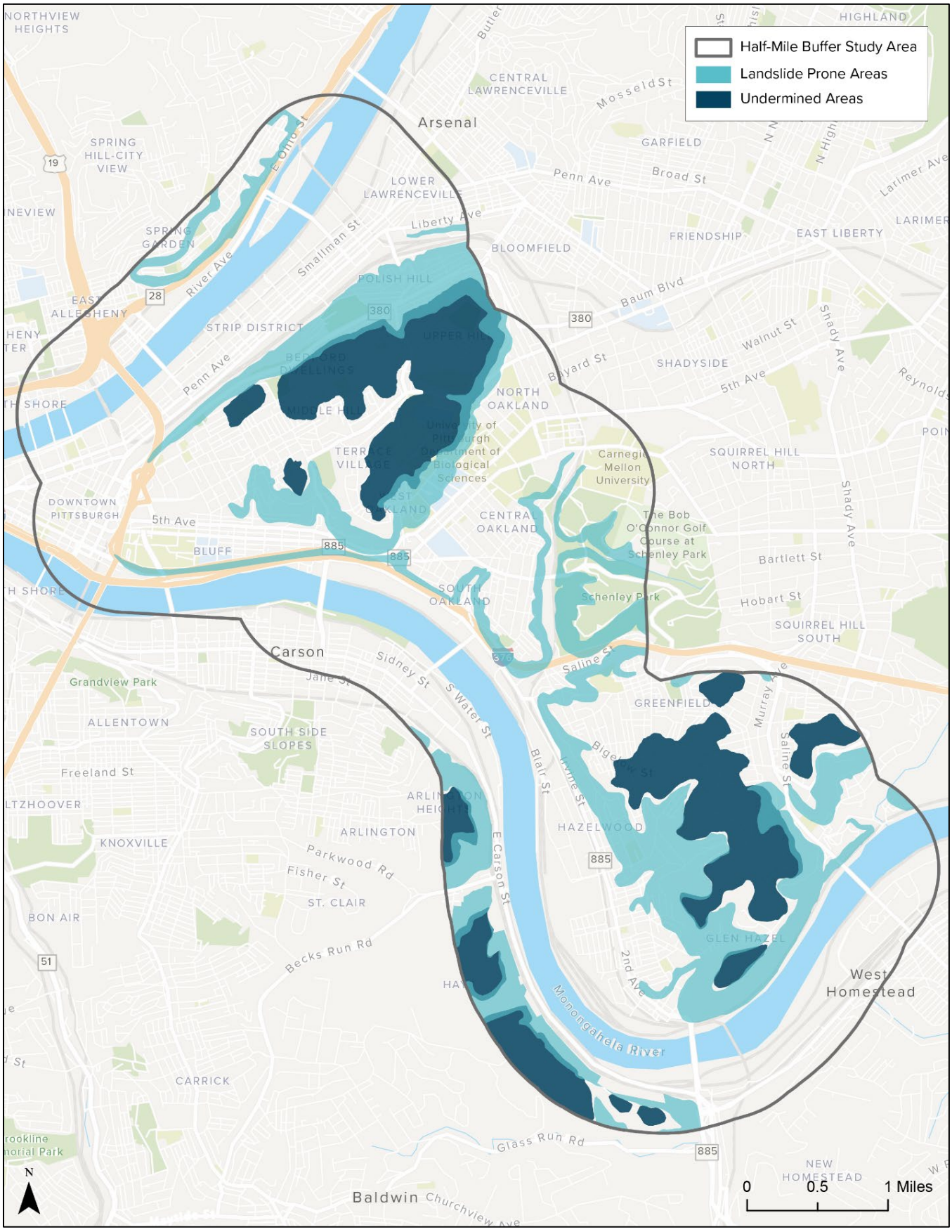


Figure 22: Soil Types within Corridor G

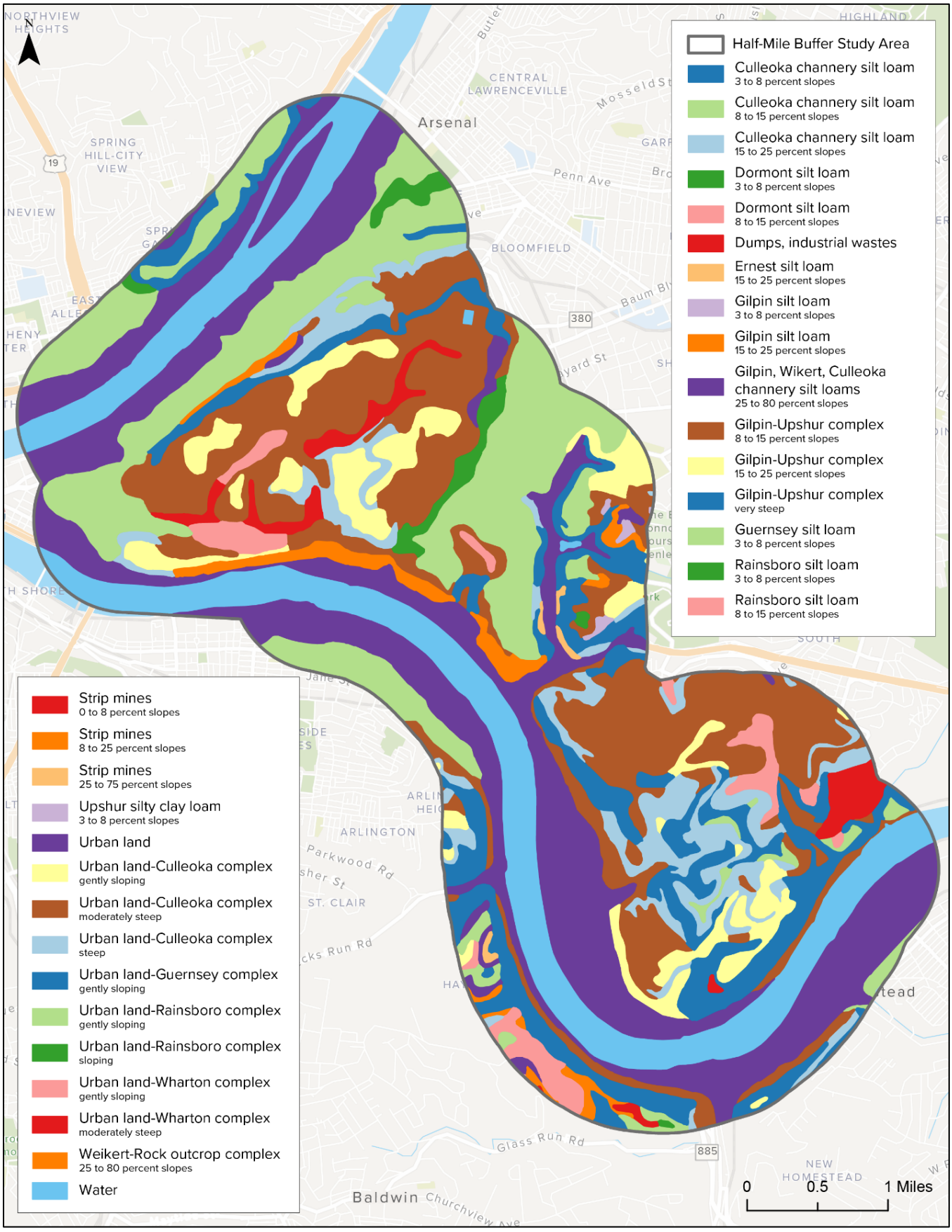
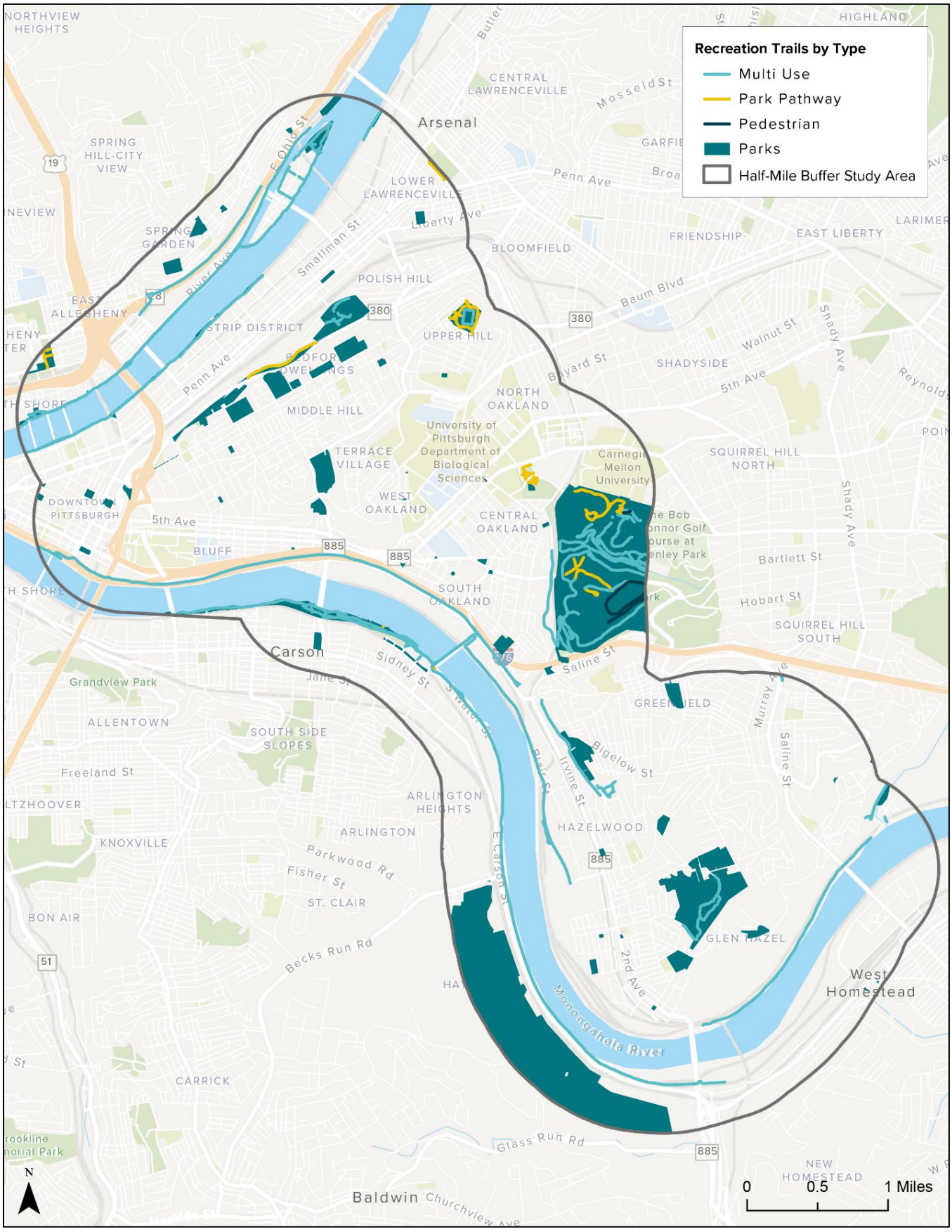


Figure 23: Recreation Trails by Type and Parks within Corridor G



CITY OF PITTSBURGH TREES

Figure 24 depicts a point map of tree locations cared for and maintained by the City of Pittsburgh Department of Public Works Forestry Division. Note that there are other trees in the study area, such as in Glen Hazel and Hays Woods Park, which are not featured as part of this dataset. Trees that hug along roadway corridors can provide more shade in the summer months for those walking, rolling, cycling, and/or taking transit. Oak Hill Drive in Terrace Village is especially tree-lined, as are much of Crawford-Roberts and South Side Flats. Schenley Park likely has the highest density of trees maintained by the city.

Tree data is from the City of Pittsburgh (2020) via WPRDC.

HISTORIC RESOURCES

To retain community character and remember the important places that have shaped local history, it is vital to note and preserve historic resources within Corridor G. **Figure 25** shows city-designated historic districts as well as historic structures, cultural resource buildings, historic sites, and historic districts designated within the National Register of Historic Places, which is maintained by the U.S. Department of Interior National Park Service (NPS). Within the project study area, there are 12 historic structures; 50 cultural resource buildings; one historic site; 11 NPS historic districts; and 10 city-designated historic districts. Note that some of the overlapping historic districts indicate the same sites but with different boundaries, such as the Penn-Liberty Historic District downtown or Schenley Farms Historic District in Oakland. Downtown Pittsburgh and Oakland stand out for having the most historic resources compared to the rest of Corridor G. Most historic structures in the map are located downtown, aside from the Homestead Grays Bridge.

Cultural resource buildings in the map are spread throughout the study area, with only Glen Hazel lacking any while Hazelwood has two: the John Woods House and Hazelwood Brewing Company. Albeit not depicted on the map, the Gladstone School in Hazelwood is also on the National Register of Historic Places. Outside of downtown and Oakland, the Hill District has the most cultural resources buildings: the New Granada Theater, Letsche Elementary School, the Clifford B. Connelly Trade School, the August Wilson House, Crawford Grill No. 2, the Centre Avenue YMCA, and Madison Elementary School (Upper Hill).

NPS data listed in the map was created and published in 2024 by NPS GIS Specialist Matt Stutts as part of the National Register of Historic Places. City-designated historic districts (2024) came from the City of Pittsburgh ArcGIS Hub.

PUBLIC PROPERTY

Figure 26 shows city-owned property as points, public building locations as points, and polygon data for building footprints. The map indicates that there is a plethora of city-owned property in the project study area, mostly focused on the Hill District, the Upper Hill, Hazelwood, and parts of Oakland. The Hill District has 337 city-owned properties while Hazelwood has 433.

Large parts of Hazelwood, Glen Hazel, and Hays appear largely vacant of development; as stated in the earlier section on Land Use / Land Cover, much of this is mixed forest and, in Hazelwood along the river, undeveloped industrial land.
Building footprints locations (2024) and public building locations (2024) data both came from the Allegheny County ArcGIS Hub. City-owned property (2023) data came from WPRDC.

