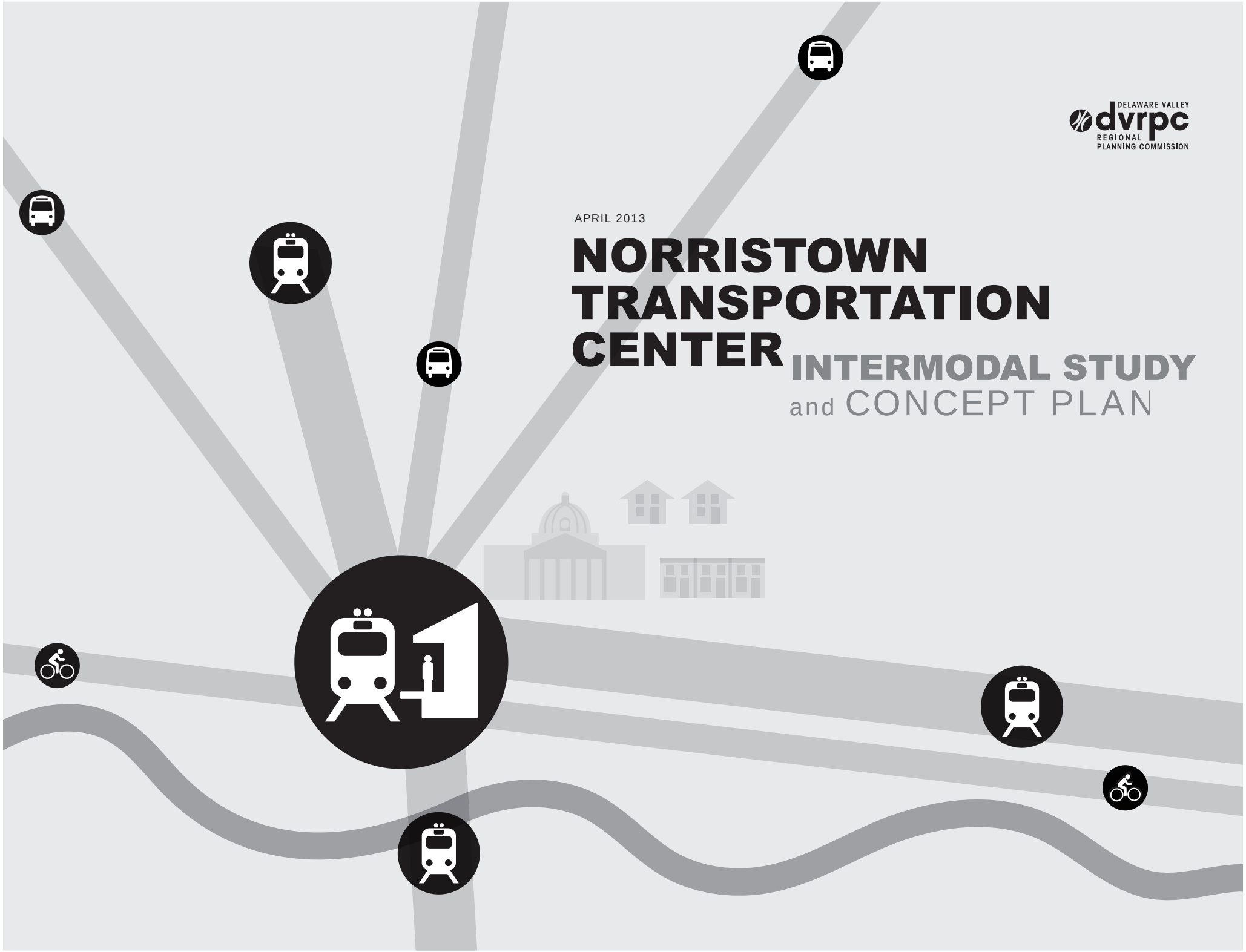
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

APRIL 2013

NORRISTOWN TRANSPORTATION CENTER

INTERMODAL STUDY and CONCEPT PLAN



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The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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Executive Summary

DVRPC was asked by SEPTA and Montgomery County to study the transit services accessible from Norristown Transportation Center and the ways in which passengers access and move between these services. Following this analysis, the DVRPC study team was tasked with developing a conceptual station master plan that reflects a short-and long-term strategic improvement plan.

Based on field observations, analysis, and conversations with project stakeholders, the DVRPC study team identified a set of needs for Norristown Transportation Center, including:

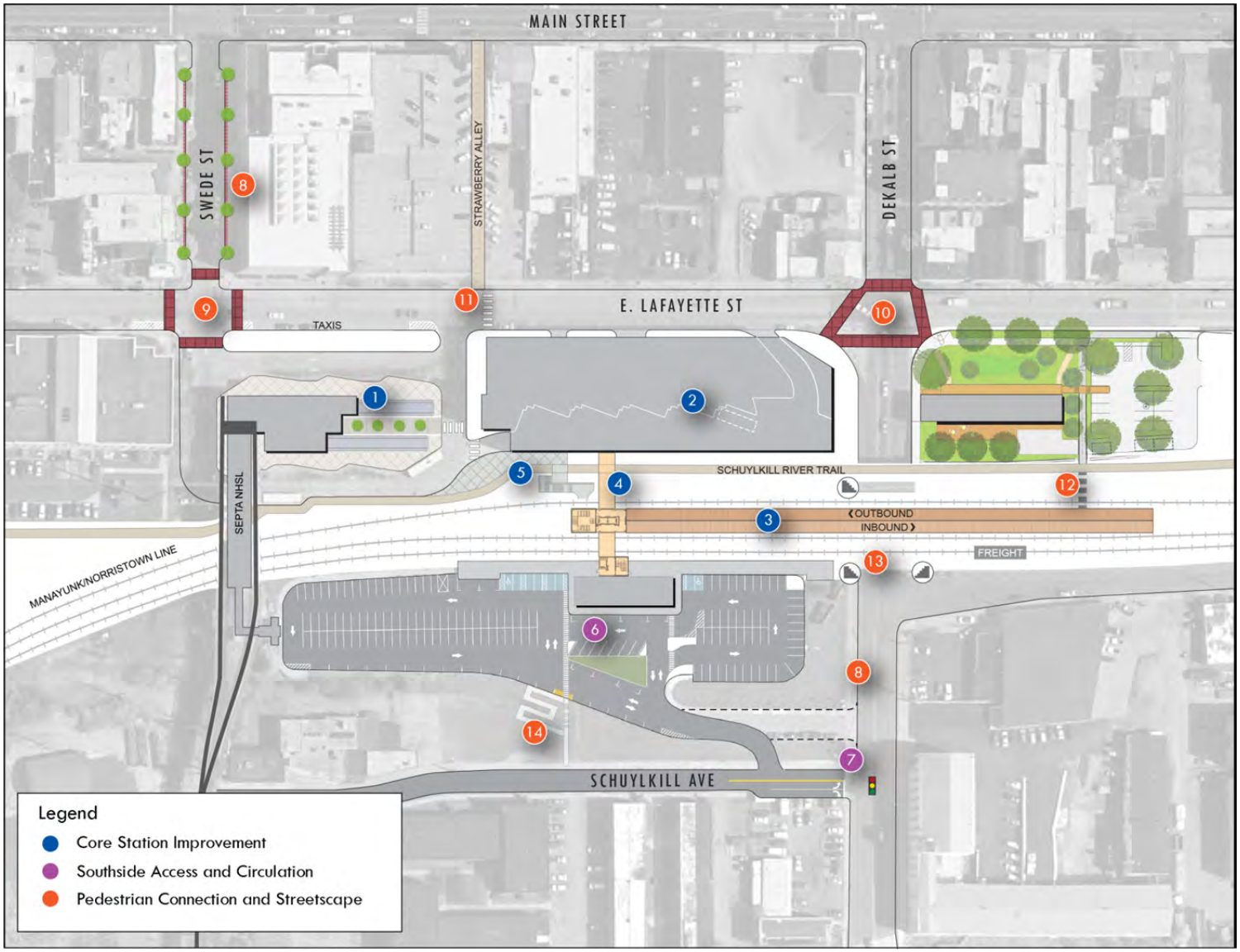
1. Improve connectivity with the surrounding community.
2. Address bus bay capacity and bottlenecks in the SEPTA bus loop.
3. Rationalize automobile pick-up and drop-off locations, including new wayfinding and directional signage.
4. Reduce trail conflicts.
5. Develop a more welcoming station environment, addressing such elements as security, seating, lighting, and weather protection.

To identify design and programmatic solutions for these needs, DVRPC hosted a design workshop for project stakeholders, and also held a series of meetings with partners to address specific design issues. Drawing on the collective expertise of the advisory committee, the DVRPC study team developed a conceptual improvement plan, including a recommended early action plan.

The concept plan diagram and table of recommendations that follow summarize the outcomes of this work, and also serve as an index to help readers find more detail on plan elements that might be of particular interest to them. The estimated construction costs for plan elements on SEPTA's property would total approximately $21.6 million, and there are additional "off-site" elements in the concept plan where costs are less precisely defined.

The program of improvements for Norristown Transportation Center (NTC) developed through this study represents an ambitious plan—one that has the potential to realize benefits to both NTC and to Norristown at-large. The recommendations herein represent improvements to circulation that encourage increased transit ridership, development potential of the area surrounding NTC, improved quality of life and perception of safety, and economic viability. Taken in its entirety, the concept plan would represent a significant level of investment; however, it is also modular, such that individual elements of the plan can be pursued strategically as funding becomes available.

NORRISTOWN TRANSPORTATION CENTER CONCEPT PLAN



SOURCE: DVRPC 2012

SUMMARY OF NTC CONCEPT PLAN WITH IMPLEMENTATION ELEMENTS

	#	Element Name	Priority	Cost Range	Timeframe	Responsible Party	Page Number
Core Elements	1	Enhance station area plaza	High	$$	Short	SEPTA	65
	2	Bieber Tourways and SEPTA bus bay capacity	High	$	Short	SEPTA/Bieber Tourways	67
	3	Regional Rail track and platform reconfiguration	High	$$$	Long	SEPTA	67
	4	Construct pedestrian skybridge	Medium	$$$	Long	SEPTA	68
	5	Trail markings & signage	High	$	Short	Norristown/ SEPTA/Montgomery County	70
Southside	6	Drop-off/pick-up loop access reconfiguration	Medium	$	Short	SEPTA	72
	7	Southside parking lot access rearrangement	High	$$	Short	SEPTA/ PennDOT/ Montgomery County	72
Pedestrian Connection & Streetscape	8	Streetscape improvements and maintenance along Swede and DeKalb streets	Medium	$$	Short	Norristown/ Arts Hill	74
	9	Crossing improvements at Swede St. and Lafayette	High	$	Short	Montgomery County/Norristown	75
	10	Crossing improvements at DeKalb St. and Lafayette	High	$	Short	Montgomery County/Norristown	75
	11	Continue improvements to Strawberry Alley and add pedestrian connection between NTC and Strawberry Alley	High	$$	Short	Norristown/Montgomery County	76
	12	New connection from platform to trail and to freight building future development	Low	$$	Long	SEPTA/ Montgomery County	77
	13	Enhance and sustain existing pedestrian platform access at DeKalb Street	High	$	Long	SEPTA/ Arts Hill	77
	14	Pedestrian access & ramps from Schuylkill Ave to NTC surface parking lots	High	$$	Short	SEPTA	77

SOURCE: DVRPC 2012

CHAPTER 1

Introduction

Purpose

This project developed following a request by Montgomery County and SEPTA to reexamine the operations and layout of the Norristown Transportation Center (NTC). The project has two broad components:

1. An analysis of operation elements to determine how best to accommodate all modes and identify operational challenges.

2. Development of a conceptual program of improvements to enhance operations and maximize the economic development benefits of NTC and its myriad transit connections to the greater Norristown area.

FIGURE 1: HISTORIC READING RAILROAD DEKALB STREET STATION

SOURCE: HTTP://WWW.WEST2K.COM/PASTATIONS/MONTGOMERYPA.SHTML, 2011

History

Norristown was formerly served by the Reading Railroad, chartered in 1833 to build a line between Philadelphia and Reading along the Schuylkill River. The railroad opened the link from Reading to Norristown in 1838, and the entire line opened at the end of 1839. Reading Railroad operations increased commerce in Norristown, thereby spurring residential population growth.

In 1846, Pennsylvania granted a charter to connect Philadelphia and Pittsburgh, founding the Pennsylvania Railroad (PRR). From 1860 to 1890, PRR extended service throughout the eastern United States. PRR was a competitor of the Reading Railroad, and some station locations are less than a mile apart. These two lines operated parallel to one another along the Schuylkill River through Norristown, including the present location of the Norristown Transportation Center.

After WWII the railroad industry experienced a massive traffic decline, and both the Reading and Pennsylvania railroads were hit especially hard during this downturn. In 1968, the Pennsylvania and New York Central railroads merged, forming Penn Central. Penn

Central declared bankruptcy in 1970, which in turn, due to unpaid debt to the Reading Company, also caused that firm's bankruptcy in 1971. The companies either sold or transferred their railroad interests to the newly formed Consolidated Railroad Corporation (Conrail).

Passenger service to Bethlehem and Pottsville was discontinued in 1981. Conrail operated commuter services under contract to SEPTA until 1983, when SEPTA took over operations and acquired track, rolling stock, and other assets to form the Railroad Division. Figure 1 is a photo of the Reading Railroad Station at DeKalb Street, now served by SEPTA's Manayunk/Norristown Line as part of NTC. As of 1999, most former Reading lines are now part of the Norfolk Southern Railway (NS), as a result of the Conrail split between NS and CSX Transportation.

In 1912, the Philadelphia and Western Railroad (P&W) began service from 69th Street to Norristown, now known as the Norristown High Speed Line (NHSL). The Philadelphia Suburban Transportation Company (PSTC) acquired the P&W Railroad in 1952. PSTC was nicknamed the Red Arrow Lines and merged with SEPTA in the 1970s.

The Norristown Transportation Center (NTC) opened in 1989 and replaced the former NHSL terminus, which was located one block north of NTC at Main and Swede streets. In addition to rail service, NTC serves as a major center for SEPTA's suburban bus services, particularly the Frontier Division routes operating in Montgomery County.

Location and Context

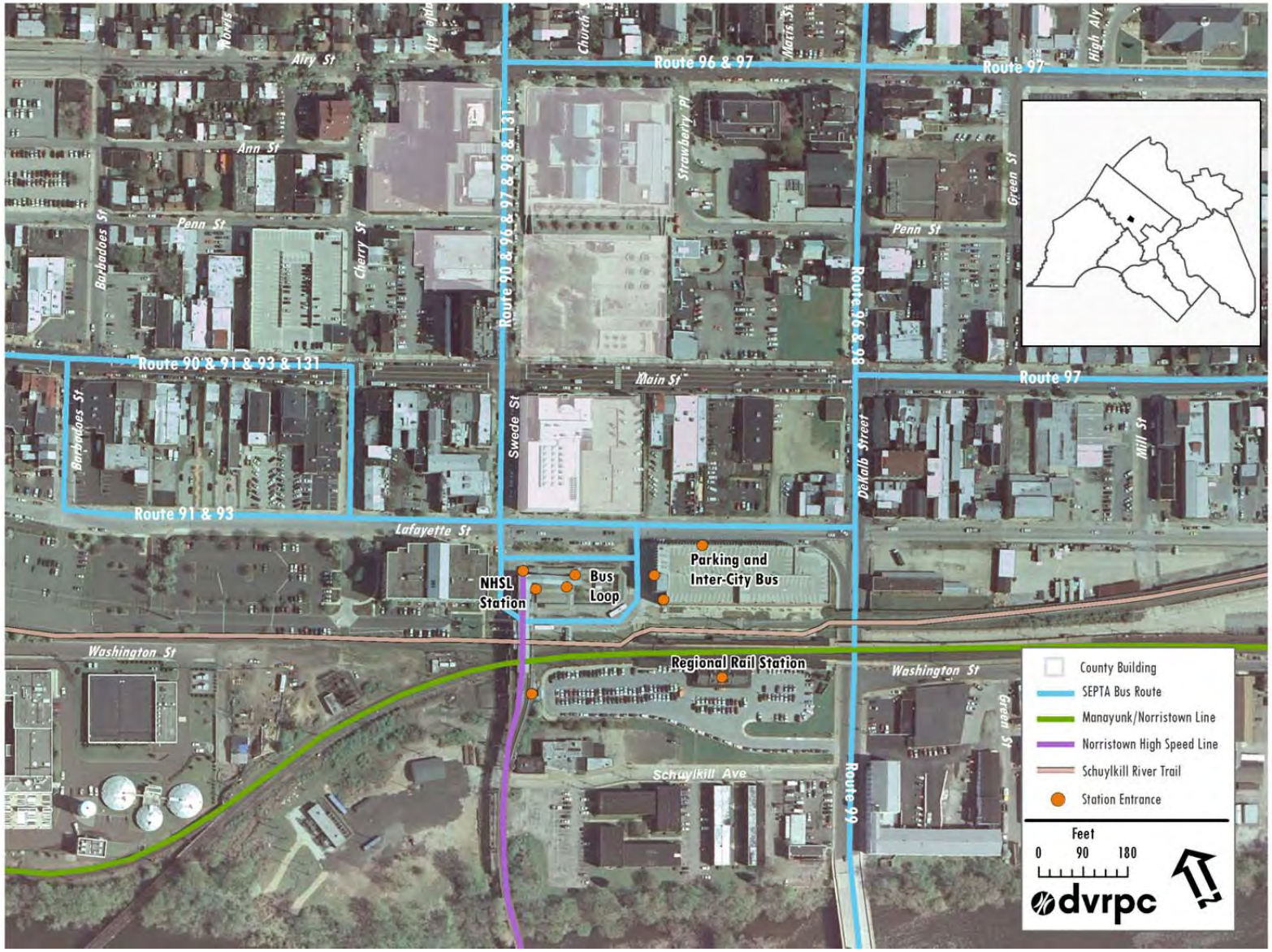
NTC is a multimodal facility that includes access between Regional Rail, NHSL, SEPTA bus, intercity bus, corporate bus, pedestrians, and bicyclists. The station is adjacent to downtown Norristown and is served by an extensive pedestrian network. Main Street, Norristown's central commercial corridor, is located one block north. The station is also served by a large surface parking lot and a recently constructed multilevel parking garage. These parking facilities offer roughly 700 combined parking spaces. There are also private parking options available in the vicinity of the station. SEPTA bus services at NTC are coordinated for easy transfer between routes. The frequency of NHSL, Manayunk/Norristown Line, and bus services allow for efficient transfers between all modes operated by SEPTA at NTC. Bicyclists may connect to the station via local roads or the Schuylkill River Trail, which bisects the station. Figure 2 presents an overview of the facility.

FIGURE 2: NTC VIEWED FROM SEPTA GARAGE ROOF

SOURCE: DVRPC 2011

The transportation center is at the edge of Norristown. Despite its proximity to Main Street, there is a lack of integration between the transportation center and the town center, partly due to the expansive surface parking lots fronting Lafayette Street and a lack of pedestrian-scale uses in the immediate vicinity of NTC. In addition to the “downtown” attractions close to NTC, Norristown Borough and Montgomery County government services are also nearby on Swede Street. The Montgomery County Courthouse, Montgomery County Planning Commission (MCPC), Pennsylvania Department of Environmental Protection, other county services, and the Norristown Municipal Building are located within a reasonable walking distance of NTC. Figure 3 summarizes the station’s transportation and development context.

FIGURE 3: NORRISTOWN TRANSPORTATION CENTER TRANSIT AND ROADWAY CONTEXT MAP



SOURCE: DVRPC 2011, SEPTA 2011

CHAPTER 2

Summary of Transit Services at Norristown Transportation Center

Norristown Transportation Center (NTC) is served by numerous public and private transit services. These include:

- SEPTA's Norristown High Speed Line (NHSL).
- SEPTA's Manayunk/Norristown Regional Rail Line.
- SEPTA Bus Routes – 90, 91, 93, 96, 97, 98, 99, and 131.
- Private bus services:
  - Corporate bus shuttles;
  - Bieber Tourways intercity service;
  - Greyhound Lines intercity service; and
  - Martz Trailways intercity service.

This chapter details the destinations accessible by transit from NTC, as well as the levels of service provided.

FIGURE 4: NHSL TRAIN AT NTC

SOURCE: DVRPC 2011

Norristown High Speed Line (NHSL)

The NHSL, formerly Route 100, is a high-speed third-rail service (Figure 4) that operates between the 69th Street Transportation Center in Upper Darby and NTC. There are 22 stations, including the two termini. Connections are available at 69th Street Transportation Center to numerous SEPTA bus and trolley routes, as well as the Market-Frankford Line. NHSL provides frequent, seven-day-a-week service. Between Bridgeport and NTC, the two northernmost stations, there is a single track constraint. End-to-end travel times are scheduled between 23 and 36 minutes, depending on route variation and time of day. DVRPC's regional long-range plan, *Connections 2035*, identifies an NHSL route spur to be constructed between Hughes Park Station and King of Prussia as a high-priority project.

Weekdays:

- Service is offered between just before 5am to 2am the following day, with headways ranging from one hour after midnight to around 20 minutes throughout the day. During peak periods, selected trips operate two-car trains to handle heavy ridership, while other trips use only one car. Single-car trains provide off-peak service. The price varies by zone.
- Offers five service patterns, though not all serve NTC:
  - Local: serves all stops.
  - Bryn Mawr Local: local between 69th Street Transportation Center and Bryn Mawr.
  - Hughes Park Express: express service between 69th Street Transportation Center and Hughes Park, skipping three stops.
  - Norristown Express: between 69th Street Transportation Center and NTC, skipping five stops.
  - Norristown Limited: between 69th Street Transportation Center and NTC, skipping 14 stops.
- Sixty-three round trips serve NTC on weekdays, for an average service day headway of 20 minutes.

Weekends:

- Service is offered between 4:30am and 2am on Saturdays and Sundays.
- With very few exceptions, all weekend service is local.
- Twenty-minute headways on Saturdays.
- Thirty-minute headways on Sundays
- Fifty-three round trips serve NTC on Saturdays. On Sundays there are 40 westbound arrivals to NTC and 41 eastbound departures.

Manayunk/Norristown Regional Rail Line

The Manayunk/Norristown Line is one of 13 lines in SEPTA's Regional Rail system. There are 10 stations unique to the Manayunk/Norristown Line. Two stations, Elm Street and Main Street, are further west than NTC. Travel times end to end are approximately 40 minutes between NTC and Suburban Station in Philadelphia. These same tracks are also used for freight transportation. Freight traffic averages 12 to 14 trains per 24-hour weekday period, while traffic on the weekends is less frequent, with only nine to 11 trains per 24-hour period. Due to this additional traffic on the tracks, Regional Rail frequencies are constrained to their current headways.

Weekdays:

- Service hours span from 6am to 12:20am, with roughly 30-minute headways in the peak, and off-peak frequencies widening to about 60 minutes.
- Several peak-period express trains skip four to five stations between Norristown and Philadelphia.
- Twenty-three eastbound and 22 westbound trips serve NTC daily.
- One additional late-night trip is scheduled on Friday evenings.

Weekend:

- One-hour headways between 7am and 2:30am on Saturdays.
- One-hour headways between 7am and midnight on Sundays.
- Nineteen round trips on Saturdays.
- Seventeen round trips on Sundays.

FIGURE 5: INBOUND REGIONAL RAIL TRAIN

SOURCE: DVRPC 2011

SEPTA Bus Service

SEPTA bus service at NTC serves a variety of Montgomery County origins and destinations. Weekday and weekend service is typically available at 30-minute or hourly headways for the entire service day. SEPTA bus service at NTC operates on a “pulse,” or timed-transfer schedule, where most routes arrive and depart from NTC during the same brief time window, permitting easy transfers and minimizing end-to-end travel times for multiroute journeys.

ROUTE 90:

Route 90 provides service between NTC and the Plymouth Meeting Mall six days a week. The route operates primarily along US 202 and Germantown Pike. End-to-end travel times are scheduled for approximately 40 minutes.

Weekdays:

- Forty-five minute to one-hour frequencies between 6am and 11pm.
- Sixteen eastbound and 17 westbound trips daily.
- All service is local.

Weekends:

- One-hour frequency between 6am and 11pm.
- Fifteen eastbound and 16 westbound trips daily.
- Sunday service is not offered.

FIGURE 6: SEPTA BUS EXITING BUS LOOP

SOURCE: DVRPC 2011

ROUTE 91:

Route 91 provides limited, Saturday-only service between NTC and the State Correctional Institution—Graterford. End-to-end travel times are scheduled for approximately 30 minutes.

Saturdays:

- Two AM westbound departures from NTC, and three eastbound arrivals to NTC.

ROUTE 93:

Route 93 provides service between NTC and Pottstown seven days a week. The route operates primarily along the Ridge Pike/Main Street corridor. End-to-end travel times are scheduled for approximately one hour and fifteen minutes.

Weekdays:

- Thirty-minute peak and one-hour off-peak frequencies.
- Twenty-one westbound and 29 eastbound trips daily.
- All service is local, though several trips skip route deviations when the destinations are closed.

Weekends:

- One-hour frequency between 5am and 11pm on Saturdays.
- One-hour frequency between 6am and 10pm on Sundays.
- Nineteen westbound and 17 eastbound trips on Saturdays.
- Fourteen round trips on Sundays.

ROUTE 96:

Route 96 provides service seven days a week between NTC and Lansdale. All service is local, though several trips skip selected locations to speed the ride for long-distance passengers. The route also serves the Montgomery Mall in Montgomeryville. The route operates primarily along the US 202 corridor. End-to-end travel times are scheduled for approximately one hour. The route connects with the Lansdale/Doylestown Regional Rail line at North Wales and Lansdale stations.

Weekdays:

- Thirty-minute frequency between 5am and 1am.
- Thirty-three northbound and 34 southbound trips daily.
- All service is local.

Weekends:

- One-hour frequency between 6am and midnight on Saturdays.
- One-hour frequency between 6am and 10:30pm on Sundays.
- Eighteen northbound and 19 southbound trips on Saturdays.
- Sixteen round trips on Sundays.

