

SOUTH HILLS JUNCTION STATION AREA PLAN

PORT AUTHORITY OF ALLEGHENY COUNTY
PLANNING DEPARTMENT

SOUTH HILLS JUNCTION

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ACKNOWLEDGMENTS

About Port Authority

Port Authority of Allegheny County (Port Authority) provides public transportation throughout Pittsburgh and Allegheny County.

The Authority's 2,600 employees operate, maintain, and support bus, light rail, incline, and paratransit services for approximately 200,000 daily riders.

Governed by an 11-member board appointed by the Allegheny County executive, leaders from both parties in the Pennsylvania House of Representatives and Senate, and the governor of Pennsylvania, the board and its committees hold regularly scheduled public meetings.

Port Authority's budget is funded by fare and advertising revenue, along with money from county, state, and federal sources. The Authority's finances and operations are audited on a regular basis, both internally and by external agencies.

Port Authority began serving the community in March 1964. In early 2015, Port Authority began investing in a transit-oriented development program. This document is the result of investment to date, overseen by TOD staff and an interdisciplinary working group focused on TOD.

Participants

Port Authority would like to thank agency partners for supporting the station area planning project at South Hills Junction Station, and all those who participated by dedicating their time and expertise.

This document was stewarded internally by Port Authority's TOD advisory committee, an interdepartmental body established to support the Station Improvement Program and other TOD activities. Current Port Authority Divisions and Departments represented on the committee include: Facilities & Rail Maintenance, Grants & Capital Programs, Legal & Consulting Services, Planning & Evaluation, Road Operations, Service Development & ITS Technology, System Safety, and Technical Support & Capital Programs. This committee and development of station area planning are managed by Moira Egler, AICP, Transit-Oriented Communities Project Manager.

This study was developed by Port Authority of Allegheny County in collaboration with the Community Solutions Group of GAI Consultants, evolve environment::architecture, and Brean Associates. All maps and graphics were created by Community Solutions Group and evolveEA unless otherwise noted.

South Hills Junction Station is the fourth plan to be produced by Port Authority's Station Improvement Program which was initiated in 2016.

Port Authority



evolve
environment::architecture



BREAN
ASSOCIATES

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INTRODUCTION

WHAT IS STATION AREA PLANNING?

Station area planning examines the challenges and opportunities for existing Port Authority fixed guideway stations within the context of three scales. For many communities, this process also serves as the first opportunity to engage in conversation with Port Authority about issues related to station configuration, station access, area land use, and potential transit-oriented development (TOD) opportunities.

Port Authority's Planning Department, supported by its consultant team—comprised of Community Solutions Group, evolve environment::architecture, and Brean Associates—outlined the following objectives for South Hills Junction Station Plan for cost-effective station improvements that will increase ridership at the station, thereby increasing the revenue potential for Port Authority. In addition to increased ridership, these kinds of facility-specific improvements could attract new real estate investment.

- Improve connectivity, operations, and overall function at the station in order to encourage high quality TOD at the station.
- Engage all of the relevant stakeholders to ensure that TOD opportunities are community supported and complimentary to other planned projects. This will facilitate future implementation of TOD—supportive initiatives (e.g. TOD-friendly zoning, strategic purchase of land, recommended roadway improvements, etc).
- Build new infrastructure that meets the needs of today while enabling future service expansions and network adaptability.



Members of the public met with the project team for an open house outside of the Warrington Recreation Center to discuss concept scenarios for South Hills Junction in August 2021.

HOW TO USE THIS PLAN

This document is meant to provide the entire community of the South Hills Junction Station area and transit-oriented development stakeholders—riders, residents, transit agencies, local governments, regional planners, community groups, developers, and others—with a common understanding of the existing conditions and opportunities for South Hills Junction Station.

It should be used to:



Encourage development that integrates and expands transit use at South Hills Junction Station.

Per the Authority's 2016 Transit-Oriented Development Guidelines, TOD allows people to integrate transit use into their lives by creating dense, mixed-use places where they can live, work, shop, and play. South Hills Junction is made up of over 12 acres of Port Authority—owned land south of the Mt. Washington Transit Tunnel between Boggs, Warrington, and Haberman Avenues. Much of this property fronts Warrington Avenue, a busy transportation corridor. With coordination between Port Authority and stakeholders, this site is highly desirable for TOD.



Make it easy for people to get there.

Getting to and from the station should be an enjoyable experience for all transit users. South Hills Junction offers Light Rail, South Busway, and local bus service and transfers. Riders use the station inbound to reach Downtown Pittsburgh and outbound to the South Hills, with Red Line service to South Hills Village via Beechview, Blue Line service to South Hills Village via Overbrook, and Silver Line service to Library via Overbrook. The South Busway extends about four miles south of the station and is used for express bus service.



Create a safe, welcoming station.

The design of the station influences ease of use, operational efficiency, and how users perceive its quality. Strategic investments should be made to update the station's appearance and amenities so that it is more recognizable as a high-value transit amenity. This document provides conceptual design recommendations for the light rail and busway stations.

PLANNING PROCESS

The consultant team, working under the guidance of Port Authority's Planning Department and Service Department, performed this study in four phases: Review and Analysis, Public Engagement, Station Area Plan, and Implementation Strategy.

Review and Analysis gave the team the background information to understand existing challenges and opportunities. This phase formed the basis for identifying potential infrastructure and TOD strategies that could be valuable for Port Authority and the communities surrounding South Hills Junction.

Public engagement opened a channel of dialogue between the public, Port Authority, and the consultant team to discuss existing conditions and desires. The first set of meetings were working sessions that allowed community members to collaborate in order to identify challenges they face in using the station and to prioritize potential interventions. The second set were presentations and discussions that allowed community members to learn about and critique proposed planning and

design strategies for addressing their concerns and other challenges identified in the station area. The third and final set confirmed that public feedback had been heard and presented the final conceptual design that will be advanced to the engineering phase of the project.

In the Station Area Plan, the team used input from the community, input from Port Authority staff, and urban design best practices to propose improvements to station design and station access. Plan development was also informed by issues including safety, property ownership, cost, operational efficiency, and alignment with other initiatives. After initial concepts were created, they were vetted by the community at the second set of public meetings.

Implementation Strategy focused on Port Authority's role in moving proposed projects forward. For any given station area project, Port Authority may be tasked with designing station area improvements or acting as a supporter for improvements nearby.

Discovery

- Reviewed relevant plans and studies to understand previously documented challenges and opportunities
- Reviewed historic maps and photos to understand how existing infrastructure and development patterns came to be
- Reviewed Port Authority station user surveys
- Engaged with potential project partners and agencies to understand current projects in motion
- Performed a site topographic survey and a site walk
- Completed a TOD Market Assessment
- Presented and discussed findings with Port Authority's internal Transit-Oriented Communities (TOC) Committee

Public Engagement #1

- May 2021: Presented initial findings at a virtual public meeting utilizing Social Pinpoint for an interactive mapping experience
- August 2021: After further concept development, met with the public again to report on project progress and to gather additional ideas, listen to concerns, and answer questions
- November 2021: A final public meeting was held to present a final conceptual design to confirm a working concept that benefited the community
- Meetings were held in both the afternoon and evening to accommodate stakeholders' schedules

Public Engagement #2

Station Area Plan

- Concept plans were developed for improvements to South Hills Junction Station
- Created concept-level plans for improvements to public realm infrastructure on and near Port Authority property
- Developed concepts for transit-oriented development on Port Authority land.
- Presented and discussed strategies with Port Authority's internal TOC Committee

Public Engagement #3

Implementation Strategy

- Reviewed conceptual alternatives and institutional capacity to develop a strategy for project implementation

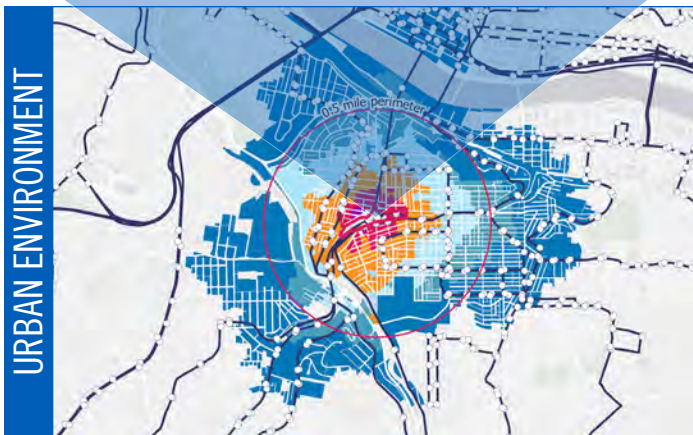
ANALYSIS AT THREE SCALES

This project was predicated upon the understanding that major public transit stations are important social and economic anchors for the communities they serve. To understand how South Hills Junction Station is integrated within its community and the broader region, Port Authority considered issues at three scales:



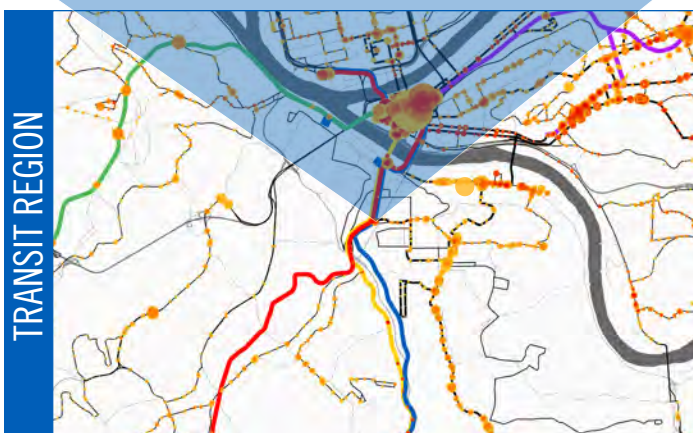
At the station area scale, Port Authority considered:

- Physical condition, assets and liabilities, environmental resources
- Customer use patterns and ridership
- Station connectivity and safety for pedestrians accessing the station as well as for multimodal transfers between Port Authority services
- Station area efficiency for day-to-day operations and major event operations



At the urban environment scale, Port Authority considered:

- Key transformations in the surrounding area that could be supportive of transit-oriented development
- Regulatory context and guiding documents
- Physical condition of infrastructure
- Economic trends in the adjacent area
- Cultural context with regards to community identity, place-making, and public art
- Community use patterns and perceptions
- Environmental context such as stormwater conveyance and ecological contiguity



At the regional scale, Port Authority considered:

- Improving connectivity to other major nodes and the complimentary or competitive uses at those nodes
- Regional economic forces that affect the attractiveness and viability of this node
- Timing of station area initiatives in relation to other planned Port Authority projects and planned partner projects

A TRANSIT NEIGHBORHOOD STATION

In an effort to provide context-sensitive recommendations, Port Authority's Transit-Oriented Development Guidelines sort its 76 station areas into six categories based on density and land use. South Hills Junction Station, located within the City of Pittsburgh with a moderate density and mix of uses, was classified as a Transit Neighborhood station.

Transit Neighborhood stations are the second most common station type and feature significant diversity. These areas have a moderate density and mix of uses. Residential portions of these neighborhoods can be similar in nature to both Suburban and Urban Neighborhoods. Transit Neighborhoods are unique due to the mid-level density of jobs and residents. Some of the 18 Transit Neighborhoods may be in this category due to vacancy rather than being less dense by design.

Transit Neighborhoods are located within the City of Pittsburgh and in surrounding municipalities. Land use development patterns in these neighborhoods are of a modest density with similar street grids to what one would find in suburban development, albeit with smaller more condensed blocks. While the block sizes and street network accommodate pedestrian access, the primarily residential character of these areas results in greater travel distances to businesses and services. Planning for a diverse range of transportation modes is important at Transit Neighborhood stations to effectively allow people to reach low- and mid-density areas that are not within walking distance.

While the fixed-guideway service remains consistent, local on-street transit in these areas may be less frequent than in higher density neighborhoods, as riders are more likely to use transit primarily for commuting. Transit Neighborhoods can be destinations unto themselves, but less likely than in areas with a greater density and mix of uses. With less density, parking for new development can be built at low to moderate levels. Large-scale surface lots will likely not fit in with the residential character of a Transit Neighborhood; parking structures could be an efficient way to incorporate that use, depending on the character of the site and surrounding buildings.

Page 21, Port Authority TOD Guidelines, 2016



An aerial view of South Hills Junction Station showing the varying differences in topography, multiple operational site uses, and a combination of transit types, from light rail, the South Busway, and on-street connectors.

Source: Google Earth[®]

Transit Neighborhood Multimodal Highlights

- Enhance multimodal access with infrastructure improvements
- Park and Ride not appropriate except at end of line
- Enhance drop-off access at locations near main streets
- Connect to existing multimodal networks including on-street transit

Transit Neighborhood Walkability Highlights

- Provide safe, visible connections around station and neighborhood streets
- Provide alternative pedestrian routes off fast-moving streets
- Decrease block size
- Consider wayfinding

Transit Neighborhood Development Highlights

- 3-5 stories
- 30-70% lot coverage
- Multi-family or townhouses
- Building design should match the feel and needs of the specific neighborhood
- Build higher density in close proximity to the station

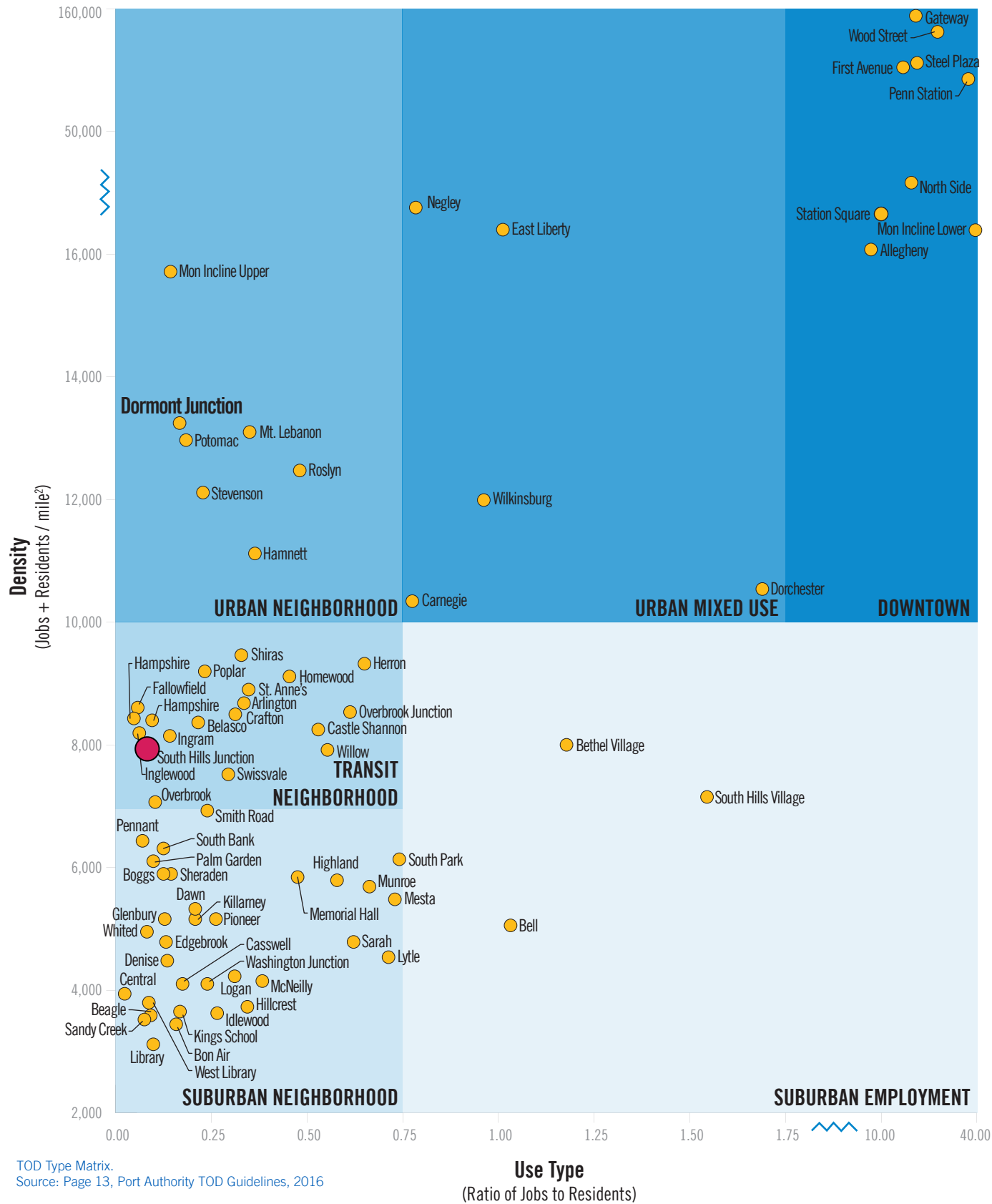
Transit Neighborhood Keys to Success

- Market transit connections
- Rebuild and reconnect pedestrian infrastructure
- If vacancy is high, plan development and infrastructure for future density

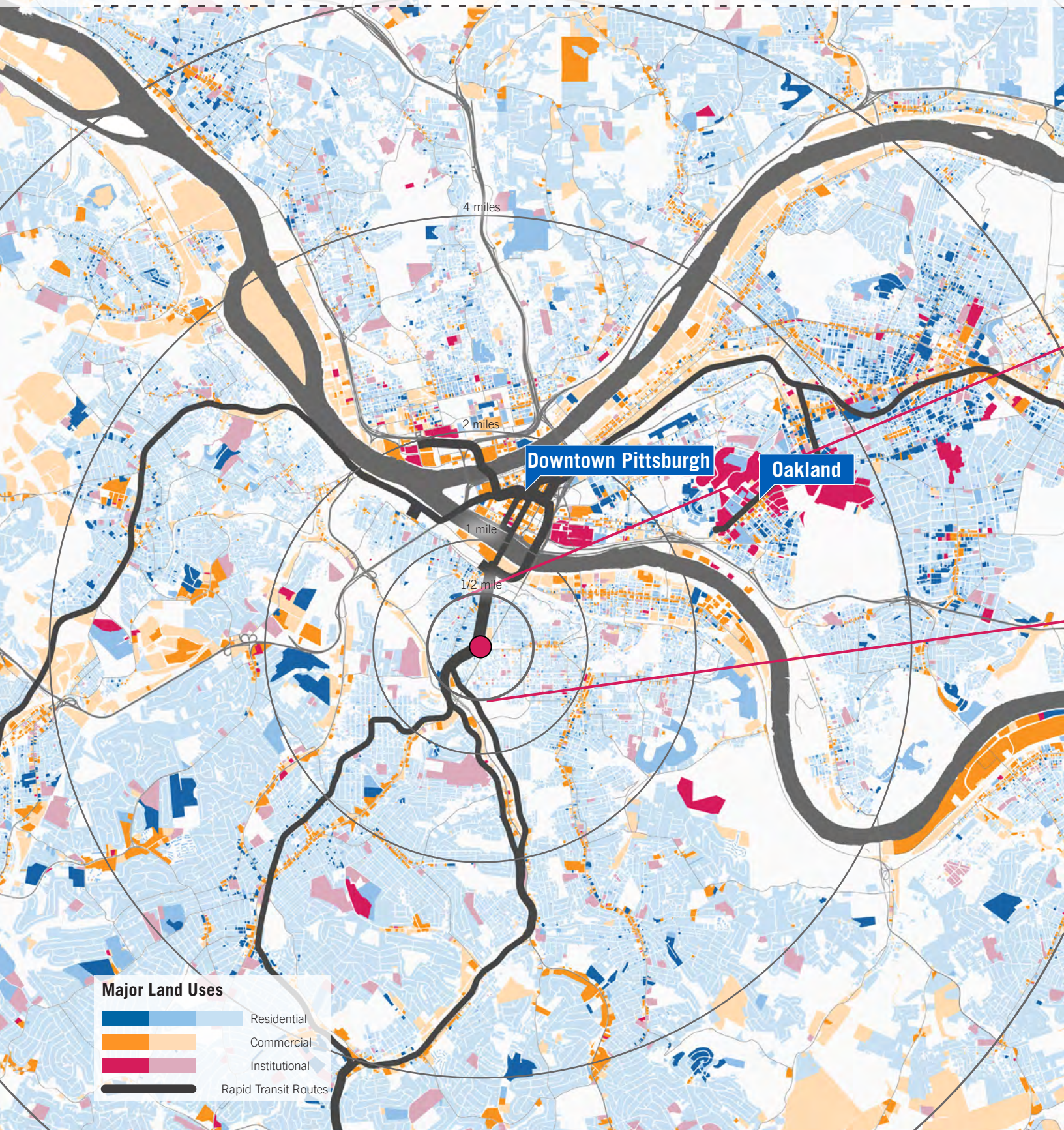
Transit Neighborhood Comparable Station Areas

- Crafton Station (Crafton)
- Homewood Station (Pittsburgh)

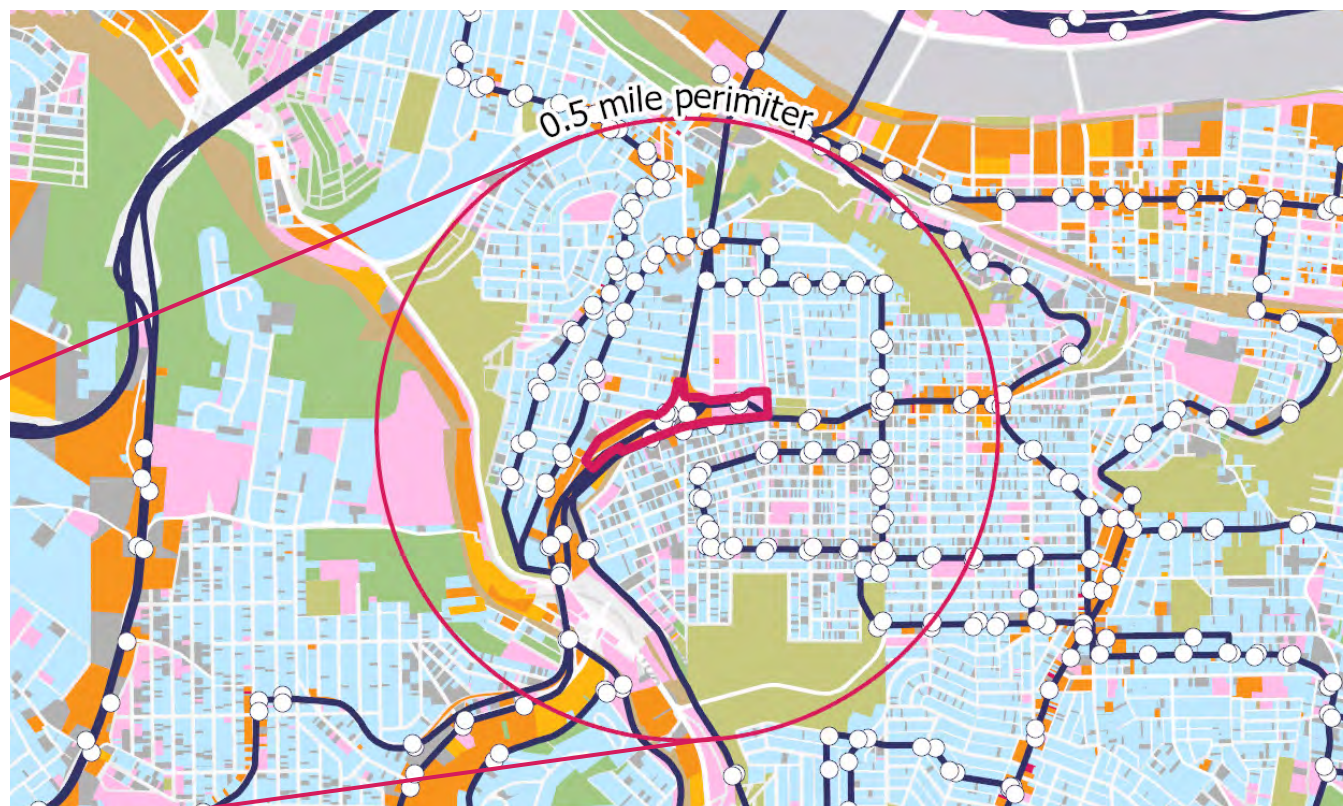
Page 17, Port Authority TOD Guidelines, 2016



SOUTH HILLS JUNCTION: URBAN CONTEXT



STATION AREA LAND USE



Source: Urban Footprint

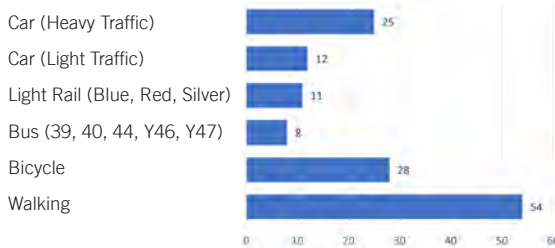


South Hills Junction is located at the seam between two largely residential communities. It is surrounded by residential uses and is a half mile west of the Warrington Avenue commercial corridor. Because it is at the bottom of a steep valley, the station is not readily visible from Warrington Avenue, a key challenge for this station.

From the North Shore at Allegheny Station, the light rail network travels south, weaving its way through downtown and across the Monongahela River before joining the South Busway through the Mt. Washington Transit Tunnel to South Hills Junction. Outbound from South Hills Junction Station, the Red Line passes through hilltop communities of Beechview, Dormont, and Mt. Lebanon before terminating at South Hills Village; the Blue Line Beltzhoover through the Sawmill Run valley below Overbrook and through Castle Shannon before terminating at South Hills Village; the Silver Line follows the Blue Line to Bethel Park where it continues another five miles through the South Hills to terminate at Library Station.

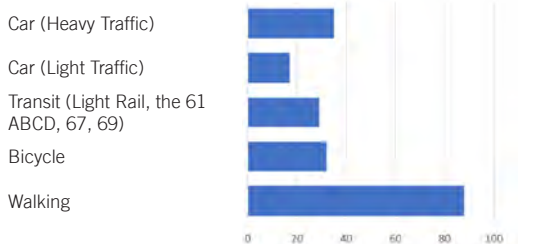
The South Busway follows the Saw Mill Run valley to connect express routes to the Monongahela River valley and to Downtown Pittsburgh.

Traveling to Downtown:



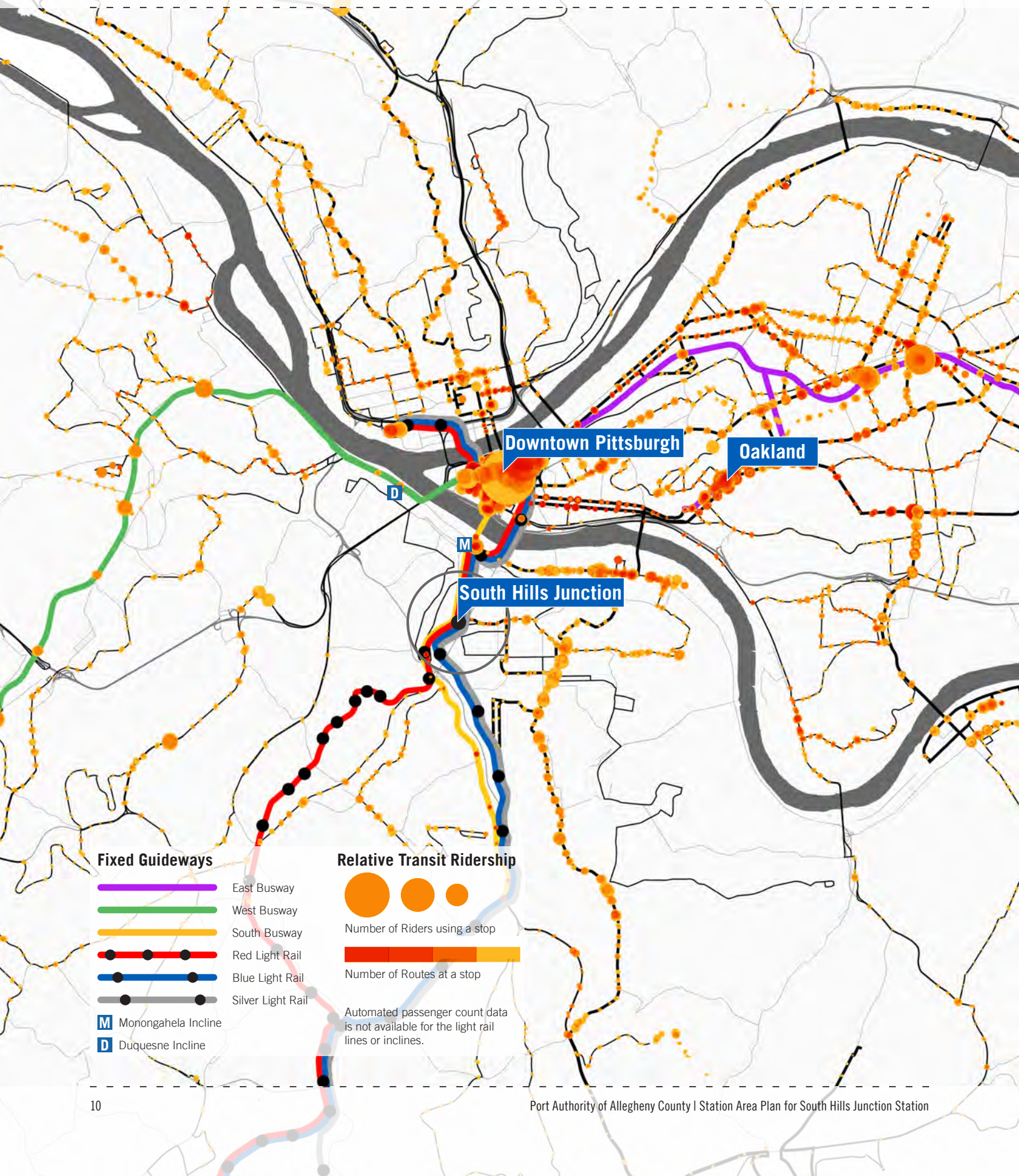
*Using Smithfield Street at Sixth Avenue as a reference point

Traveling to Oakland:

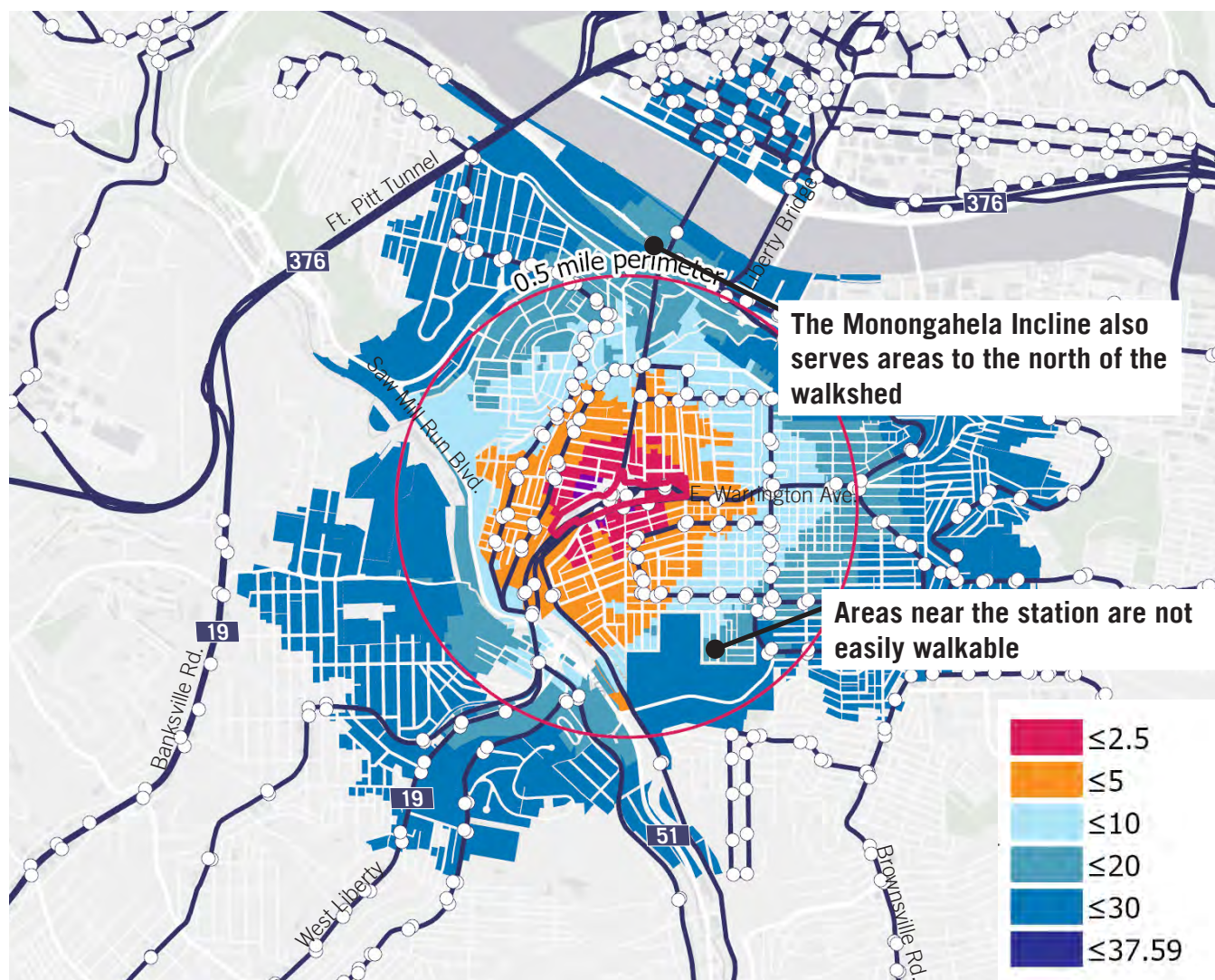


*Using Forbes Avenue at S. Bouquet Street as a reference point

SOUTH HILLS JUNCTION: TRANSIT



STATION AREA WALKABILITY



Transit routes serving the South Hills Junction area:

RED LINE LIGHT RAIL

South Hills Village via Beechview

BLUE LINE LIGHT RAIL

South Hills Village via Overbrook

SILVER LINE LIGHT RAIL

Library via Overbrook

SOUTH BUSWAY ROUTES

Y1	Large Flyer
Y45	Baldwin Manor Flyer
Y46	Elizabeth Flyer
Y47	Curry Flyer
Y49	Prospect Flyer

ON STREET BUS ROUTES

39	Brookline
40	Mount Washington
41	Bower Hill

SOUTH HILLS JUNCTION: HISTORY

Mt. Washington, or Coal Hill as it was originally named, was a formidable barrier to Pittsburgh's ability to grow and develop southward. The Washington Turnpike to Washington, Pennsylvania, was the first road to cross the hill, although it must have felt like crossing over a mountain. In trying to find a more traversable grade—first Boggs Avenue, then Southern Avenue, and then Warrington Avenue—were all different alignments of the Washington Turnpike. They are now important roads serving the Mt. Washington, Allentown, and Beltzhoover neighborhoods. Still, it was not until public transportation reached the area that residential development could flourish.

Initially, coal mining was the area's main industry. A coal hauling railroad tunneled through Mt. Washington in 1861, with a horseshoe around what became the South Hills Junction station area, on its way to a mine in Beltzhoover. Nearby land started to be parceled out for future residential development. A decade later, the Pittsburgh & Castle Shannon Railroad took over the railroad and extended it to Castle Shannon, carrying passengers by day and freight by night. The company planned new residential developments along the route, starting with Fairhaven (Overbrook) in 1872. According to a newspaper article in 1873 advertising the railroad's route through the area:

"After a minute or two enveloped in Egyptian darkness [through the Mt. Washington tunnel], you come out into the valley of Saw Mill Run, which stream foams below you a good distance. The scenery is very fine, in fact well worthy of visited for its own sake. The railroad descends at a grade of seventy-six feet to the mile, a very pretty bend [at South Hills Junction], a miniature counterfeit of the celebrated Horse Shoe Bend near Altoona. At Allentown you cross the city line [into Beltzhoover], and one of the oldest roads in Western Pennsylvania [Washington Road, present-day Warrington Avenue]."

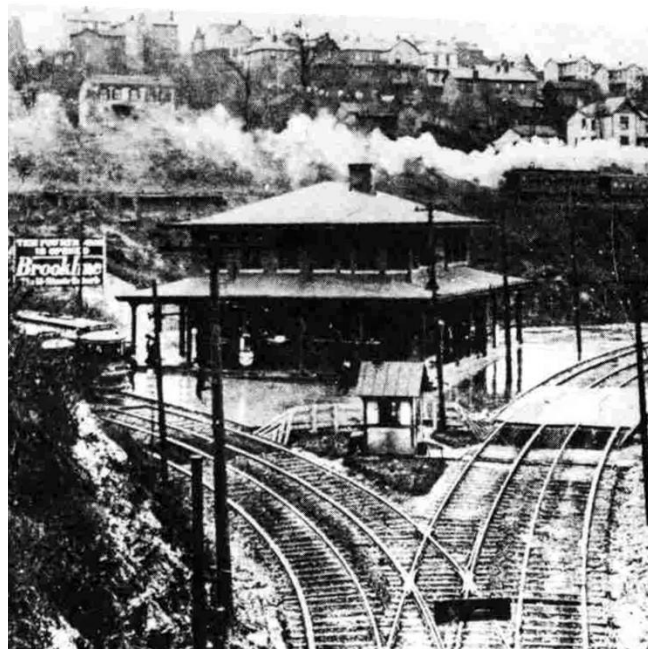
In the 1800s, inclines started to be built up the Mt. Washington face to haul coal down from the mines. The 1870 Monongahela Incline was the City's first passenger incline, and its success led to several more being built. In 1892, the Castle Shannon Railroad replaced its tunnel with Inclines 1 and 2 along the front and backside of Mt. Washington; its station was at the intersection of Warrington and Haberman Avenues.

City streetcars were originally horse-drawn, but once electric traction was introduced to the Allentown neighborhood in 1888, development could finally take

off in the area around South Hills Junction. Scaling Mt. Washington was still an obstacle to widespread development further into the South Hills, so the transit operator at the time, Pittsburgh Railways, bored a direct tunnel from the Smithfield Street Bridge to the Junction in 1904.

Local neighborhood lines were routed through the tunnel, and longer-distance lines were built throughout the South Hills, all converging at the Junction for the quick trip through the tunnel into downtown. Even the Castle Shannon Railroad was converted to carry streetcars, forming the present-day Overbrook (Blue and Silver) lines.

South Hills Junction became the operations and maintenance center of the old trolley system. It continued to service the legacy streetcars until their retirement in 1999. Port Authority was formed in 1964, and shortly after, most streetcar routes were converted to bus routes (except the Overbrook Line (Blue and Silver) and Beechview (Red) Line, which were upgraded to become modern light rail lines) serviced at South Hills Village. The Allentown Line retained its streetcar service until 2011 and is only used as-needed for detours. The South Busway was built through South Hills Junction and Mt. Washington Transit Tunnel in the late 1970s, requiring complete reconfiguration of the site. With the introduction



An outbound P&CS RR train in 1907 on the hillside above the South Hills Junction. After emerging from the coal tunnel, the train navigated the Horseshoe Curve to Warrington Avenue, then headed south along Saw Mill Run.

Source: <https://www.brooklineconnection.com/history/Trolleys/PCSRR.html>

of the modern light rail vehicles in the 1980s and the final retirement of the older streetcars in 1999, rail vehicles are no longer serviced at South Hills Junction, although the rail facility buildings are still used for other maintenance needs for Port Authority.

South Hills Junction was never well integrated into the fabric of the nearby neighborhoods of Mt. Washington to the north, Beltzhoover to the south, and Allentown to the east. Since streetcar routes used to pass through the surrounding neighborhoods before converging in South Hills Junction, passengers used to more easily be able to board at other places. Located in a steep and narrow valley surrounded by the maintenance facilities and car barns, the station area lacked visible and convenient main-street access, a problem that continues to this day. Many pedestrian routes are still hard to find, and most require staircases. With the elimination of local streetcar services, plus the construction of the downtown Pittsburgh subway in the 1980s and the improvement of the rail station platform during the 1990s' Phase 2 project, passengers are more willing to walk farther to the station for single-seat rail service.

The neighborhoods surrounding the Junction had initially flourished, but by the Great Depression, they were noted to be in decline. The area was assessed by the U.S. Federal government's Home Owners' Loan Corporation

in the 1930s, and the area surrounding the station was assessed as:

"Topography is not readily appreciable to residential building. Section is very spotty, with much cheap construction of considerable age."

The report noted the downward trend of desirability. This was exacerbated by postwar suburbanization and Pittsburgh's industrial collapse in the 1980s, though Mt. Washington to the north has more recently recovered. Beltzhoover and Allentown are in varying stages of recovery, with proximity to transit a key neighborhood amenity. Over 40 percent of commuters in both neighborhoods rely on transit, demonstrating the need of better connections to the Junction.

Using this historical context to understand how the existing station came to be, this project looks to combine background research of available area planning and engineering studies, a robust public involvement process, and site visits and safety analyses to determine a strategic plan for updating South Hills Junction Station to best meet its current and future needs.



The Pittsburgh Railways Car Barn at South Hills Junction - Pittsburgh Railways. Inbound end of car barn. Tunnel CB.

Source: Pittsburgh History & Landmarks Foundation <https://historicpittsburgh.org/islandora/object/pitt%3A407-03-3>

SOUTH HILLS JUNCTION: STAKEHOLDERS

Stakeholder input was an essential part of this planning process. Three sets of public meetings were held virtually to allow for safe input during the COVID-19 pandemic. Additionally, Port Authority and consulting team held outdoor workshops at the station area and the Warrington Avenue Recreation Center, as well as joined the Allentown Business District's Side Yard Side Hustle to gain additional public input. Community groups, elected representatives, regional agencies, key property owners, and the general public were invited to participate. A detailed list of stakeholders and organizations is included within the appendix of this report.

WHAT THE RIDERS SAY

Based on a 2016 survey performed by the Planning and Evaluation Department. Sample size of 199 of 895, confidence level of 95%, confidence interval of 6.13.

Where are you coming from/
where are you going?

Between Work and Home	90.9%
All Other Combinations	0.9%

How many miles do you
normally travel to get to/from
this facility?

Less than 1 Mile	55.6%
Greater than 1 Mile	44.3%

What barriers/obstacles did
you encounter as you make
your way to this facility?

None	74.6%
No Sidewalks/ Crosswalks	1.5%
Unwelcoming	15.0%
Unsafe Passage	1.0%
Parking	0.5%
No Direct Path to Facility	4.7%
N/A	2.6%

What would you like to see
that would make this station
better?

Design	39.3%
Safety	18.3%
Information	11.7%
Amenities	10.1%
Cleanliness	8.9%
Lighting	3.1%
Pathways and User Access	3.1%
Ticket Vending Machines	1.6%



Members of the public meet with Port Authority and their consultants during an outdoor open house to develop action plans related to the South Hills Junction area.

-Added density in a manner/scale that compliments the existing Warrington Avenue corridor and creates a safe and vibrant pedestrian-friendly neighborhood.

2 months ago

Drivers need relief facilities/bathrooms

2 months ago

People use the junction as a cut through to get from Boggs side to Allentown

2 months ago

Wayfinding to rec center, spray park, business district

2 months ago

this junction has been for a long time just just an ugly stop for suburbanites on their way to home and work. Thank you for the careful planning going into this. I think it will help the area a lot.

2 months ago

-Added density in a manner/scale that compliments the existing Warrington Avenue corridor and creates a safe and vibrant pedestrian-friendly neighborhood.

2 months ago

Traffic signal @ Haberman

2 months ago

Connect retail as a continuation of Allentown's business district. Food and drink.

2 months ago

Screens w/ real-time rider info

2 months ago

Challenging to get off LRT to access the neighborhood, bad knees make walking up steps impossible

2 months ago

If these parcels are developed has a stop sign or traffic light been explored at Haberman/Warrington? Even without the added traffic this can be a nightmare trying to turn from Haberman. Also, as a Eutaw St. resident I completely agree with opening back up the Albert/Westwood stairs - and I can see our community supporting any shops/restaurants that might go in there.

2 months ago

Traffic signal @ Haberman

2 months ago

Social Pinpoint was used to gain public feedback utilizing interactive mapping tools as well as a graphic Ideas Wall. The comments shown above are a collections of public comments from the Ideas Wall received after the second public meeting in August 2021.

2.



STATION AREA PLAN



2.1 NEIGHBORHOOD CONTEXT

LOCATION

South Hills Junction is located at the southern edge of Mt. Washington at the border of Beltzhoover, and just west of Allentown, three distinct neighborhoods within the South Hills area of Pittsburgh. Placed between where the South Hills rapid transit lines--Blue and Silver lines via Overbrook, Red Line via Beechview, and the South Busway--converge approaching the Mt. Washington Transit Tunnel, as it is the last station inbound, or first station outbound before reaching the downtown Pittsburgh area (including Station Square, Central Business District, and North Shore). With three direct neighborhoods being served within the station's half-mile walkshed, walkability and access are important factors to consider. Currently, the accessibility of the station area is challenged by steep slopes and aging infrastructure. Multiple stairs, ramps, and sidewalk access points are compromised by deteriorating concrete, overgrown vegetation, and general lack of crosswalk striping and ADA-truncated domes and ramps. The neighborhoods are primarily residential in nature, with only small pockets of commercial use and active greenspaces near the station itself. It is evident that even regular passengers find the user experience to be challenging. Potential new users may not be confident in trying to use the station at all. Solutions for station area improvements and user-friendly wayfinding will help support existing passengers, as well as encourage new passengers to utilize South Hills Junction and take advantage of neighborhood amenities within its walkshed.

South Hills Junction was built with seven pedestrian access points, none of which are ADA-complaint. They include the sidewalk along the Haberman Ramp to the South Busway (Allentown, Mt. Washington, and Beltzhoover), the Harwood Way Stairs (Mt. Washington), the Paur Street Stairs (Mt. Washington), the Lelia Street Stairs (Mt. Washington), the Jasper Street Stairs (Mt. Washington), the ramp to Boggston Avenue (Beltzhoover), and the Montooth Street Stairs (Beltzhoover). The Paur Street Stairs, which are currently closed, also had a branch to Albert Street connecting two otherwise discontinuous parts of Albert Street. Rebuilding the Paur Street Stairs, which could include adding an ADA-compliant ramp along the former Castle Shannon Railroad alignment, provides the opportunity to better connect Mt. Washington to the station for all users. While the six other access points currently are in use to access the nearby communities, there are still signs of how these gateways to South Hills Junction are not equally serving the residents. Further opportunity for ADA access, safer road crossings will help users reach the station more easily and comfortably.

South Hills Junction does not have a park-and-ride lot, though bordering streets have been widened onto Port Authority property to provide available parallel parking. The parking area along Haberman Avenue can hold up to 13 cars and the parking area along Warrington Avenue can hold up to 29 cars, though actual numbers vary since spaces are not marked. The station does not have an official pull-off for pick-ups and drop-offs, though a bus pull-off along Warrington Avenue opposite

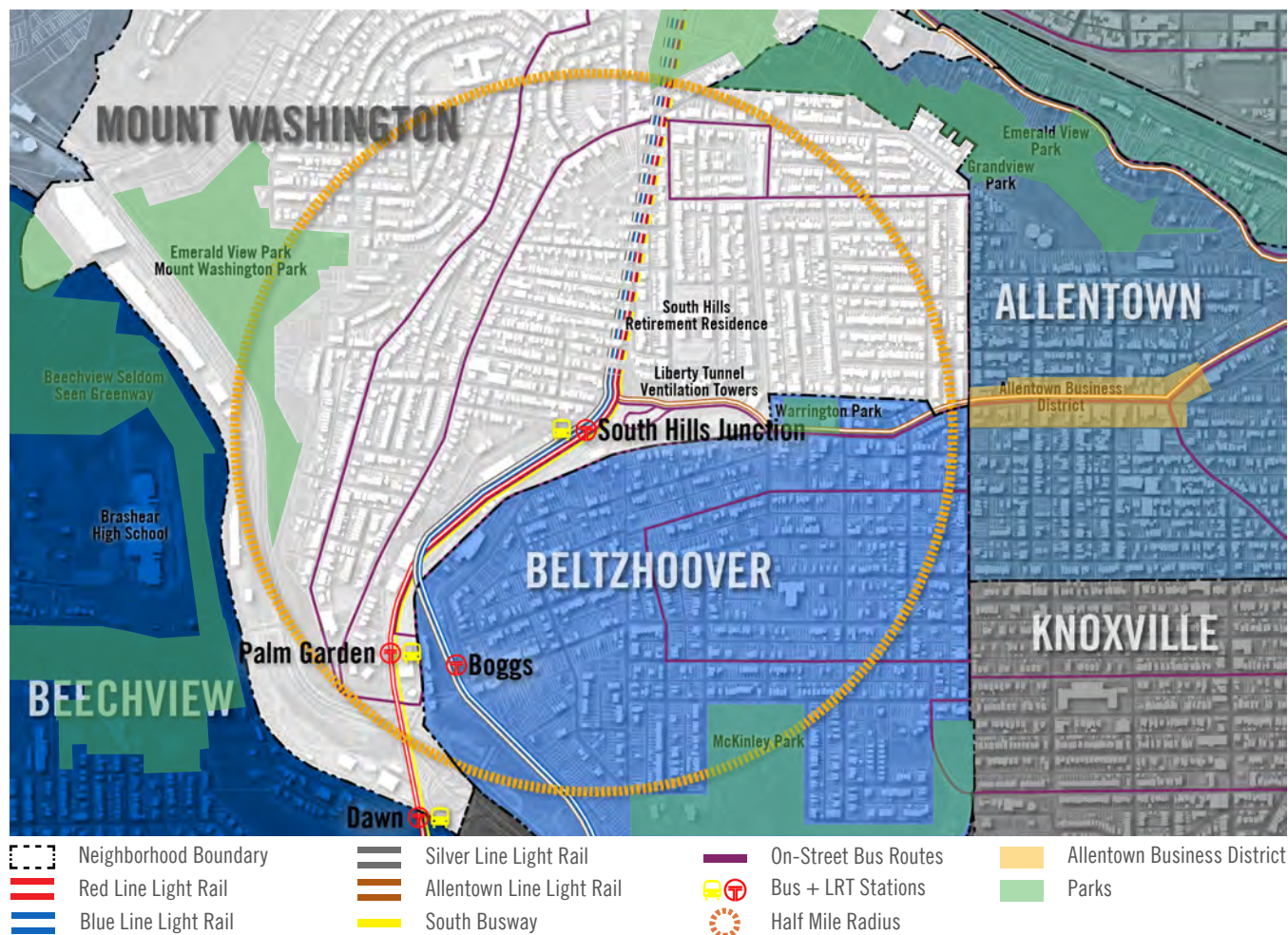
Boggston Avenue can be used for that purpose. Drivers were also observed to ignore the No Trespassing signs to drive along the Haberman Ramp to use the employee parking lot as a pick-up and drop-off area. This demonstrates the need for accommodations in the future, especially as rideshare becomes a more common mode for station connections.