Figure 24: City of Pittsburgh Trees within Corridor G

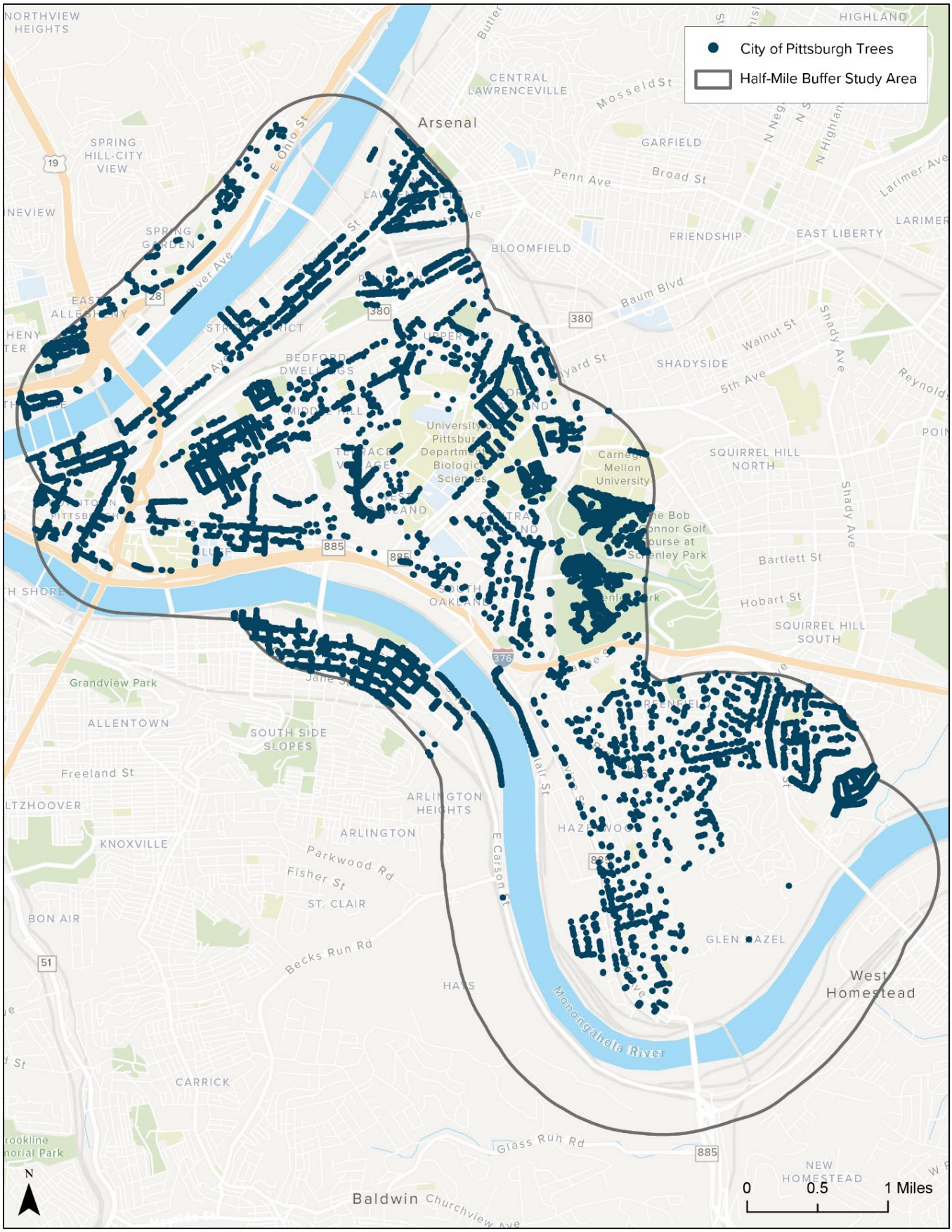


Figure 25: National Park Service and City of Pittsburgh Historic Resources within Corridor G

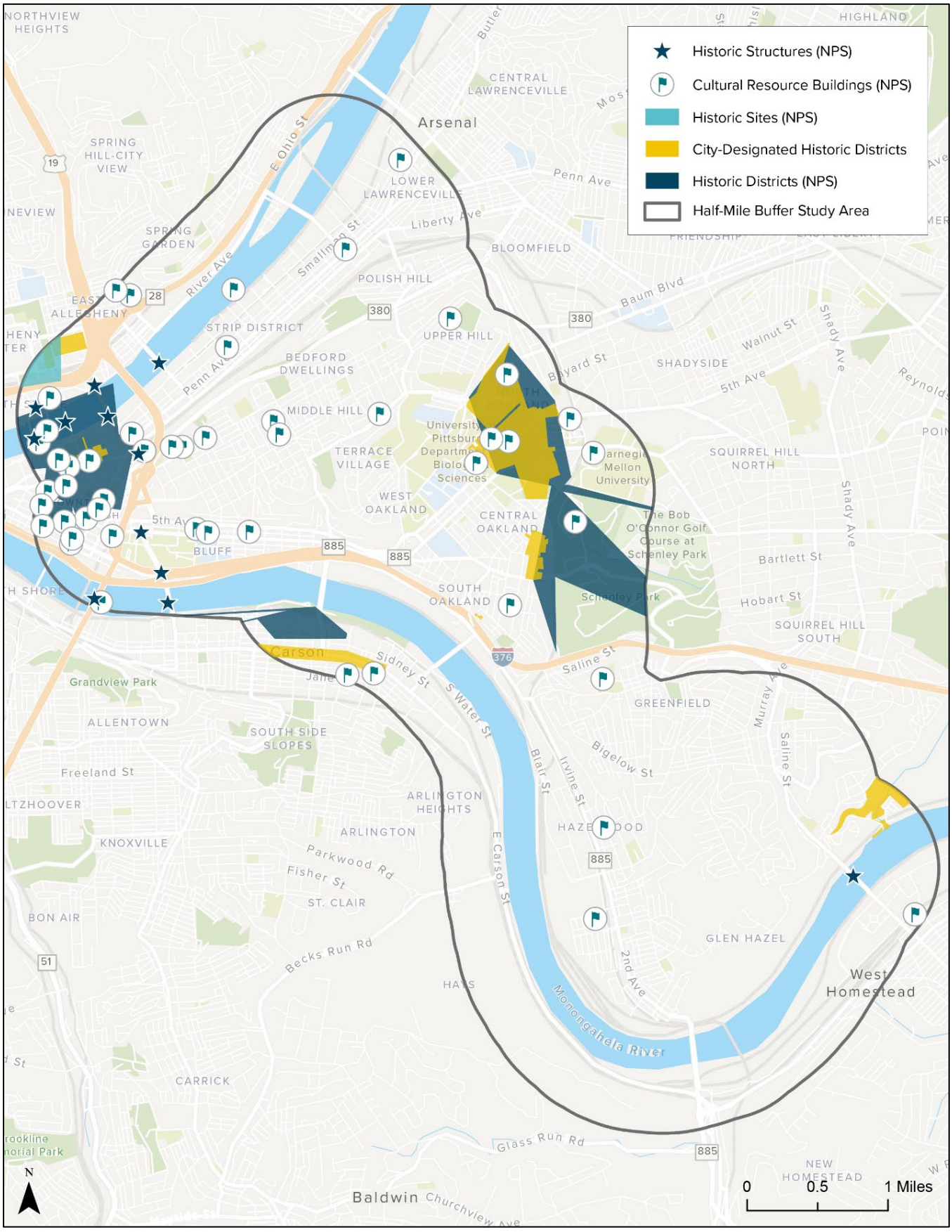
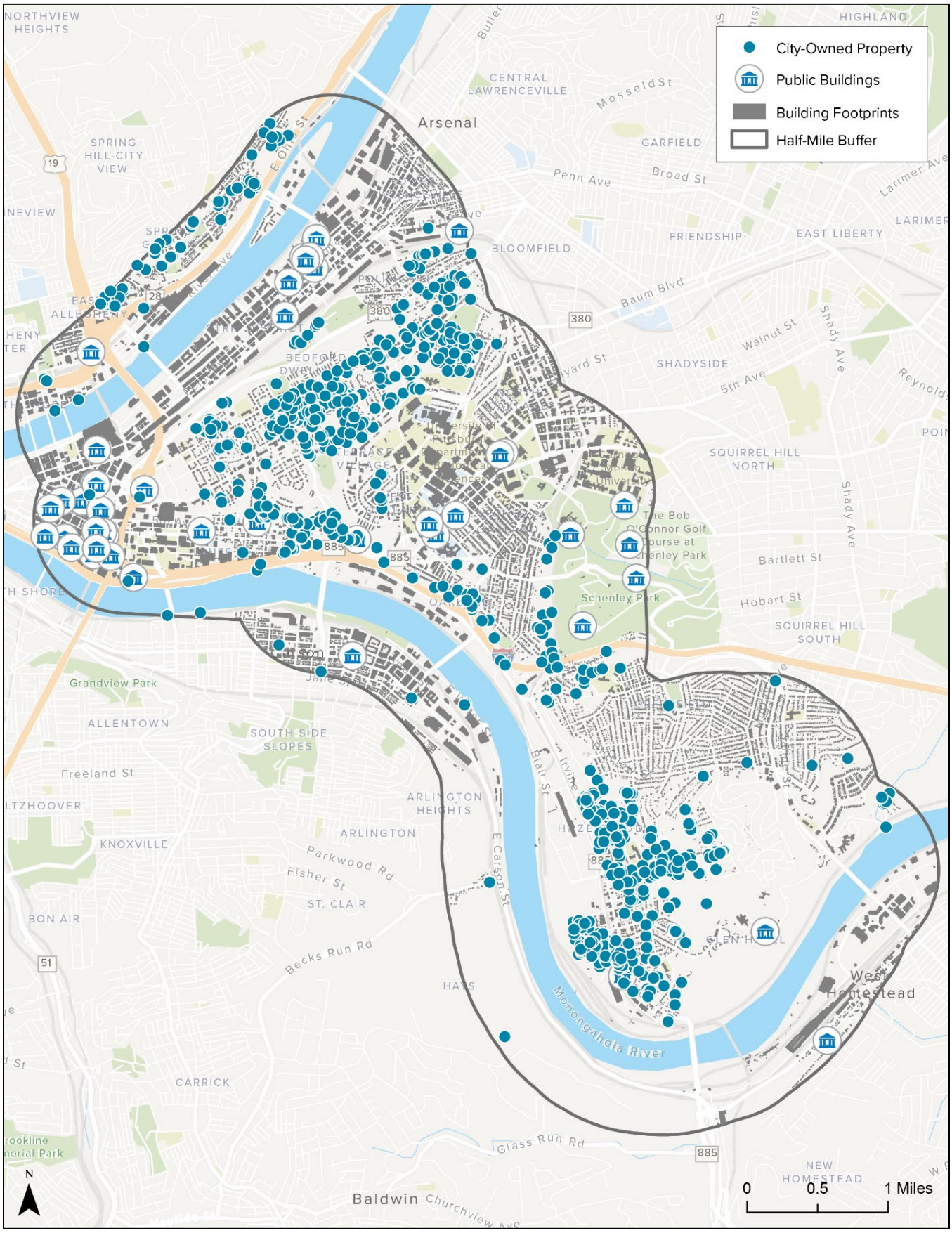


Figure 26: Public Property and Building Footprints within Corridor G



AIR QUALITY

Given Pittsburgh's industrial legacy, air quality is a particularly important and relevant topic to consider. According to the American Lung Association's 2024 *State of the Air* report, the Pittsburgh metropolitan area remains in the top 25 list for worst polluted cities for annual particle pollution. Additionally, Allegheny County received failing grades for both daily and annual particle pollution under the new EPA standard despite incremental improvements in particle pollution levels.[31]

Pittsburgh's unique topography and geography frequently leads to temperature radiation-type inversion, particularly in valleys and low-lying areas of southwestern Pennsylvania, which can exacerbate poor air quality in the region. The worst incidents occur in September, October, and November. Using data from 2008-2017, the frequency of inversion occurrence during this period averaged 44 percent of all days annually (or about 158 days per year) which is quite substantial.[32]

Data on air quality was obtained from USDOT's Climate and Environmental Justice (EJ) Screening Tool and U.S. EPA EJ Screen 2.32 (2024).[33] The EJ Indexes included in the screening tool combine 16 environmental indicators with various socioeconomic factors. For the following three environmental indicators, the EJ Index has been calculated by multiplying the environmental indicator percentile for each block group by the average of the percent of low-income and people of color for each block group.[34]

The air quality sensors data (2016) is collected by Allegheny County and comes from the WPRDC as a spreadsheet of coordinates. These coordinates were geocoded in ArcGIS Pro to determine which sensors fell within the Corridor G project study area, and their locations.

PARTICULATE MATTER 2.5 EJ INDEX

Particulate matter (PM) contains microscopic solids or liquid droplets that can be inhaled and contribute to chronic health issues. Particles at the 2.5-micron level (PM 2.5) pose the greatest health threat to people. Sources contributing to increased PM 2.5 levels include industrial facilities burning fossil fuels, vehicle emissions, vehicle tire wear, and road dust. PM 2.5 is responsible for a significant portion of smog, which contributes to reduced visibility, particularly in dense, urban areas across the country. As outlined in the Air Quality section above, Pittsburgh's inversions and unique topography also help create ideal smog conditions. Children, older adults, people with pre-existing health conditions, low-income and Black and brown communities are all at increased risk from PM 2.5 exposure.[35] In Pittsburgh between 2020 and 2022, a regional air monitor registered annual PM 2.5 concentrations worse than 90 percent of all monitors in the U.S.[36]

Figure 27 indicates the PM 2.5 EJ Index by census tract for Corridor G alongside locations of air quality sensors within the study area. Darker colors in the map indicate areas where there are more low-income and people of color as well as rates of PM 2.5. Most of the Hill District, South Oakland, parts of Hazelwood, and Glen Hazel have the most severe exposures to PM 2.5. The hilliest parts of the

[31] American Lung Association. (2024). 2024 *State of the Air* report.
[32] Allegheny County. (Q4 2018). Allegheny County em PLUS.
[33] There is slight variation for how each governmental agency defines EJ areas and indicators. While the US DOT combines 16 indicators, the EPA only uses 13 indicators.
[34] U.S. Environmental Protection Agency (EPA). (2024). EJ Index Descriptions.
[35] U.S. EPA. (2024). PM 2.5.
[36] Breathe Pittsburgh. (2023). 10 Health Facts You Need to Know.

project study area tend to have the highest exposure levels, suggesting that elevation within some Corridor G neighborhoods may affect the presence of air pollutants.

DIESEL PARTICULATE MATTER EJ INDEX

The diesel particulate matter index measures how much diesel PM people might be exposed to over time. Diesel engines, including diesel-powered cars, trucks, and buses, construction equipment, locomotives, marine vessels, and stationary generators are all sources of diesel particulate matter.