ROUTE 97:

Route 97 provides service seven-days a week between NTC and Chestnut Hill, via Conshohocken. The route operates primarily along the Ridge Pike and Germantown Pike corridors. End-to-end travel times are scheduled for approximately 45 minutes. The route connects with the Manayunk/Norristown Regional Rail line at Conshohocken Station, and the Chestnut Hill West Regional Rail line at Chestnut Hill West Station. Transfers to SEPTA bus routes 23, 77, 94, 134, and L are also available at the Chestnut Hill Loop, Germantown Avenue, and Bethlehem Pike.

Weekdays:

- One-hour frequency between 6am and 12:30am.

- Eighteen eastbound and 20 westbound trips daily.
- All service is local.

Weekends:

- One-hour frequency between 6am and 12:30am on Saturdays.
- One-hour frequency between 7am and 9pm on Sundays.
- Nineteen eastbound and 18 westbound trips on Saturdays, though after 7:30pm, service is only offered between NTC and Conshohocken.
- Fourteen eastbound and 13 westbound trips on Sundays.

ROUTE 98:

Route 98 provides seven-day-a-week service between NTC and Plymouth Meeting. End-to-end travel times are scheduled for approximately 30 minutes.

FIGURE 7: SEPTA BUS STOPPED IN THE BUS LOOP AT NTC

SOURCE: DVRPC 2011

Weekdays:

- Half-hour frequency between 6am and 6pm, and then hourly until 11pm.
- Thirty eastbound and 31 westbound trips daily.
- All service is local.

Weekends:

- One-hour frequency between 6am and 11pm on Saturdays.
- One-hour frequency between 9am and 7pm on Sundays.
- Seventeen eastbound and 18 westbound trips on Saturdays.
- Ten round trips on Sundays.

ROUTE 99:

Route 99 provides seven-day-a-week service between NTC and Phoenixville, via King of Prussia and Audubon. End-to-end travel times are scheduled for approximately one hour and fifteen minutes.

Weekdays:

- Primarily 30-minute frequency between 5am and 12:30am.
- Thirty westbound and 33 eastbound trips daily.
- All service is local.
- Numerous trips throughout the day only operate between NTC and King of Prussia.

Weekends:

- One-hour frequency in the mornings, followed by 30-minute frequency the remainder of the day on Saturdays between 5am and midnight.
- One-hour frequency between 6am and 11pm on Sundays.
- Twenty-seven westbound and 30 eastbound trips on Saturdays.
- Seventeen westbound and 16 eastbound trips on Sundays.

ROUTE 131:

Route 131 provides six-day-a-week service between NTC and Audubon. There is no Sunday service. End-to-end travel times are scheduled for approximately 30 minutes.

Weekdays:

- Thirty-minute peak-period and one-hour midday frequency between 6am and 7pm.
- Twenty westbound and 21 eastbound trips daily.
- All service is local, though business parks are served westbound only until 3pm and eastbound only after 3pm.

Saturdays:

- One-hour frequency between 7am and 7pm.
- Twelve round trips.

Private Bus Service

The recently constructed (2008) parking garage at NTC has a ground-floor bus way, which is used by three intercity bus service providers and is managed by Bieber Tourways. Tickets for these intercity transit services are available for purchase in the garage.

BIEBER TOURWAYS

Services between Reading, Philadelphia, Harrisburg, and New York City travel through NTC. Bieber Tourways buses stop at NTC 17 times daily. Some of their services are operated under contract for Greyhound Lines.

GREYHOUND LINES

Services to and from Harrisburg, Pittsburgh, Philadelphia, and New York City are offered at NTC. Some Greyhound Lines service at NTC is operated by Bieber Tourways.

MARTZ TRAILWAYS

Services between Philadelphia and Scranton travel through NTC (shown in Figure 8). Typical days have four Martz Trailways' buses stopping at NTC.

FIGURE 8: MARTZ TRAILWAYS BUS

SOURCE: DVRPC 2012

Corporate Bus Shuttles

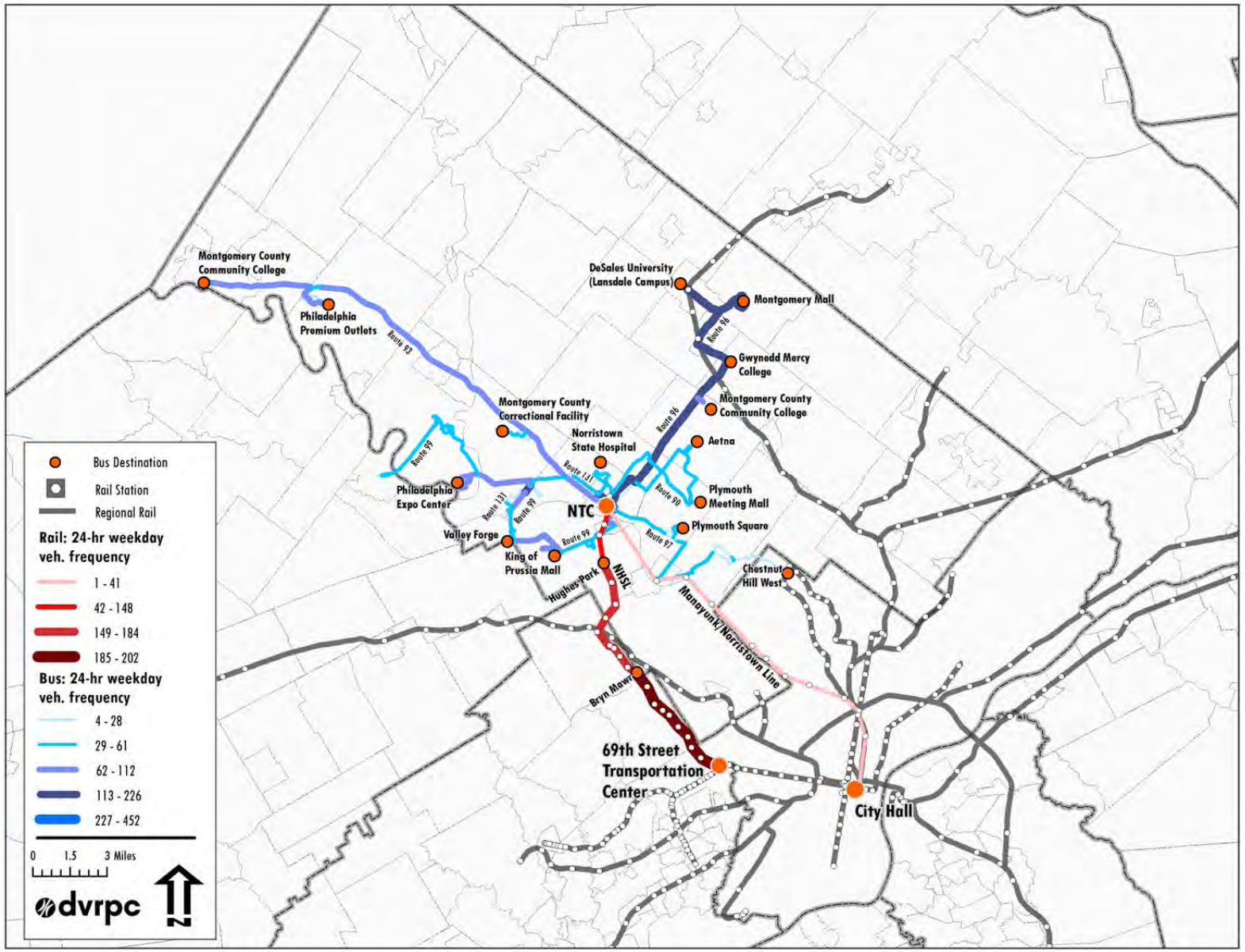
Cruiseline East is funded as a part of the Congestion Mitigation Strategies for the U.S. Route 202, Section 300 reconstruction project. PennDOT pays a significant amount of the operating costs to run the service. This service will sunset at the end of reconstruction, which is projected to occur in 2016, unless extended by alternative funding. The service is contracted currently to Transnet by the project management partner, Greater Valley Forge Transportation Management Association (GVFTMA). The Cruiseline East service provides shuttle service between NTC and a corporate campus in Malvern, Pennsylvania. There is no charge for employees who use this service.

Until recently (2012), Pfizer also provided a shuttle service for its employees between NTC and its Collegeville campus, operated by Krapf's Coaches, Inc. The shuttle ran four times per day, with stops at two locations on the Collegeville Campus. The Pfizer shuttle was recently discontinued, a 2012 Congestion Mitigation and Air Quality (CMAQ) grant was awarded to Upper Merion Township and the King of Prussia Business Improvement District to begin a new shuttle service connecting NTC with the King of Prussia Business Center. The majority of shuttle passengers connect with Regional Rail service at NTC.

Summary

Figure 9 is a summary map of the SEPTA services (NHSL, Regional Rail, and bus) and connectivity at NTC detailed above. This map illustrates the 24-hour weekday service frequencies (thicker lines reflect routes with more frequent service). The volume of NHSL vehicle trips to the terminus in Norristown is less frequent than the trips to Bryn Mawr and Hughes Park stations. Figure 9 depicts this difference in volume by the light red line between Hughes Park and Norristown, compared to the darker and thicker red lines between Hughes Park and Bryn Mawr, and Bryn Mawr and 69th Street Transportation Center. This change in frequencies reflects the single-track constraint between Bridgeport and NTC, and may also demonstrate less demand at NTC relative to points south. The pink line in Figure 9 represents Regional Rail frequencies, with 41 trains per day (less than one-third of NHSL volumes at NTC). Bus service is highlighted by the blue lines; generally, higher levels of bus service occur to the north of the station, beyond the reach of NHSL or Regional Rail service.

FIGURE 9: SUMMARY OF SEPTA CONNECTIONS AND SERVICE FREQUENCIES FROM NTC



SOURCE: GOOGLE TRANSIT VIA DVRPC REGIONAL TRAVEL MODEL 2011

CHAPTER 3

NTC Passenger Movements and Modes of Access

When assessing the transit activity at NTC, it is important to understand which modes are used most frequently, during which times of the day, as well as transfer activity between modes. The analysis and conclusions about passenger activity at NTC presented here were derived from travel time and traffic count data from PennDOT and DVRPC and ridership data from SEPTA. In addition, a group of DVRPC staff collected detailed observations and counts on Wednesday, October 26, 2011, during the morning rush period from 6am to 10am. Another field visit was conducted during the PM peak on Tuesday, December 13, 2011. Since NTC is a hub for significant volumes of trips in both directions, it is useful to understand travel patterns to NTC, from NTC, and within NTC, as a way of prioritizing facility needs and opportunities. Drawing on DVRPC field counts and passenger data from SEPTA, Table 1 summarizes estimates of the mode share for all trips to NTC and from NTC during the morning.

Park-and-ride and drop-off volumes combine to indicate that auto access has the highest mode share entering NTC during the morning, with 475 combined users (30 percent), of all trips to NTC from 6am to 10am. This corresponds with 555 Regional Rail boardings over the same timeframe—the traditional park-and-ride, peak direction rail commute to Philadelphia. However, the relatively high volume of morning rail alights (499 combined between NHSL and Regional Rail) also reflects significant reverse commute activity to Norristown.

DVRPC staff also observed the number of passengers transferring between transit modes at NTC from 6am to 10am on October 26. The counts reflect the combined observations of multiple staff in multiple locations across NTC. For example, in some cases—particularly during peak hours—it was hard to differentiate between alighting NHSL passengers who transferred to buses on the northern side of the NTC bus loop and those who kept walking into town. Additionally, since October 26 was a cold morning, staff noticed some passengers entered the NHSL station building to wait indoors for another bus to arrive, and left a few minutes later (making them hard to differentiate from NHSL boards or alights). Table 2 summarizes staff's best estimates of the transfer activity observed and is a reasonable representation of actual volumes for the purposes of making simple comparisons between transfer pairs. Transfers between SEPTA buses and the NHSL are by far the highest volume at NTC, with all other observed transfer volumes (even those between buses, which are made easier by the timed-transfer schedule in place) being comparatively small in absolute terms, and also small as a proportion of total passenger activity.

TABLE 1: SUMMARY OF WEEKDAY MORNING MODE SHARE TO & FROM NTC

To NTC			From NTC		
Mode of access	Volume (6am-10am)	Mode share	Mode of access	Volume (6am-10am)	Mode share
Park-and-ride	366	23%	SEPTA bus	782	38%
NHSL	360	22%	Regional Rail	555	27%
SEPTA bus	342	21%	Walking	374*	18%
Walking	297*	18%	NHSL	302	15%
Regional Rail	139	9%	Pick-up (auto and taxi)	24	1%
Drop-off (auto and taxi)	109	7%	Corporate shuttles	13	1%
Intercity buses	7	0%	Intercity buses	5	0%
Bicycling	4	0%	Park-and-ride	n/a	n/a
Corporate shuttles	0	0%	Bicycling	0	0%
TOTAL	1,622	100%	TOTAL	2,055	100%

*ESTIMATED FROM DVRPC PEDESTRIAN COUNTS

SOURCE: DVRPC 2011, SEPTA 2008-2010

Taken together, the data in Tables 1 and 2 reflects complex and multidirectional usage patterns at NTC. The sections that follow in this chapter present a detailed overview of data, issues, and observations on each of the groups of modes in Tables 1 and 2, beginning with station access by car and station-area traffic patterns, followed by transit activity (both SEPTA and private), and finally, issues of bicycle and pedestrian station access.

TABLE 2: SUMMARY OF OBSERVED TRANSFER ACTIVITY AT NTC (6AM TO 10AM)

Transfer	Volume (6am-10am)
NHSL to SEPTA bus	393*
SEPTA bus to NHSL	114
SEPTA bus to SEPTA bus	50
Regional Rail to SEPTA bus	29
SEPTA bus to Regional Rail	25
TOTAL	611

*LIKELY REFLECTS SOME OVERCOUNT GIVEN NHSL ALIGHT DATA IN TABLE 1, WHICH WAS TAKEN FROM SEPTA RIDERSHIP DATA.
SOURCE: DVRPC 2011

Station Access by Car

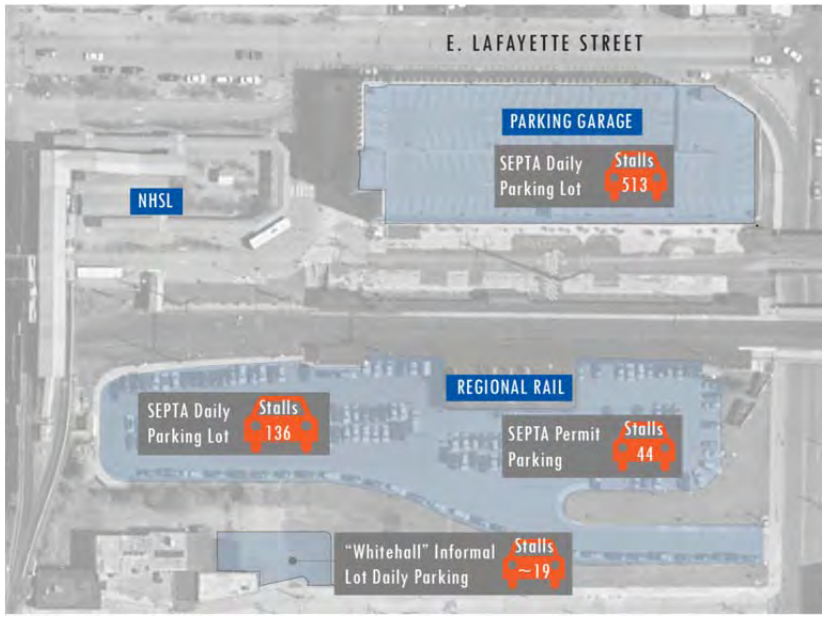
PARK-AND-RIDE STATION ACCESS

As summarized in Table 1, park-and-ride is the single highest access mode into NTC throughout the observed morning hours (23 percent). As patrons arrive at NTC by car, there are three official park-and-ride facilities available, as well as one informal facility; some passengers were observed using an adjacent vacant surface lot for free station parking. Figure 10 is a summary diagram of the parking available at NTC.

Station License Plate Survey

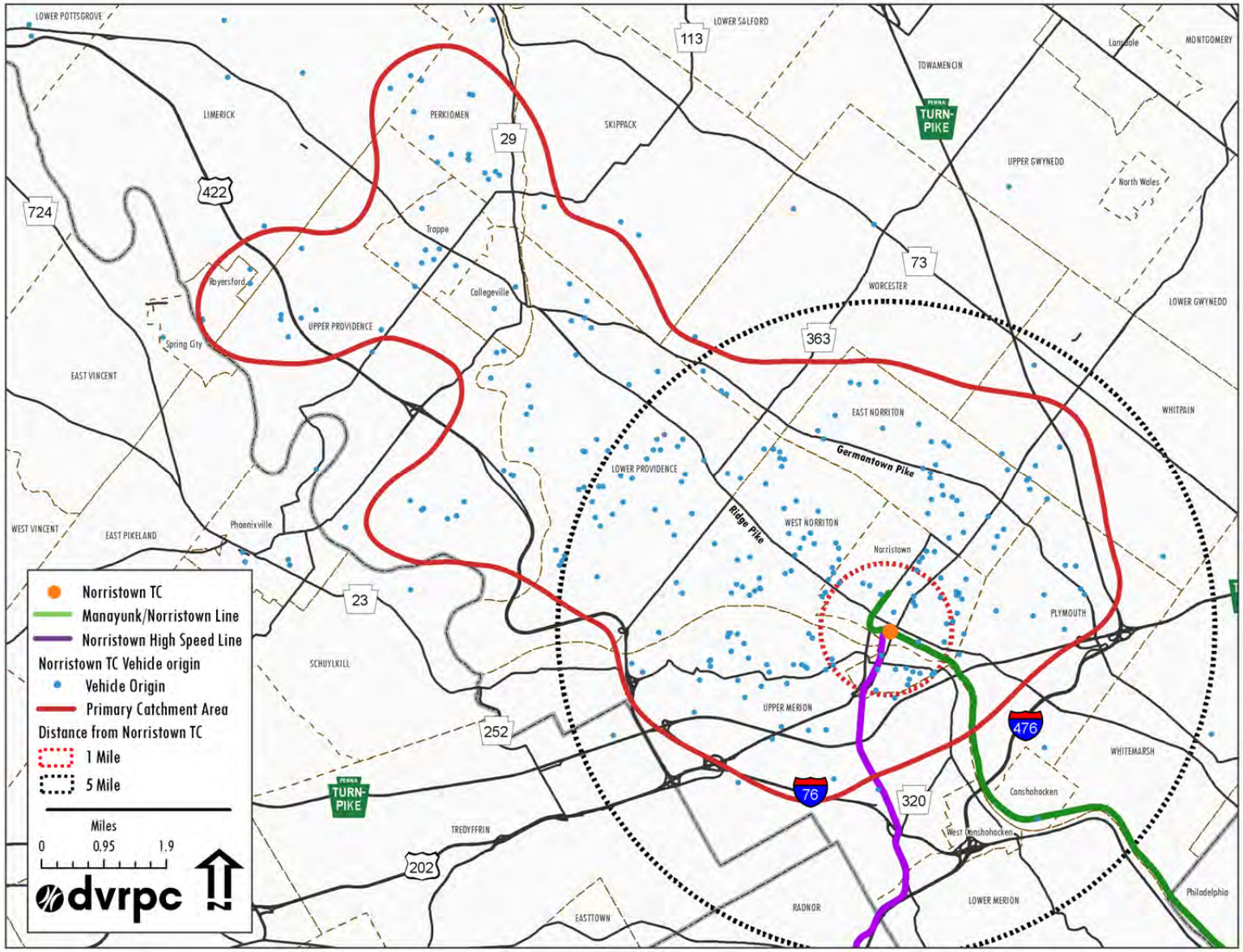
To understand the distribution of park-and-ride ridership at NTC, DVRPC used the results of a license plate survey at each of SEPTA's NTC parking facilities conducted in August 2010. PennDOT processed this license plate data, enabling mapping of where each car is registered in order to understand the station's primary park-and-ride catchment area. The boundaries of this area are summarized by the red shape in Figure 11. This area was derived through DVRPC's standard method for processing the densities of station park-and-ride origins (for more details, see DVRPC pub. 10025).

FIGURE 10: PARKING LOCATIONS AND CAPACITIES AT NTC



SOURCE: DVRPC 2011
NOTE: "WHITEHALL" LOT IS NOW AN ENFORCED NO PARKING ZONE

FIGURE 11: PARK-AND-RIDE CATCHMENT AREA



SOURCE: DVRPC 2012

Figure 11 indicates that the primary catchment area for park-and-ride access extends northwest of NTC along the broader US 422 corridor and includes townships such as Upper Providence, Perkiomen, and Lower Providence, all more than five miles from the transportation center.

SEPTA permit surface lot

The SEPTA permit parking lot is located immediately southeast of the Regional Rail platforms, as shown in Figure 12. The lot is located adjacent to the eastbound platform, and an underpass permits safe pedestrian access to the westbound platform, as well as the rest of NTC. Cars enter the lot through a driveway from DeKalb Street. There are a total of 44 permit parking spaces.

FIGURE 12: SEPTA PERMIT PARKING LOT

SOURCE: DVRPC 2011

- A monthly permit costs $20. These are available for purchase on a first-come/first-served basis on the 20th of each month.
- Passengers can purchase a permit by mail, but they must purchase a monthly TrailPass in conjunction with the purchase of a parking permit before the first of the month.
- For the 2011 fiscal year, permit passes were 100 percent sold.

Although the lot is at capacity daily, DVRPC observers noted that the permit parking lot filled more slowly than the daily parking lot, most likely because these customers do not have to compete for spaces.

SEPTA daily surface lot

The SEPTA daily parking lot is located just west of the permit lot, south of the Regional Rail platforms, and cars enter through the same driveway from DeKalb Street. There is direct pedestrian access to the eastbound Regional Rail platforms and a pedestrian underpass connecting the daily lot to the rest of NTC. There is also an entrance to the NHSL from the westernmost part of the daily parking lot, though DVRPC observers saw very few passengers entering the NHSL through this entrance. The daily surface lot does not require purchase of a rail pass or ticket for the price to park there. Fees to park are $1 per day and can be paid in cash at kiosks.

Table 3 summarizes historical parking occupancy for surface parking at NTC over the past 10 years. Since 2001, the permit and daily parking lots have been nearly at capacity. The permit lot's parking occupancy declined from 2004 to 2007, from approximately 100 percent to 80 percent. The daily lot has remained close to capacity. Fifteen handicap spaces were designated in 2004. In 2007, the total number of daily spaces was reduced because the construction of the new parking garage began on the site of what was formerly a second daily fee parking lot. Prior to and during garage construction, a narrow parcel stretching parallel to the Regional Rail right-of-way east of DeKalb Street was used as a spillover free parking lot, with a capacity of 107 stalls.

TABLE 3: PARKING OCCUPANCY HISTORY AT NTC SURFACE PARKING LOTS

	Daily surface lot			Permit surface lot		
Year	Available stalls	Occupied stalls	% Occupied	Available stalls	Occupied stalls	% Occupied
2001	272	272	100%	44	43	98%
2002	272	272	100%	44	44	100%
2003						NO DATA
2004	289	272	94%	44	44	100%
2005	289	279	97%	44	36	82%
2006	136	136	100%	44	36	82%
2007	136	136	100%	44	37	84%
2008	136	136	100%	44	35	80%
2009	136	136	100%	44	35	80%
2010	136	136	100%	44	44	100%

SOURCE: DVRPC 2011

SEPTA garage

The SEPTA garage is accessed via Lafayette Street, east of the bus loop and NHSL. Construction of the garage was completed in 2008. The garage is five stories tall, with 513 available daily parking spaces. On the ground floor there is an area designated for temporary (20 minute) parking, but there is no clear signage explaining who has access to use this space from outside the garage. The garage also serves as an intercity bus station. It is unclear how many of the spaces in the lot are used by this ridership base, though observations suggest that nearly all garage users are Regional Rail riders. There are three locations where SEPTA passengers can validate their parking ticket: in the Regional Rail station building, NHSL terminal, and the Bieber Tourways terminal. The DVRPC study team has heard from the working and residential community in Norristown that the validation needs to be advertised more clearly.

Weekdays:

- Fees for SEPTA riders are $3 per day with ticket validation when entering from 5:30am to 1pm; after 1pm, validation is not required. Additional discounts are available for regular SEPTA riders (see below).
- Fees for non-SEPTA customers are $6 per day entering 5:30am to 1pm, and $3 entering from 1:01pm to closing.
- The garage is open from 5:30am to12:30am Monday through Thursday, and 5:30am to 1:30am on Friday.

Weekends:

- Fees for all customers are $3 per day.
- The garage is open from 6:30 am to 2:30am on Saturdays and 6:30am to 12:30am on Sundays.

Other Payment Options:

- SEPTA Rider Prepaid Proximity Card
  - SEPTA riders can pay $10 for five daily uses (minimum purchase), $40 for 20 uses (maximum purchase), or $20 for 10 uses (only available for purchase with 10-trip ticket).
  - A monthly card can be purchased for $35 with the purchase of a monthly Trans or TrailPass through the SEPTA Pass by Mail Program.
  - Cards are rechargeable at ground-level kiosks.

Since the construction of the parking garage, both Regional Rail permit and daily surface parking lots continue to fill, but the garage is not at capacity. Table 4 compares the combined occupancy of the surface parking lots and the garage since the garage's construction in 2008. The parking garage had its highest occupancy level in 2010 at 48 percent, while the combined surface lots are consistently 95 percent to 100 percent full. The comparatively low occupancy of the garage reflects the price difference between the two parking facilities.

TABLE 4: NTC HISTORICAL PARKING OCCUPANCY RATES

Year	Surface Lots % Filled	Garage % Filled
2008	95%	46%
2009	95%	44%
2010	100%	48%
2011 Observed (before 10am)	95%	40%

SOURCE: DVRPC 2012

Informal station parking

As a fourth alternative, some passengers were observed parking in a parking lot adjacent to a vacant commercial building south of the Regional Rail platforms. DVRPC staff observed cars entering and parking, and passengers walking up a small grass incline to the Regional Rail station platforms upon exiting their vehicles. Figures 13 and 14 are photos of the lot (identified as the "Whitehall" lot from signage on the adjacent building). As these photos indicate, the lot was filled by the end of the AM rush, with 19 cars present. Since DVRPC field observations in fall 2011, this lot is an enforced "No Parking" zone; the commercial structure is currently being renovated for occupancy.