South Hills Junction is in a depressed valley, to the north of Warrington Avenue, a minor arterial. Warrington Avenue forms the border of the Mt. Washington and Beltzhoover neighborhoods. Average daily traffic is approximately 7,500 vehicles per day. This creates a barrier to safe station use, as all three crossing locations between the station and Beltzhoover are uncontrolled. Only one crosswalk is marked. As the common Pittsburgh saying "You can't get there from here" goes, improving station access and visibility are keys to revitalizing the station and transforming it into an identifiable gateway to South Hills neighborhoods and municipalities.



Gearing Parklet is a small public garden just a few minutes walk south from South Hills Junction. This community park is a great example of how to utilize space from vacant parcels to help create a vibrant neighborhood.

STATION AREA NEIGHBORHOODS



Sitting north of the station area is the community of Mt. Washington. Serving primarily as a residential neighborhood, residents have the ability to use South Hills Junction Station or the Monongahela Incline to access the transit network.



East of the station area is the Allentown Business District. Providing as a hub of cultural activity, the business district is an attractive and active main street of eclectic shops and restaurants that serve the residents and visitors of Allentown.

2.2 NEIGHBORHOOD CONTEXT: MOBILITY

TRANSPORTATION

Warrington Avenue, owned and maintained by the City of Pittsburgh, is the primary east-west corridor in the station area. It is posted with a speed limit of 25 and signed as an "Emergency Snow Route." Along the segment fronting Port Authority's rail laydown yard (which is located behind a striped, gray, green, and white chain link fence at the back of sidewalk), parking is permitted on both sides of the street. At this location, the total roadway width is about 39 feet, which includes 11 feet of concrete pavement along the outbound side for parking along the fence. The remaining 28 feet, which is asphalt pavement, carries single travel lanes in each direction and the other (unmarked) parking lane. With only six feet allotted for parking along the inbound side adjacent to the residential properties, cars often park partly on the sidewalk which restricts pedestrian movements through the area. With an average traffic volume of about 10,660 vehicles per day (2015 data; 2020 data was lower than normal at about 8,600 due to the COVID-19 pandemic), the Federal Functional Class of this roadway is "Minor Arterial." True to that roadway typology, Warrington Avenue augments the higher arterial system, providing intra-community continuity and carrying local bus routes (44 Knoxville, 48 Arlington, 51L Carrick Limited, and 54 North Side; and 43 Bailey; east and west of Haberman Avenue, respectively), Warrington Avenue is also used as a bypass for the Liberty Tunnel (about 35,000

vehicles per day, pre-COVID-19) which allows motorists to travel between the South Hills and the City of Pittsburgh, beneath Mt. Washington. The Liberty Tunnel is identified as the Southwestern Pennsylvania Commission's (SPC's), "Congestion Management Process (CMP) Corridor 20: Liberty Tunnel / West Liberty Avenue." The CMP process, which is required by Federal transportation legislation, requires the SPC to address and manage congestion within their 10-county region to facilitate the movement of people and goods. Both PennDOT and the SPC are studying the West Liberty Avenue corridor just south of the South Hills Junction, and PennDOT has been installing "smart" traffic signal technology to better manage traffic congestion. The City of Pittsburgh is also planning for transportation improvements within the area, which this plan will either facilitate or incorporate. Specific to the Warrington Avenue corridor, an improved crossing at Boggston Avenue with curb extensions and high-visibility markings is under design, and future bicycle infrastructure improvements are planned per the City's Bike(+) Master Plan which notes Warrington Avenue as part of the proposed network.

Haberman Avenue, also posted with a speed limit of 25, is a City of Pittsburgh street about half a mile in length between Bailey Avenue at its northern terminus to Michigan Street in the south. Haberman Avenue is noted as a proposed connection within the Emerald View Park Regional Master Plan, providing



Beltzhoover residents access to the 250-acre park located in the City of Pittsburgh's Mt. Washington, Duquesne Heights, and Allentown neighborhoods. In Mt. Washington, Haberman Ave is typically around 18 to 20 feet wide, with a sidewalk along houses on the east side and the undeveloped former Castle Shannon Incline alignment on the west side. Due to the narrow width, cars generally park on the sidewalk in front of the houses, obstructing pedestrian movements. Closer to the station, the block between Kingsboro Street and Warrington Avenue is about 26 feet wide, with single travel lanes in each direction and a parking lane along Port Authority property on the west side. Vehicles also park on the east side, which limits usable roadway width. The approximate midpoint of Haberman Avenue bisects Warrington Avenue, creating an offset (about 30 feet) at an unsignalized intersection, where the South Busway's Haberman Avenue Ramp also connects as a fifth approach. This ramp connects local buses to the Mt. Washington Transit Tunnel and South Busway and has embedded rail, used for tunnel detours along the otherwise inactive Allentown Line. It also provides vehicular access to the station for employee parking. With unconventional geometry that leads to lengthy crossings, and without marked crosswalks, pedestrian and vehicular movements are difficult at this intersection. South of the station, Haberman Avenue should provide direct access to McKinley Park through Beltzhoover. Steep grades, missing or overgrown sidewalks, and several discontinuous street blocks are barriers to pedestrian use.

PEDESTRIANS AND BICYCLISTS

The residential units surrounding the South Hills Junction station are part of a comprehensive pedestrian network. The neighborhood streets in this area are gridded, and most (i.e., other than alleys) have sidewalks along both sides; though the parked cars along Warrington Avenue (as noted above), the presence of catenary poles along Warrington Avenue, and bike racks, trash receptacles, and other street appurtenances within the Allentown Business District restrict pedestrian movements. Most blocks are of a walkable scale, but the sloped topography approaching the junction from any side can present a challenge. The general elevation of the station area is about 40 feet below that of adjacent Warrington Avenue and the eastern termini of Jasper and Lelia Streets. Additionally, the valley creates a disconnect between the Mt. Washington and Beltzhoover neighborhoods.

Palm Garden (Red Line) and Boggs (Blue and Silver Line) stations are located about four-tenths of a mile to the south. The Red Line follows the South Busway until it splits about a quarter mile south of Palm Garden station after crossing over Saw Mill Run Boulevard (SR 51/US BUS 19). There are no public sidewalks connecting South Hills Junction station to Palm Garden station through Port Authority property, but there is a sidewalk along Warrington Avenue connecting station access points. There is also a busway crossing for Port Authority employees between a parking lot and Buildings 4 and 5. Signage and flashing warning lights are not provided at this crossing, but high-visibility markings are placed. The Blue and

Silver Lines diverge from the Red Line and South Busway just a tenth of a mile south of the South Hills Junction station, where it becomes exclusive rail right of way.

The 8th Edition BikePGH Map does not show any bicycle facilities present within the station area, though the corridor comprising Boggs, Bailey, and Beltzhoover avenues loop up and around the site along Warrington Avenue and SR 51 from Warrington Avenue is classified as an "On-Street Bike Route," with both Boggs and Beltzhoover Avenues marked as steep hills. In addition to Warrington Avenue as noted previously, both Bailey and Beltzhoover Avenues are shown to have proposed future bicycle infrastructure improvements per the City's Bike(+) Master Plan.

Roadways surrounding the station area and serving as pedestrian routes to the station area were reviewed during a safety audit performed in the spring of 2021. Detailed conditions of these streets are given in Appendix A.3 Transportation Planning along with general recommendations for improvement. These potential multimodal strategies for congestion mitigation and pedestrian safety improvements within and around the South Hills Junction station area will address select deficiencies and bolster initiatives by the City of Pittsburgh and others.



Providing the majority of street frontage to South Hills Junction, Warrington Avenue is a minor arterial street forming the southern border of the station area. With uncontrolled and mostly unmarked crossings, Warrington Avenue is also a barrier for those accessing the station.

2.3 NEIGHBORHOOD CONTEXT: BARRIERS

With Warrington Avenue serving as the only arterial within the South Hills Junction area and being situated around 40 feet above the station itself, one of the greatest barriers to using the station is its lack of visibility. This is worsened by the lack of wayfinding or station branding signage. Traffic on Warrington Avenue is not provided with any indication that the station exists.

The South Hills Junction station area survey compiled in the summer of 2017 shows that greater than 70% of busway and light rail riders walk to and from the station, and when asked what improvements they would like to see at the station, nearly 20% of the survey participants indicated safety improvements. Other pedestrian barriers noted were, in general:

- Lack of information (maps, signs, etc.)
- Poor pathways for access
- Poor accessibility (ramps, curb cuts, etc.)
- Lack of bicycle amenities
- Limited parking

Pedestrians from the south, east, and west can walk to South Hills Junction Station along neighborhood streets to Warrington Avenue, but they must use the open-tread Montooth Street Stairs or traverse steep slopes at the South Busway Haberman Avenue Ramp or non-ADA compliant sidewalks and ramps Warrington Avenue access ramp across from Boggston Avenue. Transit users living south of the site deal with the pedestrian circulation and safety problems associated with crossing Warrington Avenue. The only striped crosswalk within the station area is at the Montooth Street Stairs, with the nearest crosswalks along Warrington Avenue being located at the adjacent traffic signals about one-third mile east and one-half mile south, at Estella Avenue and Saw Mill Run Boulevard (SR 51/US BUS 19), respectively. All of these locations lack positive pedestrian protection or visibility features, so pedestrians must generally yield to cars, which can be challenging due to high

vehicular speeds and sight distance limitations. To the north and west, pedestrians can use the recently upgraded stair system at Lelia Street. There is another staircase one block south at Jasper Street, but it has an open tread design. Neither of these street connections provide ramp access to the station.

To the north, the Harwood Way Stairs have uneven stair treads, and those at Paur Street have been closed off by chain-link fencing. Here, there is clearly still a desire for use, as the fence have been repeatedly cut through despite attempts to repair it.

Within the station area itself, roadway crossings and sidewalks are not all located at pedestrian desire lines. Along the South Busway Haberman Avenue Ramp, for example, pedestrians walk through the parking lot and sometimes in the road itself rather than follow the narrow sidewalk path which lacks curb ramps.

Given the function of the station as a local transportation hub, transit users were the second highest mode used in accessing South Hills Junction at nearly 20%. A combined total of 90% were walkers and transit users, with less than 6% of the busway and light rail riders surveyed drive and park near the station, likely within the concrete parking lane along the Warrington Avenue fence. Once parked, these riders are presented with the same barriers as area walkers, as the only on-site parking at the station level is for employees only.

The offset condition of the Haberman Avenue approaches to Warrington Avenue noted previously, along with the disconnect of the local street and sidewalk network caused by the valley, further limit station accessibility for pedestrians and vehicular traffic.

A pedestrian safety and operational analysis has been performed to take a more detailed look at these barriers to the station use, as well as recommendations for improvements. Refer to Appendix A.4 Transportation Planning of this report for a more detailed analysis.

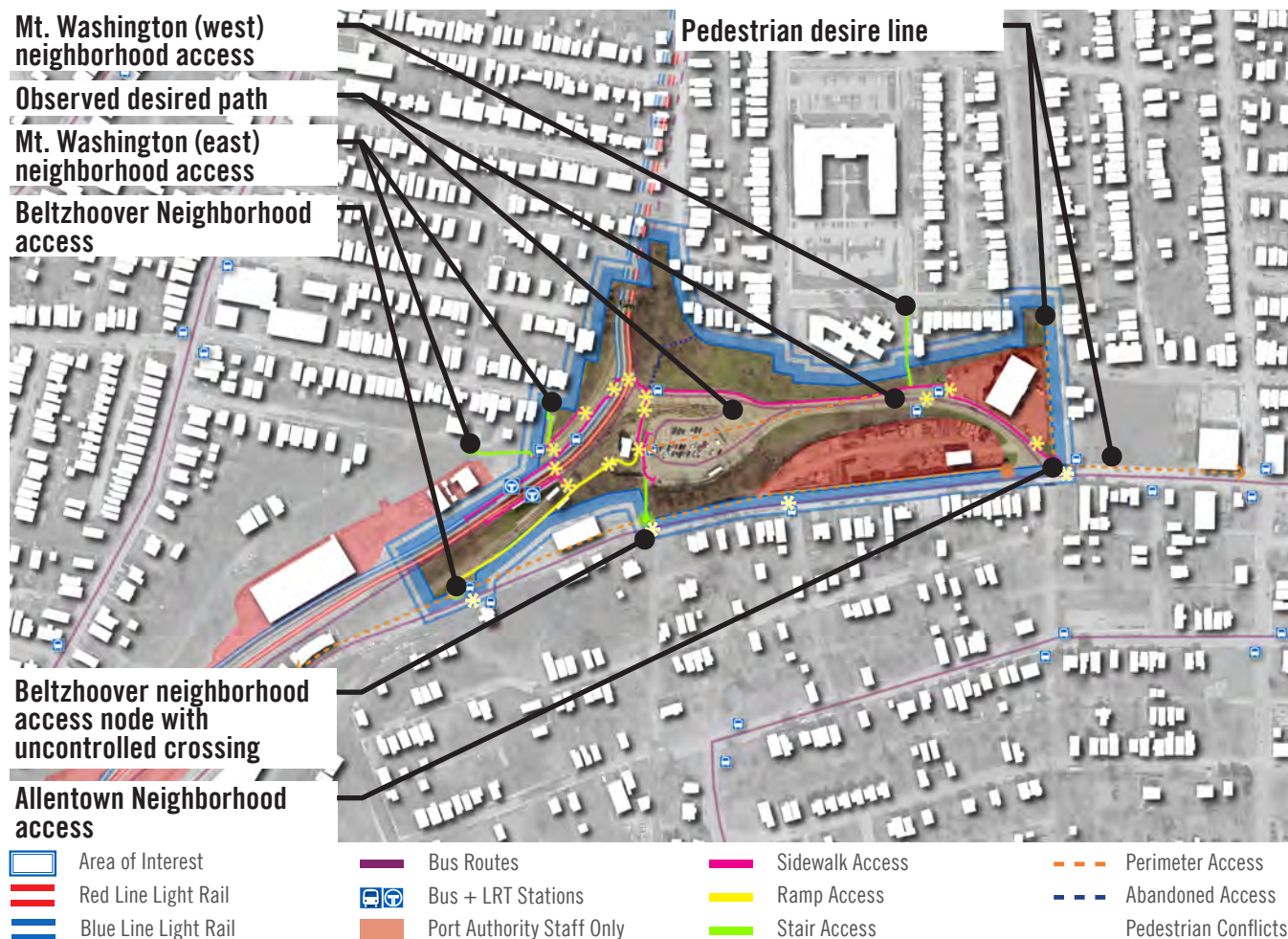


At the base of the Montooth Street Steps is the only marked crosswalk across Warrington Avenue leading to the station area. This non-signalized midblock crossing presents a safety concern for pedestrians accessing the station from Beltzhoover.



A pedestrian attempts to cross Warrington Avenue between the station walkway and Boggston Avenue, a main route to Beltzhoover. Safety improvements are planned by the City of Pittsburgh.

CIRCULATION: BARRIERS AND ACCESS



Mt. Washington access improvements were a common theme verbalized by the public. The community would like to see the staircase connecting Paur and Albert streets to be repaired and reopened.



The intersection of Haberman Avenue and Warrington Avenue is challenging for pedestrians to maneuver. Realigning this intersection, providing pedestrian refuge islands, and studying if accessible pedestrian signals are warranted is recommended.

2.4 STATION ACCESS

Station area accessibility is considered one of the main priorities for future enhancements by Port Authority, and was reiterated by the community during a series of public engagement activities. South Hills Junction has a total of six open points of access and one connecting Paur and Albert streets closed due to aging infrastructure. Due to deferred maintenance and challenging terrain the open six points of entry have their own set of issues, thus presenting opportunities for overall station access enhancements.

CONNECTION VIA LELIA STREET

Existing Conditions

- Sidewalk Width: 6' 0"+
- Access Type: Stair
- Street Condition: End of Road
- Bicycle Lanes: None
- Parking: On-Street

Challenges

- Stairs at the end of Lelia Street lack station identification and wayfinding.
- Steep slopes along street prohibit the use by people with limited mobility.
- Neighborhood street with parallel parking (on sidewalks) creates a narrow gateway to the station area.
- Disregard for no-parking zone adjacent to staircase.
- Utility vault adjacent to the top of stair which can limit further improvement to this gateway.

- Overgrown vegetation along the east hillside obscures station visibility from Lelia Street.
- Channelized stormwater collects debris and unfiltered discharge into the storm sewer network with ponding at the end of the street.

Opportunities

- Clear views of the station platform from the top of stair.
- Recently upgraded stair access point with improved lighting and appropriate handrails.
- Vacant parcel to the west provides open atmosphere to the gateway.
- Public right of way sits adjacent to Port Authority land which opens new connection opportunities.
- Lelia Street could be extended for direct station access.
- Parcel is vacant next to the Lelia Street stairs, which could be purchased and used to improve station gateway.



- Bus + LRT Stations
- Gateway Focus



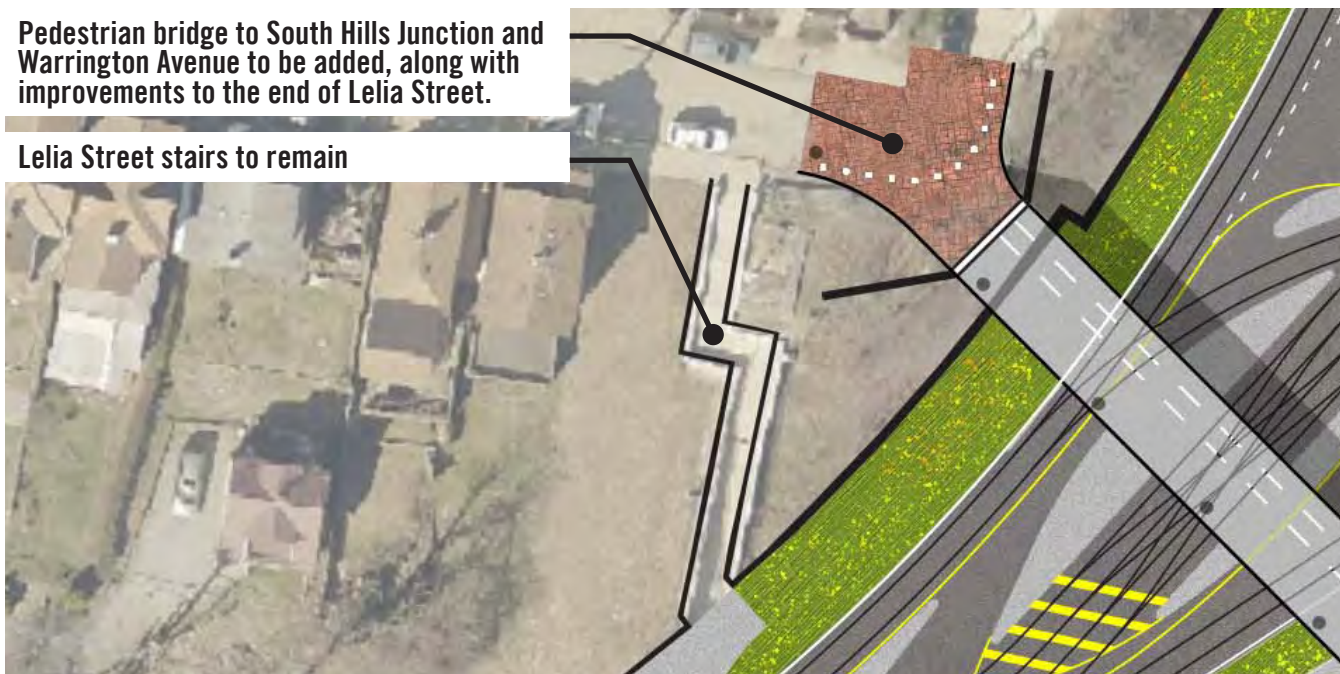
View looking into the station area from Lelia Street Steps. The upgraded stair has clear views down into the valley providing a sense of place while using this access point.



Retrofitted lighting upgrades to newer LED's allows for a safer point of entry at night. These improvements continue throughout the site and provide overall good quality lighting at South Hills Junction Station.

Pedestrian bridge to South Hills Junction and Warrington Avenue to be added, along with improvements to the end of Lelia Street.

Lelia Street stairs to remain



Proposed station plan showing potential elevated station entrance bridge from Lelia Street with gateway treatments for an enhanced station area identification.

STATION ACCESS

CONNECTION VIA JASPER STREET STEPS

Existing Conditions

- Sidewalk Width: None
- Access Type: Stair
- Street Condition: End of Road
- Bicycle Lanes: None
- Parking: On-Street

Challenges

- Poor site visibility due to overgrown vegetation along stair path down into the station area.
- Aging infrastructure includes disconnected railings of various types, poor concrete conditions, and dated wayfinding.
- Jasper Street not fully built-out due to hillside slopes, so the pavement width decreases from 28 feet to 12 feet approaching the station.
- There is a gap of about 400+ feet of sidewalk that was never built approaching the station access, forcing users to walk along roadway to gain access to the stair.
- Curtis Street, which runs between Jasper Street and Boggs Avenue, is narrow and has no sidewalk.

Opportunities

- If Jasper Street was graded and the sidewalk extended, it could provide the least steep sidewalk connection to the western side of Mt. Washington.
- Some pedestrians walking to Palm Garden Station may switch to Jasper Street if upgrades are made.
- Less elevation difference between the top and bottom of stair allows for the possibility of building a ramp system down into the station area. Previous plans have been developed and could be utilized to upgrade this point of access.



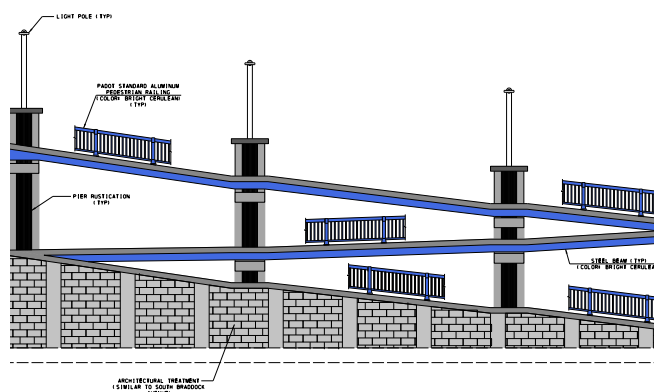
- Bus + LRT Stations
- Gateway Focus
- Over 400' Sidewalk Gap along Jasper Street



Existing pedestrian entry at the end of Jasper Street. The stairs have limited signage presenting themselves as a gateway to the station, and vegetation can block sight lines to the station.



Retrofitted lighting upgrades to newer LED's allows for a safer point of entry at night.



Port Authority could collaborate with the City of Pittsburgh to have sidewalks along Jasper and Curtis Streets continued to the station access. Conceptual design for ramp from Jasper Street to South Hills Junction was completed and the installation of the proposed ramp would be contingent on the City of Pittsburgh constructing the connecting sidewalks first.

Source: Port Authority of Allegheny County and GAI Consultants, Inc.



STATION ACCESS

CONNECTION VIA HARWOOD WAY STEPS

Existing Conditions

- Sidewalk Width: 6' 0"+
- Access Type: Stair
- Street Condition: Midblock
- Bicycle Lanes: None
- Parking: On-Street

Challenges

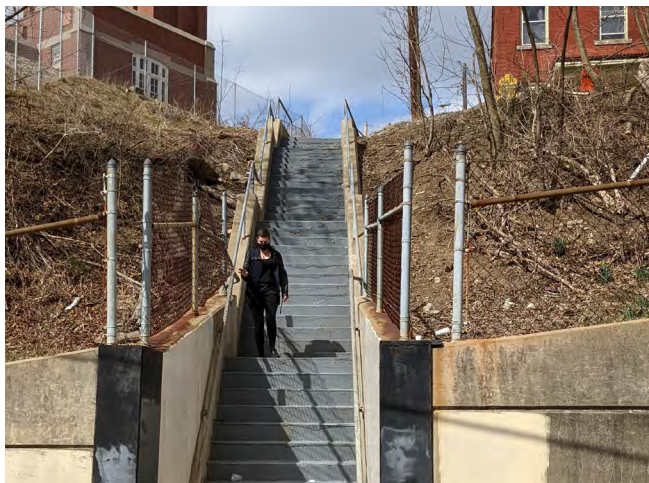
- Inconsistent stair tread and sidewalk slabs make it difficult to maneuver the walkway to the station.
- Lack of station area signage provides a challenging point of entry to those unfamiliar to the area.
- Users cannot see the station and do not have station identification signs from Secane Avenue.
- Vegetation along pathway can get overgrown without continued maintenance, thus presents itself as an additional visibility concern.
- Only active connection to the more dense neighborhood of Mt. Washington from the east.
- The pathway can become overgrown with vegetation, making it difficult to use.
- There are no stop signs at Harwood Street and Secane Avenue, so pedestrians cross at an uncontrolled location.
- The marked crosswalk leads to an inlet where a curb ramp cannot be provided.

Opportunities

- Adequate right of way to reconstruct stair and walkway in a more consistent and accessible manner.
- Increased presence along Secane Avenue to promote South Hills Junction as a primary mode of transit for the neighborhood.
- Harwood Way Steps sits adjacent to the major landmark of the Liberty Tunnel Ventilation Towers which can be used to help mark the gateway to the station.
- Regrading the base of the stairs could better connect the grade of a previous hillside railroad right-of-way to allow for new trail connections at this location.



- Bus + LRT Stations
- Gateway Focus

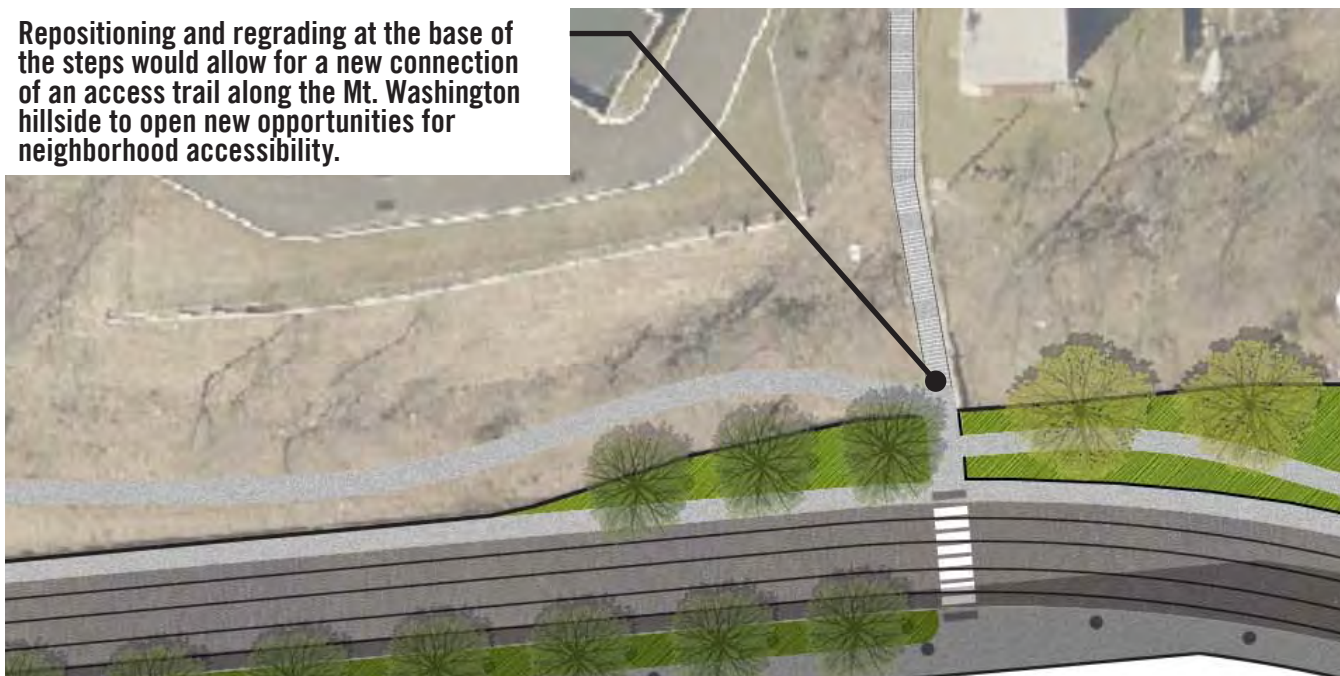


View looking north along Harwood Way from the Haberman Ramp towards Mt. Washington showing a pedestrian reaching for the handrail navigating the uneven stairs.



View looking south from Secane Avenue at the Harwood Way station entrance, showing the lack of station identification. Station access from this point could be confusing to those unfamiliar with the system.

Repositioning and regrading at the base of the steps would allow for a new connection of an access trail along the Mt. Washington hillside to open new opportunities for neighborhood accessibility.



Conceptual design showing reconfigured Harwood Way Stairs with ADA-compliant hillside path to Paar Street.

STATION ACCESS

CONNECTION VIA EAST WARRINGTON AND HABERMAN AVENUES

Existing Conditions

- Sidewalk Width: 6' 0"+
- Access Type: Sidewalk
- Street Condition: Intersection
- Bicycle Lanes: None
- Parking: On-Street

Challenges

- Unwelcoming station entrance where pedestrians walk along the South Busway Haberman Ramp sidewalk between maintenance areas.
- Gateway intersection has offset approaches, wide paved areas, and no marked crosswalks leading to pedestrian and driver hazards
- Do not enter vehicular signage along station entrance is unwelcoming for pedestrians
- Station does not have a pick-up and drop-off area, though some drivers disregard signage and use the employee parking lot.
- Sidewalk entrance is not ADA compliant.

- Pedestrians desire a shorter route between the Haberman Ramp and Haberman Avenue in Mt. Washington, resulting in a worn path.

Opportunities

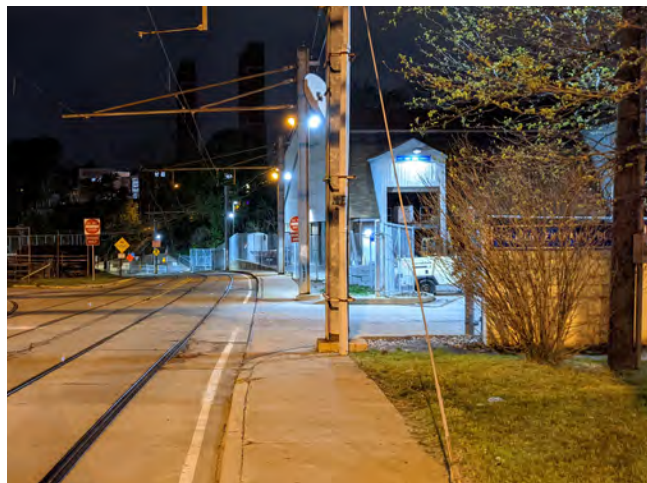
- Intersection realignment to reduce intersection offset and align for potential traffic signal control if warranted.
- Pedestrian and vehicular conflict areas can be minimized through the incorporation of bump-outs, pedestrian islands, appropriately marked crosswalks, signage, and ADA compliant features to make the crossing safer.
- Street frontage along Warrington and Haberman provide opportunity of TOD.
- Improvements to the streetscape and the overall intersection would provide for a clear gateway into the station for pedestrians, while maintaining a Port Authority only vehicle entry.
- Incorporation of new bicycle facilities along Warrington Avenue to promote the safety and usage of cyclists.



- Bus + LRT Stations
- Gateway Focus

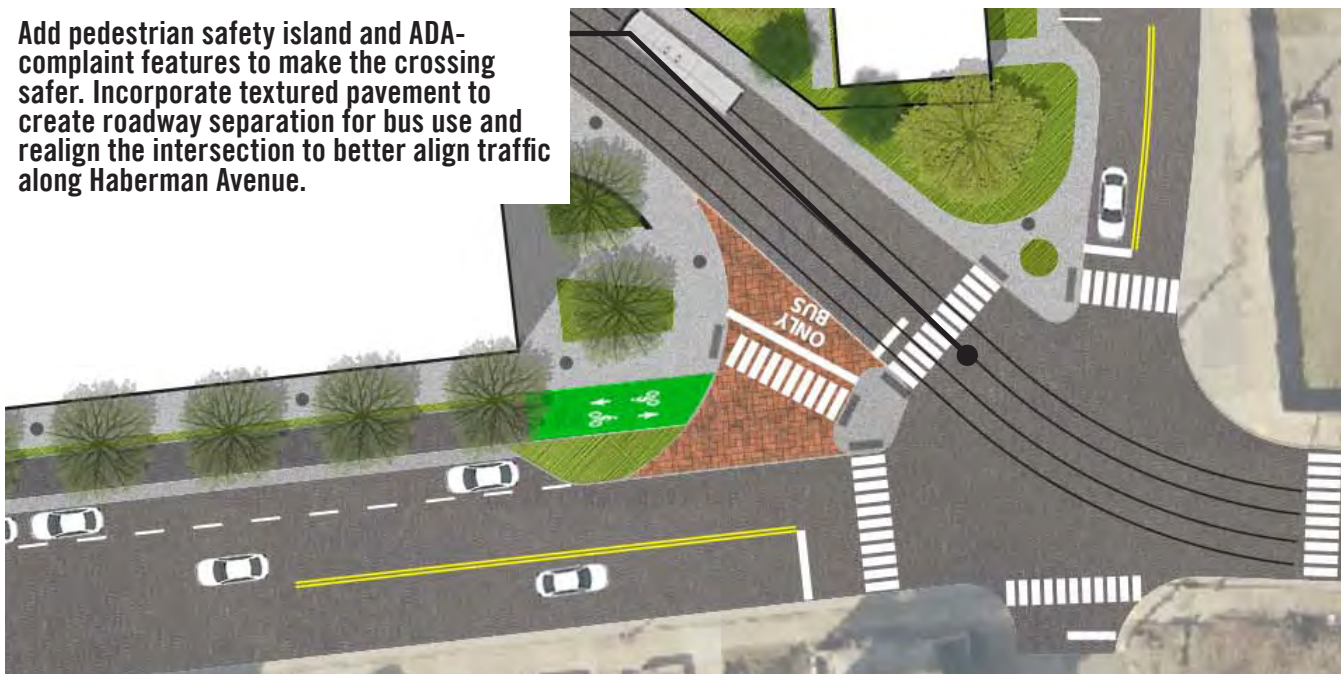


View looking east at the station entry sidewalk along the Haberman Ramp. Prominent Do Not Enter signage and maintenance facilities do not make station users feel welcome.



Salt Shed lighting upgrades have improved nighttime visibility from this point of entry. Additional lighting enhancements could be made along the pedestrian route into the station.

Add pedestrian safety island and ADA-complaint features to make the crossing safer. Incorporate textured pavement to create roadway separation for bus use and realign the intersection to better align traffic along Haberman Avenue.



Conceptual design showing reconfigured Warrington Avenue, Haberman Avenue, and Haberman Ramp intersection with approach road realignments, pedestrian islands, visible crosswalk markings, landscaping, and bicycle infrastructure.

STATION ACCESS

CONNECTION VIA MONTTOOTH STREET STEPS

Existing Conditions

- Sidewalk Width: 6' 0"+
- Access Type: Stair
- Street Condition: Midblock
- Bicycle Lanes: None
- Parking: None

Challenges

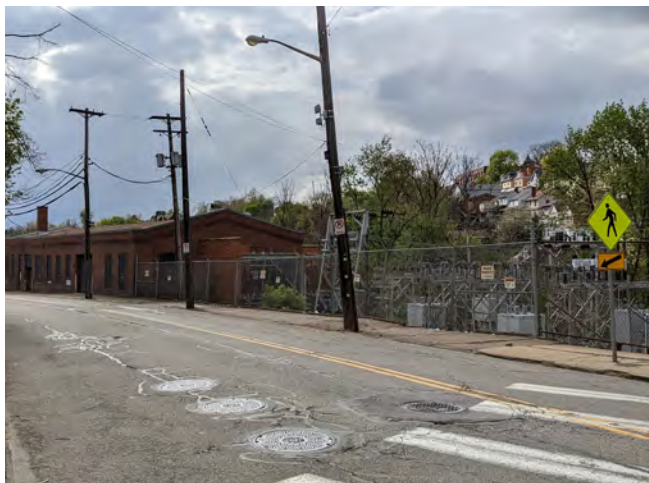
- Sidewalks do not have curb ramps at the midblock crossing.
- Open riser stairs can be tripping hazards.
- Lack of signage and wayfinding for this gateway.
- Visible deferred maintenance to the stair structure.
- Station area visibility blocked by overgrown vegetation and utilities flanking the entry point creating an unwelcoming environment.
- Connection to Beltzhoover may present safety and security issues, as Monttooth Street is a narrow dead-end street for vehicles, has no sidewalk, and has only a few houses along it near the station. The staircase connection to Warrington Avenue limits accessibility and visibility.

Opportunities

- Improvements to Monttooth Street and the station connection could help this become a central access point from Beltzhoover
- Improving the station connection to Beltzhoover could help spur infill development in the vacant parcels near the station. Street frontage along Warrington Avenue allows for potential station visibility and future TOD opportunities.
- Roadway restriping or widening could allow for a potential user drop off zone to gain quick access into the station area.
- Potential connection over the valley with a pedestrian bridge between Warrington Avenue and Lelia Street could provide an ADA-compliant connection to the station and across the valley.
- Improving the on-street bus stop along Warrington Avenue with a pedestrian bridge would provide local buses a transfer point to the South Hills Junction light rail lines and South Busway.



- Bus + LRT Stations
- Gateway Focus

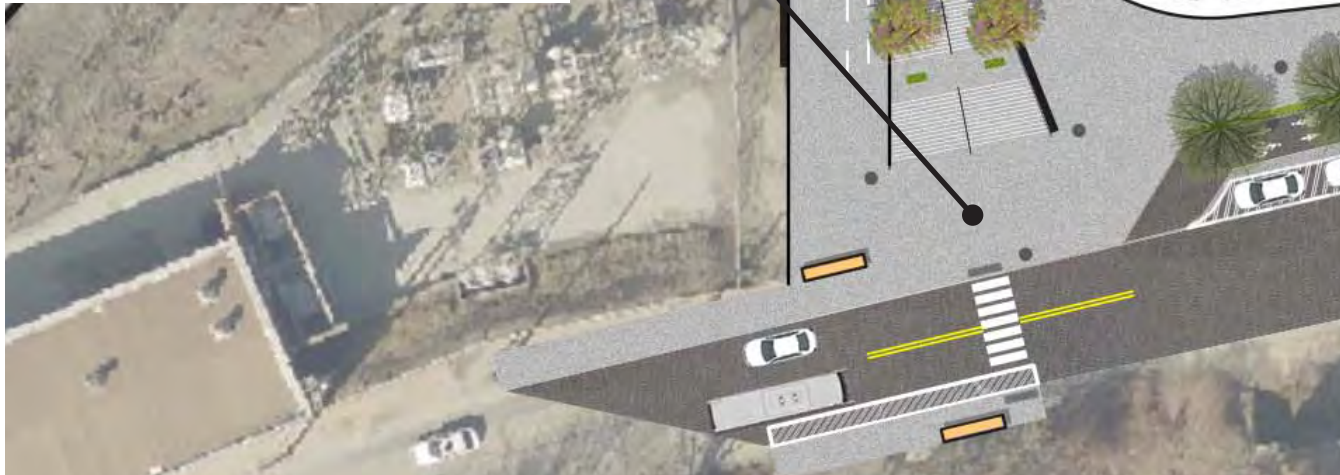


View of the uncontrolled pedestrian crosswalk across Warrington Avenue between the Montooth Street stairs and the station entrance. The skewed crosswalk alignment lengthens pedestrian crossing distance at an area with limited sight distance.



The Montooth Street Stairs leading down into the valley at the base of the existing control tower and bus loop shows the deferred maintenance to the existing stair structure.

Crosswalk enhancements with new on-street bus facilities are shown at the transition of the Montooth Street Stairs and station area. This connection is proposed to be further enhanced with a new monument stair and pedestrian bridge spanning the valley.



Conceptual design showing updated Montooth Street crossing with a marked perpendicular crosswalk and improved bus stops, alongside an improved station entrance with a pedestrian bridge and a wider staircase.

STATION ACCESS

CONNECTION VIA WARRINGTON AVENUE RAMP AT BOGGSTON AVENUE

Existing Conditions

- Sidewalk Width: 6' 0"+
- Access Type: Ramp
- Street Condition: Uncontrolled Intersection
- Bicycle Lanes: None
- Parking: On-Street (south side only)

Challenges

- Visible deferred maintenance to site amenities, such as railings, lighting posts, and fence.
- Sidewalks have missing or non-compliant ADA curb ramps along Warrington Avenue.
- Lack of signage and wayfinding for this gateway.
- Channelized stormwater infrastructure along the backside of the retaining wall spills out onto the station access walkway.
- Lack of a safe connection between Beltzhoover and the station area across Warrington Avenue and along Boggston Avenue.

Opportunities

- Improving the connection to Beltzhoover via Boggstown Avenue to Taft Avenue, as it is the only non-staircase route to Beltzhoover on the west side of the station.
- Redeveloping the former Overbrook Line spur track for pedestrian and green infrastructure amenities.
- City of Pittsburgh is in the development stages of designing intersection upgrades at Warrington and Boggston Avenue. This would widen sidewalks, incorporate new ADA-compliant features, and provide a new marked crosswalk.
- Potential for green infrastructure systems to be incorporated into a redesign of the ramp to allow for proper stormwater runoff and filtration.
- Existing sidewalk can be realigned to accommodate a longer trail and be graded to a 5% accessible path down into the station area.



- Bus + LRT Stations
- Gateway Focus



Along former Overbrook Line alignment (current staging track), the existing path leads down into the valley towards the light rail platforms. Stormwater is channelized behind the retaining wall and spills out onto the pathway.



Existing faded station entrance sign that also tells users to use a local bus for accessible station access.

A proposed 5% accessible walking trail along the existing retaining wall to provide an upgraded accessible route for pedestrians. Planting upgrades and stormwater management are recommended at the base of the wall channelized swale to filter runoff and prevent water from entering the pathway.



Conceptual design showing an ADA-compliant path, greenspace, and gateway upgrades to welcome all users to South Hills Junction.

2.5 STATION ANALYSIS

The following analysis focuses on the area including Port Authority's operations facilities.

STATION AREA

Challenges

- The station lacks a cohesive architectural identity between the buildings on site.
- Each of the three bus shelters at South Hills Junction are designed differently.
- Beside the current station platform is an old station platform that is no longer in use. This can make navigating the station challenging for new users.
- How to access the station is not immediate clear at each entry point.



Due to the incremental changes over time, the station lacks a cohesive architectural identity making it challenging to navigate.

Opportunities

- All of the station property, and most of the area around access points, is controlled by Port Authority.
- Reconfiguration of the station and means of entry could be made attractive through the integration of green spaces and public art.
- Reconstruction of the light rail and bus infrastructure as part of a unified design process that references Port Authority's station design guidelines would allow for a coherent and approachable architectural identity.



The station identity is not clear from each point of entry. At the Montooth Street steps, it is not apparent that you can access South Hills Junction Station.

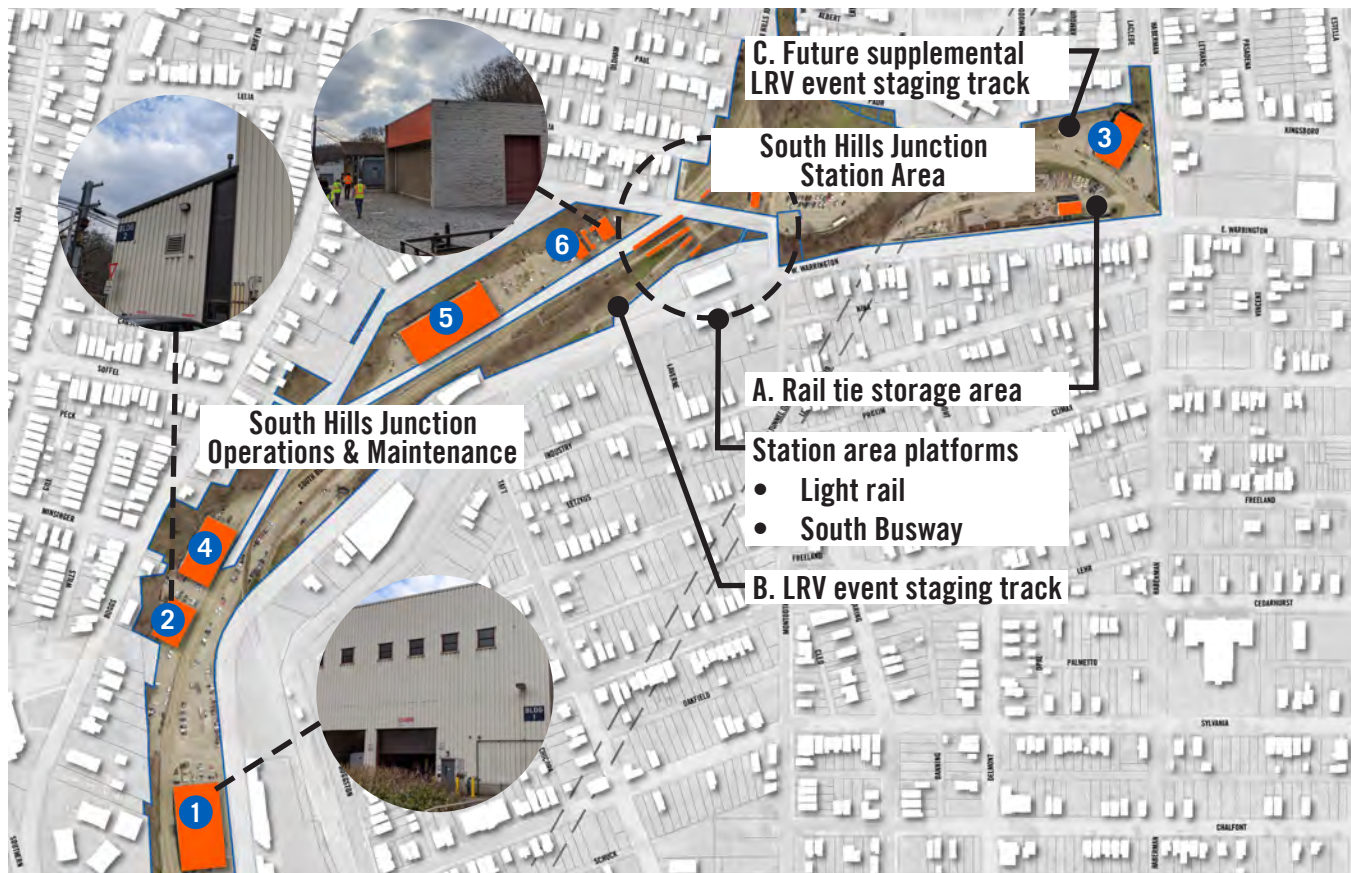


There are lush green spaces between the current and former station platforms that could be integrated as a part of the station entry experience.



The station entries are unwelcoming and challenging to navigate.

STATION AREA USES



STATION AREA USES

The current South Hills Junction area is one of the most complex areas throughout Port Authority system, as maintenance and operational facilities are combined with active light rail, busway, and local bus stops, all with separate platforms. The site is also used to support special services, events, and detours, as the normally inactive turnback track spur from the legacy Overbrook line is used for LRV staging for events, and the former Allentown Line track is activated during Mt. Washington Transit Tunnel closures as an alternate route to Pittsburgh. Being the junction of all South Hills rapid transit routes, it is also used for transfers during service interruptions on one of the lines. Understanding how each piece of the Junction area functions is essential to determine how best to reaccommodate these needs or improve operational efficiency for any station area improvement project.

Port Authority embarking upon operational facilities master planning process which will ultimately determine how the existing facilities fit with future needs.

Building Operations:

1. Auto Shop and Building Maintenance
2. Power Department
3. Salt Shed
4. Radio Shop
5. Way Department
6. Port Authority Substation

Outdoor Operations and Maintenance Areas:

- A. Rail Tie Storage Area
- B. LRV Event Staging Track
- C. Future Supplemental LRV Event Staging Track

Based on discussions with Port Authority staff, Buildings 2 and 4 suited for their current uses and are most likely to remain in their current locations. The Rail Tie Storage Area is a candidate for relocation, as is Building 1 which has outgrown its available capacity. As a result, this station area plan assumes eventual off-site relocation of Building 1 and the rail tie storage area and reaccommodation of the salt shed and the LRV event staging track to the Building 1 location. Development components throughout this report are intended to be independent of each other, so one component of the plan can be done while another component must wait for a site to be made available.

3.