According to the EPA, diesel particulate matter is listed as a mobile-source air toxin due to the health effects and carcinogenic properties associated with long-term exposure from vehicles. Similarly to PM 2.5, diesel particulate matter also contributes to increased levels of black carbon. Overall, more than 72 million people live near major truck routes in the U.S. and low-income and Black and Brown communities are most detrimentally impacted.[37]

Figure 28 indicates the Diesel PM EJ Index by census tract alongside locations of the air quality sensors within Corridor G. Darker colors show tracts where there are more low income and people of color as well as rates of Diesel PM. Most of the Hill District and parts of West Oakland are highlighted due to their exposure to Diesel PM. The hilliest parts of the project study area tend to have the highest exposure levels, suggesting that elevation within some Corridor G neighborhoods may affect the presence of air pollutants.

OZONE EJ INDEX

Ozone is a gas composed of three atoms of oxygen and includes two types: stratospheric and tropospheric. While stratospheric ozone is considered "good," tropospheric ozone is "bad" since at the ground-level it becomes a harmful air pollutant when chemical reactions occur between oxides of nitrogen and volatile organic compounds.

Vehicles, power plants, industrial boilers, refineries, chemical plants, and additional sources are all major sources of chemical pollutants that contribute to the formation of "bad" ozone. Similarly to PM 2.5, tropospheric ozone levels become the unhealthiest on hot, sunny days particularly in urban environments but can also still form during colder months. Not only does ozone have adverse health effects on people, but elevated ozone exposure can also affect the growth and health of forests, parks, wildlife refuges, and wilderness areas.[38]

Figure 29 indicates the tropospheric ozone EJ index by census tract alongside locations of the air quality sensors within Corridor G. The Hill District again is highlighted as an area of high exposure, as is part of the Upper Hill and Glen Hazel. These results suggest that elevation may play a role in the presence of air pollutants, especially for low-income and minority groups.

[37] EPA. (2024). Diesel Particulate Matter Indicator.
[38] EPA. (2024). Ozone Overview.

Figure 27: Particulate Matter 2.5 EJ Index by Census Tract within Corridor G

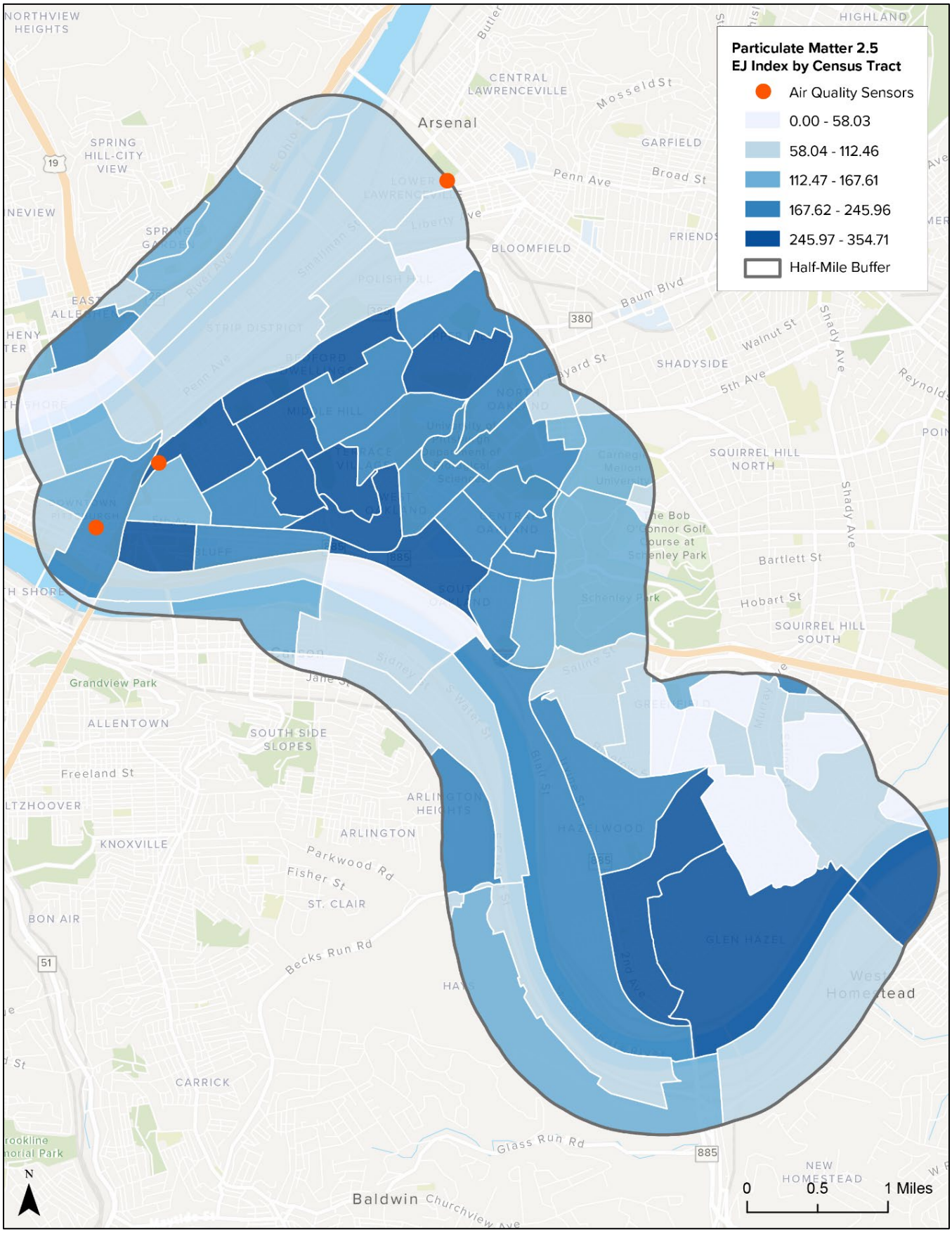


Figure 28: Diesel Particulate Matter EJ Index by Census Tract within Corridor G

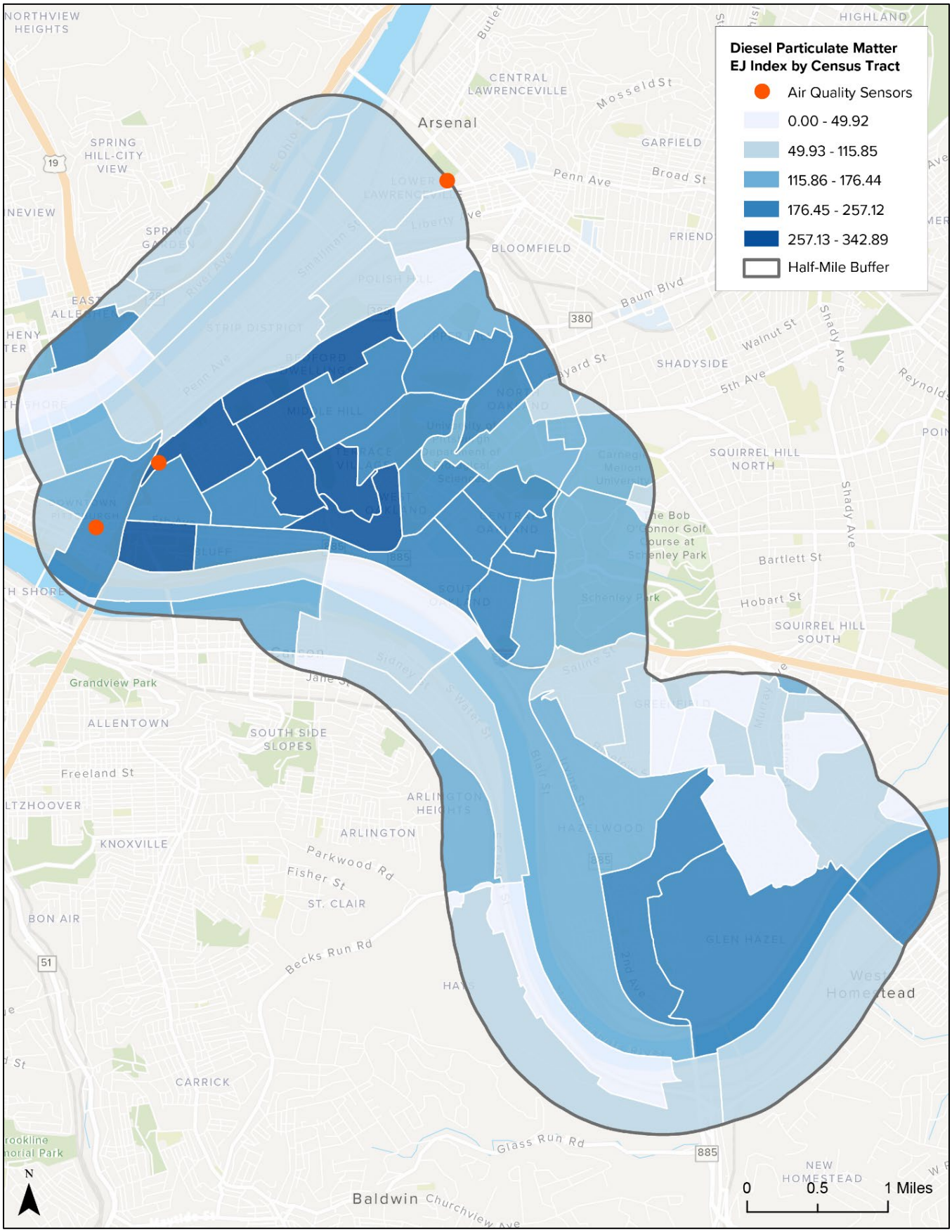
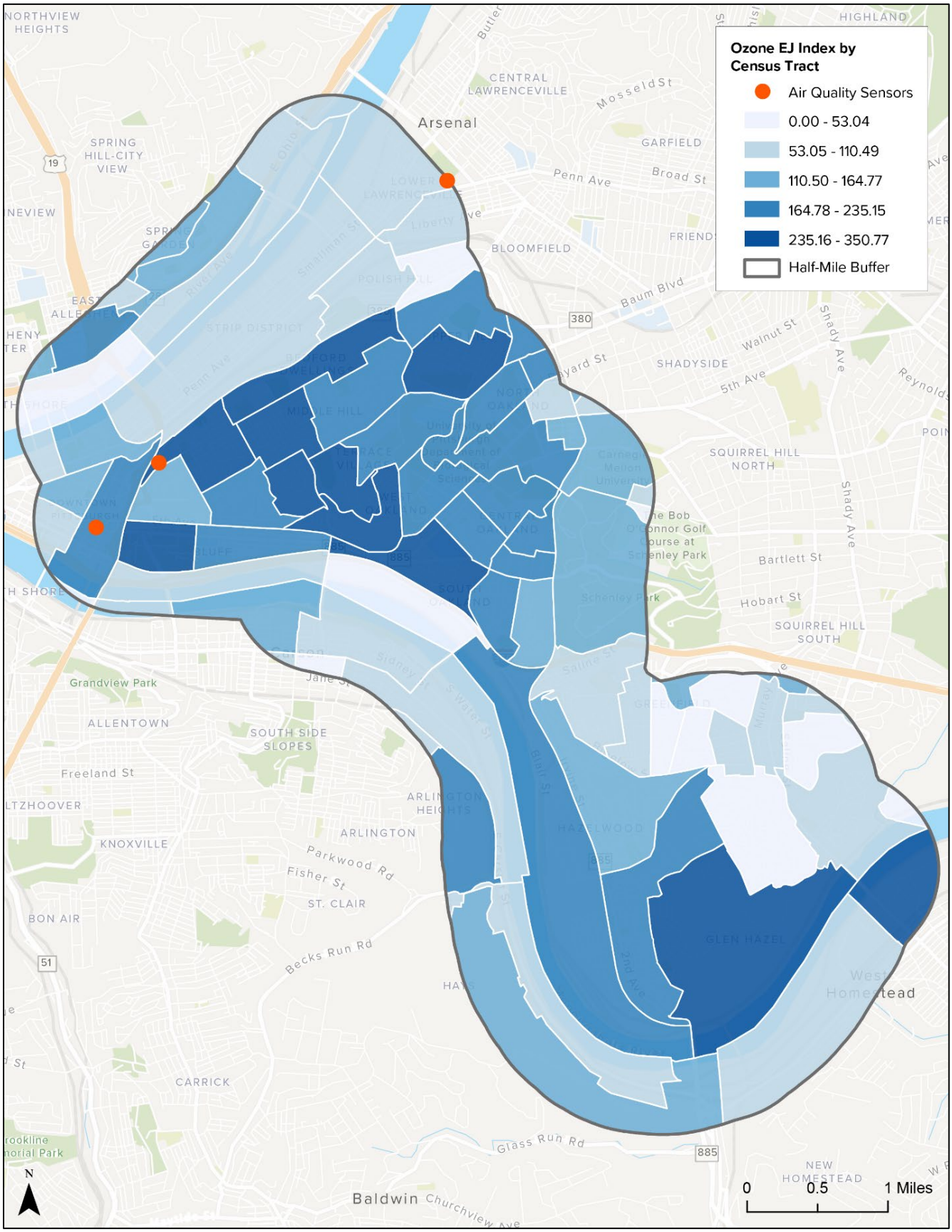


Figure 29: Ozone EJ Index by Census Tract within Corridor G



ZONING AND LAND USE

As is the nature of zoning in cities and large urban areas, zoning tells a different story than land use. The distribution of zoning is based on a prescriptive process and tends to be more orderly than land use, which is often, especially in older neighborhoods, more organic.

As seen in **Figure 30**, a map of generalized zoning districts in the study area, Pittsburgh's topography and natural features also play a role in how the community is zoned. There is a significant amount of land in the area zoned as Hillside, Riverfront, or Parks, where development is limited or prohibited. Dense commercial and industrial zoning, which typically indicate job centers, provide further proof of the general topography of the study area, from urban industrial zoning in the Strip District along the Allegheny River down to the Golden Triangle zoning downtown and finally to the Specially Planned technology parks between the Monongahela River and I-376.

The interior and eastern edges of the study area are majority residential (both high- and low-density) and lower-density commercial uses. Much of the multi-unit residential land is found to the north near downtown and the Strip District and abutting the swath of institutional zoning towards the middle of the study area. Moving farther south, more of the land in the interior of the study area is zoned for either single-family residential or low-density mixed-use/commercial uses. Particularly visible is a large area of single-family and two-family zoning stretching between Greenfield and Hazelwood.

One of the other notable aspects of zoning in the study area is that much of the commercial zoning (outside of downtown) is in the form of the aforementioned mixed-use zoning or in small collections of properties zoned for Local Neighborhood Commercial or Neighborhood Office. This can indicate that much of the smaller-scale commercial and service needs of the communities in the study area are being met in the study area itself, but that the significant job centers typical of large commercial zones require travel to the edges or outside of the study area.