FIGURE 13: WHITEHALL PARKING LOT PRIOR TO RENOVATION

SOURCE: DVRPC 2012

FIGURE 14: WHITEHALL PARKING LOT DURING RENOVATION

SOURCE: DVRPC 2011, 2012

Parking fill rates

During DVRPC's morning field observations on October 26, staff noted the relative fill rates for each of the SEPTA parking facilities. The daily surface lot was first to fill, reaching 90 percent occupancy by 7:15am (10 to 15 empty spaces). Permit parking was observed to fill more slowly, with 90 percent occupancy not occurring until 8:45am. The SEPTA garage also had most of its activity before 8:45am (reaching about 40 percent occupancy), with only 17 additional entries between 8:45am and 10:15am. The peak time of entry for all three parking lots was between 6:45am and 7:15am, with 100 cars parking in the garage during this timeframe, and 72 cars parking in the surface lots. DVRPC observers noticed that nearly all park-and-ride passengers at NTC (including the garage) were using Regional Rail. Most likely, the SEPTA surface parking lots are filling more quickly due to the cost discrepancy.

Other parking in Norristown

The license plate survey illustrated that most park-and-ride passengers are commuting to NTC from the northwest. On the Manayunk/Norristown Regional Rail Line, there are two stations further outbound: Main Street and Elm Street stations. Table 5 summarizes the parking usage history at these facilities. Both stations' parking facilities are close to capacity. The parking lot at Main Street has significantly lower capacity (92 stalls) than either NTC (693 stalls) or Elm Street (246 stalls). It is noteworthy that among the 1,031 combined official station parking stalls available in Norristown across the three stations, only the NTC garage operates at much less than 100 percent occupancy.

TABLE 5: HISTORICAL PARKING AT SEPTA REGIONAL RAIL MAIN AND ELM STREET STATIONS

Year	Available Stalls (Elm Street)	% Occupied (Elm Street)	Available stalls (Main Street)	% Occupied (Main Street)
2001	174	96%	76	100%
2002	174	96%	76	100%
2003				NO DATA
2004	246	57%	92	100%
2005	246	86%	92	100%
2006	246	100%	92	100%
2007	246	100%	92	100%
2008	246	100%	92	100%
2009	246	88%	92	100%
2010	246	96%	92	100%

SOURCE: SEPTA 2010, DVRPC 2012

There are three public parking lots within a half-mile of NTC: Main and Cherry streets ($2 per/hour), courthouse garage on Lafayette east of Swede ($5 flat rate per day), and on Main Street between Swede and Lafayette streets ($1.50 per/hour, and $6 three hours and above). The metered parking varies by the meter type. Parking in a space with an older meter will cost $1.50 per hour, while parking at an electronic metered space is $2 per hour, with a ten hour maximum (8am to 6pm, Monday to Friday). Figure 15 shows the locations of parking at NTC and the Main and Elm Street stations in the context of major roads.

FIGURE 15: ALL STATION PARKING IN NORRISTOWN (AT ELM ST. STATION, MAIN ST. STATION, AND NTC)

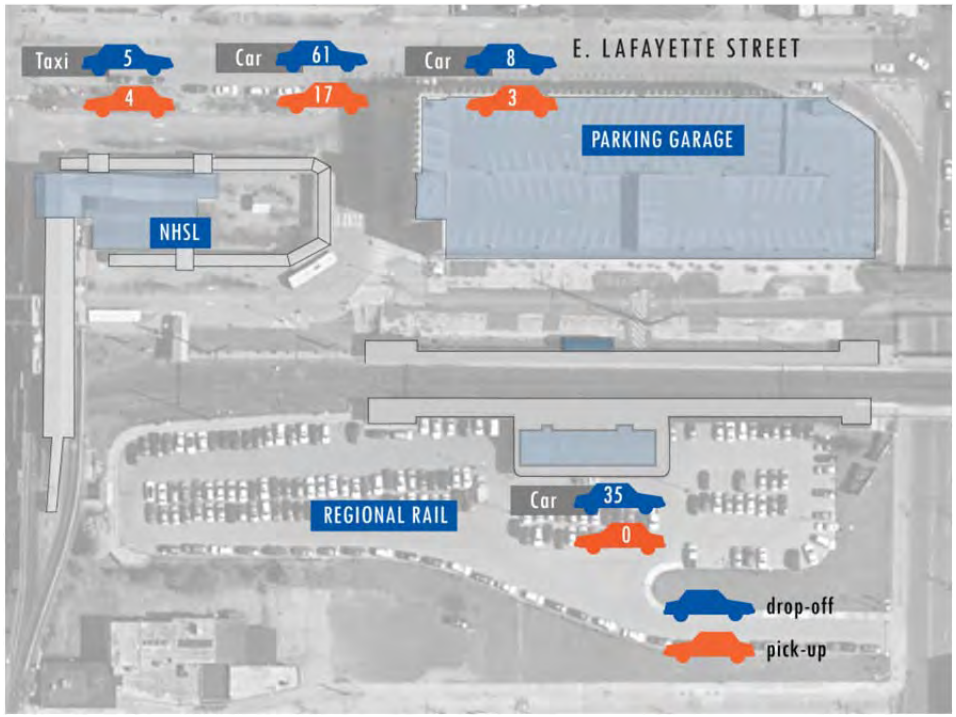
SOURCE: DVRPC 2011

DROP-OFF/'KISS-AND-RIDE' STATION ACCESS

From observation there are three primary areas where cars drop-off and pick-up passengers at NTC: along Lafayette Street adjacent to the SEPTA garage, in the designated taxi area on Lafayette Street adjacent to the SEPTA bus loop, and in the Regional Rail drop-off location in the daily surface parking lot, accessed via DeKalb Street. During morning field observations, DVRPC staff recorded 109 total drop-offs and 24 pick-ups. Figure 16 summarizes the locations and volumes of drop-off and pick-up activity observed by DVRPC staff. The majority of this activity occurred between 7:30 and 8:00am.

At NTC, the signage and designated auto drop-off and pick-up areas seemed to be confusing for drivers. During observation of the PM peak, cars were observed queuing on Lafayette Street to pick-up passengers, even though the eastern curb area is signed "No Parking Taxis Only." The curb area just to the west is labeled as a "No Parking" zone, although it is also used as a de facto pick-up and drop-off area. There is no signage in the SEPTA surface lots where drop offs were observed. In this curb space, taxis, autos, and corporate shuttles compete for drop-off and pick-up space. The area inside the garage, designated as a waiting area, is underused by cars dropping-off and picking-up passengers. While this area is marked for temporary parking inside the garage, there is no signage outside the garage alerting customers to this option. On-site SEPTA supervisors have repeatedly complained about vehicles pulling into the SEPTA bus loop to drop-off and pick-up passengers, even though the area is posted "SEPTA Only;" changing this wording to "SEPTA Buses Only" could help clarify for drivers who are dropping off SEPTA passengers.

FIGURE 16: NTC MORNING AUTO DROP-OFF/PICK-UP SUMMARY

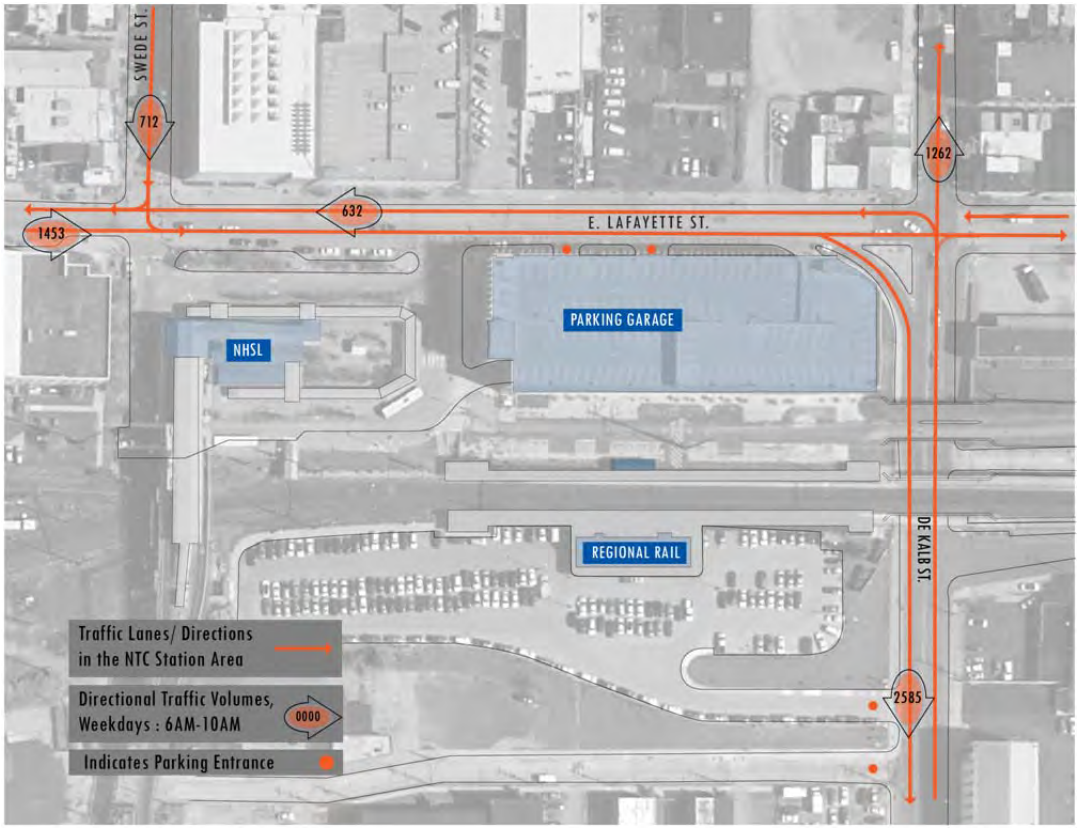


SOURCE: DVRPC 2012

STATION AREA TRAFFIC CONDITIONS

One block north of Lafayette Street is Main Street (alternately called Ridge Pike in neighboring municipalities), the most significant “downtown” corridor in Norristown. Swede Street connects Lafayette and Main streets on the western side of NTC, and DeKalb Street connects them on the eastern side. About three miles east of NTC is an on-ramp to the Pennsylvania Turnpike, and US 202 is located about one-half mile to the west. In the surrounding area there have been a number of PennDOT/DVRPC traffic counts that permit an understanding of traffic flow in the area.

FIGURE 17: TRAFFIC DIRECTIONS AND VOLUMES NEAR NTC (6AM TO 10AM)



SOURCE: DVRPC 2012

In the station vicinity, Lafayette Street has higher all-day volumes (AADTs) eastbound (4,290) than westbound (1,608). Two-way volumes along Main Street are about 14,400 between Cherry and Swede streets and 16,500 between Swede and DeKalb streets. The traffic volumes along Lafayette Street are approximately 40 percent of those of Main Street. Although there are significant traffic flows during the morning and afternoon peak periods, judging from counts and observations, congestion does not appear to be a common problem in the vicinity of NTC. Figure 17 summarizes traffic directions and morning volumes in the context of NTC parking entrances.

An analysis of local crash data surrounding NTC is an additional way to identify problematic roadways that may need extra attention. A crash analysis was conducted, focusing on all crashes that occurred from 2006 to 2010 along DeKalb, Lafayette, Main, and Swede streets near NTC. Figure 18 summarizes accident locations near NTC during this five-year interval.

A total of 41 crashes occurred in the project area, the majority of which (36) occurred on one link: DeKalb Street, from Front Street (south side of the Schuylkill River) to Main Street. These were particularly concentrated at the intersections of DeKalb/Main and DeKalb/Lafayette. High AADTs were counted on all these streets throughout the day, making accidents more likely than other surrounding local roads simply by virtue of volume.

FIGURE 18: CRASH SUMMARY FOR NTC STATION AREA (2006 TO 2010)

SOURCE: DVRPC 2012

There were three bicycle crashes over the same five years on the DeKalb Street Bridge, including two at the intersection of Schuylkill Avenue and DeKalb Street. One bus and pedestrian crash was identified on Lafayette Street, which accounts for the total of both pedestrian crashes and bus crashes. No fatalities or major injuries were recorded from the 41 total crashes.

LAFAYETTE STREET EXTENSION PROJECT

The Lafayette Street Extension Project, which will be completed in phases beginning in the next few years, will have significant impacts on traffic circulation in the vicinity of NTC. The project is expected to include:

- An extension of Lafayette Street eastward to the Pennsylvania Turnpike, with a new direct interchange to the turnpike. Building the Lafayette Street interchange is projected to reduce traffic at the Norristown interchange and at the Valley Forge interchange. Reducing this traffic creates capacity for the expected growth in areas such as Plymouth Meeting and King of Prussia over the next 15 years. Traffic is also expected to be reduced on local roads such as Ridge Pike, Germantown Pike, US 202, Belvoir Road, and Sandy Hill Road.
- A new interchange with US 202 at the Dannehower Bridge/Markley Street.
- Widening of Lafayette Street between these two locations in order to accommodate the increased traffic volumes that will be generated.

This project will open up new portions of Norristown's waterfront for development between Main Street and the Schuylkill River. These locations are expected to be attractive for development because of the sites' accessibility and connectivity via US 202 and the Pennsylvania Turnpike, and transit connectivity via NTC. However, development will need to be sensitive to the Schuylkill River floodplain.

DEKALB STREET DIRECTIONAL CHANGE

Currently, north of Lafayette Street, both lanes on DeKalb Street run northbound. There has been a proposal, which is supported by the Norristown TOD Marketing Initiative funded through the Transportation and Community Development Initiative (TCDI) Program and endorsed by the Norristown Municipal Council, to make DeKalb Street two-way in hopes of improving local mobility. Enabling two-way traffic on DeKalb Street would open up Norristown to traffic from the north, creating another vital connection between the downtown and surrounding suburbs.

AUTO SUMMARY

- Park-and-ride and drop-off volumes combine to form the highest mode share into NTC (30 percent for autos) in the morning.
- Taxis, autos, and corporate shuttles compete for drop-off and pick-up space along Lafayette Street.
- All available station parking in the municipality of Norristown is typically occupied, with the exception of the NTC parking garage, which has 265 stalls available on a typical weekday (greater than the combined capacity of all surface parking at NTC).
- The garage offers various discounts for SEPTA passengers, but there is an opportunity to promote these options more visibly.
- There are some conflicts within the bus loop between service vehicles, SEPTA vehicles, and confused autos.
- Congestion is not commonly a problem on any of the streets surrounding NTC. However, 88 percent of all crashes (including bus, pedestrian, car, and bicycle) in the project area were on DeKalb Street.
- While congestion is presently not an issue for NTC auto access, the Lafayette Street extension and widening projects are expected to result in significant changes to traffic volumes in this part of Norristown. Improved roadway connectivity will likely attract development, economic activity, and additional potential for congestion in the vicinity of NTC.

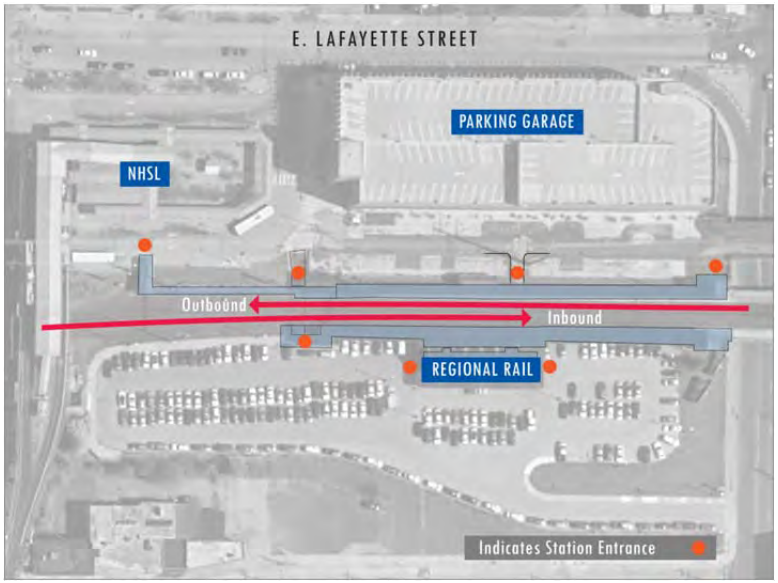
Station Access by Transit

REGIONAL RAIL FACILITIES AND PASSENGER ACTIVITY

As noted at the beginning of this chapter, Regional Rail is a key driver of passenger activity at NTC: it has a 28 percent mode share for trips out of NTC in the morning (with 555 boards from 6am to 10am), and brings a fairly significant number of commuters to Norristown in the morning (with 139 alights at NTC during this same timeframe). Observations indicate that Regional Rail captures nearly all park-and-ride activity at NTC and is also the primary driver of corporate shuttle boardings. Figure 19 highlights the Regional Rail platform area at NTC. A pedestrian underpass connects the eastbound platform to the northern half of NTC and Lafayette Street, and the station can also be accessed from DeKalb Street.

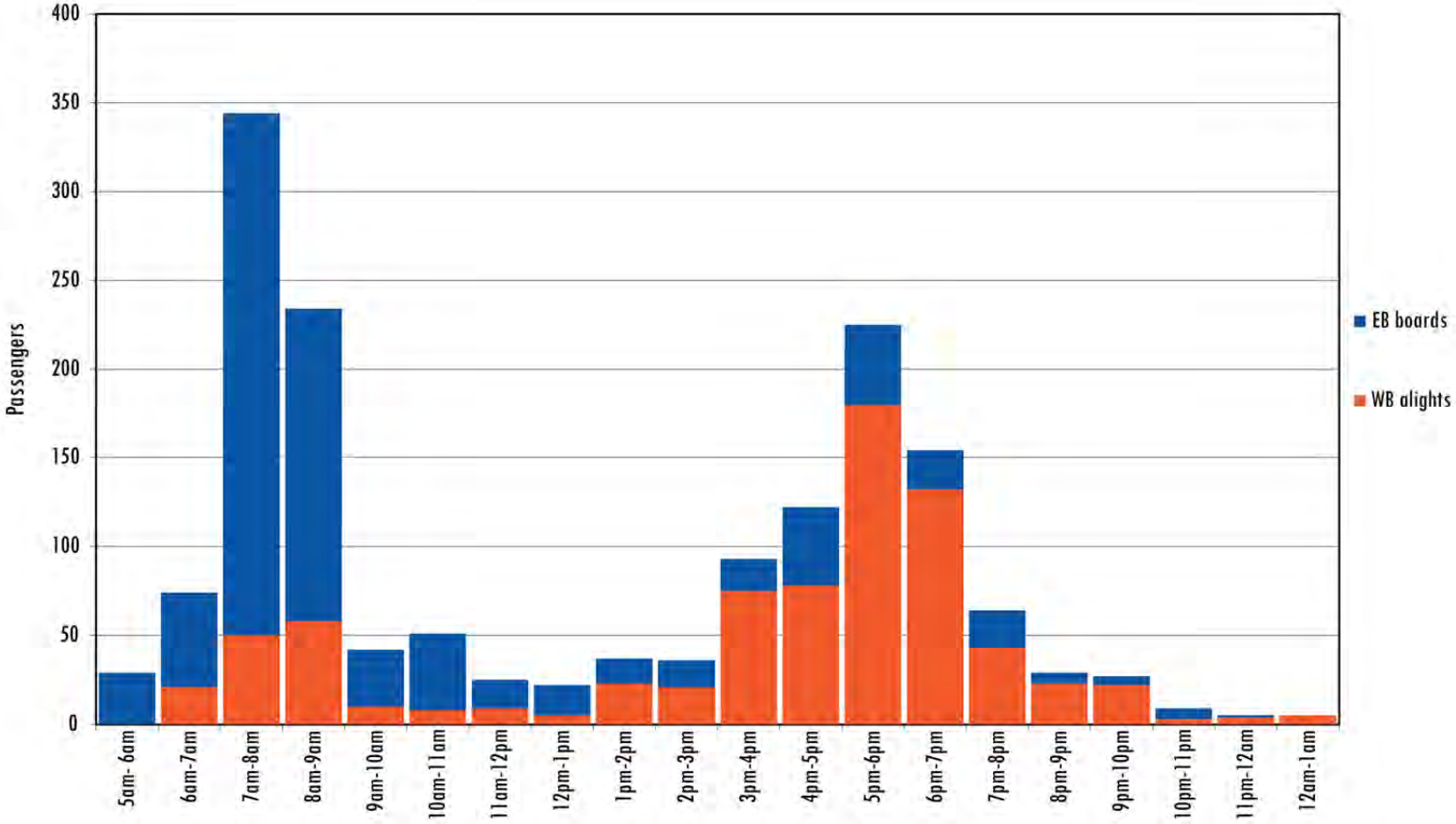
Figure 20 summarizes hourly weekday passenger volumes at NTC from SEPTA's 2009 Regional Rail Census. During the morning peak period, a majority of passengers who use Regional Rail are heading toward Philadelphia. Passenger boarding volumes are highest between the hours of 7 to 9 am, reaching close to 500. During the same hours, there are 108 alights. These passengers are most likely reverse commuting to Norristown or to nearby suburbs, including the major corporate campuses that are served by corporate shuttles at NTC. Among the SEPTA services available at NTC, Regional Rail exhibits the most traditional peak commuting pattern.

FIGURE 19: REGIONAL RAIL STATION FACILITIES AT NTC



SOURCE: DVRPC 2011

FIGURE 20: HOURLY WEEKDAY REGIONAL RAIL PASSENGER VOLUMES AT NTC

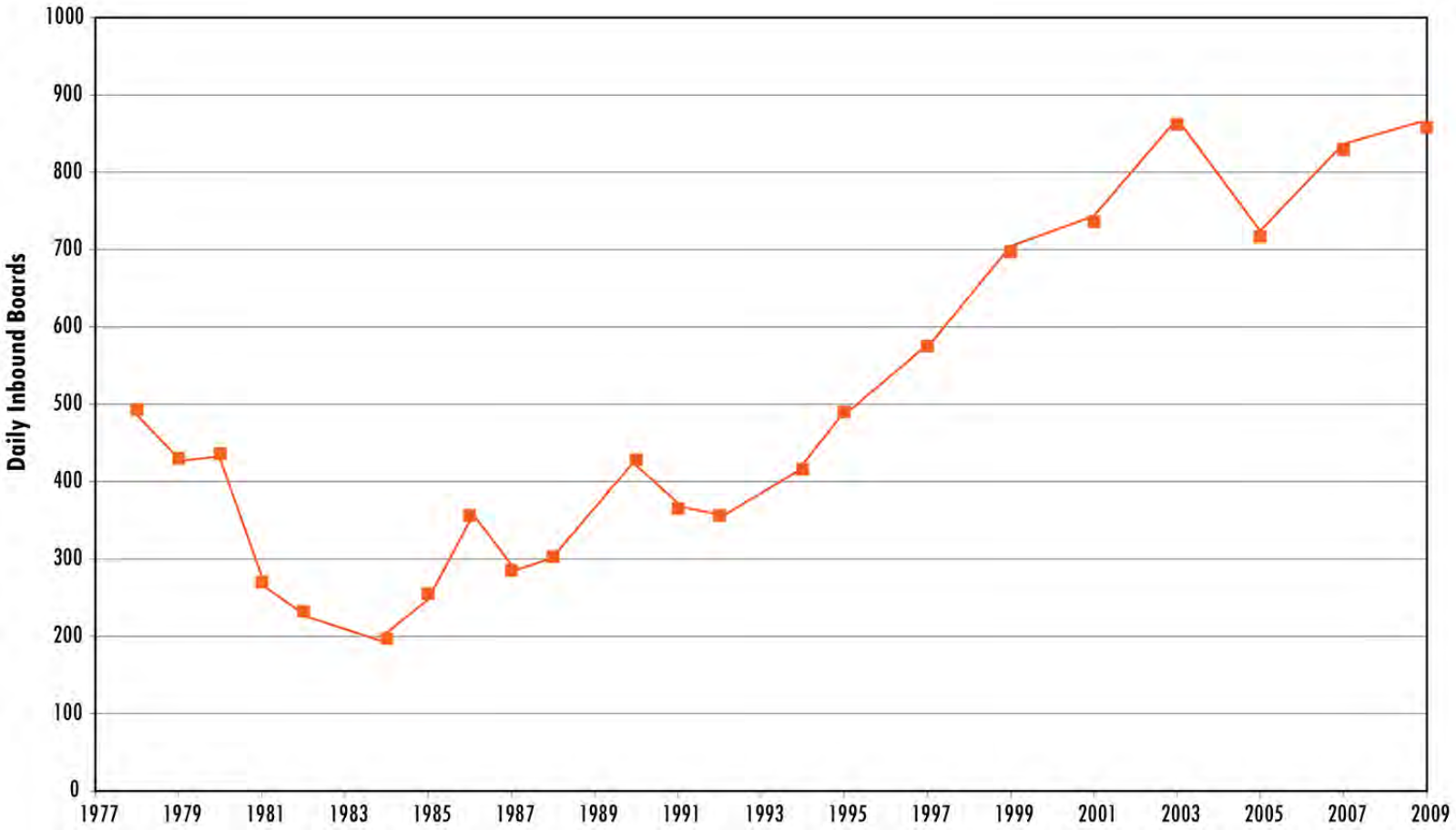


SOURCE: SEPTA 2009

During the afternoon peak period, passenger alights are highest over a four-hour period, from 3 to 7pm. NTC has about 770 alights throughout the day and 857 eastbound boardings.

Ridership levels have varied over the last 30 years at NTC. Figure 21 summarizes historical daily boards. In the mid- to late-1970s, there were approximately 500 eastbound daily boards toward Philadelphia. In the mid-1980s, boardings declined, reaching a historical low of about 200 in 1984, as overall Regional Rail ridership significantly declined due to a 108-day strike. Ridership has generally exhibited an upward trend in recent years.

