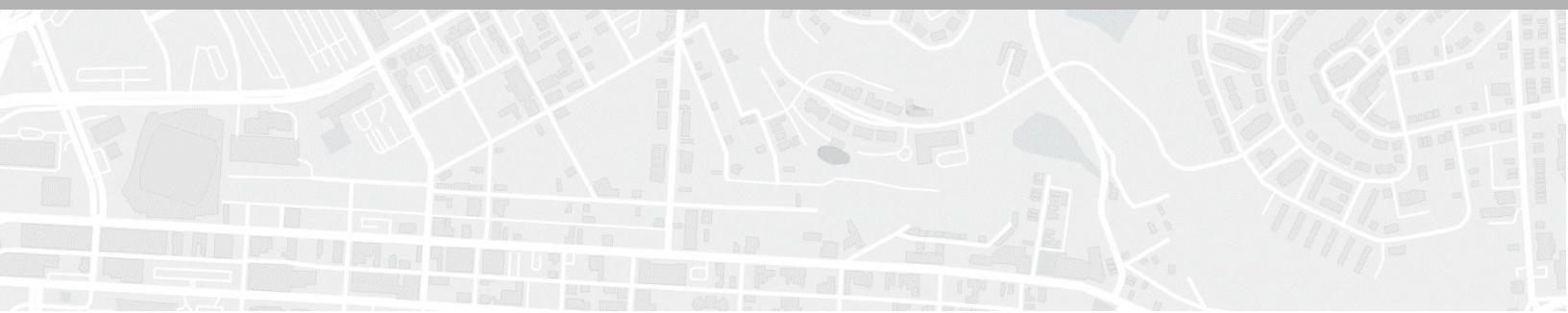
KITTELSON & ASSOCIATES

HILL DISTRICT TRANSPORTATION STUDY

March 2022



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Hill District Transportation Study

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City of Pittsburgh Department of Mobility and Infrastructure

Pittsburgh, PA

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March 2022

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EXECUTIVE SUMMARY

The City of Pittsburgh is updating and adopting the Original Greater Hill District Master (Neighborhood) Plan to guide policy and investments promoting sustainable and equitable growth in the Hill District. This plan will update and adopt the 2011 *Greater Hill District Master Plan* and help guide public and private investment in the Hill District over the next ten years and beyond. The Hill District Transportation Study (the Study) was completed at the beginning of the more extensive neighborhood planning process to develop recommendations for the Hill District transportation network and provide recommendations ahead of planned development along Centre Avenue and in the Lower Hill. The study's findings and recommendations will be incorporated into the subsequent neighborhood plan's mobility chapter.

The Study covers the review of previous planning studies, summary and analysis of the existing transportation system and multimodal connections, public engagement efforts undertaken as part of the Study, and mobility recommendations and implementation steps needed to move projects forward.

Existing Conditions

The existing conditions summary and analysis reviews the transportation network, including roadways, transit, pedestrian connections, and bicycle connections. The analysis also considers commutes into and out of the Hill District, safety, and parking concerns to identify gaps in the network, key locations that need improvement, and dangerous areas due to a concentration of crashes or dangerous roadway or pedestrian conditions. The following topics are covered in more detail in **Appendix A: Existing Conditions Report**:

- Street Network
- Commuting
- Transit
- Safety
- Active Transportation
- Parking

The plan review showed that there have been several community-based planning efforts around specific corridors or topics. There are corridor plans for Centre Avenue and Bedford Avenue and a Bicycle Master Plan. This report considers the previous plans and ongoing projects identified, including the Fifth and Forbes Avenue Bus Rapid Transit (BRT) and Lower Hill redevelopment. It pulls together these plans, in addition to some new recommendations, to create comprehensive mobility recommendations for improving transportation in the Hill District.

Mobility Priorities

The existing conditions evaluation provided valuable insight into the transportation-related challenges and opportunities within the Hill District. Based on this analysis, mobility priorities were identified to guide the development of recommendations for the Hill District. The following three focus areas summarize the mobility priorities:

- Neighborhood Travel Patterns
- Safety and Active Transportation
- Increasing Transportation Options and Managing Parking

Public Involvement

This project's community engagement efforts included an informative project website, two online public surveys, an online public meeting in partnership with the Hill District Community Development Corporation (Hill CDC), and several pop-up engagement events at popular locations in the Hill District to gather feedback from the community. The first round of engagement was largely virtual due to COVID-19 concerns; however, the second round of engagement sought to take advantage of in-person, already established events for the best opportunity to meet people where they were already gathering. The team also used EngagePGH, the City's online public engagement platform, to share information and collect feedback. Through these efforts, community preferences and priorities have been identified and incorporated into the Study's recommendations.

Recommendations and Projects

The recommendations and projects align with the neighborhood's three mobility priorities mentioned previously and provide the following improvements to the Hill District:

- Enhanced connectivity throughout the Hill District for all modes of transportation,
- Enhanced north/south connections between Centre Avenue from Bedford Avenue and Fifth Avenue,
- Increased access to/from the Hill District to future BRT stations on Fifth Avenue and Forbes Avenue,
- Enhanced sense of place and community on major streets (e.g., Centre Avenue),
- Enhanced street and intersection safety for all transportation users,
- Increase in transportation options beyond personal vehicles (i.e., walking, biking, transit, and micoromobility), and
- Enhanced parking wayfinding and management.

The Study includes recommendations for traffic calming and streetscape improvements along main corridors in the Hill District, strategies for increasing transportation options and managing parking, and concept designs for specific corridors and intersections. A detailed summary of the proposed recommendations, projects, and programs is included in **Figure 1**Error! Reference source not found.. Specific recommendations, name, project type, extents, and priority level are shown in **Table 1**. The priority levels are ranked high, medium, and low priority. These priority levels build on the project's three mobility priority focus areas: neighborhood travel patterns, safety, active transportation, increasing transportation options, and managing parking. Each focus area has related mobility priorities. Each of the projects listed below in Table 1 was scored based on how well they met each mobility priority. Based on the overall score, each project was given a priority level. Other considerations include project cost, implementation timeline, public input, potential impacts, and coordination efforts. This process is outlined in more detail in subsequent sections.

Figure 1 Recommended Projects Priority Map

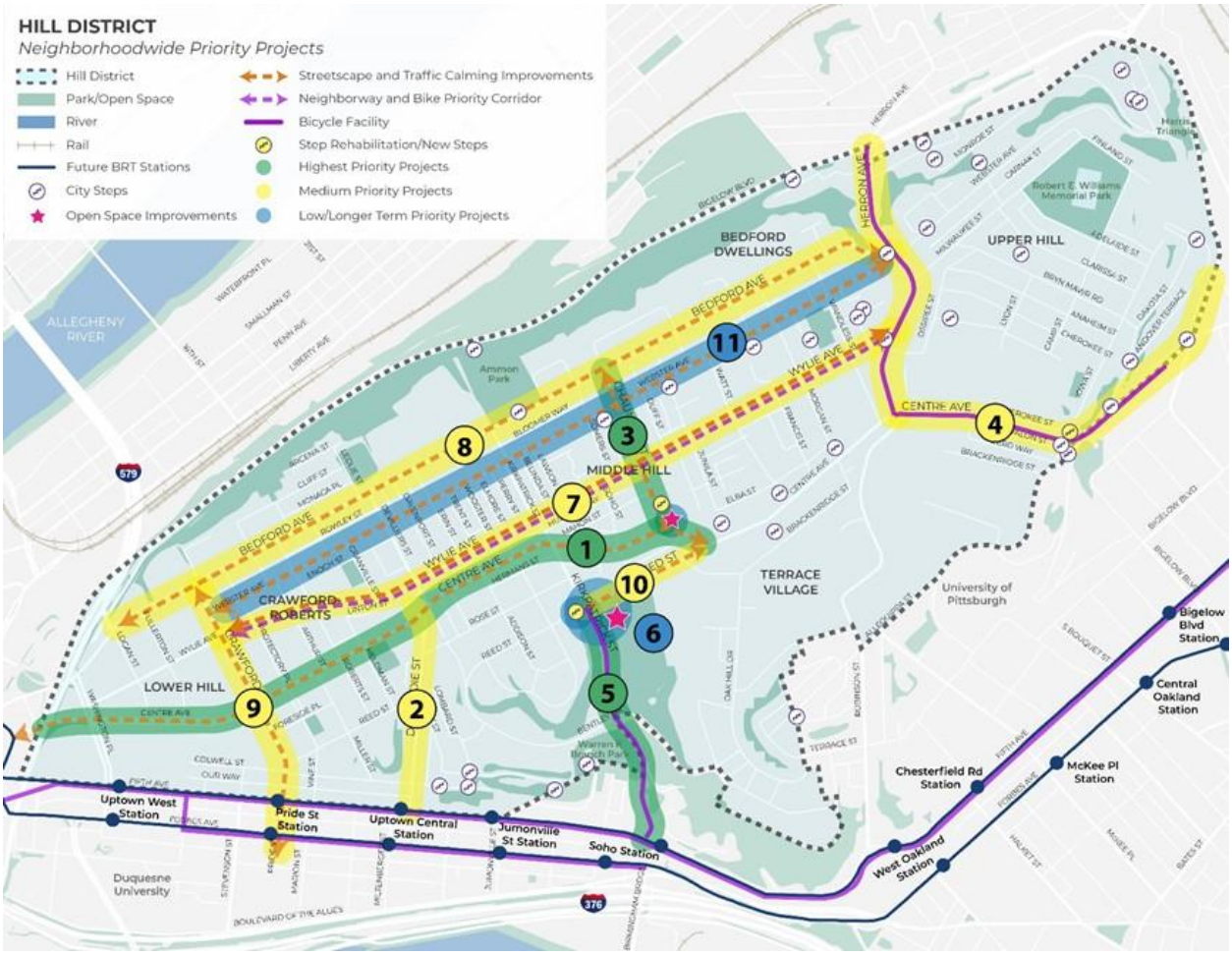


Table 1 Summary Table of Recommendations, Projects, and Programs

ID	Project Name	Type	Project Extents	Priority
1.	**Centre Avenue Streetscape**	**Complete Street**	**Dinwiddie Street to Kirkpatrick Street**	**High**
1A.	General traffic calming	Traffic Calming	Dinwiddie Street to Kirkpatrick Street	High
1B.	Install parking meters	Parking	Dinwiddie Street to Reed Street	Medium
1C.	Centre Avenue & Dinwiddie Street Reconstruction	Safety	Intersection: Centre Avenue, Devilliers Street, and Dinwiddie Street	Medium
1D.	Centre Avenue & Kirkpatrick Street	Safety	Intersection: Centre Avenue, Kirkpatrick Street, and Mahon Street	Medium
1E.	Centre Avenue and Reed Street	Safety	Intersection: Centre Avenue and Reed Street	High
2.	**Dinwiddie Street Transit**	**Transit**	**Centre Avenue to Fifth Avenue**	**Medium**
3.	**Chauncey Street Pedestrian Connector**	**Pedestrian**	**Centre Avenue to Bedford Avenue**	**High**
3A.	Reconstruct Chauncey Street Steps	Connectivity	Centre Avenue to Mahon Street	High
3B.	Chauncey Traffic Calming/Sidewalk Gap Infill	Traffic Calming	Centre Avenue to Bedford Avenue	Medium
3C.	Chauncey Street Shared Street	Complete Streets	Webster Avenue to Bedford Avenue	Low
3D.	Install Pedestrian Plaza	Public Space/ Placemaking	Chauncey Street Steps at Centre Avenue	Low
4.	**Upper Hill Bicycle Connector**	**Connectivity**	**Herron Avenue (from Bigelow Boulevard to Centre Avenue), Centre Avenue (from Herron Avenue to Dithridge Street/Bigelow Boulevard)**	**Medium**
5.	**Kirkpatrick Street Bicycle Connection**	**Connectivity**	**Reed Street to Fifth Avenue**	**High**
6.	**Kennard Playground Access and Safety Improvements**	**Safety**	**Intersection: Kirkpatrick Street and Reed Street**	**Low**
6a.	New Pedestrian Connection	Connectivity	Reed Street west of Kirkpatrick Street to Reed Street east of Kirkpatrick Street	Low
6b.	Kirkpatrick Street and Reed Street Intersection Improvements	Safety	Intersection: Kirkpatrick Street and Reed Street	Low

ID	Project Name	Type	Project Extents	Priority
7.	**Wylie Avenue Neighborway**	**Traffic Calming, Connectivity**	**Crawford Street to Herron Avenue**	**Medium**
8.	**Bedford Avenue Traffic Calming/Streetscape**	**Traffic Calming, Streetscape**	**Logan Street to Herron Avenue**	**Medium**
9.	**Crawford Street Traffic Calming/Streetscape**	**Traffic Calming, Streetscape**	**Bedford Avenue to Forbes Avenue**	**Medium**
10.	**Reed Street Traffic Calming**	**Traffic Calming**	**Kirkpatrick Street to Centre Avenue**	**Medium**
11.	**Webster Avenue Streetscape and Traffic Calming**	**Traffic Calming, Streetscape**	**Crawford Street to Herron Avenue**	**Low**
12.	**Increase Parking Availability**	**Programmatic**	**Hill District**	**High**
12A.	Balance parking supply and demand	Programmatic	Hill District	High
12B.	Increasing access through curbside management	Programmatic	Hill District	High
12C.	Modify residential parking	Programmatic	Hill District	High
13.	**Reduce single-occupancy vehicle trips**	**Programmatic**	**Hill District**	**High**
13A.	Establishing a TDM program	Programmatic	Hill District	High

Implementation and Evaluation

After determining the proposed recommendations and projects for the Hill District, the project team developed an implementation plan that included a prioritization process and evaluation criteria. The team worked with the City to identify key criterion for evaluating and prioritizing each of the recommendations outlined in this report. The following prioritization process and evaluation criteria incorporate the City's overall goals for safety and mobility, feedback from the community, available funding, coordination efforts, and estimated timelines.

EVALUATION CRITERIA

The project team determined several evaluation criteria to measure how each proposed project and recommendation aligns with community and city goals. The evaluation criteria include three main goals or focus areas:

- Improve safety and connectivity of transportation networks to, from, and within the Hill District.
- New infrastructure should promote walkability, street accessibility for people with mobility challenges, and access to work, retail, and social amenities.
- Create a well-planned parking and transportation strategy that supports new development while minimizing negative impacts on residents.

PRIORITIZATION PROCESS AND FUNDING OPPORTUNITIES

In addition to the evaluation criteria summarized above, the project team reviewed additional considerations when determining a prioritization plan for implementing the proposed recommendations and projects. The following summarizes additional considerations for the prioritization process:

- Identified in previous plans or studies,
- Implementers,
- Potential Funding Sources, and
- Quick-build Materials.

Proposed recommendations and projects previously identified in other plans and studies were prioritized. Many proposed recommendations and projects were identified in the Greater Hill District Master Plan (2011), the Centre Avenue Corridor Redevelopment and Design Plan (2015), the Bedford Connects Transformation Plan (2018), and the Bike (+) Plan (2020).

PROJECT TIMEFRAME

In addition to the evaluation criteria and prioritization, each proposed project's timeline must be considered when determining the order of project implementation. As the City balances its funds and prioritizes projects appropriately, timelines must be considered when determining an implementation plan. The proposed projects are categorized by project timeframe, including short-term, mid-term, and long-term. Each of these timeframes and their projects is summarized below.

Short-Term

Short-term projects follow a timeline of roughly less than three years. These projects are considered quick-build and follow a relatively short implementation timeline. Short-term projects do not require additional analysis or coordination. The following proposed projects are considered short-term:

- 1A. Centre Avenue General Traffic Calming,
- 1E. Centre Avenue and Reed Street,
- 3B. Chauncey Street Traffic Calming/Sidewalk,
- 3C. Chauncey Street Shared Street,
- 10. Reed Street Traffic Calming,
- 12B. Increase access through curbside management, and
- 12C. Modify residential parking.

Mid-Term

Mid-term projects follow a timeline of roughly 3-5 years. These projects are longer-term than short-term due to some additional analysis, required coordination, or required design and construction. The following proposed projects are considered mid-term:

- 1B. Centre Avenue Parking Meters,
- 1C. Centre Avenue and Dinwiddie Street Reconstruction,
- 1D. Centre Avenue and Kirkpatrick Street,
- 2. Dinwiddie Street Transit,
- 3A. Chauncey Street City Steps,
- 3D. Chauncey Street Plaza,
- 4. Upper Hill Bicycle Connector,
- 5. Kirkpatrick Street Bicycle Connection,
- 6A. Kennard Playground New Pedestrian Connection (steps),
- 6B. Kennard Playground Access + Intersection Safety Improvements,
- 7. Wylie Avenue Neighborway.
- 8. Bedford Avenue Traffic Calming/Streetscape,
- 9. Crawford Street Traffic Calming/Streetscape,
- 11. Webster Avenue Streetscape and Traffic Calming,
- 12A. Balance parking supply and demand, and

Long-Term

Long-term projects follow a timeline of roughly 5+ years. These projects are the most involved and require additional coordination, analysis, design, and construction. These projects tend to be larger scale and require more funding than short- and mid-term projects. Long-term projects may require additional outreach with the community and stakeholders. The following proposed project is considered long-term:

- Establish a Neighborhood TDM Program

INTRODUCTION

Plan Purpose

Pittsburgh is developing a comprehensive neighborhood plan (hereafter referred to as "the Plan") to guide policy and investments to promote sustainable and equitable growth in the Hill District. The Plan will update and adopt the 2011 *Greater Hill District Master Plan* and help guide public and private investment in the Hill District over the next ten years and beyond. Kittelson & Associates, Inc. (Kittelson), with support from Nspiregreen, Ltd. and in collaboration with the City of Pittsburgh's Department of Mobility and Infrastructure (DOMI) and the Port Authority of Allegheny County (PAAC), is developing the Hill District Transportation Study (hereafter referred to as "the Study"). The Study will be incorporated into the Plan's mobility chapter. This report summarizes and analyzes the existing transportation system and multimodal connections and mobility-related recommendations and implementation steps for improving transportation in the Hill District. It will be used as the basis of the Study's mobility recommendations.

Study Area Context

The Hill District is roughly bounded by Bigelow Boulevard to the north and northeast, the University of Pittsburgh and West Oakland to the southeast, Fifth Avenue to the south, and Interstate (I) 579 to the west (see Figure 3). Downtown Pittsburgh borders the Hill District to the west, Polish Hill and the Strip District to the north, Uptown (the Bluff) to the south, and Oakland to the east and southeast. The neighborhood is primarily residential with the PPG Paints Arena and commuter parking in the Lower Hill and commercial uses in Middle Hill along Centre Avenue. The Hill District is home to several cultural and historical destinations, including the Elise H. Hillman Auditorium, New Granada Theater, Carnegie Library of Pittsburgh, and churches, restaurants, bars, and community and recreation centers.

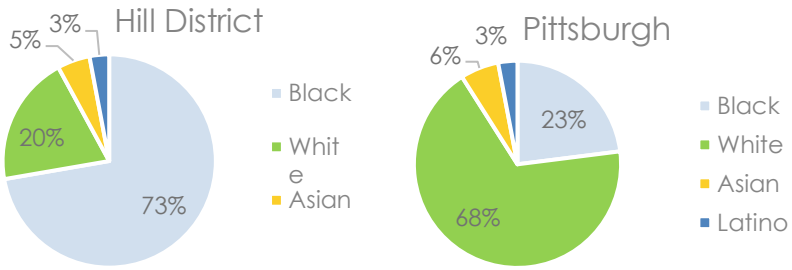
The Hill District comprises six neighborhoods, including the Lower, Middle, and Upper Hill, Crawford-Roberts, Terrace Village, and Bedford Dwellings. Each neighborhood has a slightly different context, as summarized below.

- The Lower Hill, a formerly middle-class neighborhood that suffered demolition during urban renewal, is currently occupied by parking lots used by commuters and visitors to PPG Paints Arena. The area connects Downtown to the rest of the Hill District and is planned for significant redevelopment in the short term.
- Crawford-Roberts has a mix of housing types, including multi-unit housing and planned residential development. It is adjacent to the Lower Hill.
- The Middle Hill and Bedford Dwellings have moderate residential density with single- and multi-unit housing. Centre Avenue, which runs through Middle Hill and the length of the Hill District, consists primarily of neighborhood commercial and retail.
- The Upper Hill is primarily low density, single- and two-unit housing.
- Terrace Village, which is adjacent to and includes part of the upper Pitt campus, is a mix of housing and open space. The housing in Terrace Village is part of newer planned developments.
- Crawford-Roberts has a mix of housing types, including multi-unit housing and planned residential development.

Figure **Figure 2** displays the 2014-2018 American Community Survey demographic estimates for the Hill District and Pittsburgh overall. In the Hill District, nearly 75^% of the population is Black/African-American. In contrast, Pittsburgh as a whole is 23% Black/African-American. Nearly 40% of families in the Hill District are in

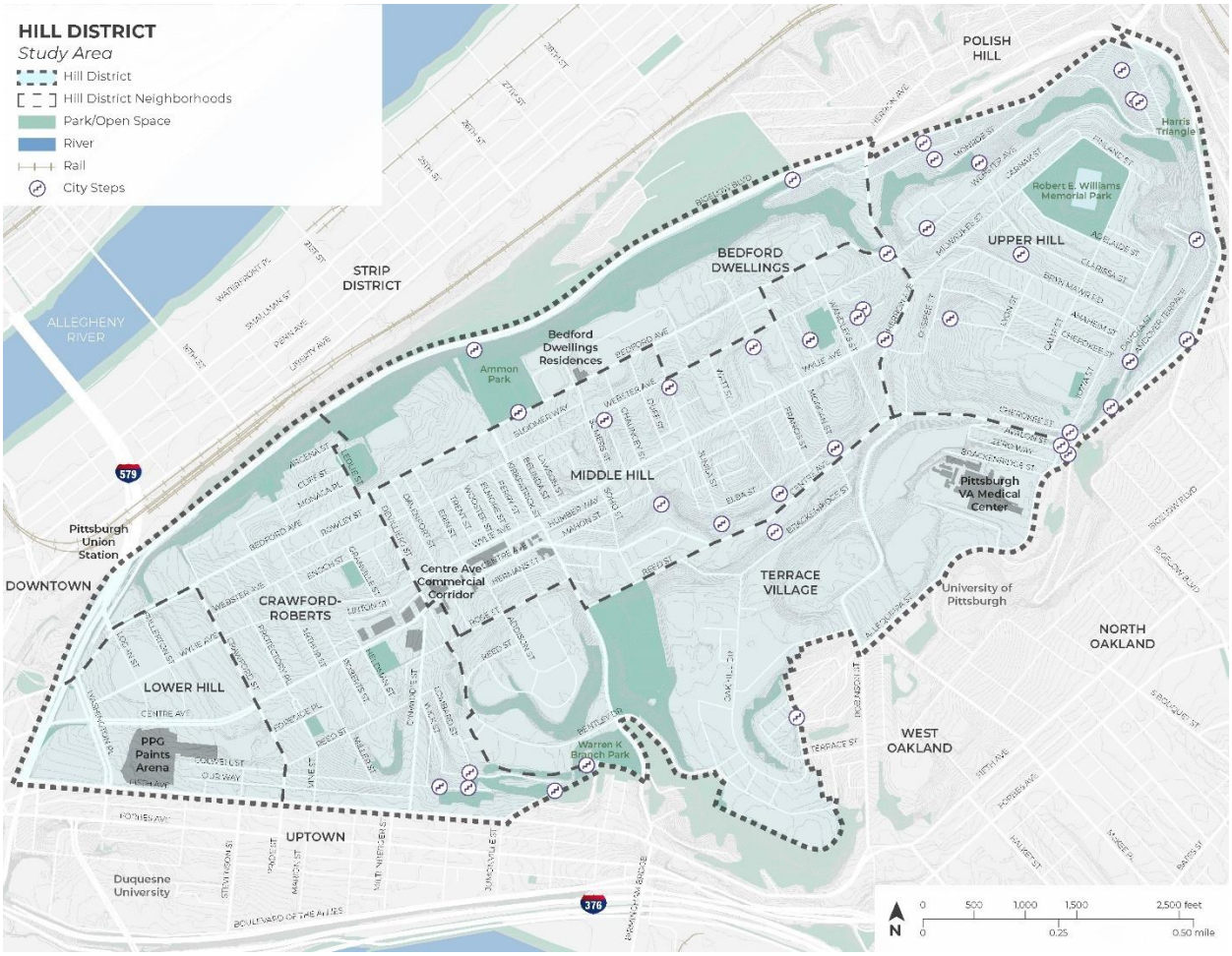
poverty, compared to 20% in Pittsburgh. Approximately 50% of households in the Hill District do not have a vehicle, compared to 23% citywide.

Figure 2. Area Comparison Demographics



Several barriers in the Hill District present mobility challenges for residents and visitors. As the name suggests, the Hill District comprises several large and steep hills. The topography makes it difficult for people of all ages and abilities to navigate between the six neighborhoods and limits access to adjacent neighborhoods like the Strip District, Polish Hill, and Oakland. Throughout the Hill District, many sidewalks and city steps that provide key pedestrian connections are in poor condition, and there are no dedicated bicycle facilities. The neighborhood is bounded by high-speed and high-volume roadways such as Bigelow Boulevard to the north, I-579 to the west, and Fifth Avenue to the south. These roadways are barriers that limit the connections between the Hill District and the surrounding neighborhoods, particularly Downtown. Figure 3 shows the Hill District, study area, and surrounding neighborhoods.

Figure 3. The Hill District Study Area



Previous Planning Studies

Previous planning studies identified recommendations and strategies for transforming the Hill District, many of which are still applicable today. Transportation and mobility recommendations from previous studies will be updated and enhanced as part of the Study, particularly the Greater Hill District Master Plan, Centre Avenue Corridor Redevelopment and Design Plan, and Bedford Connects Transformation Plan. The key takeaways and recommendations from the previous planning studies are summarized below.

The ***Greater Hill District Master Plan (2011)*** was created to guide future development investments in the Hill District. It serves as the basis for the ongoing update to the Greater Hill District Master (Neighborhood) Plan. The Master Plans' Mobility, Transportation, and Planning goal focuses on ensuring viable and affordable transportation access to all community members. The goal includes three related subgoals, including:

- Improve transportation networks and services to the city and within the Hill District,
- New infrastructure should promote walkability, street accessibility for people with disabilities, access to work, retail, and social amenities, and

- Create a well-planned parking strategy that supports new development while minimizing negative impacts on residents.

The ***Centre Avenue Corridor Redevelopment and Design Plan (2015)*** aims to redevelop Centre Avenue into a "Centre of Culture, Opportunity, and Cultivation." The plan identifies strategies to stimulate street activity, create gateway and entry landmarks, activate major open spaces, and create a welcoming place for residents, businesses, and visitors at three development locations along Centre Avenue. The plan's recommendations are summarized below:

- Near Centre Avenue and Dinwiddie Street:
    - Develop and brand New Granada Square + Heritage Square,
    - Dinwiddie realignment,
    - Establish Heritage Walk and Greenspace Walk sites,
    - Plan a District-Wide Parking Strategy,
    - Multiuse infill development east of Dinwiddie Street, and
    - Commercial Plaza Redevelopment and Tower Development.
- Near Centre Avenue and Kirkpatrick Street:
    - Stabilize and preserve heritage properties with existing building renovation,
    - Mahon Street realignment,
    - Develop Central Baptist Opportunity Square and realign the intersection of Kirkpatrick Street and Wylie Avenue.
- Near Centre Avenue and Reed Street:
    - Connect Reed Street to recreation opportunities at Kirkpatrick Street,
    - Realign Centre Avenue and Reed Street intersection, and
    - Construct the Community Garage and Entry Plaza.

The ***Bedford Connects Transformation Plan (2018)*** aims to improve the area surrounding Bedford Dwellings and Middle Hill, emphasizing housing, resident needs and services, and connections to the surrounding area. The plan's recommendations include:

- Upgrading the city steps at Chauncey Street and Junilla Street (already completed) creates improved, more accessible pedestrian connections between Bedford Avenue and Centre Avenue, where the steep topography presents a challenge.
- Improving bus shelters at key locations – Bedford Dwellings Hope Center.
- Re-routing PAAC Bus Route #83 to provide more direct and frequent service between Bedford Dwellings and Fifth Avenue and the rich transit service it provides and commercial destinations within and outside the Hill District.
- Improving the following intersections – Bedford Avenue & Chauncey Street, Webster Avenue & Chauncey Street, Wylie Avenue & Chauncey Street, Wylie Avenue & Junilla Street, Webster Avenue & Junilla Street, and Wylie Avenue & Herron Avenue.
- Proposing Bedford Heritage Trail and Coal Seam Trail. Trails extend parallel to Bedford Avenue along the northern edge of the Hill District and connect to Centre Avenue via Devilliers Street, Kirkpatrick Street, and Junilla Street.

The Hill: A Village in the Woods Conceptual Plan (2009) aims to reconnect the Hill District to its natural landscape and strengthen social ties within the community. The plan's recommendations include:

- Removing Chauncey Drive to create a larger green space.
- Narrowing Iowa Street and turning into a pedestrian-only corridor.
- Transforming Devilliers Street and Enoch Street into greenways.

The Bike (+) Master Plan (2020) aims to build upon existing bike infrastructure to provide a safe and comfortable bike network.Public surveys indicate many more people would happily take trips up to two miles – 40% of vehicle trips in Pittsburgh -- on foot, bicycle, or a personal electric device instead if only streets and intersections felt safe and welcoming for such travel. The City's Bike(+) Plan, completed in June 2020, outlines a vision for attracting people to make these local trips by bike. The plan serves as a roadmap for connecting centers and neighborhoods with safe, accessible, and comfortable facilities for people using bikes and other small, non-combustion-powered vehicles. The plan calls for building out this proposed 10-year network and continuing to expand both capacity and connections in subsequent decades toward the goal of placing a bicycle-oriented connection within a quarter mile of every residence in the City, and subsequently shifting a considerable share of short distance vehicle trips to more sustainable and less congesting modes.The Bike(+) conducted a bicycle level of traffic stress (LTS) analysis for all City streets. Bicycle LTS considers roadway type, vehicle speeds, and vehicle volumes to measure how comfortable the street is for a typical person to bike on. The LTS analysis for the Hill District determined that all streets with designated on-street bicycle routes are considered high-stress roads. To create low-stress biking opportunies, the plan's recommendations for the Hill District include:

- Proposed facilities on Herron Avenue north of Wylie Avenue, Kirkpatrick Street from Wylie Avenue to Fifth Avenue, and Crawford Street from Wylie Avenue to Locust Street.
- An east-west bike connection through the Hill District on an unspecified route.

Ongoing Projects

- Three ongoing projects will directly impact the Hill District as they are implemented over the next couple of years: the Pittsburgh Redevelopment Authority's (URA) ongoing investment in Centre Avenue as part of the Avenues of Hope Initiative, the redevelopment of the Lower Hill, and Downtown-Uptown-Oakland-East End Bus Rapid Transit (BRT) and . These projects are summarized below.

AVENUES OF HOPE

The Avenues of Hope Initiative is a place-based, people-first approach that intervenes across all layers of successful, healthy, and sustainable main street development. This initiative focuses on seven major business corridors, in which the goal is to invest in existing small businesses and residents, supporting the inclusive growth of the neighborhoods. Centre Avenue in The Hill District is one of these corridors.

The Avenues of Hope will be:

- Black-owned
- Centers of Black arts and culture
- Mixed-use, transit-oriented, and pedestrian-friendly built environments
- Healthy communities supported by education, health care, senior care, recreation, and human supportive services

The URA is working with the City of Pittsburgh to focus on housing investment, workforce connectivity, commercial corridor activation, façade renovations, and other impactful MWBE and small business support along Centre Avenue and the other six corridors.

LOWER HILL REDEVELOPMENT

The Lower Hill was once a vibrant neighborhood with thousands of homes and thriving businesses along Wylie Avenue and Logan Street. However, in the 1950s and early 1960s, these homes and businesses in the Lower Hill were demolished to make way for a new grand cultural district for Pittsburgh. Acknowledging the harm from past redevelopment, the URA is working to ensure equitable redevelopment of the Lower Hill. The development project, currently under construction, will consist of seven new city blocks bounded by Centre Avenue, Bedford Avenue, Washington Place, Crawford Street, and an additional block of the proposed park area bounded by Washington Place, Centre Avenue, and the Crosstown Boulevard, and the CONSOL Energy Center. The development proposes additional residential, retail, office, cineplex, and hotel and is focused on the following goals:

- Affordable housing on the site,
- Investment in the Greater Hill District development and connectivity to the Lower Hill,
- Preservation of the Hill District legacy through arts and culture,
- Access to well-paying jobs for Hill District resdeints and beyond,
- Investments in Hill District youth and families,
- Wealth-creating business opportunities and minority business participation,
- Replacing an existing surface parking used by daily commuters with 288 units of housing, office and retail space, a parking garage, and a live music venue,
- Terraced park to connect the I-579 Cap Urban Connector Project.

DOWNTOWN-UPTOWN-OAKLAND-EAST END BUS RAPID TRANSIT (BRT)

The ***Downtown-Uptown-Oakland-East End Bus Rapid Transit (BRT)*** project will enhance a vital east-west connection between downtown Pittsburgh and the Uptown, Oakland, and East End neighborhoods. Final design plans were completed in 2020, and construction is anticipated to begin in early 2022. The BRT will use Fifth Avenue and Forbes Avenue as the main corridor. Fifth Avenue is along the southern border of the Hill District, and while BRT will improve transit connectivity for some Hill District residents, due to steep topography, the vast majority of the neighborhood will continue to have accessibility challenges without other changes in the bus network. Five planned stations are listed, including shelters, seating, real-time signs, ticket vending and validations, and emergency call buttons. The planned stations listed below will provide connections to north-south streets to access the Hill District:

- Uptown West Station – At (Washington Place)
- Pride Street Station – At (Pride Street / Crawford Street)
- Uptown Central Station – At (Dinwiddie Street)
- Jumonville Street Station – At (Jumonville Street / Wyandotte Street)
- Soho Station – At (Kirkpatrick Street)

Project Goals

The project goals are based on the mobility goals identified in the Greater Hill District Master Plan. These goals were updated for the Study based on conversations with the City, the community, and various stakeholders. Additionally, the Greater Hill District Master Plan and other previous plans and studies helped inform and guide the development of the project's goals. The goals listed below highlight the focus areas of this Study and will be used to evaluate recommendations and proposed projects throughout the study area.

- Improve safety and connectivity of transportation networks within the Hill District and connecting to other parts of the City.
- New infrastructure should promote walkability, street accessibility for the disabled, and access to work, retail and social amenities.
- Create a well-planned parking and Transportation Demand Management (TDM) strategy that supports new development while minimizing negative impacts on residents.

EXISTING CONDITIONS OVERVIEW

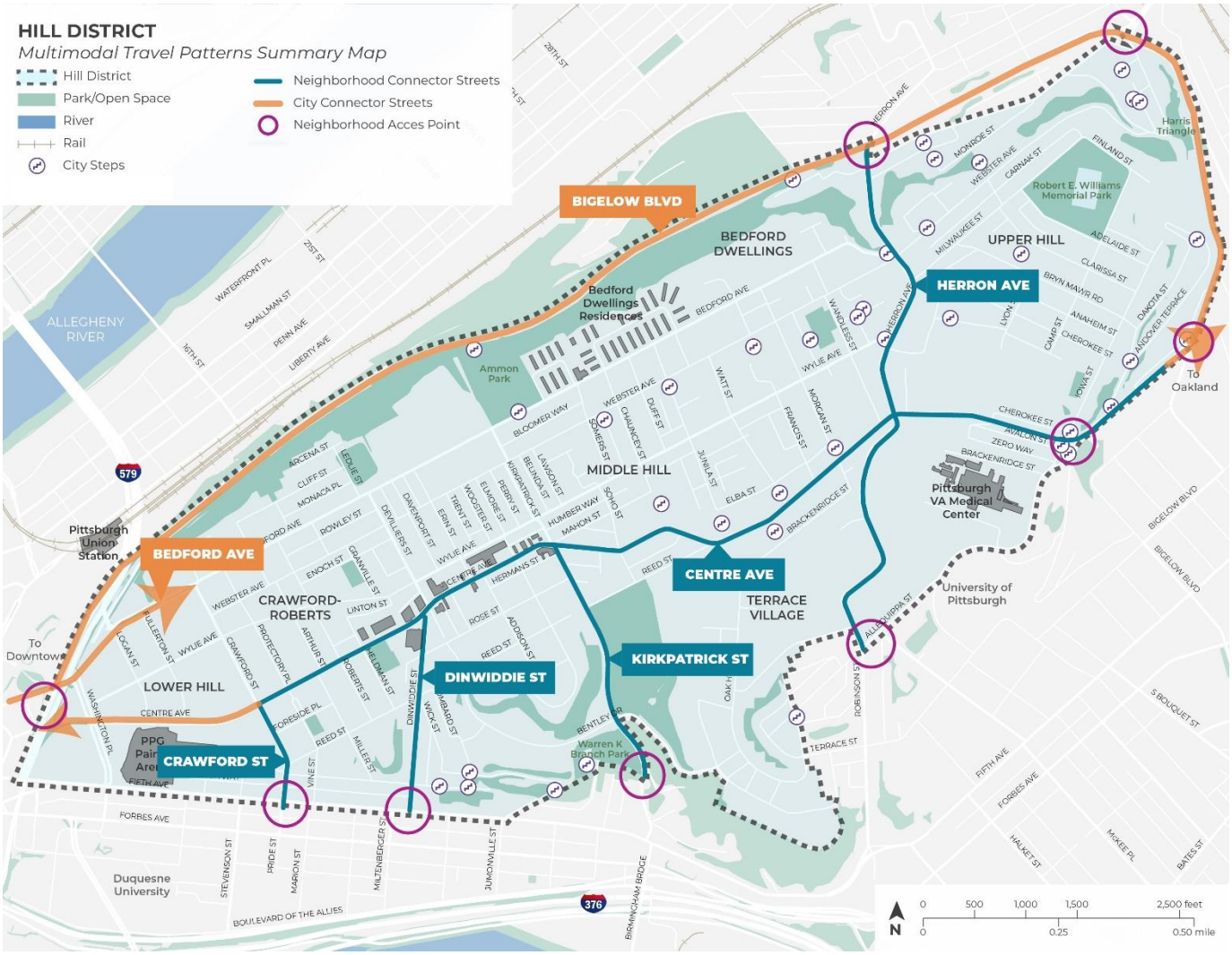
The following is a brief overview of the existing conditions analysis completed by the project team for the Hill District; more detail is available in the Existing Conditions Report, shown in **Appendix A**. The existing conditions analysis builds upon previous planning studies and includes qualitative and quantitative data collection and mapping, site visits, and stakeholder feedback from the Steering Committee and Public Meeting #1. The project team worked with the City of Pittsburgh to identify and compile data and information to inform the existing conditions analysis. This analysis was completed in late summer of 2020 during the COVID-19 pandemic, which has caused significant disruption to normal travel patterns. However, unless noted, the data presented are from periods before the COVID-19 pandemic and are intended to represent non-pandemic travel patterns.

Street Characteristics

The Hill District contains a mix of street types, volumes, and roadway classifications. All local streets in the Hill District are 25 miles per hour (MPH). Figure **4** displays a summary of the neighborhood travel patterns throughout the neighborhood. The following summarizes the street network in the Hill District.