STATION CONCEPTUAL DESIGN

3.1 CONCEPTUAL DESIGN

5% Walking trail connection from Albert Street to Harwood Way Steps

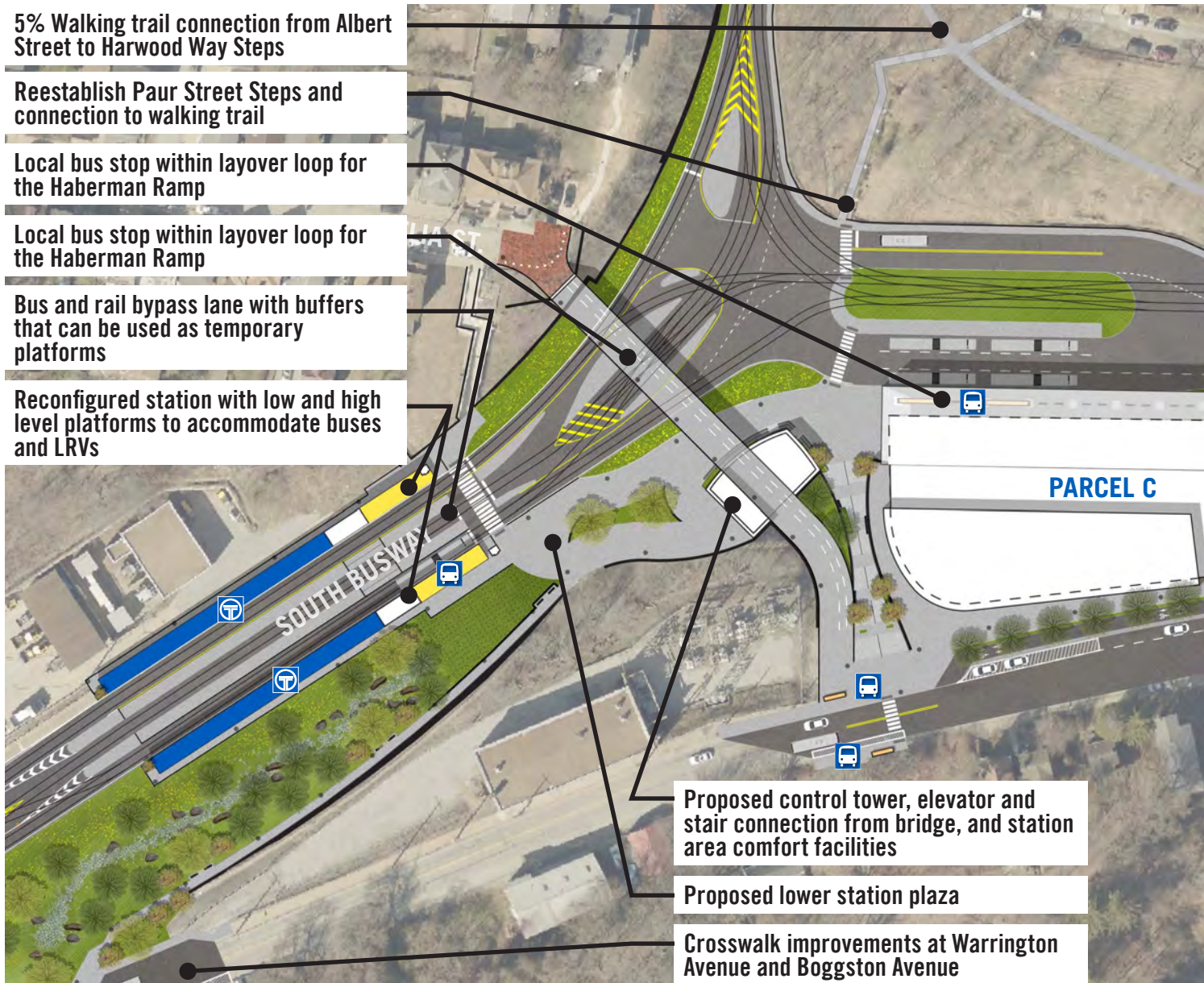
Reestablish Paur Street Steps and connection to walking trail

Local bus stop within layover loop for the Haberman Ramp

Local bus stop within layover loop for the Haberman Ramp

Bus and rail bypass lane with buffers that can be used as temporary platforms

Reconfigured station with low and high level platforms to accommodate buses and LRVs

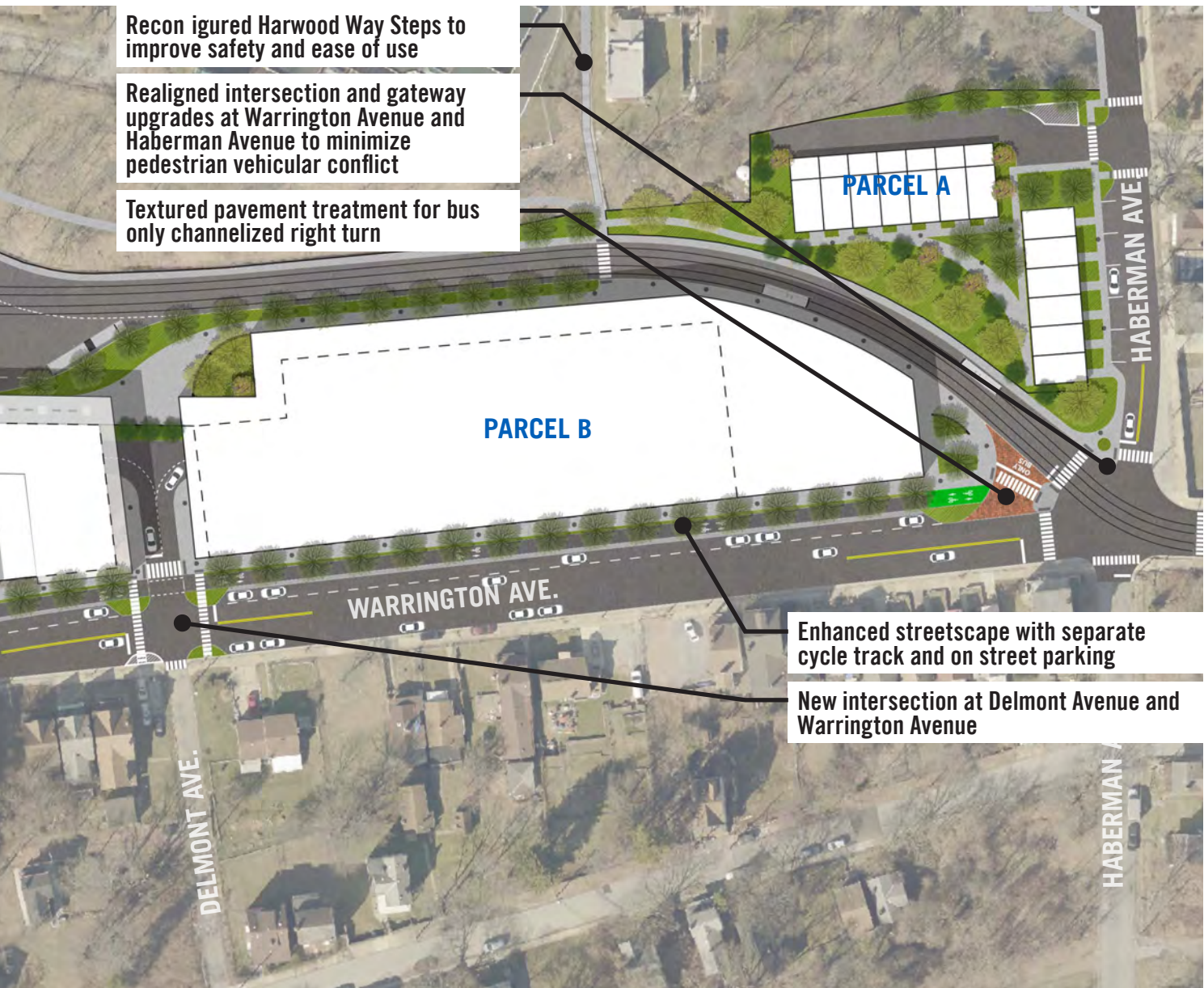


South Hills Junction serves as the first stop within South Hills for the Blue, Red, and Silver lines as well as for the South Busway. So while transit riders see the station as they pass through, area residents that are not regular users may not. South Hills Junction is situated at the bottom of a valley between Mt. Washington and Beltzhoover, so it has no street presence from the neighborhoods it serves. The goals of station redesign are to improve the overall rider experience by making the station user friendly and to optimize Port Authority operations within their property. This investigation resulted in this planning study's final recommendations that improves station area circulation and visibility while updating station structures, signage, and amenities to meet current station design standards. Proposed recommendations to the station would improve overall functionality and safety in order to

increase ridership. This conceptual design addresses four major opportunities for design improvement:

1. Pedestrian access and connectivity
2. Platform consistency and efficiency
3. Operational organization
4. Station visibility and activation

The station area has six active and one inactive points of entry for transit users, however because of elevation changes and gaps in adjacent street network, the station is still difficult to access. As a result, no entrances are currently ADA compliant. To address these connectivity challenges, this study recommends repairing or replacing the stair access to the station, including reopening the stairs from Paur Street, as well as providing ADA-compliant ramps to Beltzhoover and Mt.



Washington. To Beltzhoover, the existing ramp opposite Boggston Avenue is proposed to be lengthened and widened. To Mt. Washington, a new walking trail from Albert Street to the bottom of the Harwood Way stairs is proposed to be created. Additionally, a new ADA ramp from the end of Secane Avenue to Haberman Avenue is proposed providing residents an additional route to the station from the east as well as connection from that part of Mt. Washington to the Allentown Business District. The largest pedestrian investment comes in the form of a new pedestrian bridge between Mt. Washington and Beltzhoover from the end of Lelia Street connecting to Warrington Avenue opposite the Montooth Street Steps. The connection will have access to a proposed control tower housing an elevator and stair for ease of access to the station.

Proposed TOD in the salt shed and rail tie storage areas will help activate the site along the most visible street frontages and

enhance experiences for pedestrians and bicycles. The areas along Warrington Avenue and Haberman Avenue would allow for over 1,000 linear feet of street frontage for developers to consider a partnership with Port Authority to provide on-site TOD. Incorporating TOD into the overall station area plan helps to bring visibility to the station area by activating the station area with those living in the residential development and using the commercial businesses along the street. This also helps the neighboring communities to fill gaps in the market that are not currently provided by the nearby Allentown Business District. It is a goal of any TOD placed on-site to work effectively with the neighboring communities to provide complementary commercial, retail, and housing that is currently unavailable in the surrounding area. Through community and Port Authority driven planning, the proposed concept will allow South Hills Junction to become a vibrant gateway for all South Hills neighborhoods.

3.2 SITE

OPERATIONS

A primary focus of station area planning is to improve station operations to make pedestrian movements more efficient and transit service more reliable and sustainable. With the South Busway having been completed in 1977 and Phase 1 of the light rail system opening within the next few years, existing infrastructure is approaching the end of its useful life. Since achieving TOD requires on-site facilities to be relocated, this station area plan proposes operational improvements that can be made independently and on a shorter timeframe.

Station Platform Reconfiguration

As South Hills Junction is a transfer point between the South Busway, the light rail to the Downtown Subway, and local buses, reconfiguring the station area itself will greatly improve the user experience. Some downtown commuters prefer on-street buses, since they pickup and discharge passengers on-street, while others prefer the subway since it is free from traffic congestion despite the time it takes to walk through the station. A third group does not have a preference and simply catches whichever transit vehicle comes first. In its current state, some commuters noted that they had found a place to stand where they can watch both the South Busway and the light rail so they can run to the platform of whichever comes first. With that need in mind, this plan proposes connecting the bus and rail platforms to provide parity and accessibility. Using the South Busway or using the light rail will have the same station experience.

One potential downside to sequential platforms is that a stalled vehicle could block both lines. A temporary rail shuttle like the Subway Local or even potential resumption of the Allentown Line would require additional dwell time at the station, which could also impact operations. With this need in mind, the proposed design is 53 ft wide and includes a center bus and rail bypass lane alongside high and low temporary platforms 8 ft wide with space for backside pedestrian fences. Fenced and gated platforms have the additional benefit of preventing pedestrians from trying to cross between platforms, which is a safety issue. Reconfiguration also proposes all rail to be embedded in a paved surface between the platforms.

Operational Changes

The Junction area's infrastructure still retains legacy infrastructure from the PCC trolley era which ended in 1999. Unused track from the former Allentown Line remains, as does a spur track that once served the previous Overbrook line alignment. Turnaround loops too tight for modern light rail vehicles take up valuable space, as well as track switches that do not overlap with paved roadways. These limitations prevent buses and light rail vehicles from being able to make all needed movements, and manual flagging is still required during service detours.

A separate project is planned for 2023 to remove some of the redundant track, as well as another project to reactivate an unused maintenance spur near the salt shed to stage a light rail vehicle. Since the nearest rail yard to Downtown Pittsburgh is at the end of the Blue and Red lines in South Hills Village, three to four vehicles are staged along the former Allentown turnback alignment to serve large events. Maintaining this operational capacity is essential throughout station reconfiguration.

This station area plan proposes a first phase of construction to restore the wye between the Mt. Washington Transit Tunnel and the Allentown Line. This, along with the proposed siding near the salt shed in a separate project will give a mid-line maintenance area and greatly improve operational flexibility during special events and detours. It will also allow flexibility should Port Authority's further planning recommend and then implement reactivating either the inactive Allentown Line or the Penn Park spur to the East Busway. A purpose-built bus layover facility similar to the one proposed at the Carnegie Station is proposed to be added to replace the unused loop track and part of the employee parking facility. Stacked parking can temporarily increase capacity until facilities are relocated, eliminating parking demand at the current parking lot location.

Within this first phase of operational changes, the existing Allentown line turnback will be maintained as-is. By embedding the rail in the station area and moving the South Busway onto the rail alignment, the current South Busway alignment between the Mt. Washington Transit Tunnel and station can be used for equipment staging. Also recommended in this plan is revising track switches so the light rail can be single tracked through any station platform. Changes will require new signalization and train control systems, which will be determined in subsequent engineering projects.

Should the Building 1 site be redeveloped, a new salt shed and purpose-built light rail staging track could be added to greatly improve existing capability. That would allow the existing staging area to be redeveloped into greenspace, pedestrian areas, and equipment staging areas, as shown in the proposed plan. An alternative location for rail car staging is to reactivate the Overbrook Line alignment between Warrington Avenue and Boggs Station, though this is not the preferred alternative.

Turning Templates

In order to review that this station area plan is implementable, track and switches were laid out based on existing track curvature radii and crossover switch lengths. Movements for both a 45 ft bus and a 60 ft articulated bus turning at 15 mph were simulated using AutoTurn software. Pavement markings and curb radii were laid out accordingly. Additionally, 67-foot (WB-67) tractor trailers were modeled through the proposed station design to ensure roadways can accommodate station area and tunnel maintenance work.

Construction Staging

South Hills Junction is not only an important station for regular service, but also essential to remain open during service disruptions. This plan considers how station reconfiguration could be built to reduce service impacts. Since single-tracking and implementing bus detours in the station area would reduce capacity, keeping South Hills Junction open at all times could impact the frequency and reliability of operations. Activities such as track replacement, signal installation, catenary realignment, switch installation could require down time beyond off-peak hours, though this plan considers phasing to keep the station open to the greatest extent feasible. Therefore, a potential conceptual construction phasing plan could be as follows, though ultimately the feasibility of such a plan would have to be evaluated through the detailed design process, once

the full extent of reconfiguration work is finalized.

Preconstruction:

- If possible through City coordination, realign and signalize the intersection of Warrington Avenue, Haberman Avenue, and the Haberman Ramp.

Stage 1:

- Close South Busway platforms and reroute buses via the Haberman Ramp, Warrington Avenue, and the Palm Garden Ramp.
- Construct new outbound platforms within the South Busway alignment.
- Maintain service on the existing light rail platforms as feasible.

Stage 2:

- Upon completion of the new combined outbound platform, close the existing outbound light rail platform

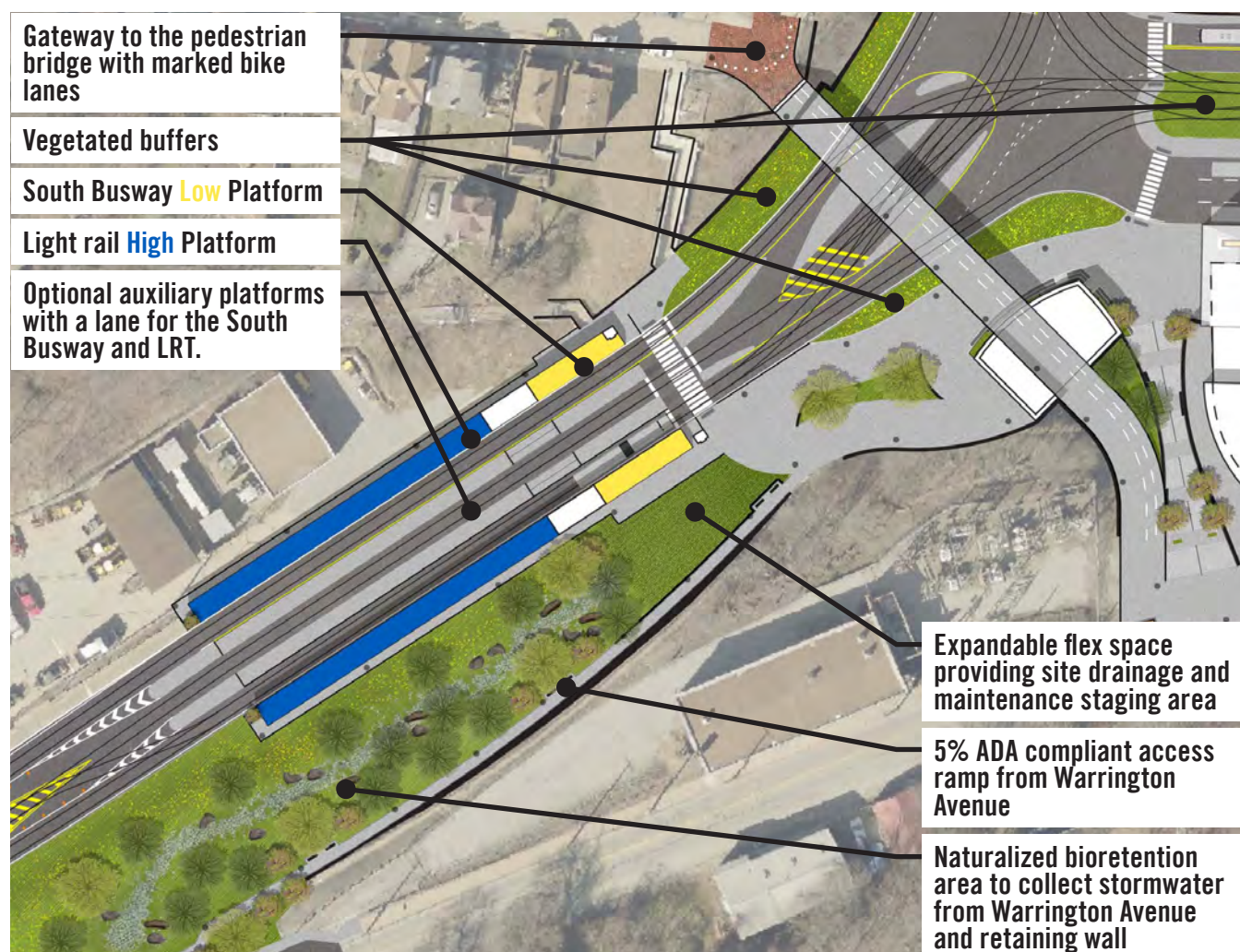
and enact single-track operations using the existing inbound platform.

- Demolish the existing outbound light rail platform and construct the proposed inbound auxiliary platforms (high and low).

Stage 3:

- Reroute bus and light rail service to use the proposed outbound and inbound auxiliary platforms.
- Rebuild the existing inbound platform.

Enacting these operational changes will not only address needed preventative maintenance projects to ensure system reliability, they will also improve system usability for all users while readying the station to take full advantage of TOD.



Proposed improvements near the light rail and South Busway station platforms between Warrington Avenue and Lelia Street.

SITE

HYDROLOGY

Drainage patterns lead to station area

Channelized stormwater at access points

Concentration of stormwater flow to Saw Mill Run



GREEN INFRASTRUCTURE SYSTEMS (GIS)

Minimizing impervious surfaces with the incorporation of green infrastructure systems is a key consideration for the future development of South Hills Junction. Today, the station area has limited to no green space on site with all stormwater activities directed into the greater storm system leading to Saw Mill Run. The conceptual plan makes an effort to add green areas wherever development and pedestrian or vehicular circulation is not taking place to help reduce these impacts. Included within this design are basic green infrastructure concepts including but not limited to:

- **Bioretention:** or rain garden is a vegetated depressions layered with engineered soil media that filters pollutants, increases the time water stays on the sites, and provides stormwater storage. This system will have an underdrain to ensure the rain garden (or rain garden cells) drains in a reasonable time period. Applicable in most settings, rain gardens are best used on small sites, urban areas, suburban areas, and parking lots.
- **Stormwater Planter:** is a bioretention system enclosed in a concrete container that contains porous soil media and vegetation to capture, detain, and filter stormwater runoff. Stormwater planter boxes are lined, contain an underdrain, have various small to medium plantings, and are installed below or at grade to the street, parking lot, or sidewalk. Runoff is directed to the stormwater planter, where water is filtered by vegetation before percolating into the ground or discharging through an underdrain. The stormwater is also used to irrigate the tree or the other vegetation in the planter box.
- **Stormwater Tree Trench:** is a system of trees connected by an underground stone bed used for infiltration. On the surface, a stormwater tree trench looks similar to a series of street tree pits. However, under the sidewalk a perforated pipe distributes stormwater throughout the trench.

Proposed green infrastructure improvements include a naturalized swale where the LRV event staging area exists today. Providing an aesthetic stormwater filtration system adjacent to the proposed 5% access ramp entering the station from the Warrington Avenue at Boggston Avenue intersection. Stormwater currently is to flow in a channel behind a retaining wall below Warrington Avenue, but site observations noted the channel fills and overflows. It is recommended for this drainage path be properly directed under the new sidewalk ramp into the proposed bioswale.

As continued maintenance is required at South Hills Junction and the nearby Mt. Washington Transit Tunnel, flexible space for construction staging is required. In an effort to minimize impervious surfaces for such occasions and allow for the construction staging to not interrupt pedestrian and vehicular circulation, a reinforced grass system is proposed. This type of system offers significant site design advantages including:

- Optimum drainage capability
- Load bearing for vehicle weight
- Reduces need for paved surfaces
- Durable and aesthetic lawn spaces

Additional considerations include stormwater planters and tree trenches along roadways throughout the site. This allows for an immediate collection of runoff from the transit system roadways. Depicted in the diagram to the right, a stormwater tree trench shows how runoff could be filtered into a system before entering the overall storm system using the following elements:

- Stormwater from roadway flows into an inlet
- Pretreatment filter catches trash and sediment
- Monitoring well
- Cleanouts allow distribution pipe and underdrain to be flushed
- Perforated pipe distributes water into stone media within the stormwater trench
- Excess stormwater is directed to overflow inlet and existing sewer

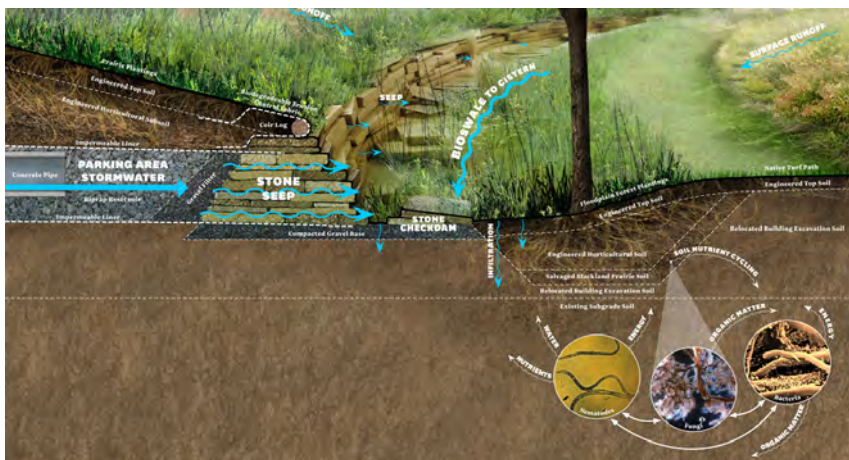


Diagram showcasing how stormwater is filtered within a naturalized bioswale.

Source: MVVA



Example of a load-bearing reinforced grass system

Source: GrassConcrete Systems

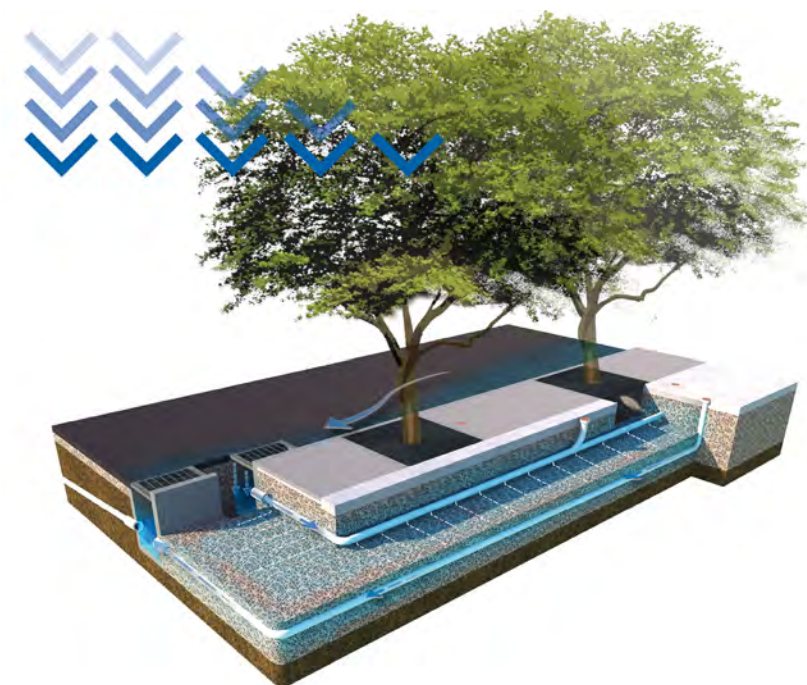


Diagram showing how a stormwater tree trench system functions

SITE

PLANTING STRATEGY

The planting strategy for Port Authority stations and operational facilities should be comprised of a limited collection of plant selections and materials. This is proposed to create a low maintenance method of landscaping and to provide a visual consistency beyond other architectural elements, such as bus and light rail shelters. The following information includes a general guide for maintenance for woody and perennial plants.

General Maintenance for Woody and Perennial Landscape Beds

- Beds and ground cover shall be maintained weed-free to the fullest extent possible. Weeds should be removed manually.
- Dead plants should be removed as soon as possible and replaced during the next planting season (Spring or Fall).
- Beds should be evaluated annually to assess need for edging and mulching. Typically, beds should be edged every two years. Mulch should be 2 - 4" in depth, and a 1" buffer should be maintained around trunks of trees or shrubs.
- Leaves should be fully removed from beds before winter, if weather allows. At the very latest, leaves should be fully removed from beds by the end of the winter season.

Woody Shrub Pruning

- All woody shrubs should be evaluated annually to assess need for pruning. Pruning should be undertaken to maintain design intent and promote optimal plant growth and health. Most other shrubs and trees will be pruned for structure and vigor on a 2-3 year rotation. Most pruning should be accomplished during the winter and early spring.
- Plants should be pruned in a manner that preserves access to sidewalks, ramps, entrances, signs and lights.
- Dead wood should be removed as soon as it becomes apparent.
- Trees adjacent to roadways, walkways, signs, and streetlights should be inspected annually for safety and clearance issues, and maintenance-pruned if necessary.

Perennial Plant Maintenance

- Perennial plants, including broadleaf perennials, grasses, bulbs, and groundcovers, should be maintained to promote optimal health, vigor, and display value.
- Deciduous broadleaf perennials should usually be cut back to the ground in late autumn or early winter, though some may be left standing until late winter to provide seasonal interest.
- Ornamental grasses should usually be cut back in late winter.

- Evergreen perennials and groundcovers should typically be cut back in late winter or early spring.

A full landscape plan and plant list for South Hills Junction has been provided as part of a 10% Design Development document.

Street + Area Trees



Acer griseum
Paperbark Maple

Betula nigra
River Birch

Crataegus laevigata 'Superba'
Crimson Cloud Hawthorn

Shrubs, Grasses, and Herbaceous Plants



Purpleleaf Wintercreeper
Euonymus fortunei 'Coloratus'

Summersweet
Clethra alnifolia

Buttonbush
Cephalanthus occidentalis



Blackeyed Susan
Rudbeckia hirta

Red Chokeberry
Aronia arbutifolia

Purple Coneflower
Echinacea purpurea



Cinquefoil
Potentilla fruticosa

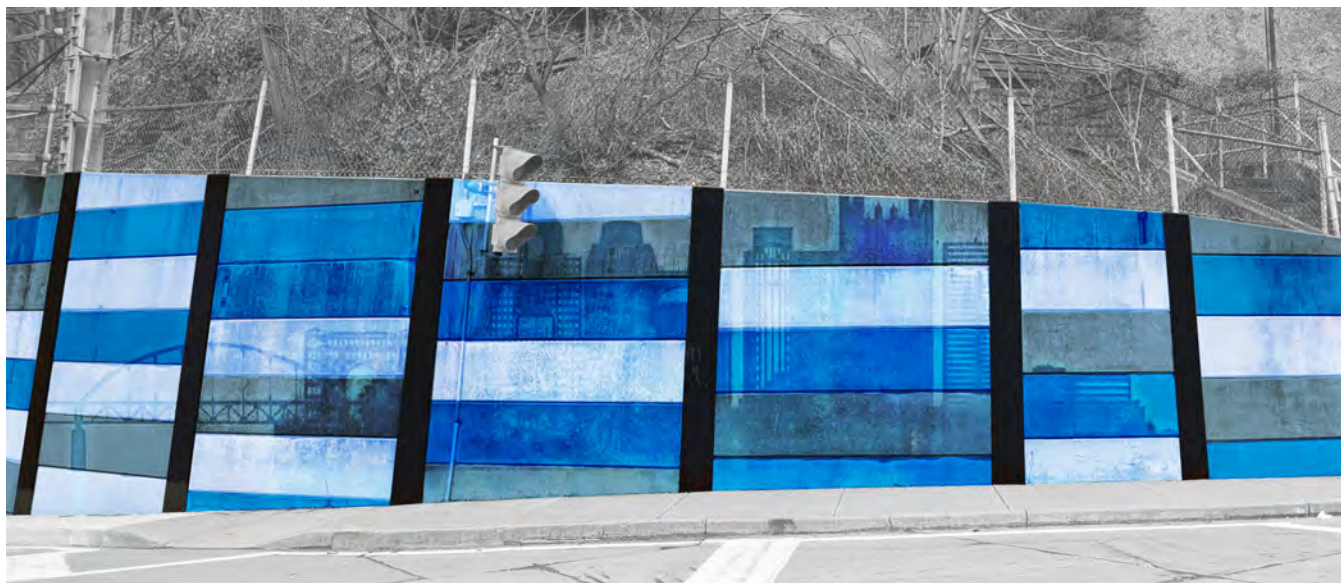
Big Bluestem
Andropogon gerardi

Lobelia siphilitica
Great Blue Lobelia

OPPORTUNITY FOR PUBLIC ART

To enhance the aesthetic appeal of the stations and provide a more welcoming pedestrian environment, Port Authority aims to incorporate public art when possible. As the station area sits within the valley between Mt. Washington and Beltzhoover, multiple retaining walls are used to create the usable space of the station area. At select locations, these walls could potentially be used as public art spaces, either through wall materials or applied surfaces such as tiles, mosaics, or

murals. Port Authority operations require that public art along walls must allow for the ability to perform inspections as needed. Low maintenance and graffiti-resistant materials are preferred. Wall murals incorporating color and vibrancy within the station are recommended to enhance the character of the station area.



The proposed concept rendering shows ways of incorporating public art into retaining walls. Concrete could be stained (or panels replaced) to add color or contrast, or mural could be applied. A partnership between a local artist and Port Authority, with input from community members, is recommended to develop artistic installations throughout the facilities. Public art installations may include but are not limited to murals, sculptural pieces, and or exterior medium applications.

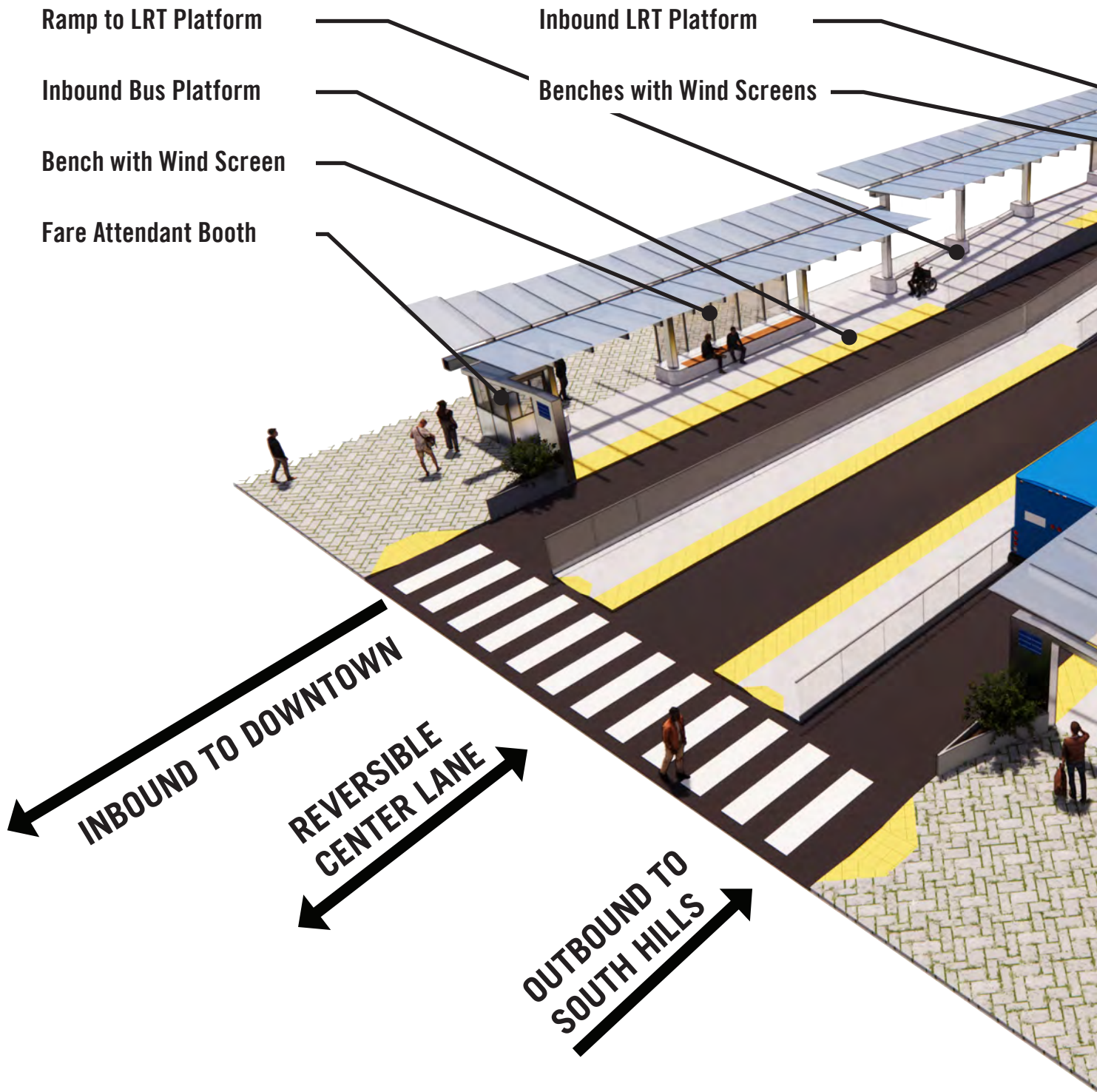


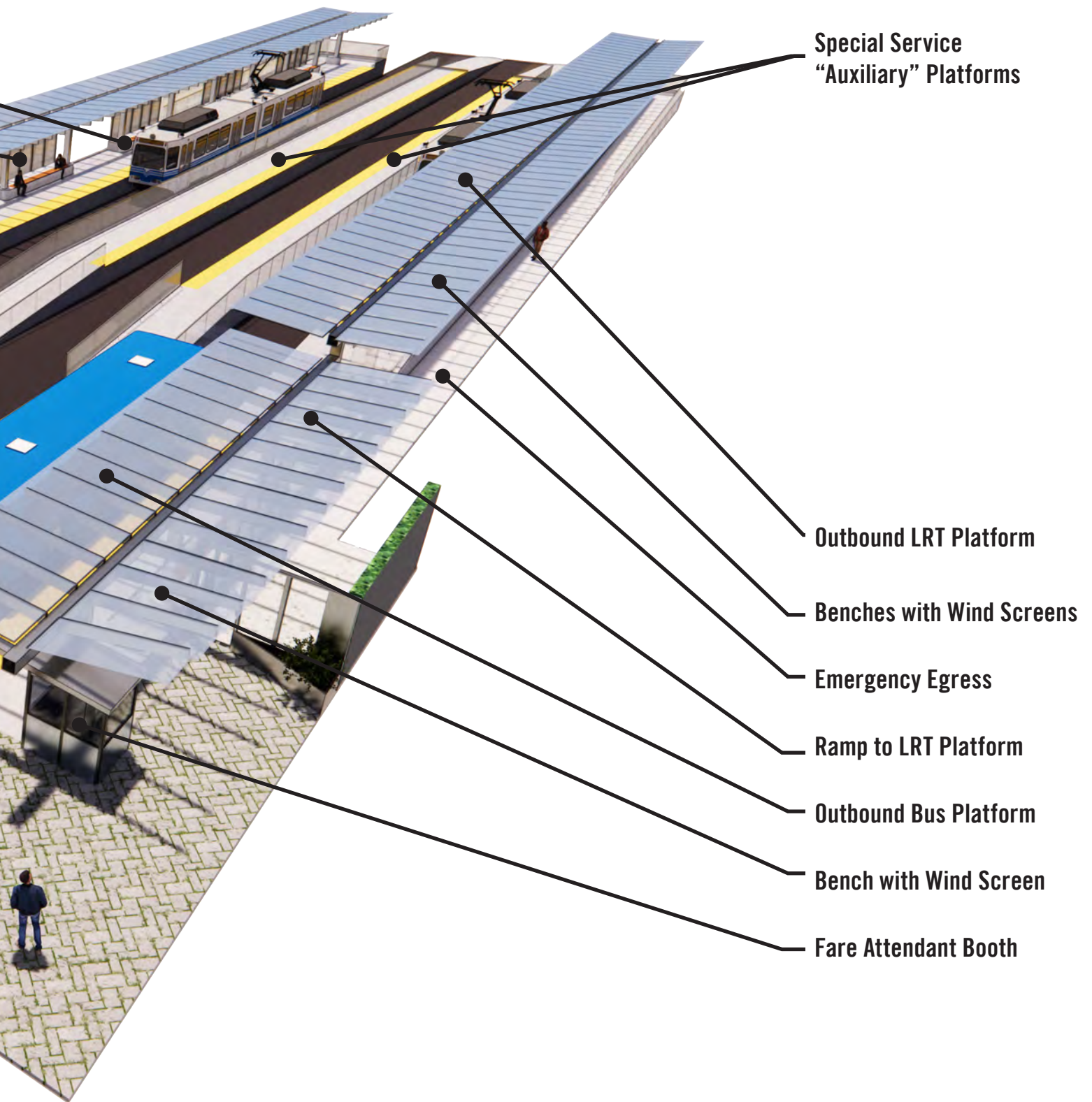
Existing public art displayed along outer wall of the subway local transit facilities.



Existing public art displayed within the Allentown Business District along Warrington Avenue.

3.3 STRUCTURE





STRUCTURE: PLATFORM

The existing station presents a number of challenges that the conceptual design addresses. Unifying bus and light rail into a unified station experience will make for a better user experience and will reduce bus and light rail conflict points through the station area. The existing station design is unique for the system and the station area features a mix of architectural finishes and expressions that can make it challenging to navigate intuitively. The additive evolution of the station and surrounding facilities lengthens pedestrian walking distances, leads to visual clutter, and inhibits successful wayfinding, especially as pedestrians shortcut sidewalks and walkways to follow their own desire lines through roadways and parking lots where they are not supposed to be. The design of the existing canopy makes the platform feel dark and unwelcoming and does not cover the entire length of the platform. For bus users, stops accommodate fewer people, seating is minimal, and windscreens are absent, having a cumulative effect of reducing the comfort of riders waiting to board.



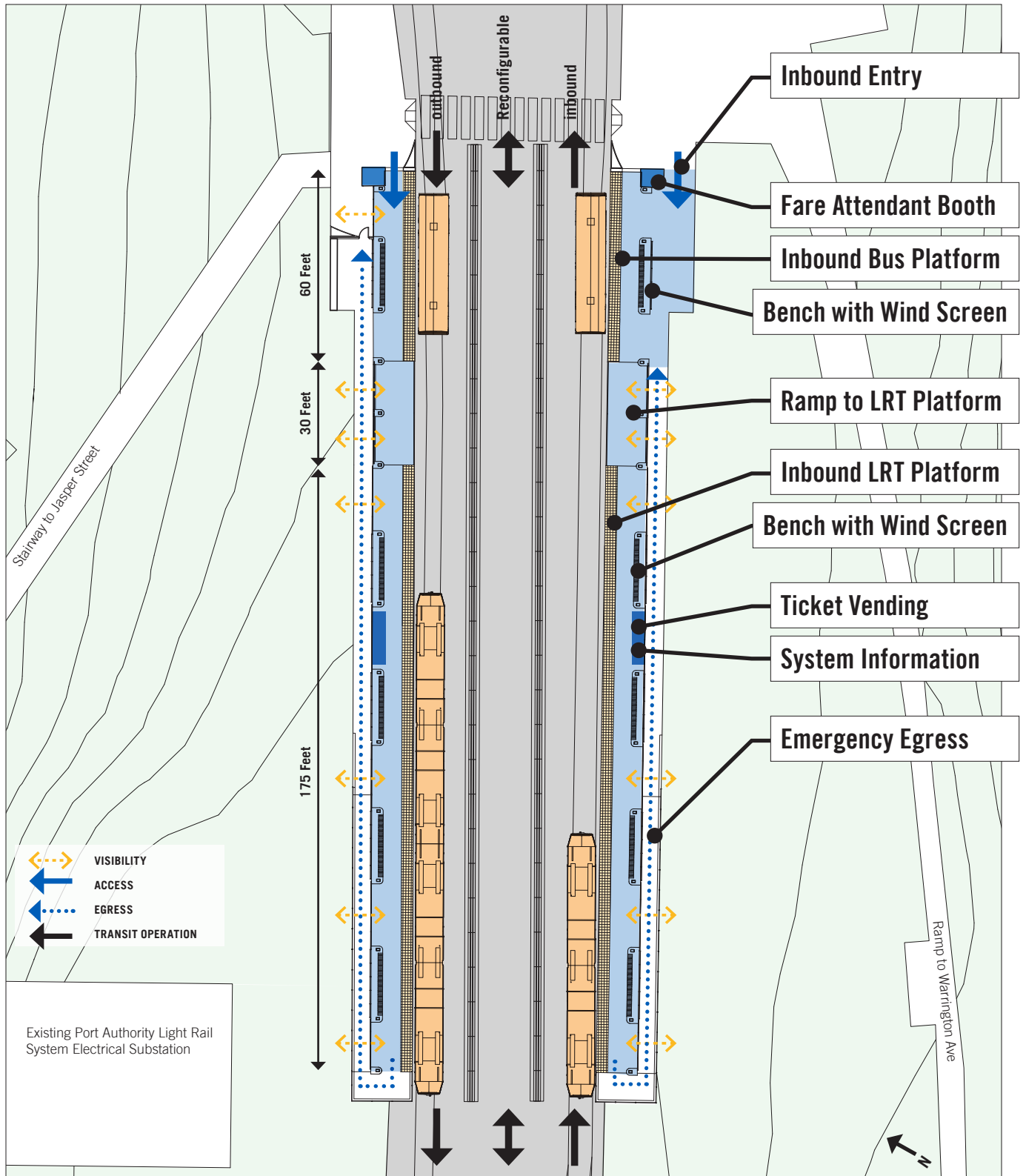
South Hills Junction Station features an architecturally unique station design that includes many elements that were custom made and cannot be interchanged with other station areas.



South Hills Junction Station is starting to show its age with rust and corrosion taking place in certain locations, especially where metal supports are embedded in walking surfaces that are routinely salted.



The South Busway platforms are separate from the light rail platforms and do not share similar design characteristics or a comparable level of passenger amenities.



STRUCTURE: PEDESTRIAN BRIDGE

Today's South Hills Junction is challenging to access from the neighborhoods it serves in part because the majority of its access points include staircases into the valley. In addition, connectivity between neighborhoods is challenging due to the steep slopes. A bridge across the valley at South Hills Junction, which would include an integrated stair and elevator, would make it easier and more inviting for riders to access the station. The bridge would connect to the Mt. Washington neighborhood at the terminus of Lelia Street and to the Beltzhoover neighborhood at West Warrington Avenue near the Montooth Street steps.

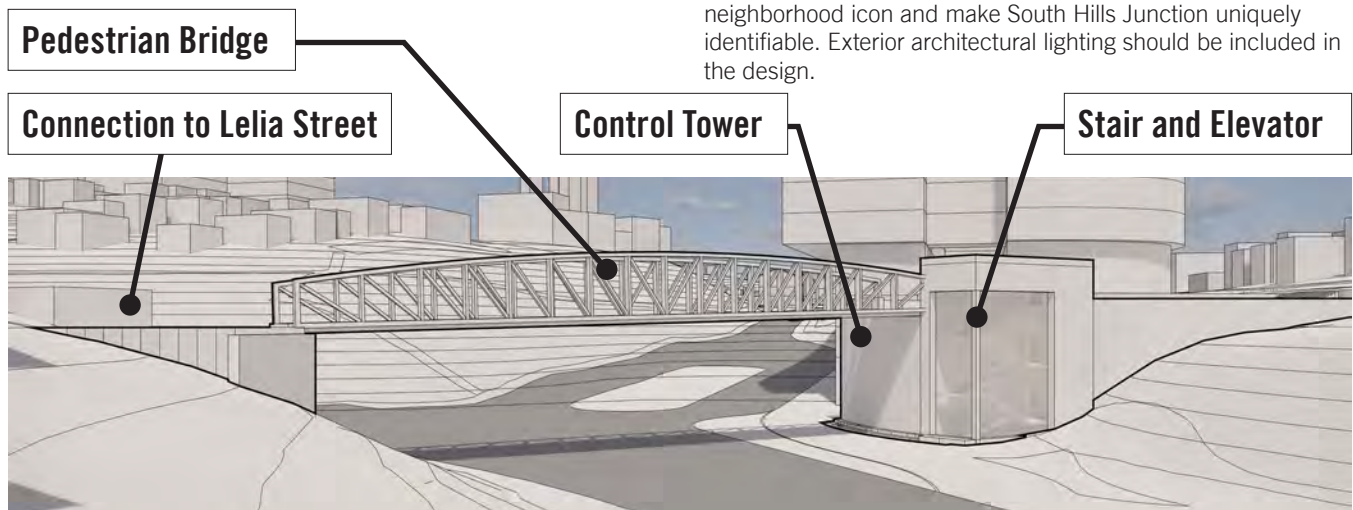
The images below show, conceptually, the approximate scale of a bridge at this location. The eventual design could be quite different but would follow a similar set of design parameters. Building the bridge as a single span would allow for future reconfiguration of tracks and catenaries in the junction below. Such a span would be up to 180 ft in length. For comparison, the Hot Metal pedestrian bridge over Second Avenue is approximately 130 ft in length.

The width of the bridge should accommodate both pedestrians and bicyclists comfortably: 16 ft at a minimum and ideally 20 ft. The pedestrian bridge at East Liberty Station is 16 ft wide at its narrowest point and was designed primarily for pedestrians but does experience bicyclist traffic.

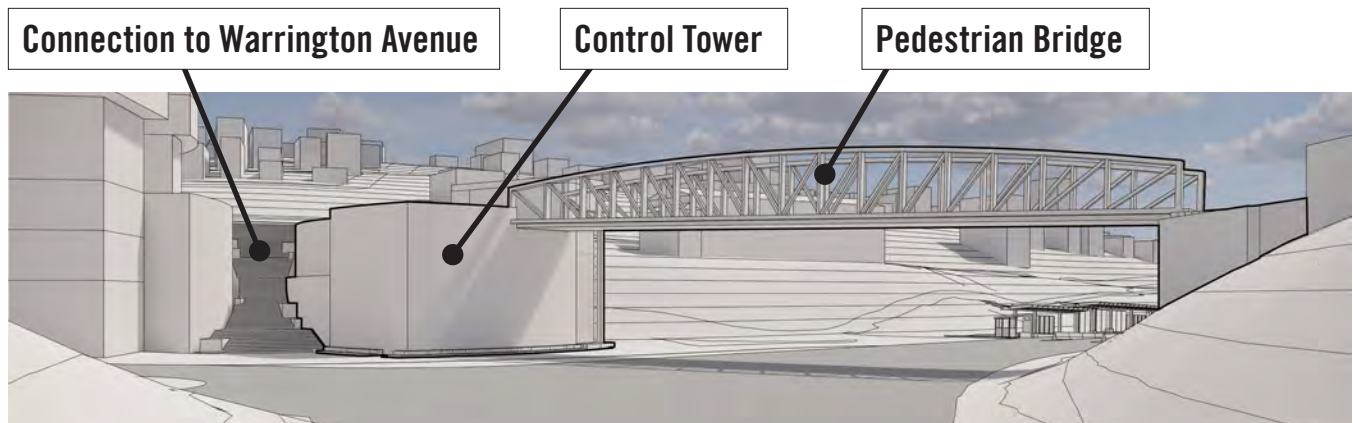
The vertical clearance below the bridge must be at least 25 ft however additional height will make modifying or maintaining the tracks and catenaries even easier in the future. A bridge structure where the structural members are mainly above the walking surface would provide additional vertical clearance below.