ZONING OVERLAYS

There are five principal zoning overlays that impact the study area. Those zoning overlays establish additional guidelines on building heights, development along the rivers and in the Uptown area, inclusionary housing requirements, and parking reductions. The height limit zoning overlay, shown in **Figure 31**, is significantly used in two ways within the study area. For one, it provides additional restrictions on height along the Allegheny and Monongahela riverfronts, particularly in the Strip District and in Hazelwood. Limits in those zones are generally either 45 feet or 90 feet, depending on where the parcel is.

The other area where height limits are significant is in the Central Oakland neighborhood, particularly in the area directly south of the University of Pittsburgh. The overlays here vary between 85 feet and 210 feet with the lower limits found along the Boulevard of the Allies. During future phases of Corridor G, the height limit zoning overlays will need to be carefully evaluated when considering station locations and alignment options in case height limits impact the placement of structures that would support aerial public transportation modes.

Figure 30: City of Pittsburgh Zoning within Corridor G

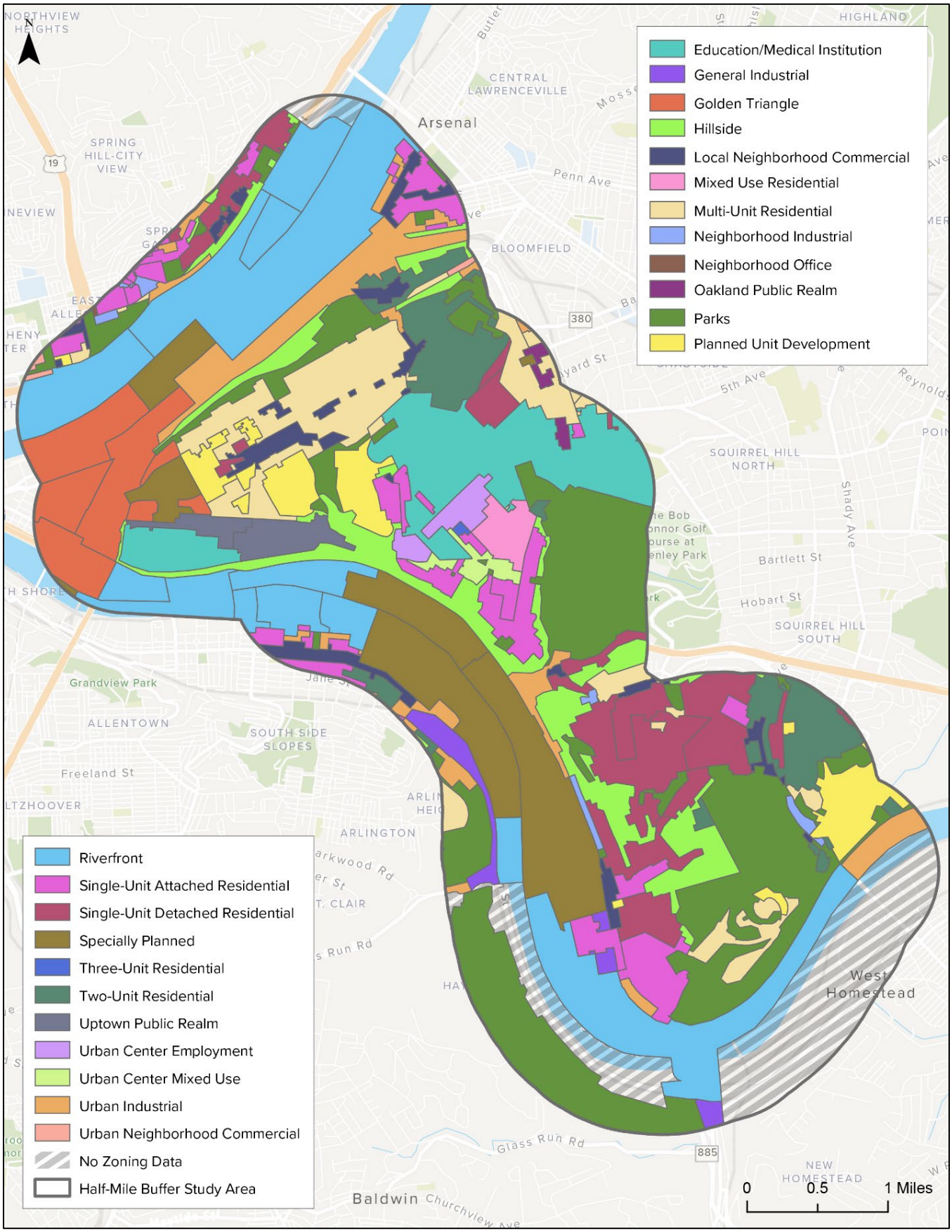


Figure 31: Height Limit Zoning Overlay within Corridor G

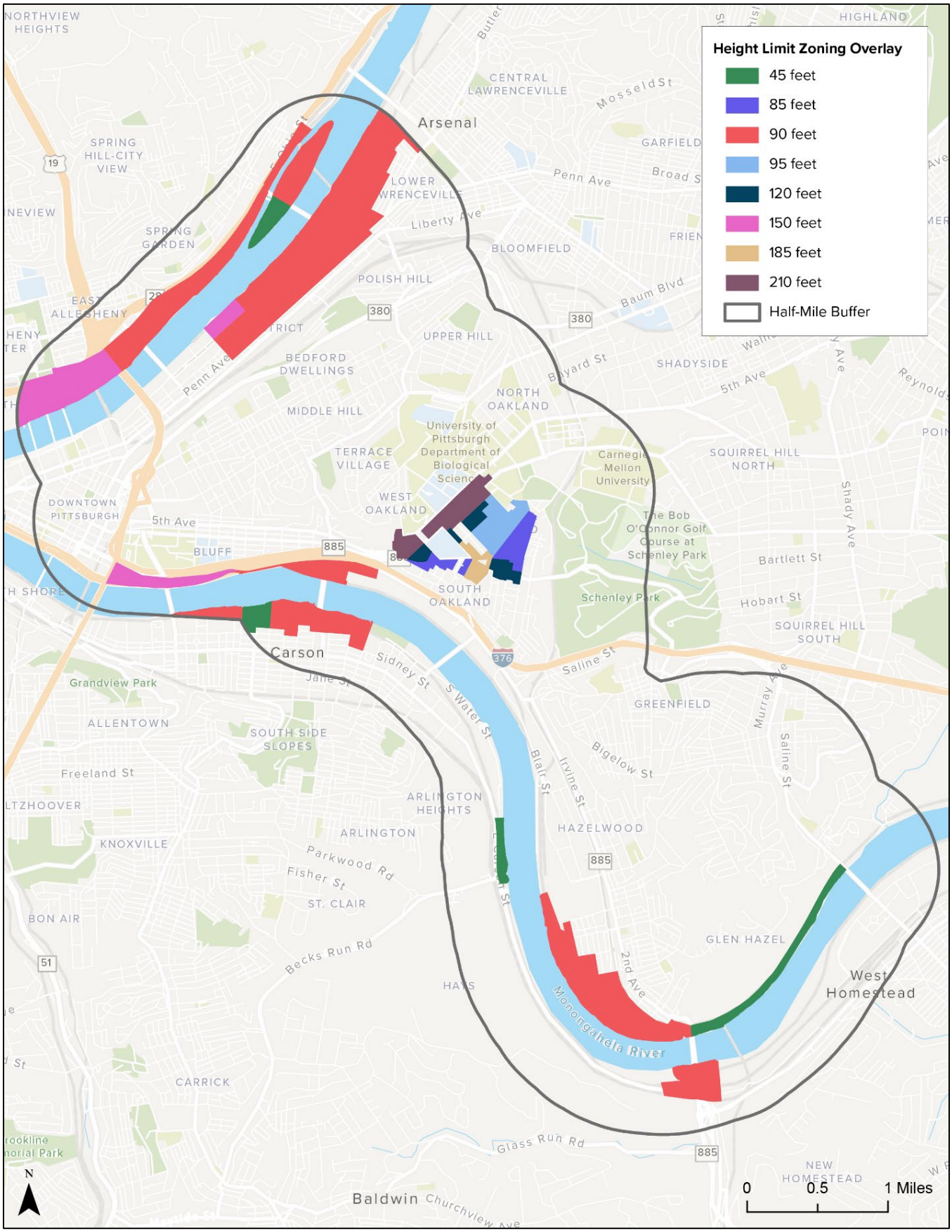


Figure 32: Riverfront, Uptown, and Inclusionary Housing Zoning Overlays within Corridor G

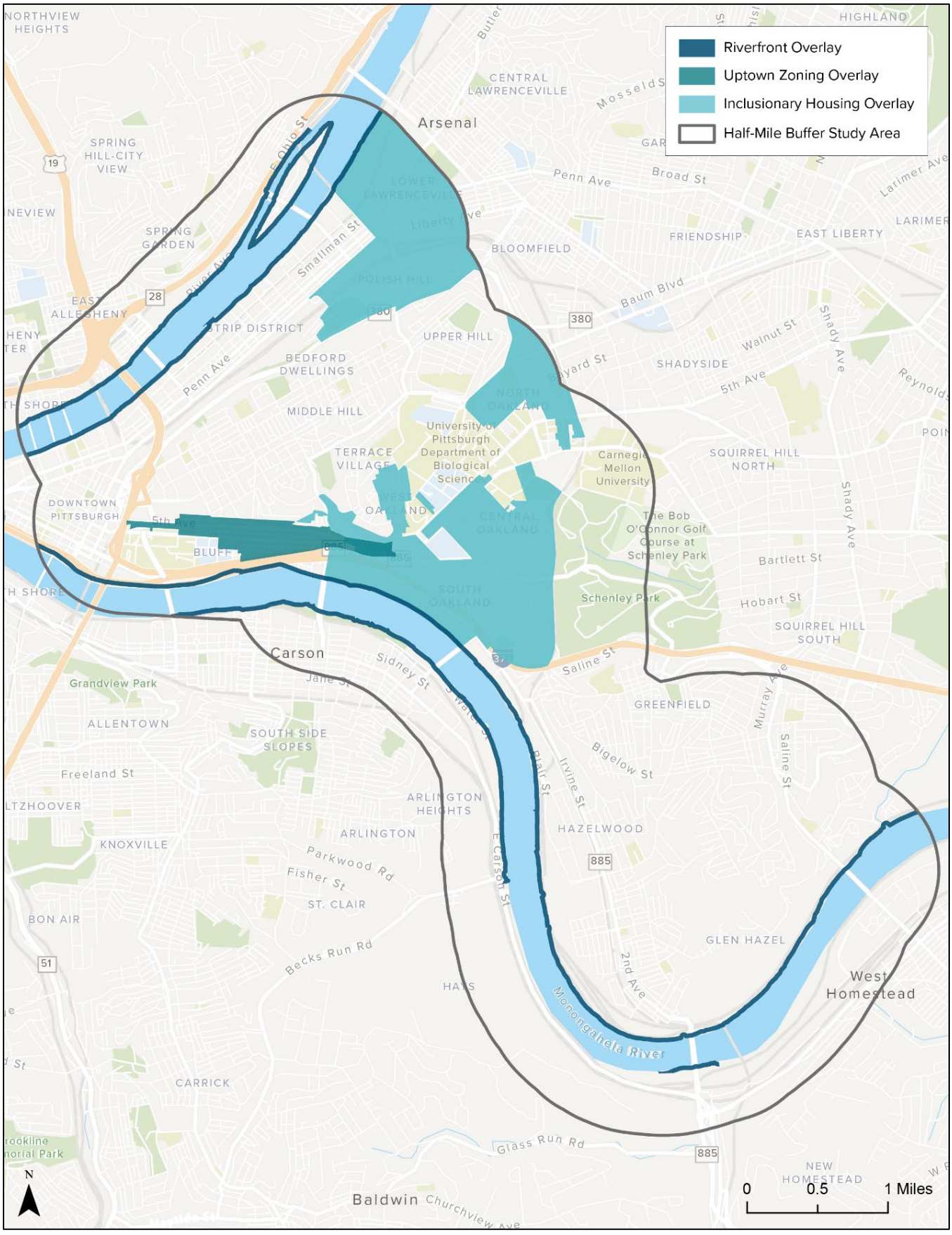


Figure 32 shows the geographic extents of the Riverfront, Uptown, and Inclusionary Housing overlay districts. The Riverfront Overlay is found along most of the riverfronts in the study area within the City of Pittsburgh proper. Properties within this overlay zone are subject to supplemental development restrictions and design review procedures. Likewise, the Uptown Planning Overlay District is in place to ensure more vigorous review of projects due to the limitations of the underlying zoning districts.

This overlay zone was put in place in anticipation of "imminent" and "substantial" development and is found only in the Uptown community, principally along Fifth Avenue between Oakland and downtown. Finally, the Inclusionary Housing Overlay is found prominently in five neighborhoods of the study area: Lower Lawrenceville, Polish Hill, North Oakland, Central Oakland, and South Oakland. This overlay zoning district provides additional regulations on multi-family residential developments to ensure an increase in affordable housing through new residential projects.

The fifth overlay district, shown in **Figure 33**, of note within the study area is the Parking Reduction Zoning Overlay. This district provides parking reductions on the use-driven requirements in the base zoning districts. In other words, the required parking within this overlay is less than what would otherwise be required due to location. Notable reductions are found in the Strip District, Downtown, Uptown, and much of Oakland. Additionally, new development in parts of Oakland, the Hill District, Terrace Village, the Monongahela riverfront, and Duck Hollow require parking demand analysis studies before parking requirements are set.

Data on zoning (2024) and zoning overlays (2024) is from the City of Pittsburgh ArcGIS Hub.

LAND USE / LAND COVER

Figure 34 depicts the variety of land use/land cover categories within Corridor G. Of the residential categories listed, the Hill District and parts of Hazelwood, Glen Hazel, and Greenfield have the most land used for medium-density residential, shown as bright red in the map. As depicted in purple in the map, Oakland has significant mixed urban land use, likely built out as high-density residential uses blended with first-floor retail and commercial uses.

A significant portion of Corridor G is mixed forest, especially within Bigelow Parklet, Terrace Village, Schenley Park area, and southern Glen Hazel. Downtown Pittsburgh, the Strip District, Crawford-Roberts, and parts of Bluff are classified as Central Business District land use, with some high-density residential in the Strip and Crawford-Roberts. High-density residential also exists throughout the Hill District and in portions of Glen Hazel, especially east of Browns Hill Road.