FIGURE 21: HISTORICAL REGIONAL RAIL RIDERSHIP AT NORRISTOWN TRANSPORTATION CENTER (1978 TO 2009)



SOURCE: DVRPC 2012

Passenger access to and from Regional Rail

DVRPC morning field observations found that the vast majority of Regional Rail passengers arrive by car (park-and-ride or kiss-and-ride), and 29 transfers from SEPTA buses to Regional Rail were counted. Staff also noted that nearly all corporate shuttle riders were transferring from Regional Rail.

Norristown Regional Rail Station Improvement Project

SEPTA has developed preliminary designs for a major Regional Rail station reconfiguration and improvement project at NTC. This project would include:

FIGURE 22: INTERIOR OF NHSL STATION BUILDING AT NTC

SOURCE: DVRPC 2011

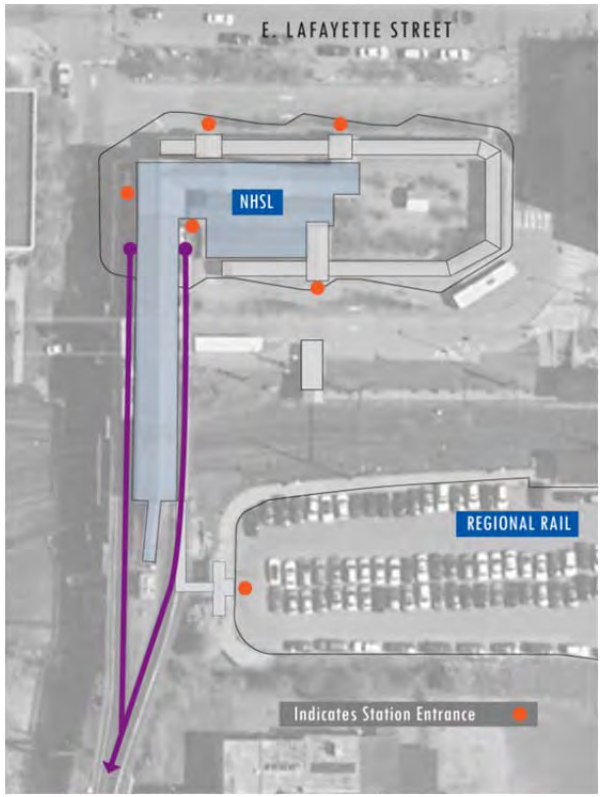
- The construction of a third track, which would improve passenger and freight movements to and from the station. The new track would be located to the north of the present outbound Regional Rail track, and it would become the new outbound track at NTC. The present outbound track would become the new inbound track, and the present inbound track would be dedicated to freight traffic. Regional Rail frequencies to NTC are constrained by freight needs, so having a dedicated freight bypass track would permit higher levels of all-day Regional Rail service at NTC (up to 30-minute all-day headways) should passenger demand warrant it.
- The addition of a third track would have a significant impact on NTC facilities near the Regional Rail right-of-way. SEPTA's preliminary site plan includes a northward relocation of the Schuylkill River Trail and its bridge over DeKalb Street, relocation of a host of utility elements and stairwells, and relocation of the pedestrian underpass (which will be connected to a new ADA-compliant ramp).

SEPTA's preliminary site plan also shows a new high-level platform configuration, which would permit level boarding for faster boardings and alightings, as well as passengers with wheelchairs. A new, longer platform pair would extend over DeKalb Street, making the station more accessible from points east and integrating it with the proposed recreational/trail redevelopment of the old freight building (discussed in detail later in this report). SEPTA's preliminary site plan can be found in Appendix A of this report.

NORRISTOWN HIGH SPEED LINE (NHSL) FACILITIES AND PASSENGER ACTIVITY

The mode share analysis detailed at the beginning of this chapter indicates that the NHSL is a key driver of passenger activity at NTC in both the inbound and outbound directions: from SEPTA ridership data, there are 360 northbound alights between 6am and 10am on a typical weekday, and 302 southbound boards. The NHSL station area and platforms are accessible from Lafayette Street and the SEPTA bus loop via a covered and enclosed stairway. There is a second platform access point from the SEPTA daily parking lot, though DVRPC staff observed very few passengers making use of this access point. Figure 23 illustrates the locations of NHSL passenger entrances and platforms.

FIGURE 23: NHSL PASSENGER AREAS AT NTC

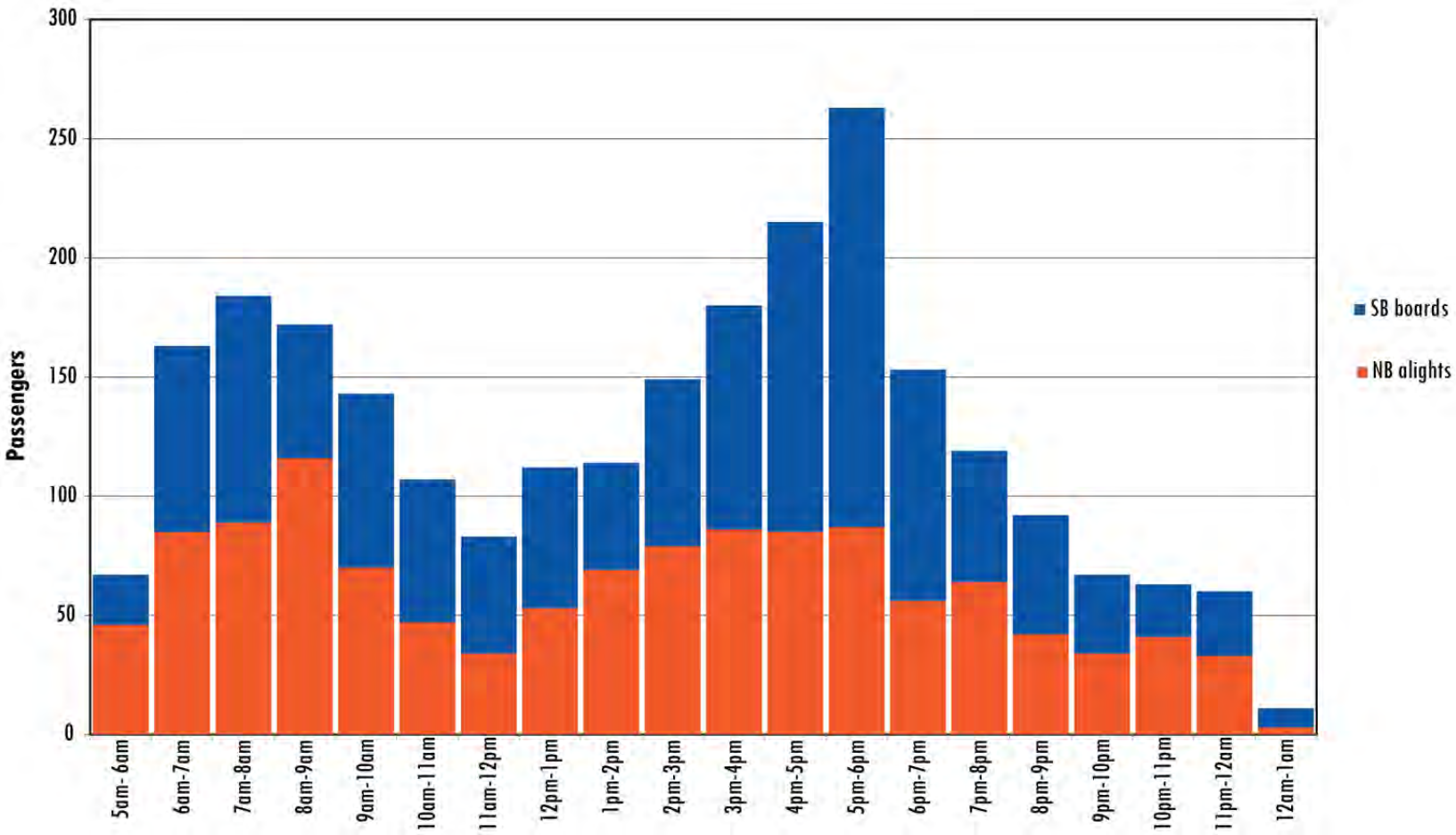


SOURCE: DVRPC 2012

Figure 24 summarizes hourly weekday NHSL passenger volumes from 2010. This figure reflects a ridership pattern that is in some ways an image of the Regional Rail pattern summarized in Figure 16: the single largest spike in passenger activity is in southbound boards during the PM peak (whereas for Regional Rail, the largest spike is in eastbound boards during the AM peak). The relatively even directional distribution of ridership suggest that the NHSL at NTC is a nearly equal-part commuter (toward Philadelphia) and reverse commute (to Norristown and beyond) service, and the consistent levels of all-day usage suggest that the NHSL is used for many other trip purposes than the traditional commute.

NTC is a uniquely multimodal facility: it connects passengers to five transit modes, plus bicycle, pedestrian, and automobile connections. When NTC opened in 1989, scheduled headways varied greatly between the various bus routes, Regional Rail, and the NHSL. This made transferring between modes problematic for customers, especially if delays were encountered on the rail lines. In many instances, buses departed at their scheduled time – just before late NHSL trains arrived at NTC. Customers who missed their connecting bus had to wait between 30 and 60 minutes for the next vehicle. To resolve this situation, a special yellow flashing light was installed at NTC to alert operators and platform supervisors that an NHSL car was due to arrive shortly. Thus, buses would be allowed to depart later than the scheduled time to accommodate transferring passengers. At this time, there is no such feature for approaching Manayunk/Norristown trains.

FIGURE 24: NHSL HOURLY WEEKDAY PASSENGER VOLUMES AT NTC



SOURCE: SEPTA 2010

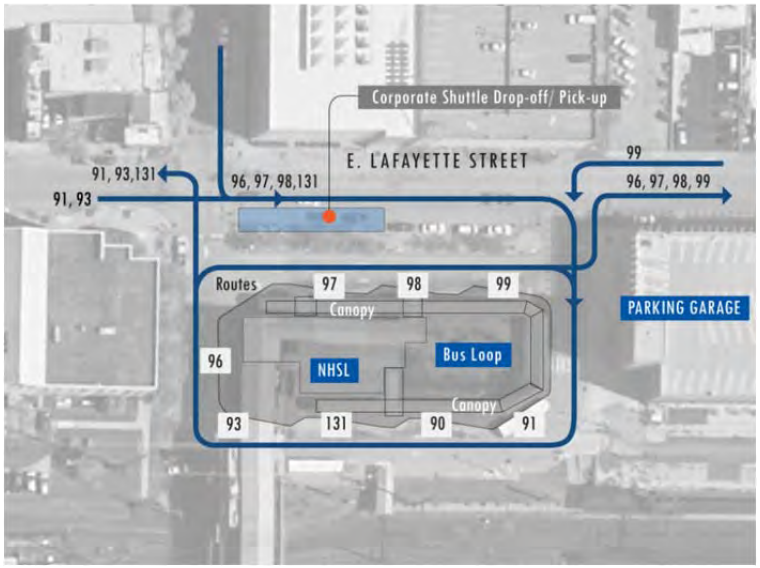
During AM peak observations, DVRPC staff noted a high level of transfer activity between the NHSL and SEPTA buses (in both directions, though especially outbound from NHSL to buses). This was by far the highest-volume transfer pair observed at NTC: the roughly 500 transfers (both ways) counted between the NHSL and SEPTA buses was 10 times larger than the next-largest transfer volume during the same timeframe (roughly 50 counted between SEPTA buses).

SEPTA BUS FACILITIES AND PASSENGER ACTIVITY

SEPTA buses carry significant volumes of passengers both to and from NTC and have the highest mode share (39 percent) among all trips outbound from NTC in the morning. There are eight SEPTA bus routes that serve NTC's bus loop: Routes 90, 91, 93, 96, 97, 98, 99, and 131.

Buses are scheduled to arrive within close timing of each other as they converge at NTC. This is called "pulsing" and makes it so that passengers can transfer quickly and conveniently from one bus route to another. Service levels at NTC vary, with bus routes typically having consistent all-day weekday headways of approximately 30 or 60 minutes. Five routes (93, 96, 98, 99, and 131) have about 30-minute peak-hour headways, thus "pulsing" every approximately 30 minutes, and including these routes, seven of the eight total routes (90, 93, 96, 98, 99, 97, and 131) converge at the bus loop roughly hourly. Route 91 does not operate on weekdays (it has two trips each Saturday).

FIGURE 25: SEPTA BUS LOOP AND PASSENGER FACILITIES AT NTC

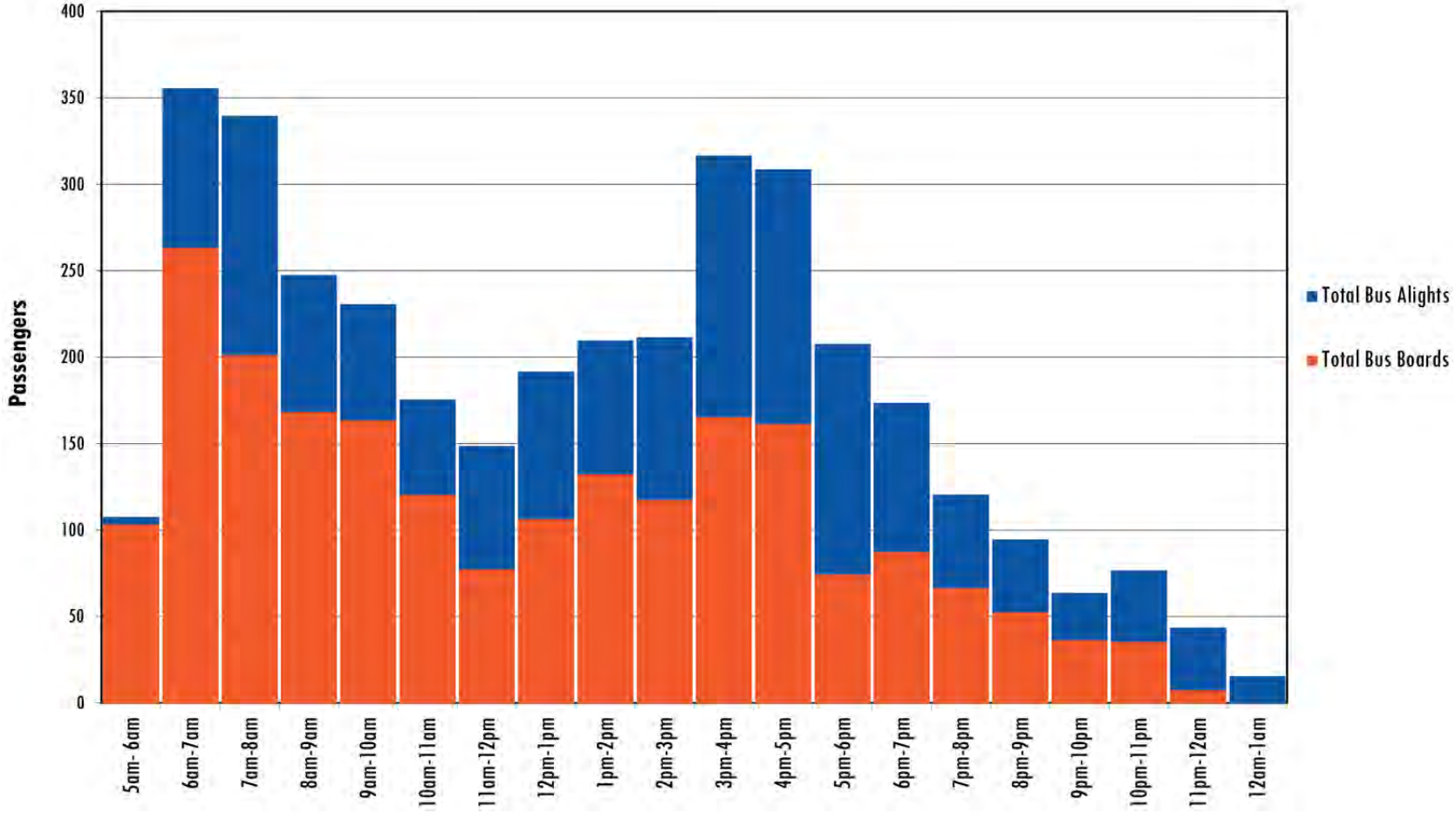


SOURCE: DVRPC 2012

The SEPTA bus loop surrounds the NHSL station facilities at NTC, and directly abuts the taxi drop-off and pick-up area. Figure 25 summarizes SEPTA bus routings and facilities in and around NTC. Multiple field observations and conversations with SEPTA staff suggest that there are few problems with respect to bus and bus passenger movements through NTC. Staff did observe an occasional bottleneck at the southwestern corner of the SEPTA bus loop, particularly when waste management vehicles were accessing the dumpster in that area. In addition, the bus passenger canopy that rings the SEPTA bus loop was noted as being too tall to provide meaningful weather protection. SEPTA staff has expressed a possible need for additional bus bay capacity at NTC. The bus bays at NTC are at capacity, and SEPTA is interested in acquiring more bays for their services, especially in case of emergencies or for construction detours.

Figure 26 is a detailed graph that combines weekday boards and alights for all SEPTA bus routes, not including Route 91. Heavy bus ridership occurs during the two peak periods. In the morning, the highest passenger volumes are from 6 to 8am. There are approximately 750 passengers using the SEPTA buses at NTC during these hours: 466 boards and 288 alights. In the afternoon peak, the heaviest usage occurs between 3pm and 5pm, with 328 boards and 296 alights during this timeframe.

FIGURE 26: TOTAL WEEKDAY HOURLY SEPTA BUS BOARDS AND ALIGHTS AT NTC



SOURCE: DVRPC 2012

The higher numbers of AM boards than alights suggest that buses are being used predominantly for reverse commuting (which is consistent with the NHSL transfer activity observed), though the all-day distribution of ridership suggests a complex array of trip purposes. It bears noting that Figure 26 shows significantly higher all-day boards than alights. From SEPTA ridecheck (manual count) data that was used to develop Figure 26, there are 2,152 total weekday boards at NTC, and only 1,475 total weekday alights. SEPTA Automated Passenger Count (APC) data paints a similar picture, showing 1,644 total weekday boards and 1,242 weekday alights (excluding Route 99, for which APC data was not available). This degree of all-day divergence between boards and alights is unusual in situations where there are no parallel service options available.

In general, there is a good match between the levels of service provided at NTC and each route's ridership: the bus routes that operate with shorter headways also tend to have the highest ridership, with Routes 93 and 131 being exceptions to this rule. Table 6 summarizes service levels at NTC in the context of weekday boardings.

Throughout the morning, DVRPC staff observed high passenger transfer volumes between SEPTA buses and the NHSL (507 combined both ways), many fewer transfers between SEPTA buses and Regional Rail (54 combined both ways), and still fewer transfers between SEPTA buses (about 50 total). While detailed route-to-route transfer counts were not taken, staff observed that:

- Most transfers from the NHSL to SEPTA buses were to Routes 93, 98, 99, and 131.
- Most transfers from SEPTA buses to the NHSL were from Routes 93, 98, and 131.
- Most transfers between SEPTA buses occurred between Routes 93, 98, and 99.

TABLE 6: SUMMARY OF WEEKDAY SEPTA BUS RIDERSHIP AND SERVICE LEVELS AT NTC

SEPTA bus route	Weekday daytime freq. (6am-7pm)	Total weekday boards at NTC
90	60 minutes	164
93	60 minutes	348
96	30 minutes	417
97	60 minutes	191
98	30 minutes	346
99	30 minutes	416
131	30 minutes	178

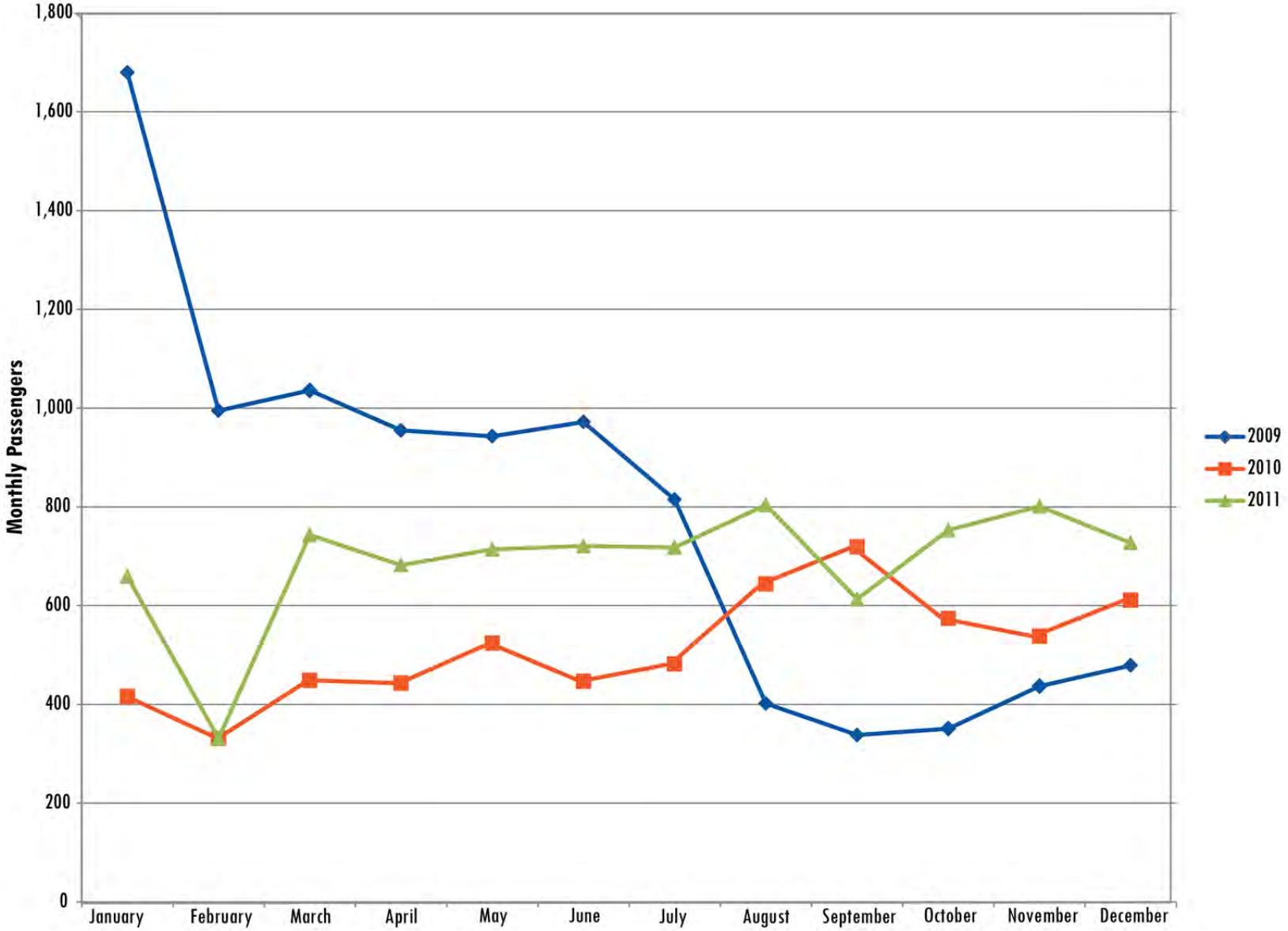
SOURCE: SEPTA 2011

CORPORATE BUS SHUTTLES

There are two corporate shuttles running from NTC to corporate campuses within about 15 miles of NTC. The Cruiseline East shuttle runs from NTC in the morning to offices in King of Prussia and Great Valley, and then again from those places to NTC in the evening. The shuttles stop at the entrance to the SEPTA bus loop on Lafayette Street, just west of the taxi and drop-off pullout. The shuttles for the Cruiseline East are owned and operated by Suburban Transit Network, Inc. (Transnet). Over the past 11 years, Transnet has received complaints from taxis and SEPTA about the drop-off and pick-up locations of their shuttles. Conversations with Transnet suggest that they are interested in having a designated space at NTC, whether it be in the same location with new signage or at another location that is safe and user friendly for passengers.

Figure 27 summarizes the monthly ridership of the Cruiseline East at NTC since 2009. In January 2009, ridership was at an all-time high of 1,800. From July to August 2009, passenger volumes dropped from 815 to 402 because one of the two destination corporations discontinued service. Since that time, ridership has been increasing steadily: 2010 annual passenger volumes were 6,178, increasing to 8,266 in 2011. Until recently (2012), a second shuttle connected NTC with stops at two locations at Pfizer's Collegeville campus. This shuttle had been in operation since 2001, and was formerly called the Wyeth Shuttle. The Pfizer shuttle was recently discontinued, but a 2012 Congestion Mitigation and Air Quality (CMAQ) grant was awarded to Upper Merion Township and the King of Prussia Business Improvement District to begin a new shuttle service connecting NTC with the King of Prussia Business Center.

FIGURE 27: SUMMARY OF CRUISELINE EAST BOARDINGS AT NTC



SOURCE: GVFTMA 2012

PRIVATE BUS SERVICES

Bieber Tourways oversees all private, intercity bus service at NTC, including Martz Trailways and Greyhound. All three companies offer intercity bus services that connect passengers with major cities within and beyond Pennsylvania. The current facility on the ground floor of the SEPTA parking garage (shown in Figure 28) is convenient for passengers due to its proximity to SEPTA services and its weather-protected loading and unloading areas. Bieber Tourways relocated its service center from DeKalb Pike and Saulin Boulevard in Upper Merion. Since becoming a tenant, Bieber has noted security concerns with homeless persons using the restrooms; as a result, passengers presently have to leave their ID to use the restroom.

FIGURE 28: BIEBER TOURWAYS BUS BAYS

SOURCE: DVRPC 2012

Passengers access intercity bus service at NTC using a variety of modes: taxi service, SEPTA services, drop-off by car, and park-and-ride. In fact, on a few occasions, Bieber has had to call the police to open the garage on holidays when the garage has been locked so that intercity bus passengers who had left their cars could exit the garage. According to Bieber Tourways, on the line that runs from Harrisburg to New York through Norristown, there are about 175 to 200 boardings at NTC per week, or 25 to 30 daily. On the buses running in the opposite direction (from New York to Harrisburg) there are 150 to 175 alights at NTC weekly, or 20 to 25 daily. Bieber staff noted higher New York-bound boards on this route on Mondays, and higher southbound alights on Fridays, suggesting that there are a fair number of work-week commuters who use this route (riders who spend their weekends in the Philadelphia region and their work weeks in New York). The Pottsville to Philadelphia line is a rural service supported by PennDOT. There are between six to 10 passengers arriving or departing from NTC on that line daily.