Enclosure of the bridge is important both for the safety of users and for the longevity of the structure. Enclosures or some other obstructions on the sides must prevent users from either dropping items onto the catenary or from falling onto the transit way. Glass walls would be an appropriate solution. A roof over the bridge would ensure that it remains sheltered from the elements and does not require salt for deicing.

Lastly, a bridge at this location would serve as a new neighborhood icon and make South Hills Junction uniquely identifiable. Exterior architectural lighting should be included in the design.



View looking North from the Jasper Street steps near the outbound platform.



View looking South from the Mt. Washington Transit Tunnel.

STRUCTURE: CONTROL TOWER

In order to facilitate the changes proposed in this master plan, the existing control tower would need to be demolished and relocated. The control tower at South Hills Junction allows Port Authority to monitor and control the track switches that comprise the junction itself. The existing control tower dates to the most recent redesign of the junction infrastructure and if the old switching systems and infrastructure were to be replaced or reconfigured, the equipment in this control tower should also be updated. The existing control tower also includes restrooms for transit operators. Improved facilities for operators at layover locations allows Port Authority greater flexibility in scheduling transit service throughout the system.

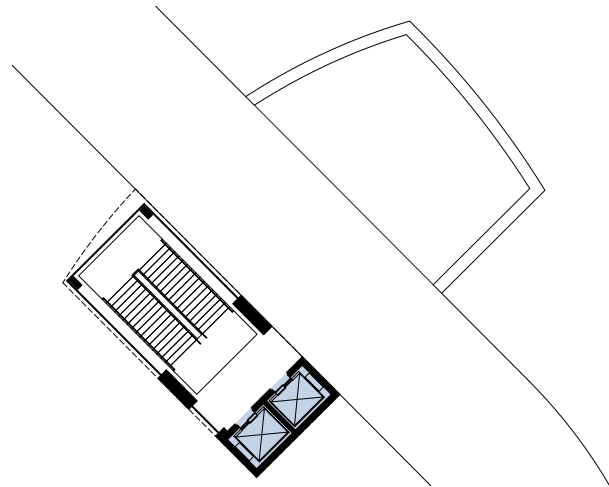
This design combines multiple functions into a single building project:

- Control Tower Operations Room (Level 2)
- Control Tower Equipment Rooms (Levels 1 + 2)
- Restroom for control tower employees (Level 2)
- Restrooms for Port Authority transit operators (Level 1)
- Resting space for transit operators (Level 1)
- Public staircase and elevators connecting the pedestrian bridge to the level of South Hills Junction
- Structural support for the eastern end of the pedestrian bridge

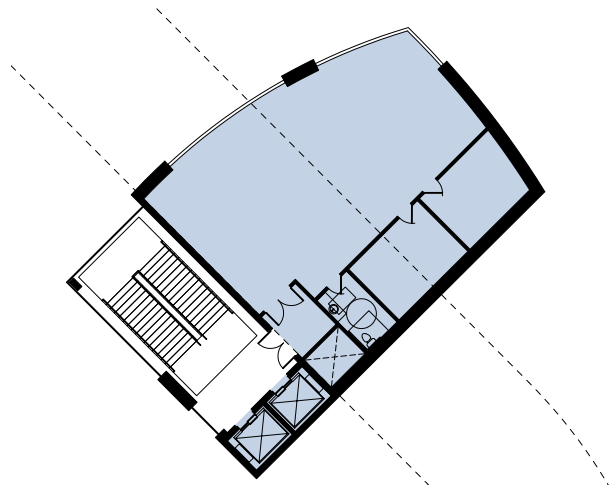
The control tower operations room is on level 2 with primary access from the public stair and elevators on the south side of the building. The room would have large floor to ceiling windows to provide clear visibility of the junction infrastructure, entrance to the Mt. Washington Transit Tunnel, and South Hills Junction itself. To provide privacy to Port Authority staff, the windows should have a tinted or mirrored exterior finish. Entrances into the private areas of the control tower should be clearly marked as being for Port Authority employees only. The junction control electrical infrastructure would be located on Level 1.

Driver relief facilities would be located on Level 1 with primary access from the north so that they are easily reachable from the new bus layover facility. The design configuration shown could be modified to have less space for restrooms and more space to create a break room for transit operators. Overall the interior spaces of this new building would be 4,000 sf to 6,000 sf depending upon configuration.

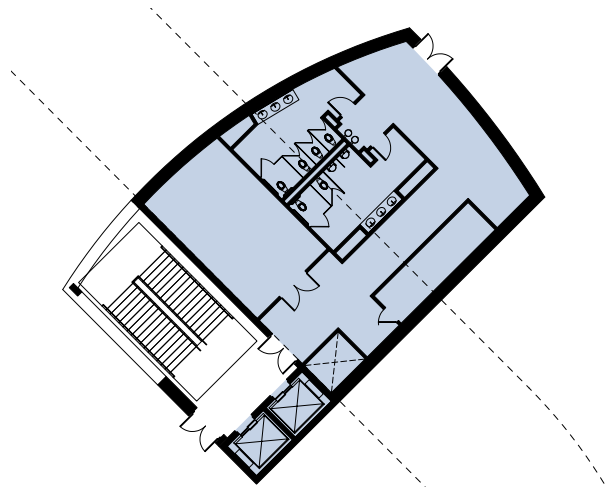
The stair and elevators would be publicly accessible and provide connectivity between the bridge and the station via the ground level plaza. Complementary architectural features and wayfinding for the stair and elevator tower will tie the overall station area together for a cohesive South Hills Junction. This feature is an additional ADA-compliant access to the station area in the lower valley which will assist in making the station visible from Warrington Avenue.



Level 3: Bridge level with stair and elevator access.



Level 2: Control room level with employee restroom and storage rooms.



Level 1: Transit operator restrooms and control room equipment

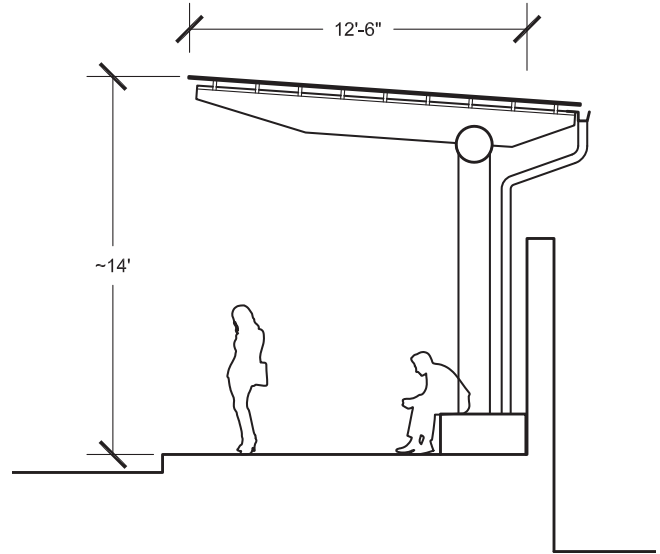
STRUCTURE

The conceptual shelter design for South Hills Junction addresses a number of the principles in Port Authority's Light Rail Station Design Guidelines, including translucent, modular canopy panels translucent windscreens, and termination of metal railings and structure above the standing surface to reduce exposure to snow, ice, and salt. The structures could be constructed of easily interchangeable panels and fixtures to make long term maintenance more efficient.

This design proposal builds on the design strategy utilized at East Liberty Station on the East Busway but adapts it for light rail and the specifics of the site. By responding to Port Authority -developed guidelines and a successful, existing station, Port Authority seeks to advance a consistent design brand with improvements to South Hills Junction Station.

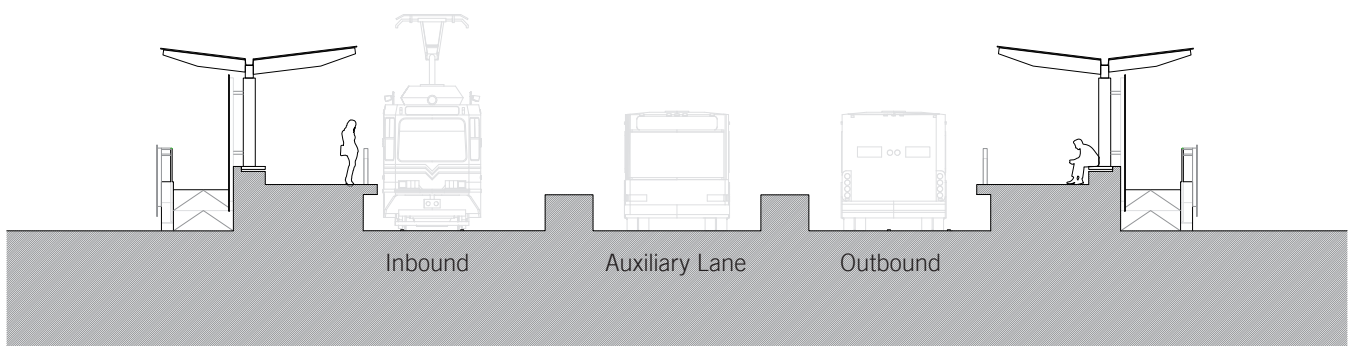
New structures at South Hills Junction could have the following attributes:

- Bright and airy boarding platform. The open design and translucent roof panels make the station platforms feel inviting and safe.
- Wide concrete benches with inset wood or composite slats. They are rust-resistant and do not collect refuse underneath. Wood or composite is also a preferred seating surface for rider comfort.
- The design language is uncluttered and simple, allowing Port Authority branding to stand out.
- Off board fare payment would apply to both light rail and bus passengers, making for more efficient boarding and alighting for bus routes at this station.



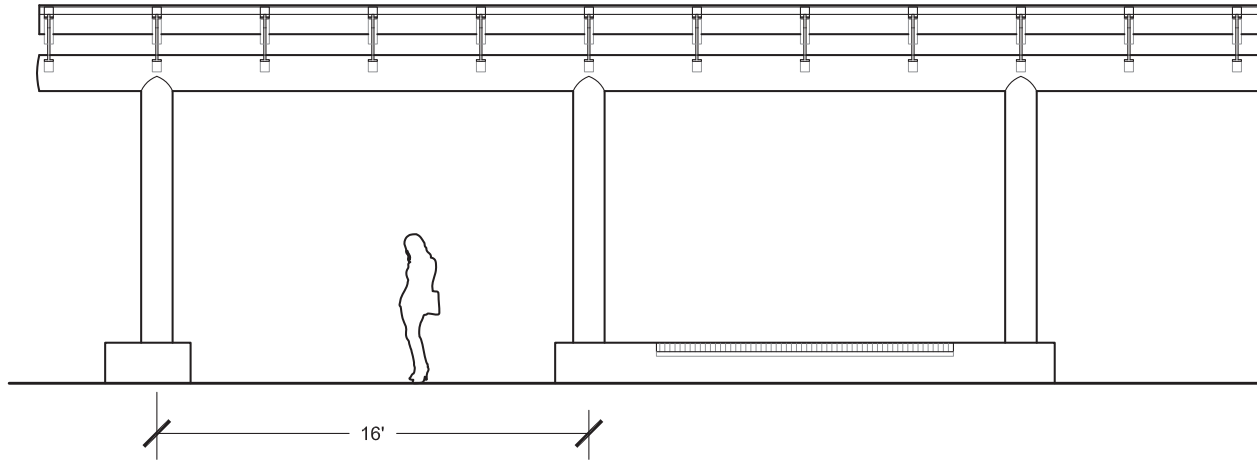
East Liberty Station Typical Section

SOUTH HILLS JUNCTION CROSS SECTION



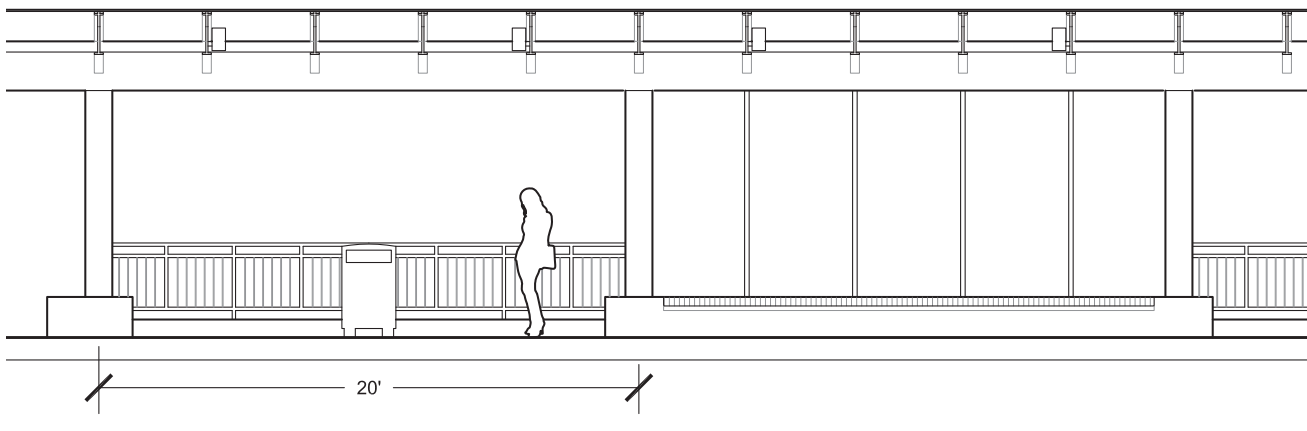
South Hills Junction Station Typical Section

EAST LIBERTY STATION SHELTER



East Liberty Station Typical Elevation

SOUTH HILLS JUNCTION SHELTER



South Hills Junction Station Typical Elevation

STRUCTURE: PRINCIPLES

The proposed station design was created using principles that align or adhere to Port Authority's 2018 LRT Station Design Guidelines

Consistent & Appropriate Signage	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Signage added over time has resulted in graphic inconsistency that adds to visual clutter Identity signage is lacking and directional signage can be difficult to see given the scale and height of the canopy <p>Proposed Station Design</p> <ul style="list-style-type: none"> Replace signage with new, graphically consistent signage that follows the new South Hills Junction Wayfinding Plan Add well-lit signage, visible from Warrington Ave 	Public Safety	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> The station is disconnected from the community and has narrow, long connecting walkways with few defensible spaces <p>Proposed Station Design</p> <ul style="list-style-type: none"> Create welcoming spaces along the major walkways that include architectural lighting Create visible spaces from station areas and from proposed TOD Use clear panels on proposed pedestrian bridge
Improved Canopies & Furniture	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Existing canopy does not conform to new design standards that emphasize natural light, modularity, and coverage to extend shelter over the full length of the platform <p>Proposed Station Design</p> <ul style="list-style-type: none"> Replace existing canopy with new translucent canopy that is consistent with LRT Design Guidelines and designs developed for East Liberty and Negley stations 	Accessibility	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> There are no accessible entrances to the station Accessible access is only by local bus <p>Proposed Station Design</p> <ul style="list-style-type: none"> Add new accessible pathways connecting to the station Add a pedestrian bridge with an elevator to the station level
New Lighting Standards	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Lighting is coordinated with structural elements and is not located to highlight key information The canopy does not extend the full length of the platform so some areas are not well lit <p>Proposed Station Design</p> <ul style="list-style-type: none"> Coordinate new lighting with informational kiosks and evenly illuminate the length of the platform Include architectural lighting in all built structures 	Rider Comfort	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> The busway platforms do not include wind screens or public art <p>Proposed Station Design</p> <ul style="list-style-type: none"> Combine busway and light rail platforms into a unified design with equivalent amenities such as seating
Clutter Free Spaces	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Outdated signage and station elements remain a part of the station even as new elements have been added. Visual clutter obstructs sight lines and inhibits wayfinding <p>Proposed Station Design</p> <ul style="list-style-type: none"> New signage and kiosks that are consistent with new design standards will be coordinated to reduce clutter Wide structural bays and information integrated into the architecture will offer more visual porosity 	Climatic & Seasonal Changes	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> The busway platforms do not include wind screens Open riser stairs may be more susceptible to freezing Indirect pedestrian routes increase exposure <p>Proposed Station Design</p> <ul style="list-style-type: none"> Combine busway and light rail platforms into a unified design with equivalent amenities. Add a heated or covered pedestrian bridge with an elevator to the station level Provide more direct pedestrian paths

*Source: Port Authority of Allegheny County Light Rail Transit Station Design Guidelines - Draft 2018

STRUCTURE: DURABILITY & MAINTENANCE

Durability & maintenance considerations are based on and align with Port Authority's 2018 LRT Station Design Guidelines.

Material Lifespan	<p>Materials and assemblies should be designed to withstand outdoor conditions and public usage</p> <p>Material and assembly design considerations include material finish, susceptibility to moisture, scratch-resistance, salt-tolerance, and exposure to the elements</p> <p>In addition to naturally-occurring conditions, station design should take into consideration the life-span and repair implications of graffiti and vandalism</p>	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Station is made of mostly durable components however structural connections are showing signs of rust and corrosion <p>Proposed Station Design</p> <ul style="list-style-type: none"> Materials used will be of durable-grade glass, steel, and concrete, with vandal-resistance incorporated where possible
Modular Components	<p>Modular and prefabricated systems offer benefits over custom systems, including: cost reduction, design flexibility, and shorter learning time</p> <p>Assemblies that are constructed of primarily repetitive and interlocking elements should utilize modular systems and products</p> <p>Lead times and production times for materials can be reduced by ordering modular system components in bulk and keeping them in stock</p>	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Major elements, such as the platform canopies and handrails, are monolithic and custom to South Hills Junction <p>Proposed Station Design</p> <ul style="list-style-type: none"> Canopies, windscreens, and guardrails will be designed as modular components where possible Modular products should be used at paving in pedestrian zones
Ease of Access & Replacement Strategy	<p>Systems that need intermittent maintenance or replacement should be located in places where they can be easily accessed and won't be blocked by other elements</p> <p>Access panels and wiring for electrical systems should be incorporated into vertical structural elements</p>	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Access panels and conduit are freestanding and not integrated into existing vertical elements <p>Proposed Station Design</p> <ul style="list-style-type: none"> Move electrical systems to be easy to access and in secure locations at vertical structure to reduce visual clutter
Seasonal Considerations	<p>Ferrous materials should not touch the ground where they are susceptible to corrosion from de-icing salts and moisture</p> <p>Metals embedded into concrete should be properly prepared and detailed so as not to damage the metal or concrete during periods of temperature-related expansion and contraction</p> <p>Maintenance plans should include consideration for limiting de-icing exposure in vulnerable areas</p>	<p>Existing Condition at South Hills Junction Station</p> <ul style="list-style-type: none"> Steel assemblies terminate at the walking-surface and interact with moisture and salt, leading to corrosion and damage of structural components Some concrete spalling is occurring at steel reinforcement <p>Proposed Station Design</p> <ul style="list-style-type: none"> Terminate all new steel components (columns, railings) a minimum of 8 inches above walking surfaces

*Source: Port Authority of Allegheny County Light Rail Transit Station Design Guidelines - Draft 2018

4.





TRANSIT - ORIENTED DEVELOPMENT (TOD)

4.1 DEVELOPMENT CONCEPT

TOD is proposed at South Hills Junction on Port Authority owned land that currently houses several operational facilities including the salt shed, rail tie laydown area, and the existing bus loop nearest the control tower. Each of these areas have been labeled as Parcels A, B, and C respectively. Each area provides street frontages along Warrington Avenue or Haberman Avenue continuing the urban fabric from the Allentown Business District or Mt. Washington neighborhood south towards the station area itself.

Existing Conditions

- Land Use: Port Authority Operational Facilities and Transit Station
- Zoning: Park
- Estimated Acreage: 12.2 Acres
- Ownership: Port Authority

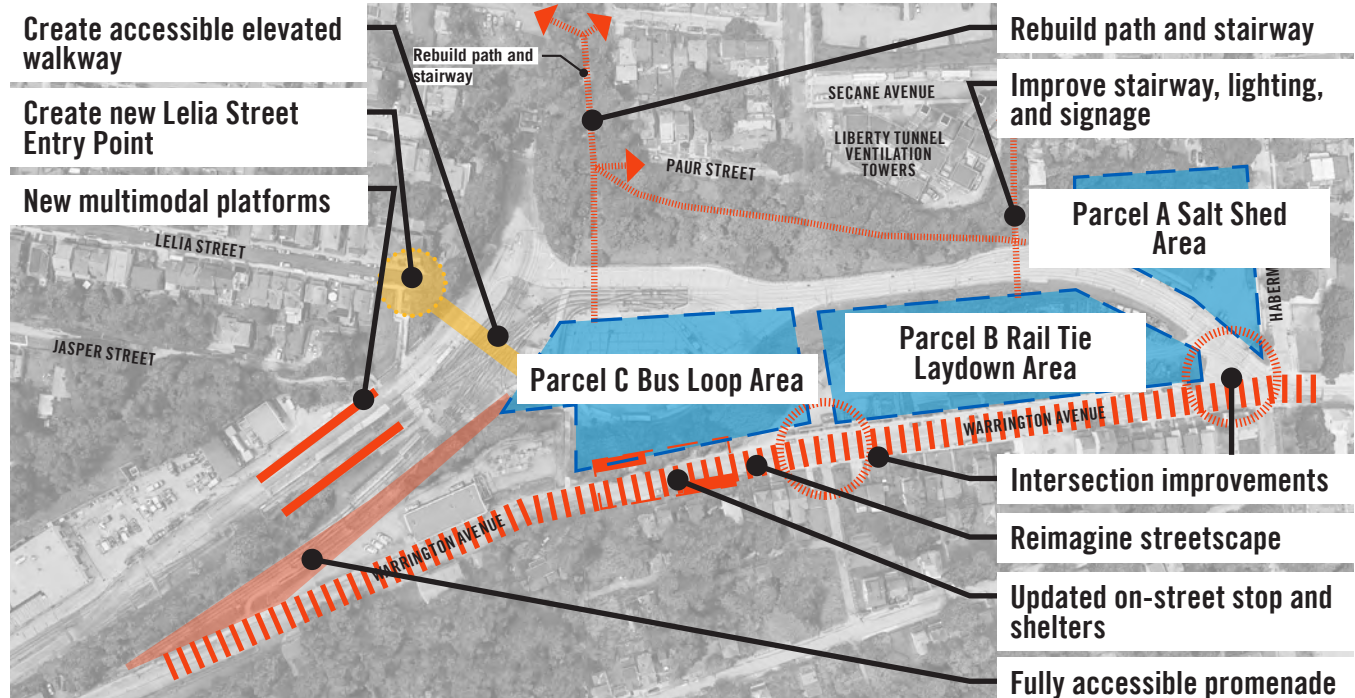
Challenges

- All parcels have active uses that would need to be accommodated elsewhere.
- At Parcel C, there is a 45-ft change in elevation from Warrington Avenue to the existing bus loop.
- Parcel B could require extensive mass excavation to develop the site and or to place parking on lower levels of development.
- Limited commercial development exists along Warrington Avenue near the station and would need to compliment commercial and retail within the Allentown Business District rather than take away from it.

- Even with excellent transit options, there may be concerns from potential developers, nearby residents, and nearby businesses about parking availability.
- Development would occur over the Liberty Tunnels and would need to allow for a PennDOT review and inspection.

Opportunities

- The property is owned by Port Authority.
- The site provides direct access to the station and provides a quick commute to Downtown Pittsburgh or the South Hills.
- A new intersection at Delmont Avenue and the future development could create the need for signalization at Haberman and Warrington, which in turn would help pedestrian safety and Port Authority vehicular movements at Haberman Ramp.
- The site is large, allowing for a sizable mixed-use development, thus increasing development options and financial feasibility.
- The site has frontage along Warrington Avenue and Haberman Avenue, near the relatively heavily trafficked commercial corridor of the Allentown Business District.
- Elevation changes allow for lower level parking structures to accommodate a code minimum requirement for development.
- Distinct parcels allow for phased development.



Public realm improvements, such as streetscape and intersection enhancements, can help leverage private development. Port Authority site improvements that create better connections from the neighborhoods to the station area could also help leverage private development.

EXISTING FACILITIES CONSIDERATIONS

Today, South Hills Junction serves Port Authority as a hub of operational activity with several facilities being housed on site, some of which have outlasted their effectiveness and are considered movable or in need of replacement. Most visible from surrounding neighborhood are the salt shed and rail tie laydown area. These facilities are recommended to be relocated and upgraded to meet the current and future needs of Port Authority, pending completion of Port Authority facilities

master plan. Port Authority has plans to develop a facilities review and master plan for the entirety of the transit system, which will allow for future planning of operational facilities such as these. By relocating the salt shed and rail tie laydown area, the station would have the opportunity for further redevelopment and activation of the site along the most visible street frontages.

TOD DENSITY CONSIDERATIONS



TOWNHOMES

The areas along Warrington Avenue and Haberman Avenue would allow for over 1,000 linear feet of street frontage for developers to consider a partnership with Port Authority to provide on-site TOD. Incorporating TOD into the overall station area plan helps to bring more visibility to the station area itself through the 24 hour activation of residential, commercial, or retail usage within the station area. This also helps the neighboring communities to fill gaps in the market that are not currently provided by the nearby Allentown Business District. It is a goal of any TOD placed on-site to work effectively with the neighboring communities to provide the activation of commercial, retail, and housing that is currently unavailable in the surrounding area. Through community and Port Authority driven planning, the proposed concept could allow South Hills Junction to become a vibrant gateway for all South Hills neighborhoods. Transit-Oriented Development density could be higher than the surrounding neighborhood fabric, and greatest in close proximity to the station, to maximize transit use and

MULTI-FAMILY

ridership. However, increased density, lot coverage and height should be balanced with the existing context so as to not overwhelm the surrounding neighborhood.

Port Authority's Transit-Oriented Development Guidelines summarize recommended ranges for FAR (ratio of total floor area to lot size), height, lot coverage, and parking ratio for each station type. Also indicated are appropriate residential types and density targets. For a Transit Neighborhood Station, the guidelines suggest 3-5 stories of mid-rise multi-family residential or townhome development. These recommendations are not meant to replace the existing local zoning regulations but are suggested guidelines to support TOD. Massing of bigger buildings should be broken up, and buildings should be sited so as to reinforce and define a pedestrian-scaled public realm. Density is an important feature of TOD and can be successfully integrated into existing development patterns.

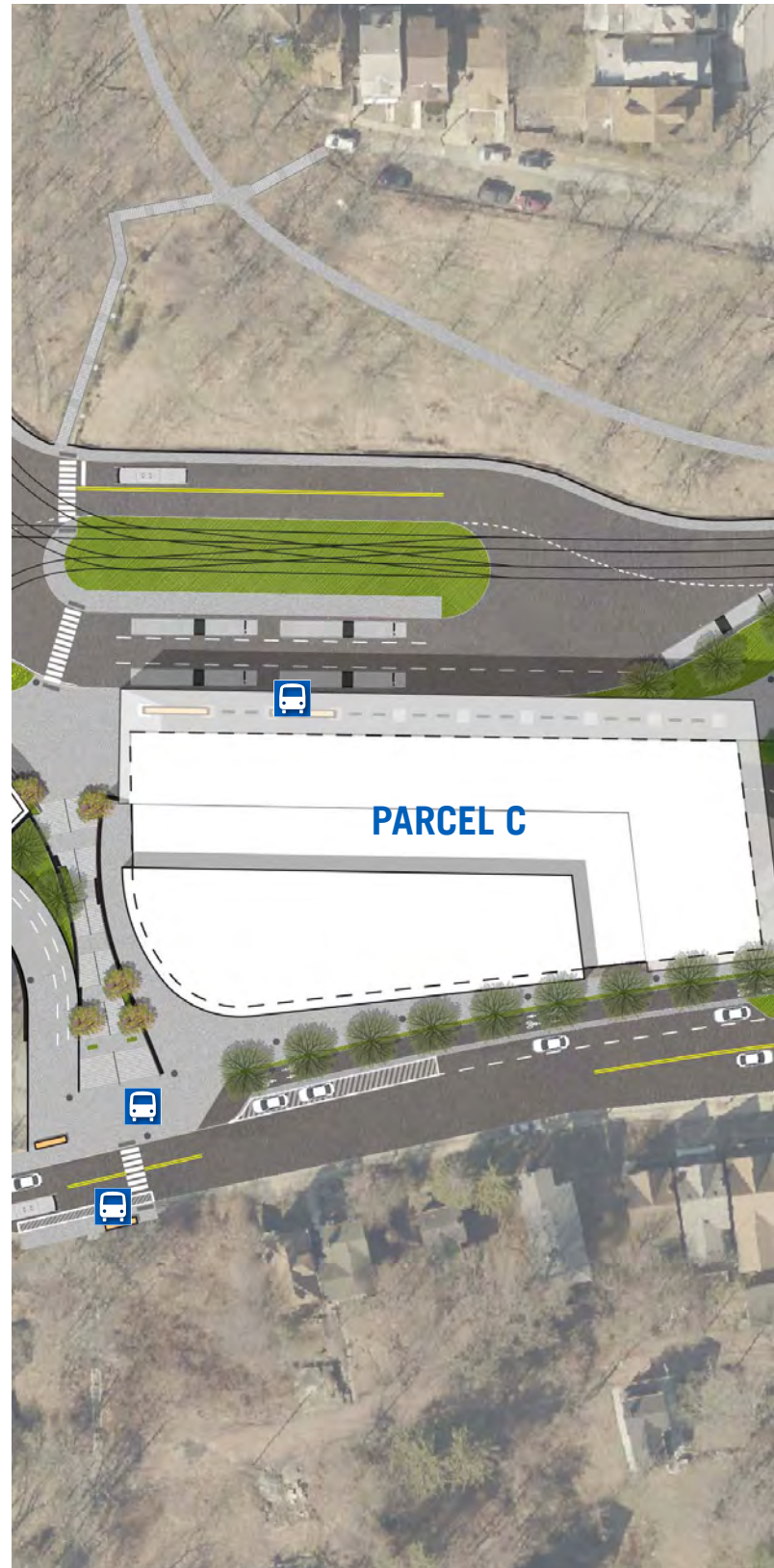
DEVELOPMENT CONCEPT

TOD CONCEPTUAL PLAN

The TOD concept presented in this report addresses opportunities and constraints offered at the site and also serves as an initial guide for potential developer engagement. The concept incorporates desirable TOD features in the plan, including pedestrian connectivity, a mix of supportable uses, appropriate scale, and street-oriented buildings and functions.

The proposed mixed-use plan includes the following key elements:

- Parcel A depicts a low density option showing a collection of 13 townhomes with a mix of on-street parking and attached garage parking to fit in with existing building densities surrounding the site. Ground level amenities are included within this arrangement provide outdoor social spaces and allow for pedestrian circulation to and from the transit station area.
- Two distinct buildings are shown in parcels B and C that include a mix of housing, first floor retail, and commercial space.
- The two buildings fronting Warrington Avenue are proposed to include first floor retail space in order to complement the existing commercial corridor of the Allentown Business District. The street frontage along Warrington Avenue can be widened onto Port Authority-owned property to include a street trees within a vegetated buffer between parallel parking and a protected cycle track, with a widened sidewalk between the cycle track and the commercial frontage. A new entry point at the Delmont Avenue intersection is proposed for vehicular access to the lower garages of parcels B and C. The buildings are envisioned as four- and five-story structures to provide enough density to ensure economic feasibility of the development. The two proposed buildings with frontage along Warrington Avenue are to be set back from the street to reflect the character of the housing located across the street.
- Parking platforms are tucked underneath parcels B and C buildings to utilize the elevation difference the site has to offer. This provides parking for the proposed TOD and nearby other uses. Parking along Haberman Avenue and Warrington Avenue to serve residence and patrons alike.
- The proposed programming for the TOD is reflected on the following section. The programming shown can easily be adapted to test different scenarios (e.g., added residential density, replace office space with residential units, etc.). A detailed financial analysis is included within the Appendix of this report.





5.





IMPLEMENTATION STRATEGY

5.1 IMPLEMENTATION OVERVIEW

When starting this planning study, Port Authority targeted several key goals for the site: to improve station visibility, access, and comfort while also exploring feasible and appropriate scenarios for TOD. This can be accomplished through the station area enhancements presented within this report. Key aspects are:

- Over one-thousand feet of Warrington and Haberman Avenues will be activated for new TOD.
- Development opportunities will include affordable housing and neighborhood-serving commercial uses.
- New bus shelters will provide improved comfort, and the complete streets conversion of Warrington Avenue will allow for separation of travel modes for improved safety.
- Geometric improvements at the Haberman Avenue intersection will improve operations and pedestrian crossings, and will allow for signalization of the intersection, if warranted, at a future date.
- Access improvements will include the new pedestrian bridge, with integrated elevator and stairs providing new vertical connections to the site.
- Area stairs will be upgraded, the closed Paur Street stairs will be opened, and several ADA-compliant station walkways will be added, which can also be used by area cyclists to access the station.
- The transit station itself will be completely overhauled, and the combined bus and rail platforms will allow for easier mode choice when waiting at the station.
- Lighting and security improvements will provide increased comfort, wayfinding signage will keep riders more informed about traveling through the station area, and green infrastructure will replace areas of expansive concrete to improve aesthetics while maintaining proper drainage within the valley.

Before achieving the above objectives, it is important to note that TOD is likely to take several years before implementation. Relying on financing, partnering with developers, and completion of Port Authority's Facilities Master Plan – which will cover the relocation of on-site uses, such as the rail tie laydown yard. In the interim, Port Authority is undertaking station area improvements through their M-Loop State of Good Repair Project, which will upgrade and repair lighting, sidewalks, crossings, and other features to provide for improved station area access and use.

1: COLLABORATE

This role encompasses proposed projects and strategies that Port Authority can influence or implement through strategic partnerships.

- Improved streetscapes along Warrington Avenue and Haberman Avenue
- Enhanced station access via a new pedestrian bridge connecting Mt. Washington and Beltzhoover
- Realigned Haberman Avenue to reduce intersection offset and align for potential traffic signal control (if warranted)

2: DESIGN

This role reflects proposed projects and implementation strategies that are linked to property controlled by Port Authority.

- Improve station elements, including new combined platform, elongated station canopies, and improved signage
- Create neighborhood connections through a series of improved public access points within the station area
- Incorporate green infrastructure projects into the station to reduce the amount of stormwater runoff into the greater Saw Mill Run watershed

3: DEVELOP

This role addresses proposed TOD projects that Port Authority can lead.

- TOD at South Hills Junction

Early Catalytic Projects 0-2 years	Port Authority Station Improvements <ul style="list-style-type: none"> ▪ M Loop State of Good Repair Project, to provide ADA compliant sidewalk upgrades and remove unused track near the control tower. ▪ Continue refinement of station conceptual design, including proposed improvements to the station platform, amenities, signage, and access. ▪ Coordinate with Port Authority transit-oriented communities advisory committee and internal design team. ▪ Prioritize capital funding for improvements. 	Ongoing Port Authority TOD Efforts <ul style="list-style-type: none"> ▪ Investigate Transit Revitalization Investment District (TRID) for infrastructure improvements associated with TOD since the market has changed since the 2011 SMART TRID was completed. ▪ Explore methods to incorporate mixed-income housing at the TOD site, including models for affordable home ownership. ▪ Consistent with Port Authority's Procedures for Competitive Negotiations for Joint Development, issue an Request for Qualifications (RFQ) for the site at the station.
Medium Term Projects 2-5 years	Wayfinding <ul style="list-style-type: none"> ▪ Utilize the 2022 Wayfinding Guidelines for South Hills Junction to establish a new wayfinding system for the station area that can be replicated at other transit stations. ▪ Coordinate wayfinding through development. Port Authority Station Improvements <ul style="list-style-type: none"> ▪ Take station area design into engineering and design development. Port Authority Access Upgrades <ul style="list-style-type: none"> ▪ Investigate funding opportunities for station area access improvements focusing on ADA compliant upgrades. ▪ Prioritize capital funding for improvements. ▪ Coordinate with Port Authority to perform initial phases of access development at the Paur Street steps and Albert Street trail. 	Mixed-Use Development Along Warrington Avenue <ul style="list-style-type: none"> ▪ Work with the City of Pittsburgh to explore TOD-friendly zoning for the station area. Port Authority Facilities Master Plan <ul style="list-style-type: none"> ▪ Explore opportunities for relocation and expansion of Port Authority facilities through a Facilities Master Plan process. ▪ Review opportunities for operational facilities to be relocated from South Hills Junction.
Long Term Strategic Initiatives 5+ years	Port Authority Station Improvements <ul style="list-style-type: none"> ▪ Coordinate with Port Authority to perform station platform redesign for a combined light rail and South Busway system. ▪ Perform track realignments as part of station platform relocation and extension. ▪ Develop green infrastructure systems throughout site to reduce stormwater runoff from entering Saw Mill Run. Pedestrian Bridge, Control Tower, and Lower Plaza <ul style="list-style-type: none"> ▪ Work with city and adjacent property owners (as applicable) to refine concept. ▪ Secure potential funding (e.g. Port Authority capital budget, TIF, CIP, etc.) ▪ Coordinate with adjacent utilities during engineering and design of new facilities. 	Mixed-Use Development Along Warrington Avenue <ul style="list-style-type: none"> ▪ Continue conversations with stakeholders to promote TOD. ▪ Explore an expedited review process for TOD projects. Public Realm Improvements <ul style="list-style-type: none"> ▪ Work with the TOD developer (as appropriate) and the City of Pittsburgh to refine conceptual streetscape plans along Warrington Avenue, including the incorporation of cycle track and green infrastructure, where appropriate. ▪ Work with the City of Pittsburgh to refine conceptual streetscape plans along Haberman Avenue, including relocating the ROW into Port Authority property to better align Haberman Avenue. ▪ Work with the City of Pittsburgh to secure funding for improvements through capital funding, grants, TRID, etc.

5.2 COLLABORATE

ONGOING WORKING RELATIONSHIP WITH THE CITY OF PITTSBURGH

Port Authority must work closely with the City of Pittsburgh's Department of Mobility and Infrastructure (DOMI) and Department of City Planning (DCP) to improve station access, promote pedestrian and bicycle safety, and foster successful TOD. Maintaining a collaborative relationship between Port Authority and the City allows the process to continue to gain momentum and ensures that all interests can be considered in negotiations moving forward. It is particularly important as DCP is developing neighborhood plans and DOMI is studying improvements to Warrington Avenue, a roadway part of the Bike(+) Plan. Other roadways used as station access routes could be incorporated into updates to the plan as well as candidate streets for its Neighborway program.



Figure 9: Proposed Bike(+) Network

Source: City of Pittsburgh's Bike(+) Plan

PUBLIC REALM IMPROVEMENTS

Public realm improvements are presented in this station area plan to improve pedestrian and bicycle connections to the station and where access routes are along or cross public streets, such as Warrington Avenue, Haberman Avenue, Secane Street, Lelia Street, and Jasper Street. Proposed improvements within Port Authority's property but connect to City streets would require coordination with the City of Pittsburgh and include adding ADA-compliant routes in the following locations: Along the Haberman Ramp to the intersection of Warrington and Haberman avenues; to the Warrington Avenue crossing at Boggston Avenue; to Paur Street; and to connect Secane Street with Haberman Avenue. Additionally, a pedestrian bridge connecting Warrington Avenue opposite Montooth Street to Lelia Street and a pedestrian ramp to Jasper Street are proposed to complete ADA access and restore neighborhood connections throughout the station.

Proposed improvements requiring joint improvements between the City and Port Authority's focus on upgrading Warrington Avenue, including the intersection at Haberman Avenue and the Haberman Ramp. This plan proposes widening Warrington Avenue onto Port Authority property in conjunction with proposed TOD projects to add a buffer and cycle track between the street and sidewalk. This station area plan also proposes realigning the north (southbound) Haberman Avenue intersection approach onto Port Authority property to eliminate the intersection offset. Collaboration is needed for signaling this intersection, as factors that could satisfy signal warrants include improving the safety of the light rail crossing, coordinating traffic signals for transit priority or preemption, and addressing potential increased pedestrian or vehicular volumes due to successful TOD. Developing an entrance to the proposed TOD opposite Delmont Avenue will require collaborative improvements and may warrant a traffic signal.

Findings also advocate City projects that improve pedestrian safety along City-owned roadways pedestrians use to reach the station. These types of projects would include upgrading street lighting, repairing or extending missing sidewalks, and upgrading or adjusting existing stop-controlled or signalized intersections.

DOMI has been prioritizing multi-modal improvement projects with consideration of safe non-motorized mobility. These types of projects align with Port Authority's modal hierarchy and goals of the TOD and FLM guidelines. These present important opportunities for strategic collaboration to ensure safe pedestrian crossings to the station, especially where pedestrians must cross city streets at uncontrolled locations. Strategies presented in this plan's safety study in the Appendix identify the need for installing or improving curb ramps, crosswalks, and sidewalks, updating stop-controlled intersections, increasing pedestrian visibility, and adding traffic calming.

5.3 DESIGN

STATION IMPROVEMENTS

The station improvements proposed in this plan will continue to be vetted by Port Authority. As part of this process, subject to budgeting approvals and limitations, Port Authority will continue to prioritize and fund station design projects through future phases. Recommended ideas which are central to the station's design include the following:

- Improvements and consolidation of light rail and South Busway platforms, consistent with Port Authority design guidelines.
- Removal of station clutter and inclusion of station amenities and fixtures, such as trash receptacles, bike racks, and ConnectCard machines, to simplify the station area and clarify its identity.
- Single point of entry for both light rail and South Busway platform to pilot a uniform off-board payment method.
- Station area access upgrades to the existing six points of entry, along with reopening previous access points from Paur and Albert Streets and developing new ADA-compliant points of entry such as the Lelia - Warrington pedestrian bridge and Secane - Haberman ADA ramp.
- Placement of clear wayfinding signage at the station platforms and along the road network surrounding the proposed TOD site.
- Continued efforts to upgrade all lighting elements to LED with new lighting placed throughout the station.
- Security upgrades through camera and call boxes throughout the station area.
- Improvements to the sidewalk and streetscape along Warrington Avenue and Haberman Avenue, including the realignment of Haberman - Warrington intersection offset for a safer pedestrian crossing and vehicle movement.
- Construction of a new passenger lower plaza at the base of a proposed control tower with vertical movement in the form of a new stair and elevator tower connection to a public pedestrian bridge.
- Thoughtful ground plane vegetated beds for green infrastructure and flex areas.
- Inclusion of public art on new and existing wall faces and incorporation of new and existing public art in lower plaza.
- ADA curb cuts and a detectable warning surface at all intersections to promote safe access to the station platforms from all directions.

COST ESTIMATE

Preliminary cost estimates for the projects enumerated above include the following (note that the cost estimates are for construction only and do not include costs for demolition, soft costs, contingency, and other agency coordination). It should be noted that these are cost estimates only and that more detailed estimates would be derived once the plans are advanced beyond conceptual design.

Category	Estimated Cost
Site/Civil	\$7.26M - \$9.44M
Access:	
Walking Trail Connection from Albert Street to Harwood Way Steps	\$459K - \$596K
Reestablished Paur Street Steps and Connection to Walking Trail	\$173K - \$226K
Monumental Steps to Lower Plaza	\$866K - \$1.20M
5% Access Ramp from W. Warrington Avenue	\$489K - \$632K
ADA Ramp Connection from Haberman Avenue to Secane Avenue	\$235K - \$305K
Reconfigured Harwood Way Steps	\$169K - \$220K
Platforms and Canopies (2)	\$3.55M - \$4.56M
Light Rail Track	\$35.9M - \$46.7M
Pedestrian Bridge	\$1.2M - \$1.56M
Control Tower with Steps + Elevator	\$1.50M - \$1.95M
Warrington Avenue Streetscape	\$1.10 - \$1.42M
New Intersection at Delmont Avenue	\$55K - \$73K
Realigned Haberman Avenue Intersection	\$222K - \$288K
Estimated Project Total	\$53.2M - \$69.2M

5.4 DEVELOP

To understand the underlying market feasibility at the TOD sites, the team looked at the region's competitive position and tested the market potential for various land uses.

MARKET POTENTIAL AND DEVELOPMENT IMPLICATIONS

To understand the underlying market feasibility at the TOD sites, the team was tasked with exploring the market potential for a number of real estate (re)development activities on the property. That work effort generated a number of planning and design implications captured in large measure in the concept plan. The full details of that analysis with supporting tables and graphics are contained in the Appendix but summarized below.

The property's competitive position was examined in the context of regional development, critically testing the market potential for various land uses through direct statistical measures and by examining the performance and composition of other areas and projects in the general region. Some of these other areas or existing projects would be considered comparable in terms of their age, demographic or general level of growth. Others would be deemed directly competitive in that they may already support area residents in some way. Other areas or projects would be informative as a point of reference.

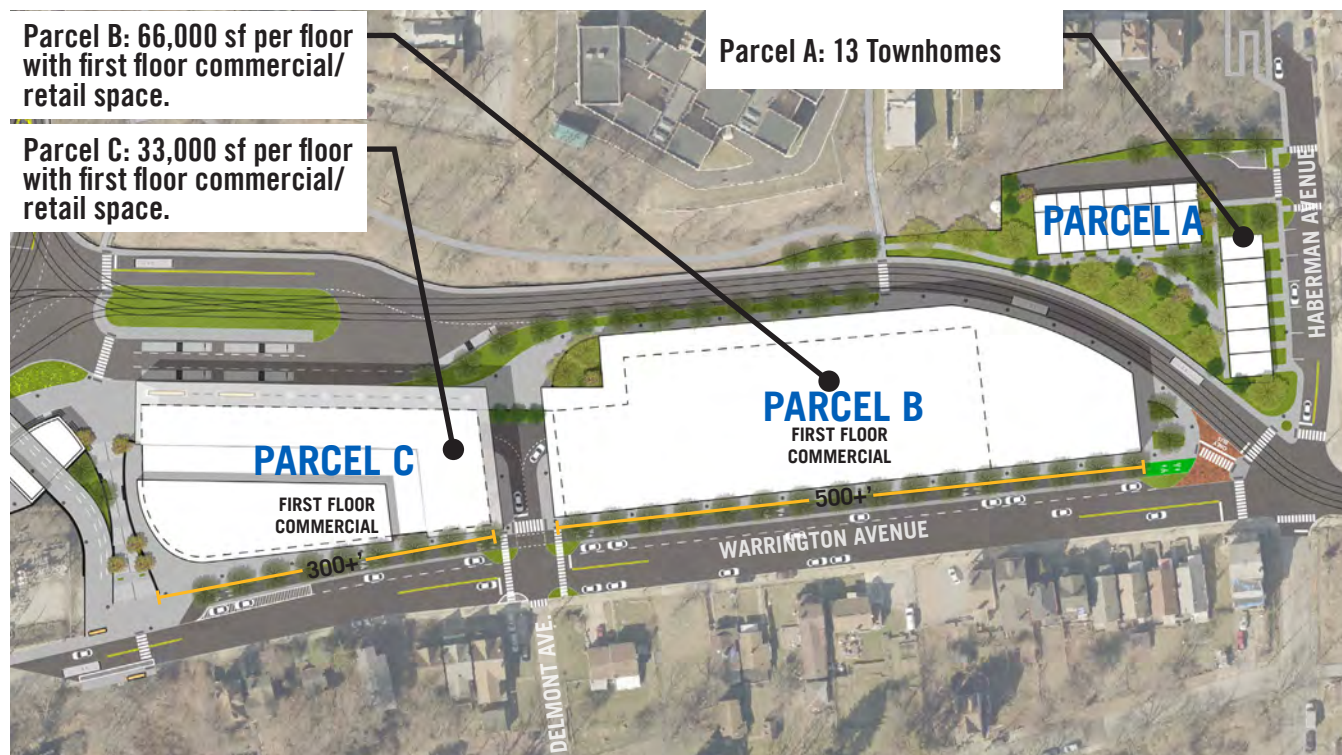
Generally, the analysis focused on housing, retail and various supporting uses. Office uses were considered but generally dismissed given prevailing market conditions that are not favorable to office uses absent the commitments of a major

anchor tenant. While such a tenancy might be secured – for example from a government agency – we concluded it was not reasonable to premise a planned development concept based on that strategy.

The analysis considered development activity occurring generally throughout Allegheny County while focusing more critically on a 0.5 mile radius from the actual station location. Based upon housing age in the nearby area and region, the flow of population in and out of Pittsburgh, analysis of spending patterns, household spending priorities, access to retail outlets and the general growth in apartment activity being experienced throughout the region, retail and residential uses are particularly worthwhile options for the South Hills Junction property. Indeed, specific locations elsewhere in the region have demonstrated capacity to support similar kinds of residential and non-residential activity.

Although other locations or neighborhoods have achieved intensities and price points above those reasonably foreseeable at the South Hills Junction property, the area is capable of being repositioned to support existing and new residents. To the point specifically of who those future residents are, that will be materially driven by policies imposed by Port Authority itself and as well as actions of the development community.

In the present case, there are elements of both need [deficiencies and insufficiencies stemming from the age of housing stock, interest in reduced auto dependency, and observed levels of disinvestment] and demand [competitive opportunities resulting from limited choices, age, lifestyle,



preferences, and continued movement of the population]. The need is largely addressed by the actions of Port Authority as it sets policy or acts to implement the plans illustrated. Demand, on the other hand, will be addressed by the actions of developers and the free market as they review and evaluate the data we have assembled, ideally while also considering the implications of need.

The assessment's findings evidence that area residents, in particular, have unmet needs. Some of these needs can be satisfied with the proper incentives and strategies. There is also demand based on obvious gaps in the products or services being delivered that are largely supportable by free market activity without such inducements.