- Most of the neighborhood's streets have posted speed limits of 25 MPH and serve as local neighborhood streets.
- Streets with the highest volumes are along I-579. Excluding the interstate, the roadways with the highest volumes are on Bigelow Boulevard, Herron Avenue, Crawford Street, and Centre Avenue (east of Herron Avenue).
- Hilly terrain creates inter-neighborhood connectivity barriers. The greatest demand for connectivity is between the Middle Hill District and Downtown Pittsburgh, west of the Hill District neighborhood.
- While Wylie Avenue and Webster Avenue run almost the entire length of the Hill District, only Centre Avenue and Bedford Avenue connect to Downtown.
- Centre Avenue serves as the neighborhood's primary retail and cultural spine. The attractors include the Carnegie Library, Family Dollar, businesses adjacent to the old Shop 'n Save, and Thelma Lovett YMCA.
- Street connectivity throughout the Hill District is limited.
- The primary neighborhood access points include:
    - Dinwiddie Street,
    - Bedford Avenue,
    - Crawford Street,
    - Kirkpatrick Street,
    - Herron Avenue, and
    - Centre Avenue.

Figure 4. Summary of Multimodal Travel Patterns



Commute Patterns

Longitudinal Employer-Household Dynamics (LEHD) data that provides statistics on employment, earnings, and job flows was used to evaluate commute patterns to, from, and through the Hill District. The inflow and outflow of the neighborhood's employees and residents were assessed to understand commute patterns in the area. LEHD shows that approximately 4,300 residents work outside the Hill District limits, and approximately 3,400 employees commute into the neighborhood for work. Approximately 150 people live and work within the neighborhood. The following summarizes inbound and outbound commuter travel to and from the Hill District:

- **Inbound Commutes (Employees).** According to LEHD data, most people who live outside the Hill District but work inside the district travel short distances (less than 10 miles). Many employees who work in the Hill District live in surrounding areas, including Downtown, the Strip District, Uptown, and Oakland. A concentration of Hill District employees live northeast of the Hill District, in the neighborhoods of Lawrenceville, Bloomfield, and Garfield. Additionally, there is a large number of

employees commuting into the neighborhood from neighborhoods in the south, including Allentown, Knoxville, Beltzhoover, and Mt. Oliver.
    - The LEHD data do not provide insight into the commute modes taken by employees. Port Authority transit service provides connectivity from these neighborhoods to the Hill District. Service is provided south of the Hill District via the Mt Washington Transit Tunnel and busway with transfers between lines. Northeast of the neighborhood, buses connect to the Hill District via Centre Avenue from Craig Street, Neville Street, Liberty Avenue, Negley Avenue, and the East Busway.
- **Outbound Commutes (Residents):** Most Hill District residents work in Downtown, Uptown, and Oakland. Major employment in these areas includes Pitt, Duquesne University, UPMC, Carnegie Mellon University, Highmark, and various major employers in Downtown. Almost 80% of Hill District residents commute less than 10 miles to work. According to 2019 Census data for zip code 15219, 35% of Hill District residents commuted by single-occupancy vehicles. Approximately 20% of residents commuted by public transportation, 26% walked, and 9% carpooled. The remaining residents commuted by a variety of other modes, primarily by telecommuting and other modes. According to the Port Authority 2019 Equity Index of Mobility Need, neighborhoods in the Hill District (Bedford Dwellings, Crawford-Roberts, Middle Hill) all score in the top ten equity index. This equity index considers poverty and disability factors, including low-income households, cost-burdened renters, low-wage jobs, households with persons with disabilities, ACCESS paratransit trips, racial and ethnic minorities, limited English proficiency, households with no vehicle access, households with older or younger adults.

Transit

Transit is a crucial mode of travel for many people who live and work in the Hill District. However, transit connectivity and route options are limited throughout the neighborhood, with most Port Authority transit trips along Fifth Avenue. The following summarizes the findings from the evaluation of the existing conditions on the Hill District's existing transit network:

- According to the Port Authority Fall 2020 Bus System map, Routes 81, 82, and 83 provide direct service in the neighborhood.
- **Route 81 Oak Hill** starts in Wharton Square on the South Side and travels north to Oakland along Forbes Avenue. The bus then turns west and travels through the Hill District along Bentley Drive, eventually turning on Centre Avenue in Middle Hill. The route continues towards Downtown then turns north on Roberts Street to serve the Crawford-Roberts area before leaving the Lower Hill on Centre Avenue.
- **Route 82 Lincoln** – This route starts on Lincoln Avenue in Lincoln Lemington and then heads southwest towards Downtown, heading through East Liberty and Shadyside before reaching the Hill District. This route travels along Centre Avenue, the length of the Hill District, and then enters Downtown. Route 82 enters the Lower Hill on Bedford Avenue in the other direction. It then turns on Crawford Street to reach Centre Avenue and continues to travel north along Centre Avenue.
- **Route 83 Bedford Hill** serves the Upper Hill and Bedford Dwellings along Bedford Avenue. Route 83 starts in Wharton Square on the South Side and travels north to Oakland along Forbes Avenue. The bus then turns west and travels towards the Hill District, along Fifth Avenue, Centre Avenue, Bryn Mawr Road, and Bedford Avenue. The bus reaches Robert E. Williams Memorial Park and then heads towards Downtown along Bedford Avenue. The bus turns at Devilliers Street and continues Downtown along Centre Avenue.
- Port Authority routes 81, 82, and 83 have the highest ridership.
- The Hill District generally has good transit service coverage. Still, the center of the Hill District, along Wylie Avenue and Terrace Village, can be more challenging to access by transit due to the steep terrain between Bedford and Centre.

Transportation Safety

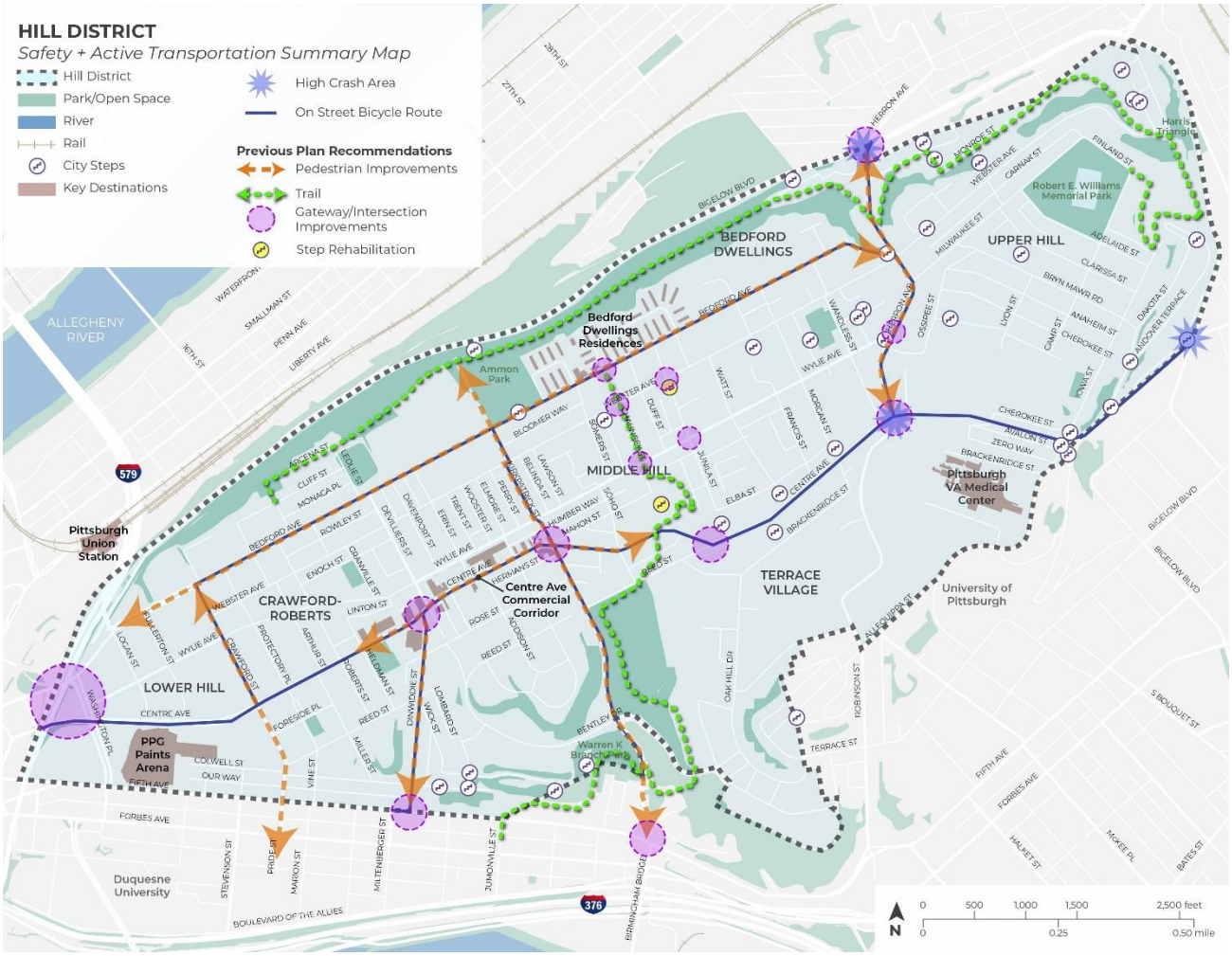
The project team reviewed crash history in the Hill District to understand safety-related trends and challenges better. The following summarizes the findings from the existing conditions analysis:

- Between 2014 and 2019, there were 520 crashes in the Hill District. Nearly ten percent of those crashes involved a person walking or biking. Around two percent of the crashes resulted in death or severe injury.
- Crashes are concentrated in the Lower and Middle Hill. In the Lower Hill, crashes are concentrated at major intersections such as Centre Avenue and Washington Place and Crawford Street / Pride Street and Fifth Avenue.
- In the Middle Hill, crashes are more dispersed along Centre Avenue and residential streets, including Wylie Avenue, Kirkpatrick Street, Bedford Avenue, Herron Avenue, and Webster Avenue.
- The analysis revealed three high crash intersections with limited sight distance and intersection geometry, resulting in skewed approach angles. The high crash intersections include:
    - Bigelow Boulevard & Herron Avenue,
    - Centre Avenue & Robinson Street / Herron Avenue, and
    - Centre Avenue & Bigelow Avenue (adjacent to Hill District study area).

Active Transportation

Walking and biking have the potential to serve as essential modes of transportation for people who live in the Hill District. The neighborhood's steep terrain, deteriorating sidewalks, and poor city step conditions make it difficult for people to use active transportation throughout the neighborhood. Lack of adequate sidewalks and bike facilities and confusing intersections contribute to concerns regarding safety and mobility. **Figure 5** summarizes key challenges regarding safety, walkability, and bikeability. Bike PGH recommends the bicycle facilities shown on the map routes. **Figure 5** displays recommendations from previous plans.

Figure 5. Safety and Active Transportation Summary Map



WALKING

Walking provides an easy, affordable, and accessible mode of transportation for a variety of users. However, the Hill District's limited sidewalk network and steep hills make it difficult to walk throughout the neighborhood. A summary of the neighborhood's existing sidewalk conditions and pedestrian network is summarized below:

- The steep hills make it difficult for Middle Hill residents along Bedford Avenue to access neighborhood amenities along Centre Avenue.
- Many of the local north-south streets have sidewalks present only on one side of the street.
- The sidewalk network has gaps and deteriorating sections located primarily on east-west streets such as Bedford Avenue, Wylie Avenue, Centre Avenue, and Reed Street.
- Physical obstructions, such as cars parked on sidewalks and a lack of ADA-compliant curb ramps, present challenges for walking, particularly those with limited mobility or pushing strollers.
- City steps are aging and in need of repair and better lighting.

Priority Pedestrian Corridors

The following corridors have been identified as potential pedestrian priority corridors based on the existing conditions and previously identified pedestrian challenges. These priority corridors focus on improving north-south connections to and from Centre Avenue. Improvements include enhanced sidewalks, lighting, and other pedestrian amenities. Additional priority corridors include east-west traffic calming. Targeted improvements, such as enhanced sidewalks, lighting, street scaping, and other treatments, will enhance the pedestrian experience by improving safety, comfort, connectivity, and accessibility to and from Centre Avenue. East-west streets will focus primarily on traffic calming measures, including pedestrian enhancements such as high visibility crosswalks and curb extensions, to slow vehicle speeds and create a safer and more comfortable environment for all users.

Feedback from the community and stakeholders informed the identification of priority pedestrian corridors. The priority pedestrian corridors listed below were synthesized from previous plans and studies and a field review of existing conditions in the Hill District. This report includes strategies and recommendations for several, not all, of these priority corridors.

- **Bedford Avenue between Logan Street and Herron Avenue:** Improve the Bedford Avenue streetscape with new street trees, lighting, signage, sidewalks, and small-scale pedestrian spaces such as seating and play spaces.
- **Crawford Street between Bedford Avenue and Forbes Avenue:** Improve the Crawford Street streetscape with new street trees, lighting, sidewalks, and small-scale pedestrian spaces.
- **Centre Avenue between Heldman Street and Reed Street**: Focus and encourage new retail and commercial development on Centre Avenue. Introduce streetscape improvements, such as lighting, signage, and vegetation, to reinforce the pedestrian character and quality of this section of Centre Avenue.
- **Dinwiddie Street between Centre Avenue and Fifth Avenue:** Improve pedestrian connections to future BRT station at Fifth Avenue.
- **Kirkpatrick Street between Bedford Avenue and Fifth Avenue:** Provide small-scale parks and plazas throughout the corridor.
    - Create a formal automobile and pedestrian gateway to the Hill District at the Kirkpatrick Street and Fifth Avenue intersection.
- **Herron Avenue between Bigelow Boulevard and Centre Avenue:** Encourage pedestrian activity by introducing streetscape improvements, including new trees, lighting, signage, and sidewalks. Consider adding parking meters from Centre Avenue to Wylie Avenue.

In addition to the priority pedestrian corridors, recommendations for two trails were identified in previous plans to enhance connections throughout the neighborhood. The first trail identified in previous plans would run parallel to Bigelow Boulevard and connect Bedford Dwellings and the Upper Hill. The potential second identified trail would run parallel to Chauncey Street and connect Bedford Avenue to Uptown.

BIKING

Bicycle facilities within the Hill District are limited. There are no dedicated bike facilities, only designated on-street bike routes on key neighborhood corridors. A summary of the neighborhood's existing bicycle conditions and network is summarized below:

- There are no dedicated bike facilities. There are designated on-street bike routes along key neighborhood corridors such as Bedford Avenue, Centre Avenue, Crawford Street, Dinwiddie Street, Kirkpatrick Street, and Herron Avenue.

- There are three Healthy Ride bike share stations in the Hill District. One station is near the PPG Paints Arena, at Centre Avenue and Fullerton Street. Another station is near the YMCA on Centre Avenue between Elmore Street and Addison Street. On the southern border of the Hill District, a Healthy Ride station is provided near the intersection of Dinwiddie Street and Fifth Avenue.
- All streets that currently have designated on-street bicycle routes in the Hill District are considered high-stress roads due to high vehicle volumes and speeds.
- There is no continuous east-west bicycle route through the Hill District on a low-stress street.
- Webster Avenue is a low-stress street that connects through most of the Hill District but does not directly connect to Downtown.
- Wylie Street runs parallel to Webster and provides better connectivity to downtown; however, the posted speed is too high for a low stree bicycle connection.

Priority Bike Corridors

The Bike(+) Plan recommends several dedicated bike facilities through the Hill District. The proposed routes are listed below:

- Crawford Street between Wylie Avenue and Forbes Avenue,
- Kirkpatrick Street between Wylie Avenue and Fifth Avenue, and
- Ridgeway Street between Herron Avenue and Bigelow Boulevard, extending beyond the Hill District to Bloomfield Bridge.

In addition to these routes, the Bike(+) Plan recommends an east-west connection through the Hill District but does not provide a specific route.

Parking

There are several parking challenges within the Hill District. PPG, downtown commuters, and Pitt have led conversations about parking concerns. Stakeholders and community members are concerned that economic activity will suffer if parking demands are not met within the neighborhood.

The neighborhood has a high demand for commuter parking, as many employees commute into the neighborhood from other areas. As a result of commuters parking throughout the neighborhood, commercial parking lots and residential permit parking areas experience increased demand. Additionally, major destinations throughout the neighborhood create high parking demand near the medical center and the PPG Arena. The community has voiced several concerns related to parking, including:

- Parking congestion at the YMCA on Centre Avenue,
- Need for pick-up/drop-off area and lack of parking at the Family Dollar on Centre Avenue,
- Commuters parking at the Shop ‘n Save lot,
- Delivery and commercial trucks blocking the street during loading on Dinwiddie Street,
- Need for dedicated delivery zones along Dinwiddie Street, and
- Need for redirecting commuter parking to lots downtown.

EXISTING PARKING INVENTORY AND OCCUPANCY

As a result of the concerns outlined above, the project team collected data and assessed the existing parking inventory and parking occupancy in the Hill District. The project team coupled the observed data

from the community and key stakeholders with the quantitative data collected through the parking assessment to understand existing parking challenges and begin to identify solutions.

Existing Parking Inventory

Using Google Earth, Google Streetview, and other online aerial or street imagery data sources, the number of legal residential **non-metered** parking spaces (referred to as "legal parking spaces) were identified in the parking study area, highlighted in **Figure 6**. Legal parking spaces were counted by measuring the distance along the curb where parking is allowed, dividing by twenty (20) feet, and rounding the remainder down. For instance, if the curbside distance between a fire hydrant and a crosswalk at an intersection is measured to be 190 feet, 20 feet would be subtracted because parking is not allowed within 20 feet of a crosswalk at an intersection, and 15 feet would be subtracted because parking is not permitted within 15 feet of a fire hydrant, for a net legal parking distance of 155 feet (7.75 spaces rounded down to 7 legal parking spaces). The number of legal parking spaces should be calculated for each segment independently and then totaled for each block. Figure 7 displays the existing legal parking supply by block.

Figure 6

A block consists of both sides of the roadway (also known as "block faces," "curbside," "curb space," or "edge of curb). On blocks with non-metered and metered parking spaces, the number of metered parking spaces is noted separately from the number of non-metered parking spaces in the count. A legal parking space is considered to be twenty (20) feet in length, and following Pennsylvania regulations, the following ARE NOT legal parking spaces:

- On the sidewalk,
- Within an intersection,
- On a crosswalk,
- On any railroad track,
- Between a safety zone and the adjacent curb within 30 feet of points on the curb immediately opposite the ends of a safety zone, unless official traffic control devices indicate a different length,
- Within 50 feet of the nearest rail at a railroad crossing,
- Within 15 feet of a transit stop sign,
- At any place where official signs prohibit parking,
- At any place where official signs prohibit stopping,
- In front of a public or private driveway or within 3 feet thereof,
- Within 15 feet of a fire hydrant,
- Within 20 feet of a crosswalk at an intersection,
- Within 30 feet of any flashing signal, stop sign, yield sign, or traffic control device located at the side of a roadway,
- Within 20 feet of a driveway entrance to a fire station,
- Where the vehicle would prevent the free movement of a public transit vehicle, or
- In front of an entrance to a residence in such a manner as to limit or completely block ingress and egress to said residence.

Legal parking spaces were counted by measuring the distance along the curb where parking is allowed, dividing by twenty (20) feet, and rounding the remainder down. For instance, if the curbside distance between a fire hydrant and a crosswalk at an intersection is measured to be 190 feet, 20 feet would be subtracted because parking is not allowed within 20 feet of a crosswalk at an intersection, and 15 feet would be subtracted because parking is not permitted within 15 feet of a fire hydrant, for a net legal parking distance of 155 feet (7.75 spaces rounded down to 7 legal parking spaces). The number of legal parking spaces should be calculated for each segment independently and then totaled for each block. Figure 7 displays the existing legal parking supply by block.

Figure 6 Hill District Parking Study Area Data Collection

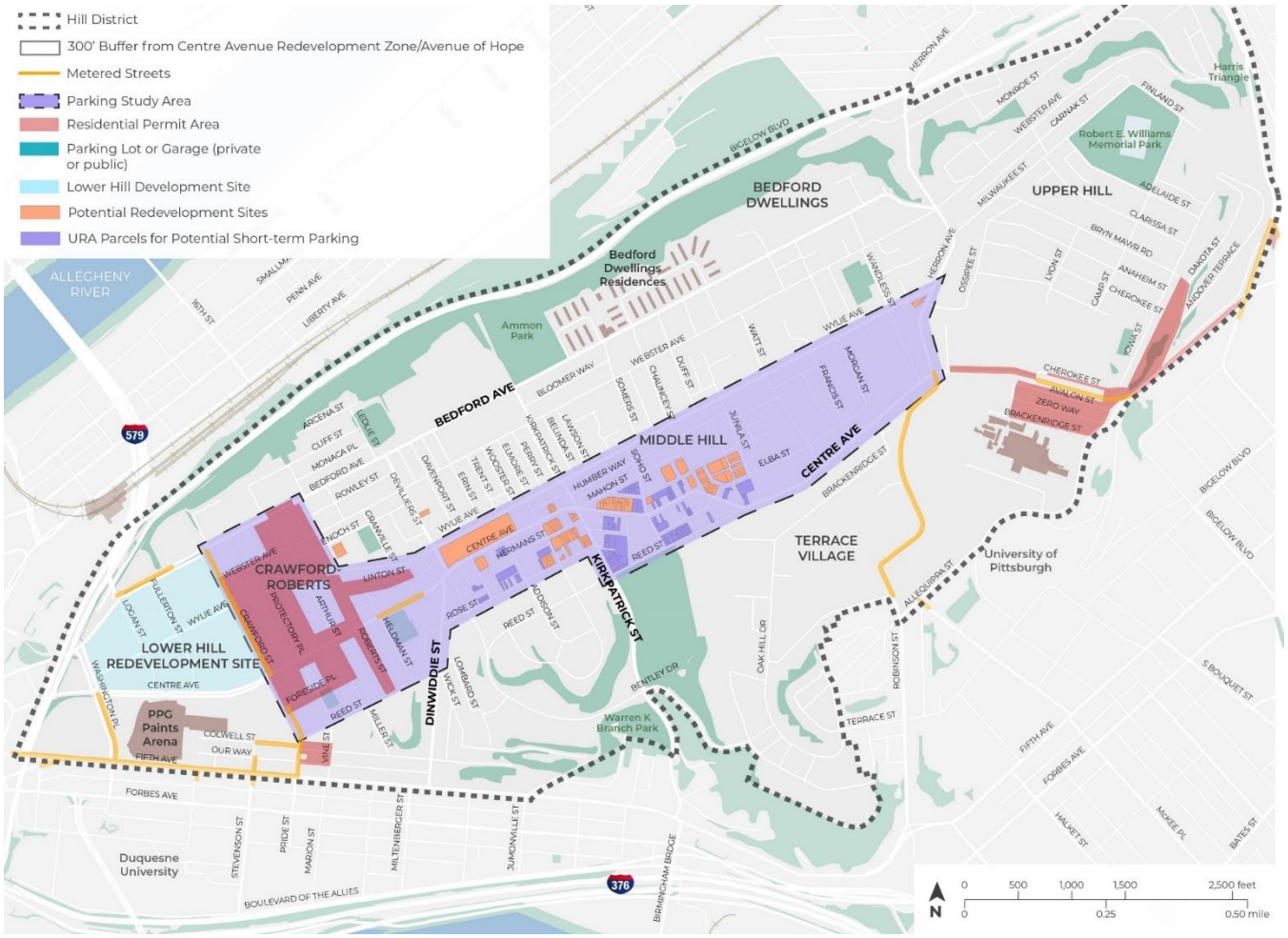


Figure 7 Existing Parking Supply by Block

Blocks shown in red display areas where there is no legal parking. However, cars were observed parking on several streets that did not provide legal parking spaces. As shown in **Figure 7**, Centre Avenue provides a significant amount of the neighborhood's parking supply, along with Reed Street and Wylie Avenue. The existing parking supply is clustered most densely in the center of the neighborhood, between Dinwiddie Street and Kirkpatrick Street. In addition to the neighborhood's existing parking near commercial land uses, Morgan Street, Francis Street, Junilla Street, and Watt Street provide parking to the residential area.

Parking Occupancy

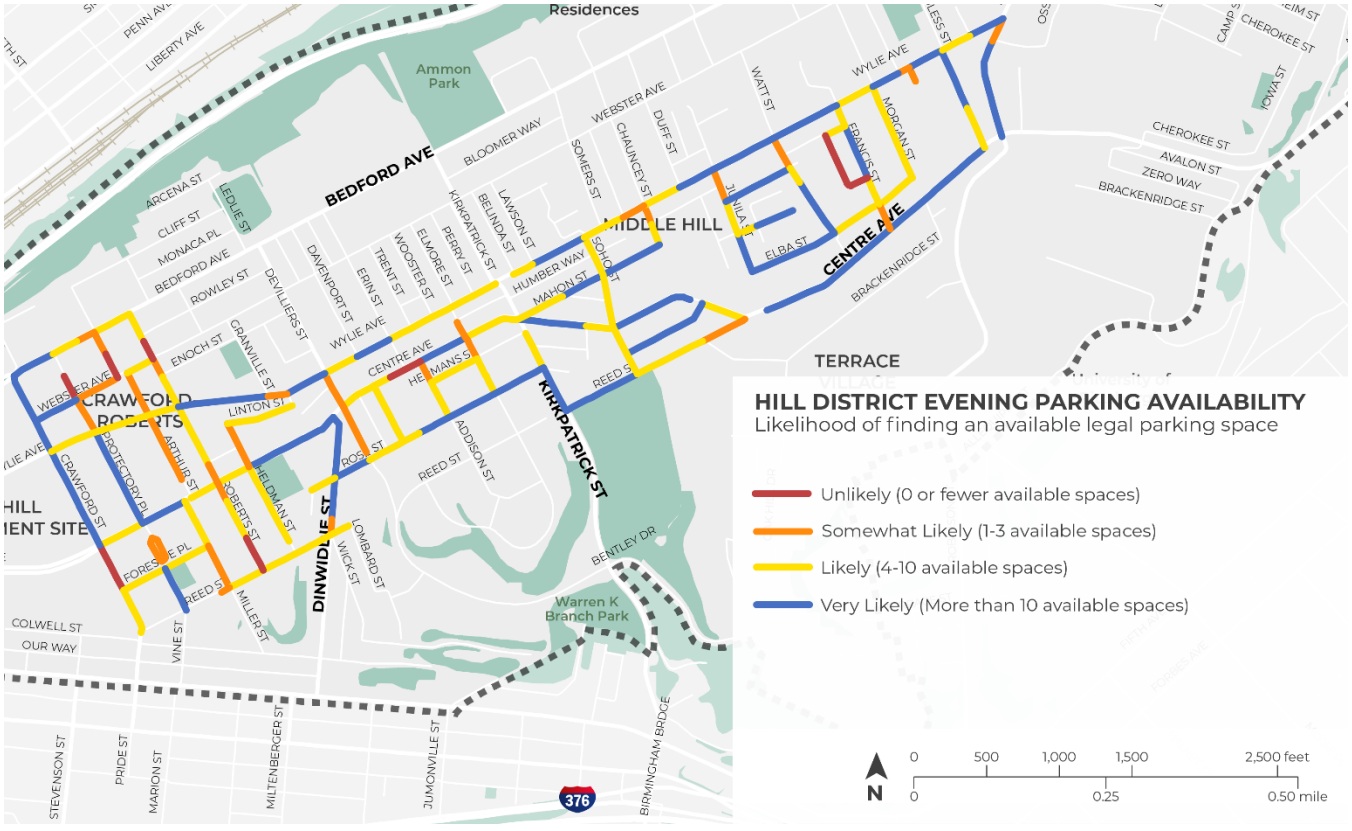
In addition to evaluating the existing parking supply, the project team evaluated existing parking demand by collecting data on parking occupancy. Parking occupancy data was collected during two time periods on two separate mid-week days, for a total of four counts per block (two daytime periods and two evening periods). During the first daytime data collection period, additional time was allocated to verify the parking inventory information from the previous section, identify poorly marked crosswalks, and locate parking restriction signs that need to be refabricated. The following information was recorded for each block:

- **Date** – the date the occupancy count was collected,
- **Day of week** – the midweek day (Tuesday, Wednesday, or Thursday), the occupancy count was collected,
- **Time** – the general time of day the count was collected,
- **Time Period** – either daytime (8 AM to 6 PM) or evening (6 PM to twilight) for each count,
- **Parked Vehicles** – the number of vehicles "stopped" on the block, consisting of the total number of vehicles on the block at a single point in time that are not traveling on the block (the count includes vehicles stopped to pick up or drop off people or deliveries or otherwise access the curb in some manner)
- **Illegally parked vehicles** – the number of vehicles that "**clearly and obviously**" parked illegally, (these are vehicles that would be considered to be illegally parked by any reasonable consideration, including double-parked vehicles or vehicles fully blocking an intersection, driveway, bus stop, or fire hydrant)

Figure 8 displays the daytime parking availability, and **Figure 9** displays the evening parking availability.

Figure 8 Daytime Parking Availability

Figure 9 Evening Parking Availability



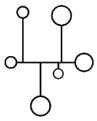
Hills and drastic elevation changes make convenient parking a challenge, as people parking may need to walk a few blocks at steep elevations from available parking spaces to their destinations. Limited safe, comfortable, and connected sidewalks and crosswalks also limit peoples' willingness to park further from their destinations. Additionally, parking availability is more prevalent in the neighborhood's residential areas, where the demand is lower during peak times than in the commercial areas of the neighborhood.

MOBILITY PRIORITIES

The mobility priorities were identified based on the needs of the Hill District, including neighborhood travel patterns, safety, and active transportation, increasing transportation options, and managing parking. The following summarizes each mobility priority and related goal indicators:

- Neighborhood Travel Patterns
- Safety and Active Transportation
- Increasing Transportation Options and Managing Parking

Neighborhood Travel Patterns



The Hill District attracts trips with a mix of residential and commercial facilities. Enhancing the existing transportation network will encourage visitors, improve connectivity and access, and create more comfortable conditions for all transportation users. Neighborhood travel pattern priorities are as follows:

- Enhance neighborhood gateways and improve connections from the Hill District to downtown and adjacent neighborhoods.
- Improve multimodal connections to Centre Avenue.
- Reroute transit access to areas not currently served.
- Focus transit shelter improvements on Centre Avenue.
- Encourage carpooling, vanpooling, and transit commute trips into the Hill District.
- Explore TDM strategies to decrease dependency on drive-alone trips
- Accommodate efficient parking, delivery, and pick-up/drop-off activities in high-demand areas.
- Develop strategies to mitigate parking pressure from the Lower Hill Redevelopment

Safety and Active Transportation

The hilly terrain and inadequate sidewalk and bike network make walking and bike through the Hill District difficult. Crashes are concentrated in the Middle and Lower Hill at challenging locations for pedestrians due to intersection geometry, sight distance, and vehicular speeds. There is a desire to improve the primarily residential area along and within Bedford Avenue (including Webster Avenue and Wylie Avenue) to the commercial corridor along Centre Avenue.

Safety and active transportation priorities are as follows:

- Improve safety conditions at high crash intersections through geometric and crossing improvements.
- Promote streetscape improvements to activate priority pedestrian corridors.
- Improve neighborhood wayfinding for people walking and biking throughout the neighborhood.
- Improve north-south corridors to provide improved pedestrian access to Centre Avenue.
- Rehabilitate Chauncey Street city steps to promote connections between Bedford Avenue and Centre Avenue.
- Enhance one of the east-west streets to create a low-stress bike facility.

Increasing Transportation Options and Managing Parking

While the parking demand in the Hill District is generally lower than in surrounding neighborhoods, perceived issues with parking supply and concerns about parking demand created with proposed development activity necessitate the development of parking management strategies that are coupled with an increase in available transportation options to decrease the reliance on people driving alone in the neighborhood.

The following summarizes the priorities related to managing parking within the Hill District:

- Increase transportation options and reduce the reliance on people driving alone,
- Redirect commuters and other drivers parking in the Lower Hill District to other downtown parking facilities,
- Reduce the agony of finding a parking space in the neighborhood by increasing parking availability, especially in the Lower Hill District, where daily commuters and the nearby PPG Paints Arena provide additional strain on the neighborhood parking supply,
- Minimize parking and mobility impacts associated with new development in the neighborhood
- Increase access to Centre Avenue

PUBLIC INVOLVEMENT

This project's community engagement efforts included an informative project website, two online public surveys, an online public meeting in partnership with the Hill District Community Development Corporation (Hill CDC), and several pop-up engagement events at popular locations in the Hill District to gather feedback from the community. The first round of engagement was largely virtual due to COVID-19 concerns; however, the second round of engagement sought to take advantage of in-person, already established events for the best opportunity to meet people where they were already gathering. The project team also used EngagePGH, the City's online public engagement platform, to share information and collect feedback. Through these efforts, community preferences and priorities have been identified and incorporated into the Study's recommendations.

PHASE 1 PUBLIC ENGAGEMENT

Following walking tours of the area with members of the Steering Committee in December 2020, the first phase of public engagement officially kicked off in the Spring of 2021 with the primary goal to identify community mobility needs and constraints. A public meeting took place virtually on March 3, 2021, from 5:30–7:30 p.m. The meeting was a regular bi-monthly meeting for the Hill CDC. In advance of the meeting, the project team hosted two pop-up engagement events on March 3rd at the Family Dollar (12:30-2:30pm) and Thelma Lovette YMCA (4:30-6:30pm) to promote the meeting and to solicit feedback. The project team also used a WikiMmap public survey to collect comments on transit, safety, and parking concerns through an interactive online platform.

Pop up meetings are an informal way to collect feedback from the community. The project team set up multiple information booths in popular gathering spaces within the community to talk with community members, share project information, and collect feedback for the Study.

Through Phase 1 of the public engagement efforts, the project team received comments regarding accessibility, transit, and safety that include:

- Better transit access and parking is needed
- Sidewalks are in poor condition or have gaps making them difficult to traverse
- Speeding cars are a problem
- The bus does not come frequently enough at Centre Avenue and Dinwiddie Street
- Transit is challenging to reach from Elba Street & Junilla Street
- The Brackenridge steps have been closed, burdening residents near the midpoint of Brackenridge with a much longer, more challenging walk to access transit on Centre Avenue
- Grass overgrown along Cliff Street blocks access
- Webster Street lacks sidewalks and lighting east of Herron Avenue, where there is a sharp turn before it meets Lisbon Street

PHASE 2 PUBLIC ENGAGEMENT

The second phase of public engagement occurred in the Summer of 2021 with the primary goal of presenting initial recommendations and collecting feedback from the community on implementation ideas and priorities. In August 2021, the project team hosted a series of pop-up events to gather feedback from the public on the recommendations. Using several large boards, the project team shared the recommendations, draft concepts for

specific intersections, and examples of what treatments for traffic calming and streetscape improvements might look like. Public surveys and informational fliers were also available, including a link to the EngagePGH website, where the same public survey could also be filled out online.

The pop-ups took place at the following locations within the Hill District:

- Thursday, August 19th, 11:00 a.m. -1:00 p.m. at Grandma B's Diner, 2537 Wylie Avenue
- Thursday, August 19th, 4:00 – 6:00 p.m. at Big Tom's Barber Shop, 2042 Center Avenue
- Friday, August 20th, 11:00 a.m. -1:00 p.m. at The Hill House, 1835 Center Avenue
- Friday, August 20th, 4:00 – 6:00 p.m. at Ammons Pool, 2217 Bedford Avenue
- Saturday, August 21st, Noon – 5:00 p.m. at Health and Wellness Weekend, Thelma Lovett YMCA

Through Phase 2 of the public engagement efforts, the project team received comments that include:

Priority Improvements:

- Streetscape beautification and repair on Centre Avenue is important as the community's core business district
- Traffic calming on Bedford Avenue and Dinwiddie Street
- Consider improvements for popular Jjitney pick-up and drop-off locations, especially at the corner of Erin Street and Centre Avenue.
- A neighborhood circulator bus shuttle serving destinations within the local community is desired
- More bus stop amenities are preferred to make waiting for the bus more comfortable, including bus shelters
- Bicycle facility improvements are less of a priority

General Comments:

- Public art would be a nice amenity to include in streetscape beautification projects
- During the COVID-19 pandemic, buses have felt crowded and unsafe. There should be stronger adherence to the CDC Guidelines
- Bus service is not always reliable and on time
- There need to be better mobility options for older residents, especially for those who may have a disability
- Walking with a stroller is challenging because of narrow sidewalks, missing sidewalks, or sidewalks in disrepair.
- Scooters are popular, but there should be an organized place where they can be stored so they do not clutter the street.
- In addition to transportation improvements, the community needs other investments, including affordable housing, redeveloping vacant or underutilized properties, and encouraging more neighborhood-oriented and locally-owned businesses to operate within the community.

Pop up meetings allowed the project team to interact with many community members. During August, the project team held four pop up meetings and spoke with close to 50 individuals within the neighborhood about specific project recommendations and priorities.

RECOMMENDATIONS & PROJECTS

The project team developed a set of recommended projects and strategies that will enhance the safety and mobility of the transportation network in the Hill District. These projects and strategies were identified based on the findings of the existing conditions analysis, lessons learned from previous plans and studies, and feedback received from the community and local stakeholders. The recommended projects and strategies include:

- Corridor projects,
- Intersection projects, and
- Strategies to balance parking availability and demand.

The recommended projects and strategies shown in **Figure 10** and outlined in this section align with the neighborhood's three mobility priorities and provide the following improvements to the Hill District transportation network:

- Enhanced connectivity throughout the Hill District for all modes of transportation,
- Enhanced north-south connections between Centre Avenue from Bedford Avenue and Fifth Avenue,
- Increased access to and from the Hill District to future BRT stations on Fifth and Forbes avenues,
- Enhanced sense of place and community on key streets (e.g., Centre Avenue),
- Enhanced street and intersection safety for all transportation,
- Increase in transportation options beyond personal vehicles (i.e., walking, biking, transit, and micoromobility), and
- Enhanced parking access.