In terms of future opportunities, Bieber staff has expressed an interest in exploring station retail (such as a coffee/magazine/food shop), as well as a unified ticket purchase program with SEPTA.

TRANSIT ACTIVITY SUMMARY

- Regional Rail is primarily used by commuters going east toward Philadelphia, with the highest inbound (toward Philadelphia) passenger volumes during the 7 to 9 am hours. There are also more than 100 riders using Regional Rail to reverse commute to NTC each day.
- Usage patterns for the NHSL and SEPTA buses are complex, with more consistent all-day volumes in both directions, suggesting that these services are used for both inbound and outbound work commutes, as well as for other trip purposes.
- Regional Rail ridership at NTC has been growing for decades, more than quadrupling between historic lows in the early 1980s and the present day. The planned Regional Rail Station reconfiguration project at NTC would add a third track, enabling freight traffic to bypass NTC and also enlarge, relocate, and provide ADA accessibility to the Regional Rail platforms. This project would enable higher levels of Regional Rail service at NTC (30-minute all-day weekday headways), potentially attracting still higher levels of passenger activity in the future.
- The largest observed passenger transfer volumes were between the NHSL and SEPTA buses.
- SEPTA bus bays at NTC are at capacity.
- Corporate service providers have expressed an interest in a new designated space for passenger pick-up and drop-off.

Pedestrian and Bicycle Station Access

The area around NTC has an established network of pedestrian sidewalks and bicycle access routes. The Schuylkill River Trail (SRT) runs directly through NTC parallel to the Regional Rail right-of-way, and is the station's signature bicycle and pedestrian amenity (Figure 29).

FIGURE 29: SCHUYLKILL RIVER TRAIL AT NTC

SOURCE: DVRPC 2011

PEDESTRIAN ACTIVITY

NTC is well connected with both Norristown and Bridgeport via a complete network of sidewalks. There is also a pedestrian-only path, known as Strawberry Alley, which connects the north side of Lafayette Street to the south side of Main Street. This path is located directly opposite the eastern driveway of the SEPTA bus loop at NTC, but there is no midblock crosswalk connecting it to NTC. To better understand pedestrian activity in the vicinity of NTC, DVRPC staff conducted a number of automated pedestrian counts (using infrared pedestrian counters) in August 2011 and March 2012 (for Strawberry Alley). Table 7 summarizes the results of these counts. Notably, the highest pedestrian volumes are on the east side of Swede Street north of the station (883) and the south side of Lafayette west of the station (804). The fact that counts were highest on the frontages closest to NTC suggests that NTC is a key driver of pedestrian activity.

TABLE 7: SUMMARY OF NTC STATION-AREA PEDESTRIAN VOLUMES

Road	Sidewalk	From (Street)	To (Street)	ADP
Swede Street	East	Lafayette Street	Main Street	883
Lafayette Street	South	Cherry Street	Swede Street	804
Swede Street	West	Lafayette Street	Main Street	481
Strawberry Alley	N/A	Lafayette Street	Main Street	362
Lafayette Street	North	Cherry Street	Swede Street	348
DeKalb Street	West	Lafayette Street	Main Street	295
DeKalb Street	East	Lafayette Street	Main Street	288
DeKalb Street Bridge	East	Front Street	Washington Street	279
DeKalb Street Bridge	West	Front Street	Washington Street	277
Lafayette Street	North	Green Street	DeKalb Street	196

SOURCE: DVRPC 2011

TABLE 8: SUMMARY OF NTC STATION-AREA BICYCLE VOLUMES

Facility	From	To	Direction	ADB
Schuylkill River Trail	Hickey Street	NTC	Both	705
Schuylkill River Trail	NTC	Green Street	Both	701
DeKalb Street Bridge (lanes and sidewalks)	Front Street	Washington Street	Both	34
DeKalb Street	Lafayette Street	Main Street	North	25
Swede Street	Main Street	Lafayette Street	South	12

SOURCE: DVRPC 2011

Looking at the difference between these frontages and their counterparts opposite the station (for example, the east side of Swede Street north of Lafayette versus the west side) permits a rough approximation of pedestrian volumes that are directly associated with station activity. The volumes are reflected in the mode share table at the beginning of this chapter.

Strawberry Alley

As noted above, Strawberry Alley is a primary pedestrian link between the NTC and Main Street. Staff observed this path as being dimly lit in the evening, with visible litter and debris. Over the past few years, Norristown has been making a considerable effort to address loitering, trash, light, graffiti, and general maintenance of the walkway.

In 2011, Norristown received funding from the Covanta Energy Corporation to “green-up” the pedestrian walkway. In addition, Norristown’s Shade Tree Commission and Montgomery County Planning Commission (MCPC) staff have worked together along with public works to install shrubs and ground cover. Despite the efforts from the many resources that are determined to keep the alley clean, it is still challenging to keep it trash free and well lit. Recently, there has been discussion regarding wayfinding signs for pedestrians.

BICYCLE ACTIVITY

The Schuylkill River Trail provides excellent, direct access to NTC for bicyclists. Other station-area bicycle facilities are more limited: Norristown does not have dedicated bike lanes on streets near NTC. DVRPC staff conducted automated bicycle counts in the vicinity of NTC (using tube counters) in August and September 2011. Table 8 summarizes the results of these counts. Despite high-quality station access, during observation DVRPC staff saw few passengers who accessed NTC using bicycles. The Schuylkill River Trail has very high bicycle volumes, but is commonly used as a thru-way rather than for station access (note the consistent volumes on both sides of the station). Staff did note that as Regional Rail passengers alight from trains and cross the Schuylkill River Trail, conflicts can occur with passing bicyclists. There are designated crosswalks along the trail to mark these areas of conflict.

FUTURE PEDESTRIAN AND BICYCLE FACILITIES

Chester Valley Trail Project

The Chester Valley Trail is a major regional trail project developed principally from a former freight rail line. Montgomery County's portion of the Chester Valley Trail will begin at the Schuylkill Expressway and continue north into Upper Merion Township, through Bridgeport and into Norristown, where it will connect to the Schuylkill River Trail at NTC. The trail's specific alignment and design into Norristown are still under development, but it is expected to follow the eastern side of the DeKalb Street Bridge and connect with the Schuylkill Valley Trail at the Freight Building parcel.

Freight Building Adaptive Reuse & Rehabilitation

This project proposes to convert the old freight building structure and parcel, located on the southeast corner of DeKalb Street at Lafayette Street, into a commercial or recreational area at the junction of the Schuylkill River and Chester Valley trails. This project's conceptual design includes green space, as well as amenities such as picnic benches, tables, bike lockers, and other bicycle-supportive accommodations. This project's proposed site plan can be found in Appendix A.

Swede Street Streetscape Project

This project is intended to improve the quality of the pedestrian environment along Swede Street between NTC and Main Street using a variety of streetscape improvements (including bulbouts to reduce pedestrian crossing distances, traffic calming, landscaping, and pedestrian-scale lighting). Note that the present design for this project, which calls for bulbouts that would narrow the cartway of Lafayette Street at the intersection of Lafayette and Swede streets, conflicts with that of the Lafayette Street extension and widening project.

PEDESTRIAN AND BICYCLE ACTIVITY SUMMARY

- NTC is a key generator of pedestrian activity to and from points north and west.
- The Schuylkill River Trail carries significant volumes of bicyclists through NTC each day, but very few riders make use of the station (nearly all bicyclists are “just passing through”).
- There are conflicts between bicyclists and Regional Rail riders on the Schuylkill River Trail.
- The Chester Valley Trail, Freight Building, and Swede Street Streetscape projects have the potential to significantly enhance the quality of bicycle and pedestrian connectivity at NTC to the surrounding station area.

CHAPTER 4

Land Use and Community Context

A quality transportation facility is well integrated with its community and development context, so that in addition to helping move people from point A to point B, it can also support balanced, multimodal travel patterns and local economic activity.

Table 9 and Figure 30 summarize land uses within one-quarter mile of NTC (the station's core pedestrian catchment area). As these items show, a large proportion of land in NTC's immediate vicinity is used for commercial purposes: this is Norristown's commercial core. Another important generator of activity, although proportionally smaller in raw land coverage terms, are community and government uses. The large blue section in Figure 30, just north of the station on Swede Street, is the Montgomery County government complex of offices and Montgomery County Courthouse. Both locations are large employers and generators of visitors or trips. Just east of the station along Lafayette Street (and south of the station along DeKalb Street in Bridgeport) is a concentration of active light industrial uses. Norristown's residential neighborhoods are mainly located more than a quarter-mile from NTC, requiring a greater than five-minute walk for pedestrian station access from these locations.

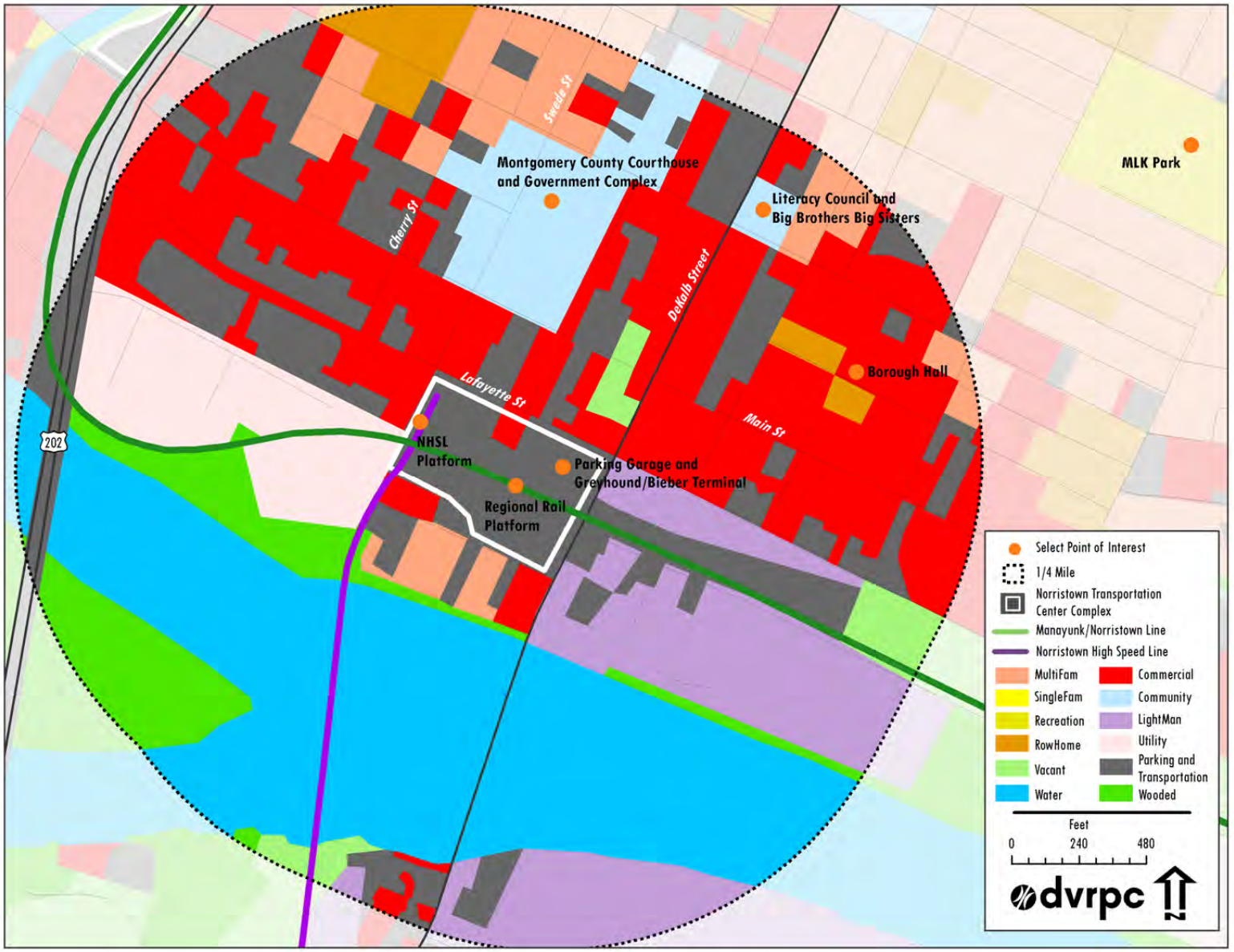
TABLE 9: LAND USE AND LAND COVER WITHIN QUARTER-MILE OF NTC

Land use/cover	Acreage	Percent Acreage
Commercial*	46	23%
Water	46	23%
Parking	30	15%
Manufacturing	20	10%
Residential	15	7%
Utility	12	6%
Wooded	11	5%
Transportation	10	5%
Community services & government	10	5%
Vacant	4	2%

SOURCE: DVRPC 2005
*INCLUDES OFFICE

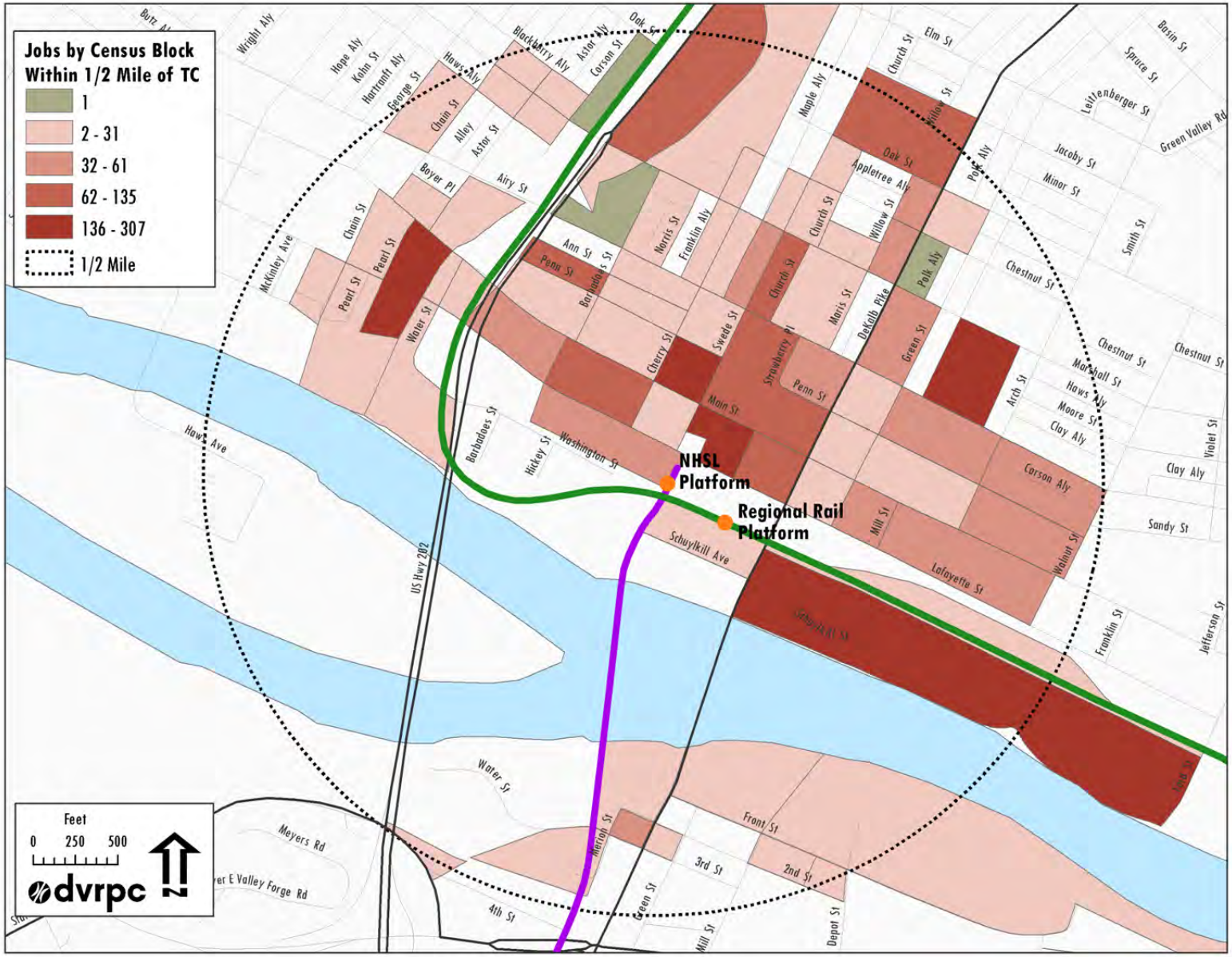
Figure 31 summarizes the distribution of jobs at the Census Block level within a half-mile of NTC, illustrating how the station's land use context corresponds with economic activity. This figure indicates that there are multiple high concentrations of jobs nearby, including the manufacturing and industrial uses immediately east of the station. In total there are 2,790 jobs within one-half mile of NTC.

FIGURE 30: LAND USE WITHIN QUARTER-MILE OF NTC



SOURCE: DVRPC 2005

FIGURE 31: JOBS BY CENSUS BLOCK WITHIN HALF-MILE OF NTC



SOURCE: CENSUS BUREAU "ON THE MAP" 2009 EMPLOYMENT DATA

POTENTIAL STATION-AREA INFILL DEVELOPMENT OPPORTUNITIES

One consideration when planning transit facility investments is how they might be leveraged to encourage new private development and economic activity. Figure 32 summarizes the locations of select parcels within one-half mile of NTC that could be available for private infill development or repurposing, including areas presently used for surface parking, parcels identified as having been developed but presently vacant, and wooded parcels. These locations have not been evaluated for their suitability for development; rather, they are intended to inform a conversation about how planned improvements at NTC—higher levels of Regional Rail or NHSL service, new connections such as the proposed NHSL extension to King of Prussia, and new recreational amenities such as the Freight Building reuse and Chester Valley Trail—could support, and be supported by, private development activity in Norristown.

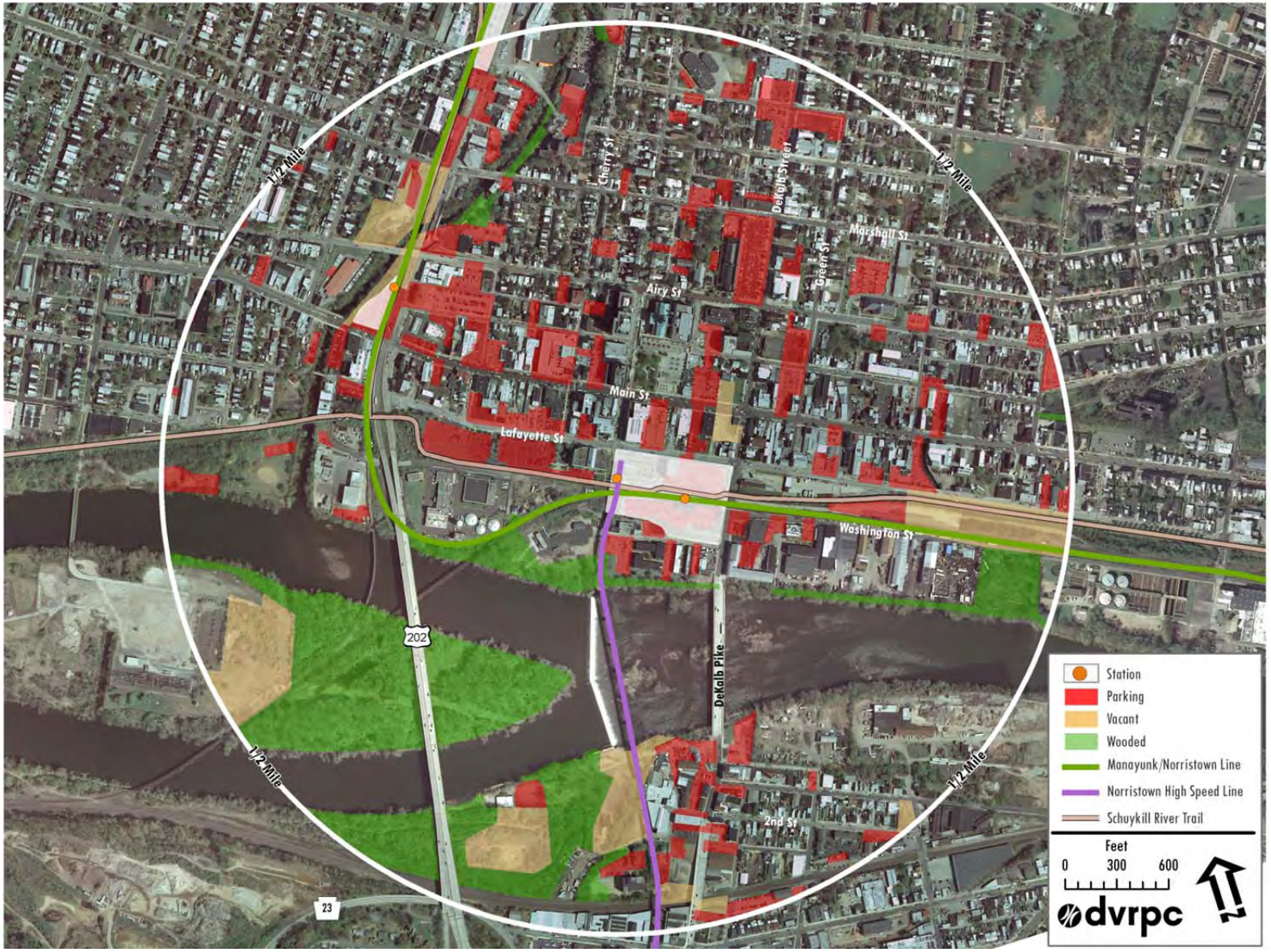
ISSUES OF ACTUAL AND PERCEIVED SECURITY & CRIME

Crime and security concerns, both actual and perceived, can have significant impact on a location's attractiveness, economic activity, and development potential. While stakeholders mentioned security concerns in and around NTC, the Montgomery County Sherriff's Office and the Norristown Municipal Police Department in December 2011 report that the area immediately surrounding the station, as well as the station itself, is relatively free of actual crime. Through November 2011, there were 23 arrests to date that year at or near NTC. These arrests tended to be for nuisance offenses: drunken/disorderly conduct, aggressive panhandling and begging, curfew violations, or disturbing the peace. There were a few break-ins at the station's surface parking lots; vehicles were not stolen and the perpetrators were caught.

During the day, the station and garage are patrolled by the Montgomery County Sherriff's Office. It provides security to employees of, and those visiting, the county court and government buildings. Its patrol starts at around 6am and lasts until 4pm. This coverage may be in jeopardy due to budget cuts. According to the sheriff's office, most troublesome activity at the station relates to loitering and occasionally mugging. The biggest stated concern for both the sheriff's officers and the Norristown Police was an identified homeless encampment close to the river.

In 2011, Norristown Municipal Police had paid Imperial Security to patrol the station, platform, garage, and parking lot between the hours of 6pm and 2am. This service was paid for with a $36,000 ARRA/"Stimulus" security grant. According to Norristown Police, SEPTA plans to continue the contract with Imperial Security.

FIGURE 32: POTENTIAL OPPORTUNITIES FOR INFILL DEVELOPMENT NEAR NTC



SOURCE: DVRPC 2005

LAND USE AND COMMUNITY CONTEXT SUMMARY:

- Land use is mixed around NTC and includes significant shares of light industrial, commercial, utility, and community and government uses, all of which are activity generators for the area.
- There are 2,790 jobs within a half-mile of NTC.
- The perception of crime seems to be greater than the actual amount of crime at NTC and in the surrounding area.

Facility Needs and Workshop

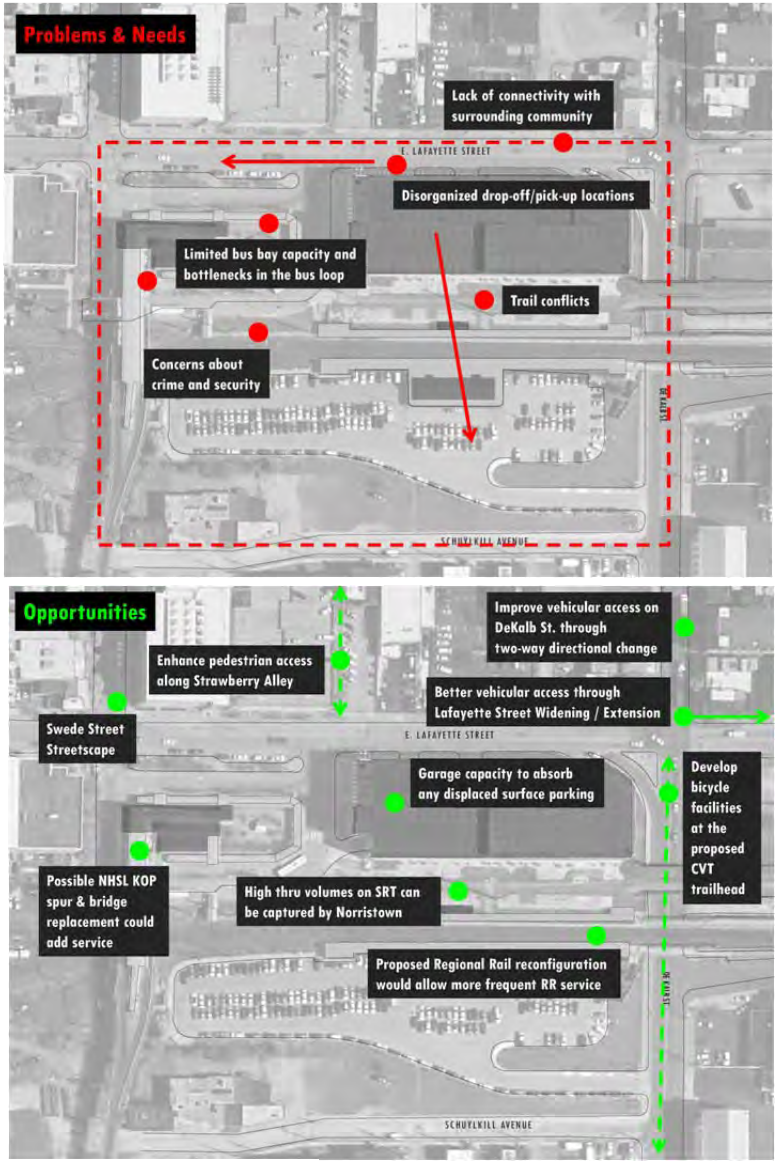
DVRPC staff used data collection, expert interviews, and fieldwork observations to compile problems, needs, and opportunities at NTC that could be addressed to optimize the facility for riders. These materials became the basis for the project workshop and concept planning that would follow. Select problems and needs are described in more detail earlier in this report and are highlighted in Figure 33. DVRPC staff also highlighted key opportunities, reflecting a combination of capital improvement projects that are proposed for SEPTA services, municipal and county proposed projects, and DVRPC staff ideas from observations at NTC. Figure 33 also depicts the highlighted opportunities at NTC.