Within Oakland and across the Monongahela River in South Side Flats area, a significant amount of mixed urban land use exists. Oakland and the western part of Bluff have large swaths of institutional land, which makes sense given that Carlow University, Pitt, and CMU are in Oakland while Duquesne University is in Bluff. UPMC's medical facilities in Oakland and Uptown are also institutional uses. Hazelwood along the river is mostly industrial with some medium-density residential and commercial and services uses. Given that much of the land in the study area is already in use, future phases of Corridor G will have to take a more in-depth look at which land uses would be most appropriate to support a new transit alignment. Land use / land cover data (2023) came from the SPC ArcGIS Hub.

Figure 33: Parking Reduction Zoning Overlay within Corridor G

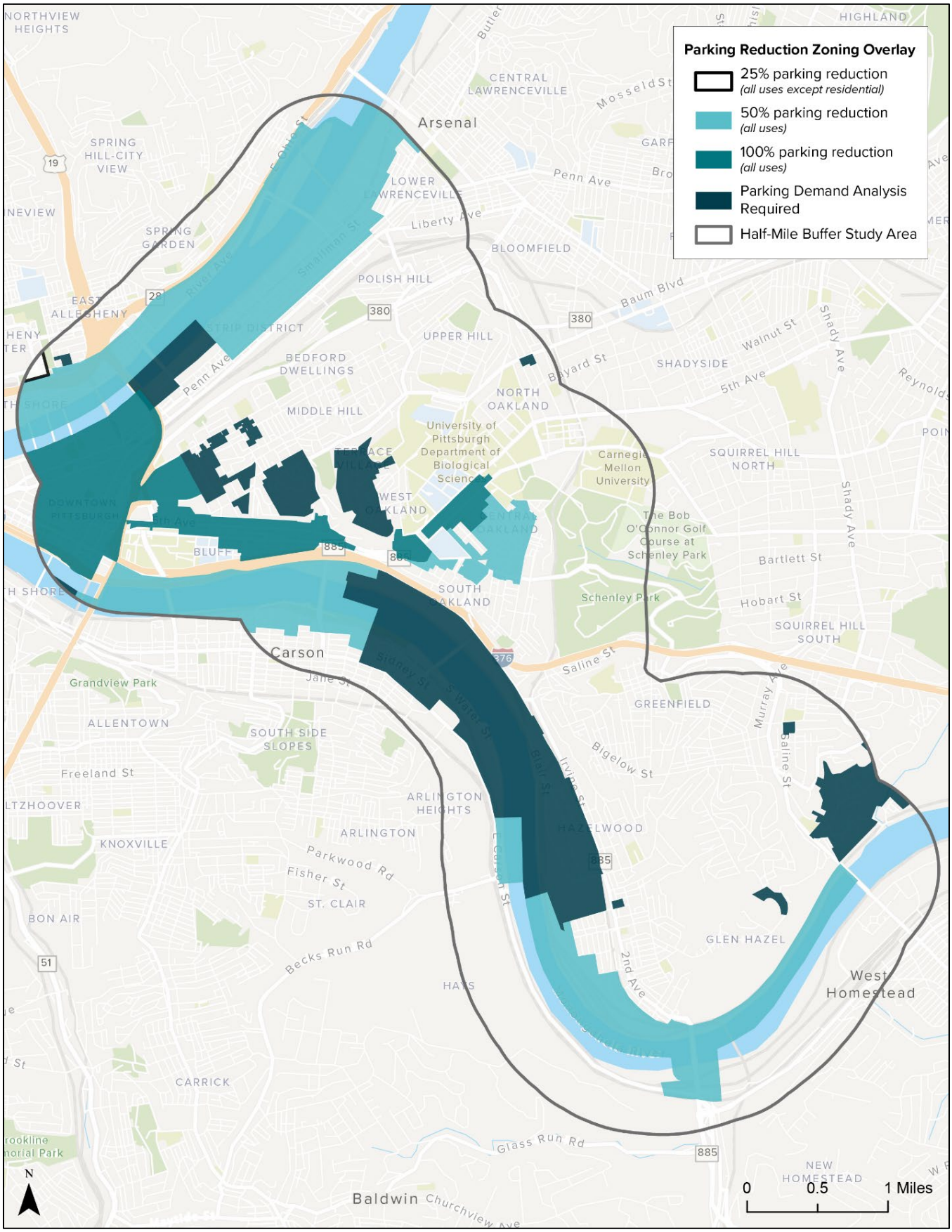
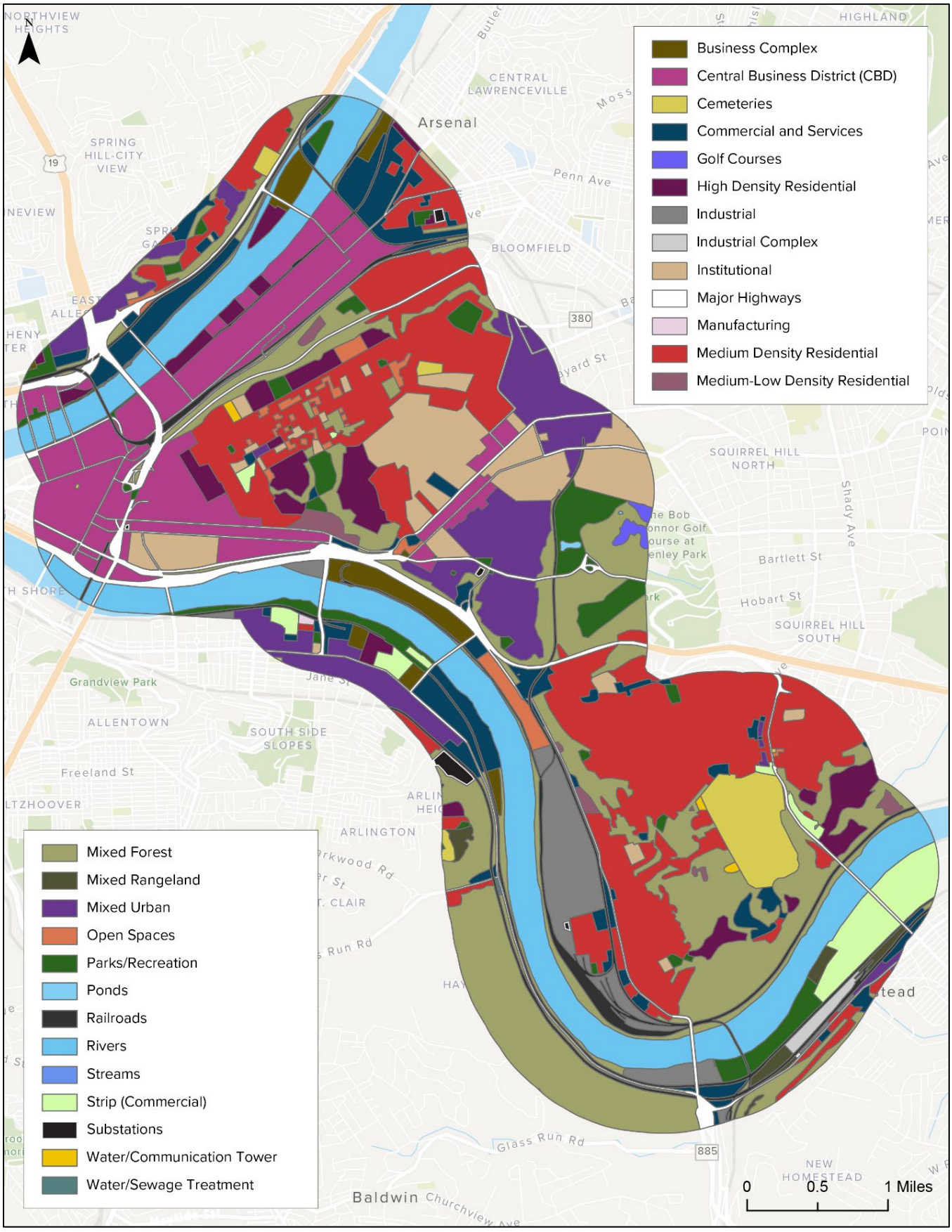


Figure 34: Land Use / Land Cover within Corridor G



TRAVEL ANALYSIS

An origin-destination (O-D) analysis was conducted within the Corridor G study area to model local travel patterns and identify trends in neighborhood-to-neighborhood connections. Replica data was used to perform this analysis. Replica software aggregates and summarizes substantial amounts of anonymous cell phone location data to track trip origins and destinations and is normalized to represent travel patterns on a typical Thursday or Saturday. The data used in this analysis is the most recent available at the start of the project, Fall (September, October, November) 2023.

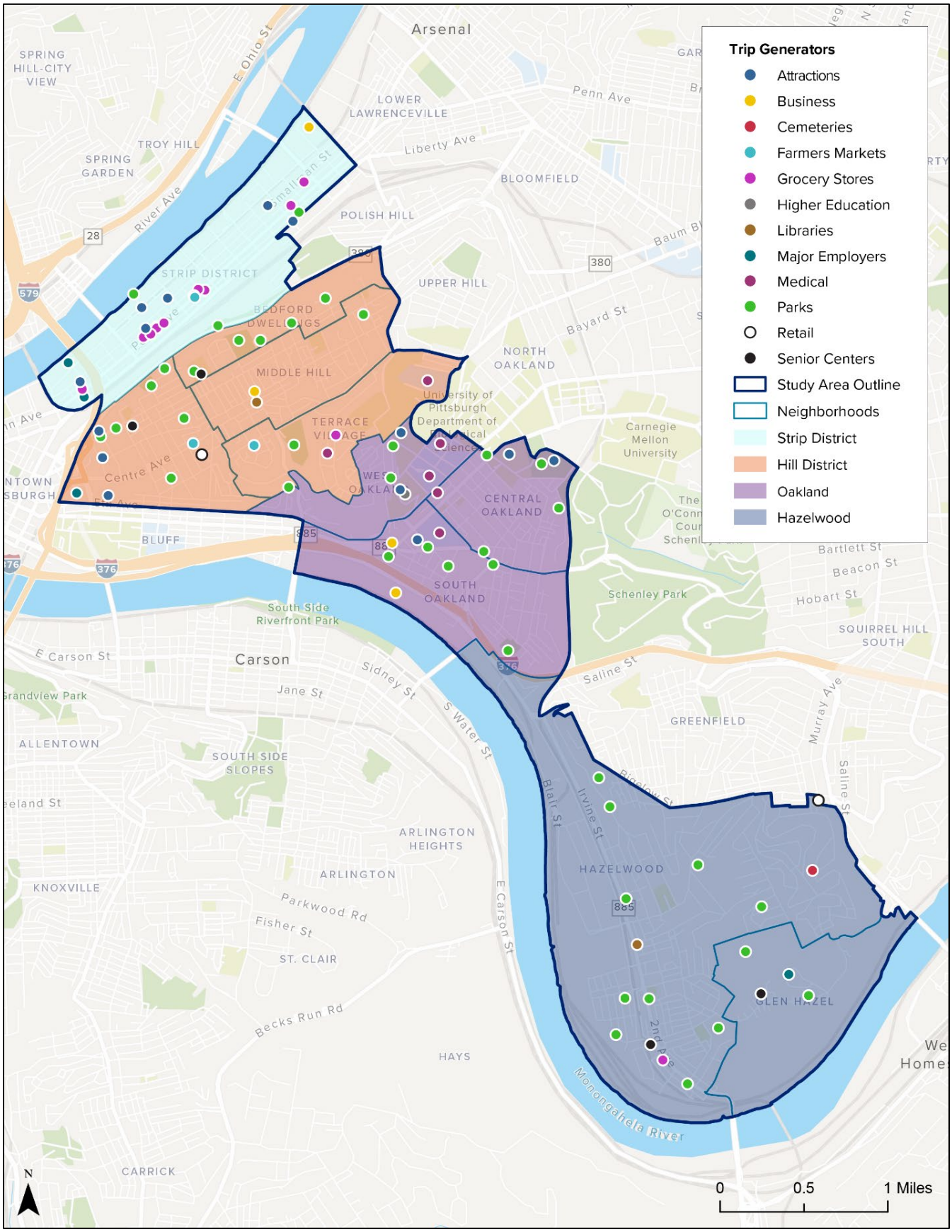
For the Corridor G O-D analysis, the study area was grouped into four main districts: the Strip District, Hill District, Oakland, and Hazelwood. For the purposes of this project, the Hill District is made up of Crawford-Roberts, Bedford Dwellings, Middle Hill, and Terrace Village; Oakland is made up of West, Central, and South Oakland; and Hazelwood is made up of Hazelwood and Glen Hazel. These neighborhoods represent the Corridor G project area identified in PRT's NEXTransit Plan and are a focus of future transit investments.

Figure 35 shows the four districts, the neighborhood boundaries that comprise them, and 97 points representing trip generators—including but not limited to attractions, grocery stores, farmers markets, parks, medical centers—within these districts. This dataset is maintained by SPC and was last updated in 2024; the project team received the dataset directly from SPC. The map helps to highlight some of the major generators of trips that influence the travel patterns from the O-D analysis that will be discussed below. For insight into the many businesses that operate and employ workers within Corridor G, refer back to the section on where workers work and live.

Travel patterns often differ on weekdays compared to weekends. Traditional office workers may share similar commute patterns from Monday to Friday and then make different trips for errands, appointments, and leisure activities throughout the weekend. However, there is a large volume of residents and workers in the Corridor G study area that do not travel at typical "commuter" hours and have different transportation needs.

Additionally, Oakland is a major medical and higher education destination in western Pennsylvania, to which thousands of workers, patients, and students travel at off-peak hours, as well. Strip District businesses generate significant traffic on weekends. Identifying the unique needs of workers, students, patients, and shoppers on both weekdays and weekends can help PRT best serve Corridor G travelers in a comprehensive manner.

Figure 35: Trip Generators within Corridor G Districts and Neighborhoods

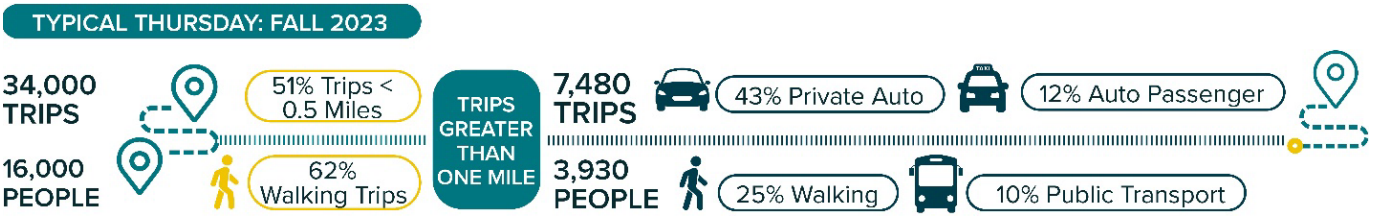


WEEKDAY TRAVEL PATTERNS

On a typical Thursday in Fall 2023, there were approximately 34,000 trips, inclusive of all modes, taken within the Corridor G study area by almost 16,000 people. Of these trips, walking (62%) was the most popular method of travel. Additionally, 51% were less than a half mile in distance. A high volume of pedestrian trips is to be expected in any travel pattern analysis, but especially in an urban center and university district where there are many students and residents walking short distances to their destinations. While it is important to look at the complete picture to understand travel within the project area, short walking trips are not the highest priority in Corridor G's study to improve local connections in a challenging topographic area. For that reason, trips greater than one mile were studied in the Replica analysis to capture the trips with a greater need for transit.