Traffic Calming and Streetscape Improvements

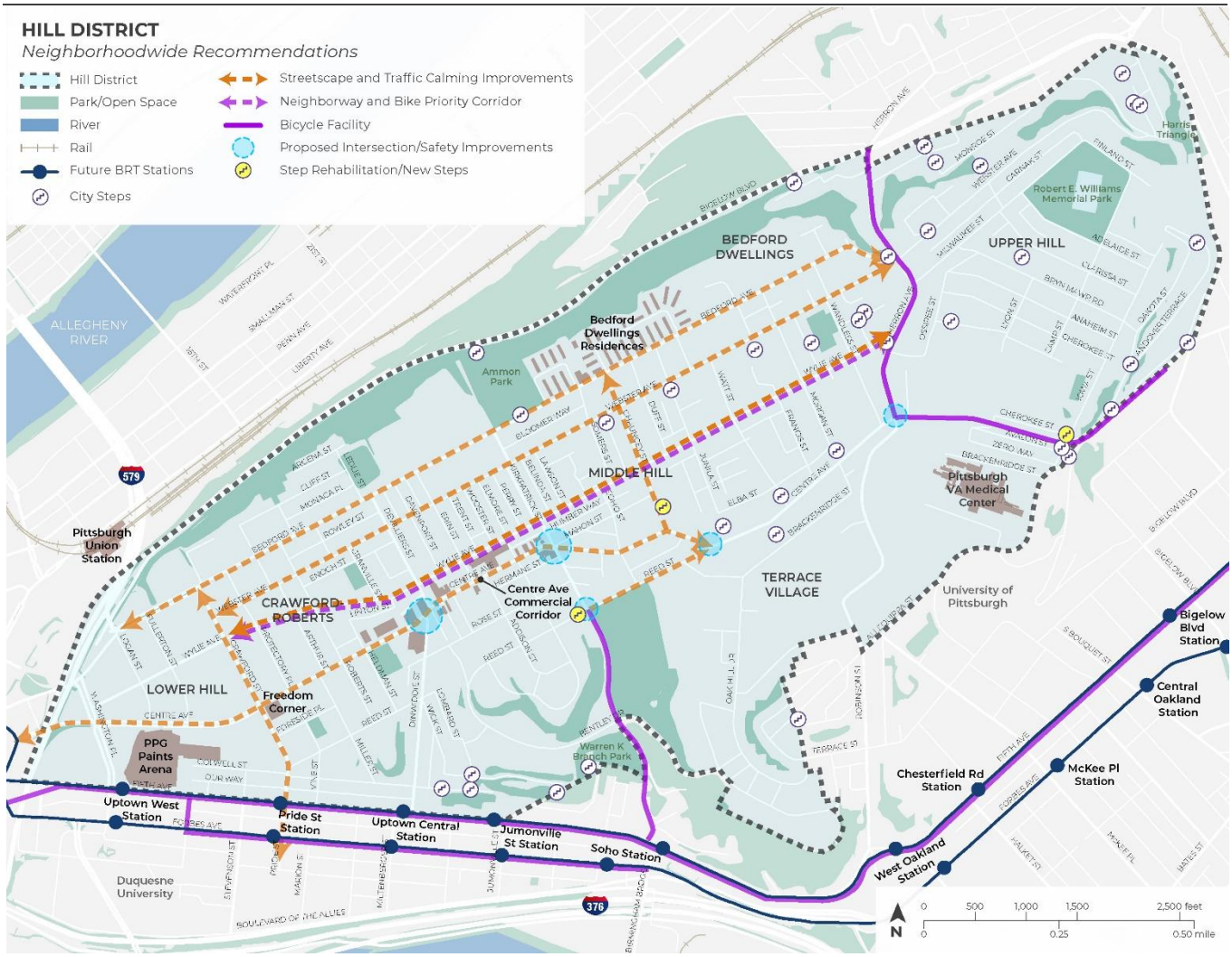
The neighborhood's streets, parks, plazas, and open space form the foundation of the Hill District's public realm.

These public spaces are intended for the community to gather and enjoy safety and comfortably. Deteriorating sidewalks, sidewalk gaps, and speeding traffic makes these public spaces less comfortable and appealing for users. Placemaking opportunities with more attractive and comfortable streetscapes can make the community feel more comfortable and connected. Neighborhood traffic calming and streetscape improvements may include:

- Traffic calming measures to slow vehicles and create safer and more comfortable conditions for all users,
- Street trees and green infrastructure to help reduce urban heat islands, reduce stormwater runoff, and add aesthetic appeal, and
- Context sensitive solutions to help achieve safer, more attractive, and better-connected streets.

Since the City's Neighborhood Traffic Calming Program launched in 2019 as a resident-driven, application-based program, there have been over 200 requests. Although the City has not received a significant number of requests for traffic calming from residents of the Hill District, DOMI recognizes the Hill District as an area in need of traffic calming improvements. The Plan recommends traffic calming and streetscape improvements on most of the main roads across the Hill District including Centre Avenue, Bedford Avenue, Kirkpatrick Street, Crawford Street, and Dinwiddie Street, several of which are described in the following section. Recommendations for enhanced crosswalks and sidewalks are also proposed throughout the neighborhood, wherever the existing conditions analysis indicated a lack of adequate facilities. **Appendix B** provides a detailed Neighborhood Traffic Calming and Streetscape Toolkit that can be used at locations throughout the Hill District.

Figure 10 Recommendations and Projects Overview Map



Corridor and Intersection Improvements

Based on the neighborhood-wide recommendations shown in Figure 10, the project team identified focal projects to address issues and challenges related to the three mobility priorities and focus on safety and accessibility enhancements for all modes. These projects were developed at the corridor and intersection level, as shown in **Figure 11** and summarized in **Table 2**. The proposed projects were prioritized using a variety of factors, including considerations for mobility priorities, community input, anticipated cost, and more. The project IDs and priority levels are shown in Table 2 correspond to the report's project prioritization and implementation sections. The projects recommended for each corridor and intersection correspond with the information presented in **Appendix B**, Neighborhood Traffic Calming and Streetscape Toolkit. The toolkit provides more detail about the benefits and considerations for the recommended treatments.

There are eleven recommended corridor and intersection projects, as displayed in **Figure 7** and summarized in **Table 2**. Seven of the twelve focal corridor and intersection projects (project IDs 1-7) were developed in greater detail and include the following information:

- Overview and Project Need
- Project Description
- Planning Level Cost Estimate
- Coordination Effort
- Right-of-way Impacts

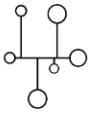
- Parking Impacts

The estimated costs provide initial planning-level cost estimates for the focal projects. They are intended to offer guidance on likely costs and provide the City with baseline information for budgeting and programming. These cost estimates were based on a review of recent City of Pittsburgh projects of similar scope and scale. The costs are estimated based on four ranges, as detailed below:

- Low Cost: $ (Less than $100,000)
- Moderately Low Cost: $$ ($100,001 to $250,000)
- Moderately High Cost: $$$ ($250,001 to $1,000,000)
- Highest Cost: $$$$ ($1,000,000+)

Additionally, each corridor and intersection improvement summary includes an overview of how well the improvement aligned with the three mobility priorities and how well the project's goals were met. The Plan's three goals/mobility priorities and goal indicators include:

Safety and Connectivity:



- **Targets crash location** (Project proposes proven safety countermeasures within 200 feet of where a crash took place),
- **Community-identified concerns** (Project location was identified as a safety concern through public input or previous planning efforts),
- **Enhances bicycle connectivity** (Project provides a new bicycle connection), and
- **Enhances transit connectivity** (Project is within 500 feet of an existing or proposed bus stop).

Walkability and Accessibility:

- **Connects to key destinations** (Project is within 1/8 mi of a key destination (e.g., park, school),
- **Connects to Centre Avenue** (Project increases access to/across Centre Avenue), and
- **Enhances pedestrian connectivity** (Project fills an existing missing pedestrian connection (e.g. (lack of sidewalks/city steps, poor sidewalk/step condition).

Parking and Transportation Strategy

- **Diversifies curbside uses on Centre Avenue** (Mix of curbside types provided that promotes safe operation of the street),
- **Increases residential parking availability and accessibility** (Creates safer and more efficient parking), and
- **Encourages non-auto trips** (Provides access to pedestrian, bicycle, transit, or micromobility options).

Each of the three goals includes several criteria to determine how well each proposed recommendation or project meets the overall goal. Each corridor and intersection improvement were ranked with check marks as follows:

- ✓ Indicates that a project "Partially met the criteria"
- ✓ ✓ Indicates that a project "Fully met the criteria"

The detailed criteria for each of the City's three goals are summarized below, organized into goal indicators. The detailed evaluation matrix is summarized in the Implementation section, which includes the total evaluation scores for each proposed recommendation and project.

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations Community-identified concerns Enhances bicycle connectivity Enhances transit connectivity	
	Connects to key destination Connects to Centre Avenue Enhances pedestrian connectivity	
	Diversifies curbside uses on Centre Avenue Increases residential parking availability and accessibility Encourages non-auto trips	

Figure 11 Recommendations and Projects Priority Map

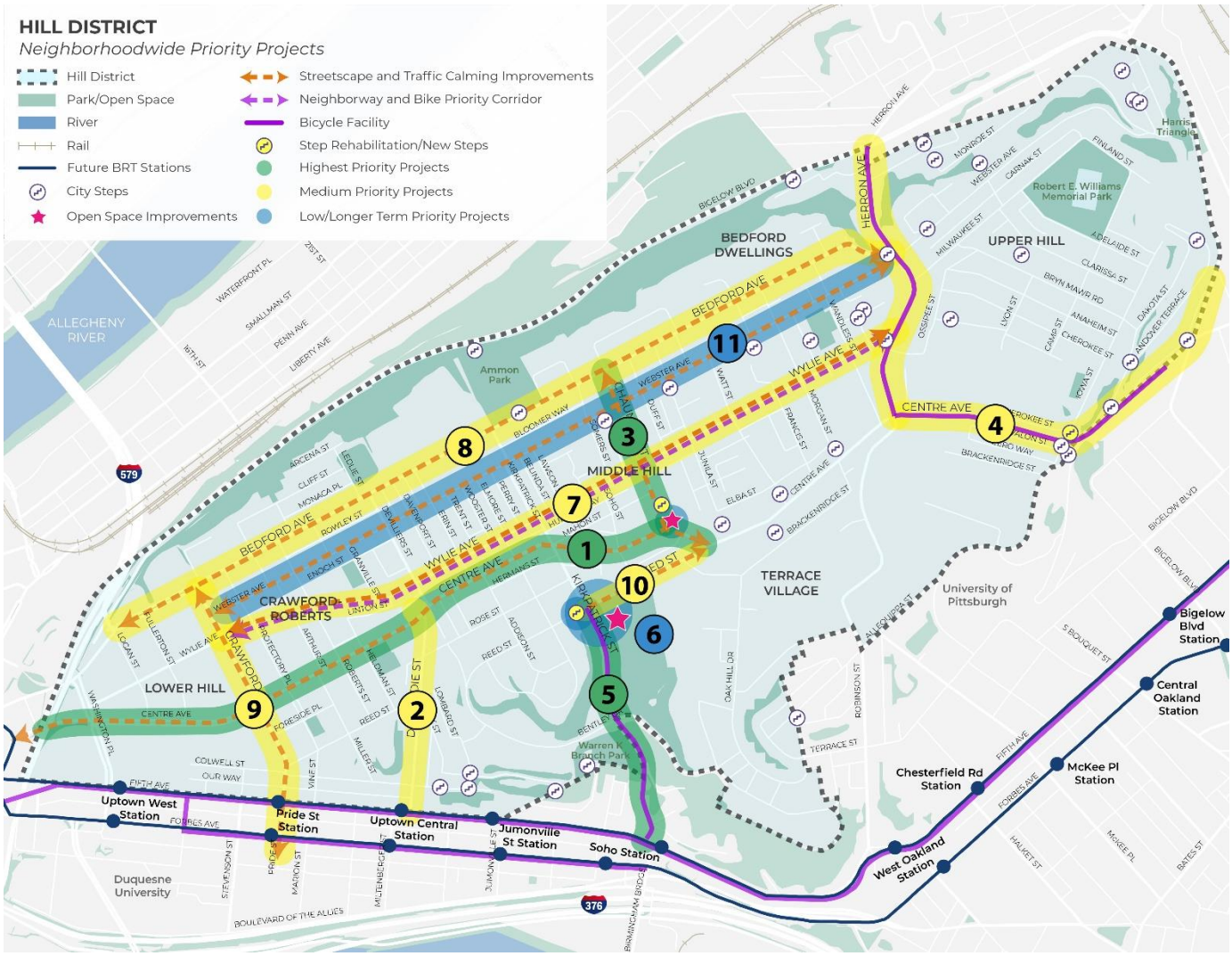


Table 2 Corridor and Intersection Improvement Project Summary

ID	Project Name	Type	Project Extents	Priority
1.	Centre Avenue Streetscape	Complete Street	Dinwiddie Street to Reed Street	High
	1A. General traffic calming and streetscaping	Traffic Calming and Streetscape	Dinwiddie Street to Kirkpatrick Street	High
	1B. Install parking meters	Parking	Dinwiddie Street to Reed Street	Medium
	1C. Centre Avenue & Dinwiddie Street Reconstruction	Safety	Intersection: Centre Avenue, Devilliers Street, and Dinwiddie Street	Medium
	1D. Centre Avenue & Kirkpatrick Street Intersection Realignment	Safety	Intersection: Centre Avenue, Kirkpatrick Street, Mahon Street	Medium
	1E. Centre Avenue and Reed Street Intersection Realignment	Safety	Intersection: Centre Avenue and Reed Street	High
2.	Dinwiddie Street Transit	Transit	Centre Avenue to Fifth Avenue	Medium
3.	Chauncey Street Pedestrian Connector	Pedestrian	Centre Avenue to Bedford Avenue	High
	3A. Chauncey Street Steps	Connectivity	Centre Avenue to Mahon Street	High
	3B. Chauncey Traffic Calming/sidewalk	Traffic Calming	Centre Avenue to Bedford Avenue	Medium
	3C. Chauncey Shared Street	Complete Streets	Webster Avenue to Bedford Avenue	Low
	3D. Pedestrian Plaza	Public Space Enhancements	Chauncey city steps at Centre Avenue	Low
4.	Upper Hill Bicycle Connector	Connectivity	Herron Avenue (from Bigelow Boulevard to Centre Avenue), Centre Avenue (from Herron Avenue to Dithridge Street/Bigelow Boulevard)	Medium
5.	Kirkpatrick Street Bicycle Connection	Connectivity	Reed Street to Fifth Avenue	High
6.	Kennard Playground Access and Safety Improvements	Safety	Intersection: Kirkpatrick Street and Reed Street	Low
	6A. New Pedestrian Connection (steps)	Connectivity	Reed Street west of Kirkpatrick Street to Reed Street east of Kirkpatrick Street	Low
	6B. Kirkpatrick Street and Reed Street Intersection	Safety	Intersection: Kirkpatrick Street and Reed Street	Low
7.	Wylie Avenue Neighborway	Traffic Calming, Connectivity	Crawford Street to Herron Avenue	Medium
8.*	Bedford Avenue Traffic Calming/Streetscape	Traffic Calming, Streetscape	Logan Street to Herron Avenue	Medium
9.*	Crawford Street/Pride Street Traffic Calming/Streetscape	Traffic Calming, Streetscape	Bedford Avenue to Forbes Avenue	Medium
10.*	Reed Street Traffic Calming (speed humps, painted parking lane)	Traffic Calming	Kirkpatrick Street to Centre Avenue	Medium
11.*	Webster Avenue Streetscape and Traffic Calming	Traffic Calming, Streetscape	Crawford Street to Herron Avenue	Low

* Focal plans were not created for these corridors.

1. CENTRE AVENUE STREETSCAPE (CORRIDOR)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Enhances pedestrian connectivity	✓✓
	Diversifies curbside uses on Centre Avenue	✓✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓✓

Centre Avenue serves as the neighborhood's spine and commercial corridor, with destinations scattered along the length of the corridor. Centre Avenue serves a critical role in the neighborhood's transportation network for all users and is anticipated to experience considerable redevelopment in the near term as part of the URA's Avenues of Hope Initiative. This section outlines bicycle, pedestrian, vehicle, and transit recommendations to enhance the safety and mobility of Centre Avenue at the corridor level and specific intersection improvements along the corridor. Additionally, this section describes general traffic calming and parking recommendations to enhance the Centre Avenue Streetscape.

OVERVIEW AND PROJECT NEED

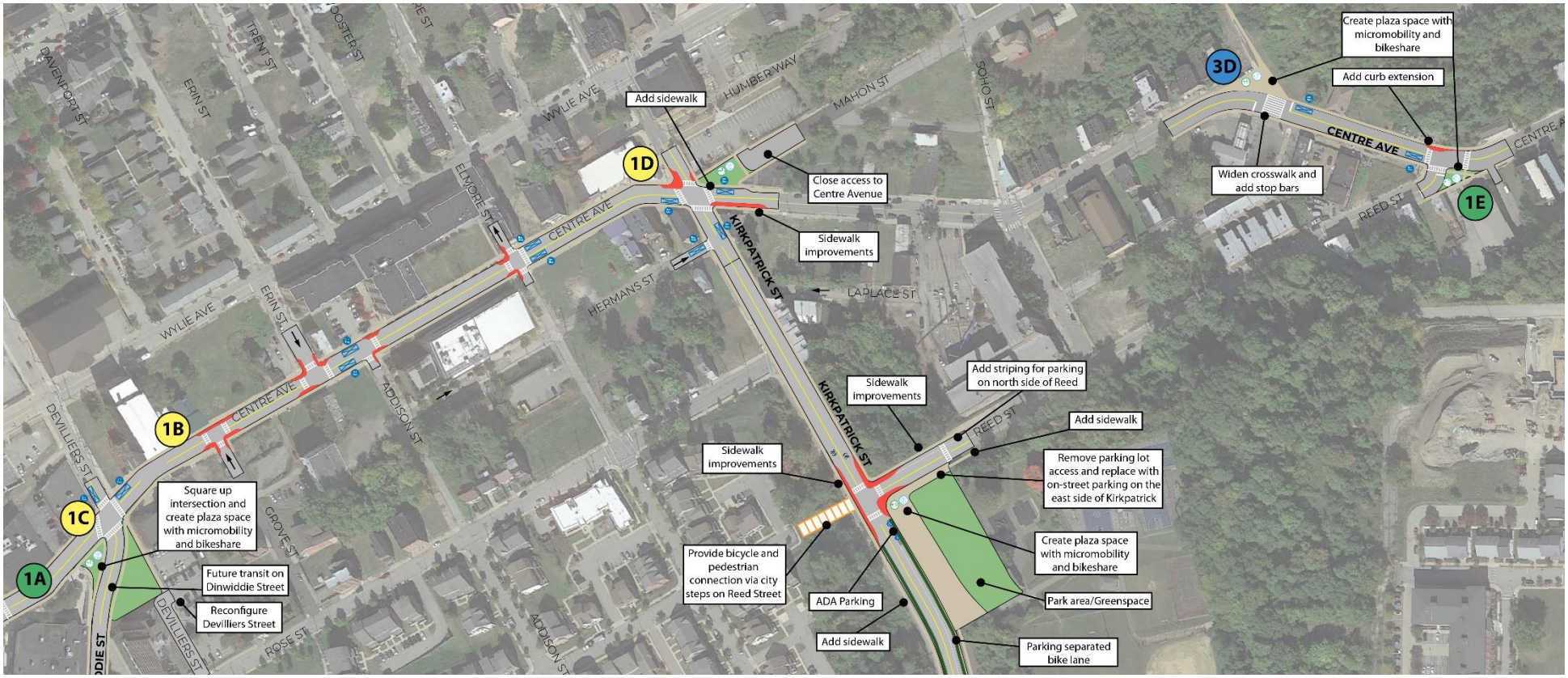
Centre Avenue serves as a major east-west connector in the Hill District and serves as the neighborhood's commercial center. The street is critical for walking, biking, driving, and taking transit. Existing facilities on Centre Avenue are somewhat limited, lacking bicycle facilities and high visibility crosswalks. Centre Avenue runs from I-579 in the west, beyond Bigelow Boulevard in the east, connecting people to East End neighborhoods. Many intersections along Centre Avenue are skewed and have challenging geometry that results in poor sight distance and long crosswalks for pedestrians. Additional challenges along Centre Avenue are detailed in the sub-project sections outlined in subsequent sections.

PROJECT DESCRIPTION

Recommendations are proposed along Centre Avenue from Dinwiddie Street to Reed Street, as shown in **Figure 12**. Many of the recommendations outlined in the area-wide recommendations section apply to Centre Avenue, including high visibility crosswalks, sidewalk improvements, curb extensions, general traffic calming, installing parking meters, and micromobility plazas. The Centre Avenue Streetscape project includes five subprojects, as indicated in **Figure 12**, including:

- 1A: General traffic calming from Dinwiddie Street to Kirkpatrick Street (High Priority)
- 1B: Install parking meters along Centre Avenue from Dinwiddie Street to Reed Street (Medium Priority)
- 1C: Centre Avenue and Dinwiddie Street Reconstruction (Medium Priority)
- 1D: Centre Avenue and Kirkpatrick Street Intersection Realignment (Medium Priority)
- 1E: Centre Avenue and Reed Street Intersection Realignment (High Priority)

Figure 12 Centre Avenue Corridor Recommendations



1A. Centre Avenue General Traffic Calming from Dinwiddie Street to Kirkpatrick Street (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Enhances pedestrian connectivity	✓✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓✓

Traffic calming features alert the driver to drive more carefully and slow down. Recommended projects for Centre Avenue include a combination of the corridor and intersection recommendations. In addition to the intersection projects described below, general traffic calming is proposed along Centre Avenue from Dinwiddie Street to Kirkpatrick Street. **Appendix B** provides additional information on Neighborhood Traffic Calming and Streetscaping.

OVERVIEW AND PROJECT NEED

Centre Avenue serves as a major connector through the Hill District, serving people walking, biking, driving, and taking transit. This corridor connects local businesses, restaurants, community centers, residential areas, and other destinations. Centre Avenue currently has sidewalks, landscaping, street trees, crosswalks, transit service, transit shelters, and other amenities that create an enjoyable route option for different transportation users. This section outlines traffic calming tools for Centre Avenue that will enhance the existing infrastructure on Centre Avenue and develop this corridor as a safe, comfortable, and accessible destination for all users.

PROJECT DESCRIPTION

This recommended corridor project proposes traffic calming treatments detailed in **Appendix B.** The following traffic calming treatments are proposed along Centre Avenue to supplement the recommended intersection projects along the corridor:

- Curb extensions along the corridor at all intersections to tighten intersections, reduce pedestrian crossing distances, and improve sight distance,
- Sidewalk improvements along Centre Avenue (east of Kirkpatrick Street),
- High visibility crosswalks on all intersection legs, where feasible, and
- Designated bus stop loading areas.

The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$
- **Coordination Effort** – High. Coordination will be required with stakeholders and businesses along Centre Avenue.
- **Right-of-Way Impacts** – Low. Traffic calming will utilize existing right-of-way. Impacts on surrounding properties will be minimized.
- **Parking Impacts** – Moderate. The recommendation will result in some parking loss. The curb extensions will prevent vehicles from illegally parking within 20 feet of the intersection, and some parking will be lost on Mahon Street.

1B. Install Parking Meters along Centre Avenue from Dinwiddie Street to Reed Street (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Diversifies curbside uses on Centre Avenue	✓
	Increases residential parking availability and accessibility	✓✓

Parking has proven to be a challenge within the Hill District. Residents, commuters, and visitors have reported parking-related challenges within the neighborhood. This project reviewed existing parking facilities, parking supply, and demand, summarized previously in the existing conditions overview section. Rather than proposing new parking facilities, the Hill District is considering ways to simplify parking within the neighborhood and utilize existing parking resources more efficiently.

OVERVIEW AND PROJECT NEED

There are many businesses and destinations on Centre Avenue from Dinwiddie Street to Reed Street, including the YMCA, banks, shops, restaurants, apartments, the Carnegie Library, and more. As mentioned in the existing conditions analysis sections, the Hill District has few metered parking areas, including along Centre Avenue east of Herron Avenue and on Robinson Street near the Pittsburgh VA Medical Center. Parking meters are often suitable where the demand for parking is high, and there is high parking turnover, such as along Centre Avenue from Dinwiddie Street to Reed Street.

PROJECT DESCRIPTION

- Provide metered on-street parking along all current and future commercial corridors, particularly Centre Avenue, and provide RPP zones on side streets to minimize spillover parking on residential streets.
- Adjust the cost to park on metered streets to match demand by time of day and day of the week to keep approximately one parking space available on each block face. The cost should be reevaluated every three to six months to match changes in demand. If price changes alone do not result in changes in demand, time limit changes can be considered.
- Establish special event/game day prices for metered on-street parking spaces in the area at a cost equivalent to parking in a private lot for the event.
- As properties redevelop or streetscape efforts are underway, review existing driveways and curb cuts for the potential to close or consolidate access points. This would provide more usable curbside space for on-street parking and other curbside uses while reducing potential conflict points.
- As part of streetscaping efforts, provide greater clarity through the design of curbside spaces. Install "parking boxes" (marked locations where curbside parking is allowed) and new signs, along with curb extensions to reduce pedestrian crossing distances and provide greater visibility of people crossing the street.

The following summarizes the impacts of the proposed recommendation, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $
- **Coordination Effort** – Moderate. The installation of parking meters will likely require coordination and buy-in from stakeholders and businesses. Additional community outreach may be beneficial.
- **Right-of-Way Impacts** – None. There are no associated right-of-way impacts with installing parking meters.
- **Parking Impacts** – There are no negative impacts to parking. The installation of parking meters is intended to enhance clarity and ease of parking by formalizing on-street parking along Centre Avenue.

1C. Centre Avenue and Dinwiddie Street Reconstruction (Intersection)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓✓
	Enhances transit connectivity	✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓
	Encourages non-auto trips	✓✓

The intersection at Centre Avenue, Dinwiddie Street, and Devilliers Street currently operates as two closely spaced intersections. **Figure 13**Error! Reference source not found. displays the existing street intersection configuration. The proposed recommendations simplify the intersection geometry and create a safer and more comfortable intersection for all modes.

Figure 13 Devilliers Street, Centre Avenue, and Dinwiddie Street Existing Configuration

OVERVIEW AND PROJECT NEED

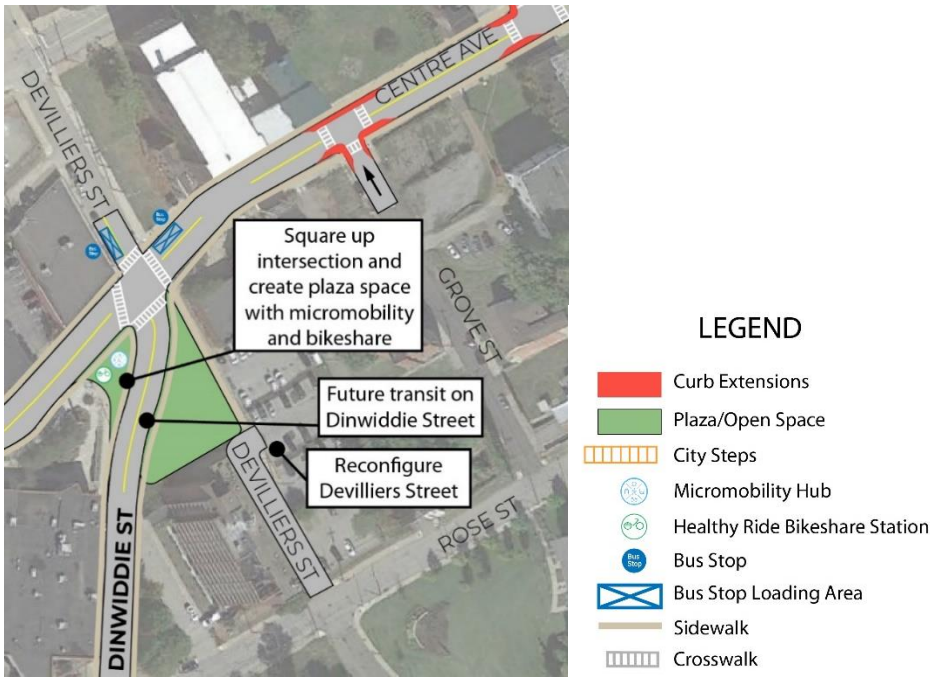
Dinwiddie Street functions as an important north-south connector through the Middle Hill District and terminates at a T-intersection located less than fifty feet west of Centre Avenue and Dinwiddie Street. The existing intersection configuration results in long pedestrian crossings due to the skewed intersection configuration, resulting in unsafe and uncomfortable conditions for non-vehicular modes of transportation.

PROJECT DESCRIPTION

The project team proposes simplifying the intersection geometry by aligning Dinwiddie Street with Devillers Street north of Centre Avenue. The proposed design would remove access from south Devilliers Street to Centre Avenue. Excess street width will be repurposed into open / plaza space, as shown in **Figure 14**Error! Reference source not found.. The recommended design includes:

- Realigning Dinwiddie Street with Devilliers Street to provide continuous north-south connectivity,
- Repurposing the excess right-of-way to create an open space/plaza area, potentially with bikeshare and a micromobility hub,
- Providing high visibility crosswalks at all legs of the intersection,
- Limiting vehicle through traffic on Devilliers Street south of Centre Avenue, and
- Shortening pedestrian crossing distance by condensing two intersections to one along Centre Avenue.

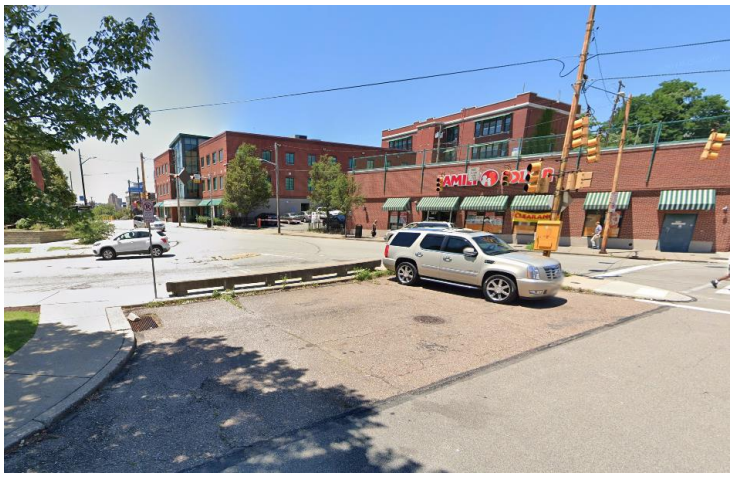
Figure 14 Proposed Realignment at Dinwiddie Street and Centre Avenue



The following summarizes the impacts of the proposed recommendation, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$
- **Coordination Effort** – High. Coordination will be required with the United States Postal Service, located west of Dinwiddie Street, and the Pittsburgh Police Department, located east of Devilliers Street. The proposed design will impact driveway access to and from the police department, so coordination will be essential.
- **Right-of-Way Impacts** – Moderate. The design proposes repurposing right-of-way to create an open public space. No surrounding properties will be impacted. The proposed design utilizes excess street width.
- **Parking Impacts** – Moderate. The recommendation will result in the loss of approximately three to four on-street parking spaces along Devilliers Street, south of Centre Avenue, as shown in **Figure 15**Error! Reference source not found..

Figure 15 Parking on Devilliers Street, South of Centre Avenue



1D. Centre Avenue and Kirkpatrick Street (Intersection)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓
	Increases residential parking availability and accessibility	✓
	Encourages non-auto trips	✓

Centre Avenue, Kirkpatrick Street, and Mahon Street operate as a wide, skewed intersection. Error! Reference source not found. **Figure 16** displays the existing street intersection configuration. This intersection improvement project aims to realign the intersection by closing off the Mahon Street leg to improve intersection operations, sight distance, and pedestrian and bicycle safety.

Figure 16 Centre Avenue, Kirkpatrick Street, and Mahon Street Existing Configuration

OVERVIEW AND PROJECT NEED

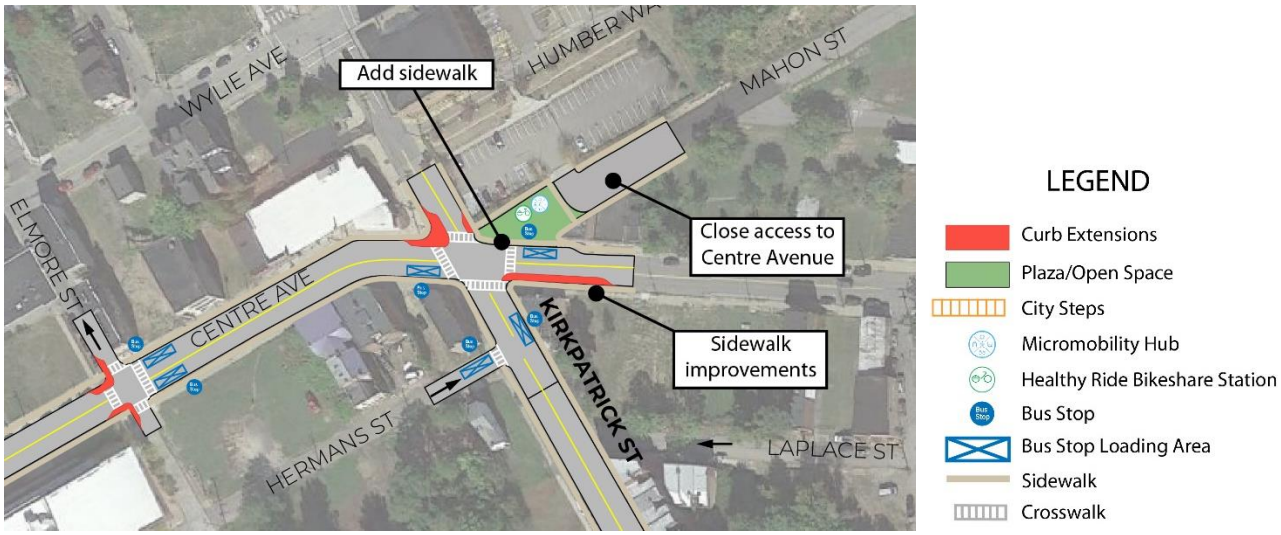
Centre Avenue and Kirkpatrick Street serve as major connectors in the Hill District. Transit travels along Centre Avenue, and bus stops are located on the east and west legs at Centre Avenue and Kirkpatrick Street. The proposed intersection recommendations address existing safety and mobility challenges.

PROJECT DESCRIPTION

The proposed recommendations for Centre Avenue, Kirkpatrick Street, and Mahon Street are focused on enhancing the intersection's safety for all users through traffic calming and pedestrian enhancements, as shown in **Figure 17**Error! Reference source not found.. The proposed recommendations include:

- Closing access to Mahon Street from Centre Avenue, where vehicle volumes are low, to tighten intersection geometry and improve sight distance; Mahon Street access will be maintained east of Centre Avenue,
- Repurposing excess asphalt to open space and work with developers to consider providing a micromobility hub with bikeshare,
- Adding curb extensions to the north leg of Kirkpatrick Street and the southeast corner of the intersection to shorten pedestrian crossing distances and discourage vehicles from parking on the sidewalk or blocking crosswalks, and
- Relocating the westbound bus stop approximately 50 feet west to align with the realigned intersection.

Figure 17 Proposed Enhancements along Centre Avenue at Kirkpatrick Street (1D)



- **Cost** – $$$
- **Coordination Effort** – High. Coordination with stakeholders and the public will determine if additional circulation analysis is needed.
- **Right-of-Way Impacts** – Moderate. The design proposes repurposing right-of-way to create an open public space on Mahon Street. No surrounding properties will be impacted. The proposed design utilizes excess street width.
- **Parking Impacts** – Moderate. The recommendation will result in some parking loss. The curb extensions will prevent vehicles from illegally parking within 20 feet of the intersection, and some parking will be lost on Mahon Street.

1E. Centre Avenue and Reed Street (Intersection)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓

Specific recommendations are proposed for a segment of Centre Avenue near the Chauncey Street city steps connection. This portion of Centre Avenue connects to city steps that extend north to Chauncey Street. This segment of Centre Avenue has a small parking area on the north side of Centre Avenue, as shown in **Figure 18**Error! Reference source not found..

Figure 18 Centre Avenue at Chauncey City Steps

OVERVIEW AND PROJECT NEED

This segment of Centre Avenue does not safely or comfortably serve people biking or walking. Existing city steps connect Chauncey Street to Centre Avenue; however, the nearest crosswalk for people crossing the street is located approximately 300 feet to the east, at Reed Street. Additionally, the nearby intersection of Centre Avenue and Reed Street is wide and has skewed geometry, resulting in long crosswalks for pedestrians and poor sight distance.

PROJECT DESCRIPTION

The recommendations for this segment of Centre Avenue aim to enhance safety and comfort for all modes and provide a safe and enhanced connection from the Chauncey Street Steps to Centre Avenue. The recommended enhancements are shown in **Figure 19**Error! Reference source not found. and include:

- Repurposing the excess street width that currently serves as unofficial parking into a plaza with open space for the public, a bikeshare station, and a micromobility hub,
- Adding a wide crosswalk across Centre Avenue to facilitate pedestrian crossings at the Chauncey Street Steps connection,
- Coordinating with potential future adjacent development,
- Adding high visibility crosswalks to the intersection of Centre Avenue and Reed Street, and
- Tightening the intersection geometry by adding cross extensions and a micromobility hub/bikeshare plaza area at Centre Avenue and Reed Street.

The recommendations, summarized below, include cost, coordination efforts, right-of-way impacts, and parking impacts.

Figure 19 Proposed Enhancements along Centre Avenue at Reed Street and Chauncey City Steps Connection (1E)

- **Cost** – $$$
- **Coordination Effort** – Moderate. Coordination will be required with the development north of Centre Avenue, near the Chauncey Street Steps, to accommodate the proposed plaza and micromobility hub. Additional coordination may be required to ensure the safety of the midblock crosswalk across Centre Avenue. At Reed Street and Centre Avenue, coordination may be required with property owners to maintain access to driveways.
- **Right-of-Way Impacts** – Moderate. The design proposes repurposing right-of-way to create an open public space. No surrounding properties will be impacted. The proposed design utilizes excess street width.
- **Parking Impacts** – Moderate. The recommendation will result in some parking loss with the addition of the plaza and micromobility hub at the base of the Chauncey Street Steps. The curb extensions on Centre Avenue will prevent vehicles from illegally parking within 20 feet of the intersection.

2. DINWIDDIE STREET TRANSIT (CORRIDOR)

Dinwiddie Street currently serves as a north-south connector street in the Hill District. No transit service currently exists on the corridor. The following sections outline proposed recommendations for transit on Dinwiddie Street from Fifth Avenue to Centre Avenue.

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓✓
	Connects to Centre Avenue	✓✓
	Encourages non-auto trips	✓✓

OVERVIEW AND PROJECT NEED

The steep hill on Dinwiddie Street creates a physical barrier – especially for those with limited mobility – between Uptown (and future BRT service on Fifth and Forbes avenues) and the Hill District. An option for easing this barrier includes re-routing existing transit service to Dinwiddie Street. Improving transit access will provide a direct transit link from Uptown to the Hill District and Centre Avenue destinations and could be accomplished by re-routing existing transit routes to run along Dinwiddie.

PROJECT DESCRIPTION

The recommendation for Dinwiddie Street transit is shown in **Figure 20**. Dinwiddie Street has existing on-street parking on both sides of the street. Parking on one side of the street would need to be removed to allow for wider vehicle lane widths so buses can comfortably pass while traveling in opposite directions. The proposed transit service along Dinwiddie Avenue would expand transit service throughout the Hill District, specifically in the north-south direction. Given the plans for BRT in Fifth and Forbes avenues, Dinwiddie would provide a direct transit connection from Uptown to the Hill District.

Rerouting PAAC route 83 to Dinwiddie Street is one option to provide the proposed transit service; however, a new route will need to be determined by PAAC, which could be considered as part of PAAC's future network study. Impacts and key considerations for rerouting route 83 are summarized below.

- Review available right of way and curb to curb width to determine parking impacts and PAAC operations
- Extensive public outreach to coordinate with residents on potential route changes and parking impacts
- Ensure all intersections where a bus will need to turn have sufficient turning radii for the bus
- Determine an appropriate location for the bus to turn from Forbes Avenue onto Fifth Avenue Connection to future BRT on Fifth Avenue
- Adjust routing in Downtown to allow a bus to turn onto Forbes Avenue for outbound travel
- Identify bus stop locations on Dinwiddie Street

The recommendations include cost, coordination efforts, right-of-way impacts, and parking impacts, and summarized below.

- **Cost** – $
- **Coordination Effort** – Moderate. Coordination will be required between PAAC and the City to determine the appropriate new route and which side of Dinwiddie Street to remove parking. High levels of public outreach will be required to notify PAAC riders and residents of the route changes and potential parking impacts. Outreach to PAAC riders will need to explain the trade-offs between increased travel time due to the re-routing and the value of the Uptown connection.
- **Right-of-Way Impacts** – None. No changes to the existing right-of-way.
- **Parking Impacts** –High. Dinwiddie Street currently has on-street parking on both sides of the street. Parking may need to be restricted on one side of the road to accommodate buses.