Following this preliminary analysis, a draft intermodal analysis (the first four chapters of this document) was shared with project stakeholders on February 16, 2012, with an invitation to attend a design workshop that would begin the process of developing a conceptual program of improvements for NTC. On March 20, 2012, a group of project stakeholders and DVRPC staff attended the NTC project design workshop.

Design Workshop Summary

Participants formed five groups and were given a brief presentation on preliminary findings (including Figure 33) by DVRPC staff and a base map of the site. Groups were first asked to identify what they thought was the primary function of NTC. The consensus among attendees was that NTC is a multimodal travel hub that provides a unique link between a variety of modes, jobs, and communities.

FIGURE 33: NTC WORKSHOP PROBLEMS, NEEDS, AND OPPORTUNITIES



SOURCE: DVRPC 2012

There is potential for NTC to become a better gateway into Norristown that would help generate more economic activity for the surrounding area.

Participants were then asked to prioritize the problem areas and facility needs that DVRPC staff identified, as well as any additional needs that they wished to raise. Table 10 summarizes each group's preferences, as well as the composite ranking of priorities across all five groups. At the bottom there are two additional needs that individual groups identified during their discussion.

TABLE 10: WORKSHOP PROBLEMS AND NEEDS PRIORITIZATION

Overall Rank	Problem/ Need	Group Rankings				
		Group 1	Group 2	Group 3	Group 4	Group 5
1	Connectivity with Surrounding Community	5	1	1	1	3
2	Bus Bay Capacity & Bottleneck	2	N/A	2	3	1
3	Rationalize Automobile Pick-Up & Drop-Off/Signage	1	N/A	4	4	2
4	Trail Conflicts	3	2	3	5	4
5	Crime and Security Concerns	6	N/A	5	2	5
N/A	Norristown & Transportation Marketing to attract NTC Visitors	4	3			
N/A	Accessibility from Surrounding Areas		4			

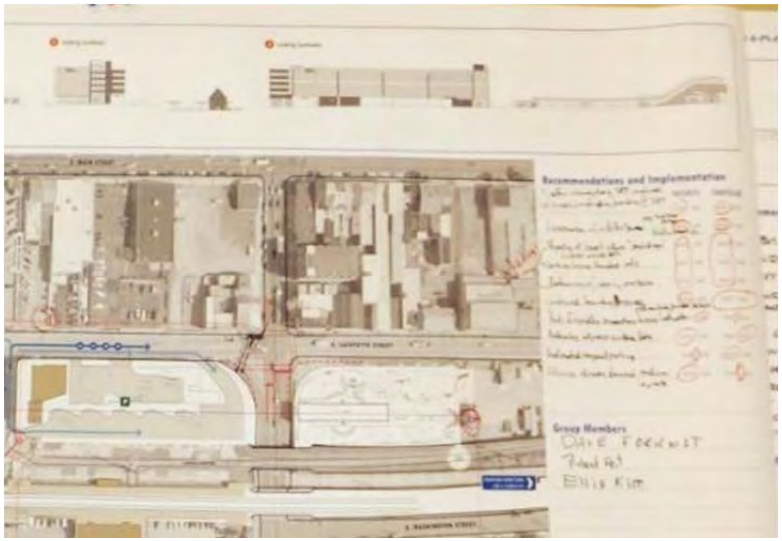
SOURCE: DVRPC 2012

Workshop groups were next asked to sketch out proposed design or programmatic solutions for each of the issues that they considered to be priorities. While each group developed a unique set of proposed strategies, there were common elements across groups. All five groups:

- Made pedestrian and bicycle connections across Lafayette, DeKalb, and Swede streets more pleasant and seamless by enhancing crosswalks, sidewalk design, and wayfinding signage.
- Reconfigured the drop-off and pick-up area on Lafayette Street; some groups relocated auto drop-offs and pick-ups and corporate shuttle pick-ups to the south side of the site.
- Identified opportunities for new commercial uses either at or near the station.
- Created a messaging or signage network that would alert transit passengers and Schuylkill River Trail users about crossings, inform them about the transportation options within NTC, and direct them to local Norristown destinations and attractions.

Figure 34 is a marked up map from one of the five groups that participated in the workshop, and Figure 35 is a photo of the workshop underway.

FIGURE 34: MARKED-UP CONCEPT MAP



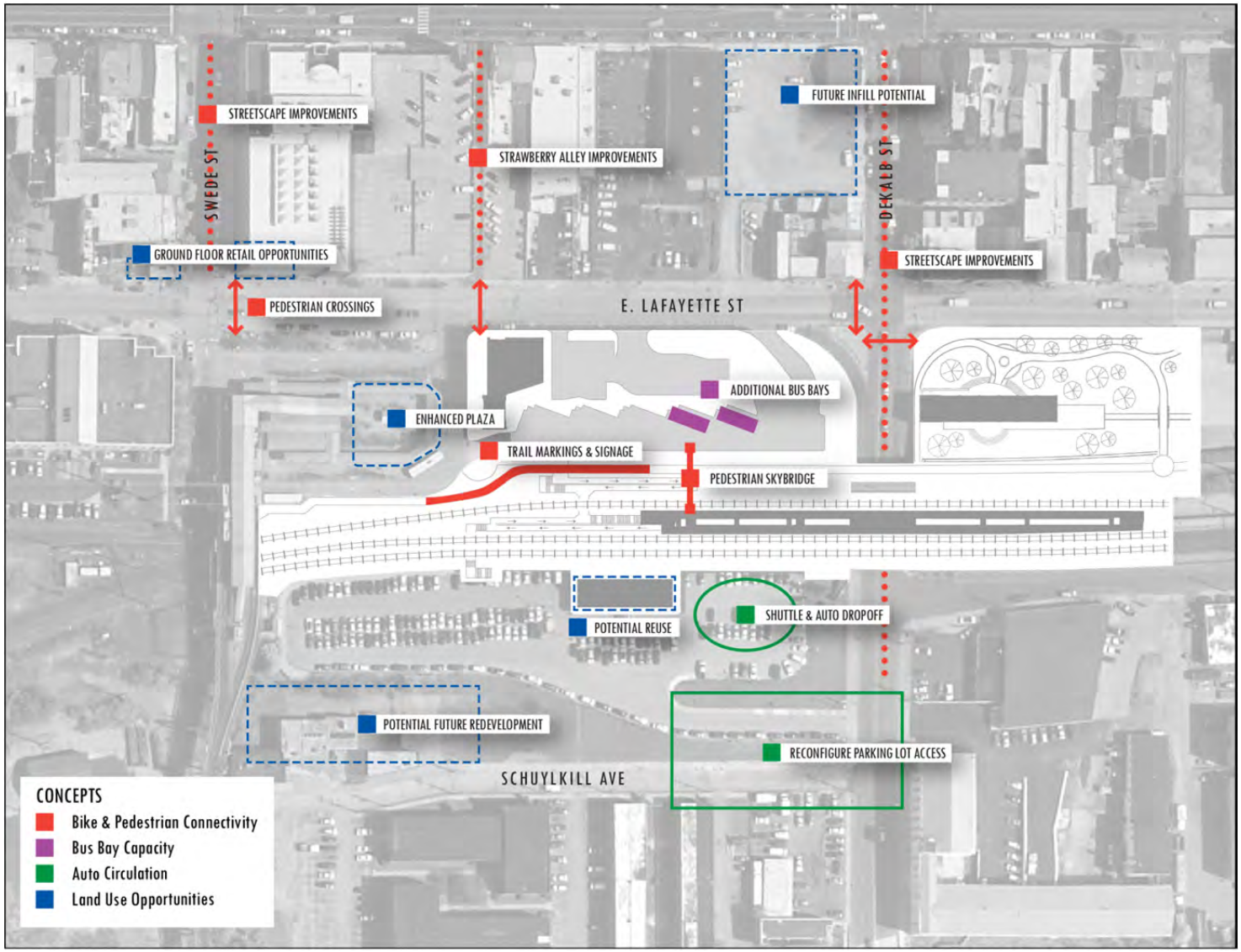
SOURCE: DVRPC 2012

FIGURE 35: WORKSHOP IN ACTION

SOURCE: DVRPC 2012

Figure 36 summarizes specific workshop ideas that were used as the basis for this project's concept plan, which also builds on two transformative plan elements that were developed previously: SEPTA's concept for a Regional Rail track and platform reconfiguration and the "trail junction"/freight building repurposing. More details about each element will be provided in *Chapter 6: Concept Plan Details*.

FIGURE 36: WORKSHOP IDEAS SUMMARY



SOURCE: DVRPC 2012

CHAPTER 6

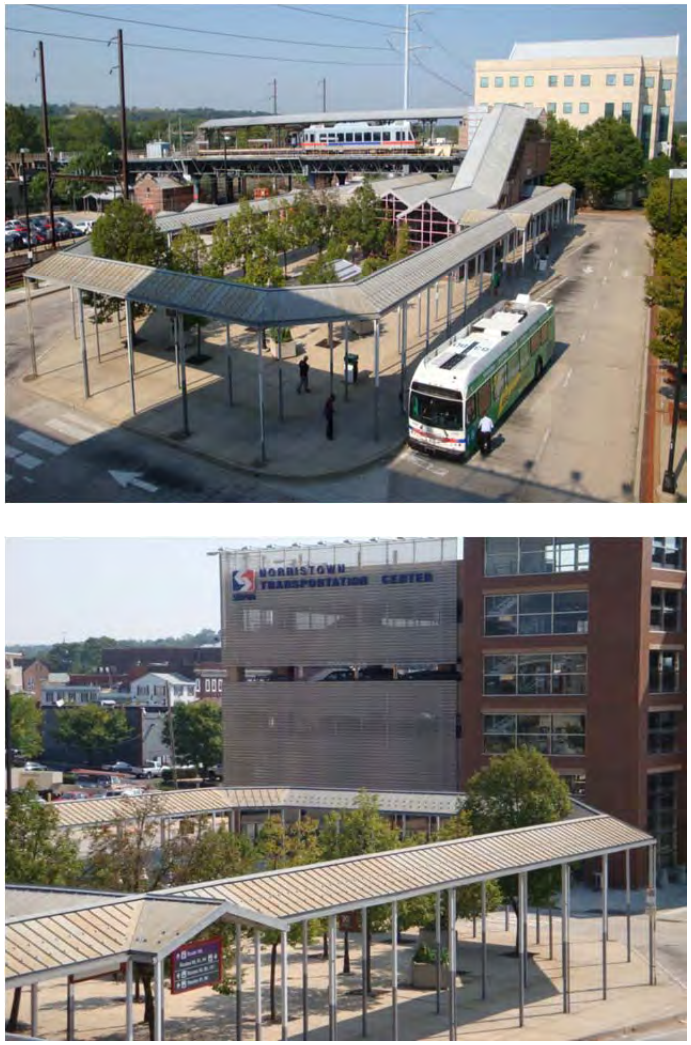
Concept Plan Details

DVRPC staff provided stakeholders with the workshop summary map and descriptions and compiled initial feedback to create a concept plan for NTC. This chapter will discuss in detail fourteen elements that comprise the concept plan and how each can help make NTC a more cohesive and a successful transportation center for SEPTA passengers, SEPTA operations, and the surrounding Norristown community.

Core Station Improvements

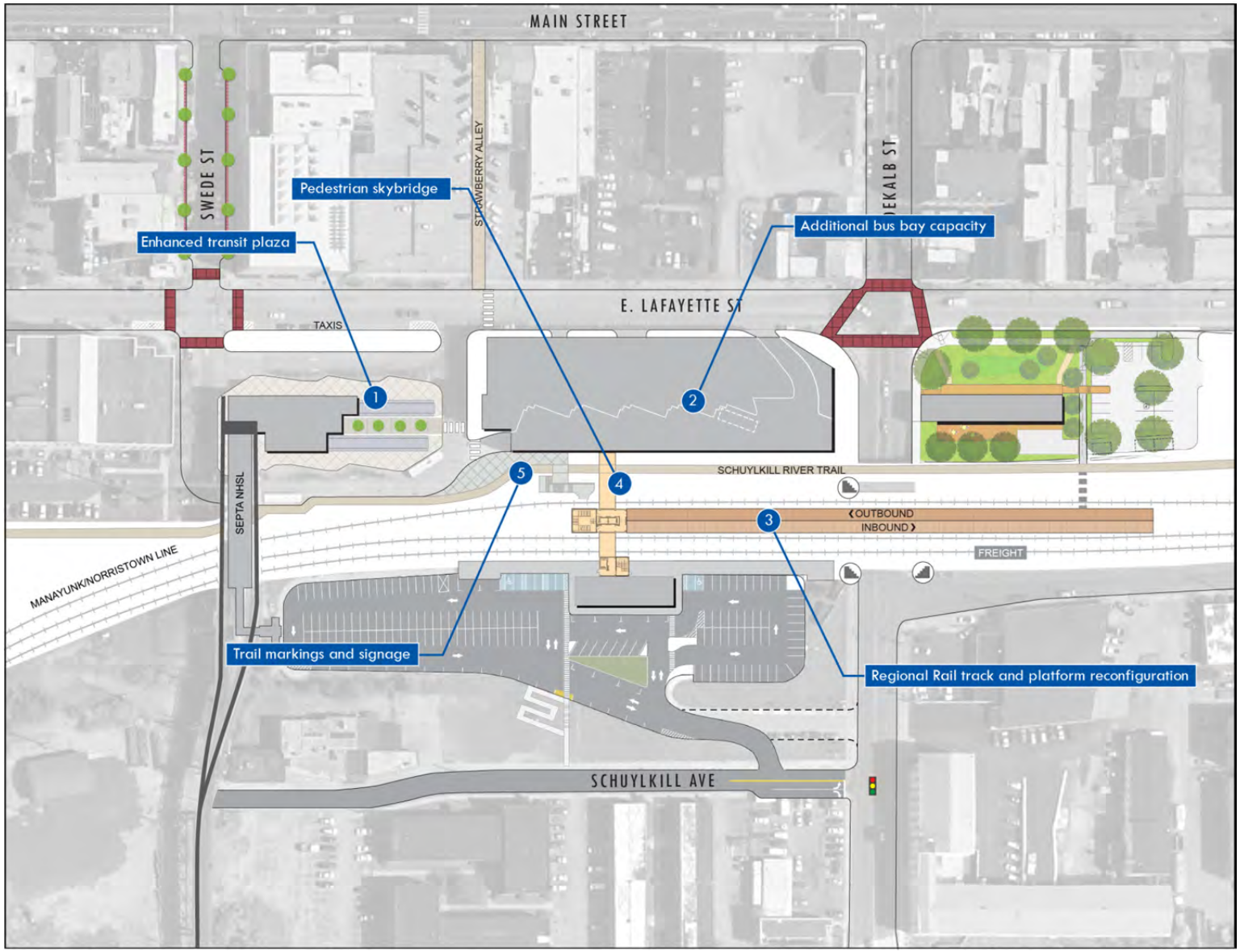
For the purposes of this plan summary, the core station area is the area bounded by Lafayette Street to the north, the Regional Rail Station building to the south, the NHSL right-of-way to the west, and DeKalb Street to the east. Figure 37 shows photographs of some of the existing core elements at NTC. In addition, Figure 38 illustrates the improvements that will be discussed: (1) enhanced transit plaza, (2) additional bus bay capacity, (3) Regional Rail track/platform reconfiguration, (4) pedestrian skybridge, and (5) trail markings and signage.

FIGURE 37: CURRENT VIEW FROM GARAGE TO PLAZA



SOURCE: DVRPC 2012

FIGURE 38: CORE STATION IMPROVEMENTS



SOURCE: DVRPC 2012

1. ENHANCE STATION AREA PLAZA

NTC operates nearly 24 hours per day, making it challenging to provide outdoor waiting areas that comfortably shelter passengers from inclement weather. Additional lighting, landscaping, seating, and artistic elements in the plaza would help make this space more safe and comfortable for passengers at any time or in any weather. DVRPC staff prepared three plaza concept ideas that reinforce the predominant pedestrian movements that exist on site (and existing crosswalk locations), and also make the plaza environment more hospitable to passengers. Figures 39 to 41 are sets of sketches that illustrate these three plaza prototypes: 'covered canopy,' 'open canopy,' and 'local aesthetic canopy.' Common elements of all three ideas include: removing the existing canopies and replacing them with lower, more human-scaled canopies, appointing the plaza with contrasting color, texture, and patterned pavers, installing outdoor furniture (lean rails, benches, trash receptacles), and planting additional landscaping. The closed canopy concept provides passengers with continuous coverage as they pass from the NHSL Station building to the crosswalks and bus bays, while the open canopy concept provides passenger coverage primarily at the bus bays, leaving more of the plaza area open. The third set of sketches is an example of how a plaza design could emphasize a unique aesthetic, such as highlighting local art and cultural themes. If the third option is selected, additional funding opportunities could be available from historic or cultural sources rather than transportation sources alone.

FIGURE 39: COVERED CANOPY PLAZA CONCEPT

SOURCE: DVRPC 2012

FIGURE 40: OPEN CANOPY PLAZA CONCEPT

SOURCE: DVRPC 2012

FIGURE 41: HISTORICAL/ARTISTIC PLAZA CONCEPT

SOURCE: DVRPC 2012

2. BIEBER TOURWAYS AND SEPTA BUS BAY CAPACITY

The SEPTA bus loop's bus bays are at capacity during SEPTA's scheduled "pulses," as illustrated in Figure 42. In the event of an emergency or a maintenance or capital project on either the NHSL or Regional Rail tracks, additional buses would be needed to substitute for these two modes. At the workshop, SEPTA and Bieber Tourways staff discussed the Central Parking contract created when the garage opened. Bieber Tourways recognized that one of its bus bays is underused and would be open to discussion about allowing SEPTA to use this bay for emergency, temporary, or permanent use for infrequent bus routes. The initial term of the contract is through January 2015, with options for three additional five-year terms. More discussion is required.

3. REGIONAL RAIL TRACK AND PLATFORM RECONFIGURATION

The Regional Rail track and platform reconfiguration project (page 39) is SEPTA's concept plan to relocate the Regional Rail tracks and platforms to allow for increased passenger and freight service. Figure 43 shows the existing layout of SEPTA's Regional Rail tracks. DVRPC's concept plan builds on SEPTA's original concept (which can be found in Appendix A) by proposing a pedestrian overpass (skybridge), along with other modifications to make this major project more compatible with other elements of the concept plan.

FIGURE 42: SEPTA BUS LOOP AT CAPACITY

SOURCE: DVRPC 2012

FIGURE 43: EXISTING REGIONAL RAIL CONFIGURATION

SOURCE: DVRPC 2012

4. CONSTRUCT PEDESTRIAN SKYBRIDGE

The skybridge is designed to better integrate all modes and facilities at NTC. The design links the parking garage on the north side of the site to the SEPTA south-side surface parking lots, connects the Regional Rail platforms to the SEPTA bus loop, NHSL, SEPTA garage and Bieber Tourways terminal, and provides ADA accessibility across the site. Figure 44 highlights each element of the skybridge; the corresponding descriptions are below (more detailed design diagrams can be found in Appendix A).

a. On the north side of the site, the skybridge would be connected to the second floor of the SEPTA garage and make use of the existing elevator to access other levels of the garage and ground-level NTC facilities.

b. The skybridge would link the parking garage to both the proposed center island Regional Rail platforms and the existing Regional Rail Station building and south side parking areas. By better connecting the platforms with garage parking, the skybridge could help to encourage more balanced parking demand. Because the new overpass crosses the Schuylkill River Trail above grade, passengers can avoid potential conflicts with trail users, especially cyclists. On the south side of the site, the skybridge would provide an enhanced connection that could facilitate adaptive reuse for the existing station building.

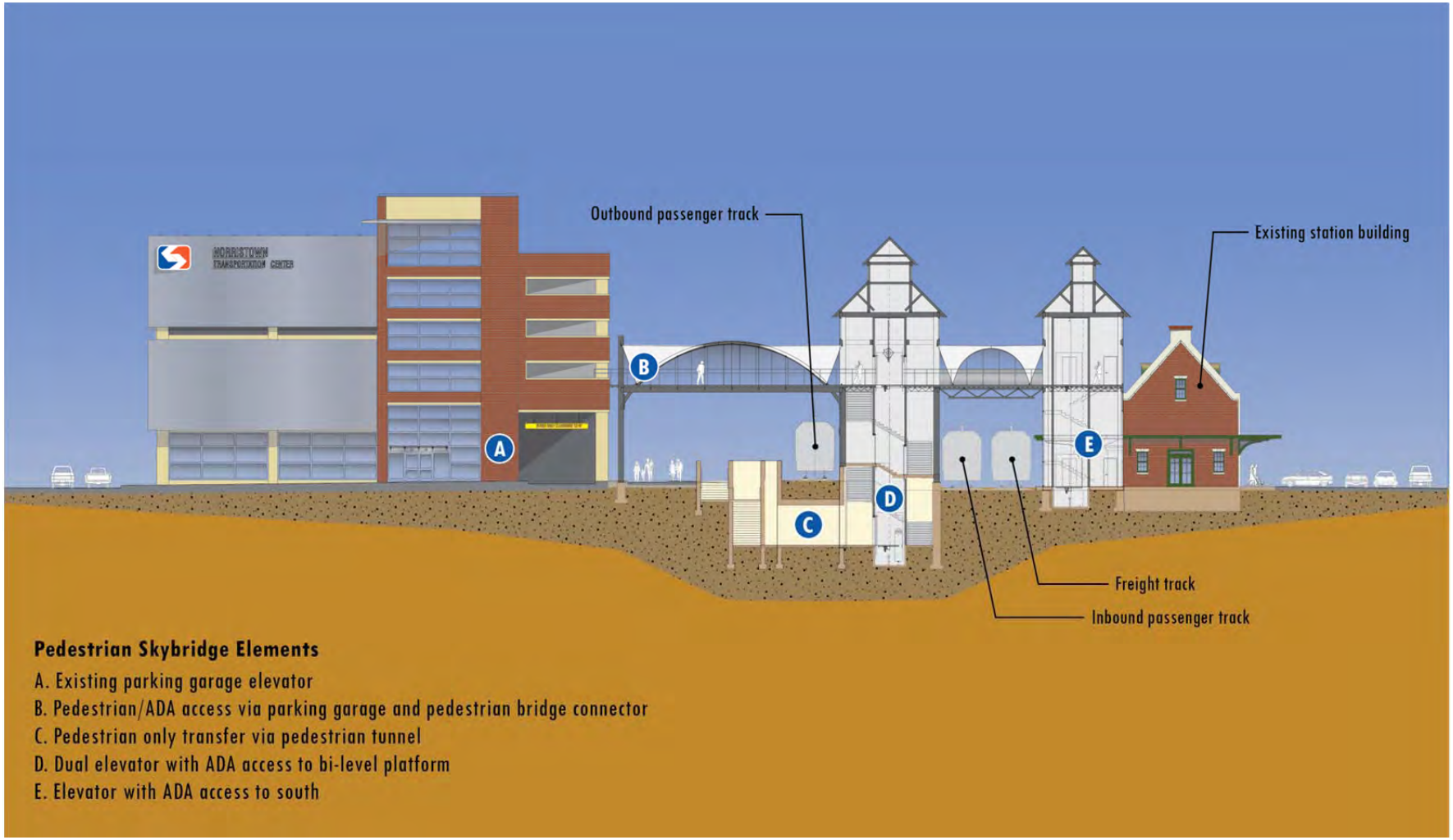
c. This tunnel would be a secondary pedestrian route that provides access from the bus loop area and the Schuylkill River Trail to the Regional Rail platforms. The tunnel would serve as an emergency exit for the platforms.

d. The center tower has an elevator with a dual door system for platform access, allowing passengers to board and alight on the inbound and outbound tracks. SEPTA's proposed new platform design suggests that the two platforms have approximately three feet of height separation, and the suggested dual elevator system allows for better passenger throughput in peak conditions. The integrated stair tower accesses both platforms and the pedestrian tunnel (C).

e. The southern segment of the skybridge would connect to a tower adjacent to the existing station building to provide the south-side parking area with platform access via both stair and elevator.

Although full design and engineering are still needed, the proposed design is within the height clearance range required for SEPTA to operate, per SEPTA engineering. Freight trains can operate on the by-pass track, under diesel or electric power, with a height clearance of 26.5 to 28.5 feet between the underside of the skybridge and the top of the tracks, where there is electrified service. The PECO power transmission pole is integrated into the proposed platform design, leaving the transmission lines in place overhead. Based on field observations, the DVRPC study team estimates that the lowest power line mounted on the pole is approximately 85 feet above the Schuylkill River Trail, the proposed access point. PECO transmission lines require 25 feet of clearance, which the skybridge was designed to accommodate. If necessary, height could be further modified by creating a lower roof profile (altering the proposed cupola designs).