The essential key takeaways from this market assessment include:

- Certain aspects of the SMART TRID Corridor Study remain relevant today but they can be reinterpreted or reevaluated in the context of the larger market's response to opportunities over the course of the last ten years. The marketplace has shown that it is anything, but static, and varied locations have emerged as indicators of potential support for new activity.
- At least over the next few years, the data suggest that a complement of about 100,000 square feet of retail and services could be supported within the defined 0.5 radius of the station area. Most of this would be convenience shopping comprised of grocery, drug, small restaurants, hardware, and personal services. We recommend no more than 35,000-40,000 square feet to launch and affirm the location.
- The success of recently developed apartments nearby offers a very real potential for at least one market-rate project of about 200-250 units. Although smaller projects could occur, this is the scale usually associated with investment grade properties. Such investment grade properties are those constructed, financed, or purchased by larger developers, insurance companies, and other institutional entities. These kinds of properties are the majority of multi-family housing delivered to the marketplace.
- Additionally, there is need for an affordable or mixed income rental property of at least 50-75 units. This smaller property would accommodate area residents seeking improved housing options nearby. To distinguish this class of housing from investment grade properties, such units could be delivered by a major developer but are typically constructed and operated by smaller local entities, often non-profits.
- Both rental housing and retail are compatible with ground leases if that is preferred by Port Authority but ground leases create transactional and structural challenges that do not exist with a fee simple approach. Single family housing [detached and semi-detached] for-sale housing offered in narrow

price ranges is also a possible consideration for Port Authority holdings. However, individually owned housing is generally incompatible with a ground lease structure. For affordable housing, in particular, a variety of land control or conveyance options may need to be explored.

- These retail and residential uses are rationally complemented by civic or public space or activities such as a retail postal facility, day care, or library which we have not evaluated.

While these housing and retail opportunities offer potential to address both need and demand, the marketplace will align the returns expected with the costs incurred. Lower rents and price points are signals of challenge.

At this stage of planning, the cost of creating development ready sites or parcels is not known, but they are likely to be at the higher end of the scale. Consequently, it may be economically difficult to pursue the primary uses seen as offering the greatest opportunity. While Port Authority is committed to achieving housing diversity, the agency will have to reconcile and balance the likely higher costs of development with its general financial resources or capacity and property interests relative to its transportation focus, general goals, and other broadly defined community improvement goals.

WORKING WITH THE DEVELOPMENT COMMUNITY

Port Authority itself has limited real estate development capabilities. While it will be very directly involved in implementing and overseeing efforts associated with the functional nature of transportation improvements, the form of residential, retail, or other development will likely be through private parties acting in concert with Port Authority.

While many approaches are possible, a competitive process is the most likely with the nature of the business relationship centering on a ground lease structure. Successful dialogue with private interests could improve the odds of achieving support for the development plan and development agreement, and also ensures that the community benefits from a successful project.

Approvals and entitlements are universally a challenge. In this case, there are a number of major land use impediments that could delay development potential. There are certainly physical and financial challenges to removing and replacing certain functions or activities already occurring on site. To enhance the potential for success, Port Authority must actively support the development community aiding in an expedited review and implementation process while evaluating how any extraordinary costs of development or relocation of services will be addressed. It is absolutely critical that transportation providers be involved throughout the planning process.

DEVELOP

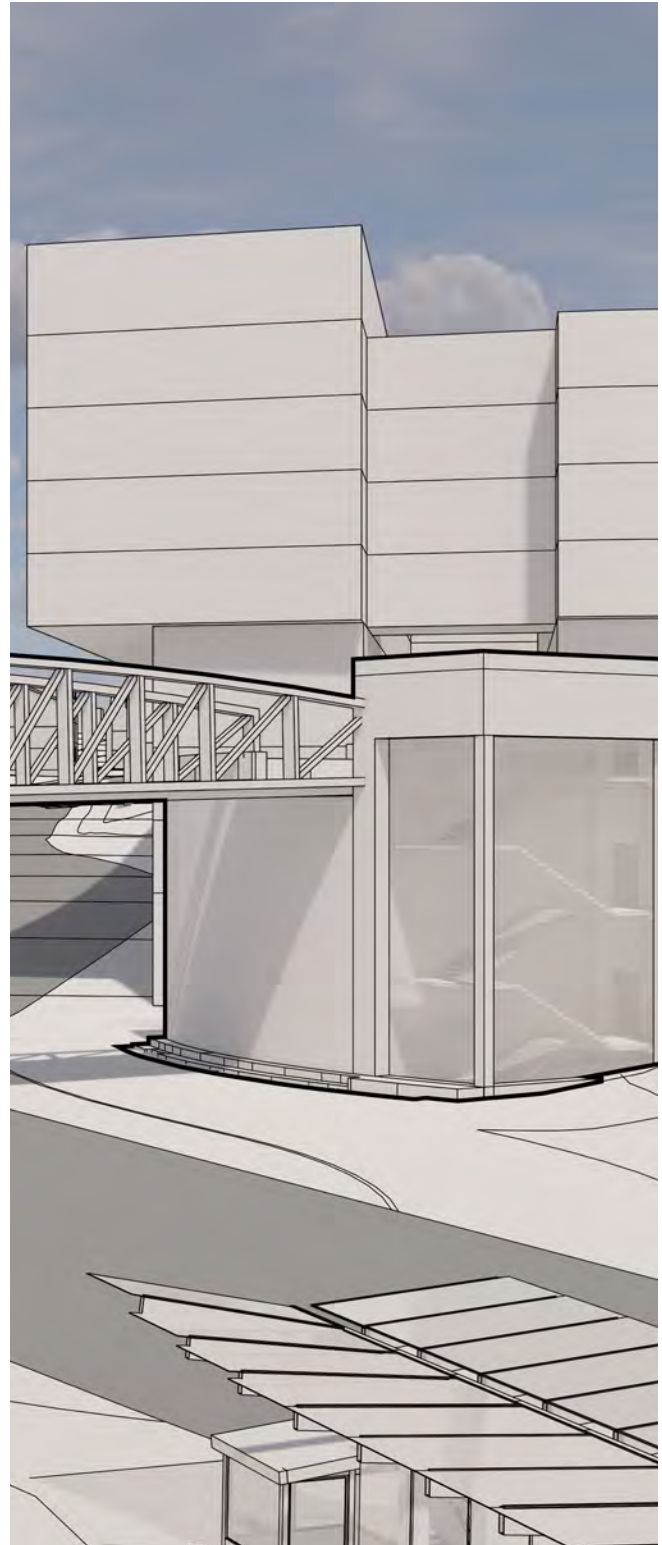
THE RFP/RFQ PROCESS

Port Authority has recently adopted procedures for competitive negotiations for joint development. The procedures call for a two-step recruitment process, including both a request for qualifications (RFQ) and request for proposals (RFP).

As part of the developer recruitment process, Port Authority will share the vision for development contained in this plan with prospective development partners. The RFQ helps to validate the feasibility of the proposed TOD project, while at the same time allowing Port Authority and any affected local government to select the best qualified team. The RFP process is intended to convey to the shortlisted firms that Port Authority and any affected local government are committed to the project. At this point, Port Authority should initiate this process by sharing their prior analytical and planning work with the selected teams. The RFP must also convince shortlisted teams that Port Authority and any affected local government are organized to deliver on their obligations: delivery of an unencumbered property interest, timely development approvals, and some sense of the categories and rough magnitude of expected financial incentives.

As stated in Port Authority procedures, the RFQ and RFP shall each contain, at minimum, the following information:

1. Site development guidelines, including parameters such as: desired uses, density, public realm concepts, parking standards, etc.;
2. Specific parameters for the conveyance of the joint development rights, including the method of disposition (sale or ground lease) and any minimum purchase price or rental rate;
3. Parameters with respect to roles, responsibilities, and allocation of risk between the developer and Port Authority and any affected local government or other relevant stakeholders;
4. Any goals which Port Authority may choose to include with respect to the participation of Disadvantaged Business Enterprises (DBE) or Diverse Businesses (DB) in the development team;
5. A statement of the minimum information that the proposal shall contain; and
6. Qualification evaluation criteria.



Transit-Oriented Development density massing nearest the proposed Port Authority control tower and pedestrian bridge along Warrington Avenue.

5.5 CONSIDERATIONS FOR TOD

The program recommended and shown is illustrative with its actual contents likely subject to a developer acting in concert with Port Authority's guidelines for development.

Using that program, Port Authority has tested preliminary measures of its financial feasibility, identifying rent or sales thresholds for residential and non-residential products as they are shown in the plan. The residential products include town homes, market rate rentals and affordable rentals. The non-residential activities are expected to be primarily retail but the space configurations and costs shown in the model could accommodate a range of office, community, service and retail activities.

In this analysis, a positive land residual is the key indicator of a feasible venture. Land residual is the amount or cost a developer could expect or would expect to allocate to land after all major costs of a specific development concept have been absorbed, including an assumed rate of return. In effect, the residual reflects reasonable value for land given very specific parameters about a development concept.

Mathematically, the residual is the estimated value of the project based on [1] its sales volume or [2] its net operating income [3] minus the multiple development costs involved. Any monies allocated or charged to land above that residual sum, based on the assumptions applied, would erode measures of return and discourage private participation. Those persons or firms faced with that situation would likely seek alternative investments better aligned to their needs. A negative residual suggests that the program or use identified will require that its development cost(s) be offset in some way to achieve a reasonable rate of return. In most cases, such activities would simply be deemed not feasible.

Details of the residual calculations are found in the APPENDIX.

Full Program	
Multi-Family/ Townhomes	
Unit Count	238
Rent/Sales per Unit or SF	\$334,494.00 / \$2.60
Estimated Improvement Cost	\$59,223,360.00
Total Rent or Sales Proceeds	\$5,128,032.00
Land Residual	\$598,270.00
Land Residual Per Unit/SF	\$46,021.00
Multi-Family (Affordable only)	
Unit Count	75
Rent/ per SF	\$1.70
Estimated Improvement Cost	\$12,159,000.00
Total Rent or Sales Proceeds	\$1,126,080.00
Land Residual	(\$166,795.00)
Land Residual Per Unit/SF	(\$2,224.00)
Retail / Office / Other	
Total SF	99,000
Rent/SF	\$22.00
Estimated Improvement Cost	\$20,512,800.00
Total Rent (Building)	\$1,758,735.00
Total Rent (Parking)	-
Land Residual	\$2,273,775.00
Land Residual Per Sf	\$23.00
Parking	
Total Spaces (Including Townhouses)	417
Total Cost	Included above
Total Rent (Parking)	Included above
Land Residual	Included above

Concept Scenario Program Totals Summary	
Units	338
Retail/Office/Other	99,000
Parking (Excluding Townhouses)	405
Total Operational Income (Gross sales or rents) [Annual rents and/or sales from the full program]	\$13,940,847
Total Residual Value (Potential value of land) (Estimated value of development less costs of improvements]	\$8,459,865
Port Authority Income (Ground lease income) [8% applied to Total Residual Value]	\$676,000

CONSIDERATIONS FOR TOD

In the scenarios prepared for this analysis, parking counts have been significantly minimized as a means of lowering overall improvement costs. Understanding that actual investment returns can vary, they were imputed at an average of 20%. Affordable housing was held to a 10% investment return, given the expected support of a non-profit entity. Vertical construction costs range from \$115 per square foot (SF) for retail to \$195 per SF for town home improvements in the detailed models shown in the Appendix. Overall improvements run as high as \$220 per SF. These costs, to emphasize, do not include major site work and reflect parking counts we believe are appropriate, not necessarily that satisfy local zoning regulations. Operating costs for multi-family and non-residential uses are incorporated in the financial analysis. Tax abatements and other operational subsidies or offsets are not.

The implication of these assumptions is that marginally increased cost, higher required returns, and lower rent or sales prices would eliminate a modest, but positive, land residual. Should that occur outside assistance will likely be required. Based on our analysis, the overall land residual is about \$8,460,00. Anything more than this figure would likely discourage development.

Using that figure as a target valuation, it is possible to illustrate what proceeds might be generated with a simple ground lease. If the Authority were to adopt an 8% ground lease rate based on this figure as the basis for valuing land, it could realize about \$676,000 per year in revenues. Actual receipts, of course, will depend on the program, the terms, and actual conditions of the lease.

In sum, what the analysis demonstrates is that the overall costs, net of any major site development costs, could yield a favorable financial position for a project encompassing the entire site. Different parcels exhibit greater or lesser residual value but modest changes in assumptions impact the outcome.

As expected, affordable housing creates a negative cost position, but that loss is offset by the other potential uses. This unfavorable position suggests a need to package and develop multiple parcels to absorb the cost of such housing. Precisely, how the several parcels would or should be combined will rely primarily on the timing and preferences of Port Authority as it solicits proposals from the private sector. Given the few number of parcels, there are only a limited number of combinations that can plausibly absorb the lower land costs necessary to advance affordable housing. All of the possible combinations can be studied further in the Appendix.

OPPORTUNITIES TO FILL THE FUNDING GAP AND IMPROVE OVERALL PROJECT FEASIBILITY

Despite the preliminary analysis described above, mixed-use development projects are complex to develop, with necessary infrastructure often driving up costs and leading to funding gaps. As mentioned, the affordable housing would, by itself, have obvious gaps to satisfy.

For such challenged projects, regardless of how it is advanced or implemented, infrastructure is often a major financial hurdle. Its support is one of the most effective forms of enhancing or increasing project feasibility is through public sector financing and construction of new infrastructure. The challenges of infrastructure and site improvement costs are especially significant in this case.

These development costs can be reduced through the use of subsidies or grants. Project funding grants typically originate at the state or federal level under the auspices of various programs for infrastructure development, targeted economic development funds, etc. Grants are often used to fund a part of the project that is likely to produce public benefits, such as infrastructure that supports all modes. For example, the federal Congestion Mitigation and Air Quality Improvement (CMAQ) program provides dedicated funding for projects that improve air quality, including bike and pedestrian facilities, and transit projects.

Capital Improvement Program funding (from any of the local stakeholders) is a traditional source of financing for infrastructure associated with TOD, including improvements to the existing transportation network.

Property taxes are one of the most important operating costs for developers. Tax abatement or tax exemption programs can be used to help defray operating costs. In many cases, property taxes will be phased in over time as the project becomes more successful. Similar to the City of Pittsburgh, Allegheny County offers a property tax abatement program. The Local Economic Revitalization Tax Act District (LERTA) was designed as an economic development tool by reducing the immediate tax burden on new development, with 10-year abatements offered on the incremental increase in market value. It should be noted that Transit Revitalization Investment Districts (TRID), described below, capture incremental property tax increases to help pay for infrastructure, thus conflicting with certain property tax abatement programs. It's important for local governments to consider the most beneficial combination of financial tools for a given project.

In the accompanying analysis, no offsets to capital or operating costs are incorporated.

REEVALUATE THE TRID

Although a Transit Revitalization Investment District (TRID), could be implemented at any time, its usefulness is enhanced if its launch matches the timing of any development. The funds generated can be allocated to a range of area and project costs. As well, the funds generated might become available to match other grants or funds that might be allocated.

There is a 20-year limitation on the incremental tax capture, so the TRID should be started when the market is development-ready to maximize revenue. In this case, the timing to launch the TRID is probably best keyed to the actual solicitation of proposals or the observed planning of nearby development in the general areas. Such projects or activities will be the source of incremental tax receipts that can be generated, and every dollar should be captured.

The TRID Act provides a mechanism to help pay for the infrastructure needs associated with TOD near a transit stop. Similar to tax increment financing (TIF) legislation, TRID utilizes the incremental increase in tax revenues to help pay for funding. Unlike TIF, TRID does not require a designation of blight in order to be implemented. TRID can apply to any new development that lies within a value capture area, or anything that falls within a reasonable walking distance of a transit stop.

An amendment of the TRID Act was signed into law in 2016 and clarifies some of the earlier language, including the ability to include only a portion of the increment to the TRID fund instead of the entire amount. It may also be possible to negotiate unique increment percentages for the different taxing agencies (e.g., county, school district, local government). The new legislation also allows the boundaries of the TRID to be altered (by amendment) as needed after the TRID has been established. A potential TRID here would be designated with cooperation from Port Authority. As stated in the legislation, TRID plans are required and could be based on this TOD plan. The plan is also required to include a financial plan (which includes potential funding sources) as well as an amortization schedule.

A major challenge of TRID is securing funding is that upfront capital costs are incurred early in the implementation process and typically well before incremental tax revenues are generated. TRID was not intended to provide all of the funding necessary for infrastructure improvements, with the intent that a TRID designation would prioritize the district for additional state funding (as available). One potential way to address the funding gap includes deferring initial bond payments until a later date, after the development is generating sufficient tax revenues. With this alternative, the administering agency's interest cost would rise as early debt service payments are reduced. Again, it makes perfect sense to evaluate sense to evaluate how improvements here might qualify for federal infrastructure support as a complement to possible TRID receipts. President Biden's original Infrastructure Bill called out renovation or construction of facilities related to transit service in disadvantaged communities which certainly characterizes the context for South Hills Junction. Eligible projects identified

center capital project construction for fixed guideway transit systems as well as construction of bus rapid transit (BRT) routes that use zero-emissions vehicles and high-frequency service using zero-emission vehicles, concepts which largely align with the planned station improvements and upgrades. Other things which might come into play, depending on how they leveraged or implemented generally, include the acquisition of zero-emission vehicles or related infrastructure and the expansion of service or frequency of service where there are free or reduced fares.

FUNDING MECHANISMS AND INCENTIVES TO ENCOURAGE MIXED-INCOME HOUSING AND TOD

TOD Fund

Other successful cities across the country have successfully developed tools targeted to facilitating TOD. These can be helpful examples to look to as Port Authority and its partners consider ways to encourage TOD in the long term.

The Denver TOD Fund was established to assist with the development of affordable housing near transit lines. The program in Denver was financed, in part, by a MacArthur Foundation grant (which was matched by the city). In the case of the Denver TOD, Enterprise Community Partners is the financial manager of the fund. Based in Columbia, Maryland, Enterprise is a non-profit that provides expertise for affordable housing by facilitating public-private partnerships with banks, governments, community organizations, and other appropriate partners. The Fund was established to take advantage of low real estate value near transit stations and preserve the opportunity for affordable housing before land values escalate.

Similarly, the Bay Area Transit-Oriented Affordable Housing (TOAH) Fund was established in the San Francisco area to provide financing for the development of affordable housing and community services near transit lines in the Bay Area. The Fund allows developers to secure affordable capital to purchase or improve land near transit stations for housing, retail, and other community services (e.g., child care).

Port Authority would lead and encourage other agencies to establish a fund that would catalyze TOD through subsidies for affordable housing, public infrastructure, or other strategic investments. A first step could include further research and discussion with agencies that have operationalized this in other cities.

CONSIDERATIONS FOR TOD

Inclusionary Zoning

Inclusionary zoning promotes economic diversity by requiring that a prescribed number of residential units within new development projects be set aside for affordable housing. There may be an opportunity to encourage or stipulate affordable units when Port Authority issues a Request for Proposal for Port Authority owned land.

In some cases, affordability can be addressed through other financing mechanisms. The Urban Redevelopment Authority (URA) has agreed to dedicate a portion of the increment created by the East Liberty Transit Revitalization District (ELTRIDA) to help finance the gap for development of affordable housing in the greater East Liberty area.

Nationwide, the majority of inclusionary zoning laws apply to development of rental units that exceed a prescribed number and are typically triggered by some type of public benefit, which in many cases takes the form of a density bonus. Inclusionary zoning programs can vary widely in terms of their requirements, but are typically most successful when linked to some sort of benefit for the developer (e.g. expedited permitting, tax abatements, height increases, reduced parking requirements) and also offer flexible compliance methods. This is a critical consideration; if developers cannot maintain a significant return, the probability of attracting development is greatly reduced. In some cases, developers are allowed to pay a fee in lieu of providing subsidized units so that affordable units can be built in projects located elsewhere.

Changes to the zoning code can also help address other issues which can complicate TOD, such as parking. Conventional parking ratios, when applied to a mixed-use development, can lead to an oversupply of parking, complicating the physical design of the project and also leading to higher overall development costs. Addressing parking requirements through regulatory measures such as the zoning code can help alleviate this issue. In some cases, eliminating parking minimums and substituting parking maximums for TOD can help decrease an oversupply of parking.

LIHTC

Based on a national survey of joint development projects that have produced affordable housing units by FRESA – (formerly Front Range Economic Strategy Center), and Enterprise Community Partners, the majority used Low-Income Housing Tax Credits (LIHTC) to finance a portion of the project. Tax credits are issued through the Pennsylvania Housing Finance Agency (PHFA) on a competitive basis to nonprofit and for-profit sponsors. All low income projects must meet stated requirements regarding tenant income and the percentage of units allocated to low income tenants.

There are two types of LIHTCs, depending on the type of construction. The 4% tax credit typically applies to rehabilitated housing and new construction that utilizes tax-exempt bonds, with the 9% credit used for new construction. The credit is claimed annually over a 10-year period, and the credit is based on the project's cost of construction. Since the process is typically lengthy (and complex), the cost of construction should be high enough to support the added cost. The credits are allocated through state housing agencies, based on federally required allocation plans. Finally, the rental housing developers typically sell their credits to investors, who in turn receive equity in the project.

Without question, implementing affordable housing is challenging but the Authority is firmly committed to the concept. In 2021, Port Authority released a report titled “TOD in Allegheny County: A Five-Year Evaluation” that analyzes the impact of TODs (or the lack thereof) along fixed guideways over a five-year period using selected variables corresponding to the agency's TOD goals and principles.

One clear theme emerged from the data analysis: there is simply not much change over time in areas where TOD did not occur. Very few shifts in population, number of jobs, and commuting patterns occurred where little to no new development happened over the five-year period. However, where development has occurred, evidence of displacement and decreasing housing affordability was significant. Given these results, the agency must be mindful of displacement that can occur as a result of TOD.

The report concluded by saying that in order to combat displacement of longtime residents and business owners in neighborhoods where TOD occurs, it is critical to ensure that the TOD itself is equitable while also paying attention to the ripple effects a development can have on the surrounding neighborhood. The report lays out several strategies for the agency to encourage Equitable Transit-Oriented Development (ETOD), including a preference for the development of affordable housing on agency property.

Other Programs

The Pennsylvania Department of Community and Economic Development offers several programs that assist with the financing of the development of low-income housing, including the HOME Investment Partnership Program. The program, which was established by the federal National Affordable Housing Act of 1990, finances construction, acquisition, and rehabilitation of rental and owner-occupied housing. Projects funded through the HOME program must meet federal HOME regulations.

In some cases, TOD financing programs provide loans or grants to help catalyze development. In Hennepin County (in the Twin Cities Region), the Transit-Oriented Development Bond Program provides loans or grants for projects that have “multi-jurisdictional impacts and enhance transit usage”. Uses of the funds include public infrastructure and property acquisition.

Affordable Housing Commitment

In 2021, Port Authority released a report titled “[TOD in Allegheny County: A Five-Year Evaluation](#)” that analyzes the impact of TODs (or the lack thereof) along fixed guideways over a five-year period using selected variables corresponding to the agency’s TOD goals and principles.

One clear theme emerged from the data analysis: there is simply not much change over time in areas where TOD did not occur. Very few shifts in population, number of jobs, and commuting patterns occurred where little to no new development happened over the five-year period. However, where development has occurred, evidence of displacement and decreasing housing affordability was significant. Given these results, the agency must be mindful of displacement that can occur as a result of TOD.

The report concluded by saying that in order to combat displacement of longtime residents and business owners in neighborhoods where TOD occurs, it is critical to ensure that the TOD itself is equitable while also paying attention to the ripple effects a development can have on the surrounding neighborhood. The report lays out several strategies for the agency to encourage Equitable Transit-Oriented Development (ETOD), including a preference for the development of affordable housing on agency property.

While assembling affordable housing projects can be difficult, Port Authority is committed to ensuring that development at South Hills Junction will include an affordability component, and that any commercial use on-site is accessible to the surrounding communities. Further analysis is required to determine the exact amount of affordable units this site can support, as well how the agency might employ affordable homeownership strategies, like a community land trust, at the site. Port Authority will utilize the recommendations from its TOD Evaluation to ensure an equitable development at South Hills Junction that increases access to transit for individuals who rely upon it most.

A.





APPENDICES

A.1 GLOSSARY OF TERMS

Capitalization Rate

The ratio between the net operating income of a property and its fair market value or capital cost. The most common form of property valuation applies a capitalization (cap) rate to a property's income stream. The capitalization rate also reflects the perceived risk of the property's cash flow relative to other investments. For example, if a property is purchased for \$900,000 and the property will generate \$125,000 annually, the cap rate is $\$125,000/\$900,000 = 13.89\%$. However, if the property's value subsequently increases, the capitalization rate decreases as the property could be sold and the money invested elsewhere. Participants in the capital market seek out risk adjusted return across investments worldwide (reflected in the capitalization rate), while the property income stream, or net operating income (NOI), depends only on what is happening in the local real estate market. In other words, property valuation or real estate value is derived from the intersection of the tenant space market and the investment capital market.

Floor Area Ratio (FAR)

The ratio of floor area to land area. It is determined by dividing the total floor area of the building by the area of the lot and is expressed as a percent or decimal. Used as a standard measure to calculate density.

Green Infrastructure Systems (GIS)

Incorporates both the natural environment and engineered systems to provide clean water, conserve ecosystems values and functions, and provide a wide array of benefits to people and wildlife.

Net Operating Income (NOI)

Property income stream after property operating expenses have been paid or are deducted from gross income.

Pro Forma

A financial statement that projects gross income, operating expenses, and net operating income for a future period based on a set of specific assumptions.

Residual Land Value

The capitalized value of net revenues (or net operating income) minus development costs. The residual value represents the amount that the project could afford to pay for land.

Triple Net Rent

The lessee pays taxes, insurance, and maintenance, in addition to the base rent.

Wayfinding

Signs, maps, and other graphic, tactile, or audible methods used to convey location and directions.

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A.2 REAL ESTATE MARKET STUDY

GAI Consultants Inc. (GAI) was tasked with exploring the market potential for a number of real estate (re)development activities on property generally associated with the South Hills Junction.

INTRODUCTION

The South Hills Junction Station and the supporting facilities comprise one of the larger property holdings owned and maintained by Port Authority. South Hills Junction itself ostensibly offers tremendous physical opportunities. The real estate activities explored would complement the transportation purposes of South Hills Junction while also providing revenues to mitigate the costs of needed improvements to transportation facilities. Presumably, thoughtful leveraging of Port Authority's holdings would also advance broader neighborhood improvement and development opportunities.

A number of socio-economic and contextual issues impacting this specific station and area as a possible development location were considered in the South Metro Area Revitalization Through Transit / Transit Revitalization Investment District (SMART TRID) Corridor Study dated May 2011. While some of the unfavorable conditions remain, the larger region's interest in, and demonstrated capacity to support, a range of new development invite a reassessment of these holdings.

STUDY AREA

There are distinct differences among the areas surrounding South Hills Junction. These distinctions are both instructive to understand the context of the area and inform aspects of the overall findings and recommendations of this market assessment. Figure 1 below illustrates the half-mile radius around South Hills Junction (Study Area), as well as the North and South distinctive areas within the Study Area.

Fig. 1. Market Assessment Study Area Map



Sources: ESRI, GAI.

To gain a better understanding of the Study Area, two additional station areas were identified for the purposes of benchmarking datasets analyzed for the Study Area. Station Square and East Liberty Station were selected for this benchmarking exercise because both have experienced significant development growth and investment in recent years. Similar to the Study Area, a half-mile radius was used to define the Station Square and East Liberty Station areas.

While very different in most respects from the study area, the level of investment and activity in Station Square and East Liberty suggest some dimensions by which the pace of future development at South Hills Junction might be compared or contrasted. Stated somewhat differently, it would not be reasonable to anticipate that the scale of prospective development and activity at South Hills Junction would ever exceed that achieved in these other station areas. Without regard to who the users are or the nature of the development itself, these other areas or locations offer insight into the magnitude or scale of opportunities that exist in the context of a larger marketplace growing slowly if at all. These other station areas are, effectively, the outside limits of what might reasonably be expected at South Hills Junction under the best of circumstances and their specific experiences enable us to interpret what discrete socio-economic data might not by itself reveal.

APPROACH AND RATIONALE

The approach to this assessment followed a number of discrete steps. Highlights involving key data and findings follow on the next several pages. Detailed tables supporting this analysis can be found in the various tables following this report. Generally, the analysis followed this sequence and approach.

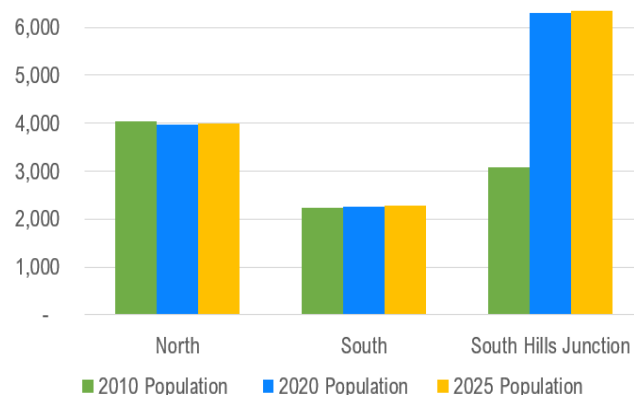
- Collected and analyzed socio-economic data to understand the character of the neighborhood, larger Station or Study Area, and the broader market context in which any real estate activities using Port Authority property would occur;
- Specifically examined incomes, spending, and population growth as initial indicators of change, housing resources, housing demand, and potential support for various commercial establishments or activities;
- Examined characteristics of housing in nearby neighborhoods and other areas to assess dominant characteristics associated with tenure, age, value, and transit access;
- Compared the inventory of housing and the pace of new construction with change in population to ascertain balance between population growth and housing availability;
- Compared the Station Area with other neighborhoods or areas to determine levels of development activity that might be reasonably expected under circumstances highly favorable to an evolving market, effectively setting both the low (current conditions and population change) and high (circumstances and conditions most favorable to development) parameters for reasonably foreseeable levels of activity;
- Examined in particular the area's existing housing inventory, defined by its age and value;
- Profiled rents and pace of activity occurring in more recently developed or opened projects;
- Examined spending habits of residents in Station Area and identified potential expenditures deemed most logical to serve nearby residents rather than a broader region;
- Evaluated locational concentrations of the various retail and services now attracting most of the Station Area's spending and determine what spending might be redirected given suitable options;
- Recommended to team basic configurations and numbers of units that could be supported.

DEMOGRAPHIC OVERVIEW AND TRENDS

Demographic and socio-economic data was obtained from ESRI, which is an industry standard source for socio-economic data. While this data source is highly reliable at the census tract level and higher, reliability declines when the area of interest encompasses only a portion of a census tract or portions of multiple census tracts. It is important to note, formal population projections were not prepared as part of this analysis.

According to ESRI, the population within the Study Area grew by 105% from 2010 to 2020 and is projected to experience minimal population growth of less than 1% through 2025 (see Figure 2). While the North portion of the Study Area experienced population decline during this time, the South portion of the Study Area experienced population growth.

Fig. 2. Study Area Population Change (2010–2025)

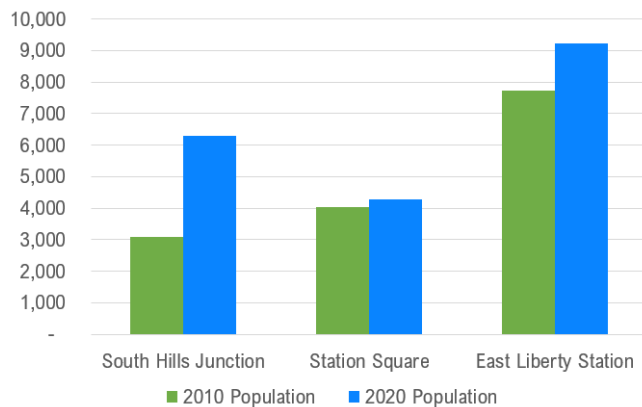


Sources: ESRI, GAI.

REAL ESTATE MARKET STUDY

The Study Area more than doubled its population between 2010 and 2020, though Station Square and East Liberty Station areas experienced population growth of 6% and 20%, respectively (see Figure 3).

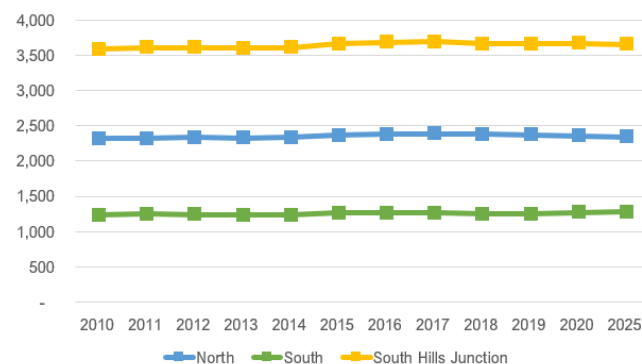
Fig. 3. Study Area Population Change (2010–2025)



Sources: ESRI, GAI.

However, total housing units within the Study Area grew by about 2% from 2010 through 2020, which is representative of the growth in housing units experienced in both the North and South portions of the Study Area (see Figure 4). Visually, from a neighborhood canvass, it appears that housing units have been removed. Such losses, the obvious number of vacant lots, and the apparent minimal overall growth in housing units, are together indicative of the age of housing present within the Study Area. Approximately 83% of the housing units located within the Study Area were constructed prior to the year 1980, with more than 50% of the housing units within the Study Area being constructed prior to 1940. Most, then, are well past their useful life and likely in a state of decline and in need of substantial repairs or upgrades.

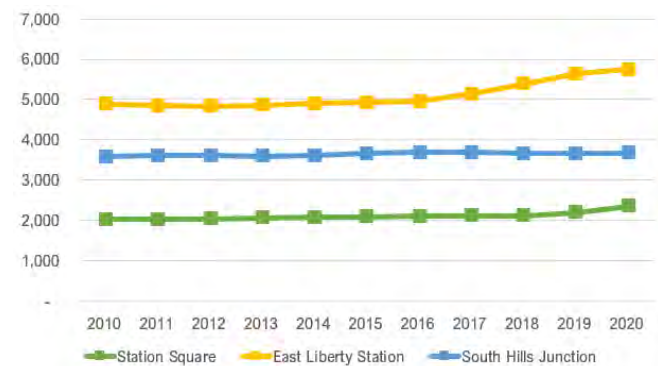
Fig. 4. Housing Unit Timeseries (2010–2025)



Sources: ESRI, GAI.

While the Study Area experienced growth in total housing units of just 2% from 2010 and 2020, Station Square and East Liberty Station experienced more significant housing unit growth of 16% and 17%, respectively, during this same time frame (see Figure 5). This is impressive growth, well in excess of population gains. The inventory of housing units constructed after the year 2000 in East Liberty Station represents over 15% of the housing inventory, while the inventory of housing units constructed after the year 2000 in Station Square represents just over 3% of the housing inventory.

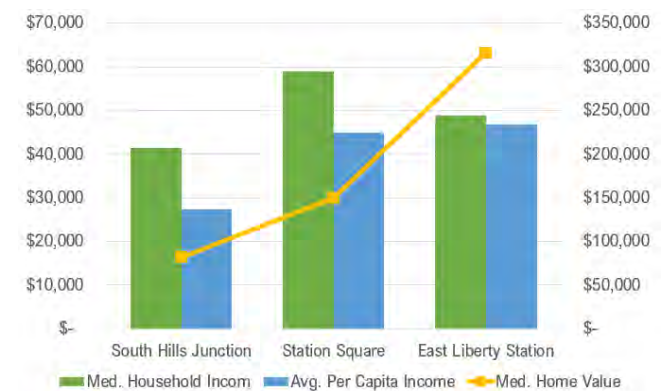
Fig. 5. Housing Unit Timeseries Comparison (2010–2025)



Sources: ESRI, GAI.

The connection between age of housing inventory and median home value are evident in the East Liberty Station area which, by comparison, has both the largest percent of housing units constructed in the last 20-years and the highest median home values. By comparison, the Study Area has the smallest percent of housing units constructed in the last 20-years and the lowest median home values (see Figure 6). Rationally, given the lower incomes in the study area, it is also logical that fewer homes are being built there and that their condition or age is a factor in addressing market conditions.

Fig. 6. Half-Mile Radius Home Value & Income Comparison



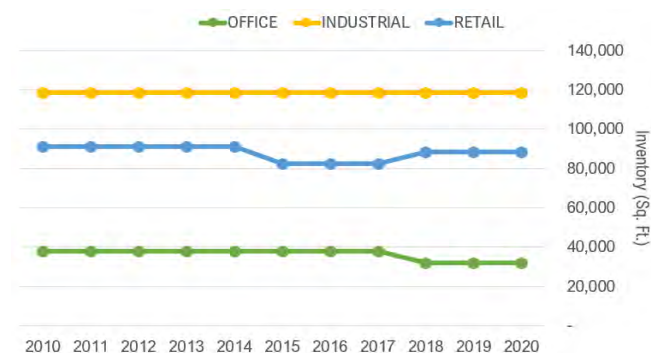
Sources: ESRI, GAI.

MARKET OVERVIEW AND TRENDS

The Study Area experienced a net loss in commercial (office, retail and industrial) inventory over the past 10-years, with total commercial space declining by approximately 4%. Industrial space accounts for the largest amount of commercial square footage within the Study Area and is the only commercial use that remained stable over the last 10-years, while retail and office have experienced declining inventory (see Figure 7).

Comparatively, commercial inventory within the Station Square area declined by just 1%, whereas the East Liberty Station area grew by approximately 21% during the same 10-year time period. Again, this is impressive growth given modest changes in the region's broader population.

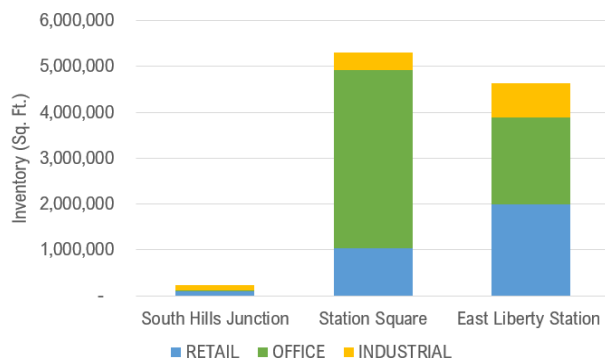
Fig. 7. Study Area Commercial Inventory Timeseries



Sources: ESRI, GAI.

The Study Area contains roughly 240,000 square feet of commercial square footage, while Station Square and East Liberty Station areas contain roughly 5.3 million square feet and 4.6 million square feet, respectively. While approximately half of the commercial square footage within the Study Area is industrial, within the Station Square and East Liberty Station areas industrial accounts for only 7% and 17% of the commercial square footage, respectively (see Figure 8).

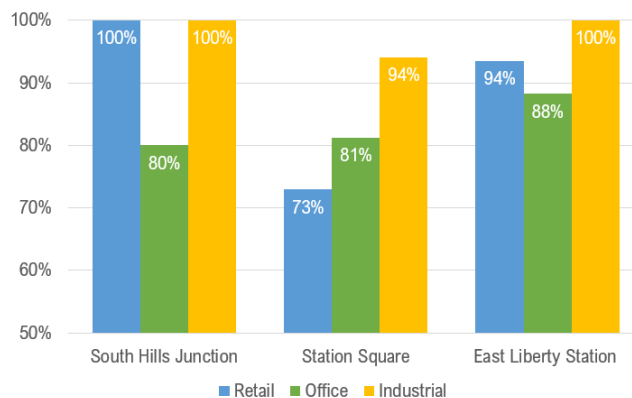
Fig. 8. Commercial Inventory Comparison (Aug. 2021)



Sources: ESRI, GAI.

Occupancy rates for industrial space are strong in the Study Area, as well as Station Square and East Liberty Station areas. While office occupancy rates are similar across the three areas, they are lowest within the Study Area. However, retail occupancy rates are highest within the Study Area, though it is also the area with the least amount of retail space (see Figure 9).

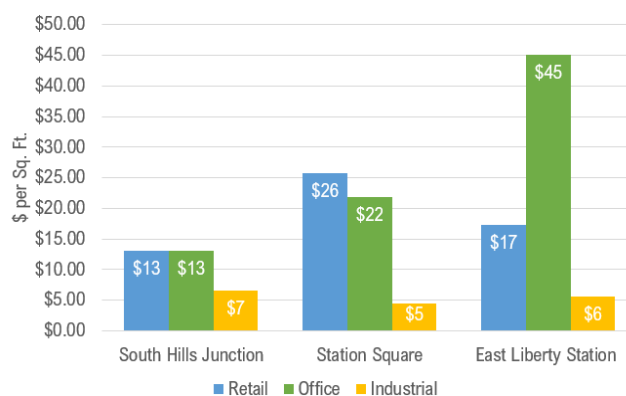
Fig. 9. Commercial Occupancy Comparison (Aug. 2021)



Sources: ESRI, GAI.

While rental rates for industrial space are higher within the Study Area than Station Square and East Liberty Station areas, in comparison rental rates for retail and office space are lowest within the Study Area. Office space rental rates are notably high in the East Liberty Station area, this is likely driven by the quality of the office space within this area (see Figure 10). Regardless, these rates and attainable rents will be challenges in the South Hills Junction setting.

Fig. 10. Commercial Rental Rate Comparison (Aug. 2021)



Sources: ESRI, GAI.

REAL ESTATE MARKET STUDY

Notably, the Study Area has lagged other parts of the larger metro-area. Station Square and East Liberty Station areas, in particular, have shown extraordinary capacity to support new development even as the region's population has experienced only modest growth. Residential, office, retail and commercial activity have generally expanded in selected locations even as they have declined or contracted badly in the Study Area. Port Authority believes these other station areas are certainly suggestive of what might be accomplished at South Hills Junction even if the specifics of the activity need to be adjusted for the needs and characteristics of the existing neighborhood.

RELATIONSHIP TO SMART TRID CORRIDOR STUDY

The intent of the **South Metro Area Revitalization Through Transit Revitalization Investment District (SMART TRID)** Corridor Study was to attract investment and development along the Red Line in an effort to:

1. Strengthen Pittsburgh's position as a regional hub and enhance its global significance.
2. Provide equal access and opportunities to live, work, play, learn, and thrive.
3. Grow and diversify Pittsburgh's economy and its tax base.
4. Foster a sense of Citywide community while strengthening neighborhood identities.
5. Capitalize on Pittsburgh's diverse natural and cultural resources.
6. Respect and enhance the relationship between nature and the built environment.

The **SMART TRID Corridor Study** examined existing conditions and future opportunities located roughly within a ½-mile of South Hills Junction and the Red Line stops in Beechview with the goals of increasing transit ridership, spurring economic development, strengthening existing neighborhood assets, improving the public realm, enhancing safety, and encouraging community building around transit. Ultimately the observations and findings of the **SMART TRID Corridor Study** provide historical relevance to this market assessment which then informs the **South Hills Junction Station Area Plan**.

Notable observations of South Hills Junction from the **SMART TRID Corridor Study** that remain challenges today:

1. There is no robust commercial activity in the vicinity of South Hills Junction.
2. Currently, residents must go elsewhere to meet their shopping needs.

3. The commercial market study found that the trade area leaks nearly \$125 million per year of local dollars spent.
 - Major leakage areas by industry subsector include Internet retail, general merchandise, building materials and garden supplies, health and personal care, clothing and accessories, hobby and leisure items, and home furnishings.
4. Age coupled with building condition data confirm that many housing units in the study area are physically and/or functionally obsolete, requiring rehabilitation to bring them up to modern standards.
5. Commercial development will face challenges overcoming the perception that the area is not safe.
6. The site lacks visibility and access from a major highway.

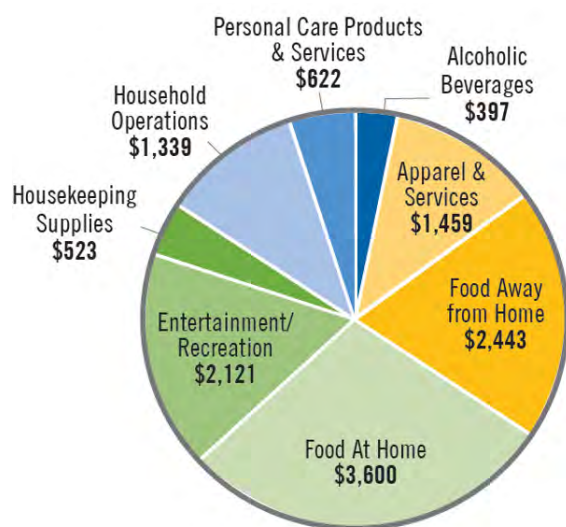
Observations 1, 2, 3, and 4 above are confirmed and elaborated upon within this assessment. Moreover, achievable price points and rental rates remain a challenge. However, the broader region, as explained, has evidenced capacity to absorb new growth and development in specific neighborhoods well beyond that supported by low to average population growth. A cohesive and thoughtfully developed plan could do much to mitigate the safety concerns identified in observation 5 above. Finally, with improved access to station facilities and products matching the neighborhood criteria, road access or visibility should no longer be problematic.

CHALLENGES AND OPPORTUNITIES

Although socioeconomic challenges remain a concern, modest population growth is anticipated within the Study Area. The area also shows retail spending is being lost to establishments outside the Station Area, as well as the area encompassing an older housing supply. This indicates that the Station Area could support additional housing and retail space, certainly given the gains that were seen in Station Square and East Liberty Station areas.

The relationship between what households spend their income on and where that spending is happening is very informative to understanding the retail environment within a specific area. The population residing within the Study Area that leave the neighborhood to purchase certain types of goods because they are not readily or abundantly available locally is commonly referred to as Retail Leakage. The 2020 average consumer spending behavior for the Station Area are illustrated below (see Figure 11). The largest consumer spending categories for the Study Area are Food at Home, Food Away from Home, and Entertainment/Recreation, respectively.

Figure 11. Study Area Average Consumer Spending (2020)



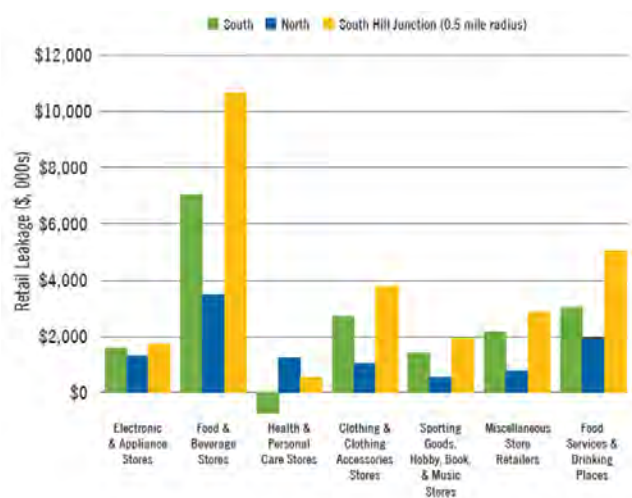
Sources: ESRI, GAI.

The retail categories that experience the highest amounts of Retail Leakage in the Study Area are Clothing/Accessories Stores, Sports/Hobby/Book/Music Stores, and General Merchandise Stores. Understandably, some retail categories serve, or are dependent upon, a larger geographic area than the Study Area, and therefore are expected to see high amounts of leakage in smaller geographic areas. These categories would include, for example, Motor Vehicle and Parts Dealers, Furniture/Home Furnishing Stores, and Gasoline Stations as well as the larger format General Merchandise stores comprised of major discount or department outlets).

The retail categories experiencing leakage on the South portion of the Study Area, compatible with, or supported by, smaller market areas include Electronic & Appliance Stores, Food and Beverage Stores, Health and Personal Care Stores, Clothing/Accessories Stores, Sports/Hobby/book/Music Stores, Miscellaneous Store Retailers, and Food Services & Drinking Places.

The way people are spending their money for these or similar activities or needs informs the findings and conclusions on types of retail that might be appropriate on the site. The figure below illustrates the types of retail uses that are believed possible within the Station Area's surrounding neighborhood (see Figure 12).

Figure 12. Study Area Retail Leakage (Demand-Supply)



Sources: ESRI, GAI.

If this assessment of the Study Area is correct, a combination of transportation access, a physically improved station that redefines and repositions the location, and the broader market's observed interest in contemporary product and services are suggestive of strong opportunities at South Hills Junction. Future opportunities are exciting but not without risk for those that may be investing in the area.

REAL ESTATE MARKET STUDY

FINDINGS AND CONCLUSIONS

Based upon analysis of spending patterns, household spending priorities, access to retail outlets, housing age, and the general growth in apartment activity being experienced throughout the region, retail and residential uses are particularly worthwhile options for Port Authority property. Indeed, specific locations elsewhere in the region have demonstrated capacity to support similar kinds of residential and non-residential activity.

Although other locations or neighborhoods have achieved intensities and price points above those reasonably foreseeable at South Hills Junction, the area is capable of being repositioned to support existing and new residents. To the point specifically of who those future residents are, whom they might be, and how developers will respond to the opportunities presented, there are important distinctions between **need** and **demand**.

Need is a relatively static concept, driven primarily by deficiency and insufficient supply (age of housing stock, commitment to neighborhoods, reduced auto dependency, food deserts, observed levels of disinvestment other). Viewed through such a lens, need is largely a planning and welfare matter often measured exclusively by gains or losses in population. Responses to need typically focus on resource allocation and community priorities without reference to the capacity of the market to provide alternatives through profit driven transactions. Needs are real and definable, but they can not always be universally and systematically addressed.

Demand, on the other hand, is a dynamic concept. It is very price and product driven, functionally the result of limited choices, age, lifestyle, preferences, and continued movement of the population. Responses to demand focus on the attraction and deployment of external capital. Even when need is limited (no population growth), demand can be strong (divorce, age, neighborhood preference). Demand may also be less than need if an area is badly distressed.

In the present case, there are elements of both need and demand reflected in the recommendations below. Area residents, in particular have needs, some of which can be satisfied with the proper inducements and strategies. There is also demand based on obvious gaps in the products or services being delivered that are largely supportable without such inducements.