Figure 20 Dinwiddie Street Proposed Transit

3. CHAUNCEY STREET PEDESTRIAN CONNECTOR

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓✓
	Enhances bicycle connectivity	✓✓
	Enhances transit connectivity	✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓✓

Chauncey Street serves as a north-south connection from Bedford Avenue to Mahon Street, with a pedestrian connection via city steps south of Mahon Street to Centre Avenue. Proposed recommendations for the corridor are shown in **Figure 21** and outlined in the section below.

OVERVIEW AND PROJECT NEED

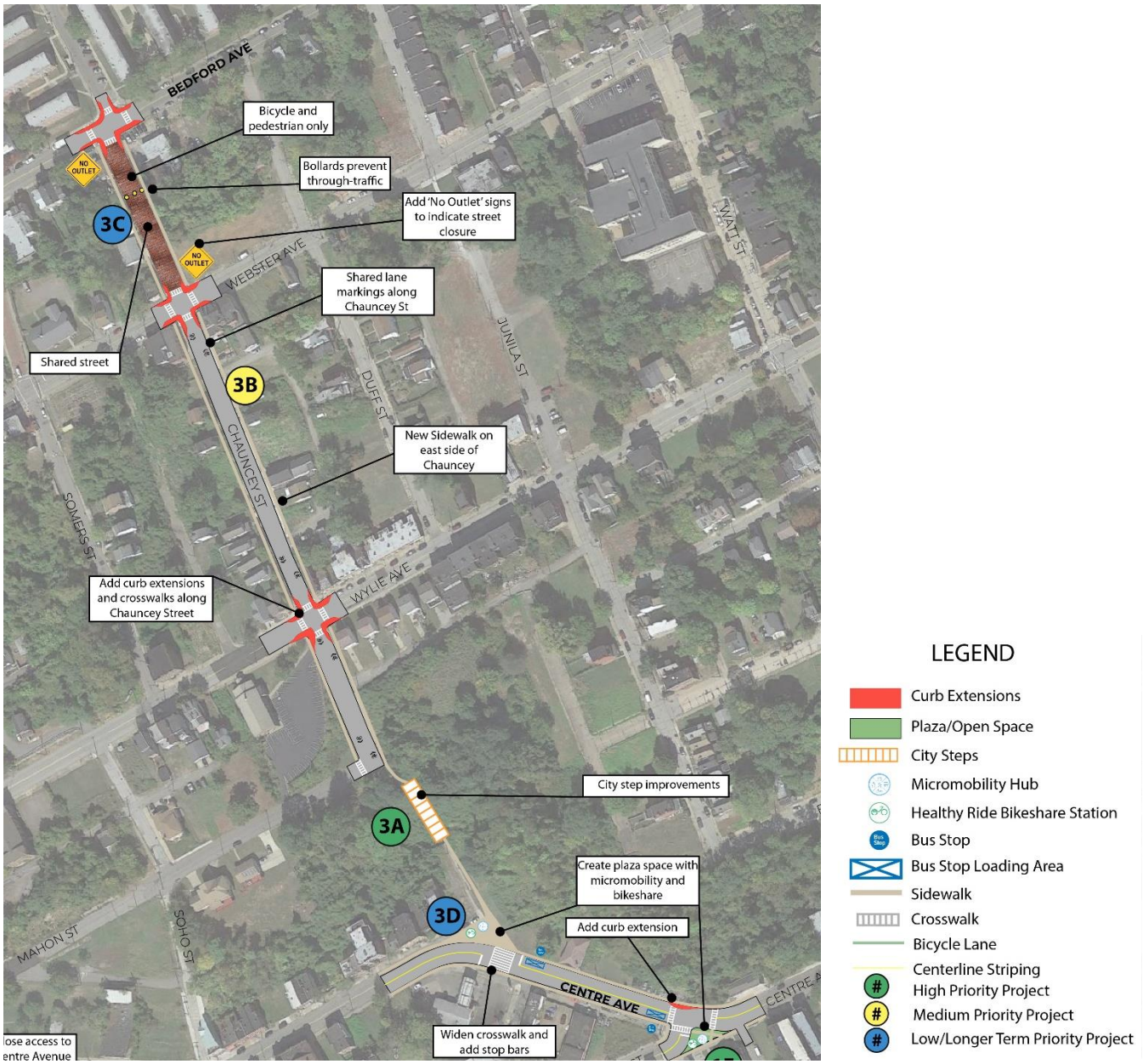
Chauncey Street is a crucial pedestrian connector between homes on Bedford Avenue and the commercial district on Centre Avenue. The topography south of Bedford Avenue is steep and has limited pedestrian infrastructure in poor condition. Additionally, crosswalks are not provided along the intersections on Chauncey Street, and the environment is not friendly for people walking or biking. Crashes on Chauncey Street are concentrated at the intersections of Webster Avenue and Wylie Avenue.

PROJECT DESCRIPTION

The proposed recommendations for Chauncey Street from Centre Avenue to Bedford Avenue are shown in **Figure 21**. The recommendations focus on enhancing the safety of the intersections for all users through traffic calming and pedestrian enhancements. The Chauncey Street Pedestrian Connector includes several subprojects, as indicated in **Figure 21**, including:

- 3A: City Steps from Centre Avenue to Mahon Street (High Priority)
- 3B: Traffic calming/sidewalk improvements from Centre Avenue to Bedford Avenue (Medium Priority)
- 3C: Shared Street from Webster Avenue to Bedford Avenue (Low/Longer Term Priority)
- 3D: Plaza at Centre Avenue and Chauncey Street Steps (Low/Longer Term Priority)

Figure 21 Chauncey Street Corridor Recommendations



3A. Chauncey City Steps from Centre Avenue to Mahon Street (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Community-identified concerns	✓✓
	Enhances bicycle connectivity	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓✓
	Encourages non-auto trips	✓✓

This recommendation proposes city step improvements to upgrade the existing steps on Chauncey Street to include bicycle runnels. There is a steep slope between Mahon Street and Centre Avenue, creating a challenging environment for walking and biking. Chauncey Street city step upgrades have been previously identified in the Bedford Connects Transformation Plan and the City's Master Plan. These recommendations build on previous recommendations and plans.

OVERVIEW AND PROJECT NEED

The Chauncey Street City Steps serve as an important connection for people biking and walking to access Centre Avenue and other destinations in the Hill District. This connection is important, as it connects residents to transit access on Centre Avenue. The steps are currently in poor condition and do not connect to a network of safe and comfortable facilities, as shown in **Figure 22**. Additionally, the community has identified and prioritized the need for city step rehabilitation. This section outlines the recommendations for improving the Chauncey Street city steps.

PROJECT DESCRIPTION

This recommended corridor project proposes improving the Chauncey Street city steps from Mahon Street to Centre Avenue. The steps have provided people with walking and biking directly connecting Mahon Street to Centre Avenue. However, like many other city steps in the area, they have deteriorated over time and would benefit from rehabilitation to improve the sidewalk conditions and remove overgrown landscaping. Recommendations include:

- Reconstructing the city steps (including bicycle runnels) between Centre Avenue and Mahon Street,
- Improving lighting, and
- Maintaining overgrown landscaping.

This project recommends upgrading and replacing the stairs, adding lighting, and wayfinding signage for walking and biking. The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$$
- **Coordination Effort** – High. Coordination will be required with City departments from planning through construction.
- **Right-of-Way Impacts** – None. The improvement proposes upgrading existing stairs; no additional right-of-way will be required.
- **Parking Impacts** – None. There are no impacts to parking.

Figure 22 Chauncey Street City Steps from Centre Avenue

3B. Chauncey Traffic Calming/Sidewalk Improvements from Centre Avenue to Bedford Avenue (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓✓

OVERVIEW AND PROJECT NEED

Chauncey Street serves as a north-south connector from Bedford Avenue to Centre Avenue. Connections to Centre Avenue are critical, as it serves as the spine of the neighborhood and provides east-west connectivity and transit access. Chauncey Street has low vehicle volumes and low pedestrian and bicycle activity. Low vehicle volumes make Chauncey Street a viable candidate for a low-stress pedestrian and bicycle route. This project recommends traffic calming and sidewalk improvements along Chauncey Street from Centre Avenue to Bedford Avenue.

PROJECT DESCRIPTION

This recommended corridor project proposes traffic calming treatments detailed in **Appendix B.** The following traffic calming treatments are proposed along Chauncey Street:

- Adding shared lane markings to increase vehicular awareness of people biking,
- Enhancing pedestrian crossings along Chauncey Street by adding high visibility crosswalks and curb extensions, and
- Providing sidewalks along Chauncey Street on both sides of the street.

The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$
- **Coordination Effort** – Moderate. Coordination may be required where there may be minor impacts to properties along Chauncey Street.
- **Right-of-Way Impacts** – Moderate. Traffic calming will utilize existing right-of-way. Impacts on surrounding properties will be minimized.
- **Parking Impacts** – Moderate. The recommendation will result in some parking loss. The curb extensions will prevent vehicles from illegally parking within 20 feet of the intersection.

3C. Chauncey Shared Street from Webster Avenue to Bedford Avenue (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓
	Enhances bicycle connectivity	✓✓
	Pedestrian Connectivity	✓✓
	Encourages non-auto trips	✓✓

OVERVIEW AND PROJECT NEED

This segment of Chauncey Street, from Webster Avenue to Bedford Avenue, is part of project 3B. This corridor project recommends creating a shared street on Chauncey Street from Webster Avenue to Bedford Avenue. This shared street will be open to people walking, biking, using micromobility, and to local vehicles accessing residential properties. Vehicles will be encouraged to drive slowly, and low volumes will create a comfortable environment for people walking and biking.

PROJECT DESCRIPTION

This recommended corridor project proposes traffic calming treatments detailed in **Appendix B.** The following traffic calming treatments are proposed along Chauncey Street from Webster Avenue to Bedford Avenue:

- Creating space for bicycles and pedestrians by restricting vehicular access on Chauncey Street between Webster Avenue and Bedford Avenue while maintaining residential vehicle access,
- Using bollards to prevent through-vehicles, and
- Providing 'No Outlet' signs.

The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $
- **Coordination Effort** – Moderate. Coordination may be required where there may be minor impacts to properties along Chauncey Street.
- **Right-of-Way Impacts** – Moderate. Traffic calming will utilize existing right-of-way. Impacts on surrounding properties will be minimized. The street block will be closed to non-local through traffic.
- **Parking Impacts** – Moderate. The proposed recommendation will close the block to non-local on-street parking.

Figure 23 Existing Chauncey Street from Webster Avenue to Bedford Avenue

3D. Pedestrian Plaza at Centre Avenue and Chauncey Street Steps (Intersection)

Project Goal	Goal Indicators	Goal Achievement
	Community-identified concerns	✓
	Enhances transit connectivity	✓

OVERVIEW AND PROJECT NEED

This project builds on the previous Chauncey Street projects to enhance the safety, comfort, and accessibility for people walking and biking. The base of the Chauncey Street steps at Centre Avenue is currently underutilized. Cars occupy the existing space for parking, as shown in Figure 26. This project envisions revitalizing the city steps into a plaza with space for a micromobility hub and public amenities.

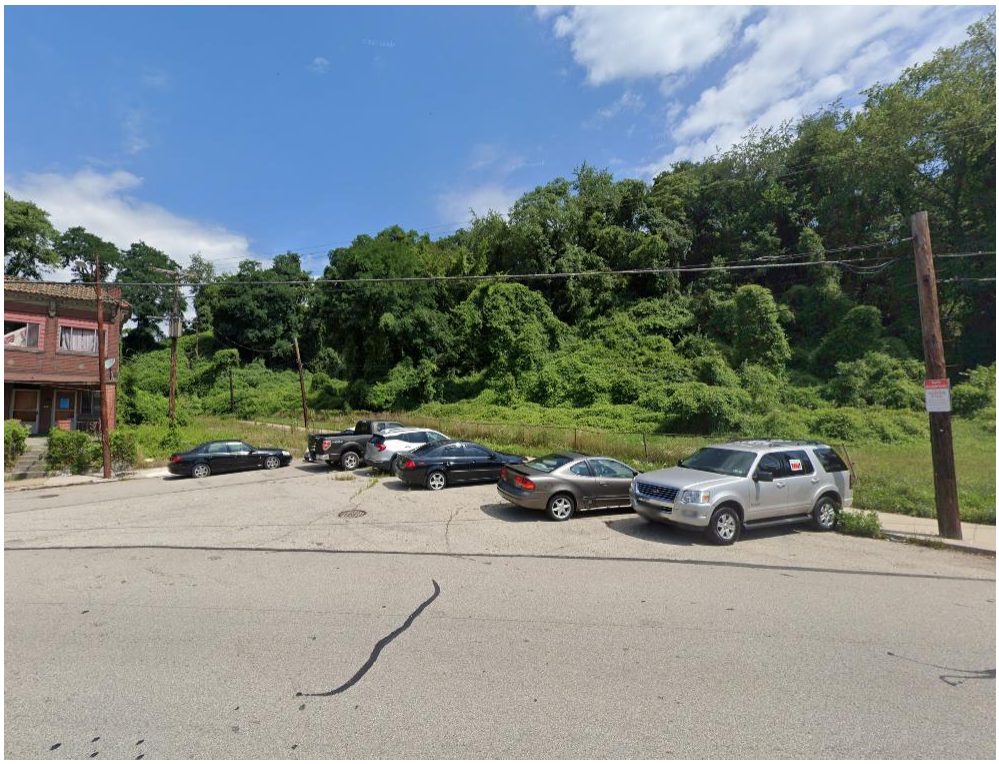
PROJECT DESCRIPTION

This recommended project proposes upgrading the base of the Chauncey Street steps to create a plaza space open to the public. The plaza will include amenities such as lighting, seating, wayfinding, bikeshare, and a micromobility hub. The plaza will extend to include the bus stop for route 82. Detailed information about public space plazas and parklets is provided in **Appendix B.**

The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$
- **Coordination Effort** – Moderate. Coordination may be required where there may be minor impacts to properties along Centre Avenue.
- **Right-of-Way Impacts** – Moderate. Traffic calming will utilize existing right-of-way. Impacts on surrounding properties will be minimized.
- **Parking Impacts** – Moderate. The proposed recommendation will close the existing parking spaces at the base of the Chauncey Street steps.

Figure 24 Existing Chauncey Street Steps at Centre Avenue



4. UPPER HILL BICYCLE CONNECTOR (CORRIDOR)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓
	Enhances bicycle connectivity	✓✓
	Enhances transit connectivity	✓
	Connects to key destination	✓
	Connects to Centre Avenue	✓✓
	Encourages non-auto trips	✓✓

The Upper Hill Bicycle Connector connects Bigelow Boulevard (in the north) south to Herron Avenue, east along Centre Avenue, then south down Bigelow Boulevard, as shown in **Figure 25**.

There is a need to build a complete network and provide better connections between the Hill District and nearby neighborhoods. The steep topography and Bigelow Boulevard on the northside of the Hill District acts as a barrier between the Hill District and the Strip District, and Polish Hill. This section outlines how a continuous bicycle connection can enhance accessibility, connectivity, and safety for bicyclists.

OVERVIEW AND PROJECT NEED

As noted previously, there are few bicycle facilities in the Hill District. The steep terrain and lack of dedicated facilities make it difficult for Hill District residents to travel within the Hill District and nearby neighborhoods. The Upper Hill Bicycle Connector would introduce a series of dedicated bicycle facilities along Centre Avenue, Bigelow Boulevard, and Herron Avenue that connect the Middle Hill to North Oakland and neighborhoods north of Bigelow Boulevard (Polish Hill and the Strip District). This facility will connect to existing bike lanes on Bigelow Street. There are several high crash areas along this corridor, including the intersections of:

- Bigelow Boulevard and Centre Avenue,
- Centre Avenue and Allequippa Street,
- Centre Avenue and Herron Avenue, and
- Herron Avenue and Wylie Avenue.

PROJECT DESCRIPTION

A buffered bicycle facility is recommended on Bigelow Boulevard (starting at Bayard Street), Centre Avenue, and Herron Avenue (ending at Bigelow Boulevard). Throughout the proposed route, the elevation, street widths, and existence of street parking varies. Therefore, proposed bicycle facilities change throughout the route and prioritize protecting bicyclists heading in the uphill direction. The proposed route also provides a dedicated connection from the proposed Wylie Avenue Neighborway (Project ID 7). **Figure 25** shows a diagram of the proposed route and the different facility types. These areas are described and shown in further detail in **Figure 26** through **Figure 31**.

Figure 25. Proposed Upper Hill Bicycle Connector

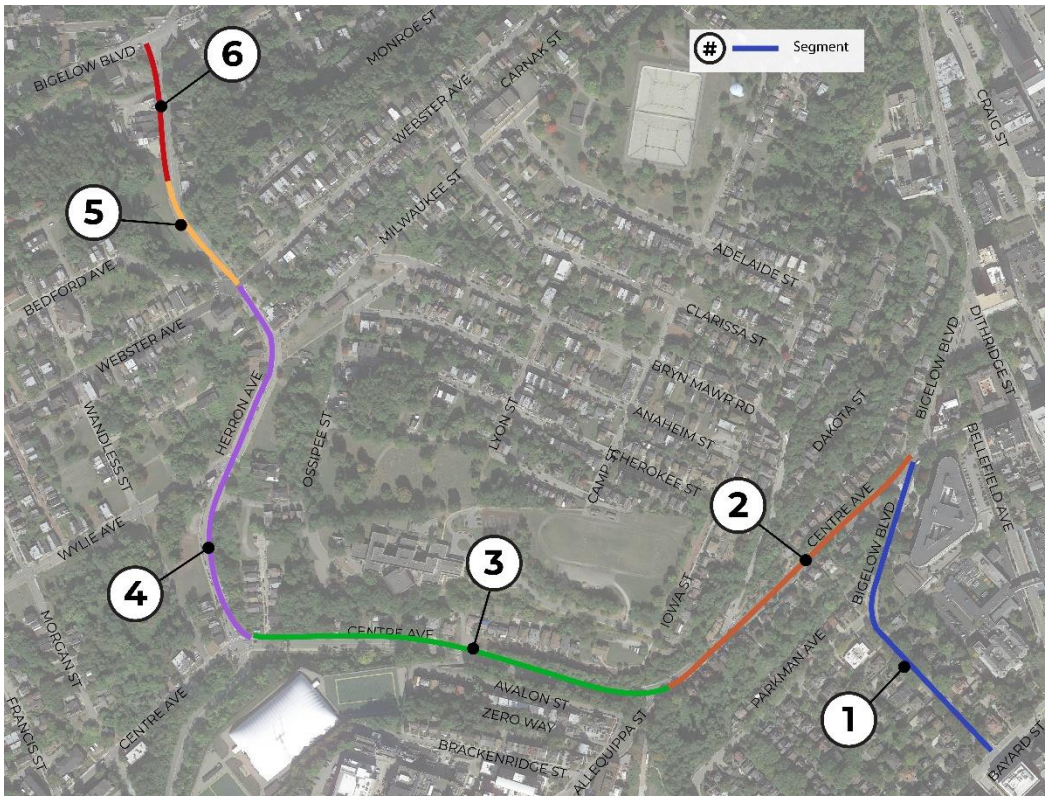
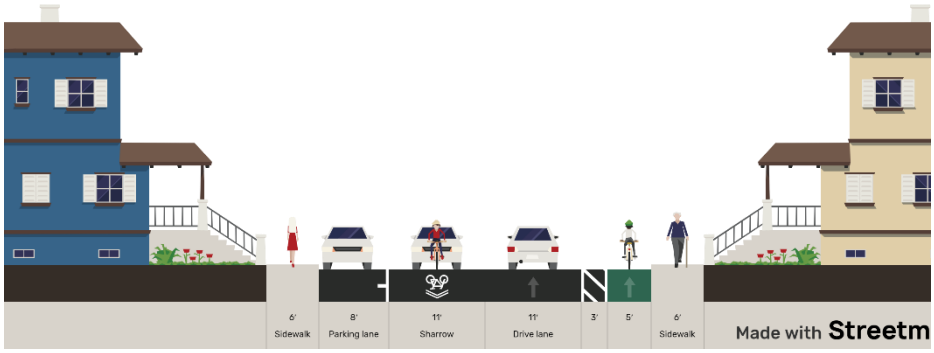


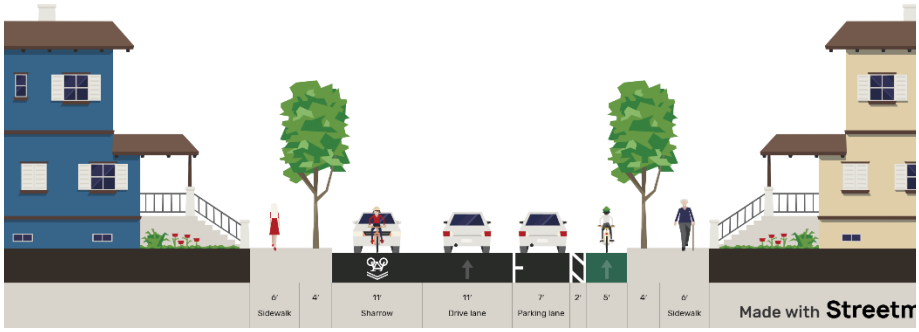
Figure 26 Segment 1 Proposed Cross Section on Bigelow Boulevard from Bayard Street to Centre Avenue (looking north)



Northbound: 5' bike lane with 3' buffer

Southbound: Sharrows and on-street parking lane

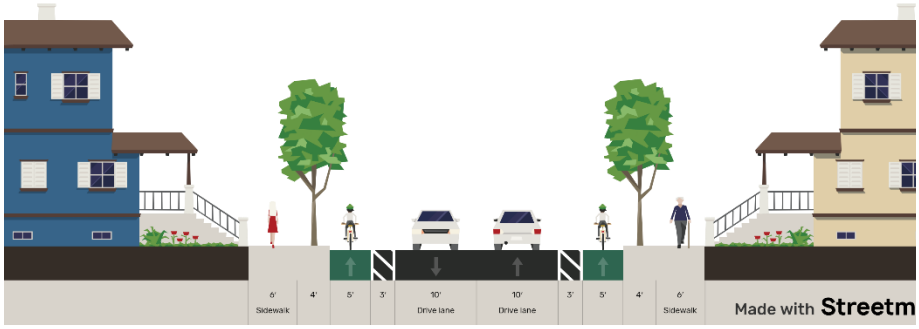
Figure 27 Segment 2 Proposed Cross Section on Centre Avenue from Bigelow Boulevard to Allequippa Street (looking west)



Westbound: 5' bike lane with 2' buffer and on-street parking lane

Eastbound: Sharrows

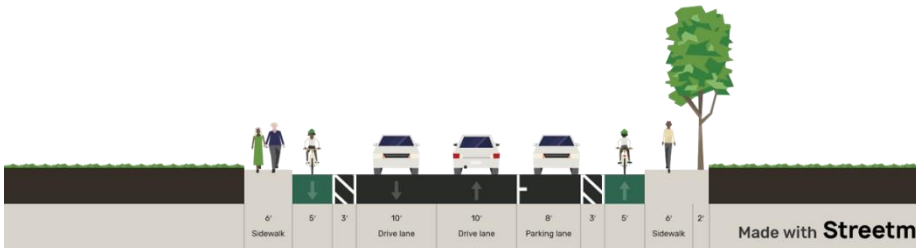
Figure 28 Segment 3 Proposed Cross Section on Centre Avenue from Allequippa Street to Herron Avenue (looking west)



Westbound: 5' bike lane with 3' buffer

Eastbound: 5' bike lane with 3' buffer

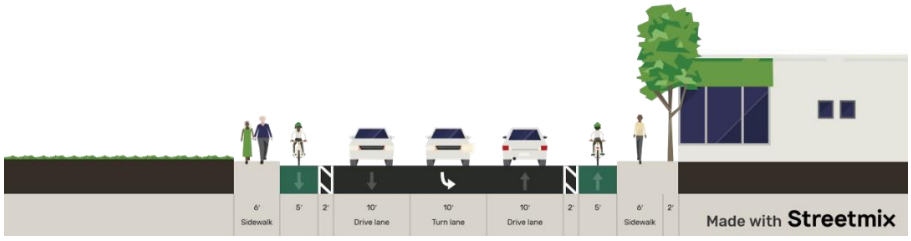
Figure 29 Segment 4 Proposed Cross Section on Herron Avenue from Centre Avenue to Webster Avenue (looking north)



Northbound: 5' bike lane with 3' buffer and on-street parking lane

Southbound: 5' bike lane with 3' buffer

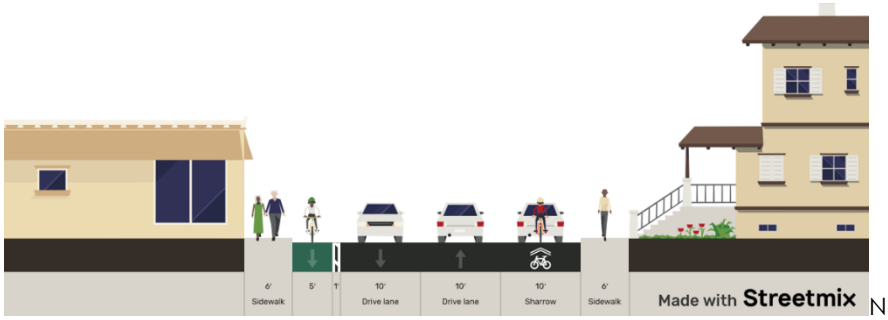
Figure 30 Segment 5 Proposed Cross Section on Herron Avenue from Webster Avenue to Monroe Street



Northbound: 5' bike lane with 2' buffer

Southbound: 5' bike lane with 2' buffer

Figure 31 Segment 6 Proposed Cross Section on Herron Avenue from Monroe Street to Bigelow Boulevard



Northbound: Sharrows

Southbound: 5' bike lane with 2' buffer

The following summarizes the impacts of the proposed recommendation, including cost, coordination efforts, right-of-way impacts, and parking impacts:

- **Cost** – $$
- **Coordination Effort** – Moderate. PAAC bus routes 82 and 83 use Centre Avenue and Herron Avenue, respectively. Coordination will be needed to avoid conflicts with bus stops and ensure sufficient space for buses to turn. Outreach is needed to address resident concerns about impacts to parking and safety.
- **Right-of-Way Impacts** – None. All proposed facilities are within existing curb to curb space
- **Parking Impacts** – Moderate. Where there is not sufficient right-of-way, parking on one or both sides of the street is removed to provide a bicycle lane and buffer. Where applicable, on-street parking is moved away from the curb to create a parking-protected bicycle facility.

5. KIRKPATRICK STREET BICYCLE CONNECTION (CORRIDOR)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Community-identified concerns	✓✓
	Enhances bicycle connectivity	✓✓
	Enhances transit connectivity	✓✓
	Connects to key destination	✓
	Connects to Centre Avenue	✓✓
	Pedestrian Connectivity	✓✓
	Encourages non-auto trips	✓✓

Kirkpatrick Street is a key connector between the Hill District, Uptown, and South Side, the Hill District. Kirkpatrick Street serves as a major north-south connection from Fifth Avenue to Webster Avenue and up to Ammons Pool and Playground. Kirkpatrick connects to key destinations, including Kennard Playground. This project ranks high priority, as it meets several of the City's mobility goals.

The corridor currently lacks bicycle infrastructure and serves primarily to transport vehicles from the Hill District to Fifth Avenue and the Birmingham Bridge. Sidewalks are present throughout the corridor but have some gaps and deterioration. Proposed recommendations for the corridor are outlined in the section below.

OVERVIEW AND PROJECT NEED

Kirkpatrick Street is a key connector between the Hill District, Uptown, and South Side, the Hill District, and it is identified as a future bicycle connection in the Bike (+) Plan. There are currently few adequate multimodal facilities on Kirkpatrick Street, and the street mainly serves vehicles traveling north and south throughout the neighborhood. Sidewalks are inconsistent throughout the corridor, and crashes are concentrated at the intersections, such as Webster Avenue, Mahon Street, Rose Street, and Reed Street. The planned realignment of Kirkpatrick Street with the Birmingham Bridge at Fifth5th Avenue as part of the BRT project will provide an opportunity to introduce provide a continuous bicycle connection between the Middle Hill District and South Side Flats.

PROJECT DESCRIPTION

The proposed recommendations for the Kirkpatrick Street corridor from Reed Street to 5th Fifth Avenue are shown in **Figure 32.** The proposed cross-sections for each segment of the corridor are shown in **Figure 33**, **Figure 34**, and **Figure 35**. The Kirkpatrick Street Bicycle Connection would introduce dedicated bicycle facilities, enhance the pedestrian experience, and implement traffic calming treatments to improve safety for all users. Detailed recommendations are provided for each corridor segment from north to south.

Figure 32 Proposed Kirkpatrick Street Bicycle Connection

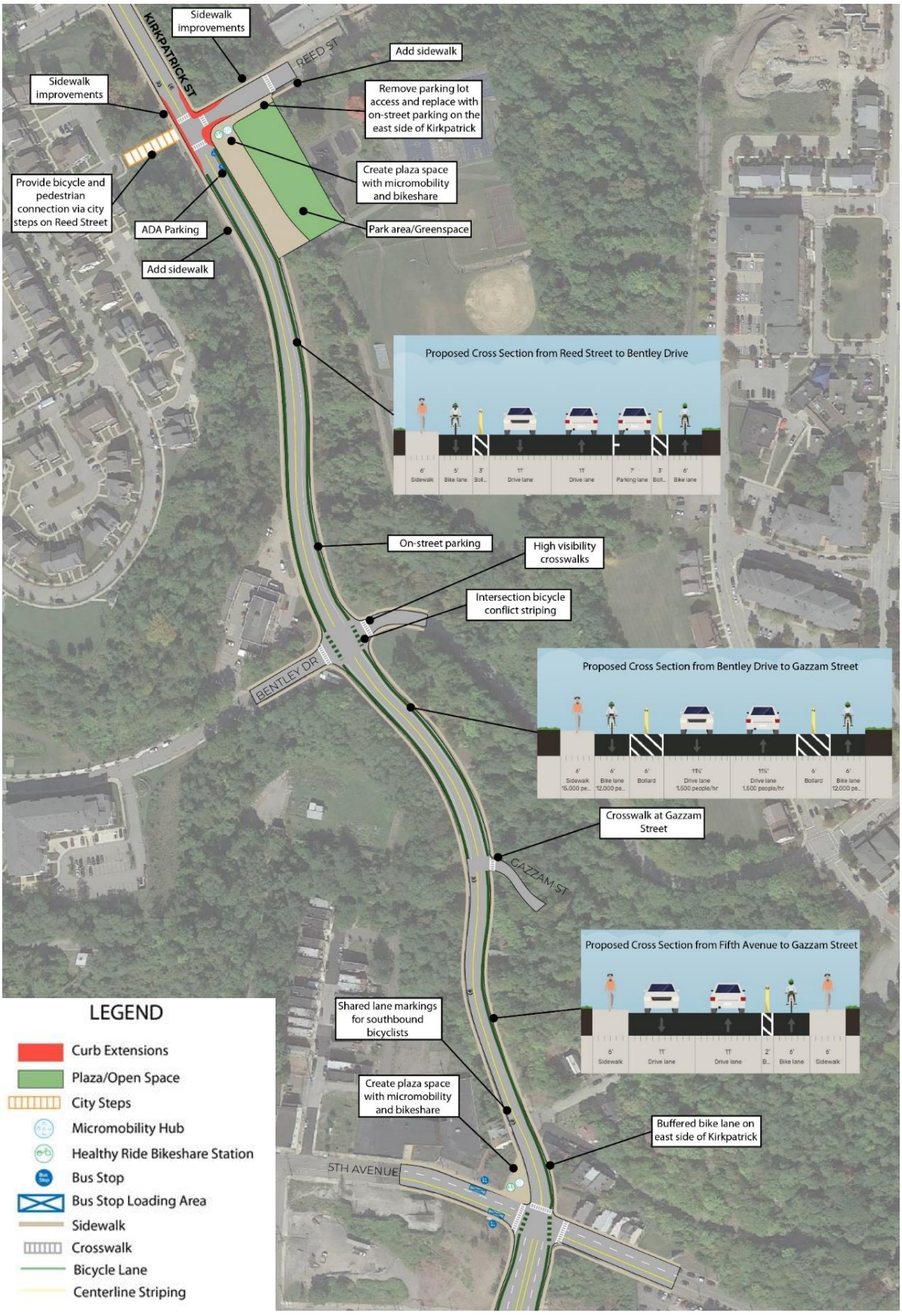
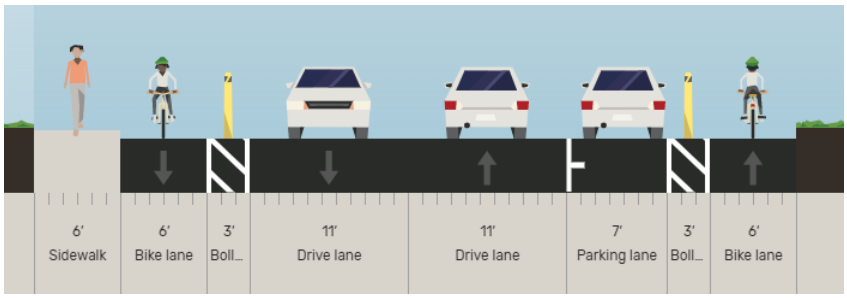
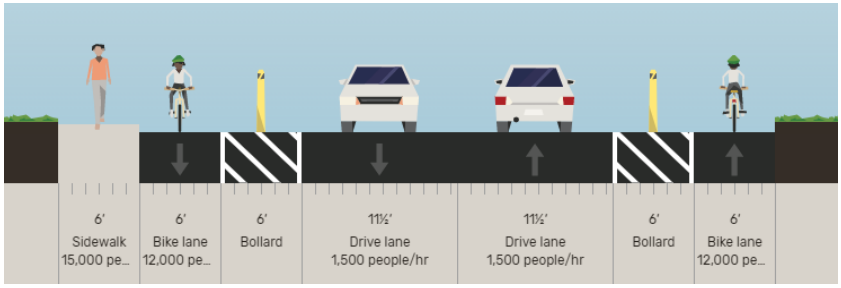


Figure 33 Proposed Cross Section on Kirkpatrick Street from Reed Street to Bentley Drive (Facing North)



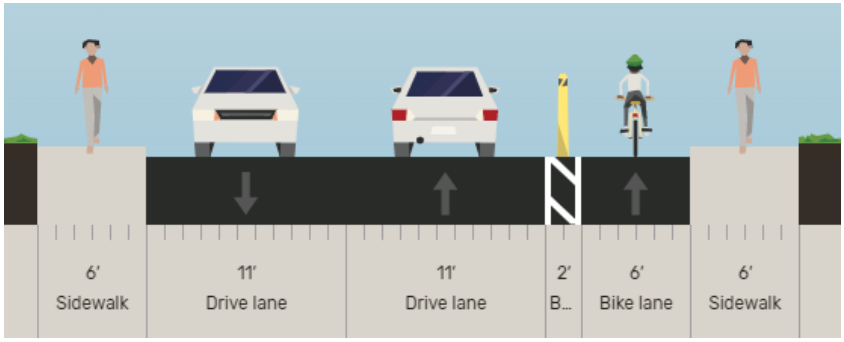
- On-street parking for Kennard Playground,
- ADA parking spaces near Reed Street and Kirkpatrick Street intersection,
- Curb extensions and crosswalk enhancements at Reed Street,
- Buffered bicycle lanes on both sides of Kirkpatrick Street,
- Sidewalks on both sides of Kirkpatrick Street and Reed Street, with connections to the Kennard Playground,
- Plaza space in front of Kennard Playground with micromobility corral and Healthy Ride bikeshare station, and
- City steps to connect to the park from Skyline Terrace via Reed Street.

Figure 34 Proposed Cross Section on Kirkpatrick Street from Bentley Drive to Gazzam Street (Facing North)



- Crosswalk enhancements at Bentley Drive,
- Green conflict paint for bicycle lanes at Bentley Drive,
- Buffered bicycle lanes on both sides of Kirkpatrick Street, and
- Sidewalks on both sides of Kirkpatrick Street.

Figure 35 Proposed Cross Section on Kirkpatrick Street from Gazzam Street to Fifth Avenue (Facing North)



- Crosswalk enhancements at Fifth Avenue,
- Green conflict paint for bicycle lanes at Fifth Avenue,
- Buffered bicycle lane on the east side of Kirkpatrick Street,
- Shared lane markings for southbound bicyclists,
- Sidewalks on both sides of Kirkpatrick Street,

- Realignment of Kirkpatrick Street/Fifth Avenue intersection with direct connection to bike lanes on the Birmingham Bridge, and
- Plaza space with micromobility corral and Healthy Ride bikeshare station at Fifth Avenue.

The recommendations include cost, coordination efforts, right-of-way impacts, and parking impacts, and summarized below.

- **Cost** – $
- **Coordination Effort** – Moderate. The proposed recommendations span approximately 3,000 feet along Kirkpatrick Street. Coordination efforts may be required with stakeholders along the corridor. Coordination will be required with City emergency and fire staff to ensure the proposed bicycle facilities do not interfere with the City's emergency operations.
- **Right-of-Way Impacts** – Low. No surrounding properties will be not impacted. The proposed design utilizes excess street width.
- **Parking Impacts** – Low. The curb extensions on Centre Avenue will prevent vehicles from illegally parking within 20 feet of the intersection. Parking will be added to the east side of Kirkpatrick Street near the Kennard Playground.

6. KENNARD PLAYGROUND ACCESS + SAFETY IMPROVEMENTS (INTERSECTION)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Community-identified concerns	✓
	Enhances transit connectivity	✓
	Connects to key destination	✓
	Pedestrian Connectivity	✓✓
	Encourages non-auto trips	✓✓

The Kennard Playground is bordered in the northwest by Kirkpatrick Street and Reed Street, as shown in **Figure 36**Error! Reference source not found.. The playground and its surface parking lot are on a hill above street level. The intersection currently has crosswalks at two out of three intersection legs. Playground access is provided by the surface parking lot, with an entrance near the intersection of Kirkpatrick Street and Reed Street.