When the Thursday Replica data is filtered for trips greater than one mile, the mode split changes significantly: 43% of trips are private auto, 25% are walking, 13% are auto passenger, 10% are public transit, 6% are commercial vehicle, 2% are biking, and less than 2% are other/unknown (see **Figure 36**).

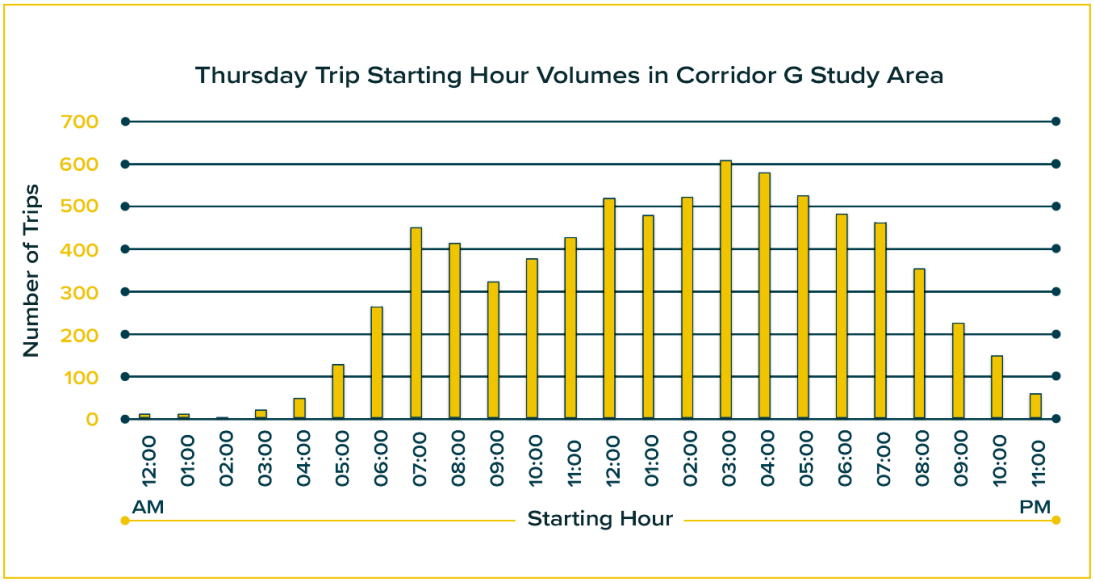
Figure 36: Mode Share for Trips on a Typical Thursday in Fall 2023 within Corridor G



The average trip duration for trips greater than one mile within the corridor is 16.3 minutes and the greatest volume of trips (about 600) starts within the 3-4 PM hour.

Figure 37, there are definitive peaks in trip start times within the corridor; 7-9 AM has a large volume, as well as 12-1 PM and 3-5 PM

Figure 37: Trip Starting Hour Volumes on a Typical Thursday in Fall 2023 Within Corridor G



As indicated in **Figure 38**, the Hill District and Oakland had the highest volume of bidirectional trips greater than one mile within the study area. The generalized weekday trends between the four districts in the Corridor G study area are shown below in bidirectional totals.

As indicated in **Figure 39**, Central Oakland and Terrace Village had the highest volume of bidirectional trips greater than one mile within the study area—about 750 people make this connection on an average weekday. Strip District and West Oakland, Strip District and Central Oakland, and West Oakland and South Oakland all had greater than 400 bidirectional trips per day as well.

DEMOGRAPHICS

A demographic analysis was also conducted to identify trends in travel within the Corridor G study area. On a typical Thursday in Fall 2023, 59% of trips in the Corridor G study area with a distance greater than one mile were taken by people of White Non-Hispanic/Latino race. 26% of trips were made by people of Black Non-Hispanic/Latino race, followed by 7% Asian Non-Hispanic/Latino, 4% Hispanic or Latino Origin, and 3% Two Races Non-Hispanic/Latino.
To identify trends in minority travel, the White Non-Hispanic/Latino trips were filtered out in this portion of the analysis.

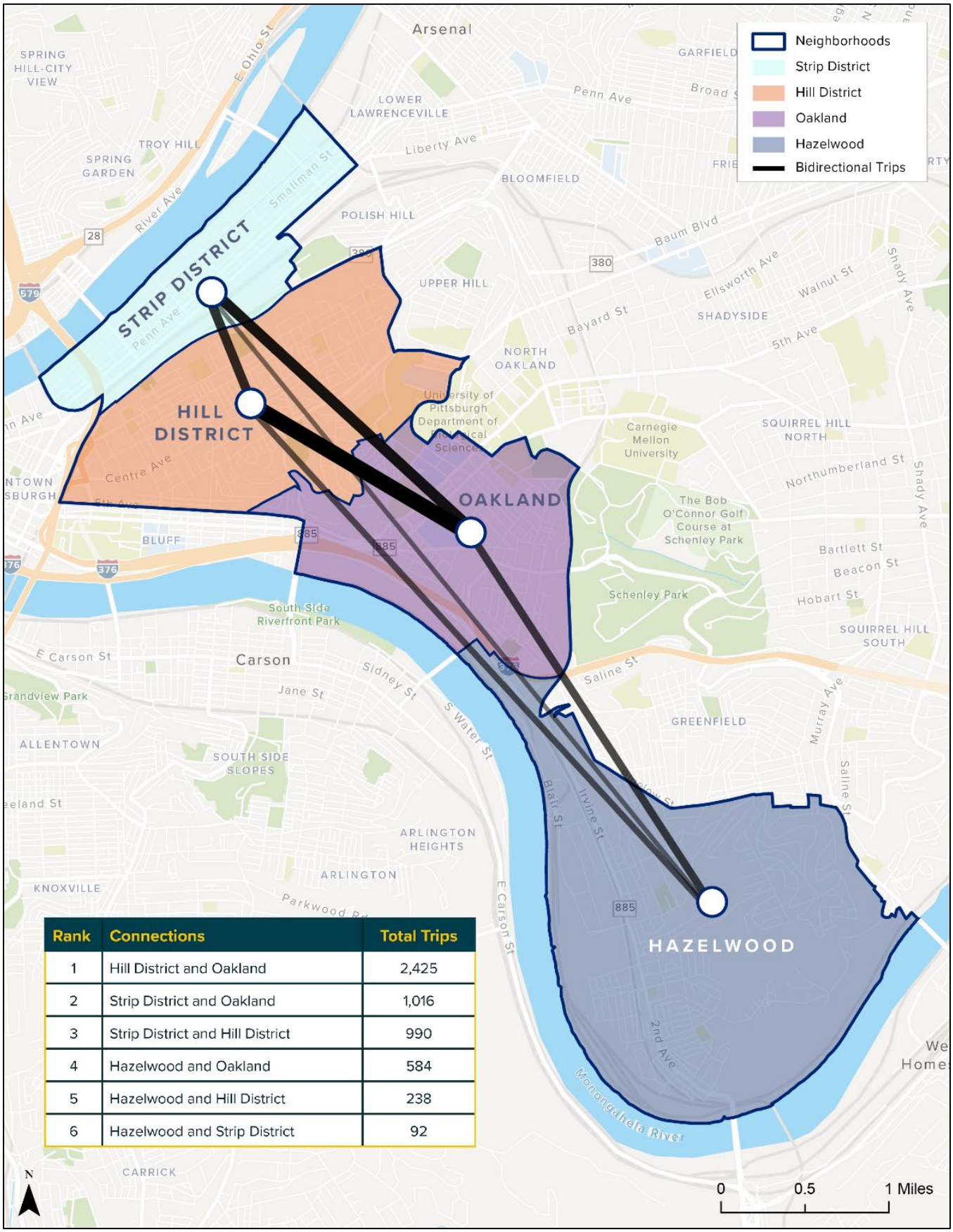
According to the Fall 2023 Replica data, there are about 3,000 trips greater than one mile taken by people belonging to minority groups in the Corridor G study area on a typical Thursday. The average income of these trip takers is $71,000, but the median income is $32,000, suggesting a skew from the small portion of high-income workers in this area, such as doctors. 29% of minority trip takers within the study area make less than $15,000 annually. **Additionally, 35% of trip takers have no access to a vehicle.** 62% of trip takers are employed, 30% are not currently in the labor force, 4% are under 16, and 4% are unemployed.

Of trips greater than one mile taken by minorities, 36% travel by private auto, 32% walk, 15% take public transit, 13% are auto passengers, and almost 2% bike. The average trip duration is 18 minutes. Between the four study area districts, the Hill District and Oakland have the highest volume of bidirectional trips greater than one mile.

When broken down into smaller neighborhood geographies, the top connection for trips greater than one mile for minorities is between Terrace Village and Central Oakland. An estimated 200 people on a typical Thursday make this connection. The breakdown by individual neighborhoods is shown below in **Figure 40** for the top ten bidirectional connections.

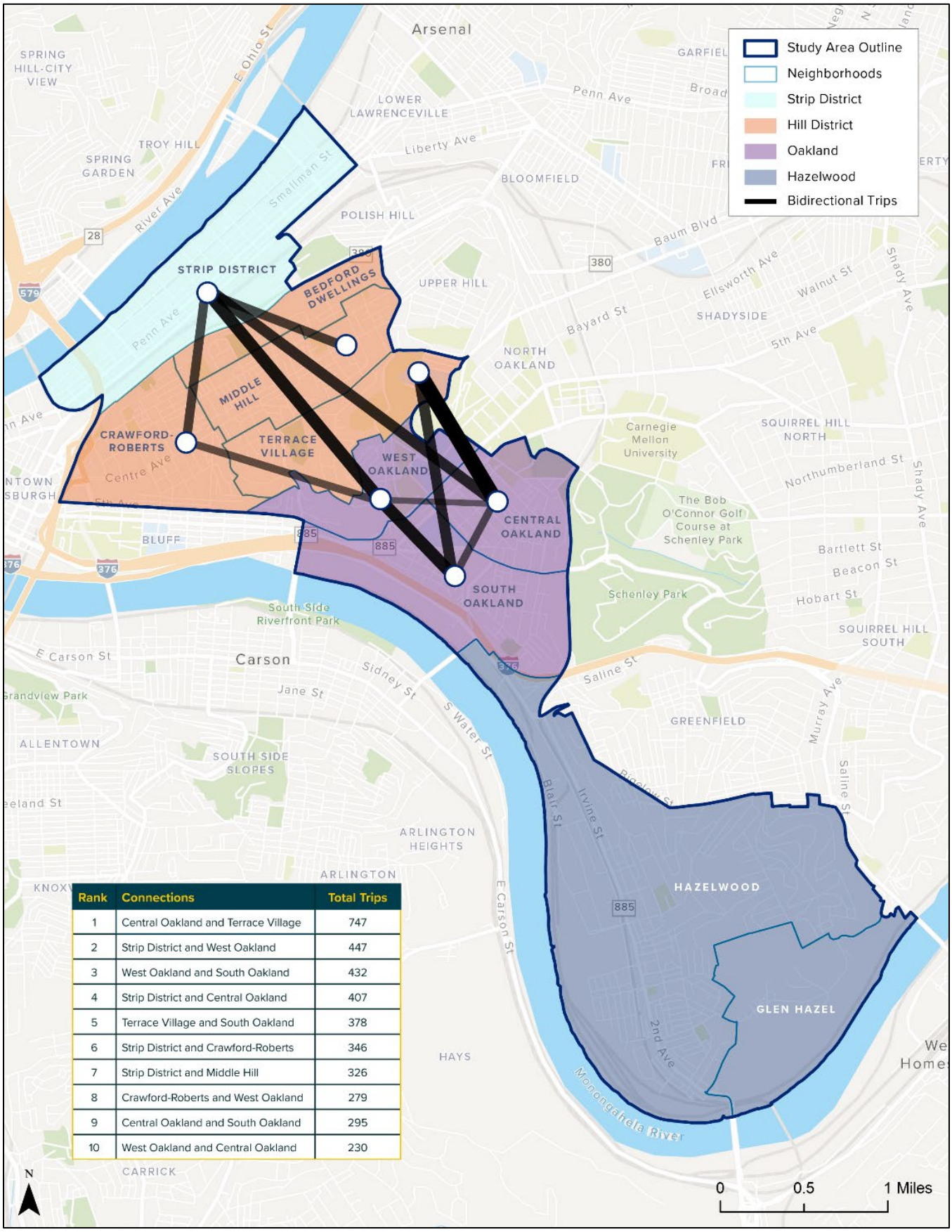
These numbers support the findings in NEXTransit and emphasize the importance of the Corridor G project. High-need populations frequently travel between areas of challenging topography in the project area and need reliable transportation options.