The essential key takeaways from this market assessment include:

- Certain aspects of the **SMART TRID Corridor Study** remain relevant today but they can be reinterpreted or reevaluated in the context of the larger market's response to opportunities over the course of the last ten years. The marketplace has shown that it is anything but static, and varied locations have emerged as indicators of potential support for new activity.

- At least over the next few years, the data suggest that a complement of about 100,000 square feet of retail and services could be supported within the Study Area. Most of this would be convenience shopping comprised of grocery, drug, small restaurants, hardware, and personal services. It is recommend no more than 35,000-40,000 square feet to launch and affirm the location.
- The success of recently developed apartments nearby offers a very real potential for at last one market-rate project of about 200-250 units, the scale usually required for investment grade properties. Additionally, there is need for an affordable or mixed income rental property of at least 50-75 units. This smaller property would accommodate area residents seeking improved housing options nearby. Both housing and retail are compatible with ground leases if that is preferred by Port Authority. For sale options in narrow price ranges are possible considerations also, but these are generally incompatible with a ground lease structure. If Port Authority acknowledges the challenge, these would follow after other recommended activity has been stabilized.
- These retail and residential uses are rationally complemented by civic or public space or activities such as a retail postal facility, day care, or library which have not evaluated.

While these housing and retail opportunities offer potential to address both need and demand, the marketplace will align the returns expected with the costs incurred. Lower rents and price points are signals of challenge.

At this stage of planning, the cost of creating development ready sites or parcels is not known, but they are likely to be at the higher end of the scale. Consequently, it may be economically prohibitive to pursue the primary uses seen as offering the greatest opportunity. If so, Port Authority will have to reconcile its property interests and expenditures relative to its transportation focus, general goals, and other broadly defined community improvement goals. For example, there is an obvious need in the nearby community for affordable housing, but such housing requires far lower development costs than market rate or mixed income housing. At the same time, it may be difficult to justify funds to shift certain operations away from the station, subsequently acquiring alternate sites which are not materially more suited to mission critical functions. Obvious balance is necessary.

DETAILED APPENDIX TABLES

Table A2.1 Demographic and Socio-Economic Data, Key Demographic and Income Indicators

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
Area in Sq. Miles (2020)	0.40	0.38	-	-	-	58.34
Population Density per Sq. Mile (2020)	9,932.50	5,934.21	8,040.00	5,462.90	11,757.20	5,286.80
<u>Key Demographic Indicators</u>						
2010 Population	4,049	2,225	3,081	4,031	7,714	305,704
2020 Population	3,973	2,255	6,305	4,284	9,220	308,432
2025 Population	4,005	2,273	6,356			
2010-2020 Historic Annual Growth Rate	-0.18%	0.13%	-0.06%	0.60%	1.76%	0.09%
2020-2025 Proj. Annual Growth Rate	0.20%	0.02%	-0.10%	1.72%	1.08%	0.16%
% Male Population	50.36%	46.00%	49.00%	51.00%	46.00%	49.00%
% Female Population	49.64%	53.75%	51.13%	48.76%	50.98%	51.17%
Median Age	34.9	35.4	35	32.5	33.9	35.5
Household Population	99.92%	99.65%	99.83%	86.46%	97.74%	92.10%
Family Population	54.82%	74.99%	62.20%	35.15%	41.59%	56.15%
<u>Age 5-Year Increments (2020)</u>						
Age 0-4	4.0%	6.2%	4.8%	2.5%	4.0%	4.4%
Age 5-9	3.3%	7.0%	4.7%	1.9%	3.2%	4.2%
Age 10-14	3.3%	7.3%	4.8%	2.0%	2.9%	4.2%
Age 15-19	3.8%	6.4%	4.8%	8.5%	2.6%	7.2%
Age 20-24	11.8%	7.8%	10.4%	16.4%	9.3%	12.0%
Age 25-29	14.4%	7.6%	11.9%	13.5%	16.9%	9.4%
Age 30-34	9.6%	7.1%	8.7%	9.9%	14.3%	8.0%
Age 35-39	5.8%	5.5%	5.6%	6.3%	8.4%	6.5%
Age 40-44	4.8%	4.2%	4.6%	4.3%	5.2%	5.2%
Age 45-49	5.1%	5.3%	5.2%	4.2%	4.5%	4.8%
Age 50-54	6.4%	7.1%	6.7%	4.9%	4.7%	5.2%
Age 55-59	6.5%	6.3%	6.4%	5.7%	5.2%	5.9%
Age 60-64	5.0%	5.2%	5.0%	4.9%	4.9%	5.9%
Age 65-69	5.1%	4.8%	5.0%	4.2%	4.2%	5.3%
Age 70-74	4.4%	4.0%	4.2%	3.6%	3.5%	4.1%
Age 75-79	2.7%	2.8%	2.7%	2.6%	2.7%	2.9%
Age 80-84	2.1%	2.8%	2.3%	2.2%	1.8%	2.2%
Age 85+	2.0%	2.5%	2.1%	2.2%	1.7%	2.6%

REAL ESTATE MARKET STUDY

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
<u>Income Key Indicators</u>						
Median Disposable Income (2020)	\$37,892	\$28,162	\$34,540	\$49,283	\$38,706	\$38,530
Avg. Disposable Income (2020)	\$50,406	\$38,955	\$46,659	\$65,267	\$58,397	\$56,109
Med. HH Income (2019)	\$50,421	\$30,000	\$39,373	\$62,759	\$51,704	\$48,711
Med. HH Income (2020)	\$46,805	\$33,464	\$41,510	\$59,019	\$48,802	\$47,287
Avg. HH Income (2019)	\$67,270	\$39,171	\$58,685	N/A	\$77,498	\$72,981
Avg. HH Income (2020)	\$63,187	\$47,802	\$58,155	\$86,164	\$78,416	\$73,017
Avg. Per Capita Income (2020)	\$31,637	\$20,024	\$27,324	\$44,997	\$46,895	\$33,976

Sources: U.S. Census Bureau, ESRI, GAI.

Table A2.2 Demographic and Socio-Economic Data, Key Housing Indicators

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
<u>Housing Key Indicators (2020)</u>						
Median Home Value	\$96,144	\$54,768	\$81,877	\$149,638	\$315,986	\$131,041
Avg. Home Value	\$165,977	\$64,753	\$128,054	\$251,260	\$367,193	\$200,142
Avg. Household Size	1.99	2.41	2.12	1.95	1.64	2.02
Total Family Households	803	539	1,358	572	1,484	61,308
Total Housing Units (2020)	2,359	1,271	3,667	2,352	5,742	160,810
Owner Occupied Housing Units	38%	41%	40%	26%	16%	39%
Renter Occupied Housing Units	46%	32%	41%	54%	80%	48%
Vacant Housing Units	15%	27%	19%	19%	4%	13%
Total Housing Units (2010)			3,584	2,026	4,888	
Owner Occupied Housing Units			41%	33%	19%	
Renter Occupied Housing Units			59%	67%	81%	
2019 HH Below Poverty Level	15%	23%	17%	13%	17%	20%
2019 HH At or Above Poverty Level	82%	70%	78%	81%	78%	79%
Households Own/Leasing a Vehicle	77%	70%	75%	83%	65%	77%
<u>Household Time Series</u>						
2010 Total Households	2,001	912	2,939	1,730	4,539	135,766
2011 Total Households	1,999	927	2,954	1,724	4,514	135,437
2012 Total Households	1,999	924	2,953	1,728	4,515	135,507
2013 Total Households	1,997	919	2,946	1,737	4,549	136,094
2014 Total Households	2,000	918	2,948	1,750	4,591	136,768
2015 Total Households	2,028	929	2,987	1,764	4,636	137,547
2016 Total Households	2,039	932	3,001	1,768	4,674	137,951
2017 Total Households	2,039	933	3,002	1,770	4,862	138,640
2018 Total Households	2,017	925	2,973	1,766	5,119	138,948
2019 Total Households	2,010	926	2,966	1,813	5,378	139,729
2020 Total Households	2,000	934	2,964	1,898	5,492	140,472
5-Year CAGR	-0.39%	0.04%	-0.25%	1.43%	3.28%	0.36%
10-Year CAGR	0.01%	0.08%	0.03%	0.97%	1.98%	0.37%

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
<u>Housing Units Time Series</u>						
2010 Total Housing Units	2,316	1,234	3,584	2,026	4,888	155,696
2011 Total Housing Units	2,321	1,250	3,607	2,027	4,848	155,365
2012 Total Housing Units	2,331	1,239	3,606	2,044	4,839	155,418
2013 Total Housing Units	2,329	1,234	3,600	2,061	4,862	156,193
2014 Total Housing Units	2,333	1,234	3,604	2,075	4,895	157,068
2015 Total Housing Units	2,362	1,260	3,661	2,091	4,927	158,127
2016 Total Housing Units	2,380	1,264	3,683	2,102	4,955	158,668
2017 Total Housing Units	2,389	1,261	3,688	2,113	5,132	159,441
2018 Total Housing Units	2,376	1,246	3,659	2,117	5,385	159,719
2019 Total Housing Units	2,371	1,248	3,656	2,202	5,639	160,285
2020 Total Housing Units	2,359	1,271	3,667	2,352	5,742	160,810
2025 Projected Housing Units	2,338	1,278	3,651			
5-Year CAGR	-0.18%	0.11%	-0.09%	2.27%	2.99%	0.27%
10-Year CAGR	0.16%	0.17%	0.17%	1.50%	1.71%	0.35%

Sources: U.S. Census Bureau, ESRI, GAI.

Table A2.3 Demographic and Socio-Economic Data, Key Socio-Economic Indicators

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
<u>Educational Attainment (2020)</u>						
Less than 9th Grade (Esri) (%)	1.9%	3.0%	2.3%	0.8%	2.0%	1.9%
9-12th Grade/No Diploma (Esri) (%)	4.3%	6.9%	5.2%	3.6%	1.5%	4.7%
High School Diploma (Esri) (%)	25.1%	26.5%	25.5%	21.5%	8.0%	20.5%
GED/Alternative Credential (Esri) (%)	5.0%	7.7%	6.0%	2.6%	1.6%	4.7%
Some College/No Degree (Esri) (%)	17.3%	30.6%	21.8%	16.5%	8.1%	14.9%
Associates Degree (Esri) (%)	8.7%	5.6%	7.8%	6.6%	4.1%	8.4%
Bachelor's Degree (Esri) (%)	27.7%	12.5%	22.5%	28.0%	29.5%	23.5%
Graduate/Professional Degree (Esri) (%)	10.0%	7.1%	8.9%	20.4%	45.2%	21.5%
Educational Attainment Base (Esri)	2,932	147	4,451	2,936	7,193	209,797
<u>Business and Labor Force</u>						
Total Employees (2020)	316	184	500	26,858	7,602	340,809
Total Businesses (2020)	55	25	80	652	654	13,576
Employed in Labor Force (2020)	74%	72%	73%	76%	84%	79%
Unemployment Rate (2020)	26%	28%	27%	24%	16%	21%
Daytime Population: Workers	33%	22%	29%	75%	58%	54%
Daytime Population: Residents	67%	78%	71%	25%	42%	46%
<u>Race and Hispanic Origin (2020)</u>						
Hispanic Population (Esri) (%)	3%	3%	3%	4%	4%	3%
White Population (Esri) (%)	81%	22%	60%	84%	51%	62%

REAL ESTATE MARKET STUDY

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)			City of Pittsburgh, PA
	North	South	South Hills Junction	Station Square	East Liberty Station	
Black/African American Population (Esri) (%)	12%	70%	33%	10%	27%	26%
American Indian/Alaska Native Population (Esri) (%)	0%	0%	0%	0%	0%	0%
Asian Population (Esri) (%)	1%	0%	1%	1%	18%	7%
Pacific Islander Population (Esri) (%)	0%	0%	0%	0%	0%	0%
Other Race Population (Esri) (%)	1%	1%	1%	2%	1%	1%
Population of Two or More Races (Esri) (%)	4%	6%	4%	3%	3%	3%
<u>Journey to Work (2019) ACS 5-Yr</u>						
Workers age 16+	2,186	774	2,995	2,453	5,256	153,079
Drove Alone to Work	73.3%	54.4%	68.2%	64.7%	45.9%	58.5%
Carpooled	7.1%	9.0%	7.7%	3.6%	4.6%	8.5%
Took Public Transportation	15.6%	25.7%	18.2%	15.0%	35.2%	18.7%
Took a Bus or Trolley Bus	10.3%	14.7%	11.6%	11.5%	35.2%	17.9%
Took Light Rail, Streetcar or Trolley	0.3%	4.2%	1.3%	0.6%	0.0%	0.3%
Took a Subway or Elevated	4.9%	6.7%	5.3%	2.9%	0.0%	0.4%
Took a Long-distance Train or Commuter Rail	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Took a Ferryboat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Took a Taxicab	0.0%	1.6%	0.4%	0.0%	0.0%	0.1%
Motorcycled	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%
Bicycled	0.0%	0.0%	0.0%	0.0%	2.2%	1.9%
Walked	4.1%	9.1%	5.4%	16.3%	10.5%	11.4%
Took Other Means of Transportation	0.0%	0.0%	0.0%	0.4%	1.3%	0.7%
Worked at Home	4.9%	3.8%	4.6%	7.5%	3.2%	5.9%
Commute to Work Base	2,083	746	2,863	2,263	5,091	144,498

Sources: U.S. Census Bureau, ESRI, GAI.

Table A2.4 Housing Units by Year Built/Family Size

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)		
	North	South	South Hills Junction	Station Square	East Liberty Station
<u>2015-2019 Year Structure Built</u>					
Housing Units Built in 2014 or Later	-	-	-	-	533
Housing Units Built in 2010-2013	4	7	12	16	145
Housing Units Built in 2000-2009	32	58	91	58	207
Housing Units Built in 1990-1999	118	52	170	50	135
Housing Units Built in 1980-1989	103	94	198	34	552
Housing Units Built in 1970-1979	112	8	121	218	648
Housing Units Built in 1960-1969	224	32	258	233	531
Housing Units Built in 1950-1959	221	173	400	129	511
Housing Units Built in 1940-1949	242	96	343	143	361
Housing Units Built in 1939 or Earlier	1,277	618	1,924	1,168	1,851

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)		
	North	South	South Hills Junction	Station Square	East Liberty Station
Total Housing Units	2,359	1,271	3,667	2,352	5,742
Units built in the past 20 Years	1.5%	5.1%	2.8%	3.1%	15.4%
Units built prior to the past 20 Years	97.4%	84.4%	93.1%	84.0%	79.9%
<u>2010 Household by Family Size (U.S. Census)</u>					
Family Households Base	826	534	1,375	542	1,258
Family Households: 2-Person	48.1%	40.1%	44.9%	56.3%	58.7%
Family Households: 3-Person	27.0%	26.6%	26.8%	23.6%	23.1%
Family Households: 4-Person	15.5%	16.7%	15.9%	12.2%	12.8%
Family Households: 5-Person	6.1%	8.8%	7.1%	5.0%	3.6%
Family Households: 6-Person	2.5%	3.6%	3.0%	2.4%	1.4%
Family Households: 7+ Person	0.8%	4.3%	2.3%	0.6%	0.6%
Nonfamily Households Base	1,178	370	1,559	1,213	3,289
Nonfamily Households: 1-Person	69.0%	83.5%	72.4%	71.1%	76.6%
Nonfamily Households: 2-Person	23.5%	12.2%	20.8%	21.6%	19.1%
Nonfamily Households: 3-Person	4.9%	3.2%	4.5%	4.9%	3.5%
Nonfamily Households: 4-Person	1.9%	0.8%	1.6%	2.1%	0.6%
Nonfamily Households: 5-Person	0.3%	0.3%	0.4%	0.2%	0.1%
Nonfamily Households: 6-Person	0.2%	0.0%	0.1%	0.0%	0.0%
Nonfamily Households: 7+ Person	0.2%	0.0%	0.1%	0.1%	0.0%
<u>2019 Household by Family Size (ACS 5-Year)</u>					
Family Households Base	640	445	1,100	553	1,272
Family Households with 2 People	49.8%	46.5%	48.5%	56.6%	68.3%
Family Households with 3 People	25.5%	35.3%	29.4%	29.8%	22.6%
Family Households with 4 People	11.7%	8.8%	10.7%	4.9%	4.3%
Family Households with 5 People	3.4%	7.0%	4.9%	2.7%	3.6%
Family Households with 6 People	9.5%	2.2%	6.5%	6.1%	1.2%
Family Households with 7+ People	0.0%	0.2%	0.1%	0.0%	0.0%
Nonfamily Households Base	1,297	393	1,705	1,121	3,800
Nonfamily Households with 1 Person	69.9%	92.9%	75.3%	69.3%	74.3%
Nonfamily Households with 2 People	24.2%	5.3%	19.8%	27.3%	21.4%
Nonfamily Households with 3 People	5.6%	1.8%	4.7%	2.9%	4.0%
Nonfamily Households with 4 People	0.0%	0.0%	0.0%	0.3%	0.0%
Nonfamily Households with 5 People	0.3%	0.0%	0.2%	0.3%	0.0%
Nonfamily Households with 6 People	0.0%	0.0%	0.0%	0.0%	0.0%
Nonfamily Households with 7+ People	0.0%	0.0%	0.0%	0.0%	0.3%

Sources: U.S. Census Bureau, ESRI, GAI.

REAL ESTATE MARKET STUDY

Table A2.5 Historic Employment by Station Area

	South Hills Junction (0.5 Mile Radius)				Station Square (0.5 Mile Radius)				East Liberty Station (0.5 Mile Radius)			
	Total All Jobs	Employed in Area	Living in Area	Net Job Inflow/ Outflow	Total All Jobs	Employed in Area	Living in Area	Net Job Inflow/ Outflow	Total All Jobs	Employed in Area	Living in Area	Net Job Inflow/ Outflow
2018	621	621	3,046	(2,425)	15,696	15,696	2,446	13,250	8,548	8,548	3,624	4,924
2017	615	615	2,932	(2,317)	15,677	15,677	2,492	13,185	8,491	8,491	3,639	4,852
2016	599	599	3,030	(2,431)	15,315	15,315	2,514	12,801	8,010	8,010	3,528	4,482
2015	450	450	2,944	(2,494)	15,963	15,963	2,432	13,531	8,357	8,357	3,396	4,961
2014	667	667	2,794	(2,127)	15,720	15,720	2,771	12,949	6,708	6,708	3,416	3,292
2013	693	693	2,680	(1,987)	18,545	18,545	4,088	14,457	6,279	6,279	4,168	2,111
2012	678	678	2,705	(2,027)	19,286	19,286	3,847	15,439	6,668	6,668	4,104	2,564
2011	577	577	2,617	(2,040)	17,734	17,734	3,882	13,852	6,535	6,535	3,958	2,577
2010	471	471	2,880	(2,409)	17,305	17,305	1,566	15,739	6,399	6,399	3,185	3,214
2009	255	255	3,047	(2,792)	17,345	17,345	1,619	15,726	6,366	6,366	3,228	3,138
2008	227	227	2,821	(2,594)	17,670	17,670	1,573	16,097	5,575	5,575	3,066	2,509
2007	222	222	2,967	(2,745)	16,654	16,654	1,465	15,189	5,592	5,592	3,026	2,566
2006	219	219	2,867	(2,648)	15,146	15,146	1,481	13,665	5,842	5,842	2,923	2,919
2005	219	219	2,878	(2,659)	15,646	15,646	1,450	14,196	5,202	5,202	2,921	2,281
2004	195	195	2,913	(2,718)	15,450	15,450	1,574	13,876	6,131	6,131	2,992	3,139
2003	239	239	3,006	(2,767)	15,025	15,025	1,547	13,478	5,817	5,817	3,058	2,759
2002	279	279	3,121	(2,842)	15,326	15,326	1,606	13,720	6,811	6,811	3,175	3,636
10-Yr Change	173.6%	173.6%	8.0%	-6.5%	-11.2%	-11.2%	55.5%	-17.7%	53.3%	53.3%	18.2%	96.3%
5-Yr Change	-6.9%	-6.9%	9.0%	14.0%	-0.2%	-0.2%	-11.7%	2.3%	27.4%	27.4%	6.1%	49.6%

Sources: U.S. Census Bureau, ESRI, GAI.

Table A2.6 Consumer Expenditures

Place/Location	South Hills Junction		Station Areas (0.5 Mile Radius)		
	North	South	South Hills Junction	Station Square	East Liberty Station
<u>Average Consumer Spending (2020)</u>					
Alcoholic Beverages	0.8%	0.8%	0.8%	0.8%	0.9%
Apparel & Services	2.9%	2.8%	2.9%	2.9%	3.0%
Food Away from Home	4.9%	4.7%	4.8%	4.9%	5.1%
Food At Home	7.1%	7.1%	7.1%	6.9%	7.1%
Education	2.3%	2.1%	2.2%	2.4%	2.4%
Entertainment/Recreation	4.2%	4.2%	4.2%	4.1%	4.0%
Health Care (50%)	7.3%	8.0%	7.5%	7.1%	6.7%
Housekeeping Supplies	1.0%	1.1%	1.0%	1.0%	1.0%
Household Operations	2.6%	2.7%	2.6%	2.6%	2.6%
Housing	32.0%	31.1%	31.7%	32.1%	33.3%
Personal Care Products & Services	1.2%	1.2%	1.2%	1.2%	1.2%
Transportation - Public/Other Transportation	0.3%	0.2%	0.3%	0.3%	0.4%
Transportation	12.1%	12.4%	12.2%	12.1%	11.7%
Travel	2.9%	2.8%	2.9%	2.9%	2.8%
Local Transportation on Trips	0.0%	0.0%	0.0%	0.0%	0.0%
Total Expenditures	\$55,282	\$41,753	\$50,833	\$74,903	\$67,876
Total Expenditures per HH	\$15,629	\$11,895	\$14,408	\$21,027	\$19,149

Sources: U.S. Census Bureau, ESRI, GAI.

Table A2.7 Retail Leakage/Surplus Factors

	South Hills Junction		Station Areas (0.5 Mile Radius)		
	North	South	South Hills Junction	Station Square	East Liberty Station
<u>Retail Trade (NAICS 44-45)</u>	66.6	84.5	71.8	(7.0)	(27.8)
Motor Vehicle and Parts Dealers (NAICS 441)	75.2	89.7	79.5	21.1	95.1
Furniture/Home Furnishing Stores (NAICS 442)	83.9	92.7	86.5	23.2	(15.1)
Electronics & Appliance Stores (NAICS 443)	100.0	10.6	62.9	(50.0)	23.5
Bldg/Garden Equip/Supply Stores (NAICS 444)	12.7	66.1	26.1	(43.6)	(52.0)
Food and Beverage Stores (NAICS 445)	63.7	89.3	70.6	(4.0)	(63.4)
Health and Personal Care Stores (NAICS 446)	(8.7)	93.5	9.3	(12.2)	(23.8)
Gasoline Stations (NAICS 447)	90.6	81.9	88.1	(20.4)	37.5
Clothing/Accessories Stores (NAICS 448)	100.0	100.0	100.0	(4.8)	(19.8)
Sports/Hobby/Book/Music Stores (NAICS 451)	94.9	100.0	96.3	(54.4)	16.2
General Merchandise Stores (NAICS 452)	98.6	98.4	98.6	69.2	(22.6)
Miscellaneous Store Retailers (NAICS 453)	94.1	71.9	87.0	(37.9)	(49.4)
Non-store Retailers (NAICS 454)	84.6	96.6	88.1	17.0	(3.7)
Food Services & Drinking Places (NAICS 722)	42.9	97.2	55.2	(80.8)	(28.7)
Total Retail (including Food/Drink Sales)	64.0	85.6	70.0	(32.4)	(27.9)

Sources: U.S. Census Bureau, ESRI, GAI.

REAL ESTATE MARKET STUDY

Table A2.8 Market Inventory Data, Retail

	South Hills Junction (0.5 Mile Radius)			Station Square (0.5 Mile Radius)		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	88,609	100.0%	-	1,034,428	72.9%	-
2020	88,609	100.0%	-	1,034,428	91.0%	\$25.82
2019	88,609	99.4%	-	1,034,428	89.9%	\$28.00
2018	88,609	99.4%	-	1,034,428	90.7%	\$10.82
2017	82,623	99.4%	\$13.09	1,028,442	91.3%	\$17.22
2016	82,623	100.0%	\$9.61	1,028,442	98.4%	\$10.11
2015	82,623	100.0%	\$4.40	1,028,442	98.4%	\$9.69
2014	91,256	99.5%	-	1,037,075	98.2%	\$13.33
2013	91,256	98.9%	-	1,036,642	98.6%	\$13.01
2012	91,256	99.5%	-	1,036,642	99.0%	\$13.88
2011	91,256	98.9%	-	1,036,642	99.0%	\$13.41
2010	91,256	98.9%	-	1,036,642	99.0%	\$13.07
2009	91,256	98.9%	-	1,036,642	97.1%	\$12.00
2008	91,256	89.3%	-	1,036,642	94.9%	\$12.00
2007	91,256	88.2%	-	1,036,642	93.7%	\$12.37
2006	91,256	97.0%	-	983,421	95.2%	-
5-Year Change	7.2%	0.0%	-	0.6%	-7.5%	155.4%
10-Year Change	-2.9%	1.1%	-	-0.2%	-8.1%	92.5%

Table A2.9 Market Inventory Data, Office

	South Hills Junction (0.5 Mile Radius)			Station Square (0.5 Mile Radius)		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	32,015	80.0%	-	3,894,035	81.2%	\$21.79
2020	32,015	80.0%	\$13.00	3,896,235	81.5%	\$21.84
2019	32,015	80.0%	\$13.00	3,896,235	86.0%	\$24.01
2018	32,015	100.0%	-	3,903,735	83.5%	\$24.80
2017	38,015	99.7%	\$46.03	3,903,735	88.1%	\$25.28
2016	38,015	100.0%	-	3,903,735	88.1%	\$23.67
2015	38,015	100.0%	-	3,903,735	87.6%	\$21.10
2014	38,015	100.0%	-	3,903,735	91.6%	\$20.58
2013	38,015	95.8%	\$15.03	3,925,923	92.1%	\$21.15
2012	38,015	95.8%	\$15.03	3,929,526	91.8%	\$21.01
2011	38,015	100.0%	\$14.80	3,929,526	93.1%	\$20.08
2010	38,015	98.7%	-	3,952,573	93.8%	\$21.54
2009	38,015	98.7%	-	3,952,573	93.1%	\$21.23
2008	38,015	97.4%	-	3,999,621	93.1%	\$20.63
2007	38,015	95.8%	-	4,019,006	90.3%	\$20.84
2006	38,015	95.0%	-	4,088,973	87.8%	\$18.56
2005	38,015	95.0%	-	4,123,063	92.2%	\$16.50
5-Year Change	-15.8%	-20.0%	-	-0.2%	-1.8%	13.8%
10-Year Change	-15.8%	-18.9%	-	-1.4%	-8.3%	11.5%

	East Liberty Station (0.5 Mile Radius)			City of Pittsburgh		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	1,997,990	93.5%	\$17.31	47,410,477	94.9%	\$14.74
2020	1,987,990	93.7%	\$18.31	47,396,642	96.2%	\$14.33
2019	1,810,530	95.2%	\$22.82	47,341,459	95.4%	\$14.55
2018	1,803,157	96.5%	\$22.88	47,465,858	96.8%	\$15.46
2017	1,814,937	95.1%	\$21.79	47,368,489	96.9%	\$15.41
2016	1,814,937	95.1%	\$18.62	47,191,970	96.8%	\$14.04
2015	1,814,937	91.9%	\$15.94	47,327,876	96.3%	\$13.84
2014	1,871,286	92.2%	\$15.62	47,152,730	96.3%	\$13.22
2013	1,852,311	94.7%	\$14.03	47,187,845	95.7%	\$12.65
2012	1,856,311	92.8%	\$14.75	47,234,921	95.8%	\$12.93
2011	1,856,311	91.5%	\$15.74	47,224,557	95.5%	\$13.18
2010	1,713,311	92.1%	\$15.41	47,002,993	94.5%	\$12.41
2009	1,537,771	91.6%	\$15.62	46,677,503	93.9%	\$12.59
2008	1,537,771	91.1%	\$16.30	46,241,292	94.1%	\$13.07
2007	1,537,771	89.5%	\$16.43	46,232,534	93.9%	\$13.45
2006	1,533,252	90.8%	\$15.67	46,056,699	94.1%	\$13.43
5-Year Change	9.5%	-1.5%	-1.7%	0.4%	-0.6%	2.1%
10-Year Change	7.1%	2.4%	16.3%	0.4%	0.7%	8.7%

Sources: CoStar, GAI.

	East Liberty Station (0.5 Mile Radius)			City of Pittsburgh		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	1,882,422	88.2%	\$45.00	83,456,481	88.3%	\$27.23
2020	1,576,089	92.6%	\$45.37	82,927,535	89.8%	\$27.11
2019	1,180,779	97.2%	\$38.69	81,196,766	91.0%	\$24.77
2018	1,180,779	96.7%	\$20.36	80,699,633	91.4%	\$23.28
2017	1,180,779	93.7%	\$21.12	80,473,615	91.9%	\$22.40
2016	1,180,779	94.5%	\$22.25	80,414,855	91.9%	\$21.94
2015	1,180,779	85.9%	\$30.68	80,152,936	91.6%	\$20.85
2014	1,016,617	93.3%	\$37.85	79,414,252	91.5%	\$21.12
2013	1,016,617	95.1%	\$15.68	79,088,965	91.8%	\$19.87
2012	1,016,617	95.3%	\$14.97	79,055,901	92.0%	\$19.59
2011	1,149,159	87.1%	\$22.16	79,750,503	91.1%	\$19.50
2010	1,173,220	79.2%	\$24.63	80,116,617	90.6%	\$19.41
2009	1,173,220	72.2%	\$22.52	80,170,876	90.2%	\$19.25
2008	1,173,220	73.2%	\$22.51	79,665,492	89.2%	\$19.06
2007	898,220	90.2%	\$15.68	79,540,619	88.3%	\$18.86
2006	898,220	89.4%	\$13.04	79,801,504	86.5%	\$18.50
2005	898,220	86.4%	\$11.92	79,463,570	87.0%	\$18.16
5-Year Change	0.0%	13.2%	26.1%	1.3%	-0.7%	18.8%
10-Year Change	0.6%	22.7%	57.1%	1.3%	0.4%	27.6%

Sources: CoStar, GAI.

REAL ESTATE MARKET STUDY

Table A2.10 Market Inventory Data, Inventory

	South Hills Junction (0.5 Mile Radius)			Station Square (0.5 Mile Radius)		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	118,815	100.0%	\$6.63	377,463	94.1%	\$4.50
2020	118,815	99.6%	\$7.03	377,463	96.3%	-
2019	118,815	96.2%	\$6.37	377,463	99.2%	-
2018	118,815	99.6%	\$6.22	377,463	99.1%	\$12.04
2017	118,815	88.1%	\$5.55	377,463	99.2%	\$5.08
2016	118,815	96.5%	\$8.74	377,463	97.5%	\$4.32
2015	118,815	91.3%	\$6.50	377,463	96.4%	\$6.43
2014	118,815	88.8%	\$6.50	377,463	93.1%	\$6.64
2013	118,815	91.3%	\$5.97	377,463	90.9%	\$5.49
2012	118,815	91.3%	\$5.64	377,463	77.1%	\$5.22
2011	118,815	91.3%	\$5.60	377,463	73.5%	\$3.53
2010	118,815	91.6%	\$5.32	377,463	73.3%	\$4.00
2009	118,815	89.2%	\$5.31	377,463	76.1%	\$4.39
2008	118,815	84.1%	\$5.46	377,463	76.9%	\$4.00
2007	118,815	92.6%	\$6.40	377,463	92.5%	\$4.92
2006	118,815	95.0%	-	588,963	93.2%	\$5.64
2005	118,815	84.4%	\$4.50	588,963	93.7%	\$4.06
5-Year Change	0.0%	5.4%	-19.6%	0.0%	2.9%	-
10-Year Change	0.0%	5.0%	13.8%	0.0%	35.3%	-

	East Liberty Station (0.5 Mile Radius)			City of Pittsburgh		
	Inventory SF	Occupancy %	Avg. Rental Rate	Inventory SF	Occupancy %	Avg. Rental Rate
YTD 2021	764,318	100.0%	-	45,656,817	92.9%	\$12.64
2020	764,318	100.0%	\$5.67	45,656,817	93.4%	\$11.53
2019	764,318	93.5%	\$5.67	45,707,804	95.9%	\$9.58
2018	764,318	93.5%	\$6.03	45,702,347	96.4%	\$9.03
2017	764,318	93.5%	\$8.26	45,891,214	96.7%	\$7.91
2016	764,318	93.5%	\$8.26	46,029,624	96.8%	\$7.23
2015	764,318	99.8%	\$6.49	46,185,499	95.3%	\$6.84
2014	764,318	90.7%	\$4.83	46,441,773	95.1%	\$7.28
2013	764,318	82.0%	\$5.54	46,206,308	93.8%	\$7.53
2012	764,318	82.0%	\$4.50	46,676,804	93.0%	\$6.89
2011	769,118	81.4%	\$4.50	47,426,377	91.8%	\$6.20
2010	787,278	81.8%	\$3.00	47,333,537	92.9%	\$6.84
2009	787,278	90.6%	\$3.09	47,474,637	92.5%	\$6.20
2008	787,278	90.2%	\$2.75	47,618,749	92.8%	\$5.91
2007	787,278	89.4%	\$2.75	47,471,789	92.4%	\$5.89
2006	787,278	80.2%	\$3.04	48,300,554	89.1%	\$5.05
2005	787,278	79.7%	\$3.04	48,368,554	87.3%	\$5.15
5-Year Change	0.0%	-6.3%	-12.6%	-1.0%	0.6%	40.1%
10-Year Change	-2.9%	14.3%	89.0%	-3.4%	3.2%	40.1%

Sources: CoStar, GAI.

A.3 TOD FINANCIAL ANALYSIS

The series of tables on the next several pages show the land residual was estimated for each use and each parcel. The many items can be combined in various ways. As examples, the information can be used to illustrate the impacts of combining parcel A and parcel B. The information can also be used to show how affordable housing might be combined with market rate housing to entice its development.

Each use and activity generally follows the same pattern: estimated rents or sales values are shown, identifying either net income or receipts generated by the activity and the estimated cost of development netted from the respective income streams, then resulting in a land residual. The residual stands as a proxy for land value commensurate with the proposed development activity.

Parcel A: Townhomes, Market			
		Sales Price/Unit SF	\$262.98
Unit Count	13		
Avg SF Per Unit	1,500	Total Price Per Unit	\$394,464.00
Avg Net Per Unit	1,500	Sales Volume	100%
Construction Cost/SF Or Unit	195	Expenses	5%
Base Building Costs	\$3,802,500.00		
Construction Cost/Space	\$1,000.00		
Base Parking Costs	\$13,000.00	Total Sales	\$5,128,032.00
Total Construction Costs	\$3,815,500.00	Less Expenses	\$256,402.00
Other Costs (12% Of Construction)	\$457,860.00	Cash Sales Proceeds	\$4,871,630.00
Total Improvement Costs	\$4,273,360.00	Total Improvement Costs	\$4,273,360.00
Total Improvement Costs/SF	\$219.00		
Notes			
Parking, 1.00/Unit	13	Land Residual	\$598,270.00
Debt Service Coverage Ratio	1.15	Land Residual Per Unit	\$46,021.00
Mortgage Term, 25 Yrs. 4.5%			
Return On Cost	20%		

Parcel B: Multi-Family (MF), Market

		Rent/Unit SF	\$2.60
Unit Count	225	Occupancy	95%
Avg SF Per Unit	1,000	Expenses	33%
Avg Net Per Unit	800		
Construction Cost/SF Or Unit	170		
Base Building Costs	\$38,250,000.00		
Construction Cost/Space	\$35,000.00	Total Rent	\$5,335,200.00
Base Parking Costs	\$5,906,250 .00	Less Expenses	\$1,760,616.00
Total Construction Costs	\$44,156,250.00	Cash Flow	\$3,574,584.00
Other Costs (12% Of Construction)	\$5,298,750.00	Mortgage at Debt Service Coverage Ratio	\$3,108,334.00
Total Improvement Costs	\$49,455,000.00	Supportable Mortgage Payment 25	\$52,154,788.00
Total Improvement Costs/SF	\$220.00	Cash Flow Less Mortgage Obligation	\$466,250.00
		Justified Equity	\$2,331,250.43
		Justified Total Investment	\$54,486,039.00
		Total Construction Costs	\$44,156,250.00
		Total Other Costs	\$5,298,750.00
		Estimated Improvement Cost	\$49,455,000.00

Notes	
Parking, .75/Unit	168.75
Debt Service Coverage Ratio	1.15
Mortgage Term, 25 Yrs. 4.5%	
Equity Return	20%

Land Residual	\$5,031,039.00
Land Residual Per Unit	\$22,360.00

TOD FINANCIAL ANALYSIS

Parcel B: Retail/Office/Other				
			Rent/ Unit SF	22
Total SF	66,000		Occupancy	95%
Avg SF Per Unit	1		Expenses	15%
Avg Net Per Unit	1			
Construction Cost/SF Or Unit	115			
Base Building Costs	\$7,590,000.00			
Construction Cost/ Space	\$35,000.00		Total Rent (Building)	\$1,172,490.00
Base Parking Costs	\$4,620,000.00		Total Rent (Parking)	\$0.00
Total Construction Costs	\$12,210,000.00		Less Non-Reimbursed Expenses	\$175,874.00
Other Costs (12% Of Construction)	\$1,465,200.00		Cash Flow	\$996,617.00
Total Improvement Costs	\$13,675,200.00		Mortgage at Debt Service Coverage Ratio	\$866,623.00
Total Improvement Costs/SF	\$207.00		Supportable Mortgage Payment 25	\$14,541,083.00
			Cash Flow Less Mortgage Obligation	\$129,993.00
			Justified Equity	\$649,967.28
			Justified Total Invest	\$15,191,050.00
			Total Construction Costs	\$12,210,000.00
		Total Other Costs	\$1,465,200.00	
		Estimated Improvement Cost	\$13,675,200.00	

Notes	
Building Efficiency	85%
Parking, 2/1,000	132
Debt Service Coverage Ratio	1.15
Mortgage Term, 25 Yrs. 4.5%	
Equity Return	20%

Land Residual	\$1,515,850.00
Land Residual Per SF	\$23.00

Parcel C: Multi-Family (MF), Market

		Rent/Unit SF	\$2.60
Unit Count	25	Occupancy	95%
Avg SF Per Unit	1,000	Expenses	33%
Avg Net Per Unit	800		
Construction Cost/SF Or Unit	170		
Base Building Costs	\$4,250,000.00		
Construction Cost/Space	\$35,000.00	Total Rent	\$592,800.00
Base Parking Costs	\$656,250.00	Less Expenses	\$195,624.00
Total Construction Costs	\$4,906,250.00	Cash Flow	\$397,176.00
Other Costs (12% Of Construction)	\$588,750.00	Mortgage at Debt Service Coverage Ratio	\$345,370.00
Total Improvement Costs	\$5,495,000.00	Supportable Mortgage Payment 25	\$5,794,976.00
Total Improvement Costs/SF	\$220.00	Cash Flow Less Mortgage Obligation	\$51,806.00
		Justified Equity	\$259,027.83
		Justified Total Investment	\$6,054,004.00
		Total Construction Costs	\$4,906,250.00
		Total Other Costs	\$588,750.00
		Estimated Improvement Cost	\$5,495,000.00

Notes	
Parking, .75/Unit	18.75
Debt Service Coverage Ratio	1.15
Mortgage Term, 25 Yrs. 4.5%	
Equity Return	20%

Land Residual	\$559,004.00
Land Residual Per Unit	\$22,360.00

TOD FINANCIAL ANALYSIS

Parcel C: Multi-Family (MF), Affordable				
			Rent/Unit SF	\$1.70
Unit Count	75		Occupancy	92%
Avg SF Per Unit	850		Expenses	33%
Avg Net Per Unit	800			
Construction Cost/SF Or Unit	160			
Base Building Costs	\$10,200,000.00			
Construction Cost/space	\$35,000.00		Total Rent	\$1,126,080.00
Base Parking Costs	\$656,250.00		Less Expenses	\$371,606.00
Total Construction Costs	\$10,856,250.00		Cash Flow	\$754,474.00
Other Costs (12% Of Construction)	\$1,302,750.00		Mortgage at Debt Service Coverage Ratio	\$656,064.00
Total Improvement Costs	\$12,159,000.00		Supportable Mortgage Payment 25	\$11,008,109.00
			Cash Flow Less Mortgage Obligation	\$98,410.00
			Justified Equity	\$984,096.00
			Justified Total Investment	\$11,992,205.00
			Total Construction Costs	\$10,856,250.00
			Total Other Costs	\$1,302,750.00
			Estimated Improvement Cost	\$12,159,000.00
Notes				
Parking, .25 Unit	18.75	Land Residual	(\$166,795.00)	
Debt Service Coverage Ratio	1.15	Land Residual Per Unit	(\$2,224.00)	
Mortgage Term, 25 Yrs. 4.5%				
Equity Return	10%			

Parcel C Retail/Office/Other

		Rent/ Unit SF	22
Total SF	33,000	Occupancy	95%
Avg SF Per Unit	1	Expenses	15%
Avg Net Per Unit	1		
Construction Cost/Sf Or Unit	115		
Base Building Costs	\$3,795,000.00		
Construction Cost/ Space	\$35,000.00	Total Rent (Building)	\$586,245.00
Base Parking Costs	\$2,310,000.00	Total Rent (Parking)	\$0.00
Total Construction Costs	\$6,105,000.00	Less Non-Reimbursed Expenses	\$87,937.00
Other Costs (12% Of Construction)	\$732,600.00	Cash Flow	\$498,308.00
Total Improvement Costs	\$6,837,600.00	Mortgage at Debt Service Coverage Ratio	\$433,312.00
		Supportable Mortgage Payment 25	\$7,270,541.00
		Cash Flow Less Mortgage Obligation	\$64,997.00
		Justified Equity	\$324,983.64
		Justified Total Invest	\$7,595,525.00
		Total Construction Costs	\$6,105,000.00
		Total Other Costs	\$732,600.00
		Estimated Improvement Cost	\$6,837,600 .00

Notes	
Building Efficiency	85%
Parking, 2/1,000	66
Debt Service Coverage Ratio	1.15
Mortgage Term, 25 Yrs. 4.5%	
Equity Return	20%

Land Residual	\$757,925.00
Land Residual Per SF	\$23.00

TOD FINANCIAL ANALYSIS

Parcel A	
Multi-Family/ Townhomes	
Unit Count	13
Sales/Rent per Unit or SF	\$394,464.00
Estimated Improvement Cost	\$4,273,360.00
Total Rent or Sales Proceeds	\$5,128,032.00
Land Residual	\$598,270.00
Land Residual Per Unit/SF	\$46,021.00
Multi-Family (Affordable only)	
Unit Count	-
Rent per SF	-
Estimated Improvement Cost	-
Total Rent or Sales Proceeds	-
Land Residual	-
Land Residual Per Unit/SF	-
Retail / Office / Other	
Total SF	-
Rent/SF	-
Estimated Improvement Cost	-
Total Rent (Building)	-
Total Rent (Parking)	-
Land Residual	-
Land Residual Per SF	-
Parking	
Total Spaces	13
Total Cost	Included above
Total Rent (Parking)	Included above
Land Residual	Included above

Total	
Units	13
Retail/Office/Other	-
Parking	Included above

Total Operation Income	\$5,128,032.00
Total Residual Value	\$598,270.00

Parcel B	
Multi-Family/ Townhomes	
Unit Count	225
Sales/Rent per Unit or SF	\$2.60
Estimated Improvement Cost	\$49,455,000.00
Total Rent or Sales Proceeds	\$5,335,200.00
Land Residual	\$5,031,039.00
Land Residual Per Unit/SF	\$22,360.00
Multi-Family (Affordable only)	
Unit Count	-
Rent per SF	-
Estimated Improvement Cost	-
Total Rent or Sales Proceeds	-
Land Residual	-
Land Residual Per Unit/SF	-
Retail / Office / Other	
Total SF	66,000
Rent/SF	\$22.00
Estimated Improvement Cost	\$13,675,200.00
Total Rent (Building)	\$1,172,490.00
Total Rent (Parking)	-
Land Residual	\$1,515,850.00
Land Residual Per SF	\$23.00
Parking	
Total Spaces	301
Total Cost	Included above
Total Rent (Parking)	Included above
Land Residual	Included above

Total	
Units	225
Retail/Office/Other	66,000
Parking	301

Total Operation Income	\$6,507,690.00
Total Residual Value	\$6,546,889.00

Parcel C	
Multi-Family/ Townhomes	
Unit Count	25
Sales/Rent per Unit or SF	\$2.60
Estimated Improvement Cost	\$5,495,000.00
Total Rent or Sales Proceeds	\$592,800.00
Land Residual	\$559,004.00
Land Residual Per Unit/SF	\$22,360.00
Multi-Family (Affordable only)	
Unit Count	75
Rent per SF	\$1.70
Estimated Improvement Cost	\$12,159,000.00
Total Rent or Sales Proceeds	\$1,126,080.00
Land Residual	\$(166,795.00)
Land Residual Per Unit/SF	\$(2,224.00)
Retail / Office / Other	
Total SF	33,000
Rent/SF	\$22.00
Estimated Improvement Cost	\$6,837,600.00
Total Rent (Building)	\$586,245.00
Total Rent (Parking)	-
Land Residual	\$757,925.00
Land Residual Per SF	\$23.00
Parking	
Total Spaces	104
Total Cost	Included above
Total Rent (Parking)	Included above
Land Residual	Included above

Total	
Units	100
Retail/Office/Other	33,000
Parking	104

Total Operation Income	\$2,305,125.00
Total Residual Value	\$1,314,705.00

Full Program	
Multi-Family/ Townhomes	
Unit Count	238
Sales/Rent per Unit or SF	\$334,494.00 / \$2.60
Estimated Improvement Cost	\$59,223,360.00
Total Rent or Sales Proceeds	\$5,128,032.00
Land Residual	\$598,270.00
Land Residual Per Unit/SF	\$46,021.00
Multi-Family (Affordable only)	
Unit Count	75
Rent per SF	\$1.70
Estimated Improvement Cost	\$12,159,000.00
Total Rent or Sales Proceeds	\$1,126,080.00
Land Residual	\$(166,795.00)
Land Residual Per Unit/SF	\$(2,224.00)
Retail / Office / Other	
Total SF	99,000
Rent/SF	\$22.00
Estimated Improvement Cost	\$20,512,800.00
Total Rent (Building)	\$1,758,735.00
Total Rent (Parking)	-
Land Residual	\$2,273,775.00
Land Residual Per Sf	\$23.00
Parking	
Total Spaces	417
Total Cost	Included above
Total Rent (Parking)	Included above
Land Residual	Included above

Total	
Units	338
Retail/Office/Other	99,000
Parking	405

Total Operation Income	\$13,940,847
Total Residual Value	\$8,459,865

A.4 TRANSPORTATION PLANNING

SAFETY AUDIT

Upon the completion of the Mt. Washington Transit Tunnel over a century ago, South Hills Junction was not as much a transit station as an operations hub. The various on-street trolley routes spread out among the South Hills funneled through the tunnel to bring streetcars toward Downtown Pittsburgh. With system modernization taking place beginning in the 1960s with the replacement of on-street trolleys with buses the dynamics of the South Hills Junction area started to change. South Hills Junction transitioned from a trolley stop to a transit station starting 1977 completion of the South Busway, then with the 1980s Phase 1 light rail modernization, and finally with the 1990s Phase 2 light rail modernization. This station evolution has created unique safety challenges in creating a transit hub where all access points are now across a street and into a valley from residential areas.

In 2019, Port Authority published their First and Last Mile Program Plan, with the stated goals of increasing transit ridership, promoting non-single occupancy vehicle access to transit, and improving access to transit for those most likely to depend on it. Modal hierarchy priorities pedestrians first, followed by bicycles, transit connections, drop-offs, and finally park and ride. The key element of this plan is to provide, “safe, direct, fully accessible, and attractive pathways.” To further these goals, this station plan includes a comprehensive safety audit conducted by reviewing area roadway crash history, by field viewing the station and its connections to determine opportunities for improvement, and through conducting public involvement to understand what users find to be the key barriers to safe station use.