OVERVIEW AND PROJECT NEED

The transportation network near the Kennard Playground lacks adequate bicycle and pedestrian facilities and has excess width that is not being used by vehicles. Additionally, Reed Street does not connect from the higher elevation Skyline Terrace homes west of Kirkpatrick Street. At the Reed/Kirkpatrick intersection, Kirkpatrick Street is wide, crosswalks are slightly skewed, and the playground parking driveway is too close to the southeast corner, creating uncomfortable conditions for walking and biking. Ten crashes were reported near this intersection for crash data collected between 2014 and 2018, and seven resulted in an injury. The section below outlines recommendations that target safety enhancements for all modes

PROJECT DESCRIPTION

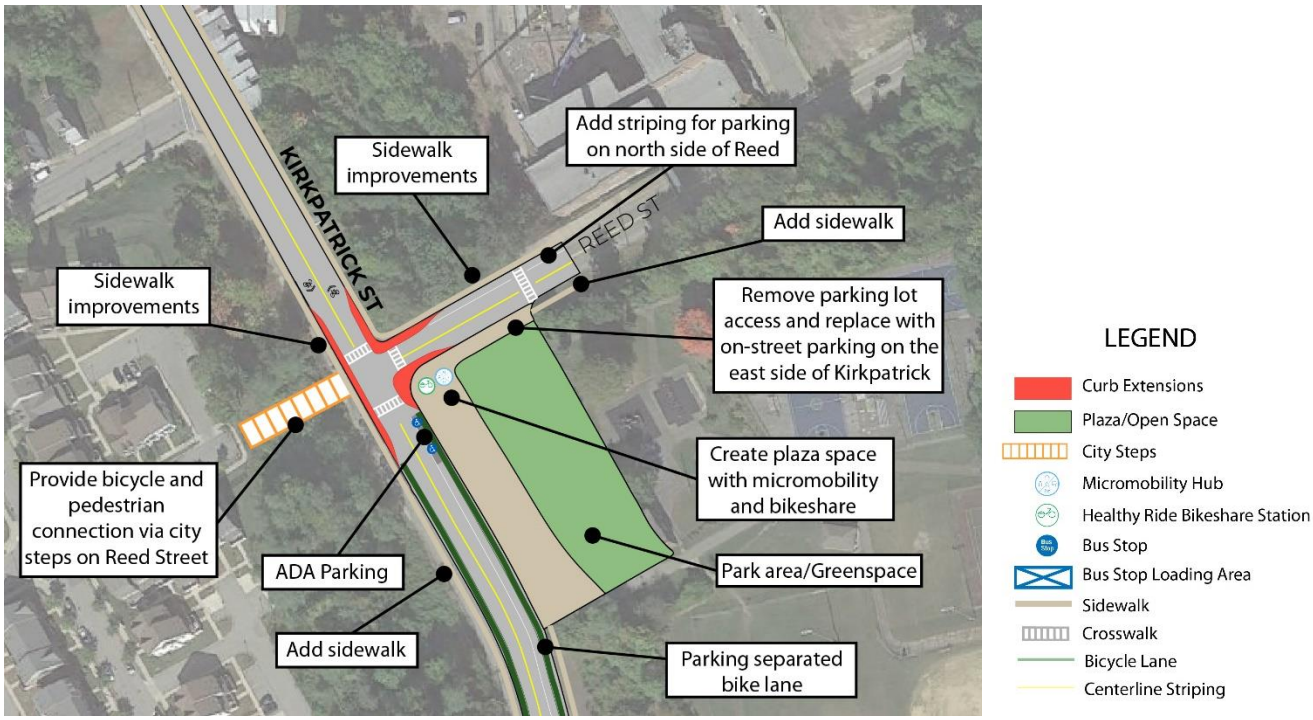
The proposed recommendations for Kirkpatrick Street and Reed Street near Kennard Playground are shown on

Figure 37. The following projects focus on enhancing the safety of the intersection for all users through traffic calming and pedestrian enhancements:

- 6A: Kirkpatrick Street Pedestrian Connection (Low/Longer Term Priority)
- 6B: Kirkpatrick Street and Reed Street Intersection Improvements (Low/Longer Term Priority)

Figure 36: Existing Configuration at Kirkpatrick Street and Reed Street

Figure 37 Kennard Playground Access and Safety Improvements



The recommendations include cost, coordination efforts, right-of-way impacts, and parking impacts, and summarized below.

- **Cost** – $$$$

- **Coordination Effort** – High. Coordination will be required to add city steps to connect Reed Street west and east of Kirkpatrick Street. Additional coordination with other city departments may be required to remove the vehicular entrance and parking lot to the Kennard Playground.
- **Right-of-Way Impacts** – Medium. ROW will need to be acquired for the City Steps connection.
- **Parking Impacts** – Moderate. The recommendation proposes removing the surface level playground parking lot and adding on-street parking along the east side of Kirkpatrick Street and on the north side of Reed Street. The total net parking will remain unchanged.

6A. Kirkpatrick Street Pedestrian Connection (Corridor)

Project Goal	Goal Indicators	Goal Achievement
	Community-identified concerns	✓
	Connects to key destination	✓
	Pedestrian Connectivity	✓✓
	Encourages non-auto trips	✓✓

Kirkpatrick Street connects to various key destinations, including the Kennard Playground, Terrace Village, Skyline Terrace, and Warren K Branch Park. There is a missing connection along Reed Street, west of Kirkpatrick Street. Due to the challenging topography, there is no connection for people biking or walking, as shown in **Figure 38**. This project recommends a new pedestrian connection on Reed Street from Elmore Street to Kirkpatrick Street.

OVERVIEW AND PROJECT NEED

The connectivity along Reed Street is disjointed due to challenging topography west of Kirkpatrick Street. This project is recommended to enhance pedestrian and bicycle connectivity and access in the Hill District. Kirkpatrick serves as a major north-south connector, and possible future bus service along Kirkpatrick Street will increase desired access. This project explores options for pedestrian and bicycle connections on Reed Street, west of Kirkpatrick Street.

PROJECT DESCRIPTION

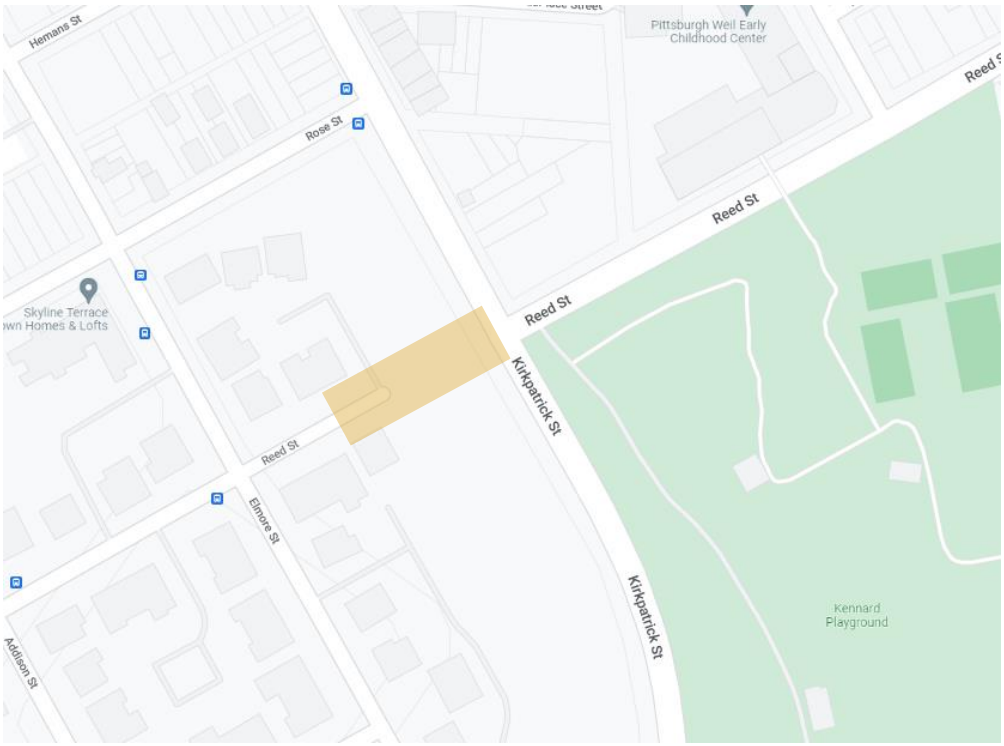
This recommended corridor project proposes a constructed connection along Reed Street, from Elmore Street to Kirkpatrick Street. Due to challenging slopes, City Steps should be considered at this location. The following improvements are proposed:

- Providing a direct pedestrian connection between the Kennard Playground, Reed Street, and Skyline Terrace and
- Consider constructing new city steps with bicycle runnel to accommodate people walking and biking.

The following summarizes the impacts of the proposed traffic calming recommendations, including cost, coordination efforts, ROW impacts, and parking impacts:

- **Cost** – $$$$
- **Coordination Effort** –High. Coordination will be required to add city steps to connect Reed Street west and east of Kirkpatrick Street.
- **Right-of-Way Impacts** – Moderate. The pedestrian connection will likely utilize existing right-of-way but may require additional land to ensure ADA accessibility.
- **Parking Impacts** – None. This project does not impact parking.

Figure 38 Missing Connection on Reed Street from Elmore Street to Kirkpatrick Street



6B. Kirkpatrick Street and Reed Street Intersection Improvements (Intersection)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓
	Enhances transit connectivity	✓
	Connects to key destination	✓
	Pedestrian Connectivity	✓
	Increases residential parking availability and accessibility	✓✓
	Encourages non-auto trips	✓✓

The intersection of Kirkpatrick Street and Reed Street at the Kennard Playground currently lacks adequate pedestrian infrastructure. The intersection is missing a crosswalk on the south leg and has deteriorating sidewalks. Given the proximity to the Kennard Playground, pedestrian and bicycle safety is critical. This project proposes recommendations to improve the safety and accessibility of all users.

OVERVIEW AND PROJECT NEED

As aforementioned, Kirkpatrick Street serves as a north-south connector in the Hill District, connecting to two major east-west connectors, Centre Avenue and Forbes Avenue. Kirkpatrick Street connects to several key destinations, including Kennard Playground, Warren K. Branch Park, and several residential areas, including Oak Hill Apartments and Skyline Terrace. Kirkpatrick Street has deteriorating sidewalks, missing crosswalks, and a lack of bicycle infrastructure. The intersection of Kirkpatrick Street and Reed Street is wide and uncomfortable for people walking and biking. This project focus on intersection improvements at this location.

PROJECT DESCRIPTION

This recommended intersection project proposes traffic calming treatments detailed in **Appendix B,** including curb extensions and high visibility crosswalks. Additionally, the improvements are proposed at the intersection of Kirkpatrick Street and Reed Street to supplement the recommended Kirkpatrick Street corridor projects:

- Enhanced pedestrian crossings with high visibility crosswalks and curb extensions at Reed Street and Kirkpatrick Street,
- Provide sidewalks on both sides of Kirkpatrick Street (from Centre Avenue to Fifth Avenue) and Reed Street (from Kirkpatrick Street to Centre Avenue), with connections to the Kennard Playground,
- Reuse the surface parking lot as park space and provide on-street parking on Reed Street and Kirkpatrick Street; shift the Reed Street centerline to accommodate on-street parking, and
- Remove the park entrance and existing parking lot driveway as a multimodal plaza space with micromobility corral and Healthy Ride bikeshare station.

The recommendations include cost, coordination efforts, right-of-way impacts, and parking impacts, and summarized below.

- **Cost** – $$$
- **Coordination Effort** – High. Coordination with other city departments may be required to remove the entrance and parking lot to the Kennard Playground.
- **Right-of-Way Impacts** – None. The recommendation will utilize the existing right of way.
- **Parking Impacts** – Moderate. The recommendation proposes removing the surface level playground parking lot and adding on-street parking along the east side of Kirkpatrick Street and on the north side of Reed Street.

7. WYLIE AVENUE NEIGHBORWAY (CORRIDOR)

Project Goal	Goal Indicators	Goal Achievement
	Targets crash locations	✓✓
	Enhances bicycle connectivity	✓✓
	Enhances transit connectivity	✓
	Connects to key destination	✓
	Pedestrian Connectivity	✓✓
	Increases residential parking availability and accessibility	✓
	Encourages non-auto trips	✓✓

Neighborways are low-traffic streets that prioritize pedestrians and bicyclists. These streets, typically traveling through residential areas, serve as a more comfortable, safer travel route than busy arterial streets. A combination of these streets may receive context-appropriate treatment, including wayfinding signage and shared lane markings, curb extensions, neighborhood traffic circles, speed humps, and solutions to fill critical pedestrian, bicycle, or accessibility gaps. To be considered for a neighborway treatment, streets must have two traffic lanes or fewer, a 25 mph or lower speed limit, fewer than 3,000 vehicles per day, and be owned by the City.Error! Reference source not found.

OVERVIEW AND PROJECT NEED

Wylie Avenue is a key east-west corridor and satisfies the City's requirements for neighborway treatments. Wylie Avenue provides a parallel route to Centre Avenue for people who want to walk or bike between the Lower and Upper Hill. There is a moderate concentration of crashes along Wylie Avenue, primarily at intersections. The proposed neighborway will calm traffic and connect to the proposed Hill District Bicycle Connection on Herron Avenue. The proposed neighborway also aligns with the Bike (+) Master Plan identified the need for an east-west connection through the Hill District.

PROJECT DESCRIPTION

The proposed neighborway on Wylie Avenue extends from Crawford Street to Herron Avenue. The neighborway will include a variety of treatments aimed at reducing vehicular speeds and creating a more comfortable street for people to walk and bike. Potential improvements may include:

- Wayfinding Signage
- Share-Lane Markings
- Curb Extensions/Bump Outs
- Neighborhood Traffic Circles
- Speed Humps

The recommendations include cost, coordination efforts, right-of-way impacts, and parking impacts, and summarized below.

- **Cost** – $
- **Coordination Effort** – Moderate. Coordination between the City and relevant stakeholders will be needed to identify the appropriate neighborway treatments along the corridor.
- **Right-of-Way Impacts** – Low. Neighborway treatments will use the existing curb to curb space.
- **Parking Impacts** – Low. Parking may be formalized with striping and signage at select locations to accommodate proposed neighborway treatments.

Strategies to Balance Parking Availability and Demand

The project team reviewed and evaluated parking best practices in other major U.S. cities. The review looked into programs that focused on increasing transportation options, such as biking, walking, and transit. Relevant and valuable findings from parking programs in other cities were used to inform the development of parking strategies for the Hill District. A summary of this review is available in **Appendix C.**

Transportation Demand Management (TDM) is a critical component of parking management. TDM strategies involve increasing available transportation options and reducing the reliance on people driving alone – also known as "single-occupancy vehicles (SOV)." TDM strategies will help the Hill District identify opportunities to balance the demand for parking throughout the neighborhood and encourage non-SOV commute trips.

This plan is focused on two major objectives for increasing transportation options and managing parking, including:

- Increasing parking availability
    - Balancing parking supply and demand through development activities
    - Increasing access to Centre Avenue through curbside management
    - Modifying residential parking
- Reducing single-occupancy vehicle trips
    - Establishing a Transportation Demand Management (TDM) program

INCREASE PARKING AVAILABILITY

The neighborhood is interested in identifying parking strategies that increase parking availability throughout the neighborhood and encourage a more efficient use of existing parking resources. These strategies comprise three basic elements, described in more detail in the following sections.

Increasing the parking availability in the Hill District will include three primary objectives, including:

- Balancing the neighborhood parking supply and demand through development activities,
- Increasing access to Centre Avenue through curbside management, and
- Modifying residential parking.

12A. Balance Parking Supply and Demand

Redevelopment activity in the Hill District and surrounding neighborhoods provides an opportunity to improve active transportation infrastructure, filling a gap where current funding for bicycle/pedestrian projects is challenging to acquire. As identified in the review of the existing parking supply, the Hill District has a mix of parking facilities throughout the neighborhood. However, as new development occurs and the demand for parking changes, it will be critical for the City to work with developers to balance the parking supply with demand. Working with developers through the Community Benefits Agreement (CBA) process can help identify mutually beneficial options for the development potential and provide benefits to the neighborhood.

There are two key strategies for balancing parking supply and demand, including:

- Reducing parking demand and
- Increasing parking availability or supply.

Transportation Demand Management (TDM) strategies may reduce the demand for parking throughout the neighborhood. It is important to emphasize that active transportation infrastructure serves both existing and future Hill District residents. Concerns surrounding gentrification can often become linked to revitalized streetscapes. It is essential to reinforce to existing residents that development intends not to displace but to nurture and grow the existing community. Recommendations focus on improving access to transit, especially for the neighborhood's aging population, as the hilly terrain poses an additional challenge. Development and redesigned streets are for all

users, and TDM strategies can support equitable redevelopment by keeping transportation costs for existing residents low. Current community partners and residents have laid the groundwork for this messaging, and that message should remain at the core of implementing TDM efforts. TDM strategies will be explored in more detail under project 14. Reduce Single Occupancy Vehicle Trips.

The second strategy, increasing parking availability, uses a variety of strategies to increase the likelihood of users being able to find an open parking space. One such strategy is to increase the physical amount of parking in the Hill District. This strategy, however, is resource-intensive and makes it more challenging for neighborhood-oriented and locally-owned businesses to operate within the community due to the high capital and opportunity costs associated with building additional parking supply. Further, additional parking supply, particularly surface parking lots, will decrease opportunities to provide affordable housing or redevelop vacant or underutilized properties while diminishing the area's walkability and local residents' access to work, retail and social amenities within their community. As described in the existing parking inventory and parking occupancy data collected, approximately 2/3 of the parking supply within the Hill District in the area near the Lower Hill redevelopment and within a few blocks of Centre Avenue are available at any given time of the day. By strategically taking advantage of the existing available parking supply within the Hill District, along with the use of additional parking strategies to better utilize existing parking within the neighborhood, the Hill District will be able to increase the area's parking availability while not sacrificing future economic development opportunities at the expense of constructing additional parking.

The first step in understanding the need for parking is to analyze current and future parking demand. The review of existing parking conditions revealed many underutilized parking areas within the neighborhood. After analyzing current and future parking demands, shared parking initiatives, which allow different users to utilize the same parking space at different times of day or days of the week, may be explored to increase parking supply and better utilize existing parking facilities. Shared parking encourages flexible use of existing parking spaces and ensures a more efficient use of existing facilities without constructing new parking structures and facilities. For instance, a parking facility could accommodate office workers during the daytime and residents overnight. The use of shared parking initiatives has the ability to cut future parking needs in half compared to parking supply needs if each parking space only allows for one user type. A future Hill District Transportation Impact Study (TIS) should identify shared-parking initiatives, and future parking supply needs should be identified in a future Hill District Transportation Impact Study (TIS).

12B. Increase Access to Centre Avenue through Curbside Management

Improving parking in the Hill District will require enhanced access to key destinations within the neighborhood. Centre Avenue is a key corridor in the neighborhood with a high demand for parking. Several curbside management strategies may be utilized to increase parking availability along Centre Avenue and other key commercial areas and destinations in the neighborhood, including:

- Reallocating curb space from on-street parking to more productive uses, such as:
    - Pick-up/drop-off and delivery zones,
    - Micromobility corrals, and
    - Bicycle parking
- Considering parking price changes and time limit adjustments to incentivize shorter parking durations and increase parking turnover in high-demand areas, and
- Identifying short-term parking opportunities on or near Centre Avenue, including temporary parking spaces on parcels slated for redevelopment.

Table 3 summarizes various curbside uses and provides an example of how the estimated effective capacity and societal value, calculated by person per trip, changes from different types of curb uses. The table shows that curbside transit service provides a high societal value by servicing an estimated four persons per trip. Alternatively, on-street parking provides a societal value of just 1.5 persons per trip and has an effective capacity of less than one parked car per hour. Non-transportation uses, such as parklets and streateries, have the potential to provide the highest societal value of 160 persons per day.

Table 3 Curbside Uses by Effective Capacity and Societal Value

Use	Effective Capacity	Societal Value
Ride-hailing Service	**18.91 PUDOs/ hour** *(3 minutes, 10 seconds per pick-* *[illegible]*	1.24 persons/ trip
Commercial Loading	**0.83 deliveries/ hour** *(50 minutes per delivery)*	1 person/ trip
Transit Service	**25 stops/hour** *(2 minutes, 24 seconds per stop)*	4 persons/ trip
Micromobility	**200 trips/day**	1 person/trip
On-Street Parking	**0.73 parked cars/ hour** *(43 minutes, 48 seconds per stay)*	1.5 persons/ trip
Non-Transportation Uses (Parklets and Streateries)	N/A	160 persons/ day

Adjusting curbside uses and regulations provides opportunities to increase access to commercial uses on Centre Avenue and better manage the curbside to increase parking availability and more effectively use the curb space. Additional strategies include:

- Provide metered on-street parking along all current and future commercial corridors, particularly Centre Avenue, and provide RPP zones on side streets to minimize spillover parking on residential streets.
- Adjust the cost to park on metered streets to match demand by time of day and day of the week to keep approximately one parking space available on each block face. The cost should be reevaluated every three to six months to match changes in demand. If price changes alone do not result in changes in demand, time limit changes can be considered.
- Establish special event/game day prices for metered on-street parking spaces in the area during special events/games at a cost equivalent to parking in a private lot for the event.
- As properties redevelop or streetscape efforts are underway, review existing driveways and curb cuts for the potential to close or consolidate access points. This would provide more usable curbside space for on-street parking and other curbside uses while reducing potential conflict points.
- As part of streetscaping efforts, provide greater clarity through the design of curbside spaces. Install "parking boxes" (marked locations where curbside parking is allowed) and new signs, along with curb extensions to reduce pedestrian crossing distances and provide greater visibility of people crossing the street.

12C. Modify Residential Parking

Modifying and expanding the RPP program in the Hill District can help reduce the agony of finding a parking space in the neighborhood by increasing parking availability and minimizing parking and mobility impacts associated with new development in the community. The RPP strategies discussed below focus on reducing the number of non-residents using RPP areas rather than building more parking. The strategies are outlined below:

- RPP Expansion and Adjustments
    - Expanding RPP near future development areas, such as the Lower Hill Redevelopment, while limiting the size of individual RPP zones,
    - Adjust time-of-day restrictions,
    - Implement paid visitor parking,
    - Provide additional pass options,
- Establishing a Parking Enhancement District (PED),
- Using revenue to enhance streetscapes to improve walkability and provide greater clarity to restricted and permitted parking areas through the design of residential curbside spaces.

RPP EXPANSION AND ADJUSTMENTS

The neighborhood's RPP program should be evaluated and adjusted to manage parking in the Hill District better. Several strategies may be utilized, including expanding the program and adjusting program payment, user requirements, and limitations, summarized below:

- Consider expanding or adding new RPP meters in the area, particularly adjacent to future development (Lower Hill redevelopment zone) or along commercial corridors like Centre Avenue.
- As individual RPP zones get bigger, consider splitting RPP zones into the smallest size possible administratively to minimize the potential for people to commute while staying within a single RPP zone.
- Adjust the current RPP time-of-day restrictions from 7 a.m. to 7 p.m. to include evening and overnight time periods. This would help address demand from special events that occur in the evening or late at night.
- Adjust the current RPP day of week restrictions from Monday through Saturday to include Sunday. This would help address demand from special events that occur on Sundays.
- Provide additional accessible parking spaces on residential streets that allow RPP permit holders with disability placards/plates to use the spaces. This would help ensure that spaces are available for those who most need on-street parking spaces. This requires dedicated enforcement to ensure compliance.
- Provide additional rideshare spaces on residential streets. This would provide more shared vehicles in the area and potentially reduce the number of residents who feel they have to own a car parked on the street. The City currently has a limited number of rideshare spaces on residential streets.
- Eliminate visitor passes and provide paid on-street parking in the entire area with RPP permit holders exempt from payment or time limit restrictions on residential streets. Instead of installing on-street meters, mobile phone payments could be provided (PGH Mobile app).
- In conjunction with reducing or eliminating the availability of visitor permits, provide additional pass options, including contractor passes, healthcare permits, childcare permits, educational permits, or special event permits. This would need to be coupled with increased enforcement to be effective, which could be funded through additional revenue from the PED.
- Provide an incentive to residents who choose not to get a parking permit. This could include a reduced-cost transit pass or a free month of Healthy Ride membership. This would likely need to be administered through an outside organization to minimize the burden on TDM staff.

For all potential RPP strategies outlined above, coordination with the Pittsburgh Parking Authority would be critical to increase parking enforcement throughout the area.

PARKING ENHANCEMENT DISTRICT (PED)

If the RPP expansion and adjustments outlined above do not provide sufficient parking availability, or if parking demands in the area significantly increase due to redevelopment, a PED should be established in the Hill District as a long-term plan. The prerequisites for eligibility for a parking zone to be eligible for a PED could include revenue requirements from on-street metered parking spaces, an RPP zone established on a determined percentage of the street segments that intersect with streets with metered parking spaces, sponsorship by an outside organization that provides services with the parking zone, a co-signature by the member of the City Council who represents any street segments in the proposed PED, etc.

The establishment and operations of the PED could be done in conjunction with the Hill District TDM Program discussed in the next section. As part of the curbside analysis study discussed in the previous strategy, a review of the impacts of establishing a parking district should be explored, along with the following elements:

- Consider areas with high parking demands that may warrant a parking district,
- Identify potential benefits and impacts of a parking district,
- Define the possible goals of the parking district,
- Complete an initial assessment of the need for a parking district, and
- Identify the sponsoring agency for administering the parking district and look for opportunities to re-invest any net revenues to enhance streetscapes and improve walkability in the PED area,
- Work with the Pittsburgh Parking Authority to increase enforcement of the area or review the feasibility of using PED revenue to fund a dedicated Parking Enforcement Officer in the Hill District.

Further, limiting the construction of new parking spaces in conjunction with new developments and instead requiring in lieu contributions equivalent to the cost of the parking that would have been built has the potential to streamline development activity while minimizing the construction of unnecessary parking. These contributions could then be used to construct either public shared parking facilities or provide other services or capital projects that reduce the demand for parking, such as the recommendations listed in the Corridor and Intersection Improvements section.

REDUCE DEMAND FOR SINGLE OCCUPANCY VEHICLE TRIPS

As bicycle and pedestrian infrastructure projects take place and active transportation becomes a more viable option for a wider variety of people, the city should explore opportunities to reduce SOV trips throughout the neighborhood. The city should start with educational outreach to provide information, encouragement, and incentives to help people learn more about transportation options. Additionally, it will be necessary for the city to understand how and why people make transportation decisions. Through education and outreach, the city can then develop strategies and opportunities to balance the demand for parking throughout the neighborhood and encourage non-SOV commute trips.

Figure 39 Recommendations for Reducing SOV Trips

	 Car	 Transit	 Walking, Biking, and E-Scooters
Travel Modes & Connectivity	- Single Occupancy Vehicles - Rideshare (Carpool, vanpool) - Carshare (Zipcar) - Taxi & Ridehail App (Uber, Lyft) - Parking & Curbside	- PAAC Buses - University Shuttles	- Walking - Biking - HealthyRide Bikeshare - E-Scooters - City Steps
Goals	- Reduce single occupancy car trips - Increase parking availability	- Increase transit ridership	- Increase rates of walking and biking
Recommendations	- Balance parking supply and demand through regulations, pricing, and increasing available parking - Increase access to Centre Avenue by reallocating curb space to more productive uses - Modify and potentially expand RPP program - Establish a TDM program to incentivize non-single occupancy car trips	- Increase bus service, including on Dinwiddie Street - Increase bus frequency - Establish a TDM program to incentivize transit usage	- Install spot safety treatments at key locations to make walking more comfortables - Restore critical City Steps, and identify opportunities for new connections - Improve crosswalks at key intersections - Improve bicycle connections - Establish a TDM program to incentivize walking and biking

Establish a Hill District TDM Program with a Neighborhood TDM Coordinator

Increasing available transportation options through TDM strategies are typically focused on reducing SOV trips, particularly during peak travel times, and encouraging alternate modes, such as transit, bicycling, and walking. Nationally, TDM strategies have developed at the regional, citywide, and site levels, with different techniques available depending on the scale of the TDM initiative. Throughout Pittsburgh, DOMI has been advancing TDM through various efforts at the City and site levels. Successful TDM measures are driven by consideration of the transportation infrastructure, land uses, and transportation users at both the citywide and site levels. By utilizing the

context of the Hill District described in the Existing Conditions Overview of this report, Hill District-specific considerations were made to develop a series of TDM strategies unique to the Hill District. These TDM strategies will help the Hill District identify opportunities to balance the demand for parking throughout the neighborhood and encourage non-single occupancy vehicle commute trips.

Establishing a Hill District TDM Program with a neighborhood TDM coordinator is the first step in implementing TDM strategies in the Hill District. Before hiring a TDM coordinator, the TDM governance structure will need to be established to administer program costs, including the TDM coordinator position and how various entities (the City, developers, institutions, etc.) will bear and share these costs. Ideally, a potential governance or buy-in structure would jointly fund the Neighborhood TDM Coordinator and other activities. The Hill District TDM Coordinator would be hired by a local Hill District organization or institution; this would also position the individual to be impartial, as they would bridge the gap between entities and accommodate the interests of multiple parties.

After establishing the Hill District TDM Program with an agreed-upon governance structure, a TDM coordinator will provide a singular point of contact that serves all neighborhood stakeholders and manages neighborhood access holistically to facilitate the implementation of TDM strategies. This includes working with developers to identify opportunities for implementing TDM strategies as part of new development, coordinating with existing (Pitt) and future shuttle service providers, prioritizing and preserving neighborhood parking during special events, and developing marketing programs that inform people of new and different opportunities. The coordinator would also oversee the evaluation of TDM strategies and work with the neighborhood to modify existing strategies or try new approaches to managing transportation demand in the Hill District.

TDM governance structures include enforcement mechanisms like:

- Requiring payment of a Multimodal Incentive Fee to support TDM activities
- Establishing mode split goals, requiring monitoring, and charging developers penalties for noncompliance.
- Conducting site checks to confirm physical elements of the TDM plan are provided before occupancy approvals are granted.

The enforcement mechanism to require payment of a Multimodal Incentive Fee (described in more detail in **Appendix C**) could significantly benefit the Hill District. Another revenue stream, like establishing a Parking Enhancement District (PED), discussed in the following section, might present another revenue stream to fund TDM activities.

Long-term next steps to further develop the governance structure for the TDM program includes consideration of the details for governance and coordination with stakeholders to ensure there is a mutual understanding of expectations for the neighborhood. Elements to consider include:

- **Who should pay?** This should include considerations for existing neighborhood stakeholders and future developers. Depending on the size and land uses proposed for some developments, it may not be realistic to expect all development projects to contribute equally.
- **How much should be paid?** Setting clear and equitable expectations with stakeholders is important to fund TDM. This information is recommended as a starting point for determining cost structures with stakeholders.
- **Who should employ the TDM coordinator?** In addition to implementing TDM over time, immediately hiring a TDM coordinator could help determine these governance questions. This has the added benefit for the coordinator to understand the origins and goals for the program governance structure.
- **What structures does the City need to require TDM and accept payments?** Peer cities that successfully enforce TDM have cost-sharing requirements built into their approvals and permitting processes. Additionally, legal and regulatory mechanisms for managing a potentially new revenue stream must be established as part of the governance structure.
- **What type of City or State agreement structures/policy statutes exist or are needed?** Some of the existing regulatory structures may already be adequate for some TDM measures. For example, bike parking for new developments in Pittsburgh is currently required by code. There may need to be additional structures or statutes for other measures, like unbundling parking, which involves renting parking spaces separately from residential units. Apartments and other residential properties may 'bundle' parking fees with rent, disincentivizing non-vehicle transportation.

It is also important to involve stakeholders in discussions around the TDM program details. This ensures there is a mutual understanding from stakeholders, including:

- Neighborhood institutions
- City of Pittsburgh
- PAAC
- Residents and neighborhood groups
- Economic development corporations
- Community and development organizations (501c3s)
- Developers

This position aims to coordinate activities for the neighborhood and implement the recommendations outlined in this section. The success of TDM implementation for the neighborhood hinges on having leadership and staff capacity to oversee the following activities:

- Coordinate with neighborhood residents to understand their travel needs;
- Work to coordinate ongoing funding and economic investment from developers and institutions in Uptown to establish the ongoing funding and coordination for a TDM coordinator position;
- Review development plans and collaborate with developers to ensure projects serve the interests of residents. Working with developers, establish a mutually agreeable level of investment in transportation improvements (provision of Transit Screens, reimbursement for transit passes, etc.);
- Coordinate and collaborate with the PAAC on promoting the use of transit; and
- Establish and maintain a monitoring program, including reporting.

The Hill District has relatively low employment throughout most of the neighborhood, but major attractors, including Pitt and PPG, drive parking demand. Initiating partnerships in the neighborhood could be an effective TDM strategy and one of the first initiatives undertaken by the TMD coordinator. The following TDM strategies may be used to form partnerships to encourage alternative modes of commuting to work:

- Encourage employers to offer commute benefits for non-single occupancy vehicle commutes. Provide transit subsidies.
- Organize carpool/vanpool systems.
- Establish clear pick-up and drop-off areas.
- Incentivize teleworking and flex hours when possible.
- Limit the construction of new parking facilities and identify opportunities for shared parking strategies.
- Increase the cost of parking for single occupancy drivers.
- Offer parking permit buy-back programs for individuals interested in changing their primary commute mode.
- Consider offering fare-free transit for employees.
- Establish commute patterns early on and encourage new employees to explore non-auto transportation options. Provide information and materials in a welcome packet.
- Offer carsharing memberships and create designated parking spaces for carsharing vehicles (Zipcar).
- Regularly send educational information to employees and students, discussing the importance of reducing one's dependence on automobiles (environmental benefits, economic savings, etc.).
- Utilize signage, maps, and wayfinding for transit stops and routes.

Additional options for developer provided TDM initiatives include:

- Mobility Hubs and Healthy Ride stations
- Safe and reliable bicycle and storage areas
- Bike lockers may be added at major transit stations or major institutions
- Improved bus stop amenities
- More comfortable and ADA accessible sidewalks, including fewer gaps and deteriorated areas,
- Including wayfinding to help people biking and walking navigate throughout the neighborhood
- Completing gaps in the walking and biking networks

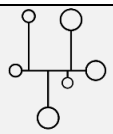
- Identified delivery and ride-hail pick-up/drop-off zones

IMPLEMENTATION

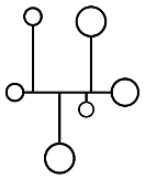
After determining the proposed recommendations and projects for the Hill District, the project team developed an implementation plan that includes a prioritization process and evaluation criteria. The team worked with the City to identify key criterion for evaluating and prioritizing each of the recommendations outlined in this report. The following prioritization process and evaluation criteria incorporate the City's overall goals for safety and mobility, feedback from the community, available funding, coordination efforts, and estimated timelines.

Evaluation Criteria

The project team determined several evaluation criteria to measure how well each of the proposed projects and recommendations aligns with the Plan's three goals:

	**Safety and Connectivity**	Improve safety and connectivity of transportation networks to the City and within the Hill District.
	**Walkability and Accessibility**	New infrastructure should promote walkability, street accessibility for people with mobility challenges, and access to work, retail, and social amenities.
	**Parking and Transportation Strategy**	Create a well-planned parking and transportation strategy that supports new development while minimizing negative impacts on residents.

Each of the three goals includes several criteria to determine how well each proposed recommendation or project meets the overall goal. The evaluation criteria were quantified using a three-tiered scale, with an empty circle ○, indicating that a project "Did not meet the criteria," a partially filled circle, ◐, indicating that a project "Partially met the criteria," and a filled-in circle, ●, indicating that a project, "Fully met the criteria." The detailed criteria for each of the City's three goals are summarized below. The detailed evaluation matrix is summarized in the next section and displays the total evaluation scores for each proposed recommendation and project.



SAFETY AND CONNECTIVITY

The City is focused on developing a safe and connected network of transportation facilities that serves the needs of all users. This goal focuses on safe access for all modes to, from, and throughout the Hill District. This goal includes four main metrics, including:

- **Targets crash location** (Project proposes proven safety countermeasures within 200 feet of where a crash took place),
- **Community-identified concerns** (Project location was identified as a safety concern through public input or previous planning efforts),
- **Enhances bicycle connectivity** (Project provides a new bicycle connection), and
- **Enhances transit connectivity** (Project is within 500 feet of an existing or proposed bus stop).

WALKABILITY AND ACCESSIBILITY

Walkability is an important component of any municipality. Walking constitutes some portion of each trip an individual takes. Whether walking to or from a bus stop or a parked car, everyone spends a portion of their trip traveling by foot. The City is focused on creating safe, accessible, and connected facilities for people walking to, from, and throughout the neighborhood. This goal focuses on promoting and encouraging walkability and pedestrian access throughout the Hill District. This goal includes three main metrics, including:

- **Connects to key destinations** (Project is within 1/8 mi of a key destination (e.g., park, school),
- **Connects to Centre Avenue** (Project increases access to/across Centre Avenue), and
- **Enhances pedestrian connectivity** (Project fills an existing missing pedestrian connection (e.g. (lack of sidewalks/city steps, poor sidewalk/step condition).

The evaluation for each of these three metrics involved a geographic review of key destinations in the neighborhood, including schools, places of worship, parks, public facilities, and recreational facilities. The proposed recommendations and projects located within 1/8 miles of these key destinations met the criteria for, 'Connects to key destinations." Additionally, an assessment of the sidewalk conditions throughout the neighborhood informed the pedestrian connectivity criteria and connectivity to Centre Avenue. Recommendations and projects that proposed improving sidewalk conditions or filling gaps in the existing sidewalk network met these criteria and scored high in the evaluation matrix.

PARKING AND TRANSPORTATION STRATEGY

As the neighborhood grows and new development takes place, the Hill District's transportation network should grow to accommodate the needs of residents and visitors. While bicycle and pedestrian facilities are important, parking remains an essential piece of the neighborhood's transportation network. This goal focuses on creating an efficient and integrated parking and transportation strategy. This goal includes three main metrics, including:

- **Diversifies curbside uses on Centre Avenue** (Mix of curbside types provided that promotes safe operation of the street),
- **Increases residential parking availability and accessibility** (Creates safer and more efficient parking), and
- **Encourages non-auto trips** (Provides access to pedestrian, bicycle, transit, or micromobility options).

The criteria listed above aim to evaluate how well each proposed recommendation meets or exceeds the current and future neighborhood parking demands. The criteria listed above also consider and prioritize projects that promote alternative modes of transportation by providing access to non-automobile transportation facilities.

The following section summarizes the results from the project evaluation. The total scores for each proposed corridor and intersection project will be used to determine priorities for implementation.

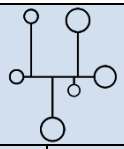
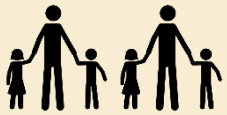
Project Ranking

The evaluation criteria were used to assess, rank, and prioritize the twelve corridor and intersection projects. **Table 4** provides a detailed review of scoring for each project, organized by the three Plan goals. Large-scale projects are broken down into smaller sub-projects, as shown for Centre Avenue and Chauncey Street. For example, the Centre Avenue Streetscape is Project ID 1, and there are five subsequent sub-projects related to the overall Centre Avenue Streetscape recommendations. The table shows priority levels for each project based on the total scoring for each evaluation metric. Priority levels include high, medium, and low priority.