FIGURE 44: PEDESTRIAN SKYBRIDGE CONCEPT

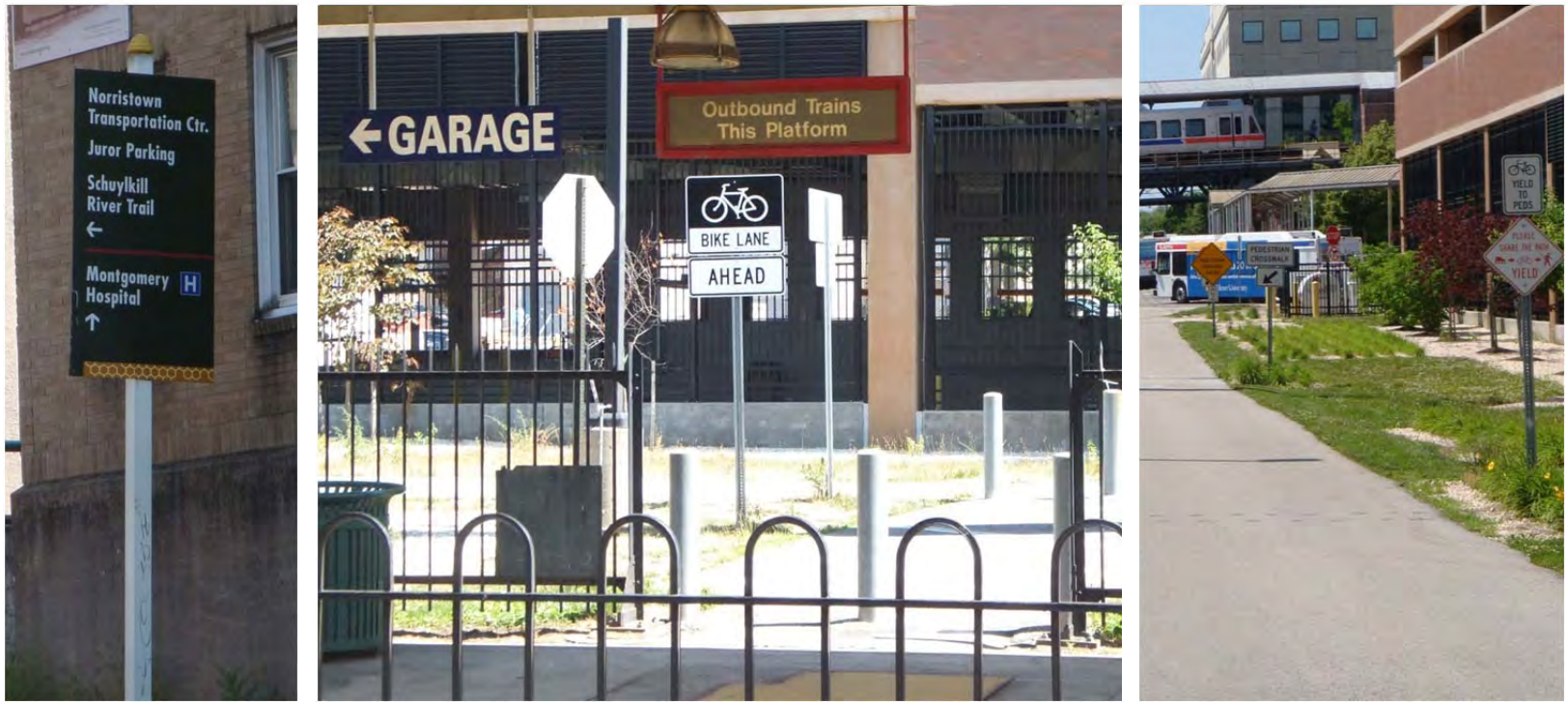


SOURCE: DVRPC 2012

5. TRAIL MARKINGS AND SIGNAGE

In 2002, a wayfinding program was prepared for Norristown by Kent Design/Seiler + Drury Architects. The signage program is still being implemented. Figure 45 (left) illustrates some of the municipality's existing wayfinding elements, which emphasize directional signage to lead travelers to municipal and county buildings, parks, shopping districts, transportation, and other key locations in Norristown. From conversations with stakeholders and passengers at NTC, it is clear that additional signage on site could be useful to supplement or consolidate the signage already there, especially for the parking lot validation in the SEPTA garage. For example, at the connection between the Schuylkill River Trail and NTC, there is an overwhelming amount of signage that alerts cyclists to watch for pedestrians when entering the station area, as shown in Figure 45 (right). A signage program could be implemented at NTC to consolidate all directional and wayfinding signage using the existing municipal designs, which would help provide brand consistency and aesthetic connectivity between the municipality and NTC.

FIGURE 45: MUNICIPAL SIGNAGE, SIGN CLUTTER FOR PASSENGERS, AND SIGN CLUTTER FOR TRAIL USERS

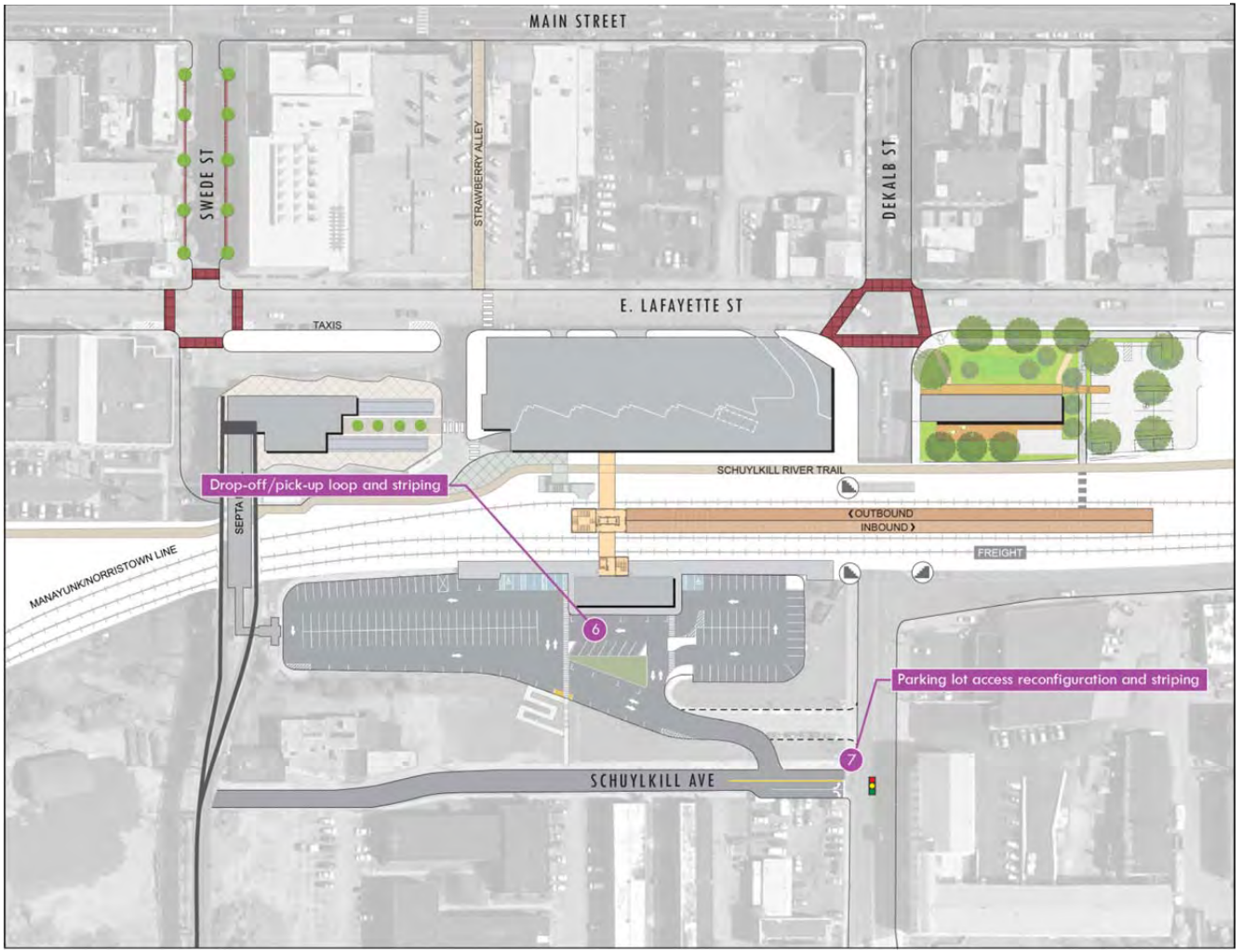


SOURCE: DVRPC 2012

Southside Access and Circulation

Figure 46 identifies proposed improvements for the south side of NTC. Recommendations in this area focus on improving access to the SEPTA surface parking lot and creating an efficient and convenient drop-off/pick-up location for motorists and employee shuttles. Currently, taxis, shuttles, and motorists compete for limited space on Lafayette Street.

FIGURE 46: SOUTHSIDE CONCEPT MAP



SOURCE: DVRPC 1012

6. DROP-OFF/PICK-UP LOOP RECONFIGURATION

A proposal for the south side of the station is to create a new drop-off/pick-up location in the central portion of the SEPTA surface parking lot, south of the Regional Rail platforms and adjacent to the station building. The island north of NTC that is currently used as a pick-up and drop-off location for shuttle buses, taxis, and passenger drop-off/pick-up will be signed for taxis only. Figure 46 illustrates this new organization and circulation pattern. Motorists and shuttles dropping off or picking up passengers would enter the facility and use the one-way lane directly in front of the station building. This configuration includes four parking spaces for shuttles along the curb that abuts the station building and seven short-term diagonal parking spaces along a new landscaped island. The concept seeks to create a safe and convenient drop-off location, while maintaining as much of the current parking as possible. The parking lot currently has a total of 180 spaces, including 136 daily and 44 permit spaces. The concept illustrated in Figure 46 has a total of 169 spaces, including 109 daily, 49 permit, and 11 short-term spaces. SEPTA prefers to maintain all of the lot's existing capacity, which may prove possible during design.

7. SOUTHSIDE PARKING LOT ACCESS REARRANGEMENT

There are two access points just south of NTC along DeKalb Street: the entrance and driveway to the SEPTA surface parking lot is located approximately 30 feet north of Schuylkill Avenue. The study team recommends eliminating the existing parking lot driveway and rerouting traffic onto Schuylkill Avenue. Consolidating these intersections will require a new access point to connect Schuylkill Avenue and the parking lot. Due to the topography of the site, this access would need to accommodate the significant grade change that exists along the southern and eastern portion of the parking lot.

Changing the location of the parking lot access and creating a new drop-off location will likely result in higher traffic volumes along Schuylkill Avenue. This reconfiguration may require widening Schuylkill Avenue to create an additional turn lane, which could improve traffic flow because there would be dedicated lanes for north and southbound turning movements. Similarly, an increase in traffic volume may necessitate the signalization of this intersection. A traffic study would need to be undertaken to determine the potential impacts of these roadway reconfigurations.

FIGURE 47: EXISTING DROP-OFF/PICK-UP AREA

SOURCE: DVRPC 2012

FIGURE 48: PROPOSED PICK-UP/DROP-OFF

SOURCE: DVRPC 2012

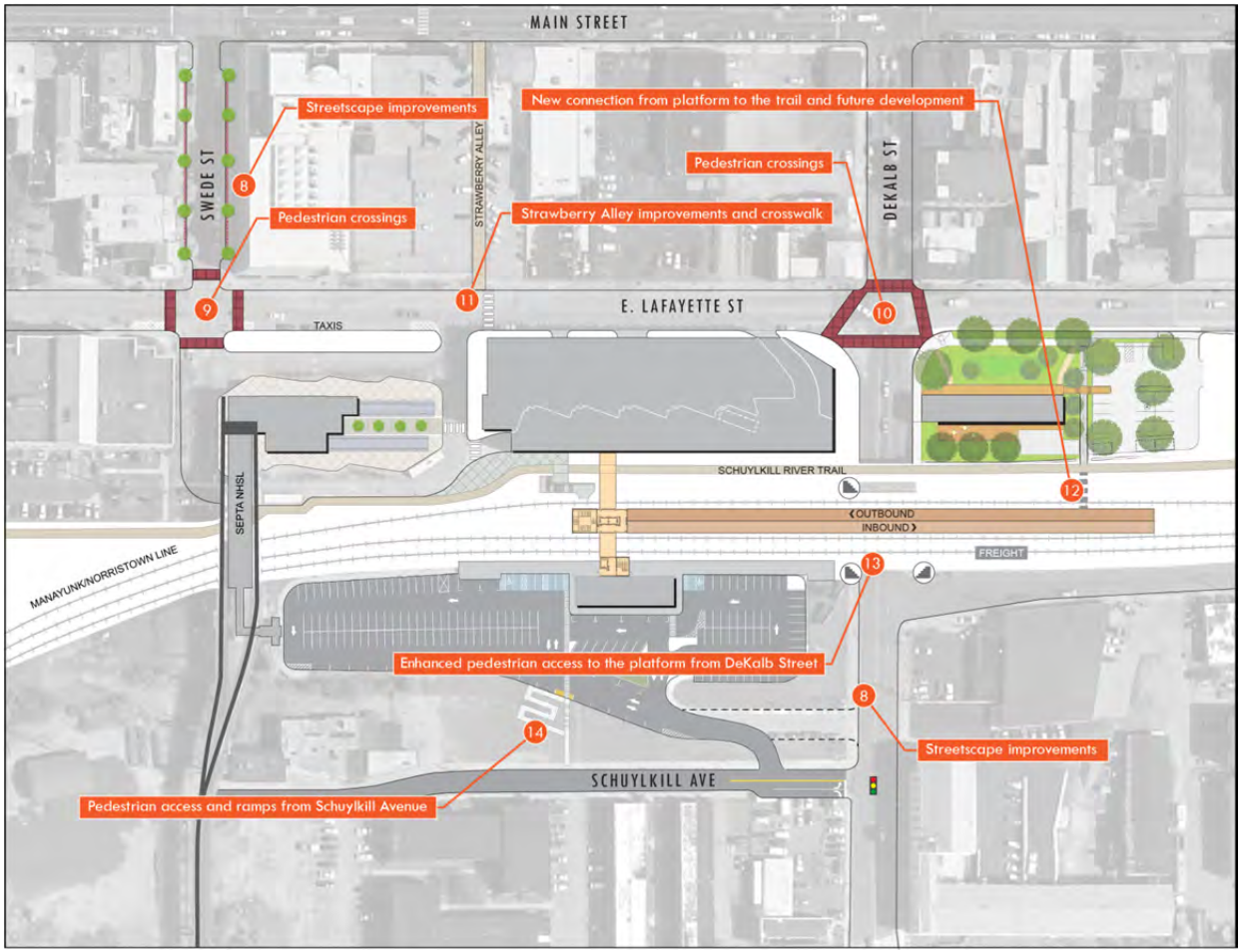
FIGURE 49: ENTRANCE TO SOUTHSIDE OF NTC AND SCHUYLKILL AVENUE

SOURCE: DVRPC 2012

Streetscape and Pedestrian Improvements

Roadways in downtown Norristown generally enable a walkable and inviting environment, but there are improvements that could be made to sidewalks, intersections, and various pedestrian and bicycle facilities that could make the connection between NTC and Norristown more appealing. These improvements are shown in Figure 50. This section discusses existing conditions in these areas in comparison to the proposed elements.

FIGURE 50: PEDESTRIAN IMPROVEMENTS CONCEPT AREA MAP



SOURCE: DVRPC 2012

8. STREETSCAPE IMPROVEMENTS AND MAINTENANCE ALONG SWEDE AND DEKALB STREETS

Swede Street, a primary gateway into Main Street and the downtown area of Norristown, should have an aesthetically pleasing streetscape that is safe and attractive for bicycle and pedestrian use. The present conditions are illustrated in Figures 51 and 52, which compare the existing conditions on Swede and DeKalb streets just north of NTC. The proposed Swede Street Streetscape Project (discussed on page 51) would improve the existing streetscape and include installing street trees, street furniture, and bike racks. There is currently a revitalization implementation grant for the DeKalb Street Arts Hill, also a streetscape project. So far, installed improvements include sidewalk design, lighting, and public art, which were completed north of NTC on DeKalb Street; extending these types of improvements to the block of DeKalb Street that abuts NTC would enhance aesthetics and connectivity.

FIGURE 51: IMPROVED STREETSCAPE ALONG DEKALB STREET

SOURCE: DVRPC 2012

FIGURE 52: EXISTING STREETSCAPE ALONG SWEDE STREET

SOURCE: DVRPC 2012

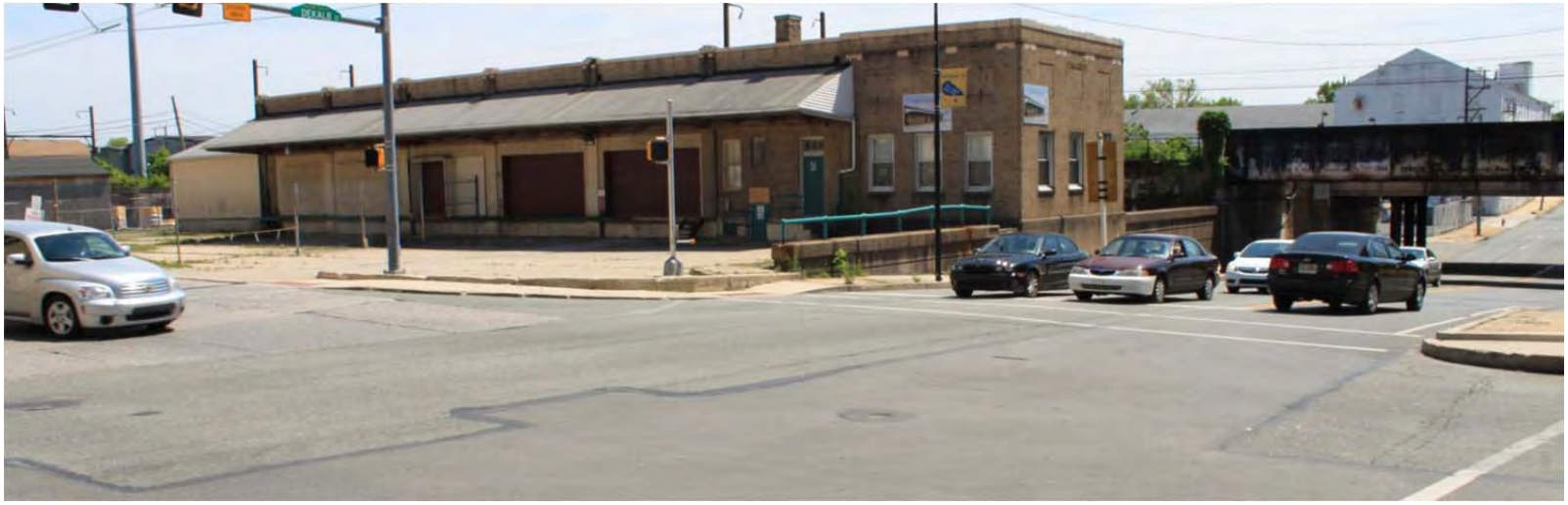
9&10. LAFAYETTE STREET CROSSING IMPROVEMENTS AT SWEDE AND DEKALB STREETS

There are two main intersections that connect Norristown and NTC: Lafayette Street at Swede Street (Figure 53) and Lafayette Street at DeKalb Street (Figure 54). Both could be improved for safety and aesthetic purposes. This plan suggests improvements to the pedestrian environment at these intersections, including enhanced crosswalks.

FIGURE 53: INTERSECTION OF LAFAYETTE STREET AND SWEDE STREET

SOURCE: DVRPC 2012

FIGURE 54: INTERSECTION OF LAFAYETTE STREET AND DEKALB STREET



SOURCE: DVRPC 2012

11. CONTINUE IMPROVEMENTS TO STRAWBERRY ALLEY AND ADD PEDESTRIAN CONNECTION BETWEEN NTC AND STRAWBERRY ALLEY

Strawberry Alley is a pedestrian walkway that connects the north side of Lafayette Street to the south side of Main Street (discussed on page 50, shown in Figure 55). A pedestrian count for Strawberry Alley found that 363 pedestrians use the path on an average day. The structural elements of the walkway are well designed, but maintenance needs should continue to be addressed proactively.

Figure 56 shows the current lack of connection between the north side of Lafayette Street (and Strawberry Alley) and NTC. Figure 57 illustrates a proposed midblock crosswalk with pedestrian crossing signage. The DVRPC study team discussed the midblock crosswalk idea with PennDOT staff, who concluded that this proposal is likely to be feasible, though some additional investigation would be required. The Lafayette Street Expansion project, planned to begin construction soon, will widen the roadway. Although the speed limit is not likely to escalate, installing a crosswalk in this location will help make pedestrians more visible. Improving the aesthetics along Strawberry Alley and the connection between NTC and Strawberry Alley may encourage more foot traffic along the path, better connecting NTC with Main Street.

FIGURE 55: STRAWBERRY ALLEY

SOURCE: DVRPC 2012

FIGURE 56: EXISTING CROSSING TO NTC

SOURCE: DVRPC 2012

FIGURE 57: PROPOSED MIDBLOCK CROSSWALK RENDERING

SOURCE: DVRPC 2012

12. NEW CONNECTION FROM PLATFORM TO TRAIL AND FREIGHT BUILDING FUTURE DEVELOPEMENT

The proposed Regional Rail reconfiguration (discussed on page 39) will require the relocation of the Schuylkill River Trail (SRT) within the station area because the new third track will be installed in the SRT's current location. As a result, the existing link connecting the Regional Rail outbound platform to the SRT, shown in Figure 58, will be removed. Replacing this connection is desirable to ease future walk-up and bike-up station access. Providing access between the trail and platform would be especially valuable on the east side of DeKalb Street where it could enhance the connectivity and development potential of the freight building site. However, making this connection may be problematic depending on the eventual viaduct configuration east of DeKalb Street.

FIGURE 58: EXISTING CONNECTION FROM SRT TO RR TRACKS

SOURCE: DVRPC 2012

13. ENHANCE AND SUSTAIN EXISTING PEDESTRIAN PLATFORM ACCESS AT DEKALB STREET

The existing pedestrian and bicycle connections from the Regional Rail platforms to DeKalb Street are not aesthetically pleasing or welcoming to passengers. Visual improvements and wayfinding signage could be installed in the access stairways to enliven the space. The Arts Hill Council is a nonprofit artist advocacy group that hopes to revitalize DeKalb Street north of NTC. Its influence and projects could be extended to the NTC through elements such as streetscape artistic murals, lighting, and pavers.

14. PEDESTRIAN ACCESS AND RAMPS FROM SCHUYLKILL AVENUE TO THE NTC SURFACE PARKING LOTS

There is no existing connection between Schuylkill Avenue and the NTC surface parking lots. Figure 59 shows that passengers do walk between the two destinations, although there is a steep grade between them. The DVRPC study team recommends installing a formal connection between the two areas for safety purposes and to better accommodate pedestrian access from points south.

FIGURE 59: GRADE BETWEEN SCHUYLKILL AVENUE AND NTC

SOURCE: DVRPC 2012

Potential Development Opportunities

In addition to station access and facility improvements, infill development opportunities in the station area offer the potential to better leverage NTC as an economic development asset. Figure 60 identifies potential development sites in the station area. This inventory of sites is based on recent planning documents, information presented by the Steering Committee, and the DVRPC study team's research. The latest planning studies addressing development opportunities in Norristown include *Lafayette Street Land Use Access Study*, *Downtown Strategic Development Plan*, and *Norristown Economic Revitalization Strategy Update*. The Lafayette Street Study was sponsored by the Montgomery County Planning Commission and prepared by Edwards & Kelcy in 2006. This study was undertaken to understand the development potential and access issues associated with waterfront properties in Norristown and Plymouth Township. The Downtown Strategic Development Plan was prepared by Wallace Roberts and Todd and focused on revitalizing the downtown area. Finally, the Norristown Economic Revitalization Strategy Update was prepared for Norristown by Urban Partners in June 2009. Brief overviews of each potential development site are presented below.

DOWNTOWN SITES

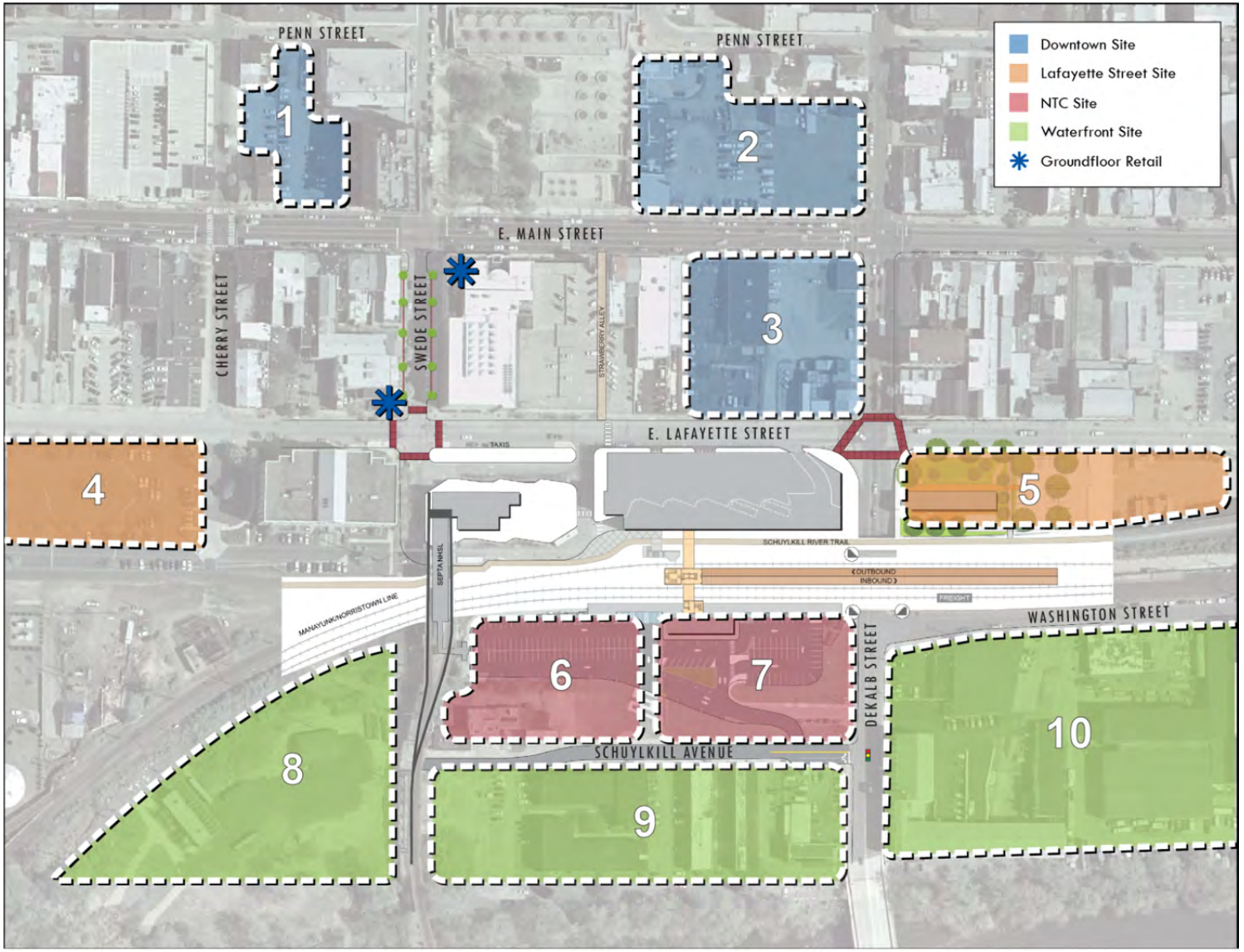
Site 1

***Size*:** Approximately 0.6 acres
***Current Use*:** Surface parking lots
***Zoning*:** Town Center
***Development Potential*:** This site is located on a portion of the block bounded by Penn Street, Swede Street, Main Street, and Cherry Street. The Downtown Strategic Development Plan proposed a mix of residential and retail uses for these properties. According to that plan, the site could be appropriate for 60 residential units and 4,500 square feet of retail space. Parking for the site could be located at the county garage located at Main Street and Cherry Street.