Crash Data Review

To understand where crashes have been occurring and their causation factors, the consultant team reviewed the last five years of available reportable crash data (2016-2020) for all modes and the last ten years of available reportable crash data involving pedestrians (2011-2020). A reportable crash is one that involves an injury or requires towing. Refer to the following table for the five-year crash history for all modes and the subsequent table for the ten-year crash history involving pedestrians:

Station Area Five-Year Reportable Crash History^{1 and 2}

Location	Crash Type(s)	Lighting/ Weather	Crash Severity			Total
			PDO ³	Injury	Fatal	
Warrington Avenue between Blue Line Overpass and Boggston Avenue	Fixed Object (2) Sideswipe (2) Rear-end (2)	Day/Dry (3) Dark/Dry (2) Dark/Snow (1)	4	2		6
Warrington Avenue near Boggston Avenue	Fixed Object (1) Sideswipe (1) Rear-end (1)	Day/Dry (2) Dark/Wet (1) Dark/Snow (1)	3			3
Warrington Avenue near Montooth Street	Fixed Object (2) Head-on (1) Rear-end (1)	Day/Dry (1) Dark/Dry (3)	3		1	4
Warrington Avenue between Montooth Street and Haberman Avenue	Fixed Object (3) Rear-end (1)	Day/Dry (1) Day/Snow (1) Dark/Dry (2)	2	2		4
Warrington Avenue at Haberman Avenue and South Busway Ramp	Fixed Object (1) Angle (3)	Day/Dry (2) Day/Wet (1) Dark/Dry (1)	4			4
Warrington Avenue between Haberman Avenue and Estella Avenue	Fixed Object (1) Pedestrian (2)	Day/Dry (1) Day/Wet (1) Dark/Dry (1)		3		3
Warrington Avenue at Estella Avenue	Angle (1) Sideswipe (1) Head-on (1) Rear-end (3)	Day/Dry (3) Dark/Dry (1) Dark/Wet (1) Dark/Snow (1)	2	4		6
Secane Avenue	Fixed Object (1) Sideswipe (1) Rear-end (2)	Day/Dry (1) Dusk/Wet (1) Dark/Snow (2)	3	1		4
Paul Street	Angle (1) Sideswipe (1)	Dark/Dry (2)	2			2
Boggs Avenue near Paul Street	Pedestrian (2)	Day/Dry (1) Dark/Dry (1)		2		2
Boggs Avenue near Lelia Street	Rear-end (1)	Dark/Dry (1)	1			1
Boggs Avenue near Jasper Street	Fixed Object (2) Sideswipe (1)	Day/Dry (3)	2	1		2
Boggs Avenue near Curtis Street	Fixed Object (1) Angle (1) Sideswipe (1)	Day/Dry (1) Dark/Dry (2)	2	1		3
Taft Avenue from Boggston Avenue to Climax Street	Fixed Object (1)	Dark/Dry (1) Dark/Snow (1)	2			2

Notes:

1. Crash data from Pennsylvania Crash and Information Tool (PCIT) (<https://crashinfo.penndot.gov/>) from January 2016 through December 2020.
2. No reportable crashes were recorded along Boggston Avenue, Curtis St, Jasper St, Lelia St, and Haberman Avenue near the South Hills Junction Station.
3. PDO crashes represent Property Damage Only and suspected Property Damage Only (Unknown) crashes.

Station Area Ten-Year Reportable Pedestrian Crash History¹ and ²

Location	Crash Type(s)	Lighting/Weather	Crash Severity			Total Crashes
			PDO ³	Injury	Fatal	
Warrington Avenue between Haberman Avenue and Estella Avenue	Pedestrian (2)	Day/Dry (1) Day/Wet (1)		2		2
Warrington Avenue at Estella Avenue	Pedestrian (2)	Day/Dry (1) Day/Wet (1)		2		2
Boggs Avenue near Paul Street	Pedestrian (2)	Day/Dry (1) Dark/Dry (1)		2		2
Taft Avenue from Boggston Avenue to Climax Street	Pedestrian (1)	Dusk/Dry (1)		1		1

Notes:

1. Crash data from Pennsylvania Crash and Information Tool (PCIT) (<https://crashinfo.penndot.gov/>) from January 2011 through December 2020.
2. Roadways and intersections that did not experience reportable pedestrian crashes are omitted from this table.
3. PDO crashes represent Property Damage Only and suspected Property Damage Only (Unknown) crashes.

The results of the crash history review do not indicate the presence of any crash clusters, defined as five or more crashes in a year at the same location with similar causation factors. The highest crash locations experienced an average of just over one crash per year. While seven pedestrian crashes have occurred in the previous ten years, no crashes occurred crossing a public street directly into the South Hills Junction Station. However, there are several findings this crash data review that could impact safety improvement strategies:

- The majority of vehicular crashes (25 of 47) occurred at night when traffic volumes are typically lower. This indicates inadequate lighting could be a common factor.
- Along Warrington Avenue, the majority of vehicular crashes (16 of 30) involved a vehicle departing from the travel lane and striking a fixed object, sideswiping a parked vehicle, or hitting another vehicle head on. This indicates vehicles may be speeding or travel lanes may be too narrow.
- Along Warrington Avenue, over 25 percent of vehicular crashes (8 of 30) were rear end collisions. This indicates speeding, inadequate stopping sight distance, or lack of turn lanes could be an issue.
- Most of the pedestrian crashes happened near the Warrington Recreation Center complex, which includes an indoor facility, an outdoor field, an outdoor playground, and a spray park. Pedestrian barriers are located along Warrington Avenue at the playground/field and indoor facility egress points indicating an ongoing safety concern. The Warrington Avenue at Estella Avenue intersection is offset and lacks pedestrian accommodations.
- Two pedestrian crashes occurred at the intersection of Boggs Avenue and Paul Street, which is an all-way stop-controlled T-intersection. Since controlled intersections typically have lower crash occurrences, this may indicate lack of visibility or lack of driver compliance to existing traffic control devices.

- One pedestrian crash occurred Taft Avenue, which combined with Boggston Avenue, is a route pedestrians use to reach the station from Beltzhoover. The streets have sidewalks of inconsistent width and quality, and there is a sidewalk on just one side of the route for the last 700 feet toward Warrington Avenue.

As the intent of FLM planning is to create the safest possible station access, the project team performed on-site safety assessment looking for any potential issue, not just ones that have resulted in crashes, as a reportable crash history review does not capture near misses or minor collisions.

Safety Assessment

The consultant team performed field observations throughout the South Hills Junction Station and along surrounding roadways and primary pedestrian routes including Warrington Avenue, Haberman Avenue, Secane Avenue, Paul Street, Lelia Street, Jasper Street, Curtis Street, Boggs Avenue, Boggston Avenue, and Taft Avenue. Field visits occurred on March 13, 2021, April 4, 2021, June 11, 2021, and November 30, 2021. They were supplemented by reviewing current and historical Google Street View imagery.

Within the station area, the most significant issues observed included the lack of ADA-compliant access points, lack of visible and direct pedestrian walking paths, uneven staircases, closed staircases, at-grade rail crossings that could create tripping hazards, and an overall lack of clarity as to what is the public realm and the private realm. Port Authority is planning wayfinding and state of good repair projects in the near term.

The consultant team also observed deficiencies in the public realm surrounding the station. There are few marked crosswalks, missing and non-ADA compliant curb ramps, uncontrolled pedestrian crossings, narrow sidewalks, poorly maintained and missing sidewalks, and intersections that lack pedestrian friendly features. The City of Pittsburgh through the Department of Mobility and Infrastructure (DOMI) is planning a

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safety improvement project along Warrington Avenue.

Safety Improvement Strategies

The following section describes pedestrian and bicycle safety improvement strategies consistent with the FLM guidelines. Refer to a summary on the **Safety Assessment Observations** figure, in which the letters denoting each type of safety observation in the figure corresponds with the following report recommendations below. These recommendations include the following:

- A – Install Curb Ramps
- B – Upgrade Curb Ramps
- C – Install Crosswalks
- D – Improve Crosswalks
- E – Improve Stop Controlled Intersection
- F – Signalize Intersection if Warranted
- G – Upgrade Signalized Intersection
- H – Install, Improve, or Reconfigure Sidewalk
- I – Improve Pedestrian Visibility and/or Vehicular Sight Distance
- J – Provide Bicycle Connectivity
- K – Improve Staircases
- L – Provide Traffic Calming
- M – Realign Intersection
- N – Provide ADA Access

Since these recommendations are the results of safety observations and not formal safety audits, they are not intended to be a complete and exhaustive list at all intersections. General guidance for each safety strategy is given below, with intersection-specific observations that follow.

Guidance A – Install Curb Ramps

To have safe, accessible routes to the South Hills Junction Station, ADA-compliant curb ramps should be provided at all crossing locations along routes pedestrians use to reach the station. Lack of curb ramps may lead to pedestrians needing to make longer roadway crossings or pedestrians walking within a roadway to find an accessible ramp. Since these pedestrian safety observations noted missing curb ramps, this recommendation is to install these curb ramps.

Guidance B – Upgrade Curb Ramps

Pedestrian safety observations noted that some of the existing curb ramps appeared to have been designed prior to the most recent ADA standards, which could create challenges for some users. These ramps may lack detectable warning surfaces and may have excessive slopes. If possible, intersection corners should have separate ramps per direction, as shared ramps require sufficiently wide radii for wheelchair turning movements outside of vehicular paths.

Single ramps should still allow pedestrians to make on-street turning movements outside of vehicle paths. This recommendation is to improve deficient curb ramps to the latest standards to improve accessibility. Ramps and detectable warning surfaces should point to the direction of pedestrian travel, and slopes should be limited to ADA maximums where feasible.

Guidance C – Install Crosswalks

Some locations were observed in the station's walkshed that lacked crosswalk markings. While marked crosswalks are typically discouraged at uncontrolled crossings (locations that lack traffic control devices to stop moving traffic), the roadway network surrounding the station has long blocks where crosswalks at uncontrolled locations may be needed. Since crosswalks can provide pedestrians a false sense of security, marked crosswalks at uncontrolled locations should be added along with appropriate traffic calming, high-visibility markings, and signage. Missing crosswalks should be added at appropriate locations with highly visible perpendicular ("Piano Key" or PennDOT Type C) markings.

Guidance D – Improve Crosswalks

Faded crosswalks, or crosswalks without high-visibility markings, present hazards as drivers may not react to pedestrians within them. Safety observations revealed deficient crosswalks near South Hills Junction Station. State-of-the-practice is to install perpendicular (PennDOT Type C informally referred to as "Piano Key") crosswalk markings which improve visibility while reducing wear from wheel paths. Likewise, crosswalks that are not well located in visible pedestrian crossing locations may not be effective since drivers may not see pedestrians within these crosswalks or pedestrians may walk outside of these crosswalks. Misaligned crosswalks have longer pedestrian crossing distances, which increase traffic exposure. This recommendation is to improve crosswalks by switching to high-visibility markings and to reorient crosswalks to optimal positions to minimize crossing distances while improving pedestrian visibility.

Guidance E – Improve Stop-controlled Intersection

Improperly signed stop-controlled intersections, or ones with missing stop signs, may create vehicular conflicts and unsafe intersections for both drivers and pedestrians. This recommendation is to place stop signs at visible locations and stripe corresponding stop bars. Stop signs and stop bars should be installed at least four feet away from marked or unmarked crosswalks.

Guidance F – Signalize Intersection

Due to safety risks associated with uncontrolled pedestrian crosswalks, signalizing intersections with high pedestrian activity improves safety. Signalization can help promote an efficient and reliable transit network, especially during service disruptions where buses may be rerouted. Intersections with unconventional geometry may require traffic signals to prevent overlapping movements drivers may expect to be concurrent from conflicting with each other. Signalization may also be important to provide safe movements into and out of proposed TOD. This recommendation is to conduct traffic signal warrant studies at select intersections to determine if they are a candidate for future signalization and to identify what future improvements would lead to signalization.

Guidance G – Upgrade Signalized Intersection

Older signalized intersections may be out of date from the latest safety standards. They may lack pedestrian signal heads and countdown timers. Signals both locally and nationally are now being programmed with leading pedestrian intervals (LPIs) that give pedestrians a head start of three to five seconds of exclusive crossing time prior to concurrent vehicular green indications. While LPIs cannot be implemented with leading left turn arrow phases, they can be implemented at intersections with lagging left turn arrows. Protective-permissive phasing can now become upgraded with flashing yellow left turn arrows to indicate permissive movements, which also helps signal designers optimize leading and lagging left turns. This recommendation involves upgrading signalized intersections to the latest technology to improve safety for all users, including implementing LPIs, and studying if lagging left turns are appropriate.

Guidance H – Install, Improve, or Reconfigure Sidewalk

Sidewalks, which are primary pedestrian access routes to the South Hills Junction, should be safe and accessible for all users. Deterioration and lack of maintenance of sidewalk surfaces and landscaping results in tripping and drop-off hazards. Sidewalks without street buffers do not adequately protect against pedestrian and vehicle interactions. Narrow streets may have vehicles that routinely park on sidewalks, blocking their accessibility. In some areas, pedestrians may create their own path, indicating the need for sidewalks at those locations. Improving and reconfiguring sidewalks are needed to mitigate these safety hazards.

Guidance I – Improve Pedestrian Visibility and/or Vehicular Sight Distance

Safety observations revealed some intersections have reduced pedestrian visibility due to conditions like tight turns, grade changes, and sight distance obstructions from parked cars. While not feasible in all cases, installing curb extensions (bump-outs) is one strategy to shorten crossing distances and to improve pedestrian visibility. Curb extensions bring sidewalks out into the parking lane, which prevents vehicles

from parking too close to intersections while allowing pedestrians to stand closer to driving lanes. A similar but less costly strategy is to stripe a pedestrian area at intersections, identified by flexible delineator posts. Striping with flexible delineator posts can also be added where space permits in the center of roadways to give a pedestrian crossing refuge. Adding “No Parking” signs combined with enforcement campaigns are other ways improving visibility and sight distance.

Guidance J – Provide Bicycle Accessibility

Efficient bicycle accessibility is important in allowing convenient, non-motorized station access. Bicycle infrastructure was not observed at the South Hills Junction Station. The City of Pittsburgh has developed guidance on defining and improving the area’s bicycle network, including the June 2020 Bike (+) Master Plan through the MoveForwardPGH initiative. Part of this initiative is the Neighborway Program applicable on low-volume streets. Various elements of the program may be applicable in the area around South Hills Junction.

Older inlet covers may have diagonal openings which present hazard for bicycle wheels. Improving bicycle accessibility also includes replacing deficient inlet covers with bicycle-safe grates.

Guidance K – Improve Staircase

There are five staircases connecting to the South Hills Junction and others on surrounding neighborhood streets. They have different designs and are in varying states of repair, from being closed to pedestrians to being recently rebuilt. This recommendation is to improve staircases where needed to have even stair treads and closed risers.

Guidance L – Enact Traffic Calming Measures

Pedestrians are vulnerable crossing streets at uncontrolled locations, especially when roadways have sight distance limitations and vehicles exceeding speed limits. The City of Pittsburgh through DOMI has a traffic calming program applicable to City-owned roads that are not more than one lane in each direction, classified as a local street, collector, or minor arterial, and have grades less than or equal to 13 percent. Most roads in the vicinity are applicable, except for a few blocks with steep streets. This recommendation is to provide traffic calming at recommended locations with marked midblock crossings, travel speeds exceeding the speed limit, or where pedestrians may be forced to walk in streets due to missing or narrow sidewalks.

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Guidance M – Realign Intersection

Since some of the neighborhoods around the South Hills Junction Station were laid out when they were independent municipalities. Their street grids may not line up, leading to offset intersections. Intersections designed for high vehicular movements may be especially wide, leading to long pedestrian crossings. This recommendation is to improve intersection geometry where needed to make pedestrian and vehicular movements safer, more predictable, and more orderly.

Guidance N – Provide ADA Access

The South Hills Junction Station was built prior to current ADA-standards. As a result, the station is not accessible; sidewalks that provide ramp access to the station do so with either excessive grades or lack of landings. There are several staircases that connect to the station that do not offer alternative ADA-compliant routes. Signage informs users to ride local buses to the station for ADA access. This safety assessment examined the area to determine where ADA-compliant access could be added.

Intersection Safety Field Views

The consultant team along with Port Authority staff field viewed pedestrian routes through the South Hills Junction Station and along adjacent intersections to document existing safety deficiencies. The following section summarizes each location, discussing observations and suggesting potential safety improvement strategies.

SOUTH HILLS JUNCTION STATION

GUIDANCE A: INSTALL CURB RAMPS



Photo: Haberman Ramp to the South Busway looking west toward the bus stop opposite Harwood Way Stairs

Observation: The bus stop is not ADA-compliant as it has no curb ramps to the stop.

Recommendation: Install curb ramps to provide an accessible path to this stop.



Photo: Looking north from the Haberman Ramp crosswalk toward the Paur Street Stairs

Observation: There is no curb ramp for the marked pedestrian crosswalk across the Haberman Ramp opposite the Paur Street Stairs.

Recommendation: Install ADA-compliant curb ramps at marked crosswalk locations such as this.

GUIDANCE B: UPGRADE CURB RAMP



Photo: Haberman Ramp looking east towards sidewalk curb ramp at the salt shed driveway

Observation: The sidewalk has neither a marked crosswalk nor an ADA-compliant curb ramp to cross the salt shed entry and exit driveways.

Recommendation: Install ADA-compliant curb ramps with detectable warning surfaces at all curb ramp locations to correspond with highly visible perpendicular (PennDOT Type C “Piano Key”) markings).

GUIDANCE C: INSTALL CROSSWALKS

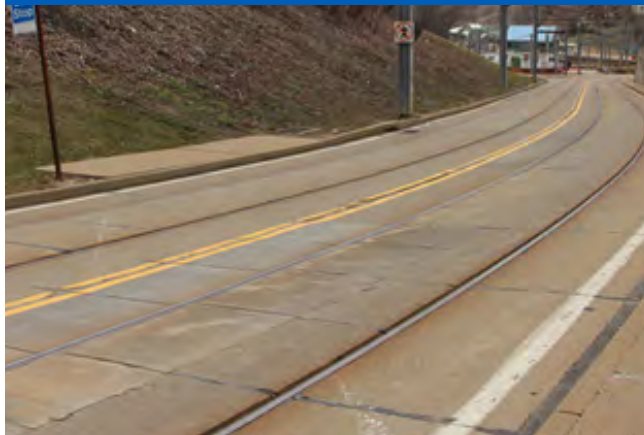


Photo: Haberman Ramp looking west toward the bus stop opposite Harwood Way Stairs

Observation: There is no marked crosswalk for pedestrians to reach the bus stop along the Haberman Ramp opposite Harwood Way Stairs.

Recommendation: Mark missing crosswalks using appropriate high-visibility perpendicular (Type C “Piano Key”) markings.



Photo: Looking north at the South Busway crosswalk at the South Hills Junction between the bus stop shelter

Observation: Curb ramps within the South Hills Junction Station area were built before modern ADA standards and may not be compliant.

Recommendation: Reconfigure crosswalks to be ADA compliant and install detectable warning surfaces. Paint crosswalks with highly visible perpendicular (PennDOT Type C “Piano Key”) markings.

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GUIDANCE D: IMPROVE CROSSWALKS



Photo: Looking south at the crosswalk across the legacy Allentown Line from the Haberman Ramp crosswalk

Observation: The concrete has deteriorated, and asphalt patches have inconsistent depths at the rail crossing, leading to potential tripping hazards. The crosswalk is elevated without transitions, leading to drop-offs at either side. Markings are the parallel type which can be hard to see.

Recommendation: Improve crosswalk by addressing tripping hazards, sloping the sides at rail crossings to avoid drop-offs, and painting highly visible perpendicular (PennDOT Type C or “Piano Key”) markings.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK

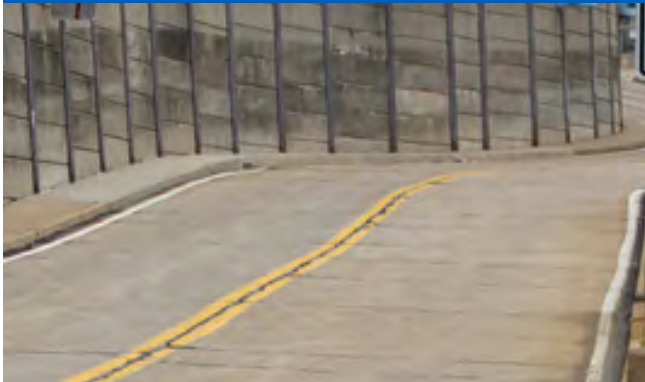


Photo: Looking east at the sidewalk along the Haberman Ramp

Observation: The sidewalk along the Haberman Ramp is narrow and lacks buffers. Due to the retaining wall, there is limited sight distance toward oncoming vehicles.

Recommendation: Widen all sidewalks to a minimum width of five feet, eight feet preferred.



Photo: Looking east along the Haberman Ramp toward South Hills Junction

Observation: Pedestrians were observed to take the shortest path to the station, walking within the westbound Haberman Ramp travel lane and through the employee parking lot, despite the lack of sidewalks and crosswalks, disobeying “No Pedestrian” signs.

Recommendation: Construct a sidewalk on the south side of the Haberman Ramp and install a direct connection to the South Hills Junction station along the pedestrian desire line.



Photo: Sidewalk deterioration at the Allentown turnback platform

Observation: Some sidewalks within the South Hills Junction exhibited deterioration, particularly at rail crosswalks and along the station platforms on the Allentown turnback.

Recommendation: Repair sidewalks or fence off deteriorated sidewalks that are no longer needed.

GUIDANCE J: PROVIDE BICYCLE CONNECTIVITY



Photo: Looking north across the Allentown turnback to the LRT station platforms

Observation: The station lacks bicycle amenities, such as bicycle storage or bicycle paths. As a result, users must walk bicycles within the station area.

Recommendation: Provide bicycle amenities, such as storage, and wider paths to enhance usefulness for bicyclists.



Photo: Looking north towards South Hills Junction and the Mt. Washington neighborhood on the hillside above

Observation: There is no ramp access from the South Hills Junction Station to the Mt. Washington neighborhood to the north. Cyclists must carry their bicycles up and down stairs to reach the station from this side.

Recommendation: Construct a hillside ramp if appropriate to Mt. Washington or otherwise add runnels to staircases for bicycles. Add runnels to all station staircases as appropriate.



Photo: Looking east from the rail crosswalk across the former Allentown Line toward the Haberman Ramp

Observation: It is unclear how bicycles should reach the South Hills Junction, if cyclists can ride on the Haberman Ramp, or if they must walk bikes along the sidewalk.

Recommendation: Provide bicycle connectivity to the South Hills Junction and delineate an appropriate and safe bicycle path from the station to Warrington Avenue.



Photo: Looking southwest along the sidewalk from South Hills Junction Station toward Warrington Avenue at Boggston Avenue.

Observation: The existing sidewalk is too narrow for cyclists to pass pedestrians, as the sidewalk is constrained by a wall, lightposts, and fencing.

Recommendation: Once the Turnback track is no longer in use for LRV staging, widen the sidewalk or add a cycle track to one side. Relocate light posts as applicable to allow a wider sidewalk.

TRANSPORTATION PLANNING

GUIDANCE K: IMPROVE STAIRCASES



Photo: Looking north toward the closed stairs to Paur Street

Observation: The stairs to Paur Street are in disrepair and have been closed.

Recommendation: Repair the Paur Street Stairs and reopen to pedestrians.



Photo: Looking north along the Harwood Way Stairs

Observation: Various staircases including the ones at Harwood Way can become overgrown during the summer, with vegetation discouraging user access.

Recommendation: Update maintenance schedule to consistently trim vegetation on staircases during the growing season. Coordinate with the City of Pittsburgh for staircases not owned by Port Authority.



Photo: Looking south along the Harwood Way Stairs

Observation: The Harwood Way Stairs have a non-slip surface; however, they have uneven treads and surfaces which could lead to ponding and other user challenges.

Recommendation: Reconfigure staircases to have level surfaces gently sloped for proper drainage, with consistent tread depth and riser heights to meet current standards.



Photo: Station access stairs opposite Montooth Street, looking from South Hills Junction towards Warrington Avenue

Observation: Staircases with open treads become maintenance concerns, as treads may become loose. Open treads could become tripping hazards as pedestrians could get their feet caught between the stairs.

Recommendation: Update staircases to eliminate open tread designs as applicable.



Photo: Looking east along the Jasper Street Stairs toward South Hills Junction

Observation: Overgrown vegetation blocks pedestrian access. Evidence of ponding is present, and the open tread design of the stairs can present tripping hazards and maintenance challenges.

Recommendation: Institute a maintenance plan to trim vegetation and clean sidewalk. Reconstruct sidewalk where applicable to address drainage concerns and eliminate staircase open tread design.

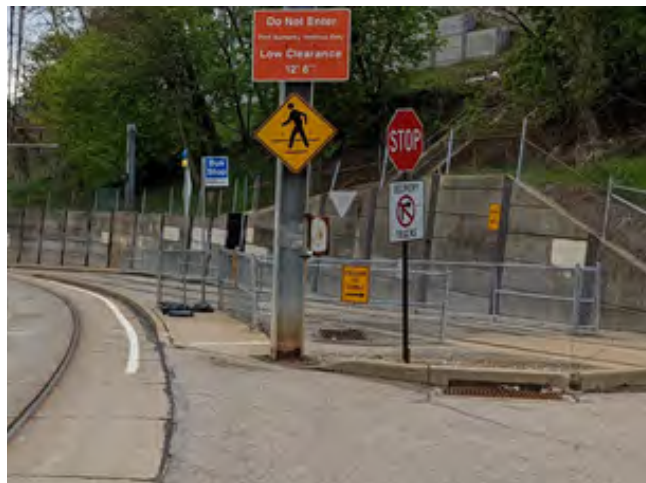


Photo: Looking west along the Haberman Ramp at the pedestrian route beyond the salt shed

Observation: There is no ADA-compliant entrance to the station from Haberman Avenue, as the sidewalk is funneled across an inactive spur track to a narrow sidewalk along a retaining wall that does not have a curb ramp near the station. The proper path through this area is not clear to pedestrians.

Recommendation: Construct an ADA-compliant sidewalk along the Haberman Ramp to connect to the station.

GUIDANCE N: PROVIDE ADA ACCESS

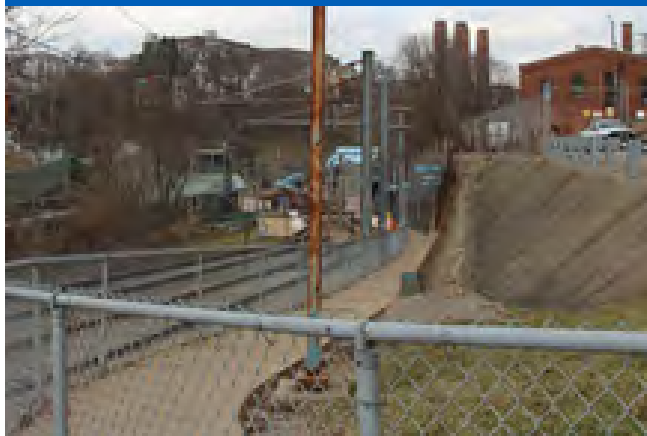


Photo: Looking northeast along the ramp to South Hills Junction opposite Boggston Avenue

Observation: The existing pedestrian ramp is not ADA-compliant since it is steeper than allowable, narrow, and lacks landings.

Recommendation: Reconstruct the ramp to the station opposite Boggston Avenue to be ADA-compliant with appropriate widths, slopes, and landings.



Photo: Looking northwest along the Haberman Ramp from the entrance to the salt shed

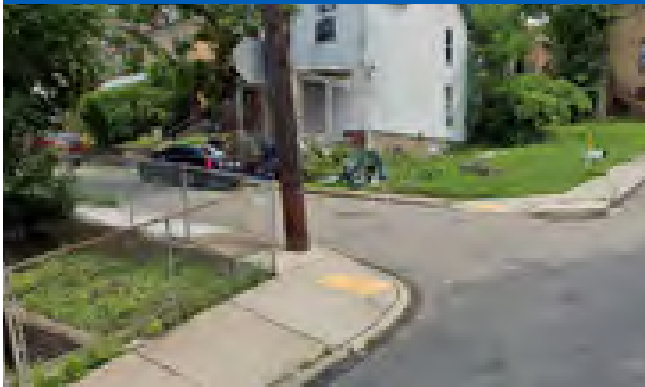
Observation: Due to the lack of an accessible sidewalk, signage instructs users with mobility needs to use a local bus to reach the station, as no sidewalk route is accessible. Instead, users were observed to ride on the ramp creating operational and safety concerns.

Recommendation: Construct an ADA-compliant sidewalk along the Haberman Ramp to connect to the station.

TRANSPORTATION PLANNING

BOGGSTON AVENUE AND TAFT AVENUE

GUIDANCE C: INSTALL CROSSWALKS



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Photo: Taft Avenue looking south toward Industry Street

Observation: Intersections along Boggston Avenue and Taft Avenue do not have marked crosswalks.

Recommendation: Paint perpendicular (PennDOT Type C “Piano Key”) crosswalks at intersections along Boggston Avenue and Taft Avenue to provide a safer walking route to the South Hills Junction Station. Paint stop bars at stop-controlled intersection approaches and place them a minimum of four feet in advance of crosswalks.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



Photo: Looking southwest from Warrington Avenue to Boggston Avenue

Observation: Boggston Avenue has a sidewalk on just its south side, though some of the sidewalk is blocked by vegetation, hillside debris, and parked cars. The sidewalk is less than five feet wide, and the width is decreased due to utility poles. Pedestrians were observed to walk in the street to reach the station since much of the sidewalk was unusable.

Recommendation: Upgrade the sidewalk to be ADA-compliant and clear or replace sidewalk areas that are currently blocked.

GUIDANCE E: IMPROVE STOP CONTROLLED INTERSECTION



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Photo: Climax Street looking west toward Taft Avenue

Observation: Some intersections have stop signs placed in improper places and do not have painted stop bars.

Recommendation: Paint stop bars and mount corresponding stop signs a minimum of four feet in advance of a marked or unmarked pedestrian crosswalk.



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Photo: Looking north along Taft Avenue toward Boggston Avenue

Observation: Opposite Letzkus Way, the sidewalk on the left side of Taft Avenue ends, leading pedestrians walking to the station to walk in the street. Parts of the existing sidewalks are blocked by vegetation or are in poor repair.

Recommendation: Connect the missing Taft Avenue sidewalk to Boggston Avenue and improve existing sidewalks.

GUIDANCE L: ENACT TRAFFIC CALMING MEASURES



Photo: Looking south toward Boggston Avenue at its approach to Warrington Avenue

Observation: Due to the steep hillsides, Boggston Avenue is a narrow road approaching Warrington Avenue. There is only a sidewalk on its south side. Shown in the photograph, pedestrians walk in the street to reach the station, and a sidewalk on its north side is not feasible due to topographical challenges. The road is not sufficiently wide enough for two travel lanes, a parking lane, and a sidewalk, so Boggston Avenue must function as a yield street, where oncoming cars must yield to each other.

Recommendation: Add traffic calming where feasible and appropriate since there is no other reasonable way of slowing vehicular speeds and improving safety for pedestrians walking to South Hills Junction.

WARRINGTON AVENUE NEAR BOGGSTON AVENUE AND LAVERNE STREET

GUIDANCE A: INSTALL CURB RAMPS

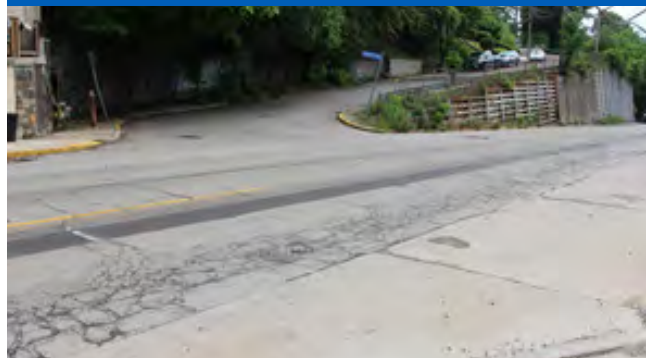


Photo: Looking south across Warrington Avenue to Boggston Avenue

Observation: The intersection of Warrington Avenue and Boggston Avenue has one curb ramp at the southeast quadrant and a driveway along the north side of Warrington Avenue with a sloped driveway reveal. Pedestrians were observed to walk through the bus pull-off at the station entrance, cross Warrington Avenue in the middle of the intersection, and walk in the street along Boggston Avenue.

Recommendation: Add curb ramps at the intersection so pedestrians can have a defined and accessible crossing across Warrington Avenue that connects to the sidewalk along Boggston Avenue. A curb ramp should preferably connect the pedestrian route to the station in line with the pedestrian desire line.

TRANSPORTATION PLANNING

GUIDANCE C: INSTALL CROSSWALKS



Photo: Looking south across Warrington Avenue to Boggston Avenue

Observation: There are no marked crosswalks at this intersection, despite it being a station access route.

Recommendation: Install a high visibility perpendicular (PennDOT Type C “Piano Key”) crosswalk with associated signing and traffic calming appropriate for a midblock location. Due to the long crossing distance, consider curb extensions to maximize pedestrian visibility and minimize crossing distance.



Photo: Looking southwest along Warrington Avenue towards the Laverne Street Stairs and Boggston Avenue

Observation: Since the distance from the Laverne Street Stairs to Boggston Avenue is approximately 150 feet, the safe pedestrian route would be to walk along the south side of Warrington Avenue to cross at Boggston Avenue to avoid uncontrolled midblock crosswalks. Vehicles have been observed to park on this sidewalk, and sidewalk condition is poor. Vegetation, a crumbling retaining wall, and a utility pole, and a fire hydrant all limit sidewalk width.

Recommendation: Upgrade sidewalk to be ADA compliant, with a five-foot width preferred. Stripe a parking lane on Warrington Avenue and enact traffic calming to discourage vehicles from parking on the sidewalk.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



Photo: Looking northeast along Warrington Avenue at the sidewalk along the bus pull-off alongside the station entrance opposite Boggston Avenue

Observation: The sidewalk along Warrington Avenue is only 4'-0" or four inches wide. This photo shows the ground beyond the sidewalk is worn, suggesting pedestrians walk behind the sidewalk pavement. The sidewalk has settled separately from the curb at the bus pull-off, creating a tripping hazard.

Recommendation: Upgrade sidewalks where possible to be at least 5'0" wide. Perform regular maintenance to avoid hazards.

GUIDANCE L: ENACT TRAFFIC CALMING MEASURES

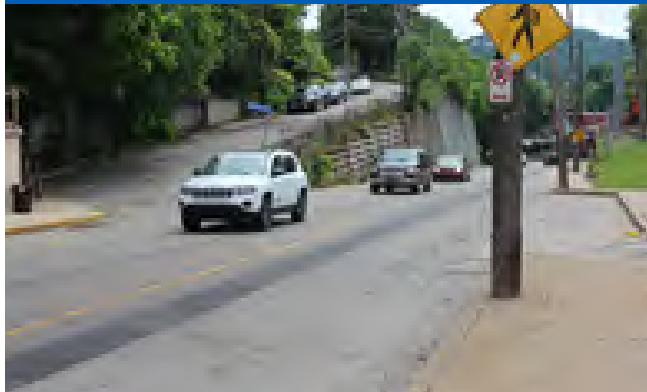


Photo: Looking southwest along Warrington Avenue at the Boggston Avenue intersection.

Observation: Pedestrians may find it difficult to cross Warrington Avenue at this location due to vehicular volume and speeds. This part of Warrington Avenue is three quarters of a mile long without stop signs or signals, so vehicles were observed to exceed the speed limit. Residents were observed to park their cars partly on the sidewalk rather than on the street on the northeast bound direction, which indicates that travel speeds are an issue.

Recommendation: Coordinate with DOMI for a traffic calming for Warrington Avenue. Classified as a minor arterial and located at a pedestrian generator, traffic calming is appropriate for this location. Curb extensions, signage, striped median pedestrian refuge island (marked with flexible delineator posts), a raised crosswalk, or speed humps (designed to be appropriate for a minor arterial) are potential traffic calming strategies that could improve safety at this location.

WARRINGTON AVE. NEAR MONTTOOTH STREET GUIDANCE A: INSTALL CURB RAMPS

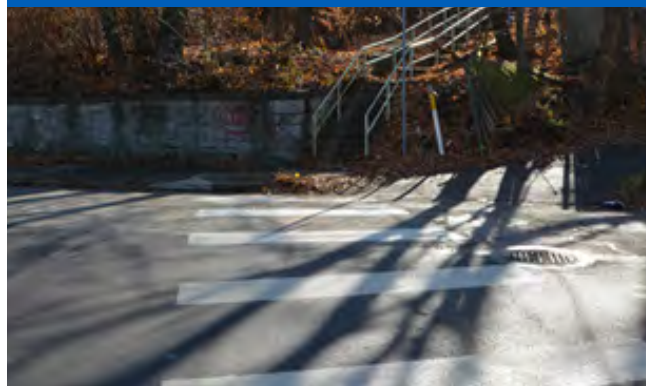


Photo: Looking south across Warrington Avenue to the Monttooth Street Stairs

Observation: There are no curb ramps at either end of the marked crosswalk.

Recommendation: Install ADA-compliant curb ramps and update signing and markings accordingly. Consider improvements to make pedestrians crossing Warrington Avenue more visible to traffic, such as curb extensions, traffic calming, or improved signage or pavement markings.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



Photo: Looking southwest along Warrington Avenue

Observation: Sidewalks along Warrington Avenue are deteriorated and present tripping hazards.

Recommendation: Repair or reconstruct sidewalks along Warrington Avenue.

TRANSPORTATION PLANNING

GUIDANCE I: IMPROVE PEDESTRIAN VISIBILITY AND/OR VEHICULAR SIGHT DISTANCE



Photo: Looking west along Warrington Avenue from the Montooth Street Stairs

Observation: Due to the curvature in northeast bound Warrington Avenue, drivers have limited visibility to see pedestrians crossing Warrington Avenue toward South Hills Junction. The northeast bound pedestrian crossing warning sign is placed in a location that can be obstructed by vegetation.

Recommendation: Install curb extensions and improve advanced signing and markings to improve pedestrian visibility to drivers.

GUIDANCE L: ENACT TRAFFIC CALMING MEASURES



Photo: Warrington Avenue looking southwest toward Montooth Street Stairs

Observation: Pedestrians may find it difficult to cross Warrington Avenue at Montooth Street Steps, an uncontrolled location. This is due to the lack of sight distance and conflicting vehicular volume and speeds along an uncontrolled three quarters of a mile stretch of Warrington Avenue. Residents were observed to park their cars on the sidewalk on the northeast bound direction, which indicates side swipes from vehicles traveling at high speeds are an issue.

Recommendation: Coordinate with DOMI for a traffic calming plan along Warrington Avenue. Classified as a minor arterial and located at a pedestrian generator, traffic calming is appropriate for this location. Curb extensions, signage, striped median pedestrian refuge island (marked with flexible delineation posts), a raised crosswalk, or speed humps (designed to be appropriate for a minor arterial) are potential traffic calming strategies to improve safety at this location.

WARRINGTON AVENUE NEAR THE HABERMAN AVENUE AND HABERMAN RAMP TO THE SOUTH BUSWAY INTERSECTION

GUIDANCE B: UPGRADE CURB RAMP



Photo: Warrington Avenue looking east from the Haberman Ramp

Observation: Curb ramps across the Haberman Ramp to the South Busway are not built to current ADA standards and could be blocked by temporary signage.

Recommendation: Upgrade curb ramps as applicable to modern ADA-complaint standards. Prohibit signs from being placed blocking pedestrian paths.

GUIDANCE F: SIGNALIZE INTERSECTION



Photo: Looking west along Warrington Avenue across Haberman Avenue toward the Haberman Ramp

Observation: The intersection of Warrington Avenue, Haberman Avenue, and the Haberman Ramp experiences congestion and vehicular conflicts due to the five-leg intersection geometry and offset Haberman Avenue approaches. Flaggers are needed to assist with service detours on occasion.

Recommendation: Conduct traffic signal warrant analysis to determine if signalization is appropriate for current conditions with respect to transit use, future conditions with development, future conditions if regular light rail service is resumed, and future conditions if signal coordination or transit preemption is introduced.

GUIDANCE C: INSTALL CROSSWALKS



Photo: Looking east along Warrington Avenue across the Haberman Ramp

Observation: There are no marked crosswalks at this intersection.

Recommendation: Install highly visible perpendicular (PennDOT Type C "Piano Key") crosswalk markings at all safe crossing locations.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK

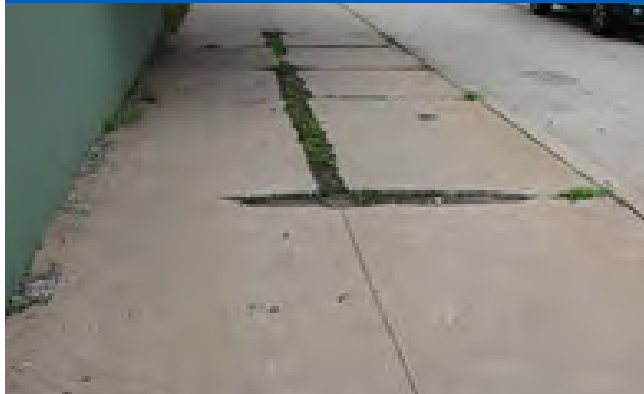


Photo: Sidewalk on the north side of Warrington Avenue looking east away from the intersection.

Observation: Sidewalk deterioration could create a tripping hazard.

Recommendation: Coordinate with DOMI and property owners to maintain sidewalk to a good state of good repair.

TRANSPORTATION PLANNING

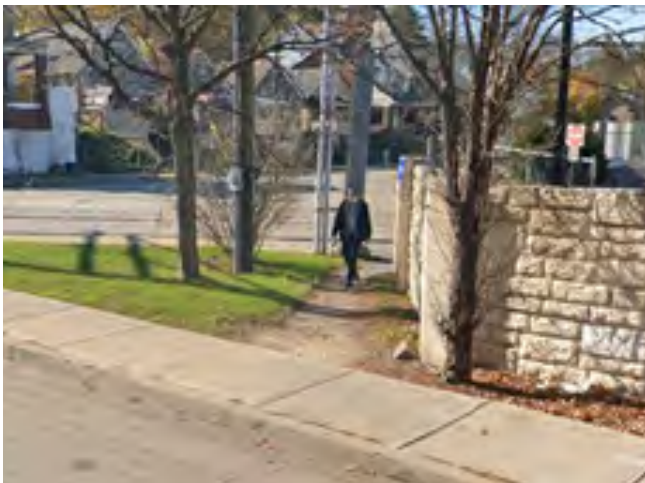


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Photo: Looking west at the area between Warrington Avenue and the Haberman Ramp

Observation: There is a missing sidewalk on the west side between the Haberman Ramp and Warrington Avenue, forcing pedestrians to walk in the street as shown.

Recommendation: Install missing sidewalk.



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Photo: Looking west between from Haberman Avenue to the Haberman Ramp

Observation: Pedestrians have worn a path between Haberman Avenue and the Haberman Ramp to South Hills Junction.

Recommendation: Install missing sidewalk.

GUIDANCE I: IMPROVE PEDESTRIAN VISIBILITY AND/OR VEHICULAR SIGHT DISTANCE



Photo: Looking east along Warrington Avenue from the Haberman Ramp to the South Busway

Observation: The intersection is difficult for pedestrians to cross, since it is not clear whether walking along the westbound (north) side of Warrington Avenue is intended to be a two-stage crossing across Haberman Avenue and the Haberman Ramp or just a single crossing across both. For a single crossing, the distance is 150 feet, which is a long length to expose pedestrians to turning vehicles. Shown in the far left of the photograph, the pedestrian appears not to be comfortable crossing Haberman Avenue alongside moving cars. There is limited sight distance at the intersection. Sight distance is also an issue crossing the Haberman Ramp, as pedestrians might cross where turning vehicles cannot see them.

Recommendation: Improve pedestrian visibility through strategies such as curb extensions and median refuge islands. Update the eastbound pedestrian route that crosses Haberman Avenue and the Haberman Ramp to be a three-stage crossing by channelizing the right turn from the Haberman Ramp with a refuge island and improving the area between the Haberman Ramp and Haberman Avenue. Also use strategies such as curb extensions to create a safe crossing across Warrington Avenue to improve connectivity to Beltzhoover.

GUIDANCE M: REALIGN INTERSECTION

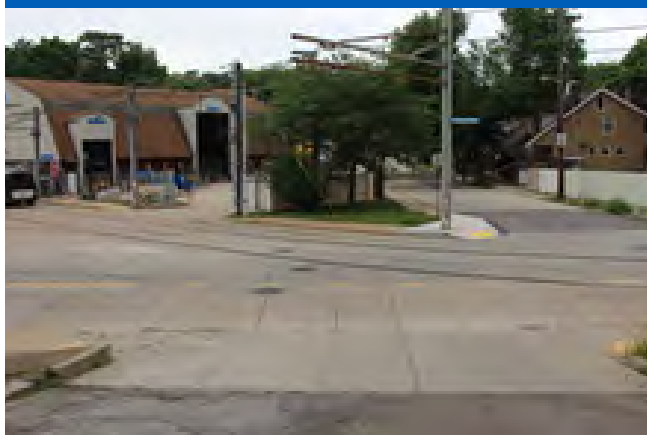


Photo: Looking north from Haberman Avenue toward Warrington Avenue and the Haberman Ramp

Observation: The existing intersection offset makes crossing challenging for pedestrians and does not allow left turning traffic to turn simultaneously, creating congestion and safety conflicts.

Recommendation: Realign the southbound Haberman Avenue intersection approach onto Port Authority property to eliminate the intersection offset.

GUIDANCE G: UPGRADE SIGNALIZED INTERSECTION

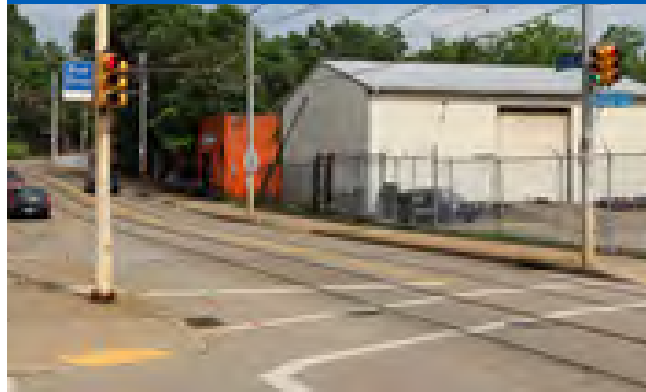


Photo: Looking east from Estelle Avenue to Warrington Avenue

Observation: The intersection has outdated traffic signals that lack pedestrian signals and push buttons.

Recommendation: Upgrade signalized intersection to have ADA-compliant audible pedestrian signals and push buttons.

WARRINGTON AVENUE NEAR THE RECREATION CENTER AND ESTELLA AVENUE

GUIDANCE D: IMPROVE CROSSWALKS



Photo: Looking south from Estella Avenue to Haberman Avenue

Observation: Crosswalks are parallel style which are less visible to drivers than high-visibility perpendicular (PennDOT Type C "Piano Key" markings).

Recommendation: Install high visibility crosswalk markings.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK

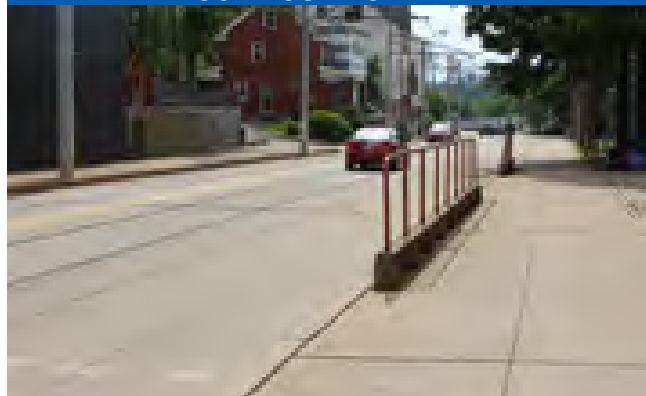


Photo: View of the sidewalk on the north side of Warrington Avenue looking west past the Recreation Center.

Observation: Pedestrian railings have been installed at the entrance to the Recreation Center to discourage crossing.

Recommendation: Since midblock pedestrian crashes have been reported at this location, consider additional strategies to reduce jaywalking. Strategies could include vegetative planter strips or strategic barriers extending existing railings or installing controls on the opposite side of Warrington where street parking is prohibited.

TRANSPORTATION PLANNING

GUIDANCE L: ENACT TRAFFIC CALMING MEASURES



Photo: Warrington Avenue looking east.

Observation: Warrington Avenue is a straight stretch of road without traffic control three quarters of a mile to the west starting at the Estelle Avenue intersection. Some vehicles were observed to accelerate west of the intersection, past pedestrian generators such as the Recreation Center and South Hills Junction Station entrance.

Recommendation: Consider appropriate traffic calming strategies that do not interfere with transit operations. Street plantings, curb extensions, signing and pavement markings, and gateway treatments are examples to help reduce speeds.

SECANE AVENUE

GUIDANCE A: INSTALL CURB RAMPS



Photo: Harwood Street looking south to the Harwood Way stairs to the South Hills Junction Station access across Secane Avenue

Observation: A few pedestrian crossings are missing curb ramps along Secane Avenue, including the connection to the Harwood Way Stairs to the station.

Recommendation: Install missing curb ramps.

GUIDANCE B: UPGRADE CURB RAMPS



Photo: Harwood Street looking south to the South Hills Junction Station access across Secane Avenue

Observation: While many curb ramps have been upgraded, some curb ramps along Secane Avenue may have older style curb ramps that lack detectable warning surfaces.

Recommendation: Upgrade all curb ramps to ones compliant with the latest ADA standards.

GUIDANCE D: IMPROVE CROSSWALKS

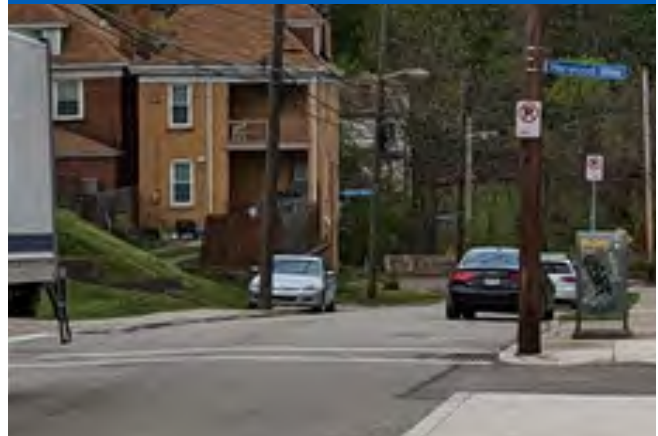


Photo: Secane Street looking east toward Harwood Street

Observation: The intersection of Secane Street and Harwood Street has less visible parallel style crosswalk markings. In general, marked crosswalks at uncontrolled locations as shown should have supplementary signing to improve driver compliance.

Recommendation: Improve markings to be highly visible perpendicular (PennDOT Type C "Piano Key") markings. Add supplementary pedestrian crossing signage or add pedestrian visibility features such as curb extensions.