Table 4 Project Evaluation Matrix

ID. Project Name (Type)											Priority Level
	Targets crash locations	**Community-identified concerns**	**Enhances bicycle connectivity**	**Enhances transit connectivity**	**Connects to key destination**	**Connects to Centre Avenue**	**Enhances pedestrian connectivity**	**Diversify curbside uses on Centre Avenue**	**Increases residential parking availability and accessibility**	**Encourages non-auto trips**	
1. Centre Avenue Streetscape	●	●	○	●	●	●	●	●	●	●	High
1A. General traffic calming	●	◐	○	●	●	●	●	○	●	●	High
1B. Install Parking Meters	●	○	○	●	●	●	○	◐	●	○	Medium
1C. Centre Avenue & Dinwiddie Street Reconstruction	◐	●	○	◐	●	●	◐	○	○	◐	Medium
1D. Centre Avenue & Kirkpatrick Street	◐	●	○	●	●	●	◐	○	◐	◐	Medium
1E. Centre Avenue and Reed Street	◐	●	○	●	●	●	●	○	●	◐	High
2. Dinwiddie Street Transit	●	◐	○	●	●	●	○	○	○	●	Medium
3. Chauncey Street Pedestrian Connector (Centre Avenue to Bedford Avenue)	●	●	●	◐	○	●	●	○	●	●	High
3A. Chauncey Street Steps	○	●	●	●	◐	●	●	○	○	●	High
3B. Chauncey Traffic Calming/sidewalk	◐	◐	○	○	○	●	●	○	●	●	Medium
3C. Chauncey Shared Street	◐	◐	●	○	○	○	●	○	○	●	Low
3D. Pedestrian Plaza	○	◐	○	◐	○	○	○	○	○	○	Low
4. Upper Hill Bicycle Connector	●	◐	●	◐	◐	●	○	○	○	●	Medium

○ Does not meet the criteria ◐ Partially meets the criteria ● Fully meets the criteria

ID. Project Name (Type)											Priority Level
	Targets crash locations	Community-identified concerns	Enhances bicycle connectivity	Enhances transit connectivity	Connects to key destination	Connects to Centre Avenue	Enhances pedestrian connectivity	Diversify curbside uses on Centre Avenue	Increases residential parking availability and accessibility	Encourages non-auto trips	
5. Kirkpatrick Street Connectivity	●	●	●	●	◐	●	●	○	○	●	High
6. Kennard Playground Access + Safety Improvements	◐	◐	○	◐	◐	○	●	○	○	●	Low
6A. New Pedestrian Connection	○	◐	○	○	◐	○	●	○	○	●	Low
6B. Intersection Improvements	◐	○	○	◐	◐	○	◐	○	●	●	Low
7. Wylie Avenue Neighborway	●	○	●	◐	◐	○	●	○	◐	●	Medium
8. Bedford Avenue Traffic Calming/Streetscape	●	●	○	●	●	○	●	○	◐	●	Medium
9. Crawford Street Traffic Calming/Streetscape	●	●	○	●	●	●	○	○	◐	●	Medium
10. Reed Traffic Calming (speed humps, painted parking lane)	●	◐	○	◐	◐	◐	◐	○	●	◐	Medium
11. Webster Avenue Streetscape and Traffic Calming	●	●	○	◐	●	○	◐	○	◐	●	Low

○ Does not meet the criteria ◐ Partially meets the criteria ● Fully meets the criteria

Project Implementation Timeline

In addition to the evaluation criteria and prioritization, each proposed project's timeline must be considered when determining the order of project implementation. As the City balances its funds and prioritizes projects appropriately, timelines must be considered when determining an implementation plan. The proposed projects are categorized by project timeframe, including short-term, mid-term, and long-term. The timelines for each project and strategy are summarized in **Table 5**.

- **Short-term** projects follow a timeline of fewer than three years. These projects are considered quick-build and follow a relatively short implementation timeline. Short-term projects do not require additional analysis or coordination.
- **Mid-term** projects follow a timeline of roughly 3-5 years. These projects are longer due to some additional analysis or required coordination. The following proposed projects are considered mid-term:
- **Long-term** projects follow a timeline of roughly 5-10 years. These projects are the most involved and require additional coordination, analysis, and construction. These projects tend to be larger scale and require more funding than short- and mid-term projects. Long-term projects may require additional outreach with the community and stakeholders. The following proposed projects are considered long-term:

In addition to the evaluation matrix previously summarized, the project team reviewed additional considerations when determining a timeline for implementing the proposed projects and strategies, including cost, overlap with previous plans, opportunities for quick-build materials, and potential impacts and required coordination.

Proposed corridor and intersection projects previously identified in other plans and studies were considered to have earlier implementation timeframes. Many proposed recommendations and projects were also recommended in the Greater Hill District Master Plan (2011), the Centre Avenue Corridor Redevelopment and Design Plan (2015), the Bedford Connects Transformation Plan (2018), and the Bike(+) Plan (2020).

The potential costs were provided in the previous sections describing the proposed corridor and intersection projects. The estimated project costs include:

- Low Cost: $ (Less than $100,000)
- Moderately Low Cost: $$ ($100,001 to $250,000)
- Moderately High Cost: $$$ ($250,001 to $1,000,000)
- Highest Cost: $$$$ ($1,000,000+)

In addition to potential cost and overlap with previous plans and studies, the availability of quick-build materials bears weight when identifying project timelines. The availability of utilizing quick-build materials has the potential to expedite project design and implementation. The timelines for each project are provided in more detail in the Project Timeframe section.

The final consideration includes potential impacts and the required coordination for implementation. The potential impacts and required coordination were considered when estimating the cost and timeline for each project. The projects vary in scope and scale. Larger projects, such as the corridor traffic calming and streetscape projects, will likely require coordination with the community, stakeholders, and other entities impacted by the project. Furthermore, projects that incorporate geometric reconfiguration will likely have larger impacts on drainage, parking, and right-of-way. These factors may increase the estimated cost and project timeline.

KEY IMPLEMENTERS AND FUNDING OPPORTUNITIES

The City of Pittsburgh Department of Mobility and Infrastructure (DOMI) is anticipated to be the major implementer; additional support from other City departments, such as Parks and Recreation, may be involved when necessary. Project selection will rely heavily on available funding, including the award of recently submitted grant applications.

Table 5 Summary of Project Timeline and Prioritization Criteria for Implementation

ID. Project Name		Project Type	Identified on Previous Plan	Potential Cost	Quick-build materials	Tradeoffs to Implementation	Priority	Timeframe
1. Centre Avenue Streetscape		Streetscape	Yes (Master Plan)	$$$$	n/a	The long corridor will require significant coordination	High	n/a
1A.	General traffic calming	Traffic Calming, Streetscape	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$$$	Painted curb extensions	High	High	Short
1B.	Install parking meters	Parking	Not explicitly	$	n/a	Medium	Medium	Medium
1C.	Centre Avenue & Dinwiddie Street Reconstruction	Safety	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$$$	Painted plaza	Low	Medium	Medium
1D	Centre Avenue & Kirkpatrick Street	Safety	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$$$	Painted curb extensions	Medium	Medium	Medium
1E.	Centre Avenue and Reed Street	Safety	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$$$	Painted curb extensions	Low	High	Short
2. Dinwiddie Street Transit		Transit	Not explicitly; Some overlap with Master Plan - "Improve connections to future BRT at Fifth Avenue")	$	Bus/Vehicle Shared Lane signage	Some parking loss to make room for bus boarding areas	Medium	Miedum
3. Chauncey Street Pedestrian Connector		Pedestrian	Yes (Master Plan, Bedford Connects Transformation Plan)	$$$$	Bollards and temporary barricades	Changes to vehicle circulation on north Chauncey Street	High	n/a
3A.	Chauncey Street Steps	Connectivity	Yes (Master Plan, Bedford Connects Transformation Plan)	$$$$	n/a	Low	High	Medium
3B.	Traffic Calming/sidewalk	Traffic Calming	Yes (Bedford Connects Transformation Plan)	$$$	Painted curb extensions	Medium	Medium	Short
3C.	Chauncey Shared Street	Complete Streets	Yes (Bedford Connects Transformation Plan)	$	Bollards and temporary barricades	Medium	Low	Short
3D.	Pedestrian Plaza	Public Space/ Placemaking	Yes (Bedford Connects Transformation Plan)	$$$	Painted plaza	Low	Low	Medium
4. Upper Hill Bicycle Connector		Bicycle, Connectivity	Yes (Bike + Master Plan, Toole Draft Modal Emphasis/Street Type)	$$	Paint and flexiposts	Some parking loss to make room for bicycle facility	Medium	Medium
5. Kirkpatrick Street Bicycle Connection		Bicycle, Connectivity	Yes (Bike + Master Plan, Toole Draft Modal Emphasis/Street Type)	$	Paint and flexiposts	Narrowed street width will prevent vehicles from passing	High	Medium
6. Kennard Playground Access + Safety Improvements		Safety	Not explicitly	$$$$	Painted curb extensions and flexiposts	Longer walking distances for visitors who park on the street	Low	n/a
6A.	Steps	Connectivity	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$$$$	n/a	Low	Low	Medium
6B.	Intersection	Safety	Not explicitly	$$$	Painted curb extensions	Low	Low	Medium
7. Wylie Avenue Neighborway		Bicycle, Connectivity	Not explicitly	$	Paint and flexiposts	Traffic calming may increase vehicle volumes on parallel streets	Medium	Medium
8. Bedford Avenue Traffic Calming/Streetscape		Traffic Calming, Streetscape	Yes (Bedford Connects Transformation Plan)	$	Paint and flexiposts	Traffic calming may increase vehicle volumes on parallel streets	Medium	Medium
9. Crawford Street Traffic Calming/Streetscape		Traffic Calming, Streetscape	Yes (Master Plan, Toole Draft Modal Emphasis/Street Type)	$	Paint and flexiposts	Traffic calming may increase vehicle volumes on parallel streets	Medium	Medium

ID. Project Name		Project Type	Identified on Previous Plan	Potential Cost	Quick-build materials	Tradeoffs to Implementation	Priority	Timeframe
10. Reed Traffic Calming		Traffic Calming	Yes (Centre Ave Corridor Redevelopment and Design Plan)	$	Painted pavement markings	Speed humps may slow emergency/transit operators	Medium	Short
11. Webster Avenue Streetscape and Traffic Calming		Traffic Calming, Streetscape	Crawford Street to Herron Avenue	$	Paint and flexiposts	Traffic calming may increase vehicle volumes on parallel streets	Low	Medium
12. Increase Parking Availability		Programmatic	Not explicitly	$$$	n/a	n/a	High	n/a
12A.	Balance Parking Supply and Demand	Programmatic	Not explicitly	$$	n/a	n/a	High	Medium
12B.	Increase access through curbside management	Programmatic	Not explicitly	$$	n/a	n/a	High	Short
12C.	Modify residential parking	Programmatic	Not explicitly	$$	n/a	n/a	High	Short
13. Reduce Single Occupancy Vehicle Trips		Programmatic	Not explicitly	$$$	n/a	n/a	High	n/a
13A.	Establish a TDM Program	Programmatic	Not explicitly	$$	n/a	n/a	High	Long

* Significant funds have been requested from grant sources.

APPENDIX A: EXISTING CONDITIONS REPORT

Introduction

The City of Pittsburgh is developing a comprehensive neighborhood plan (hereafter referred to as "the Plan") to guide policy and investments to promote sustainable and equitable growth in the Hill District. The Plan will update and adopt the 2011 *Greater Hill District Master Plan* and will help guide public and private investment in the Hill District over the next ten years and beyond. Kittelson & Associates, Inc. (Kittelson), in collaboration with the City of Pittsburgh's Department of Mobility and Infrastructure (DOMI) and the Port Authority of Allegheny County (PAAC), is developing the Hill District Transportation Study (hereafter referred to as "the Study"), which will be incorporated into the Plan's mobility chapter. This memorandum provides a summary and analysis of the existing transportation system and multimodal connections as well as mobility-related recommendations coming out of previous planning efforts in the Hill District; it will be used as the basis of the Study's mobility recommendations. The Hill District is roughly bounded by Bigelow Boulevard to the north and northeast, the University of Pittsburgh and West Oakland to the southeast, Fifth Avenue to the south, and Interstate (I) 579 to the west (see **Figure 1**). Downtown Pittsburgh borders the Hill District to the west, Polish Hill and the Strip District to the north, Uptown to the south, and Oakland to the east and southeast. The neighborhood is primarily residential with the PPG Paints Arena and commuter parking in the Lower Hill and commercial uses in Middle Hill along Centre Avenue. The Hill District is home to several cultural and many historical destinations, including the Elise H. Hillman Auditorium, New Granada Theater, and Carnegie Library of Pittsburgh, as well as churches, restaurants, bars, and community and recreation centers.

The Hill District is comprised of six neighborhoods, including the Lower, Middle and Upper, Hill, Crawford-Roberts, Terrace Village, and Bedford Dwellings. Each neighborhood has a slightly different context, as summarized below.

- The Lower Hill, a formerly middle-class neighborhood that suffered demolition during urban renewal, is currently occupied by parking lots used by commuters and visitors to PPG Paints Arena. The area connects Downtown to the rest of the Hill District and is planned for significant redevelopment in the short term.
- The Middle Hill and Bedford Dwellings have moderate residential density with single- and multi-unit housing. Centre Avenue, which runs through the Middle Hill and the length of the Hill District, serves some neighborhood commercial and retail.
- The Upper Hill is primarily low density, single- and two-unit housing.
- Terrace Village encompasses open space and the Pittsburgh VA medical center. Many students live in this area. The housing in Terrace Village is part of newer planned developments.
- Crawford-Roberts has a mix of housing types, including multi-unit housing and planned residential development.

According to 2014-2018 American Community Survey estimates, more than two-thirds of residents in the Hill District are Black or African American, 20% are White, 5% are Asian, and 3% are Latino. In contrast, Pittsburgh overall is two-thirds White, 23% Black or African American, 6% are Asian, and 3% are Latino. In the Hill District, nearly 40% of families are in poverty, and nearly 50% of households do not have a vehicle.

There are several barriers in the Hill District that present mobility challenges for residents and visitors. As the name suggests, the Hill District is comprised of several large and steep hills. The topography makes it difficult for people of all ages and abilities to navigate between the six neighborhoods and limits access to adjacent neighborhoods such as the Strip District, Polish Hill, and Oakland. Throughout the Hill District, many sidewalks and city steps that provide key pedestrian connections are in poor condition, and there are no dedicated bicycle facilities. The neighborhood is bounded by high-speed and high-volume roadways such as Bigelow Boulevard to the north, I-579 to the west, and Fifth Avenue to the south. These roadways are barriers that limit the connections between the Hill District and the surrounding neighborhoods, particularly Downtown. **Figure 1** shows the Hill District, key destinations, and surrounding neighborhoods.

Figure 1. The Hill District Study Area

PREVIOUS PLANNING STUDIES

Previous planning studies identified recommendations and strategies for transforming the Hill District, many of which are still applicable today. Transportation and mobility recommendations from previous studies will be updated and enhanced as part of the Study, in particular the Greater Hill District Master Plan, Centre Avenue Corridor Redevelopment and Design Plan, and Bedford Connects Transformation Plan. The key takeaways and recommendations from each of the previous planning studies are summarized below.

Greater Hill District Master Plan (2011)

Summary: The Greater Hill District Master Plan was created to guide future development investments in the Hill District, and it serves as the basis for the updated ongoing Hill District Comprehensive Neighborhood Plan. The Master Plans' Mobility, Transportation, and Planning goal focuses on ensuring viable and affordable transportation access to all members of the community. The goal includes three related subgoals, including:

- Improve transportation networks and services to the city and within the Hill District
- New infrastructure should promote walkability, street accessibility, and access to work, retail, and social amenities
- Create a well-planned parking strategy that supports new development while minimizing negative impacts on residents

Potential neighborhood-wide programs for the Mobility, Transportation, and Planning goal include:

- **Neighborhood Transportation Goal:** Increase transportation options for Hill District residents and visitors

    - Transportation Advocacy Group
    - Intra-Hill Neighborhood Transit
    - Hill District Transportation Plan
- **Ride-to-Work Goal:** Improve resident mobility; decrease carbon emissions
    - Shuttle to major employers
    - Ride-sharing system
    - Jitney Stand
- **Streetscape Improvements Goal:** Improve the pedestrian experience. Improve safety.
- **Complete Streets Pilot Goal**: Introduce "Complete Streets" to the Hill; create jobs in construction/street improvements
- **Comprehensive Parking Strategy Goal:** Minimize the sense that the Hill is the City's parking lot. Preempt parking issues that may arise from the new Consol Center and from future development.

Recommendations: The Master Plan identifies several location-specific recommendations for the Hill District:

- Improve streetscape treatments on the following corridors, Herron Avenue, Kirkpatrick Street, Centre Avenue, Bedford Avenue, and Crawford Street;
- Improve neighborhood gateways at the following intersections, Herron Avenue and Bigelow Boulevard, Herron Avenue and Centre Avenue, and Kirkpatrick Street and Fifth Avenue;
- Refurbish the city steps on Chauncey Street to provide a pedestrian connection from Centre Avenue to Chauncey Street; and
- Enhance pedestrian conditions to promote new retail and commercial development on Centre Avenue.

Centre Avenue Corridor Redevelopment and Design Plan (2015)

Summary: Redevelop Centre Avenue into a "Centre of Culture, Opportunity, and Cultivation." The plan identifies strategies to stimulate street activity, create gateway and entry landmarks, activate major open spaces, and create a welcoming place for residents, businesses, and visitors at three development nodes along Centre Avenue.

Recommendations:

- Near Centre Avenue and Dinwiddie Street – Develop Granada Square + Heritage Square, Dinwiddie realignment, Establish Heritage Walk and Greenspace Walk sites, plan a District-Wide Parking Strategy, multiuse infill development east of Dinwiddie Street, and Commercial Plaza Redevelopment and Tower Development.
- Near Centre Avenue and Kirkpatrick Street – Stabilize and preserve heritage properties with existing building renovation, Mahon Street realignment, develop Central Baptist Opportunity Square and realign roads.
- Near Centre Avenue and Reed Street – Connect Reed Street to recreation opportunities at Kirkpatrick Street, construct the Community Garage and Entry Plaza.

Bedford Connects Transformation Plan (2018)

Summary: Improve the area surrounding Bedford Dwellings and Middle Hill with an emphasis on housing, resident needs and services, and connections to the surrounding area.

Recommendations: (1) Upgrade the city steps at Chauncey Street and Junilla Street to create more accessible pedestrian connections between Bedford Avenue and Centre Avenue, where the steep topography presents a challenge. (2) Improve bus shelters at key locations – Bedford Dwellings Hope Center. (3) Re-route Bus Route #83 to provide more direct and frequent service between Bedford Dwellings and commercial destinations within and outside the Hill District. (4) Improve the following intersections – Bedford Avenue & Chauncey Street, Webster Avenue & Chauncey Street, Wylie Avenue & Chauncey Street, Wylie Avenue & Junilla Street, Webster Avenue & Junilla Street, and Wylie Avenue & Herron Avenue. (4) Proposed Bedford Heritage Trail and Coal Seam Trail. Trails extend parallel to Bedford Avenue along the northern edge of the Hill District and connect to Centre Avenue via Devilliers Street, Kirkpatrick Street, and Junilla Street.

The Hill: A Village in the Woods Conceptual Plan (2009)

Summary: Plan to reconnect the Hill District to its natural landscape and strengthen social ties within the community.

Recommendations: (1) Remove Chauncey Drive to create a larger green space. (2) Narrow Iowa Street and turn into a pedestrian-only corridor. (3) Transform Devilliers Street and Enoch Street into greenways.

Bike (+) Master Plan (2020)

Summary: Plan to build upon existing bike infrastructure to provide a safe and comfortable bike network. As part of the Bike(+) Plan, conducted a bicycle level of traffic stress analysis for all City streets was conducted. Bicycle level of traffic stress (LTS) considers roadway type, vehicle speeds, and vehicle volumes to measure how comfortable the street is for a typical person to bike on.

Hill District Recommendations: (1) Proposed facilities on Herron Avenue north of Wylie Avenue, Kirkpatrick Street from Wylie Avenue to Fifth Avenue, and Crawford Street from Wylie Avenue to Locust Street. (2) An east-west bike connection through the Hill District on an unspecified route.

ONGOING PROJECTS

Three ongoing projects will have direct impacts on the Hill District as they are implemented over the next few years: the Downtown-Uptown-Oakland-East End Bus Rapid Transit (BRT), the redevelopment of the Lower Hill, and the I-579 Cap Urban Connector Project. These projects are summarized below.

Bus Rapid Transit (BRT) On Fifth and Forbes Avenue(S)

The Port Authority, the City of Pittsburgh, Allegheny County, and the Urban Redevelopment Authority are working together to design the Downtown-Uptown-Oakland-East End Bus Rapid Transit (BRT) project that will enhance a vital east-west connection between downtown Pittsburgh and the Uptown, and Oakland, and East End neighborhoods. Final design plans were completed in 2020, and construction is anticipated to begin in early mid-2022.

The BRT will use Fifth Avenue and Forbes Avenue as the main corridor. Fifth Avenue is along the southern border of the Hill District. There are five planned stations listed below that will provide connections to north-south streets to access the Hill District:

- Uptown West Station – At Washington Place
- Pride Street Station – At Pride Street/Crawford Street
- Uptown Central Station – At Dinwiddie Street
- Jumonville Street Station – At Jumonville Street/Wyandotte Street
- Soho Station – At Kirkpatrick Street

The stations will include amenities including shelters, seating, real-time signs, ticket vending and validations, and emergency call buttons.

Lower Hill Redevelopment

The Lower Hill was once a vibrant neighborhood with thousands of homes and thriving businesses along Wylie Avenue and Logan Street. However, in the 1950s and early 1960s, the homes in the Lower Hill were demolished to make way for a new grand cultural district for Pittsburgh. Over 8,000 residents and 400 businesses of the Hill District were forced to relocate, and the community fabric was destroyed. The vision of the grand cultural center was never realized, and instead, the Lower Hill is currently home to large surface parking lots that serve commuters and the PPG Paints Arena.

Acknowledging the harm from past redevelopment, the URA is working to ensure equitable development in Lower Hill. The Lower Hill redevelopment has six priorities that are guiding the plan development:

- Affordable housing on the site
- Investment in the Greater Hill development and connectivity to Lower Hill
- Preservation of Hill District legacy through arts and culture
- Access to well-paying jobs
- Investments in Hill District youth and families
- Wealth-creating business opportunities and MBE participation

The current plan for the Lower Hill redevelopment includes replacing the surface parking with housing, office, and retail space, a parking garage, and a live music venue. The plan also includes a proposed terraced park to connect to the Cap Park project, which is summarized below.

I-579 CAP urban Connector Project

The I-579 Cap Urban Connector Project (the Cap Project) will consist of the construction of a new "cap" structure spanning over a portion of I-579 Crosstown Boulevard. The Cap Project is bounded by Washington Place, Centre Avenue, Chatham Street, Bigelow Boulevard, and land to the north of Bigelow Boulevard.
The "cap" surface includes a new 3-acre public open space with accessible pedestrian pathways and bicycle routes. It will include improvements to an adjoining intersection, provide for recreation and educational areas, performance areas, rain gardens for storm water management, design elements developed by artists from the neighborhood, and other public amenities. The project will significantly improve bicycle and pedestrian safety and connections in the Lower Hill and facilitate a better connection to Downtown.

The existing conditions analysis provides an overview of the existing transportation system and network in the Hill District. The existing conditions analysis builds upon previous planning studies and includes qualitative and quantitative data collection and mapping, site visits, and stakeholder feedback from the Steering Committee and Public Meeting #1. The project team worked with the City of Pittsburgh to identify and compile data and information to inform the existing conditions analysis. The analysis uses the data sources described in *Memorandum #1: List of Data Sources* to create maps that help illustrate the spatial distribution of transportation infrastructure, multimodal networks, and travel conditions. This analysis was completed in late summer of 2020 during the COVID-19 pandemic, which has caused significant disruption to normal travel patterns. However, unless noted, the data presented in this memorandum is from time periods prior to the COVID-19 pandemic and is intended to represent non-pandemic travel patterns.

The existing conditions are summarized based on three focus areas:

- Neighborhood Travel Patterns
- Safety and Active Transportation
- Parking

The existing conditions analysis will help identify mobility priorities and recommendations for the Hill District.

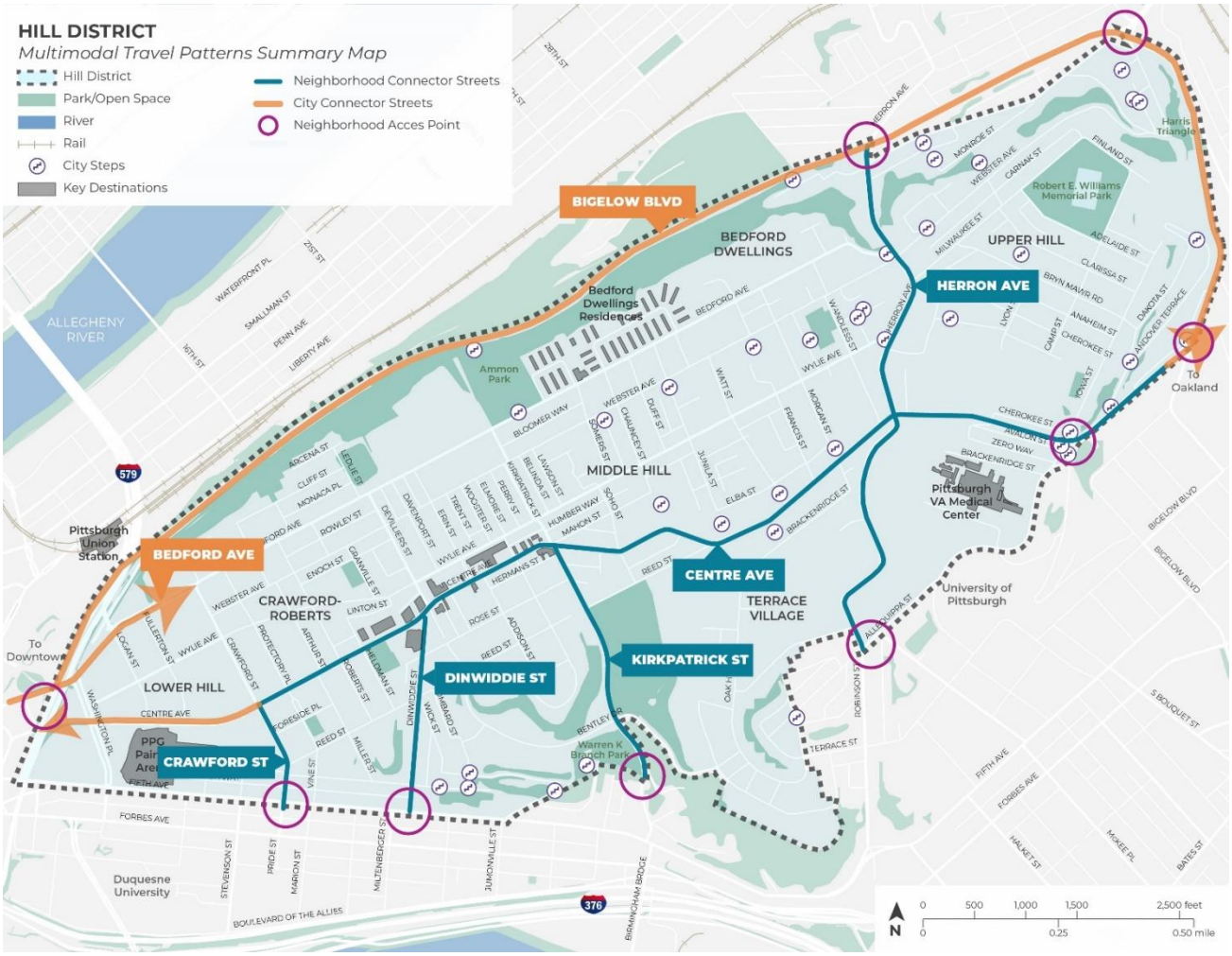
NEIGHBORHOOD TRAVEL PATTERNS

Residents, visitors, and employees travel to, from, and through the Hill District using a variety of modes. This section provides an overview of vehicle and transit travel patterns. Active transportation, including people walking and biking, will be discussed in the next section. Figure **4** displays a summary of the neighborhood travel patterns throughout the neighborhood. As shown in the figure, the primary neighborhood access points include:

- Dinwiddie Street,
- Bedford Avenue,
- Washington Place,
- Crawford Street,
- Kirkpatrick Street, and
- Herron Avenue.

These streets serve as gateways that carry people to and from the Hill District. As shown in the map, Bigelow Boulevard provides access to the Hill District from other neighborhoods. Herron Avenue, Centre Avenue, Kirkpatrick Street, Dinwiddie Street, and Crawford Street serve as the main neighborhood connector streets that facilitate vehicle and transit movement throughout the Hill District.

Figure 2. Summary of Multimodal Travel Patterns



Street Characteristics

The Hill District contains a mix of street types, with 25 MPH speed limits, volumes, and roadway classifications. Most of the neighborhood's streets have posted speed limits of 25 mph and serve as local neighborhood streets. Streets with posted speed limits of 35 mph are classified as minor and major arterials. Most streets within the neighborhood are classified as local roads. Other street classifications include collector streets (Bedford Avenue, Devilliers Street, Washington Place), minor arterials (Herron Avenue, Centre Avenue, Kirkpatrick Street, Crawford Street), and major arterials (Bigelow Boulevard and Fifth Avenue). The collector and arterial streets connect the Hill District to other neighborhoods and provide connectivity to and from the Hill District.

Traffic volumes provide insight into which roadways are in high use and where people are traveling. Excluding the Interstate, the roadways with the highest volumes are Bigelow Boulevard, Herron Avenue, Crawford Street, and Centre Avenue (east of Herron Avenue), primarily due to Pitt and other institutional commuters. High volumes are expected on Bigelow Boulevard and Centre Avenue as these streets connect to Downtown and other neighborhoods. In general, traffic volumes are relatively low throughout the Hill District. There are few intersections in the Hill District with traffic signals, as most intersections in the Hill District are stop-controlled. The area near the intersection of Bedford Avenue and Bigelow Boulevard has most of the electronic signs in the area to help guide drivers to the ramps for Interstate 579 and Bigelow Boulevard. There are flashing warning devices on Centre Avenue between Kirkpatrick Street and Reed Street. There are no intersection control beacons or Rectangular Rapid-Flashing Beacons (RRFBs) in the Hill District.

NEIGHBORHOOD CONNECTIVITY

Despite the Hill District's proximity to adjacent neighborhoods, topography and constructed obstacles create inter-neighborhood connectivity barriers. The greatest demand for connectivity is between the Hill District and Downtown Pittsburgh, west of the Hill District neighborhood. Interstate 579 significantly impedes access for all modes between the Hill District and downtown. While efforts like the currently under construction I-579 "Cap" Urban Connector Project, shown in **Figure 3**, will help overcome some of these obstacles, the Hill District neighborhood will continue to lack the connectivity and access that existed between the two neighborhoods prior to the construction of Interstate 579 and the Civic Arena in the 1950s and 60s.

Figure 3. The I-579 "Cap" Urban Connector Project, currently under construction, will help re-connect the Hill District to Downtown

The planned BRT and economic development expected in the Uptown neighborhood to the south of the Hill District creates additional demand for inter-neighborhood connectivity between the two neighborhoods. To maximize benefits to the Hill District neighborhood from the future BRT on Fifth Avenue and Forbes Avenue, in Uptown, the Greater Hill District Master Plan identified streetscape, complete streets, and economic development opportunities along Crawford Street and Dinwiddie Street to improve connectivity between the Hill District and Uptown.

Because of the significant elevation change between the Hill District and Strip District to the north, direct connectivity between the two neighborhoods is non-existent, as shown in **Figure 40**. The NEXTransit study, the Port Authority's long-range plan, identifies a connection between the Strip District, Hill District, and beyond as a priority project and is studying a potential vertical connection between the neighborhoods. While the two neighborhoods are close in proximity – separated by about 600 feet at their nearest points – walking routes exceeding two miles in length require a route through either Downtown Pittsburgh passing by the Interstate 579 "Cap" project or a meandering route through Polish Hill via Herron Avenue and the 28th Street Bridge.

Figure 40. Topography creates a significant barrier to access between the Hill District (Foreground) and Strip District (Middle Ground)

Within the neighborhood, the steep topography in the north-south direction and lack of east-west connections, especially to Downtown, create mobility challenges. Centre Avenue, Bedford Avenue, Webster Avenue, and Wylie Avenue serve as east-west connections that traverse the neighborhood and provide Downtown connections. The Greater Hill District Master Plan calls for Bedford Avenue to be transformed into a residential avenue with streetscape and walkability improvements highlighting the neighborhood's views to the north (seen in **Figure 40**).

Centre Avenue is the heart of the Hill District and serves as the neighborhood's primary retail and cultural spine. The community is interested in reinforcing the neighborhood's focus towards Centre Avenue, and the Avenue has many attractors and placemaking elements already in place. The attractors include the Carnegie Library, apartments, Hill House, and places of worship. Current placemaking elements, such as street trees, high visibility pedestrian signage (shown in **Figure 5**), wide sidewalks, bus stop infrastructure, and parklets, are also in place. However, challenges to realizing Centre Avenue's full potential include steep slopes that make street parking a challenge and a lack of a cohesive multimodal network.

Figure 5. Centre Avenue at Green Street Pedestrian Walkway

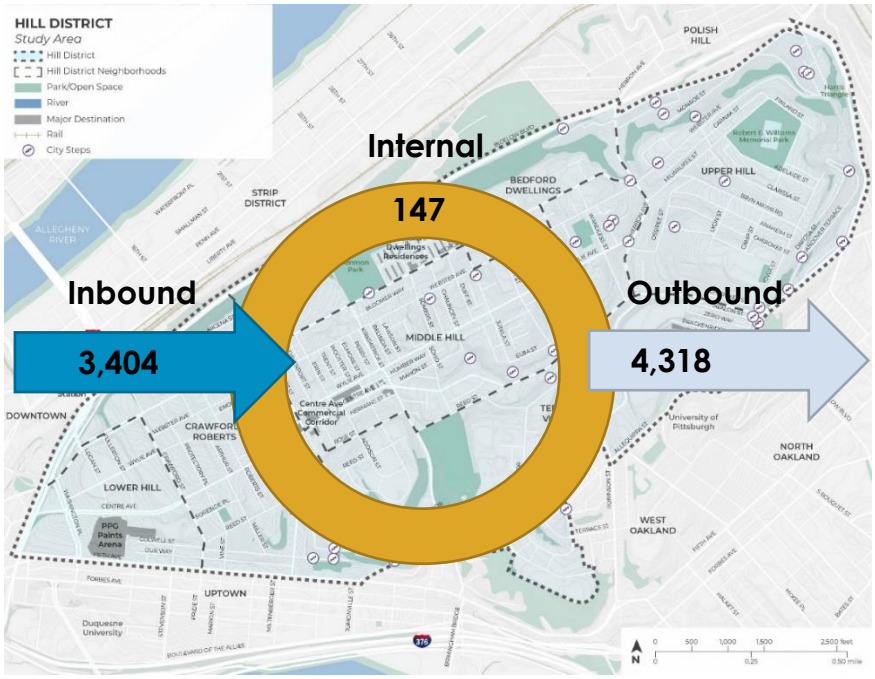
The neighborhood's hilly terrain creates connectivity and accessibility challenges. Most local streets have limited connections to collector and arterial streets, which further constrict multimodal connectivity. For instance, Reed Street is disconnected west of the Kennard Playground on Kirkpatrick Street. City steps are often provided throughout the neighborhood where there are topography challenges. Disconnected streets require people walking and biking west of on Reed Street to travel a circuitous route and creates additional travel demand on Centre Avenue, which provides the most convenient through street alternative. Additional missing street connectivity includes:

- Chauncey Street from Mahon Street to Centre Avenue
- Watts Street from Elba Street to Centre Avenue

Commute to Work

Longitudinal Employer-Household Dynamics (LEHD) was used to evaluate commute patterns to, from, and through the Hill District. The inflow and outflow of the neighborhood's employees and residents were assessed to understand commute patterns in the area and is shown in **Figure 6**. LEHD shows that approximately 4,300 residents work outside of the Hill District limits, and approximately 3,400 employees commute into the neighborhood for work. Approximately 150 people live and work within the neighborhood.

Figure 6. LEHD Inflow and Outflow of Jobs



Source: Longitudinal Employer-Household Dynamics (LEHD)

INBOUND COMMUTES (EMPLOYEES)

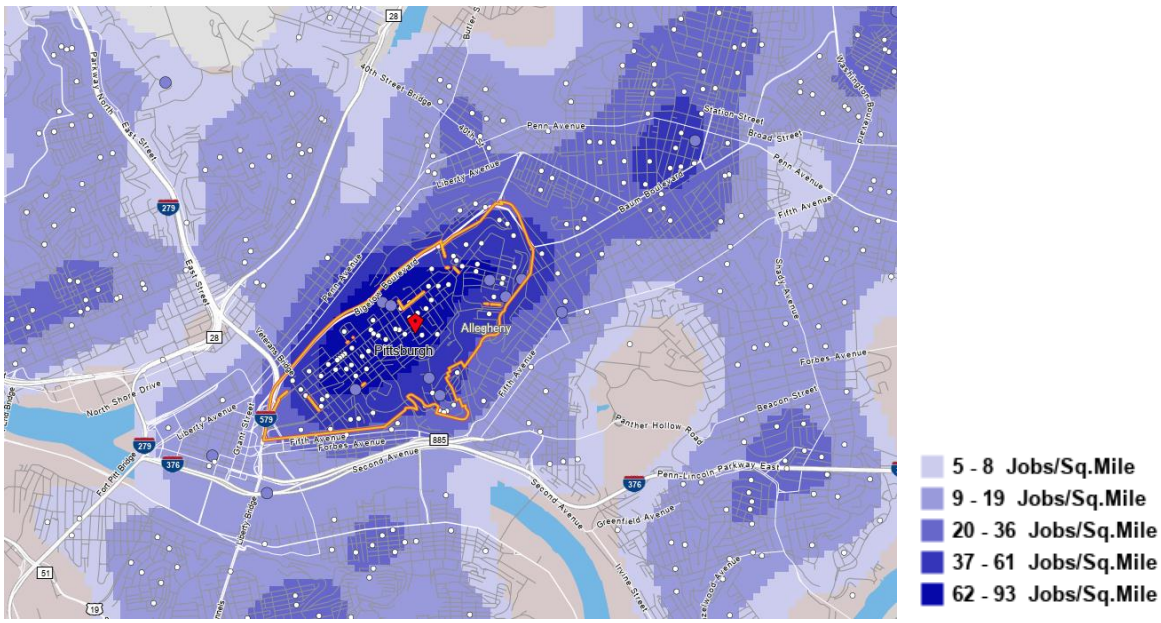
LEHD data provides information about where people who work in Hill District employees live. **Table** summarizes the distance traveled by employees who work in the Hill District and **Figure 7** displays where employees live. According to LEHD data, the majority of people who live outside the Hill District but work inside the district travel short distances (less than 10 miles). Many employees who work in the Hill District live in adjacent neighborhoods surrounding areas, including Downtown, the Strip District, Uptown, and Oakland. A concentration of Hill District employees live northeast of the Hill District, in the neighborhoods of Lawrenceville, Bloomfield, and Garfield. Additionally, there 'is a large number of employees commuting into the neighborhood from neighborhoods in the South Hills, including Allentown, Knoxville, Beltzhoover, and Mt. Oliver.

The LEHD data summarized in the table and figure below do not provide insight into the commute modes taken by employees. Port Authority transit service provides connectivity from these neighborhoods to the Hill District via Routes 81, 82, and 83. Detailed route information is provided in the Transit section.

Table 1. Commute Distance to Work in the Hill District (LEHD, 2018)

Commute Distance to Work	Count	Percentage
Less than 10 Miles	2,260	63%
10 to 24 Miles	789	22%
25 to 50 Miles	195	5%
Greater than 50 Miles	307	9%
Total	**3,551**	**100%**

Figure 7. Hill District Employee Home Origins



Source: Longitudinal Employer-Household Dynamics (LEHD)

OUTBOUND COMMUTES (RESIDENTS)

In addition to understanding Hill District employee statistics, LEHD provides information about Hill District residents traveling outside of the neighborhood for work (see . **Table 2** summarizes the distance traveled by residents who live in the Hill District and work outside of the neighborhood. **Figure 8** displays where Hill District residents travel for work. According to LEHD data, residents living in the Hill District and commuting out of the neighborhood for work vary by age. Thirty-two percent of residents are 29 years or younger, 45% are 30 to 54 years old, and 23% are 55 years or older.