Figure 38: Typical Thursday Bidirectional Corridor G District Connections in Fall 2023



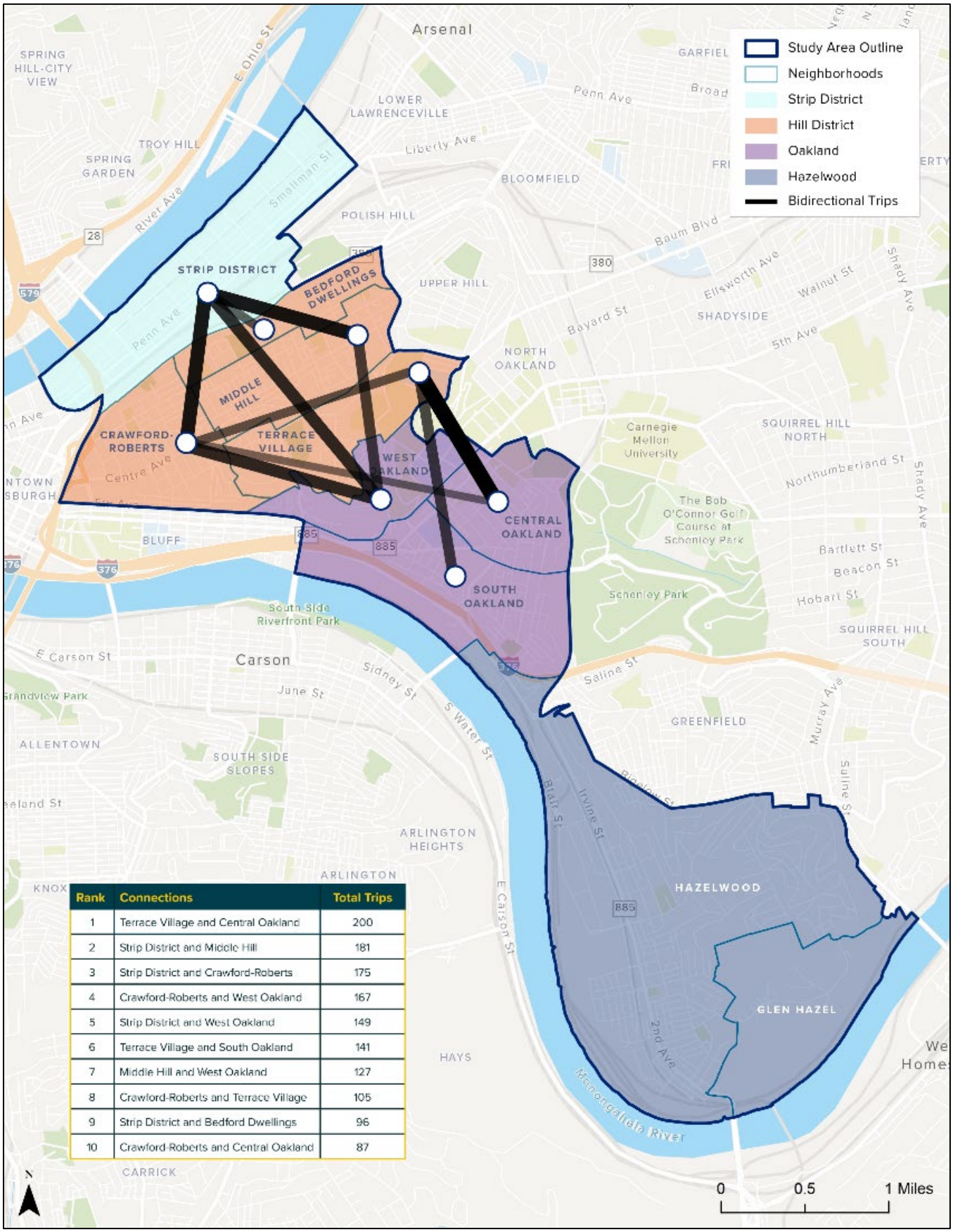
Rank	Connections	Total Trips
1	Hill District and Oakland	2,425
2	Strip District and Oakland	1,016
3	Strip District and Hill District	990
4	Hazelwood and Oakland	584
5	Hazelwood and Hill District	238
6	Hazelwood and Strip District	92

Figure 39: Typical Thursday Bidirectional Corridor G Neighborhood Connections in Fall 2023



Rank	Connections	Total Trips
1	Central Oakland and Terrace Village	747
2	Strip District and West Oakland	447
3	West Oakland and South Oakland	432
4	Strip District and Central Oakland	407
5	Terrace Village and South Oakland	378
6	Strip District and Crawford-Roberts	346
7	Strip District and Middle Hill	326
8	Crawford-Roberts and West Oakland	279
9	Central Oakland and South Oakland	295
10	West Oakland and Central Oakland	230

Figure 40: Typical Thursday Bidirectional Corridor G Neighborhood Connections for Minority Residents, Fall 2023

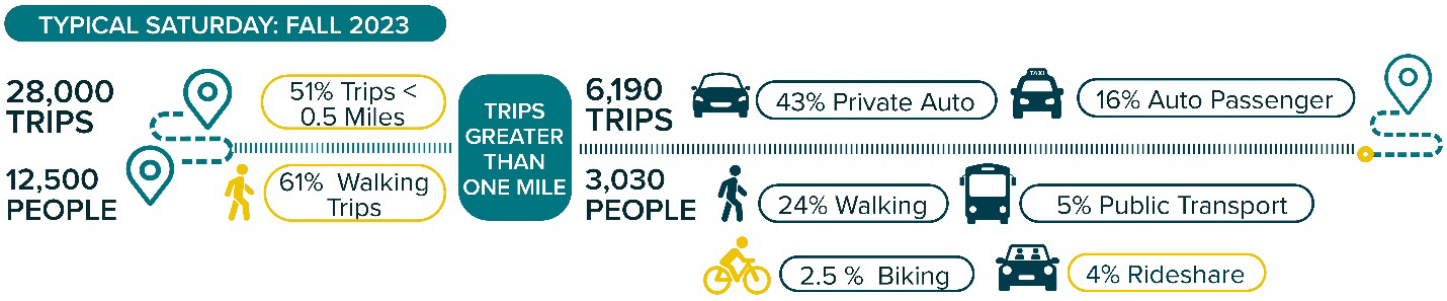


Rank	Connections	Total Trips
1	Terrace Village and Central Oakland	200
2	Strip District and Middle Hill	181
3	Strip District and Crawford-Roberts	175
4	Crawford-Roberts and West Oakland	167
5	Strip District and West Oakland	149
6	Terrace Village and South Oakland	141
7	Middle Hill and West Oakland	127
8	Crawford-Roberts and Terrace Village	105
9	Strip District and Bedford Dwellings	96
10	Crawford-Roberts and Central Oakland	87

WEEKEND TRAVEL PATTERNS

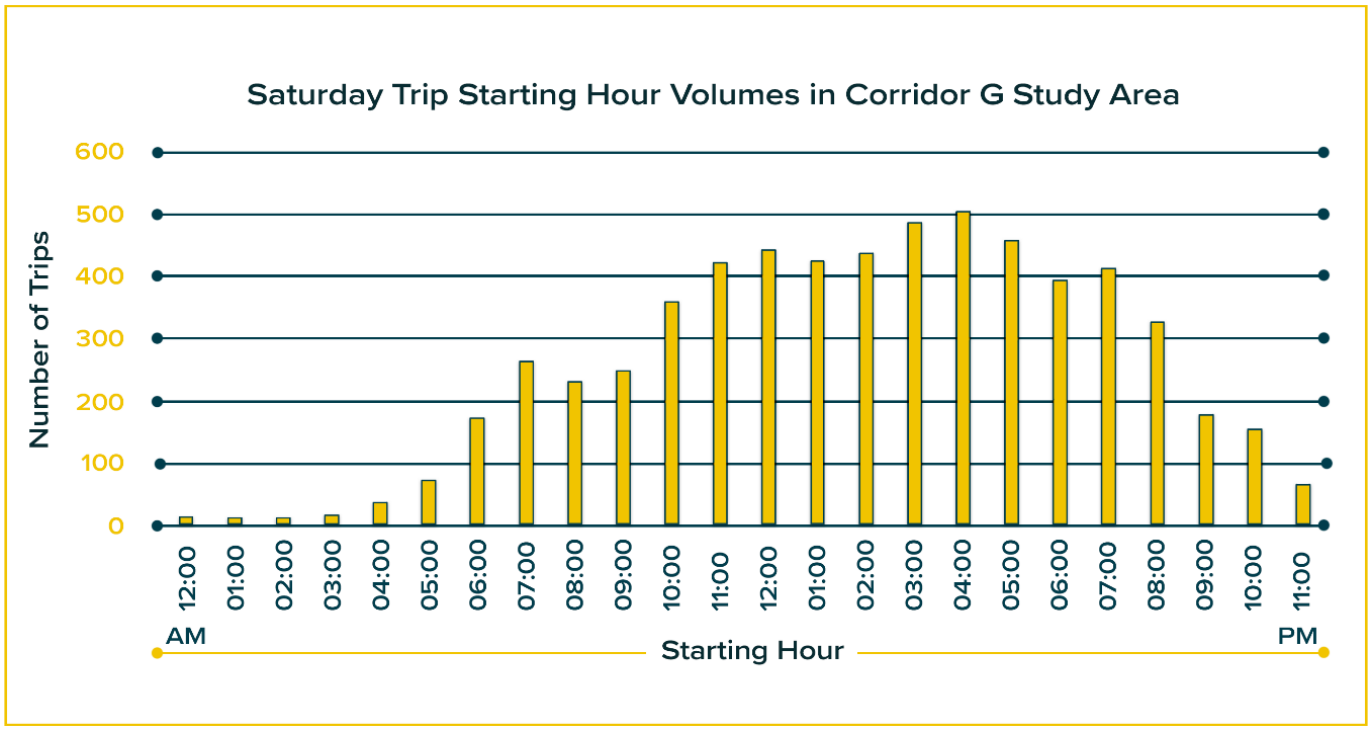
On a typical Saturday in Fall 2023, there were approximately 28,000 trips taken within the Corridor G study area by about 12,500 people. Similar to Thursday travel patterns, 61% of these trips were walking trips, and 51% of the trips were less than a half mile in distance. When the data is filtered for trips greater than one mile, 43% of the trips are private auto, 24% are walking, 16% are auto passenger, and 5% are public transit. This is a 5% decrease from weekday public transit trips over one mile. There are also 4% rideshare trips and about 2.5% biking trips (see **Figure 41**).

Figure 41: Mode Share for Trips on a Typical Saturday in Fall 2023 within Corridor G



The average weekend trip duration for trips greater than one mile within the corridor is 15.8 minutes and the greatest volume of trips (about 500) starts within the 4-5 PM hour. There are fewer notable peaks in the time-of-day travel for weekends (see **Figure 42**).

Figure 42: Trip Starting Hour Volumes on a Typical Saturday in Fall 2023 within Corridor G



The weekend trends between the four districts in the Corridor G study area are shown below in bidirectional totals in The weekend trends between the four districts in the Corridor G study area are shown below in bidirectional totals in **Figure 43**. On weekends, the Hill District and Oakland still have the highest volume of bidirectional trips greater than one mile within the study area. The Strip District and Hill District volume is also significant, especially considering there is no easy roadway connection between these two topographically opposite areas.

When broken down into smaller neighborhood geographies, Central Oakland and Terrace Village have the highest volume of weekend bidirectional trips greater than one mile (Fall 2023). As indicated in **Figure 44** below, almost 600 people make this connection on an average Saturday. The Strip District and West Oakland, Strip District and Crawford-Roberts, Strip District and Central Oakland, and Strip District and Middle Hill all generate or attract over 300 daily bidirectional trips as well. These top patterns are different from typical weekday travel patterns, and the numbers are notably lower on weekends.

DEMOGRAPHICS

On a typical Saturday in Fall 2023, 58% of trips with a distance greater than one mile were taken by people of White non-Hispanic/Latino race. 27% of trips were made by people of Black non-Hispanic/Latino race, followed by 8% Asian non-Hispanic/Latino, 4% Hispanic or Latino Origin, and 2% Two Races non-Hispanic/Latino. These percentages are nearly identical to the percentages by demographic for typical weekday travel. To identify trends in minority travel, the White non-Hispanic/Latino trips were filtered out for this portion of the analysis.

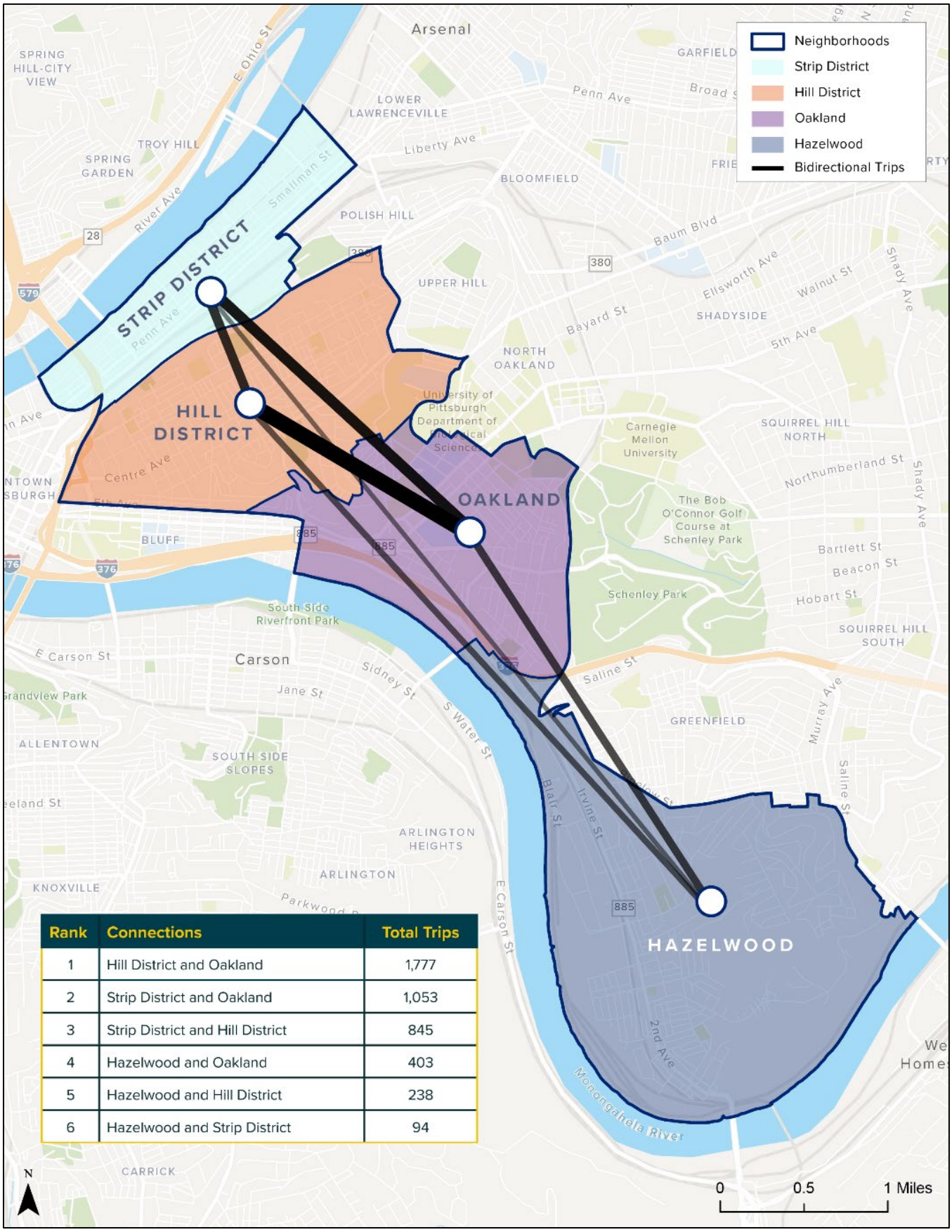
According to the Fall 2023 Replica data, there are about 2,500 trips that are greater than one mile taken by people belonging to minority groups in the Corridor G study area on a typical Saturday. Like the weekday data, the average income of these trip takers is $65,000, but the median income is $30,000, suggesting the same skew from the small portion of high-income workers in this area. 33% of minority trip takers within the study area make less than $15,000 annually. **Additionally, 33% of trip takers have no access to a vehicle.** 59% of trip takers are employed, 36% are not currently in the labor force, and 5% are unemployed.