GUIDANCE E: IMPROVE STOP CONTROLLED INTERSECTION



Photo: Harwood Street looking south to the South Hills Junction Station access across Secane Avenue

Observation: No stop signs were observed.

Recommendation: Install stop control at this intersection with painted stop bars a minimum of four feet back from the crosswalks. Since both Secane Avenue and Harwood Street have similar typology, and this location is a crossing route to the South Hills Junction, consider all-way stop control.

PAUL STREET

GUIDANCE A: INSTALL CURB RAMPS



Photo: Looking west across Boggs Avenue from Paul Street

Observation: There are no curb ramps across Boggs Avenue along the north side of the intersection, which has all-way stop control and bus stops.

Recommendation: Install missing curb ramps and upgrade all ramps to be ADA-compliant.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



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Photo: View from Haberman Avenue looking west toward Secane Avenue

Observation: Pedestrians have worn a path connecting Secane Avenue to Haberman Avenue, indicating the need for a connection.

Recommendation: Construct an ADA-compliant connection from Secane Avenue to Haberman Avenue to improve connectivity and provide a ramp bypass if a staircase is used.

GUIDANCE C: INSTALL CROSSWALKS



Photo: Boggs Avenue looking south to Paul Street

Observation: There is no crosswalk across Boggs Avenue at this all-way stop-controlled intersection.

Recommendation: Stripe missing crosswalks across Boggs Avenue using highly visible perpendicular (PennDOT Type C “Piano Key”) markings.

TRANSPORTATION PLANNING

GUIDANCE E: IMPROVE STOP CONTROLLED INTERSECTION



Photo: Looking south on Boggs Avenue toward Paul Street

Observation: The existing stop signs are incorrectly placed and are not visible to the driver.

Recommendation: Place stop signs a minimum of four feet in advance of crosswalks with associated stop bars for all intersection approaches. Mount R1-3P “All Way” plaques beneath stop signs so drivers are aware of the intersection control.

GUIDANCE I: IMPROVE PEDESTRIAN VISIBILITY AND/OR VEHICULAR SIGHT DISTANCE



Photo: Looking south along Boggs Avenue across Paul Street

Observation: Sight distance is limited at this intersection due to the curvature of Boggs Avenue. Vehicles were observed to park on the sidewalk close to the intersection, obstructing sight distance.

Recommendation: Designate no parking zones with appropriate signing and markings to improve sight distance and pedestrian visibility at the intersection. Consider installing or marking curb extensions to improve pedestrian visibility.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



Photo: Looking east on Paul Street

Observation: Due to inconsistent sidewalks and the narrowness of the street, pedestrians are forced to walk in the street.

Recommendation: Improve sidewalks where deteriorated. Stripe parking lanes to delineate sidewalk parking in order to reduce the amount of vehicular encroachment onto sidewalks. Consider parallel one-way streets.

LELIA STREET

GUIDANCE C: INSTALL CROSSWALKS



Photo: Looking southwest from Lelia Street toward Boggs Avenue

Observation: Despite being the primary pedestrian route to South Hills Junction, this intersection does not have marked crosswalks.

Recommendation: Install marked crosswalks with high visibility perpendicular (PennDOT Type C “Piano Key”) markings. Add appropriate signage and markings to provide additional warning to drivers at uncontrolled locations.

GUIDANCE E: IMPROVE STOP CONTROLLED INTERSECTION



Photo: Looking northwest from Lelia Street toward Boggs Avenue

Observation: The existing stop sign is located too close to the pedestrian crossing area and in the center of the sidewalk area, away from the curb. The signpost is leaning, reducing visibility.

Recommendation: Install the stop sign a minimum of four feet in advance of the crosswalk with a corresponding stop bar.

GUIDANCE I: IMPROVE PEDESTRIAN VISIBILITY AND/OR VEHICULAR SIGHT DISTANCE

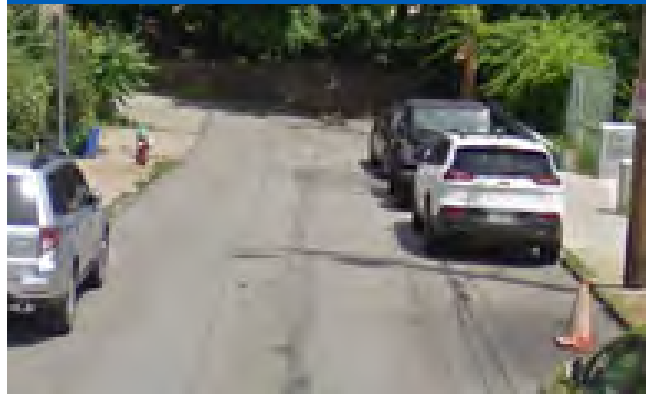
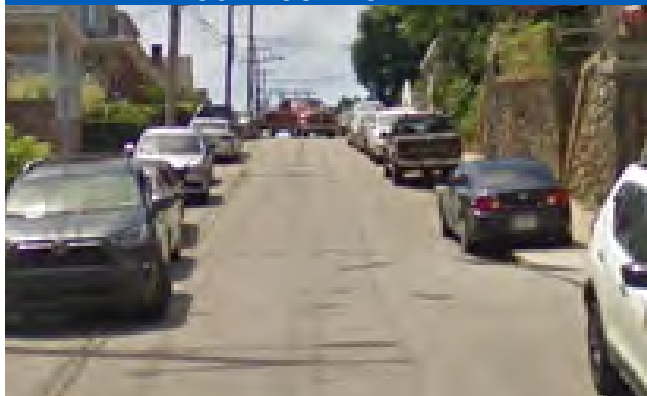


Photo: Looking east on Lelia Street toward the stairs to South Hills Junction

Observation: Despite a posted no parking zone, vehicles were observed to block the entrance to South Hills Junction Station.

Recommendation: Improve pedestrian visibility through increasing enforcement and adding pavement markings or flexible delineation posts to keep the station entrance clear.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



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Photo: Looking west on Lelia Street

Observation: Due to inconsistent sidewalks and the narrowness of the street, pedestrians are forced to walk in the street.

Recommendation: Improve sidewalks where deteriorated. Stripe parking lanes to delineate parking lanes to reduce the amount of vehicular encroachment onto sidewalks.

GUIDANCE L: ENACT TRAFFIC CALMING MEASURES

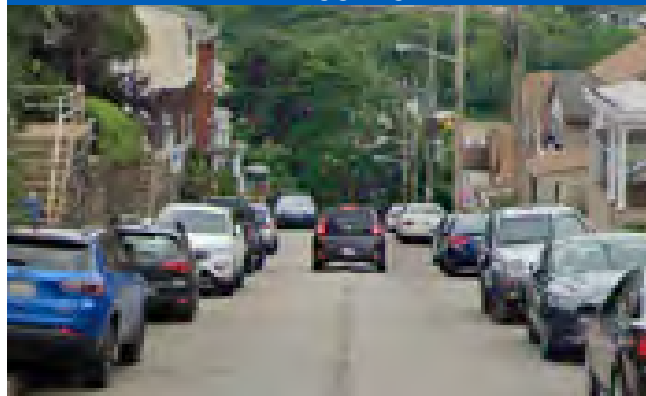


Photo: Looking east on Lelia Street

Observation: Lelia Street is assumed to be the most used pedestrian route from this section of Mt Washington to South Hills Junction. Due to narrow street width, vehicles were observed to park on sidewalks, forcing pedestrians to park in the street. Vertical curvature reduces available sight distance.

Recommendation: Consider appropriate traffic calming to limit vehicular speeds or inform drivers that they are using a pedestrian route to a transit station.

TRANSPORTATION PLANNING

JASPER STREET

GUIDANCE C: INSTALL CROSSWALKS

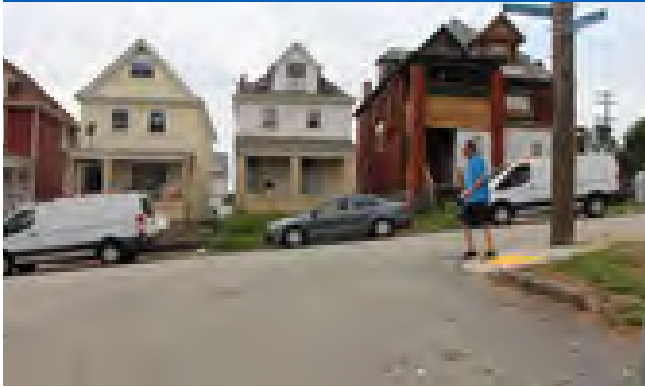


Photo: Looking west on Jasper Street toward Boggs Avenue

Observation: There are no marked crosswalks along Jasper Street.

Recommendation: Provide marked crosswalks across Jasper Street at Boggs Avenue using perpendicular (PennDOT Type C “Piano Key”) markings.

GUIDANCE H: INSTALL, IMPROVE, OR RECONFIGURE SIDEWALK



Photo: Looking east along Jasper Street toward the South Hills Junction Station

Observation: The sidewalk along Jasper Street is of inconsistent repair and then it ends, forcing pedestrians to walk in the street instead of the sidewalk.

Recommendation: Continue sidewalk to connect to the Jasper Street Stairs to the South Hills Junction station. As an interim solution, consider striping or hatching a shoulder where space permits and trimming vegetation to provide a car-free area for pedestrian use.

GUIDANCE E: IMPROVE STOP CONTROLLED INTERSECTION

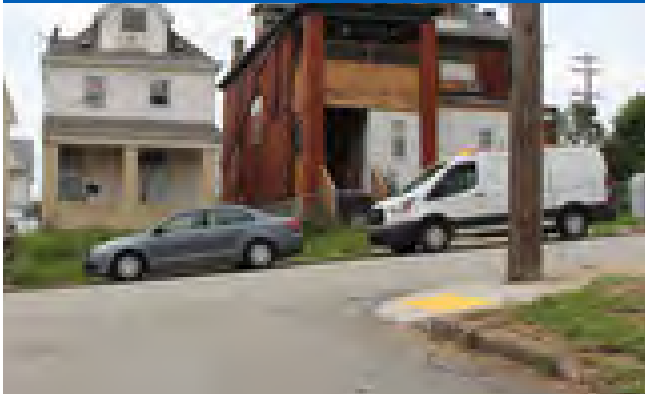


Photo: Looking west on Jasper Street toward Boggs Avenue

Observation: There is no stop sign on Jasper Street facing Boggs Avenue.

Recommendation: Install missing stop sign at a location a minimum of four feet from the pedestrian crosswalk with a corresponding stop bar.

GUIDANCE I: IMPROVE PEDESTRIAN VISIBILITY AND/OR VEHICULAR SIGHT DISTANCE



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Photo: Looking west along Jasper Street

Observation: Jasper Street becomes narrow and has a vertical curve and an intersection with Curtis Street that limits sight distance. Without sidewalks, pedestrians must walk in the street.

Recommendation: Install signing and pavement markings to inform drivers that pedestrians walk in the street. Trim vegetation to maximize visibility.

Public Involvement

Detailed in this report, public participation was conducted throughout the project planning process. The safety audit team walked the station area at the start of the project, during the project as comments were being received, and after the final public meeting. The team also participated in neighborhood community meetings.

The community most frequently discussed:

- The need to improve station visibility and access, as no entrances are ADA compliant, sidewalks are narrow and do not follow pedestrian desire lines, and the station and its entrances lack visibility.
- The difficulty once inside the station to cross the busway, light rail, and parking areas both as a pedestrian and as a bicyclist, especially during peak hours. Adding a pedestrian bridge and elevator would address these issues, as well provide a better connection to adjacent neighborhoods.
- The frustration of the ongoing Paur Street Stairs closure, as it creates barrier to station access.
- The need to improve the intersection of Warrington Avenue, Haberman Avenue, and the Haberman Ramp to the South Busway, as is a barrier to safe station use. It is difficult to cross on foot due to the intersection size and lack of traffic signal control, and it is also a challenge to drive through.

Other common concerns discussed were:

- The desire for resumption of light rail service from Allentown and potentially through the Mt. Washington Transit Tunnel. This would improve access to the Allentown business district and downtown Pittsburgh, as well as to allow users to avoid the long walk to South Hills Junction station.
- The concern for safety and security, as the community mentioned additional lighting would be helpful both within the station and along area roadways.
- The need for better bicycle access and accessibility to the station.

A few community members also discussed the need to:

- Provide an accessible connection between Secane Avenue and Haberman Avenue.
- Build or improve a sidewalk connection from the Haberman Ramp to the Mt. Washington side of Haberman Avenue.
- Add traffic calming along Warrington Avenue or otherwise make it safer for pedestrians to cross at uncontrolled locations.
- Make it easier to arrive or depart the station by vehicles, either by improving or defining pick-up and drop-off areas or by providing additional parking.
- Enhance multi-modal connectivity through an on-site bikeshare or e-scooter station.
- Improving overall station maintenance and snow removal.

Proposed improvements to address these concerns are presented within the safety audit recommendations and in the station area plan.

Safety Evaluation Summary

The safety evaluation analyzed high-crash locations and field viewed the station's walkshed. The results of these analyses will serve to improve the safety and security of South Hills Junction area users, as well as the traveling public. In general, South Hills Junction lacks accessible pedestrian and bicycle access, and roadways surrounding the station lack pedestrian-focused infrastructure appropriate for walking routes and for cycling routes to the station. These key findings show the need to improve station accessibility with a primary focus on non-motorized users. While some of these improvement strategies are outside of Port Authority's control, they can be applicable to future City, State, utility, and private development projects that occur near the station. Ultimately, this station should become a primary node incorporated with Pittsburgh's Bike(+) Plan.

A.5 COMMUNITY ENGAGEMENT

At the start of the project, the consultant team worked with Port Authority staff to assemble a database of key stakeholders to ensure focused involvement of residents, agency representatives, and other key stakeholders. The database included the following categories:

- Advocacy organizations
- Planning and regional agencies
- Community Organizations and Resources
- Public officials
- Citizens

Three rounds of stakeholder workshops were convened to gather input. Due to the continued pandemic and concerns about public gatherings, the meetings were convened virtually. To encourage attendance and allow safe face-to-face interaction, targeted outreach was undertaken with key community organizations and at community gathering spots. Details of these activities are noted on the attached public engagement content and responsibilities matrices. To accommodate stakeholders available in the daytime and those available in the evening, meetings were offered at two times, once at mid-day and once in the evening.

For each round of workshops, elected officials as well as individual stakeholders and organizations identified in the database received invitations and follow-up reminders. In addition, stakeholder organizations distributed information to their constituents. A Facebook event was created, and flyers were posted at the South Hills Junction Station and in local businesses. The meetings were advertised in the South Pittsburgh Reporter.

The first round of workshops was held on May 10, 2021, from 11:30 AM to 1:00 PM and 6:30 to 8:00 PM. At each session, presentations were given on:

- Study Area Context
- Smart TRID Corridor Study
- Site Context
- Opportunities and Constraints
- Transit Oriented Development Opportunities
- Process Timeline

Recognizing the challenge of virtual versus face-to-face interaction, Port Authority staff and the consultant team utilized Social Pinpoint, a suite of digital tools to capture feedback graphically during the workshops. (<https://pghtransit.mysocialpinpoint.com/shj>) A tutorial on the tool was given during



Graphic t-shirts were given to those who attended the Public Open House at the Warrington Recreation Center on August 19, 2021, from 4:00 to 6:00 PM. The graphic above and t-shirts were developed locally by the Commonwealth Press. <https://www.cwpress.com/>

the first workshop and the site remained open for two weeks following each of the public workshops to allow an opportunity for further reflection and feedback.

The second round of workshops was convened on August 18, 2021, from 11:30 AM to 1:00 PM and 6:30 to 8:00 PM. In addition to the virtual public meeting, an outdoor, socially distanced public open house was convened at the Warrington Recreation Center on August 19, 2021, from 4:00 to 6:00 PM. T-shirts and tote bags, designed with a South Hills Junction logo, were distributed at the open house. Targeted outreach opportunities were expanded to include a project presence at the Hilltop's Side Yard/Side Hustle and Fresh Fridays, as well as a booth set up at the station. Literature drops were expanded to more locations in the adjacent neighborhoods. In addition to flyers, magnets with the workshop information were distributed. A two-page white paper was developed to be able to share details on the two scenarios to be presented during Round II. Finally, Port Authority service staff handed out information cards at the station.

Building on input that was gathered at the first round of stakeholder meetings, the consultant team presented concepts for improvements to station access and design and transit-oriented development. The presentations included:

- Feedback from the first round of public workshops and from social pinpoint
- Market Assessment
- Design Process
- Two Scenarios for Station Area Planning – “Junction Renovated” and “Junction Reimagined”

The presentation was followed by a facilitated group discussion.

The third and final round of workshops was convened on November 16, 2021, from 11:00 AM to 12:30 PM and 6:00 to 7:30 PM. The presentations included:

- Overview of Port Authority's Transit Oriented Communities Program
- Project Timeline
- Summary of Feedback from the Third Round of Public Workshops, Social Pinpoint Maps and Idea Wall
- Station Area Master Plan

A facilitated group discussion followed the presentation.

PROJECT OVERVIEW

The purpose of this project is to identify opportunities that are supported by Port Authority and the community for:

TOD feasibility: transit-oriented development scenarios that are possible and desired on the site

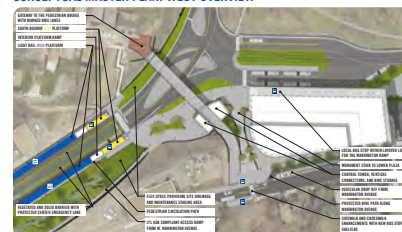
Station access: making it easier and safer for people to get to the stations

Station design: making Port Authority facilities more comfortable and easy to use

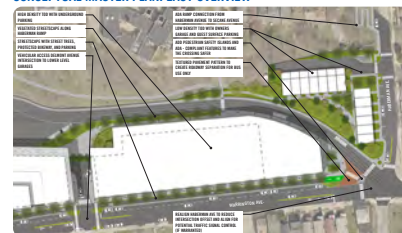
The resulting plan will recommend improvements that Port Authority could undertake to improve the rider experience and ensure the maximum utilization of its property.



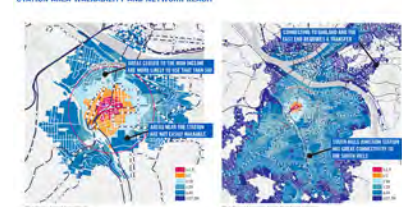
CONCEPTUAL MASTER PLAN: WEST OVERVIEW



CONCEPTUAL MASTER PLAN: EAST OVERVIEW



STATION AREA WALKABILITY AND NETWORK REACH



PLANNING TIMELINE AT SOUTH HILLS JUNCTION

2011 SMARTRID Corridor Study

The City of Pittsburgh's Department of City Planning performed a corridor study that evaluated transit-oriented development (TOD) potential at South Hills Junction and in the Beechview neighborhood. The study includes a summary of the community's feedback, market analysis, and three concepts for development.



November 2021 Final Public Meeting

In November 2021 we are presenting the final concept for the South Hills Junction Station Area based on feedback received at the May and August public meetings.

2016 Port Authority's TOD Guidelines

Port Authority developed their Transit-Oriented Development (TOD) Guidelines which assert the value of TOD for our region, define Port Authority's roles in TOD, classify station areas by their TOD typology, and provide recommendations for type of TOD station area. Based on this analysis, South Hills Junction's station area is a "Transit Neighborhood" given its moderate density and primarily residential uses.



August 2021 SHJ Pop-ups, Public Meeting, & Open House

In August of 2021 we held a series of public meetings, including an in-person open house at the Warrington Rec center, to solicit feedback about two station improvement scenarios for the South Hills Junction Station Area.

May 2021 SHJ First Public Meeting

We held a public meeting in May of 2021 where a presentation was given and an online map was opened for community members to offer their feedback. The presentation, a recording of the meeting, and the online map are all available at Port Authority's website.



Scan here to learn more about the South Hills Junction Project.

PortAuthority

Display boards were placed within the Warrington Recreation Center and local businesses to allow those who could not attend the virtual public meetings to review design concepts and have a QR Code that linked them to the Authority project website to provide feedback.

COMMUNITY ENGAGEMENT

Supporting Materials

- Stakeholder Database
- Round I
 - Public Engagement Content and Responsibilities Matrix
 - Flyer
 - AM and PM Meeting Attendees
 - Workshop Summary
- Round II
 - Public Engagement Content and Responsibilities Matrix
 - Flyer
 - White Paper
 - Info Card
 - Magnet
 - Open House Attendees
 - Open House Comment Cards
 - Workshop Summary
- Round III
 - Public Engagement Content and Responsibilities Matrix
 - Flyer
 - Half-page Flyer
 - Workshop Summary

Port Authority Transit Oriented Development: Invited Stakeholders - South Hills Junction Station

Advocacy Organizations	Committee for Accessible Transportation (CAT)
	Disabilities Rights Network of Pennsylvania
	Bike PGH
	Green Building Alliance
	Pittsburghers For Public Transit
	Mobilify Southwestern Pennsylvania
Community Organizations	Hilltop Alliance
	Beltzhoover Consensus Group
	Mount Washington Community Development Corporation
	Voices Against Violence
	Allentown CDC
	Mt. Oliver City / St. Clair Community Group
Planning and Regional Agencies	Allegheny County Economic Development
	Pittsburgh Department of Mobility and Infrastructure
	Pittsburgh Department of City Planning
	Allegheny Conference on Community Development
	Office of the County Executive
	Southwestern Pennsylvania Commission
Public Officials	Office of the County Executive
	Mayor's Office of Community Affairs
	Allegheny County Council
	Pittsburgh City Council
	PA House of Representatives
	PA Senate
	Office of Mayor Bill Peduto

Listed are the identified stakeholders for the South Hills Junction General Planning Services meetings.

ROUND I

Engagement Event	Event/Due Date	Content	Responsibility
Public Workshop #1	10 May 2021	Study Area; SMART TRID; Site Context; Public and Stakeholder Input	All
Stakeholder Database	7 April 2021	Stakeholders by Function – Contact Information	Brean
Meeting Flyer	7 April 2021	Brief Description of Project; Meeting Details	GAI/Brean
Meeting Invitation to Elected Officials	9 April 2021	Invitation with Flyer	Port Authority
Meeting Invitation to Stakeholder Database	9 April 2021	Invitation with Flyer	Port Authority
Meeting Invitation to Port Authority Stakeholders	16 April 2021	Invitation with Flyer	Port Authority
Contact Community Groups to Follow up on Promotion	16 April 2021	Phone Follow-up to Check on Outreach; Offer Assistance	Brean
Contact South Pittsburgh Reporter	16 April 2021	Calendar Notice	Brean
Post Flyers at Station and Local Businesses	Week of 26 April 2021	Station Area; Businesses with Walk-in Trade	Brean
Create Facebook Event	Week of 26 April 2021	Meeting Invitation/Information	Port Authority
Meeting Reminder to Stakeholders	3 May 2021	Resend Invitation with Flyer	Port Authority
Track RSVPs	Week of 3 May 2021	Record Meeting Confirmations	Brean
Meeting Reminder to Stakeholders	7 May 2021	Phone Calls to Key Stakeholders	Brean
Workshop Annotated Agenda	7 May 2021	Agenda with Speaking Roles, Slide Cues, etc.	Brean
Targeted Outreach: Mt. Washington CDC	20 May 2021	Inform Community of Project; Gather Input; Encourage Attendance at Future Workshops	Port Authority
Targeted Outreach: Allentown CDC	9 June 2021	Inform Community of Project; Gather Input; Encourage Attendance at Future Workshops	Port Authority
Targeted Outreach: Black Forge Coffee	June 3rd	Inform Community of Project; Gather Input; Encourage Attendance at Future Workshops	Port Authority /Brean

South Hills Junction Station Area Planning - Public Engagement Content and Responsibilities: Workshop I - April 1, 2021

COMMUNITY ENGAGEMENT

South Hills Junction Transit-Oriented Development



We want your feedback on South Hills Junction!

Please join Port Authority of Allegheny County, neighbors, and transit riders for these **virtual public workshops** which will inform a station area plan for South Hills Junction.

The purpose of this project is to identify opportunities that are supported by Port Authority and the community for:

TOD feasibility - development scenarios that are possible and desired on the site
Station access - making it easier and safer for people to get to the station
Station design - making Port Authority facilities more comfortable and easy to use

The resulting plan will recommend improvements that the transit agency could undertake to improve the rider experience and ensure the highest and best use of its property.

We need your input. Please join us for either of these virtual workshops that work best for your schedule:

Monday, May 10, 2021

11:30 AM - 1:00 PM and 6:30 - 8:00 PM

Access the workshop on your computer or smartphone at
 (insert Teams info)

Or call in to listen at: (insert phone access)

RSVP to karen@breanassociates.com

PortAuthority

Fliers for Round 1 of the stakeholder meetings were posted on station bulletin boards, and Port Authority's website. Local community groups, property owners, and public leaders were also contacted with meeting information.

PROJECT MEETING MINUTES



Date:	May 13, 2021	Project No.:	A160615.10
Project Title:	South Hills Junction Station Area Plan		
Meeting:	Public Workshop #1 (AM and PM Sessions)		
Meeting Date:	May 10, 2021	Location:	via Zoom Meeting
Attendees:			
Company	Representative	Fax / Email	
Port Authority of Allegheny County	Adam Brandolph		
	Dan Debone		
	Moir Egler		
	Breen Masciotra		
	Sarah Rizk		
	Debra Skillings		
Community Solutions Group	James Yost		
evolveEA	Elijah Hughes		
GAI Consultants	Rich Krajcovic		
	Todd Wilson		
AM Session Attendees (Non-team)			
Hilltop Alliance	Aaron Sukenik		
Mount Washington Community Dev Corporation	Gordon Davidson		
Mayor's Office of Community Affairs	Gisele Betances		
Pittsburgh City Council	Brosha Tkacheva		
Resident	Dan Zunko		
Resident, Transit User	Alison Keating		
South Hills BikePGH Advocate	Seth Davis		
PM Session Attendees (Non-team)			
Southwestern Pennsylvania Commission	Dave Totten		
Oakland Transportation Management Association	Mavis Rainey		
Mobilify SW PA	Chris Sandvig		
Allentown Resident	Judy Hackel		
Mt Washington CDC (former Board member)	Mike Grande		
Chief of Staff, Councilman Corey O'Connor	Curt Conrad		
South Hills Resident, Commuter	Jules Hall		
Allegheny County Transit Council	Andrew Hussein		
First Energy	H. Carl Pierce		

South Hills Junction Station Area Planning - Public Engagement Meeting Minutes: Workshop I Summary (Full minutes can be requested)

COMMUNITY ENGAGEMENT

South Hills Junction Workshop Morning Session : Attendees (non-team)

Aaron Sukenik	Executive Director	Hilltop Alliance
Gordon Davidson	Executive Director	Mount Washington Community Development Corporation
Gisele Betances	Community Liaison	Mayor's Office of Community Affairs
Brosha Tkacheva	Chief of Staff, District 3	Pittsburgh City Council
Dan Zunko	Resident	
Alison Keating	Resident, Transit User	
Seth Davis	South Hills BikePGH Advocate	

South Hills Junction Workshop Afternoon Session : Attendees (non-team)

Dave Totten	Transit Planner	Southwestern Pennsylvania Commission
Mavis Rainey	Executive Director	Oakland Transportation Management Association
Chris Sandvig	Executive Director	Mobilify SW PA
Judy Hackel	Allentown Resident	
Mike Grande	Mt Washington Resident	Mt Washington CDC (former Board member)
Curt Conrad	MT Washington Resident	Chief of Staff, Councilman Corey O'Connor
Jules Hall	South Hills Resident, Commuter	
Andrew Hussein	Secretary	Allegheny County Transit Council
H. Carl Pierce	Engineer V	First Energy

Port Authority Staff (in addition to team)

Dan Debone	Senior Government Relations Officer	
Adam Brandolph	Public Relations Manager	
Debra Skillings	Community Outreach Manager	
Sarah Rizk	Intern	

South Hills Junction Station Area Planning - AM and PM Attendance: Workshop I - April 1, 2021

ROUND II

Engagement Event	Event/Due Date	Content	Responsibility
Public Workshop II	18 August 2021	Presentation of two conceptual plans	All Hands
Open House Warrington Rec Center	19 August 2021 4-6 PM	Presentation of two conceptual plans with opportunity for in-person feedback	All Hands
Stakeholder Database	14 July 2021	Updated/broadened stakeholder database	GAI/Brean
Meeting Flyer	14 July 2021 (Draft) 22 July 2021 (Final)	Brief Description of Project; Meeting Details	GAI/Brean
South Hills Junction Merchandise (magnets, tote bags, pens)	3 August 2021	Magnets for distribution prior to public meetings; tote bags and pens for distribution at Open House	Port Authority /GAI
Meeting Invitation to Elected Officials	26 July 2021	Invitation with Flyer	Port Authority
Meeting Invitation to Stakeholder Database	26 July 2021	Invitation with Flyer	Port Authority
Meeting Invitation to Port Authority Stakeholders	26 July 2021	Invitation with Flyer	Port Authority
South Pittsburgh Reporter	22 July 2021	Article	Port Authority
Post Flyers at Station and Local Businesses	Week of 2 August 2021	Station Area; Businesses with Walk-in Trade	Port Authority
Create Facebook Event	Week of 2 August 2021	Meeting Invitation/Information	Port Authority
Contact Community Groups to Follow up on Promotion	Week of 2 August 2021	Phone Follow-up to check on outreach; offer assistance (Karen: Hilltop, Moira: Allentown, BCG, MWCDG)	Port Authority /Brean
Targeted Outreach: Side Yard/Side Hustle	7 August 2021 1:00-4:00 PM	Hand out flyers; garner interest for workshop	Port Authority /Brean
Meeting Reminder to Stakeholders	9 August 2021	Resend Invitation with Flyer	Port Authority
Track RSVPs	Week of 9 August 2021	Record Meeting Confirmations	Port Authority
Targeted Outreach: South Hills Junction	10 August 2021 3:00 – 6:00 PM	Information booth/staffed by Port Authority and team	Port Authority : Moira & Breen, GAI: Rich, Evolve: Elijah
Meeting Reminder to Stakeholders	13 August 2021	Phone Calls to Key Stakeholders	Brean
Workshop Annotated Agenda	13 August 2021	Agenda with speaking roles, slide cues, etc.	Brean
Targeted Outreach: Fresh Fridays	13 August 2021	Hand out flyers; garner interest for workshop	Port Authority /Brean
Literature Drops: Fresh Fridays (13 August 2021), Black Forge Coffee, Hilltop Coffee, Allentown Senior Center, Warrington Rec Center, Dark Root Barber Shop, Warrington Deli, Breakfast at Shelly's, McKinley Community Center, Knoxville Carnegie Library	Begin Week of 3 August 2021	Provide flyers	Brean
Open social pinpoint	17/18 August 2021	Show two concept plans with feedback mechanism	Port Authority
Close social pinpoint	10 September 2021	Show two concept plans with feedback mechanism	Port Authority

South Hills Junction Station Area Planning - Public Engagement Content and Responsibilities: Workshop II - July 8, 2021

COMMUNITY ENGAGEMENT



Transit-Oriented Development

South Hills Junction

We're planning for the future of South Hills Junction!

Please join Port Authority of Allegheny County, neighbors, and transit riders for these **virtual public workshops and an in-person open house** to give us your input on proposed station area plans for South Hills Junction.

Virtual Public Workshops - Wednesday, August 18, 2021
11:30 AM to 1:00 PM or 6:30 to 8:00 PM
 (Join the time that best fits your schedule)
 Access the workshop on your computer or smartphone
 Register in advance by visiting PortAuthority.org/SouthHillsJunction or call 412.566.5312

In-person Open House - Thursday, August 19, 2021
4:00 to 6:00 PM
 Warrington Recreation Center
 329 E. Warrington Avenue
 Pittsburgh, PA 15211
 (No RSVP required)

The purpose of this project is to identify opportunities that are supported by Port Authority and the community for:

- TOD feasibility** - development scenarios that are possible and desired on the site
- Station access** - making it easier and safer for people to get to the station
- Station design** - making Port Authority facilities more comfortable and easy to use

The resulting plan will recommend improvements that we could undertake to enhance the rider experience and ensure the maximum utilization of our property.

For more information about the South Hills Junction planning process, go to <https://pghtransit.mysocialpinpoint.com/shj>

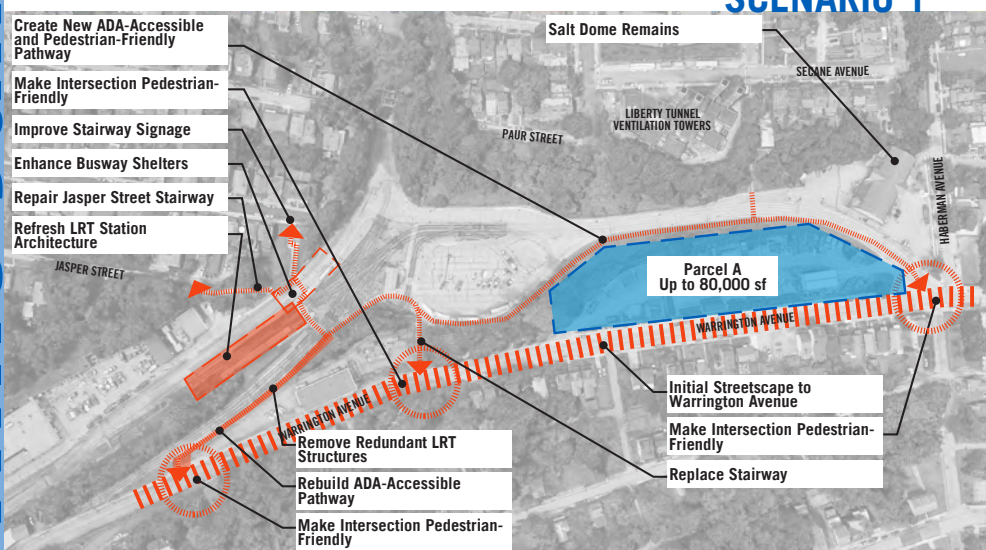
Fliers for Round II of the stakeholder meetings were posted on station bulletin boards, and Port Authority's website. Local community groups, property owners, and public leaders were also contacted with meeting information.

Project Summary

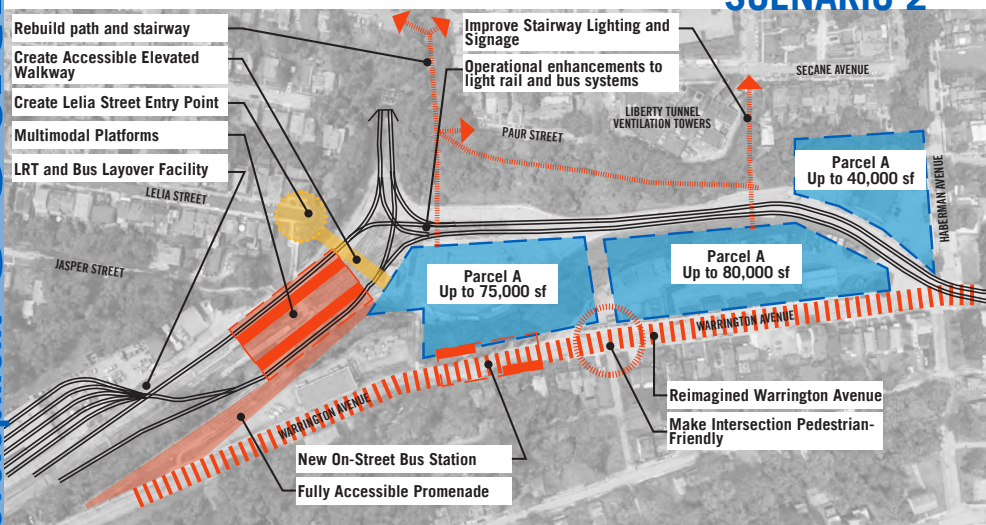
Two scenarios will be presented at the virtual public meeting and will be posted on the project web page:

- **Scenario 1 Opportunities** – Improvements to key access points, initial streetscape enhancements, transit-oriented development at the existing rail tie lay-down area, and cosmetic upgrades to existing light rail platforms and bus stops.
- **Scenario 2 Opportunities** – Includes opportunities from Scenario 1 with additional transit-oriented development sites, operational enhancements, public space expansion, and neighborhood connectivity.

SCENARIO 1



SCENARIO 2



Whitepaper for Round II of the stakeholder meetings were posted on station bulletin boards, and Port Authority's website. Local community groups, property owners, and public leaders were also contacted with meeting information.

COMMUNITY ENGAGEMENT

We're planning for the future of South Hills Junction!

Please join Port Authority of Allegheny County, neighbors, and transit riders for these **virtual public workshops and in-person open house** to give us your input on proposed station area improvements for South Hills Junction.

Virtual Public Workshops - Wednesday, August 18, 2021
11:30 AM to 1:00 PM or 6:30 to 8:00 PM
 (Join the time that best fits your schedule)
 Access the workshop on your computer or smartphone
 Register in advance by visiting PortAuthority.org/SouthHillsJunction or call 412.566.5312

In-Person Open House - Thursday, August 19, 2021
4:00 to 6:00 PM
 Warrington Recreation Center
 329 E. Warrington Avenue
 Pittsburgh, PA 15211
 (No RSVP required)

The purpose of this project is to identify opportunities that are support by Port Authority and the community for:

- TOD Feasibility** - development scenarios that are possible and desired on the site
- Station Access** - making it easier and safer for people to get to the station
- Station Design** - making Port Authority facilities more comfortable and easy to use

Your input will help us determine improvements that could enhance the rider experience and establish South Hills Junction as an upgraded community asset. For more information about the South Hills Junction planning process, go to:

<https://pghttransit.mysocialpinpoint.com/shj>

Port Authority

Information Cards for Round II of the stakeholder meetings were shared with the public.

South Hills Junction

TRANSIT-ORIENTED DEVELOPMENT

Please join Port Authority of Allegheny County, neighbors, and transit riders for these **virtual public workshops and an in-person open house**

<p>Virtual Public Workshops Wednesday, August 18, 2021 11:30 AM to 1:00 PM or 6:30 to 8:00 PM (Join the time that best fits your schedule) Register in advance by visiting PortAuthority.org/SouthHillsJunction or call 412.566.5312</p>	<p>In-person Open House Thursday, August 19, 2021 4:00 to 6:00 PM Warrington Recreation Center 129 E. Warrington Avenue Pittsburgh, PA 15221 (No RSVP required)</p>
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Also mark your calendars for the draft plan presentation on Tuesday, November 16th
 To stay informed about South Hills Junction planning process, visit
<https://pghttransit.mysocialpinpoint.com/shj>

Port Authority

Magnet reminders where handed out for Round II of the stakeholder meetings were posted on station bulletin boards, and Port Authority's website. Local community groups, property owners, and public leaders were also contacted with meeting information.

Port Authority of Allegheny County
South Hills Junction Station Area Planning
Open House
August 19, 2021

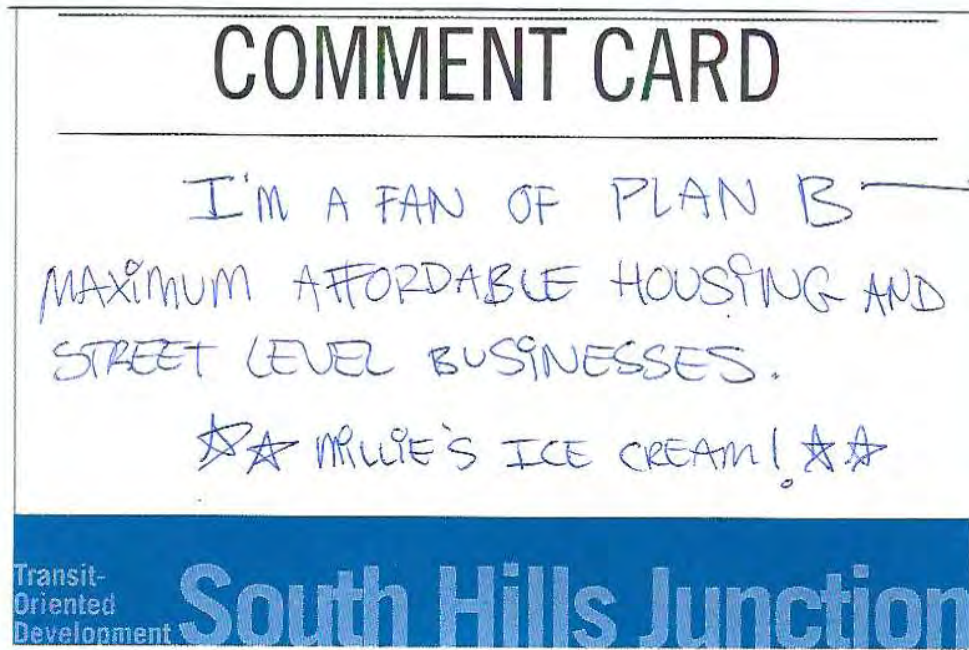
Name
NORMAN VOLLE
DAN MALONEY
HOWARD STEVENS, JR.
MAHMOUD BOY
RACHEL SIMMONS
Jessica Morrisson
Michael Grande
Cara Jette
Gamere Boy
Meg Obrien
James Pocar

Name
Zuma Tyler
Patti Stewart
ANDREW HUSSEIN
John Ray
Kathryn Vargas
Samuel J. Hurst
Adam Jette
Josh Calabrese
A. Wever
Curt Conrad
Sebastian Bels

Name
Jessica Morrisson
RALPH WILLIAMS
Janice Scott

Open house attendees held outside of the Warrington Recreation Center on August 19, 2021.

COMMUNITY ENGAGEMENT



Comment card collected during the Open house attendees held outside of the Warrington Recreation Center on August 19, 2021.

PROJECT MEETING MINUTES



Date:	September 3, 2021	Project No.:	A160615.10
Project Title:	South Hills Junction Station Area Plan		
Meeting:	Public Workshop #2 (AM and PM Sessions)		
Meeting Date:	August 18, 2021	Location:	via Zoom Meeting
Attendees:			
Company	Representative	Fax / Email	
Port Authority of Allegheny County	Moira Egler		
	Breen Masciotra		
Community Solutions Group	James Yost		
evolveEA	Elijah Hughes		
GAI Consultants	Rich Krajcovic		
	Todd Wilson		
AM Session Attendees (Non-team)			
Hilltop Alliance	Aaron Sukenik		
Resident, Transit User	Alison Keating		
PM Session Attendees (Non-team)			
Southwestern Pennsylvania Commission	Dave Totten		
Mobilify SW PA	Chris Sandvig		
Chief of Staff, Councilman Corey O'Connor	Curt Conrad		
Allegheny County Transit Council	Andrew Hussein		

Purpose: ✓ Present and explain findings of the market assessment.
 ✓ Present concept development Scenarios A and B.

Discussions:

- 1) AM and PM Presentations (Primary Presenters: Moira, David, Owen, Elijah, James, and Rich)
 - a) See attached for copies of the presentation, annotated agenda, and chat transcripts.
 - b) Below gives a summary of the question and answer and chat discussions.
- 2) Mid-point Questions and Answers (Moira Facilitated)
 - a) AM Session:
 - i) Chris asked if the market could support 300 units of housing, and whether those would include market rate units or if the determination was made based upon population alone.
 - (1) Owen explained that the market study showed a combination of both market rate and affordable housing could be supported, but the ratio may depend on what developers might consider to be appropriate for this site. In his experience, rarely does a site like this show a need for less than 200 units. The market study considered items like population, and housing age and stock.
 - ii) Norm said he appreciated that the analysis considered other neighborhoods, but he thought there was a major problem at this specific location related to safety and perceived safety. He said many

South Hills Junction Station Area Planning - Public Engagement Meeting Minutes: Workshop II Summary (Full minutes can be requested)

COMMUNITY ENGAGEMENT

ROUND III

Engagement Event	Event/Due Date	Content	Responsibility
Public Workshop III	16 November 2021 11:00 am – 12:30 pm 6:00 – 7:30 pm	Presentation of final concept plan	All Hands
Stakeholder Database	19 October 2021	Review database from 30 August 2021 for any additions/ edits	Brean
Save-the-date to Database	19 October 2021		
Meeting Flyer	20 October 2021 (Draft) 25 October 2021 (Final)	Brief Description of Project; Meeting Details	GAI/Brean
Meeting Invitation to Elected Officials	25 October 2021	Invitation with Flyer	Port Authority
Meeting Invitation to Stakeholder Database as follow-up to save-the-date	25 October 2021	Invitation with Flyer	Port Authority
South Pittsburgh Reporter	28 October 2021	Press Release	Port Authority
Post Flyers at Station and Local Businesses	Week of 1 November 2021	Station Area; Businesses with Walk-in Trade	Port Authority /Brean
Create Facebook Event	Week of 1 November 2021	Meeting Invitation/Information	Port Authority
Literature Drops:	Begin Week of 1 November 2021	Provide flyers	Brean
Meeting Reminder to Stakeholders	Week of 8 November 2021	Resend Invitation with Flyer	Port Authority
Track RSVPs	Week of 8 November 2021	Record Meeting Confirmations	Port Authority
Workshop Annotated Agenda	10 November 2021	Agenda with speaking roles, slide cues, etc.	Brean
Open social pinpoint	15/16 October 2021	Show final concept plan with feedback mechanism	Port Authority
Close social pinpoint	30 November 2021	Show final concept plans with feedback mechanism	Port Authority

South Hills Junction Station Area Planning - Public Engagement Content and Responsibilities: Workshop III - October 17, 2021



South Hills Junction

Transit-Oriented Development

Port Authority

We're planning for the future of South Hills Junction!

Please join us for our final public meetings to review the conceptual design for the South Hills Junction Station Area Plan!

Port Authority of Allegheny County has been exploring the redesign of the station area to improve station access and design and opportunities for transit-oriented development. With guidance from the Authority, local leaders, and members of the community a final conceptual plan for the station facilities has been developed.

We invite you to join us at our virtual public meetings to learn about the completed conceptual plan working towards a more accessible and user friendly station.

Virtual Public Workshops - Tuesday, November 16, 2021

11:00 AM to 12:30 PM or 6:00 to 7:30 PM

(Join the time that best fits your schedule)

Access the workshop on your computer or smartphone
Register in advance by visiting PortAuthority.org/SouthHillsJunction
or call 412.566.5312

Please visit the project web page by using our project QR code (<https://pghtransit.mysocialpinpoint.com/shj>) to view the project overview and location, explore illustrations of the proposed scenarios, and share your comments.



Fliers for Round 3 of the stakeholder meetings were posted on station bulletin boards, and Port Authority's website. Local community groups, property owners, and public leaders were also contacted with meeting information.

COMMUNITY ENGAGEMENT



South Hills Junction
Transit-Oriented Development

We're planning for the future of South Hills Junction!

Please join us for our final public meetings to review the conceptual design for the South Hills Junction Station Area Plan!

Port Authority of Allegheny County has been exploring the redesign of the station area to improve station access and design, and opportunities for transit-oriented development. With guidance from the Authority, local leaders, and members of the community a final conceptual plan for the station has been developed.

We invite you to join us at one of our virtual public meetings to learn about the completed conceptual plan working towards a more accessible and user-friendly station.

Virtual Public Workshops - Tuesday, November 16, 2021
11:00 AM to 12:30 PM or 6:00 to 7:30 PM
 (Join the time that best fits your schedule)

Access the workshop on your computer or smartphone.
 Register in advance by visiting PortAuthority.org/SouthHillsJunction
 or call 412.566.5312

View the project overview and location, explore illustrations of the proposed scenarios, and share your comments by visiting our online engagement platform. Simply scan this QR code on your smartphone or go to pghtransit.mysocialpinpoint.com/shj.



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Information Cards for Round III of the stakeholder meetings were shared to the public with an active QR Code for a direct link to the project website.

PROJECT MEETING MINUTES



Date:	December 9, 2021	Project No.:	A160615.10
Project Title:	South Hills Junction Station Area Plan		
Meeting:	Public Workshop #3 (Session 1: 11:00 a.m. to 12:30 p.m.; Session 2: 6:00 p.m. to 7:30 p.m.)		
Meeting Date:	November 16, 2021	Location:	via Zoom Meeting
Attendees:			
Company	Representative	Fax / Email	
Port Authority of Allegheny County	Adam Brandolph		
	Moira Egler		
	David Huffaker		
	Sarah Kastelic		
	Amy Silbermann		
	Russell Singer		
Community Solutions Group	Owen Beitsch		
	James Yost		
evolveEA	Elijah Hughes		
	Christine Mondor		
GAI Consultants	Rich Krajcovic		
	Todd Wilson		
Session 1 Attendees (Non-team)			
Pittsburgh Post-Gazette	Ed Blazina		
Interpreters	Elle Brokenshire, Heather Gray		
DOMI	Panini Chowdhury		
Chief of Staff, Councilman Corey O'Connor	Curt Conrad		
Casa San Jose	Laura Perkins		
WSP	Breen Masciotra		
City of Pittsburgh	Thomas Scharff		
Hilltop Alliance	Aaron Sukenik		
SPC	Dave Totten		
Others: Mahdi Bey, Heather Bruder, Julie Collins, Brian Crawford, Phyllis Davidson, Alyson Grimm, Brian Grystar, Jordyn Hronec, Tao Neuendorffer, Chris Rosselot, Brooke Shetler, Howard Stevens, Trent Sustich			
Session 2 Attendees (Non-team)			
Interpreters	Marcus, Jim Mycyk		
Others: Jeffrey Devlin, Gabrielle Dreikorn, Trent Edwards, Lukus Freeman, Judy Hackel, Steven Martinez, Therese Moss, Tim Parenti, Eric Reschke, Janet Salinshick, Gale Schwartz, Brandon Shaw, Nicole Stephens			
Purpose:	✓ Present summary of previous public workshops. ✓ Discuss project timeline and next steps. ✓ Present Station Area Master Plan.		

South Hills Junction Station Area Planning - Public Engagement Meeting Minutes: Workshop III Summary (Full minutes can be requested)

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