Most Hill District residents work in Downtown, Uptown, and Oakland. Major employment in these areas includes Pitt, Duquesne University, UPMC, Carnegie Mellon University, PennDOT, and Highmark Headquarters, among various other major employers in Downtown. Almost 80% of Hill District residents commute less than 10 miles to work. According to 2019 Census data for zip code 15219, 35% of Hill District residents commuted by single-occupancy vehicles. Approximately 20% of residents commuted by public transportation, 26% walked, and 9% carpooled. The remaining residents commuted by a variety of other modes, including bicycling, telecommuting, and other modes.

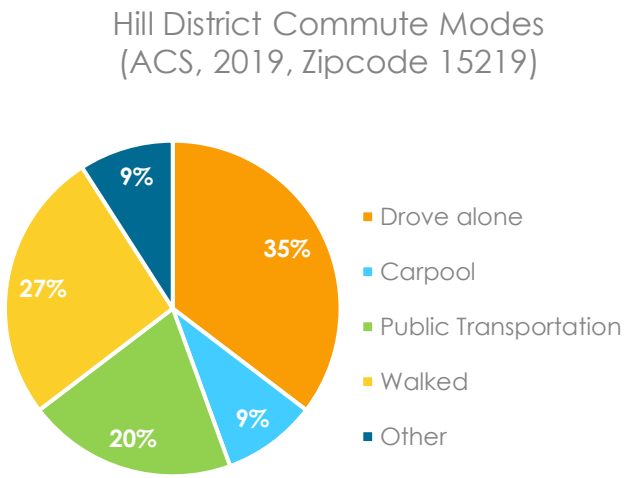
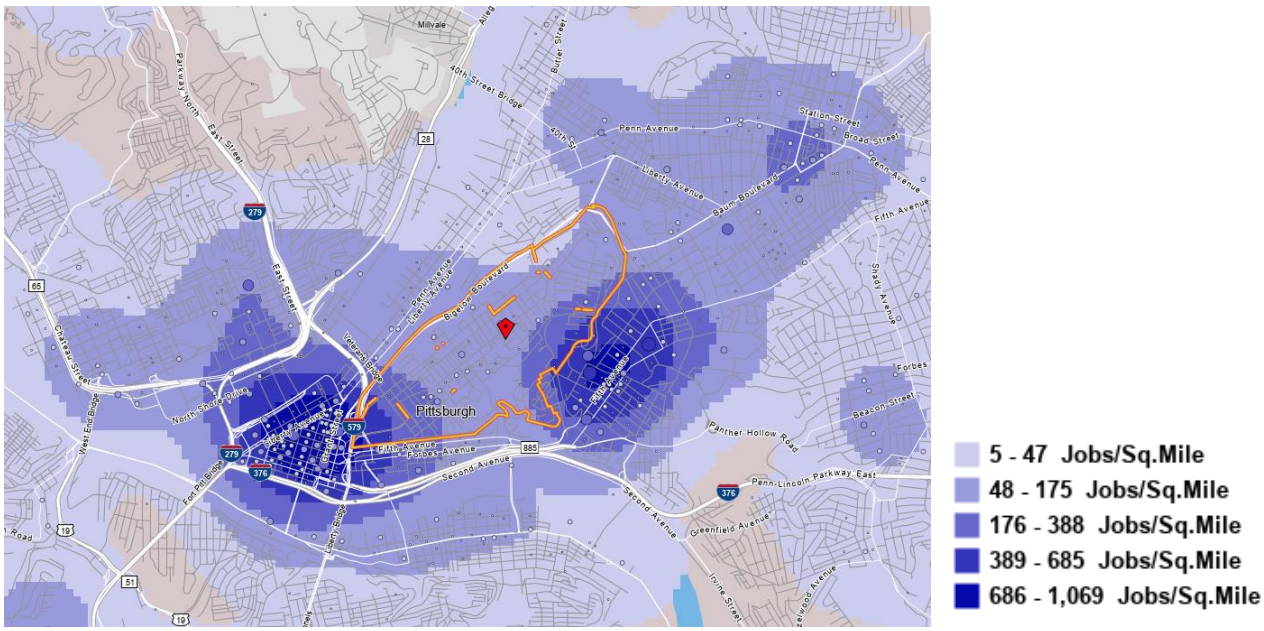


Table 2. Commute Distance from Home in the Hill District to Work (LEHD, 2018)

Commute Distance to Work	Count	Percentage
Less than 10 Miles	3,541	79%
10 to 24 Miles	439	10%
25 to 50 Miles	99	2%
Greater than 50 Miles	386	9%
Total	**4,465**	**100%**

Figure 8. Hill District Resident Employment Locations



Transit

Transit is a crucial mode of travel for many people who live and work in the Hill District. According to the *Port Authority Fall 2020 Bus System map*, ten bus routes travel through the Hill District; however, only Routes 81, 82, and 83 provide direct service in the neighborhood. The remaining bus routes travel along the periphery of the neighborhood and are not easily accessible for most Hill District residents because of distance and topography. A summary of the three main neighborhood routes and typical headways is provided in **Table .** All three routes are daily, local routes with peak weekday headways ranging from 20 to 35 minutes. **Figure 9** shows the existing transit service in the Hill District provided by the PAAC.

Transit ridership is limited throughout the neighborhood, with most PAAC trips occurring on routes 81, 82, and 83 along Fifth Avenue. The Hill District has fewer employment destinations than neighboring Downtown and Oakland. As a result, transit boardings in the Hill District are much lower than in Downtown and Oakland.

As mentioned previously, the three main PAAC routes that serve the Hill District are Routes 81, 82, and 83. Below is a brief description of each route, and **Table** provides a summary of the peak weekday headways.

- **Route 81 Oak Hill** – This route starts in Wharton Square on the South Side and travels north to Oakland Forbes Avenue. The bus then turns west and travels through the Hill District along Bentley Drive, eventually turning on Centre Avenue in the Middle Hill. The route then continues to head towards Downtown then turns north on Roberts Street to serve the Crawford-Roberts area before leaving the Lower Hill on Centre Avenue.
- **Route 82 Lincoln** – This route starts on Lincoln Avenue in Lincoln Lemington and then heads southwest towards Downtown on Centre Avenue, heading through East Liberty and Shadyside before reaching the Hill District. This route travels the length of the Hill District along Centre Avenue from the Upper Hill to the Lower Hill and then enters Downtown. In the other direction, Route 82 enters the Lower Hill on Bedford

Avenue and then turns on Crawford Street to reach Centre Avenue and then continues to travel north along Centre Avenue.

- **Route 83 Bedford Hill** – This route follows a similar pattern to Route 81, except Route 83 serves the Upper Hill and Bedford Dwellings along Bedford Avenue. The bus then turns west and travels towards the Hill District. Then the bus heads towards Upper Hill along Allequippa Street/Centre Avenue. The bus reaches Robert E. Williams Memorial Park and then heads towards Downtown along Bedford Avenue. The bus turns at Devilliers Street and continues Downtown along Centre Avenue.

Table 3. Summary of Bus Routes that Serve the Hill District

Route	Route Name	Route Type	Service	Peak Weekday Headway
81	Oak Hill	Local	Daily	35 min
82	Lincoln	Local	Daily	20 min
83	Bedford Hill	Local	Daily	25 min

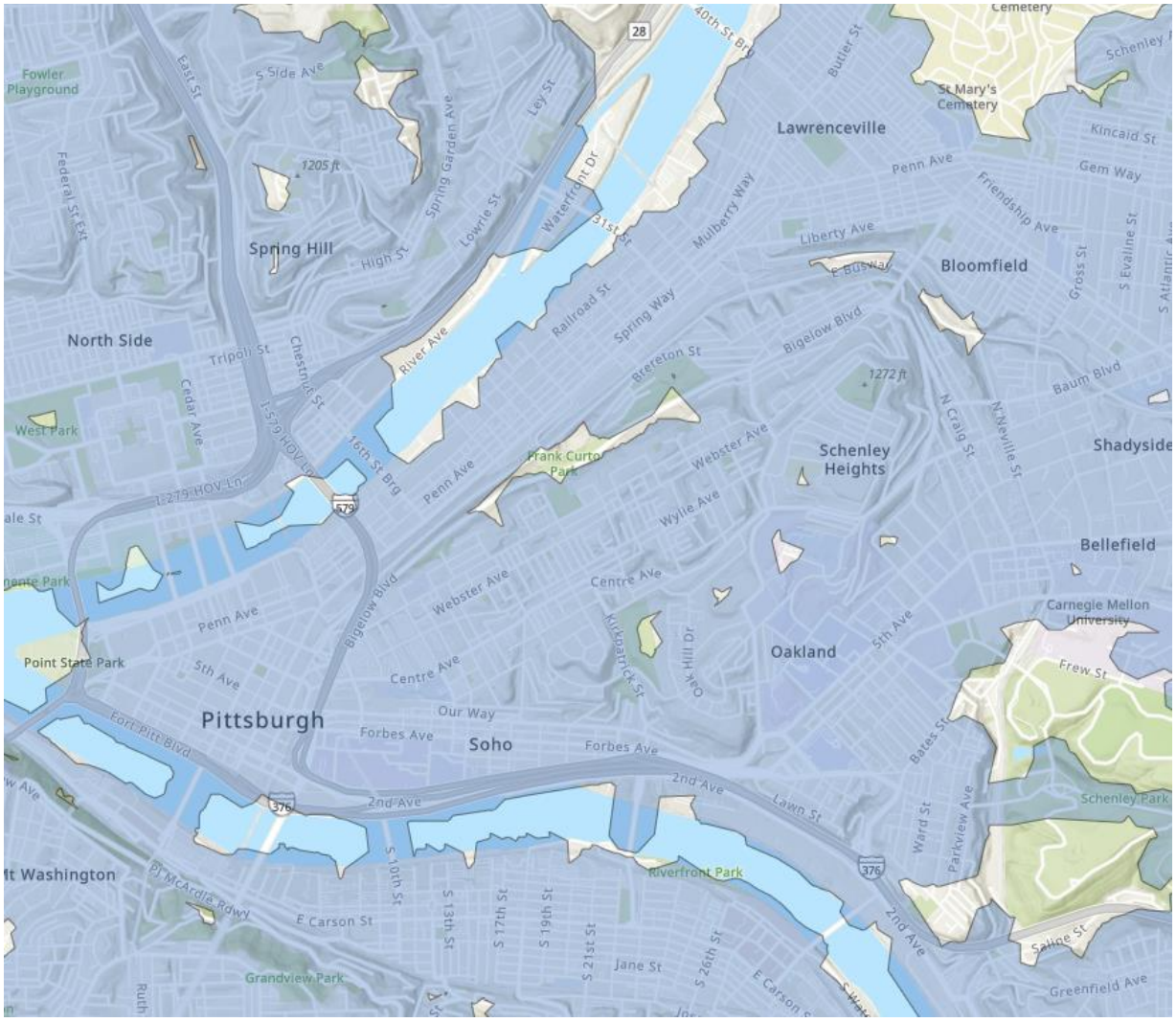
Figure 9. Existing Transit Service

ACCESS TO TRANSIT

Transit service is provided throughout most of the neighborhood; however, there are still pockets with limited transit access. **Figure 10** displays 500-foot walksheds surrounding the transit stations. According to the Federal Highway Administration, most people are willing to walk 1/4- to 1/2-mile to a transit stop. However, due to the steep terrain in the Hill District, even a short walk may be challenging for some residents. **Figure 10** displays walksheds (approximate five-minute walk to transit stops and a ten-minute walk from light rail and busway stations) that was updated in June 2021.

The map shows widespread transit access and coverage; however, in areas with steep elevations, walkable transit areas may be challenging to access for people with physical limitations. Residents of Bedford Dwellings and within proximity to living along Chauncey Street must navigate city steps to directly access bus stops located along Centre Avenue. Other locations where city steps exist to help overcome the difficult topography include Additionally, steep slope challenges persist on Morgan Street and Junilla Streets in the Middle Hill.

Figure 10. Walking Distance to Transit Stations



TRANSIT STOP AMENITIES

The conditions for passengers waiting at bus stops vary throughout the neighborhood. The majority of bus stops are city-owned, with a handful of stops owned by PAAC. PAAC categorizes bus stops into four main types: basic bus stop, bench stop, shelter stop, and station. The type of bus stop recommended is primarily decided based on ridership and physical space. In general, a basic bus stop is appropriate for stops with fewer than ten daily boardings. A bench stop is recommended for 10 to 30 daily boardings, and a shelter stop is recommended for bus stops with more than 30 daily boardings. Station stops are associated with rapid routes and future BRT. The required and recommended amenities vary based on the type of bus stop. Due to the low transit ridership in the Hill District, most bus stops in the neighborhood are basic stops.

Figure 11. Bus Stop Amenity Matrix

AMENITY MATRIX

	Sign	Pad	Sidewalk	Bench	Trash	Shelter	Light	Bike Rack	Route Info	System Info	Ticket Vending	Real-Time Sign
BASIC	■	■	■									
BENCH	■	■	■	■	■	✓	✓	✓	✓	✓		
SHELTER	■	■	■	■	■	■	■	✓	✓	✓	✓	✓

■ - Basic Requirement ✓ - Recommended Amenity

Source (Port Authority of Allegheny County Bus Stop and Street Design Guidelines)

Neighborhood and area plans, such as the Bedford Connects Transportation Plan, list several transit recommendations, including:

- Bus shelter improvements at key locations:
    - Bedford Dwellings Hope Center
- Reroute bus route #83 to provide more direct and frequent service between Bedford Dwellings and commercial destinations. The #83 will be rerouted to extend down Dinwiddie Street into the Fifth-Forbes corridor.

The bus stop shown in **Figure 12Error! Reference source not found.** displays a basic bus stop that has the recommended amenities based on the matrix in **Figure 11**. The bus stop includes a blue "Bus Stop" sign but does not provide any seating or indicate which routes the bus stop services. The bus stop shown in **Figure 13**Error! Reference source not found. provides riders with a bench but not a shelter for users to use while waiting for the bus. Bus stop seating is critical, especially for elderly riders or riders with limited abilities.

Figure 12. Basic Bus Stop on Bedford Avenue and Roberts Street

Source (Google Streetview)

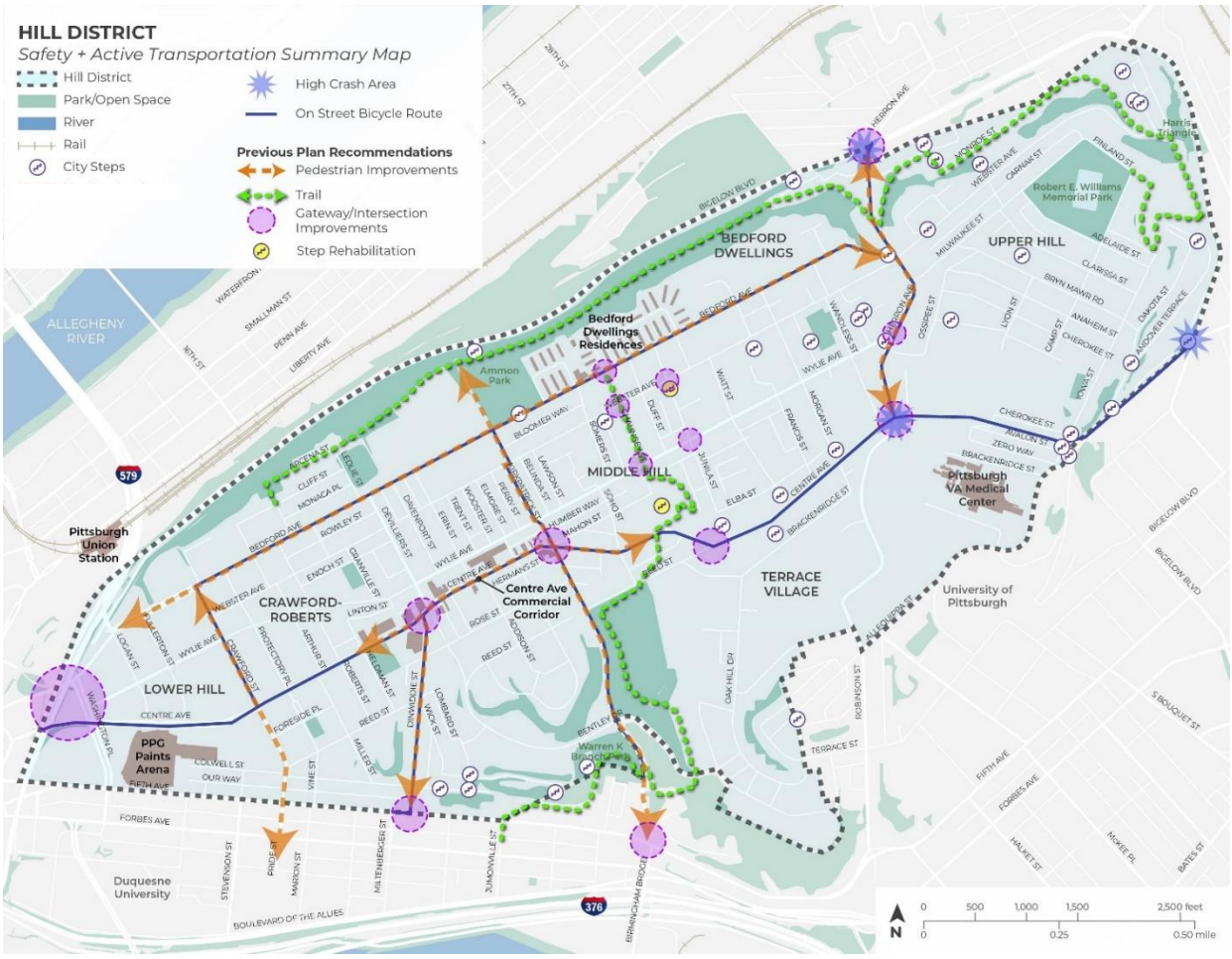
Figure 13. Bench Stop on Centre Avenue at Herron Avenue

Source (Google Streetview

SAFETY AND ACTIVE TRANSPORTATION

The Hill District, known in part for its topography, is not easy for people walking and biking to travel to, from, and within. The neighborhood comprises several hills and streets that connect through the neighborhood and to other parts of Pittsburgh, especially Downtown. Previous plans and engagement conducted for this Study indicate challenges for walkability and concerns around access to key destinations such as the commercial corridor on Centre Avenue. The topography is not the only concern. Additionally, gaps in or poor condition of the sidewalk and bike networks, a lack of adequate sidewalks and bike facilities, and confusing intersections contribute to concerns regarding safety and mobility. **Figure 14** summarizes key challenges regarding safety, walkability, and bikeability.

Figure 14. Safety and Active Transportation Summary Map



Safety

Between 2014 and 2019, there were a total of 520 crashes in the Hill District. Nearly ten percent of those crashes involved a person walking or biking. Around two percent of the crashes resulted in death or severe injury. **Table** summarizes these crashes between 2014 and 2019. Crashes are concentrated in the Lower and Middle Hill areas. In the Lower Hill, crashes are concentrated at major intersections such as Centre Avenue and Washington Place and Crawford/Pride Street and Fifth Avenue. In the Middle Hill, crashes are more dispersed along Centre Avenue, Herron Avenue, Wylie Avenue, Kirkpatrick Street, and Dinwiddie Street, as shown in Figure 15.

Table 4. Hill District Crashes (2014-2019)

Crash Type	Total	2014	2015	2016	2017	2018	2019
All Crashes	**520**	82	78	83	75	102	100
Fatal Crashes	**2 (0.38%)**	0	1	0	0	1	0
Major Injury Crashes	**8 (1.54%)**	0	0	3	1	2	2
Pedestrian/Bike Crashes	**51 (9.81%)**	5	14	5	6	13	8

The crash analysis identified three high crash intersections:

- Bigelow Boulevard & Herron Avenue (Hill gateway),
- Centre Avenue & Robinson Street/Herron Avenue, and
- Centre Avenue & Bigelow Avenue (Hill gateway).

A detailed review of the crash reports at these intersections was conducted to identify contributing factors. A summary of the contributing factors is listed in **Table** . All three intersections have limited sight distance and intersection geometry resulting in skewed approach angles.

Table 5. High Crash Intersections

High Crash Intersection	Contributing Factors
Bigelow Boulevard & Herron Avenue	• Intersection approach angles • Limited sight distance • Mainline median separation
Centre Avenue & Robinson Street/Herron Avenue	• Limited sight distance on the southbound approach • Poor intersection lighting • Steep grade on the westbound approach
Centre Avenue & Bigelow Boulevard	• Intersection approach angles • Limited sight distance • Approach grade differences

The three high crash intersections identified through the crash analysis are not the only intersections that present a safety concern. A review of previous plans, crash distribution, and community and stakeholder input identified additional intersections that present safety concerns. Challenging intersections are listed in **Table 6** and shown in **Figure 15**.

There are future plans to replace signals along Centre Avenue to create a "Smart Spine." Improvements will include real-time adaptive traffic signals and vehicle-to-vehicle communication at key intersections.

Figure 15 Hill District Crashes (2014-2019)

Table 6. Challenging Intersections

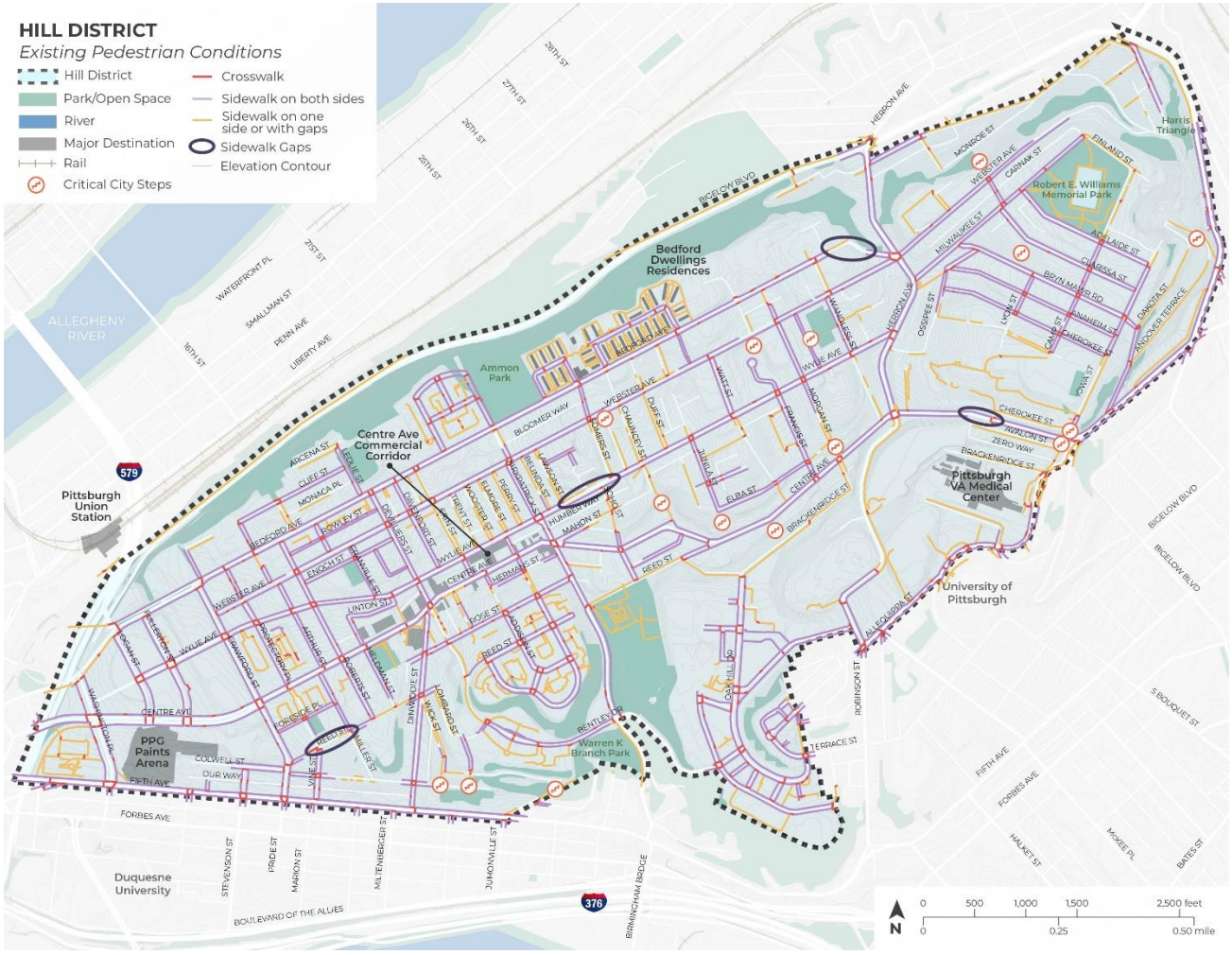
High Crash Intersection	Current Conditions
Bigelow Boulevard & Washington Place	• Gateway to neighborhood • Difficult for pedestrians to access Downtown • Challenging geometry • Highway entrance • Uncomfortable pedestrian crossings • CAP Project plans for new sidewalks
Centre Avenue & Washington Place	• Gateway to neighborhood • Difficult for pedestrians to access Downtown • Exit ramp from I-579 at the intersection
Dinwiddie Street & Fifth Avenue	• Gateway to neighborhood • T-intersection with only one crosswalk across Fifth Avenue
Centre Avenue & Dinwiddie Street	• Skew approach • Close to the signalized intersection at Devilliers Street
Centre Avenue & Kirkpatrick Street	• Five-leg intersection • Centre Avenue intersects at a skew angle
Wylie Avenue & Chauncey Street	• All-way stop-controlled • No marked crosswalks
Webster Avenue & Chauncey Street	• All-way stop-controlled • No marked crosswalks • No sidewalk on the west leg of Chauncey Street
Bedford Avenue & Chauncey Street	• All-way stop-controlled • No marked crosswalks
Bedford Avenue & Junilla Street	• T-intersection • The missing sidewalk on the west side of Junilla Street • No marked crosswalks
Wylie Avenue & Junilla Street	• All-way stop-controlled • No marked crosswalks • The missing sidewalk on the west side of Junilla Street
Centre Avenue & Reed Street	• Skewed angle
Wylie Avenue & Herron Avenue	• Skewed angle and limited sight lines • Long crossing across Wylie Avenue

Walkability

Walking is an essential mode of transportation for people who live in the Hill District. As stated previously, the steep terrain, poor sidewalk conditions, and deteriorating city steps make it difficult for people to walk through the neighborhood.

These challenges are especially pronounced in the north-south direction. The steep hills make it difficult for people who reside Middle Hill residents along Bedford Avenue to access neighborhood amenities and transit along Centre Avenue. A concern reiterated consistently in past planning and ongoing engagement efforts. Sidewalk improvements and reconstruction of the Chauncey Street Steps would help improve access. Previous plans identified this issue and recommended improvements to city steps to create better pedestrian connections. **Figure 16** shows the existing sidewalk network and critical key gaps. Many of the local north-south streets only have sidewalks present on one side of the street. There are also gaps in the sidewalk network located primarily on east-west streets such as Bedford Avenue, Wylie Avenue, Webster Avenue, Centre Avenue, Elmore Street, Rose Street (from YMCA to Skyline Terrace), and Reed Street.

Figure 16. Existing Pedestrian Conditions



In addition to gaps in the sidewalk network and the steep grade, other conditions, including cars parked on sidewalks and a lack of ADA-compliant curb ramps, present challenges for people to use the pedestrian network and access destinations by walking. Due to a perception of a lack of parking and narrow streets, there is a persistent problem of people parking their vehicles on the curb and sidewalk. These parked vehicles restrict sidewalk access for people walking by. Another concern is the lack of ADA-compliant curb ramps. Many intersections do not appear to have compliant ramps, and some intersections have compliant ramps but no sidewalk connecting to the sidewalk network. **Figure 17** shows an example of a steep road with no sidewalk on Chauncey Street. Chauncey Street serves as an important north-south connection between the residencies in

Bedford Dwellings and Centre Avenue. Avenue and Wylie Avenue, and Centre Avenue. **Figure 18** illustrates accessible curb ramps that do not connect to the sidewalk or crosswalks.

Figure 41. Missing Sidewalk on Chauncey Street

Figure 18. Missing Sidewalk Connection to Curb Ramp

An essential feature of the City's pedestrian network in Pittsburgh is the system of public city steps. These stairs play a crucial role in helping people traverse the hilly terrain throughout the city. Unfortunately, most of the city steps are aging and in need of repair or, in some cases, reconstruction. The City's 2019 City Steps Plan initiated a plan to evaluate the condition, need for these steps to still provide critical connections, and populations served to help prioritize future investment. As part of the prioritization process, the City assessed each set of city steps and assigned a score based on relative usefulness. The score includes nearby population and demographics metrics if other city steps are nearby, and proximity to schools and transit riders. The higher the score, the higher the priority. **Figure 16** highlights the top 25 percent city steps within the Hill District by priority score. Most of these steps are concentrated in the Middle Hill and serve as important connectors to Centre Avenue.

PRIORITY CORRIDORS FROM PREVIOUS PLANS

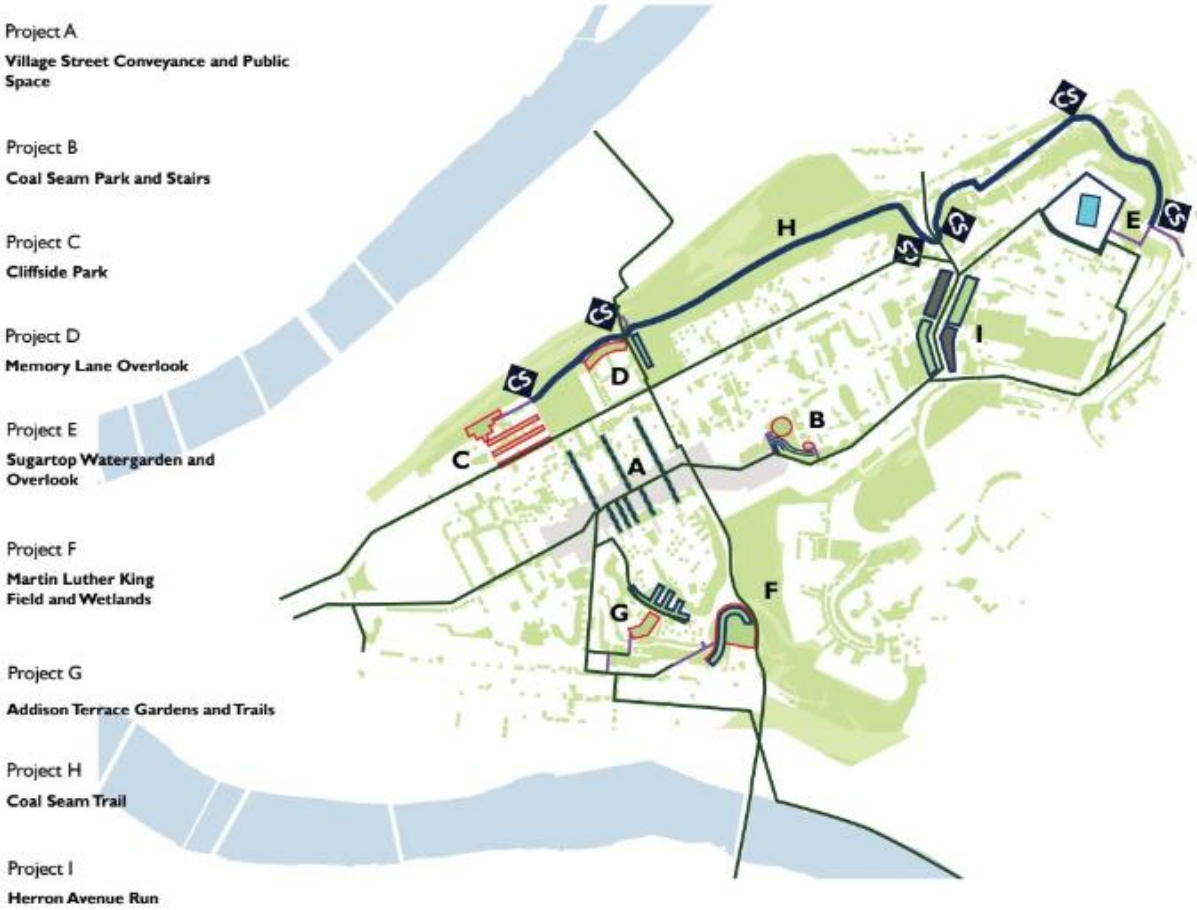
As noted in the review of previous plans, several corridors have been identified for pedestrian improvements. These corridors and the recommended improvements in those plans are listed below:

- Bedford Avenue between Logan Street and Herron Avenue
    - Improve the Bedford Avenue streetscape with new street trees, lighting, signage sidewalks, and small-scale pedestrian spaces such as seating and play spaces.
- Crawford Street between Bedford Avenue and UPMC

- Improve the Crawford Street streetscape with new street trees, lighting, sidewalks, and small-scale pedestrian spaces.
- Centre Avenue between Heldman Street and Chauncey Street
  - Focus and encourage new retail and commercial development on Centre Avenue and Wylie Avenue.
  - Introduce streetscape improvements, such as lighting, signage, and vegetation, to reinforce the pedestrian character and quality of this section of Centre Avenue.
- Dinwiddie Street between Centre Avenue and Fifth Avenue
  - Improve pedestrian connections to future BRT stations at Fifth Avenue and Forbes Avenue.
- Kirkpatrick Street between Proposed Trail at Ammon Park and Fifth Avenue
  - Provide small-scale parks and plazas throughout the corridor.
  - Create a formal automobile and pedestrian gateway to the Hill District at the Kirkpatrick Street and Fifth Avenue intersection.
- Herron Avenue between Bigelow Boulevard and Centre Avenue
  - Introduce streetscape improvements, including new trees, lighting, signage, and sidewalks. Improvements should include traffic calming measures.

In addition to these streets with identified pedestrian improvements, two trails have been identified to enhance connections throughout the neighborhood. The first trail would begin at Robert E. Williams Memorial Park in the Upper Hill and runs southwest, parallel to Bigelow Boulevard, towards Downtown. This trail would ill provide connections between Bedford Dwellings and the Upper Hill. Plans for this connection were developed in 2010 as the Coal Seam trail in The Hill a Village in the Woods (June 2010), shown in **Figure 42.**

Figure 42 Coal Seam Plans from the Hill, a Village in the Woods Plan



The second trail is along Chauncey Street and connects Bedford Avenue to Uptown. Concerns for this trail focus on ensuring Chauncey Street between Bedford Avenue and Wylie Avenue is accessible.

Bikeability

Figure 18 shows existing bicycle facilities in the Hill District. Currently, there are no dedicated bike facilities. There are designated on-street bike routes along key neighborhood corridors such as Bedford Avenue, Centre Avenue, Crawford Street, Dinwiddie Street, Kirkpatrick Street, and Herron Avenue. However, on all these streets, cyclists bikers are expected to share the lane with vehicles. There are three Healthy Ride bike share stations in the Hill District, with the most accessible station located in front of the YMCA. An additional station is near the PPG Paints Arena, and another station is located on Centre Avenue near Kirkpatrick Street.

Figure 43. Existing Bicycle Facilities

As noted in the Pittsburgh Bike(+) Master Plan, all streets that currently have designated on-street bicycle routes in the Hill District are considered high-stress roads. There is no continuous bicycle route through the Hill District. Many streets in the Hill District, aside from Centre Avenue, have low vehicle volumes and may provide low-stress environments for people biking. A summary of the current conditions on the existing designed on-street bicycle routes is provided below.

Figure 19. Bike(+) Master Plan Bicycle Level of Traffic Stress

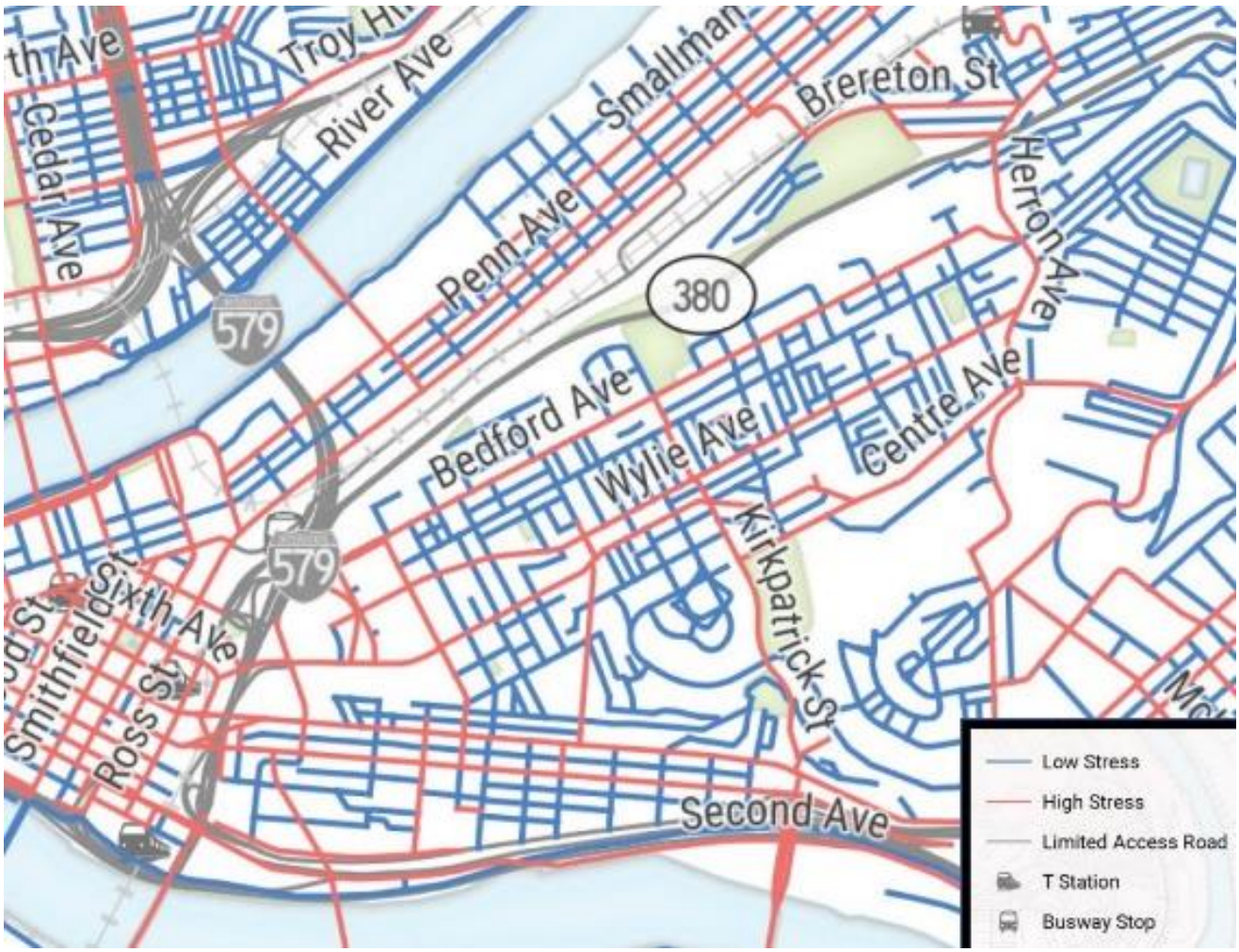


Table 7. Current Conditions of Existing On-Street Bike Routes

On-Street Bicycle Routes	Current Conditions

Bedford Avenue	• Typical Section
	  ○ 36' curb to curb
	  ○ Two lanes
	  ○ On-Street Parking
	• East-west connection to Bedford Dwellings and Downtown
	• Steep grade

Centre Avenue	• Typical Section
	  ○ 36' curb to curb
	  ○ Two lanes
	  ○ On-Street Parking
	  ○ Transit Corridor
	• East-west connection to Downtown; Access to the commercial corridor
	• Several signalized intersections at main cross streets

Crawford Street	• Typical Section
	  ○ 42' curb to curb
	  ○ Two lanes
	  ○ On-Street Parking
	• North-south connection to Uptown
	• Steep grade

Dinwiddie Street	• Typical Section
	  ○ 30' curb to curb
	  ○ Two lanes
	  ○ On-Street Parking
	• North-south connection to Uptown and Centre Avenue
	• Steep grade

Kirkpatrick Street	• Typical Section
	  ○ 36' curb to curb (varies)
	  ○ Two lanes
	  ○ On-Street Parking
	• North-south connection to Uptown, South Side Flats, and Three Rivers Heritage Trail
	• Steep grade; multiple curves; high volumes

Herron Avenue	• Typical Section
	  ○ 42' curb to curb
	  ○ South of Webster Avenue – Two lanes of bidirectional vehicle travel
	  ○ North of Webster Avenue – Four lanes (two northbound, two southbound)
	  ○ On-Street Parking
	• Connection to Polish Hill, the Strip District, West Oakland, and Pitt
	• Multiple curves; Challenging intersections at Webster Avenue and Bigelow Boulevard

PRIORITY BIKE CORRIDORS FROM PREVIOUS PLANS

The Bike(+) Master Plan recommends several dedicated bike facilities through the Hill District. The proposed routes are listed below:

- Crawford Street between Wylie Avenue and Forbes Avenue,
- Kirkpatrick Street between Wylie Avenue and Fifth Avenue,
- Herron Avenue between Wylie Avenue and Brereton Street, and
- Ridgeway Street Bike Facilities from Bloomfield Bridge to Herron Avenue.