Of the trips greater than one mile by minorities, 38% travel by private auto, 29% walk, 17% are auto passengers, and 8% take public transit. The average trip time is 18 minutes. Between the four districts, the Hill District and Oakland have the highest volume of bidirectional trips greater than one mile.

However, when broken down into smaller neighborhood geographies, the top connection for trips greater than one mile for minorities is between the Strip District and Crawford-Roberts, at 241 bidirectional trips. The breakdown by individual neighborhoods is shown below in **Figure 45** for the top ten weekend bidirectional connections.

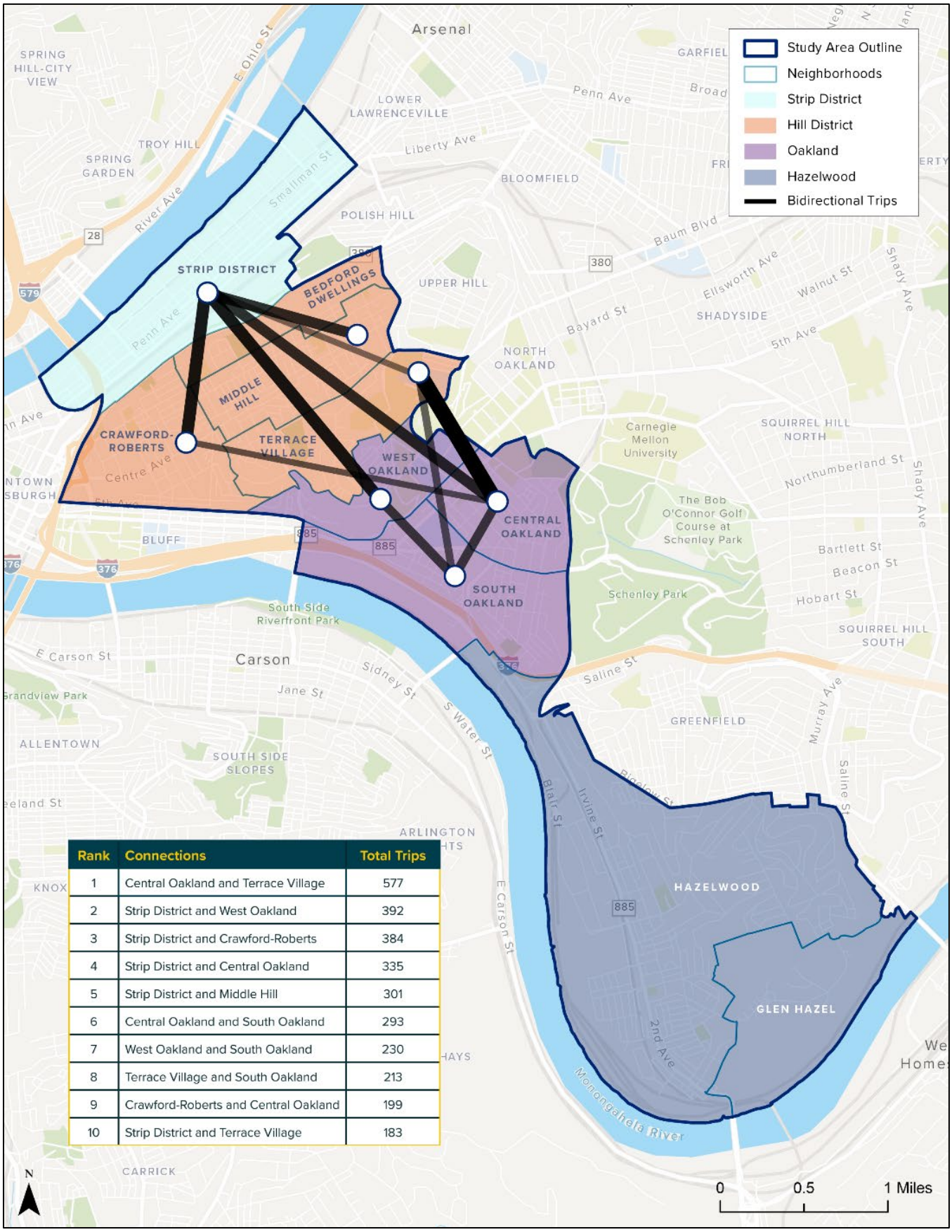
There is a weekend versus weekday difference between these top connections for minorities. For example, travel between the Strip District and Crawford-Roberts is more frequent on weekends, and travel between Crawford-Roberts and West Oakland is much more frequent on weekdays.

Figure 43: Typical Saturday Bidirectional Corridor G District Connections in Fall 2023



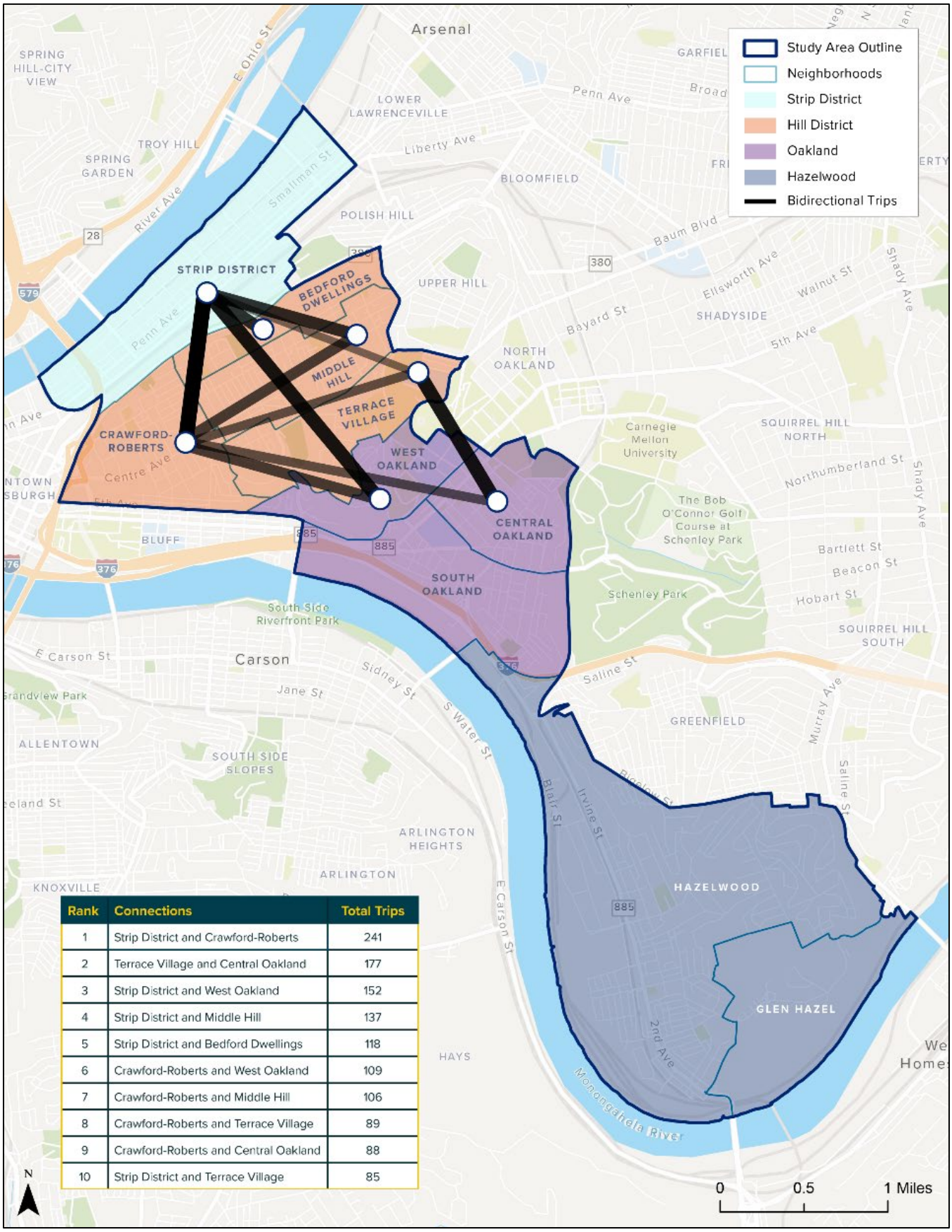
Rank	Connections	Total Trips
1	Hill District and Oakland	1,777
2	Strip District and Oakland	1,053
3	Strip District and Hill District	845
4	Hazelwood and Oakland	403
5	Hazelwood and Hill District	238
6	Hazelwood and Strip District	94

Figure 44: Typical Saturday Top Ten Bidirectional Corridor G Neighborhood Connections in Fall 2023



Rank	Connections	Total Trips
1	Central Oakland and Terrace Village	577
2	Strip District and West Oakland	392
3	Strip District and Crawford-Roberts	384
4	Strip District and Central Oakland	335
5	Strip District and Middle Hill	301
6	Central Oakland and South Oakland	293
7	West Oakland and South Oakland	230
8	Terrace Village and South Oakland	213
9	Crawford-Roberts and Central Oakland	199
10	Strip District and Terrace Village	183

Figure 45: Typical Saturday Bidirectional Corridor G Neighborhood Connections for Minority Residents, Fall 2023



Rank	Connections	Total Trips
1	Strip District and Crawford-Roberts	241
2	Terrace Village and Central Oakland	177
3	Strip District and West Oakland	152
4	Strip District and Middle Hill	137
5	Strip District and Bedford Dwellings	118
6	Crawford-Roberts and West Oakland	109
7	Crawford-Roberts and Middle Hill	106
8	Crawford-Roberts and Terrace Village	89
9	Crawford-Roberts and Central Oakland	88
10	Strip District and Terrace Village	85

KEY TAKEAWAYS FOR CORRIDOR G

The results of the origin-destination analysis for Corridor G indicate strong travel patterns between the districts and neighborhoods comprising the study area on all days of the week. For short trips (less than one mile), walking is a popular mode of travel; Oakland has an especially high ratio of walking trips. However, when trip distance is greater than one mile, walking is a less common mode of travel. Private vehicle trips remain the most popular mode of travel for longer trips, yet one-third of non-White trip-takers in the study area do not own a vehicle. As a result, these trip takers must rely on transit and other modes to get them where they need to go within the study area. Challenging topographic conditions make walking trips undesirable in some areas, and travel is even more difficult for people with accessibility challenges.

The Strip District, Hill District, and Oakland all have very frequent daily trips between one another on all days of the week. While the Hill District is primarily residential, the Strip District and Oakland are commercial destinations that Hill District residents likely visit for work, school, health appointments, and errands. Specifically, Oakland and the Hill District had the highest volume of bidirectional trips; on weekdays, nearly 2,500 people make this connection, and almost 1,800 people do on weekends. Notable peaks in trip volumes are in the morning (7-9 AM), midday (12-1 PM), and early evening (3-5 PM).

Additionally, connections between the Strip District and Hill District were slightly *higher* on weekends than on weekdays. This indicates that Hill District residents are traveling to the Strip District for purposes other than typical shift work or school. Saturday trip start time volumes are highest between 3-5 PM and do not have a morning peak.

Hazelwood and Oakland have a significant number of bidirectional trips as well, but the connections between Hazelwood and the Hill District and Hazelwood and the Strip District are substantially lower.
This trend is likely explained by Hazelwood's proximity to the Waterfront and the Southside, which are both commercial centers that provide ample shopping and employment opportunities. Hazelwood residents and visitors are still likely traveling to Oakland for school, jobs, medical facilities, and transit service as it is a hub for all those activities. Investing in a faster, more efficient transit option for Hazelwood residents without cars to get to Oakland will be beneficial, as the topography and road network between the two is steep, narrow, and difficult to traverse, especially for those with accessibility challenges.

Travel patterns for minority residents in the study area are similar to the overall trends, but these residents are much more likely to be reliant on PRT service to reach their destinations. More frequent and efficient transit between the Hill District and Oakland on weekdays and between the Hill District and Strip District stand out as connections that should be targeted for improvements. Ensuring more frequent and direct options to Oakland from all neighborhoods in the study area is also important.

NEXT STEPS

The Corridor G project study area encompasses a diverse and topographically challenging region of the City of Pittsburgh. Parts of the study area are considered transportation disadvantaged, and most of the study area is considered an area of persistent poverty by the U.S. Department of Transportation.

The history and existing conditions of the area tells the story of the need to improve transportation options for these communities, with community driven planning at the forefront of the conversation. In particular, land use patterns (and to some extent, zoning patterns) show that while east-to-west movement and mobility may be the norm due to the topography of the city, it has prevented the development of connections between the Strip District, the Hill District, Oakland, and the neighborhoods south of I-376. This has likely been a contributing factor to the distribution of certain socioeconomic trends, including ones leading to lower incomes, reduced mobility, and accessibility challenges.

As the Corridor G project moves from this initial planning study to future planning, design, and construction, community-driven planning must stay as a central value. The complement of a north-south transit connection to the existing east-west patterns will not only strengthen the mobility and the accessibility of the community by providing access to residents in more areas, but it will increase the efficiency and effectiveness of the entire transportation network. Advancing community-driven initiatives during the implementation stage requires clear communication and outreach to residents and stakeholders within the study area communities, employing strategies that minimize the negative impacts of growth while clearly outlining the benefits of these potential changes.

FUTURE PHASES OF CORRIDOR G

The second phase of the Corridor G project will look both at the corridor and the station locations. It is recommended that the physical constraints of the corridor analysis from this report be summarized in the ArcGIS Pro Suitability Modeler which creates a model of GIS data layers by applying weights and a score for the categorized data. This model can help to narrow down specific locations that will be the most suitable for future transit alignments within Corridor G.

Moving forward, engaging the community on station locations will be a key element to the success of any project. While there is a general sense of how these communities can be connected—that is, we have an idea of what the corridor will look like and the challenges that come with that corridor—the integration of the transit network, regardless of the mode, with the communities themselves is key. That integration begins and ends with access: where people get on and get off the bus, the train, or the tram.

From this high-level planning and corridor work, it is envisioned that a third and final phase will focus on the environmental and regulatory elements of the project, leading into design and preliminary engineering.