In addition to these routes, the Bike(+) Master Plan recommends an east-west connection through the Hill District but does not provide a specific route.

PARKING

The Hill District has a mix of parking infrastructure, including residential parking zones, metered parking, surface parking lots, and parking garages, as shown in **Figure 20**Error! Reference source not found.. The Hill District has limited metered parking and has a few residential parking permit areas. The permitted parking areas are located in the Crawford- Roberts neighborhood, near PPG Paints Arena, and the surface parking lots in the Lower Hill used by commuters. Metered parking is provided on a segment of Centre Avenue in front of the Hill House and throughout the Lower Hill and the Crawford Roberts neighborhood. **Table 8** summarizes metered parking locations, rates, and maximum hours. The Hill District has several major destinations that influence parking demand, such as the PPG Arena, Bedford Dwellings Residences, and several commercial properties along Centre Avenue.

Table 8. Pittsburgh Parking Meters (Source: Pittsburgh Parking Authority)

Zone	Hourly Rate	Maximum Hours
Centre Avenue between Heldman Street and Green Street	$1	2
Centre Avenue between Crosstown Boulevard and Crawford Street	$1.50	No Max
Crawford Street between Centre Avenue and Bedford Avenue	$1.50	10
Bedford Avenue between Mario Lemieux Place and Crawford Street	$1.50	10
Mario Lemieux Place between Centre Avenue and Bedford Avenue	$1.50	No Max

Figure 44. Existing Parking Services in the Hill District

In general, the parking demand in the Hill District is much lower than in surrounding neighborhoods. There is a perceived issue with parking supply due to areas and peak periods with high parking demand. Given the land uses and development along Centre Avenue, on-street parking is provided throughout the neighborhood, with few large surface lots. On-street parking, rather than large lots, helps create a more pedestrian-oriented landscape. However, it also creates a perception of limited parking.

Redevelopment

Error! Reference source not found. displays the Lower Hill Redevelopment Site, shown in the southwest corner of the neighborhood. The development project will consist of seven new city blocks bounded by Centre Avenue, Bedford Avenue, Washington Place, Crawford Street, and an additional block of the now open proposed park area bounded by Washington Place, Centre Avenue, and the Crosstown Boulevard and the CONSOL Energy Center. The development proposes additional residential, retail, office, cineplex, hotel, and arena components.

As identified in the Lower Hill Transportation Study, the Lower Hill Redevelopment site's location currently contains 2,390 off-street parking spaces. With redevelopment, 2,178 spaces are proposed for a net decrease of 212 spaces. A majority of the proposed 2,178 spaces are designated for residential uses associated with the new development and will not be available for commuters or visitors to the Lower Hill site. The Study identified 1,382 of the 2,390 current off-street parking spaces being in use during the daytime. With redevelopment, 448 public parking spaces will be made available during the daytime, for a net difference of 934 parking spaces between the current demand and the proposed number of available spaces. Whether the 934 parkers find new places to park or switch modes, including to the proposed BRT, is unclear.

During a weekday evening, 603 publicly available off-street spaces will be available to accommodate the peak weekday evening for 2,383 spaces, for a net difference of 1,780 spaces. The Study does not specify whether the 1,780 parkers find alternative places to park or switch modes, including to the proposed BRT. To mitigate the effects of parkers using on-street parking in residential neighborhoods in the Hill District, the community has suggested providing shuttles to transport commuters from other lots into the neighborhood. As the neighborhood's parking supply changes, mitigation strategies must be implemented to balance the supply and demand for parking.

Parking Concerns

There are several parking challenges within the Hill District. The neighborhood has a high demand for commuter parking, as many employees commute into the neighborhood from other areas, and there is overflow parking from Downtown and Pitt. As a result of commuters parking throughout the neighborhood, limited commercial parking lots along Crawford Street and Centre Avenue, and residential permit parking areas experience increased demand. Additionally, major destinations throughout the neighborhood create high parking demand near the medical center and the PPG Arena. The community has voiced several concerns related to parking, including:

- Parking congestion at the YMCA on Centre Avenue,
- Need for pick-up/drop-off area and lack of parking at the Family Dollar on Centre Avenue,
- Commuter parking at the ShopnNSave,
- Narrow street width on Dinwiddie Street limits parking on both sides,
- Delivery trucks blocking the street during loading on Dinwiddie Street, and
- Need for dedicated delivery zones along Centre Street.

In general, there is a variety of parking infrastructure in the Hill District. Residential density is relatively low, with predominately single-family homes and duplexes. Parking demand is concentrated in key commercial areas.

MOBILITY PRIORITIES

The existing conditions evaluation provided valuable insight into the transportation-related challenges and opportunities within the Hill District. The following section summarizes mobility priorities for the neighborhood.

Neighborhood Travel Patterns

The Hill District attracts trips with its vibrant mix of residential and commercial uses. Enhancing the existing transportation network will encourage visitors, improve connectivity and access, and create more comfortable conditions for all transportation users.

Due to lower jobs and population, transit ridership in the Hill District is lower than in surrounding neighborhoods. However, transit remains a reliable, affordable, and safe transportation option for many residents. Transit service through the Hill District primarily uses Centre Avenue and Bedford Avenue as the main corridors. The steep terrain and gaps in the sidewalk, and condition of city steps present challenges for residents to walk to Centre Avenue and access the bus routes.

Neighborhood travel pattern priorities are as follows:

- Create multimodal connections to Centre Avenue.
- Enhance neighborhood gateways and improve connections from the Hill District to Downtown and adjacent neighborhoods.
- Accommodate convenient parking, delivery, and pick-up/drop-off activities in high-demand areas.
- Develop strategies to mitigate parking pressure from the Lower Hill Redevelopment and commuters.
- Encourage carpooling, vanpooling, and transit commute trips into the Hill District.
- Explore TDM strategies to decrease dependency on single-occupancy vehicles.
- Focus transit shelter improvements on Centre Avenue where existing amenities do not align with required and recommended amenities outlined in the PAAC Bus Stop and Street Design Guidelines.
- Further explore community priorities to identify transit routing that best meets local needs.

Safety and Active Transportation

Crashes are concentrated in the Middle and Lower Hill. Detailed analysis of the crash reports suggests intersection geometry and limited sight distance are the main contributing factors. The crash analysis and community and stakeholder input identified more intersections that present safety challenges, especially for pedestrians trying to cross the street. The hilly terrain and inadequate sidewalk and bike network make it difficult for people to walk and bike through the Hill District. There is a desire to connect the primarily residential area along Bedford Avenue to the commercial corridor along Centre Avenue.

Safety and active transportation priorities are as follows:

- Improve safety conditions at high crash intersections through geometric and crossing improvements.
- Promote streetscape improvements to activate priority pedestrian corridors.
- Improve neighborhood wayfinding for people walking and biking throughout the neighborhood.
- Improve north-south corridors to provide improved pedestrian access to Centre Avenue.
- Identify priority city steps to rehabilitate that will promote connections between Bedford Avenue and Centre Avenue.
- Enhance one of the east-west streets to create a low-stress bike facility.

Parking

Parking is a crucial piece of Hill's infrastructure. Given the neighborhood's proximity to the University of Pittsburgh and the PPG Paints Arena, parking strategies should be developed to mitigate future parking issues to accommodate new development activity and the New Granada Theatre. The neighborhood has many opportunities to control parking, including metered parking restrictions and expanding residential parking permit areas.

The following summarizes mobility priorities related to parking within the Hill District:

- Parking enforcement in commercial parking lots and residential parking permit areas.
- Reduce the dependence on vehicle trips through TDM strategies and encourage non-motorized trips.
- Identify strategies to make parking more convenient on Centre Avenue.
- Identify strategies to mitigate parking overflow from redevelopment areas and the Lower Hill.

APPENDIX B: NEIGHBORHOOD TRAFFIC CALMING AND STREETSCAPE TOOLKIT

Many proven streetscape design features can be used to achieve the mobility goals in the Hill District. Traffic calming features are those that alert the driver to drive more carefully and slow down. In the last three years, DOMI has used before and after data on safety and calming projects to refine designs and determine the most appropriate treatments for a given location. Some of the traffic calming options that DOMI uses that are applicable to the identified improvement areas in the Hill District are as follows. :

Crosswalk Enhancements

Crosswalk enhancements are proposed at all intersections in the Hill District, where feasible. Crosswalks are recommended on all legs of an intersection. Crosswalks should be direct and as short as possible to enhance pedestrian safety and shorten crossing distances. High visibility crosswalks are recommended, as they use longitudinal pavement markings that are highly visible to approaching vehicles and they increase the visibility of people crossing. **Figure 45** shows an example of high visibility crosswalks.

Adding crosswalks consistently to more intersections throughout the neighborhood will enhance pedestrian connectivity and increase driver awareness of pedestrians. Over time, improved pedestrian facilities and connectivity may encourage more people to commute throughout the neighborhood by walking.

Figure 45 High Visibility Crosswalk traversing Stanwix Street at Fort Pitt Boulevard, Pittsburgh.

DOMI

Sidewalk improvements

Building on the recommendation for crosswalk enhancements, sidewalks are a critical component of pedestrian safety and comfort. The existing conditions analysis revealed many deteriorating sidewalks or gaps in the network in the Hill District. Several stretches of sidewalks are overgrown with weeds, obstructed by light and/or utility poles and vehicles, and cracking. Sidewalk improvements are recommended and should be prioritized along major streets, including Centre Avenue, Kirkpatrick Street, Reed Street, Dinwiddie Street, Webster Street, and Wylie Avenue. North-

south connections between primary east-west streets also deserve priority, such as Addision and Elmore Streets between Centre Avenue and Rose Street. A long-term goal should be to complete the sidewalk network and provide sidewalks on all streets in the neighborhood. Key sidewalk improvement areas include:

- Along Centre Avenue (east of Kirkpatrick Street),
- Along Kirkpatrick Street (near Reed Street),
- Along Reed Street (east of Kirkpatrick Street), and
- Chauncey Street.

Figure 46 Wide Sidewalks on Bedford Avenue at Devillers Street

The recommendations propose expanding and enhancing the existing network of sidewalks within the neighborhood. Many sidewalks in the Hill District are already adequately wide and free of obstructions. **Figure 46** shows wide sidewalks along Bedford Avenue near the Bedford Reservoir Parklet.

Temporary Curb Extensions

Curb extensions extend the sidewalk into the intersection to narrow the crosswalk and create a place for people to wait to cross where they are more visible to drivers. They also slow drivers due to narrower lanes and a smaller turning radius. Curb extensions can be installed with quick-build materials such as paint, vertical delineators, bollards, or planters that are less costly to design and construct than concrete work.

Curb extensions are proposed at most intersections in the neighborhood, where feasible, including:

- At cross streets along Centre Avenue,
- At cross streets along Bedford Avenue,
- Kirkpatrick and Reed Street, and
- At cross streets along Chauncey Street.

Curb extensions can also help prevent illegal parking near intersections or blocking crosswalks. These treatments are feasible on wide streets with on-street parking or excess pavement.

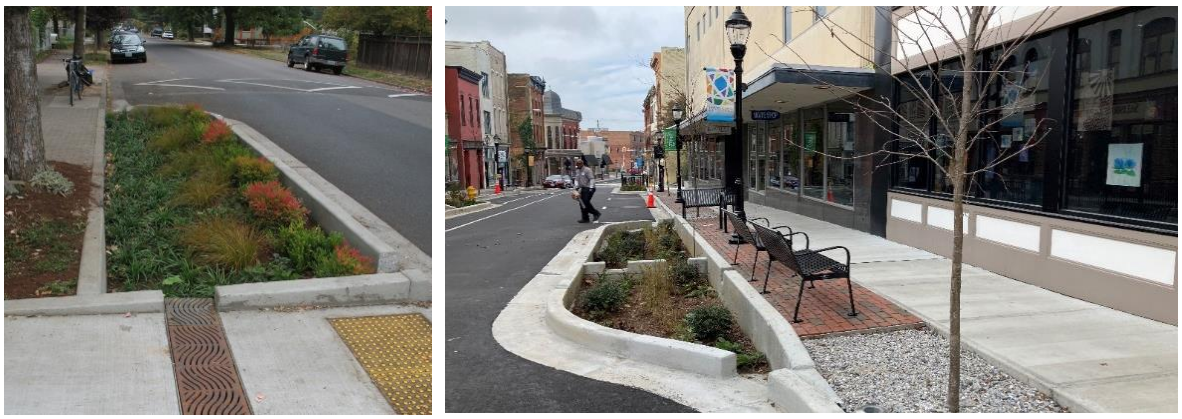
Figure 47 Painted curb extension with bollards, shown at Forbes Avenue and Stevenson Street, Pittsburgh.

DOMI

Permanent curb extensions

Permanent curb extensions serve the same purpose as temporary ones but are constructed as part of the roadway with a concrete curb. They may include landscaping, street furniture, or stormwater management features.

Figure 48 Curb Extensions with Green Infrastructure



Nspiregreen, Ltd.

Intersection realignment

Intersections, where roadways meet at a skewed angle, can be difficult or confusing for drivers, pedestrians, and bicyclists to navigate. These intersections often have a wide turning radius and long crosswalks. The turning radius impacts vehicle speeds. A wider radius will allow vehicles to turn quickly, whereas a smaller radius will cause vehicles to slow down to make a turn. The goal of intersection realignment is to have the roads meet at closer to 90 degrees, creating a safer intersection for all users.

Lane narrowing

Lane narrowing naturally slows vehicles as drivers do not have the space to speed. Lane narrowing may occur through widening sidewalks or by adding curb extensions, bicycle facilities, on-street parking, painted markings, or a median.

Figure 49 Examples of Lane Narrowing

Pedbikeimages.com

Figure 65a Painted lane narrowing effect on Darlington Street, Pittsburgh

DOMI

Parklets

A parklet is a small park or seating space that generally occupies a parking space or several parking spaces, extending public space. It is another manner of narrowing the street and can be an excellent amenity for businesses in heavily-trafficked areas.

Figure 50 Examples of Parklets

Source: Nspiregreen, Ltd.

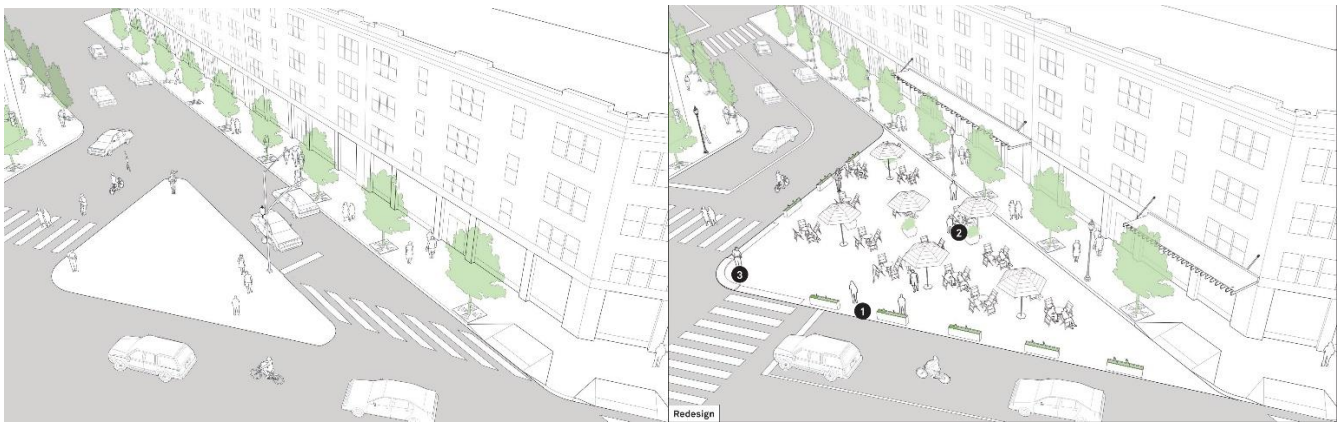
Micromobility Hubs

Several streets and intersections in the Hill District are wide and have excess asphalt. This treatment proposes repurposing excess street width into plaza/open space. Within the open space, this recommendation proposes adding bikeshare and micromobility hubs. **Figure 51** shows an example of realigning an intersection to remove the skewed approach and repurposing the small street segment with public space.

Figure 51 Before and After Pedestrian Plaza

Before

After



Global Designing Cities Initiative

Figure 52 displays an example of micromobility hub features, including areas for scooter and bikeshare and public amenities, such as lighting, seating, and landscaping.

Figure 52 Example of Micromobility Hub

Intelligent Transport

Micromobility hubs and plazas are recommended at several locations in the Hill District, where there is excess asphalt, including:

- The southwest corner of Devilliers Street and Centre Avenue,
- The southeast corner of Kirkpatrick Street and Reed Street,
- Centre Avenue at the Chauncey Street city steps,
- The southeast side of Centre Avenue and Reed Street, and
- The northwest corner of Kirkpatrick Street and Fifth 5th Avenue.

Medians

Medians are a key safety improvement for both drivers and pedestrians. For drivers, medians reduce the risk of a head-on crash with traffic traveling in the opposite direction. For pedestrians, medians divide larger roadways, creating a safe space for pedestrians to wait to cross. Even if a pedestrian can cross in a single light cycle, medians narrow the unprotected crossing distance by adding protected space where they are less likely to be hit by a vehicle.

Figure 53 Examples of pedestrian refuge island in medians

Source: Nspiregreen, Ltd.

Speed humps

Speed humps are vertical deflections about 3-6 feet wide along the roadway that encourage drivers to slow down. Speed humps are generally wider than speed bumps and, therefore, gentler on vehicles. They also allow bicyclists to cycle over the speed hump comfortably. They may be combined with crosswalks. In 2019, speed humps were installed on Webster Avenue in the Upper Hill District, which reduced the 85th percentile speed from 32 mph to 25 mph.

Figure 54 Speed hump

Move Forward PGH

Figure 70a Combination speed hump and crosswalk on Darlington Street, Pittsburgh

DOMI

Raised Intersection

A raised intersection moves the entire intersection to the level of the sidewalk. Similar to a speed hump, this introduces a vertical deflection along the roadway, causing the driver to slow down while also making the crosswalks more prominent.

Figure 55 Raised intersections

Source: Pedbikeimages.com

Source: Nspiregreen, Ltd.

Chicanes

Chicanes introduce a curved horizontal deflection to an otherwise straight roadway. They require the driver to drive slower to navigate a turning movement where they may have otherwise increased speeds along a straight roadway. Chicanes can also narrow the lane width and pedestrian crossing distances.

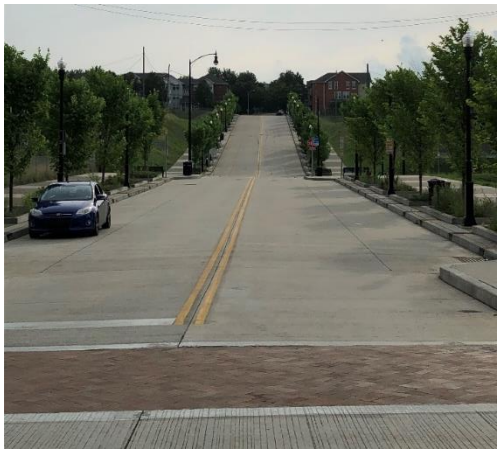
Figure 56 Urban Chicane

Pedbikeimages.com

Street Trees

An allée of street trees can visually enclose the street, making the roadway feel more confined. While the roadway may not be narrowed, it can appear to be narrower with an enclosing canopy along the sides and over the roadway. This tends to cause drivers to travel more slowly.

Figure 57 Street trees, on the left on Wylie Avenue at Fullerton Street



Source: Pittsburgh DOMI

Source: Nspiregreen, Ltd.

Neighborhood Traffic Circle

Neighborhood traffic circles are small traffic circles that require traffic to go to the right and exit on their desired street. The traffic circle removes the need for the intersection to be stop-controlled, allowing vehicles and bicyclists to continue moving. It also creates a small diversion by requiring traffic to navigate around the circle, naturally slowing vehicles as they navigate the new context.

Figure 58 Example of traffic circle with curb extensions

Source: Nspiregreen, Ltd.

Figure 59 Pilot traffic circle (MoveForward PGH)

MoveForward PGH

Public Art

Public art can be integrated into traffic calming and streetscape features to make it both more noticeable to drivers and more beautiful. Painted crosswalks, steps, and sidewalks can create fun and beautiful public spaces.

Figure 60 Examples of Public Art

Grahamprojects.com

APPENDIX C: PARKING AND TDM BEST PRACTICES

This appendix outlines the best practices for increasing transportation options and managing parking. A review of best practices for increasing transportation options and managing parking helped identify potential strategies and their applicability to the Hill District and helped develop the Recommendations & Projects. The best practices review considered practices from Pittsburgh as well as with peer cities across the country. The review focused on increasing transportation options, curbside management, and RPP programs. The following sections discuss two universally applicable TDM best practices:

1. Identify goals and objectives and establish an evaluation mechanism
2. Establish a stakeholder/public outreach plan

Identify Goals and Objectives, and Establish an Evaluation Mechanism

The Hill District has a dynamic and multi-faceted transportation system. Goals and objectives should consider:

- Providing transportation options,
- Enhancing parking experience,
- Addressing the needs of the local and regional transportation system, and
- Incorporating the City's perspectives overseeing the operating agencies (DOMI, the Department of City Planning (DCP), and the Pittsburgh Parking Authority (PPA).

Goals and objectives for increasing transportation options and the parking experience consider infrastructure for all users and modes, including commercial vehicles, transit, bicycles, pedestrians, and motor vehicles. Potential goals and objectives were developed based on the multi-layered approach to considering the user experience, the area's transportation system, and DOMI's perspective. Initially, two goals were developed:

1. Enhance the system user experience
2. Enhance the agency perspective

These two goals were expanded to include sub-goals and objectives. The sub-goals and objectives for **Goal 1: Enhance the system user experience** focuses on increasing transportation options and effectively managing the area's parking in a manner that is equitable for all travelers. The goals and sub-goals of **Goal 2: Enhance the agency perspective** focuses on better managing and understanding demands for the City's transportation and parking assets, accommodating the diverse needs of competing user groups for the same space, and optimizing the customer experience throughout the process.

An initial evaluation framework for reviewing the effectiveness of the strategies proposed was developed to allow for review and adjustments to the program. The framework addresses the transportation options and parking experience for system users, most notably residents, the needs of the broader transportation system, and DOMI, DCP, and PPA's perspectives as the operating agencies.

Table 6 summarizes the potential performance measures, evaluation methods, and targets associated with each goal, sub-goal, and objective. The table also identifies target performance measures and the data

sources or methods for measuring performance. The methods for achieving each objective will be provided in subsequent text.

Table 6 Potential Goals, Objectives, and Performance Measures for Parking and TDM

Sub-Goal				
Goal 1: Enhance the System User Experience				
Effectively Manage the area's parking	Increase parking availability	Turnover of high-demand parking spaces	Parking occupancy data	Improve turnover of high-demand parking spaces
	Reduce time spent finding parking	Length of time of cruising trips	Automated parking search time (AVI) data, manual bike survey data, and customer feedback	Reduce time spent finding parking
	Reduce illegal parking	Parking citations issued and the number of minutes vehicles violate parking regulations	Police citation data and observations	Reduce illegal parking
	Simplify parking payment	Compliant and efficient use of parking spaces	Observations, surveys; measuring the length of time of cruising trips	Improve visibility and user understanding of the parking payment process
	Reduce Vehicle Miles Traveled	Percentage of vehicles searching for parking and length of trips	Automated parking search time (AVI) data	Reduce total cruising VMT
Maintain and foster a safe, sustainable, equitable, and inclusive transportation system	Improve safety for all users	Reported aggressive motorist behavior	Observations and police data	Reduce erratic and unpredictable motorist behavior
	Reduce congestion and improve reliability	The percent change in travel time index (TTI) and planning time index (PTI)	Streetlight data	Reduce congestion and improve reliability
	Improve economic access and activity	Change over time in sales volumes, sales per establishment, total establishments, and total employees per establishment	Citywide economic data	Improve sales volume, employment, and number of establishments
	Optimize multimodal interactions	Bus speeds, bus ridership, Healthy Ride ridership, scooters	Healthy Ride and Port Authority data	Increase access to other transportation modes
	Improve convenience	Benefits and burden related to system users	User survey/ACS Data	Determine appropriate resources to aid vulnerable populations (financial services, enhanced accessibility, etc.)
Goal 2: Enhance the Agency Perspective and Mission				
Effectively manage assets	Minimize costs and equipment needs	Program cost over time and equipment/parking facility maintenance	Pittsburgh Parking Authority data	Minimize costs, reduce equipment needs, and maximize data collection
Accommodate competing users	Encourage transportation mode integration	Bus ridership, Healthy Ride ridership, scooters	Healthy Ride and Port Authority data	Improve accommodations for other travel modes
Optimize Customer Experience	Accurately predict parking occupancy	Mobile application performance	Mobile application usage and integration	Increase accuracy of mobile application real-time traveler information
	Maintain transparent pricing while ensuring revenue stability	Number of transactions and revenue per transaction	Pittsburgh Parking Authority data	Maintain net positive parking revenue
	Maintain cost-effectiveness	Equipment and maintenance costs; equipment life cycle; energy costs; data gateway costs enforcement costs	Pittsburgh Parking Authority data	Reduce maintenance and operation costs and maximize effectiveness

Establish a Stakeholder/Public Outreach Plan

Engaging stakeholders and keeping the public informed through proactive, clear, and consistent communication will be key to implementing the recommended strategies for increasing transportation options and improving the parking experience. The first step to establishing a communication strategy is to identify stakeholders, followed by determining potential outreach mechanisms.

STAKEHOLDER IDENTIFICATION

A robust and comprehensive outreach and coordination effort begins with the identification of stakeholders and an understanding of their respective needs. A communication plan should include a detailed profile of each stakeholder, including their primary needs, project impacts, benefits, and risks. Potential stakeholders include:

- DOMI and internal groups
- Department of City Planning (DCP)
- Department of Public Works (DPW)
- Pittsburgh Parking Authority (PPA
- Pittsburgh Innovation and Performance (I&P)
- Pittsburgh Bureau of Police
- The Hill Community Development Corporation (Hill CDC)
- Hill District Consensus Group
- Pennsylvania Department of Transportation (PennDOT)
- PennDOT Driver and Vehicle Services
- Motorcoach and freight trade groups
- Media organizations, including print, radio, TV, blogs, and social media
- Pittsburgh City Council (District 6)
- Sports and Exhibition Authority
- Urban Redevelopment Authority of Pittsburgh
- Walk Pittsburgh
- BikePGH
- General public
- Other policy/decision-makers
- Institutions

OUTREACH

DOMI should identify and distribute key messages at significant project milestones to clarify stakeholder issues and answer frequently asked questions. These key milestones could include the launch of the TDM program, the receipt of grant funding, or key stages in the planning, design, or implementation of proposed recommendations.

After identifying stakeholders and initial key messages, DOMI should continue to communicate with the community and stakeholders on a project-specific basis. The three primary outreach strategies that should be used include email updates, in-person meetings, and outreach through social media and other online platforms. The following materials could be developed to support these efforts:

- Summary Flyers can be used to convey key messages on transportation options and the parking experience to a general audience. The flyers could include contact information so the community and stakeholders can request more information or ask questions to City staff.
- Frequently Asked Questions (FAQs) Documents should be distributed in conjunction with press releases. The FAQs will reflect the status of the goals and objectives, and key messages.
- Public Presentation Materials can be developed to provide information to a general audience at public meetings and other in-person events. The presentation can be updated as the transportation options and parking experience evolve to reflect the changing project status and key messages.
- A website can be expanded to provide information on transportation options and the parking experience to stakeholders. The website can include links to the latest press release, FAQ documents, and the public presentation.
- Social Media can be used to convey timely messages and responses to customer concerns.
- Advertising can be used to draw attention to upcoming project milestones and transportation option initiatives
- On-Street Ambassadors can support modifications or transitions within existing programs, such as any modifications or expansions to the RPP program.

As part of the stakeholder coordination and community outreach effort, DOMI should continue to attend hold media events, speak at public meetings hosted by the Hill CDC or other community groups, hold meetings with the CDC and Hill District neighborhood groups and conduct press events for local media.

Increasing Transportation Options

Source: Mobility Lab

Increasing available transportation options and reducing the reliance on people driving alone – also known as "single-occupancy vehicles" (SOV) is a strategy termed "transportation-demand management" or TDM. TDM is defined as a program of information, encouragement, and incentives provided by local or regional entities to help people learn about and hopefully use, even if on occasion, transportation options to optimize all modes in the system. TDM is driven by transportation infrastructure, land uses, and mode shifts. TDM focuses on understanding how and why people make decisions about the different types of trips that they take.

A peer review of TDM measures developed by other municipalities and institutions across the country helped to identify the corridor and intersection improvements and program recommendations. Key takeaways from this review were:

- The designation of a TDM coordinator is critical for the implementation of other strategies and measures.
- Successful TDM strategy implementation considers many factors, including land use and end-users (residents, employees, patrons, etc.)

- Provision of site facilities, such as bike parking, shower and changing facilities, and real-time transit screens, has become a commonplace requirement for urban redevelopments
- Improving site design and considering off-site improvements to pedestrian and bicycle safety may be appropriate depending on the size and impact of certain development projects

Additionally, the review highlighted the importance of establishing a governance structure for the TDM program. Of interest was how cities bolster the site plan review process and ensure developers are implementing TDM measures. The peer cities where information was available, include:

- Sunnyvale, California
- Portland, Oregon
- Cambridge, Massachusetts
- San Francisco, California
- Menlo Park, California
- Seattle, Washington

Based on the review of these cities, example TDM governance structures include enforcement mechanisms like:

- Requiring or encouraging the payment of a Multimodal Incentive Fee to support TDM activities
- Establishing mode split goals, requiring monitoring, and charging developers penalties for noncompliance
- Conducting site checks to confirm physical elements of the TDM plan are provided before occupancy approvals are granted

The Multimodal Incentive Fee could provide significant benefit to the Hill District neighborhood, given the need to jointly fund a Neighborhood TDM Coordinator position, as highlighted and described in the Recommendations & Projects section.

Curbside Management

With new modes and technologies, including ride-hail apps, e-commerce deliveries, and micromobility services, coming online with increased frequency, the curbside landscape has changed considerably over the last decade. To accommodate the various curbside demands and provide greater economic and societal benefits to users, a more proactive curbside management approach is required. A review of curbside management practices from peer agencies identified many of the same curbside challenges, including congested loading zones, demand for pick-up drop-off locations, and competing demands for curbside use. The review helped the team understand multiple strategies cities are employing to balance curb demand with supply. A key challenge facing many jurisdictions is the consistent lack of curb space for commercial deliveries and transit vehicles. If circling for parking is reduced and spaces are used more efficiently, making them more available, drivers of private vehicles are less likely to use commercial and transit loading space. This availability can help commercial and transit vehicles pull out of travel lanes into their designated spaces, reducing disruptions to traffic flow. The following strategies are designed to

optimize the effectiveness of the curbside and create space for other modes and uses, such as bicycle parking, bus stations, micromobility corrals.

PRICE ADJUSTMENTS

A key strategy that has been effectively used to balance demand and supply is adjusting parking prices. Raising the prices of parking spaces closer to popular destinations (as determined by measured demand) while lowering the prices of spaces further away (as determined by the cost of inconvenience) can bring total costs in both dollars and time into greater agreement across an area such as the Hill District. This can help distribute demand, lessening the occurrence of multiple available parking spaces on some blocks and no available spaces on other blocks.

The cost of time, walking distance, and inconvenience are not the same for all potential users. One benefit of changing the price for parking so that a space is available on each block face is that those spaces will be more likely to be available for people who most value proximity. These could include people who are in a hurry, transporting heavy loads or young children or have limited mobility. In locations where price adjustments alone are not sufficient for balancing demand, time-limit adjustments provide an additional mechanism for balancing supply with demand. Time limit increases in areas with low demand can be effective in increasing the number of cars parked on blocks a little bit further away from popular neighborhood destinations.

RECONFIGURING CURBSIDE SPACE

In addition to pricing and time limit adjustments, reconfiguring curbside space can provide greater access to the curb for both people and deliveries. Encouraging off-peak delivery windows along with designating and enforcing curb space for those same deliveries can help make sure curb space designated for loading and unloading is generally available when needed. This will discourage double parking by private vehicles, which obstructs traffic flow, and other unsanctioned curb use such as blocking fire hydrants.

The emergence of on-demand delivery services and transportation network companies (TNC) like Uber and Lyft has led to an increased demand for readily available access to the curb. Over the past decade, locations with high TNC activity have experienced increased congestion. This results from illegal and unsafe passenger loading, on-demand delivery pickups from travel lanes, and pedestrians standing in travel lanes to hail TNC vehicles. To alleviate these issues, pick-up/drop-off (PUDO) zones can provide designated space for ride-hail services. Studies from other cities have shown that PUDO zones are effective in clearing curb space for passenger and commercial loading, and qualitative data demonstrates incremental safety and traffic flow improvements near PUDO zones.

Reconfiguring curbside space also opens opportunities to reallocate space to people who walk and bike. In particular, placing bicycle facilities between parked vehicles and existing sidewalk space has the potential to provide more comfortable facilities for bicycle riders of all skill and comfort levels.

ENFORCEMENT

Often thought of negatively, enforcement is essential to managing the curbside and minimizing vehicles blocking facilities for people walking and biking. The use of automated enforcement, whether by pole-mounted license plate readers or vehicle-mounted cameras, has proven effective and unbiased in its application. Fines should be set at the lowest effective rate, so potential violators are deterred from illegal use. Combined with consistent enforcement, relatively low fines have been shown to be enough to deter violations. Enhanced enforcement of loading regulations and performance pricing for commercial vehicle

loading zones should be undertaken strategically, along with education and incentives to encourage off-peak delivery.

The continuation of pay-by-plate payment methods along with automated license plate recognition (LPR) enforcement mechanisms has the potential to streamline both the payment processing and enforcement capabilities. With the pay-by-plate payment method, customers enter their license plate number at meters to pay for parking. The initial use of pay-by-plate is slightly more difficult than entering a space number at the kiosk, but ultimately it should prove more customer-friendly, as license plates remain constant and the need to search for a parking space number is eliminated. Pay-by-plate may also encourage more use of pay by cell. When coupled with zones, the use of pay-by-plate also streamlines and reduces opportunities for error in the parking enforcement process. Parking enforcement personnel querying a zone receive a list of paid plates, allowing them to verify miskeyed plate numbers (e.g., ABC123 versus ABC213). There are some limitations to pay-by-plate, including visitors using rental cars. These motorists may need to return to their vehicle to verify the license plate.

RPP Program Comparison

A scan of RPP programs in other jurisdictions was completed to understand common elements and characteristics amongst RPP programs, including unique strategies or innovative policies that support parking management in residential areas.

SIZE OF DISTRICTS

While no reviewed program has a maximum size for parking a district, the size of the Hill District needs to be small enough to eliminate intra-area commuting. Several jurisdictions have minimum sizes, including Pittsburgh, which has a minimum size of 10 block faces or 100 parking spaces. Other cities have minimum sizes as small as a single block face, the requirement of at least 50 permits, or a minimum of one mile of street frontage.

PERMIT TYPES

A variety of different types of residential parking permits are used throughout the country. While most permits are valid for one year, a few programs issue two-year permits for a higher fee. Except for Boston, Massachusetts, all programs offer a visitor/guest pass option. Table summarizes details about permit types for several peer cities.

Other permits available across the country include temporary permits (typically when a resident has applied for a permit but has not yet received the official placard/sticker), military/government, fire station, foreign consulate, diplomat, reciprocity, and special event permits, which allows a resident to get permits for guests of a special event at their property.

Table 2 Summary of RPP Permit Types

City	Term	Guest Pass?	Additional Permits
Pittsburgh	1 Year	✓	Commercial/Business
Boston			Healthcare permit

Washington, DC		✓	Healthcare permit
San Francisco		✓	Contractor, Commercial/Business, Childcare, Student, Healthcare, Educational
Arlington, Virginia		✓	Property Owner/Landlord
New Orleans		✓	Property Owner/Landlord
Charleston		✓	Property Owner/Landlord, Healthcare
Montgomery County, Maryland		✓	Childcare permits, Student permits

PERMIT FEES

Most jurisdictions, including Pittsburgh, charge a flat per-vehicle rate for each parking permit. About half of the jurisdictions provide a cap on the number of permits available per household, usually between 3 and 4, although Charleston, South Carolina, limits households to two permits. A few jurisdictions, including Washington, D.C., Alexandria, and Arlington, Virginia, use graduated pricing for residential permits per additional vehicle per household. Compared to the $20 fee in Pittsburgh, Washington, D.C. charges $50, Annapolis, Maryland, charges $55, and San Francisco charges $152.

PERMIT RESTRICTIONS

Restrictions also vary throughout the country. Typically, RPP restrictions are from Monday through Friday during work hours (8 a.m. to 5 p.m.). In Savannah, Georgia, there is no RPP signage, but those with RPP permits can park at metered spots free of charge. It is also common to allow non-residents to park for a limited amount of time, typically two hours. About half of the jurisdictions have resident-only restrictions which prohibit non-residents from parking in RPP zones for any amount of time. In Boston, most zones are resident-only, but Washington, D.C. has put a moratorium on allowing resident-only zones because of issues that have been identified with pushing parking demand to nearby blocks. Overnight restrictions are also inconsistent across the country, with about half of the jurisdictions, including Pittsburgh, having some form of overnight restriction.

BEST PRACTICES

Several best practices from peer cities were considered to be applicable to the Hill District, given their similar citywide goals and objectives, available resources, preexisting limitations, and parking infrastructure. Best practices and innovative strategies identified from the various jurisdictions, including the following:

- Boston raised fines for RPP violations during stadium events in the Fenway/Kenmore District, which helped reduce parking demand in that area.
- Savannah does not post signs for RRP areas, and residents with a permit are allowed to park for free with no time limit at all metered spots in the residential zone.
- Jurisdictions have had success limiting demand by raising fees, which in many places, similar to Pittsburgh, had not raised permit fees for an extended period of time.