Site 2

Size: Approximately 1.6 acres
Current Use: Surface parking lots; vacant lots; bank
Zoning: Town Center
Development Potential: This site is located on a portion of the block bounded by Penn Street, DeKalb Street, Main Street, and the Montgomery County Court Complex. The Downtown Strategic Development Plan identified these parcels as a potential site of approximately 160,000 square feet of mixed-use development that could contain a range of retail, residential, and office space, as well as structured parking.

FIGURE 60: LAND USE OPPORTUNITIES MAP



SOURCE: DVRPC 2012

Site 3

***Size*:** Approximately 1.6 acres
***Current Use*:** Auto Zone store; vacant lots; assorted commercial buildings, some with upper floor apartments
***Zoning*:** Town Center
***Development Potential*:** This site is located on a portion of the block bounded by Main Street, DeKalb Street, Lafayette Street, and Swede Street. The Downtown Strategic Development Plan contains conceptual plans for approximately 200,000 square feet of retail, residential, and office space, with structured parking.

LAFAYETTE STREET SITES

Site 4

***Size*:** Approximately 4.1 acres
***Current Use*:** Parking lots for Citizens Bank office building
***Zoning*:** Town Center, Unified Development Overlay I
***Development Potential*:** The surface parking lots located along the south side Lafayette Street, between Cherry Street and Markley Street, were identified by the Lafayette Street Land Use Access Study for high potential for redevelopment. This area is envisioned by both the Lafayette Street Study and the Norristown Economic Revitalization Strategy Update as three separate development parcels divided by an extension of Barbadoes Street and a new street to be located between Barbadoes and Cherry Streets. Residential or office uses have been identified as most appropriate for the sites with the most intense development proposed for the western portion between Markley Street and Barbadoes Street.

FIGURE 61: SITE 3

SOURCE: DVRPC 2012

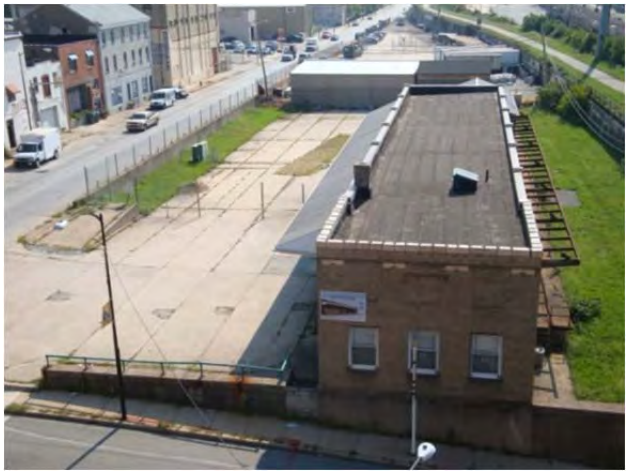
FIGURE 62: SITE 4

SOURCE: DVRPC 2012

Site 5

***Size*:** Approximately 1.8 acres
***Current Use*:** Former Norristown Freight Transfer Station; industrial
***Zoning*:** Light Industrial
***Development Potential*:** The western portion of this site contains the former Norristown Freight Transfer Station. Montgomery County completed a feasibility study for this site that examines its potential reuse as a recreation service and retail center known as Trail Junction and takes advantage of its proximity to the Schuylkill River Trail. Alternatively, the larger site, which contains the former freight station and the adjacent industrial parcel, has also been identified as a potential site for a larger scale mixed-use development.

FIGURE 63: SITE 5



SOURCE: DVRPC 2012

NTC SITES

Sites 6 & 7

***Size*:** Each approximately 1.4 acres
***Current Use*:** SEPTA parking lot; light industrial
***Zoning*:** Town Center, Unified Development Overlay I
***Development Potential*:** The current SEPTA parking lot was identified for its high potential for redevelopment in the Lafayette Street Land Use Access Study. This study suggested that the entire site, roughly 2.8 acres, might be appropriate for a large mixed-use development. Similarly, the Norristown Economic Revitalization Strategy identifies the entire site as a candidate for retail/mixed-use development provided that the SEPTA parking structure can provide sufficient space for commuters. The parking lot is shown as two separate development opportunities in Figure 54 to highlight the possibility of developing the western portion of the site (shown here as Site 6), while maintaining the revised shuttle and vehicle drop-off and circulation proposed in this plan. Site 7 covers the eastern portion of the parking lot and could offer additional development space adjacent to Site 6. Developing the entirety of the parking lot would not be compatible with the drop-off and circulation patterns proposed in this plan for the south side of the station.

WATERFRONT SITES

Site 8

***Size*:** Approximately 3.6 acres
***Current Use*:** PECO
***Zoning*:** Recreation, Unified Development Overlay I
***Development Potential*:** This triangular PECO property is located between the regional rail tracks, NHSL tracks, and the Schuylkill River. Multiple recent planning documents call for this site to be converted to recreational use with the potential inclusion of a natural amphitheater.

FIGURE 64: SITE 8

SOURCE: DVRPC 2012

Site 9

***Size*:** Approximately 11.8 acres
***Current Use*:** Multifamily housing; auto dealership
***Zoning*:** Residential
***Development Potential*:** This development site is located south of the SEPTA parking lot and is bounded by Schuylkill Avenue, DeKalb Street, the Schuylkill River, and the NHSL tracks. The Lafayette Street Land Use Access Study proposes adding new streets and two mixed-use infill buildings, while preserving existing residential uses. The Norristown Economic Revitalization Strategy specifies that any future development should include mixed-use development that incorporates retail and a restaurant.

FIGURE 65: SITE 9

SOURCE: DVRPC 2012

Site 10

***Size*:** Approximately 11.8 acres
***Current Use*:** Industrial
***Zoning*:** Heavy Industrial, Light Industrial
***Development Potential*:** This development site is referred to as Riverfront 4 in the Lafayette Street Land Use Access Study and includes several parcels bounded by Washington Street, Sawmill Run, the Schuylkill River, and DeKalb Street. Recent studies propose creating a network of new streets and promoting a mixture of residential and commercial uses. New developments should also be accompanied by a continuous waterfront esplanade along the Schuylkill River.

GROUND-FLOOR RETAIL

Figure 60 also identifies two potential sites for new ground-floor retail uses. These sites were selected due to their current vacancy and their strategic location. One site is located at the corner of Main Street and Swede Street on the first floor of the Southeast Regional Office of the PA DEP. The second site is a vacant one-story commercial space on Swede Street near the intersection of Lafayette Street. Encouraging the private sector to activate commercial uses in these locations can help promote linkages between NTC and Downtown Norristown.

NORRISTOWN TRANSIT-ORIENTED MARKETING INITIATIVE

The municipality of Norristown has recently formed a steering committee for the Norristown Transit-Oriented Marketing Initiative. The project aims to assist the municipality and potential developers in understanding the development and redevelopment potential of the key sites in Norristown. The project team will conduct a market analysis and develop marketing materials. They will present their findings to the stakeholder committee (which consists of local business owners, consultants, developers, and municipal and county officials), who will evaluate the submitted proposals and then identify key development and redevelopment success stories in Norristown. The information provided here can be used as a resource to inform this work.

CHAPTER 7

Implementation and Recommendations

The program of improvements for Norristown Transportation Center developed through this study represents an ambitious plan—one that has the potential to realize benefits to both NTC and to Norristown at-large. The recommendations herein represent improvements to circulation that encourage increased transit ridership, development potential of the area surrounding NTC, improved quality of life and perception of safety, and economic viability. While taken in its entirety the concept plan represents significant investment, it is also modular such that individual elements of the plan can be pursued strategically as funding becomes available.

The DVRPC study team prepared a concept plan summary diagram of all 14 plan elements (Figure 66) and a corresponding table (Table 11). Within the table, the element color, type, number, and name are all references to the previous chapter (described from pages 65 to 77) as well as the combined concept plan. The concept plan summary diagram includes classifications for priority, potential costs, and timeframe.

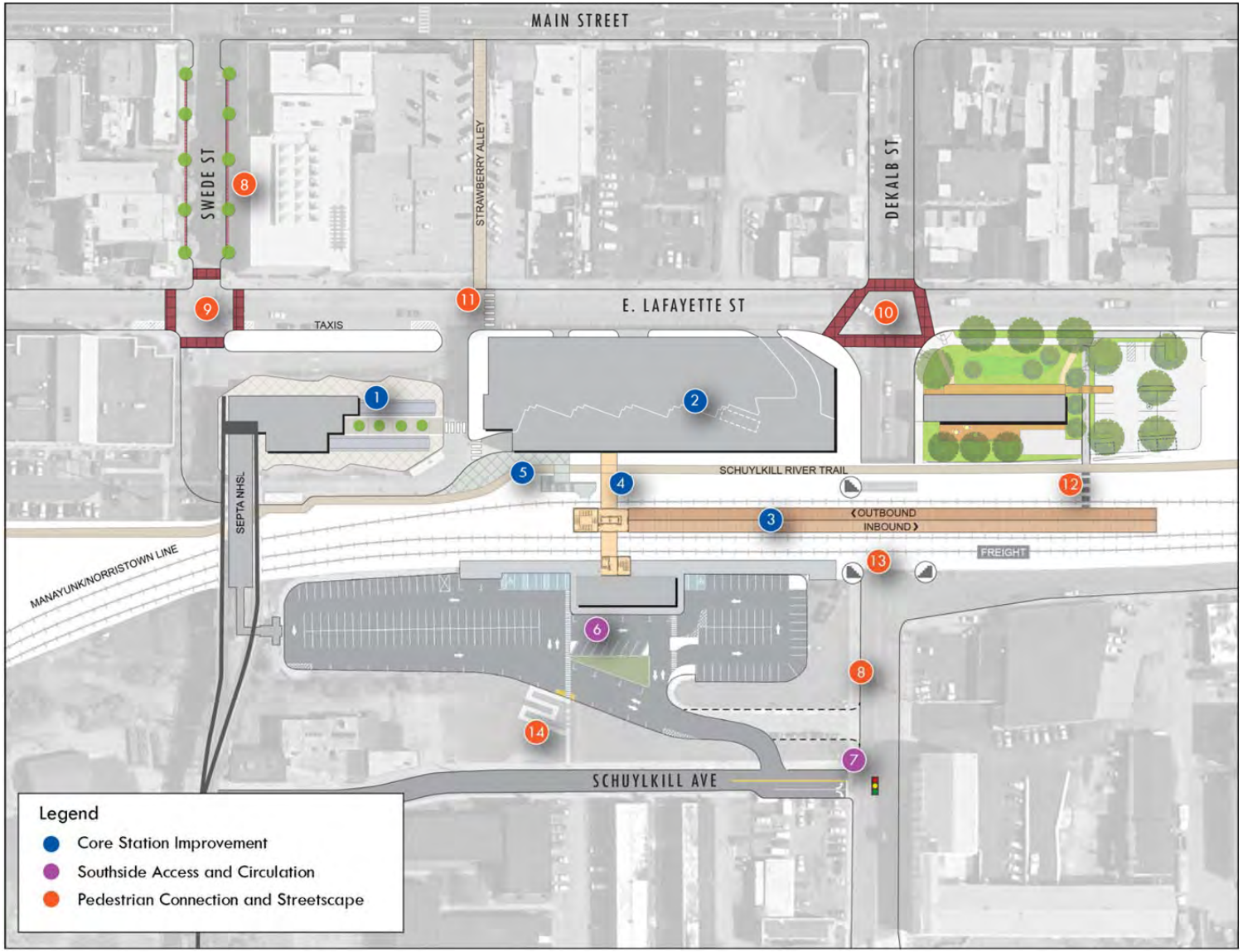
The priority of each recommendation is estimated in terms of three categories: high, medium, and low. These priorities are based on the likely effectiveness of the recommendation to address stakeholder-identified areas of need, as well as factors such as affordability and complexity of implementation.

Estimated costs were assigned a range between category one ($) and category three ($$$):

- Category one ($) is between $0 to $100,000;
- Category two ($$) between $100,000 to $1 million; and
- Category three ($$$) above $1 million.

The timeframe column refers to short-term projects that have a lower cost and a shorter timeframe for completion, such as the crossing improvements at Lafayette Street (# 8, 9). Other projects that have been listed with a long-term timeframe are more expensive and/or dependent on other projects, such as the Regional Rail reconfiguration (#3) and the pedestrian skybridge (#4), making implementation more complex.

FIGURE 66: NORRISTOWN TRANSPORTATION CENTER CONCEPT PLAN



SOURCE: DVRPC 2012

TABLE 11: SUMMARY OF NTC CONCEPT PLAN WITH IMPLEMENTATION ELEMENTS

	#	Element Name	Priority	Cost Range	Timeframe	Responsible Party	Page Number
Core Elements	1	Enhance station area plaza	High	$$	Short	SEPTA	65
	2	Bieber Tourways and SEPTA bus bay capacity	High	$	Short	SEPTA/Bieber Tourways	67
	3	Regional Rail track and platform reconfiguration	High	$$$	Long	SEPTA	67
	4	Construct pedestrian skybridge	Medium	$$$	Long	SEPTA	68
	5	Trail markings & signage	High	$	Short	Norristown/ SEPTA/Montgomery County	70
Southside	6	Drop-off/pick-up loop access reconfiguration	Medium	$	Short	SEPTA	72
	7	Southside parking lot access rearrangement	High	$$	Short	SEPTA/ PennDOT/ Montgomery County	72
Pedestrian Connection & Streetscape	8	Streetscape improvements and maintenance along Swede and DeKalb streets	Medium	$$	Short	Norristown/ Arts Hill	74
	9	Crossing improvements at Swede St. and Lafayette	High	$	Short	Montgomery County/Norristown	75
	10	Crossing improvements at DeKalb St. and Lafayette	High	$	Short	Montgomery County/Norristown	75
	11	Continue improvements to Strawberry Alley and add pedestrian connection between NTC and Strawberry Alley	High	$$	Short	Norristown/Montgomery County	76
	12	New connection from platform to trail and to freight building future development	Low	$$	Long	SEPTA/ Montgomery County	77
	13	Enhance and sustain existing pedestrian platform access at DeKalb Street	High	$	Long	SEPTA/ Arts Hill	77
	14	Pedestrian access & ramps from Schuylkill Ave to NTC surface parking lots	High	$$	Short	SEPTA	77

SOURCE: DVRPC 2012

There are multiple ways in which project implementation could proceed in a phased way. SEPTA cost engineering staff developed a construction cost estimate for elements of the concept plan that relate to SEPTA facilities, which is summarized in Table 12 (SEPTA's full itemized cost estimate can be found in Appendix B). Table 12 summarizes only third-party construction costs, plus SEPTA oversight of a third-party contractor. There would be other costs, including construction-related soft costs that could combine to add an additional 10 to 15 percent to the total project costs.

TABLE 12: SEPTA COST ESTIMATE SUMMARY

Improvement	Estimated Cost ($)
Enhance station area plaza	75,000
Regional Rail track and platform reconfiguration	8,982,342
Install pedestrian skybridge	5,646,907
Schuylkill River Trail relocation	285,008
New connection from platforms to trail and to freight building site (priced as a Pedestrian Bridge; varies depending on viaduct configuration)	160,000
Drop-off/pick-up loop access rearrangement and Southside parking lot reconfiguration	219,401*
Prime Bond (payment & performance bond for the entire 3rd party contract amount for construction)	118,069
Price % add-on (direct and Indirect costs for the conceptual design)	4,329,659**
Indirect cost add-on (overhead for the 3rd party contractor)	311,047
Direct cost add-on (profit for the 3rd party contractor)	1,520,866
TOTAL SEPTA Costs	21,648,297

SOURCE: DVRPC, SEPTA, PENNDOT 2012

*On site, plus additional $40,000 (approx.) off site for Schuylkill Avenue signal installation. Cost estimated from PennDOT's ECMS (Engineering and Construction Management System) recent bid history.
**Includes some elements of the station plaza improvement project, such as the roofline adaptation and paver installation.

The following bullets suggest an early action plan that prioritizes relatively low-cost improvements and addresses the top-priority facility needs that can be completed in a relatively short timeframe. This proposed early action plan includes structural, design, policy, and dialogue changes that are proposed for the NTC station area.

Structural and Design

- Plaza enhancements.
- Improve crossings along Lafayette Street at Swede and DeKalb streets.
- Install safe midblock crosswalk connection from Strawberry Alley to NTC.
- Reconfigure the drop-off/pick-up loop and south-side parking lot access.
- Install trail markings and signage.

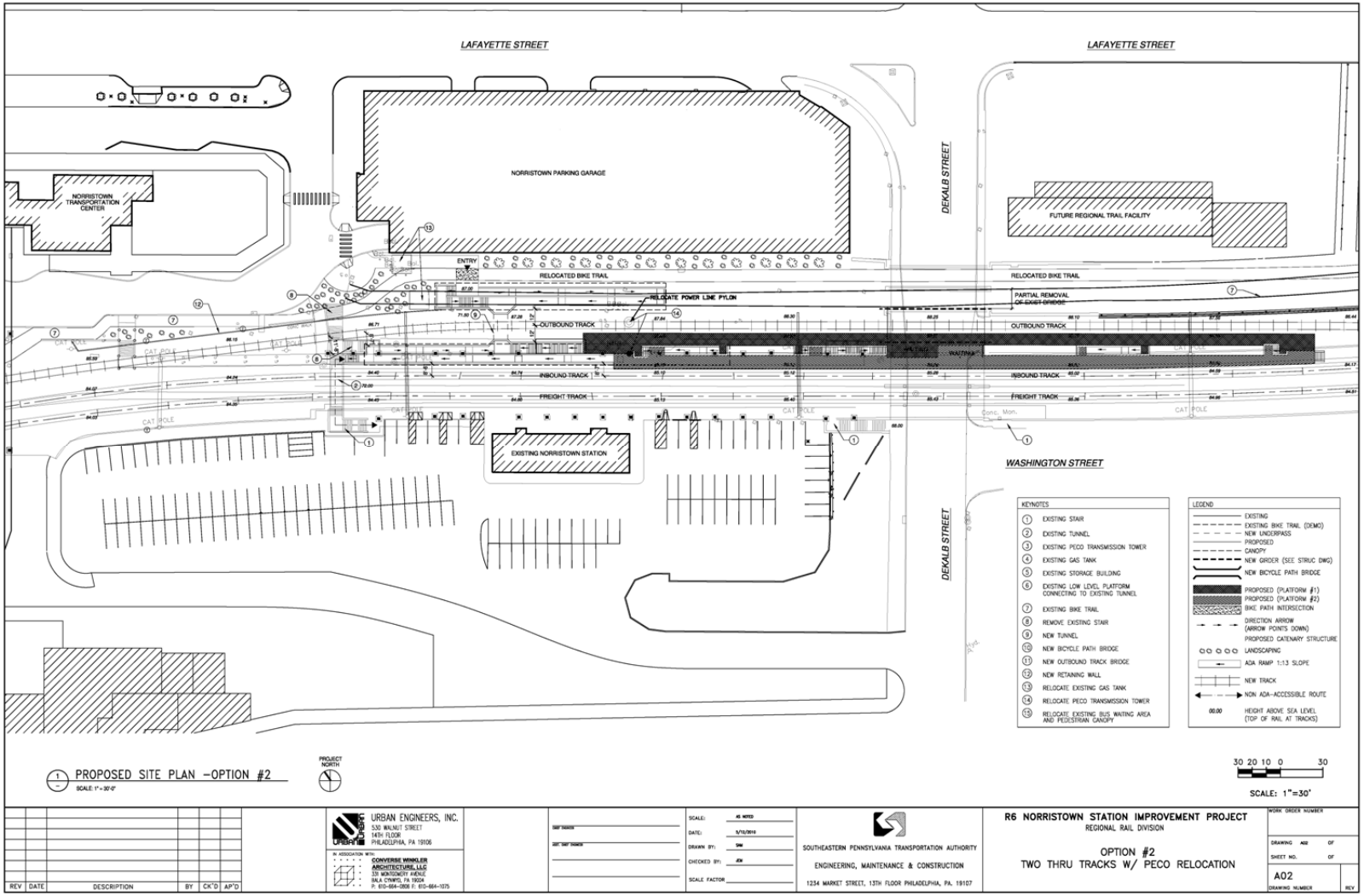
Policy and Dialogue

- Continue to invest in maintenance for Strawberry Alley.
- Bieber Tourways and SEPTA bus bay shared-use discussion.
- Use recommendations to inform other ongoing and future station-area projects, such as the Norristown Transit-Oriented Marketing Initiative and design work for the Lafayette Street widening project.

This proposed early action plan would address the main priorities from this project's design workshop: enhancing connections with the surrounding community, improving bus bay capacity and bus loop bottlenecks, clarifying and organizing drop-off and pick-up areas, and mitigating trail conflicts. DVRPC will continue to work with Montgomery County, SEPTA, the Municipality of Norristown, and other planning partners to pursue implementation of this study's recommendations and support other local planning in Norristown.

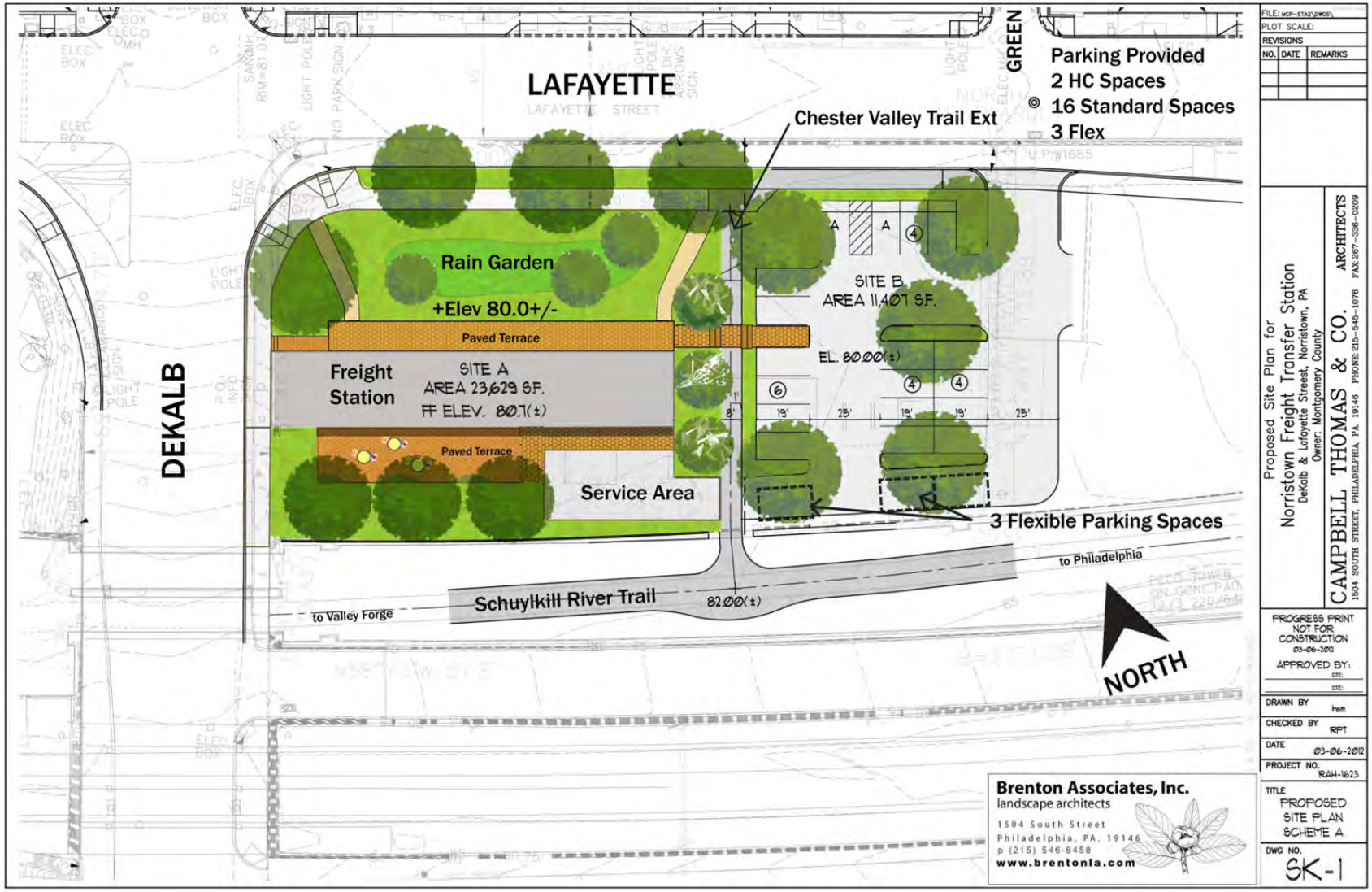
Appendix A

SEPTA Preliminary Regional Rail Reconfiguration Concept and Site Plan



SOURCE: SEPTA 2011

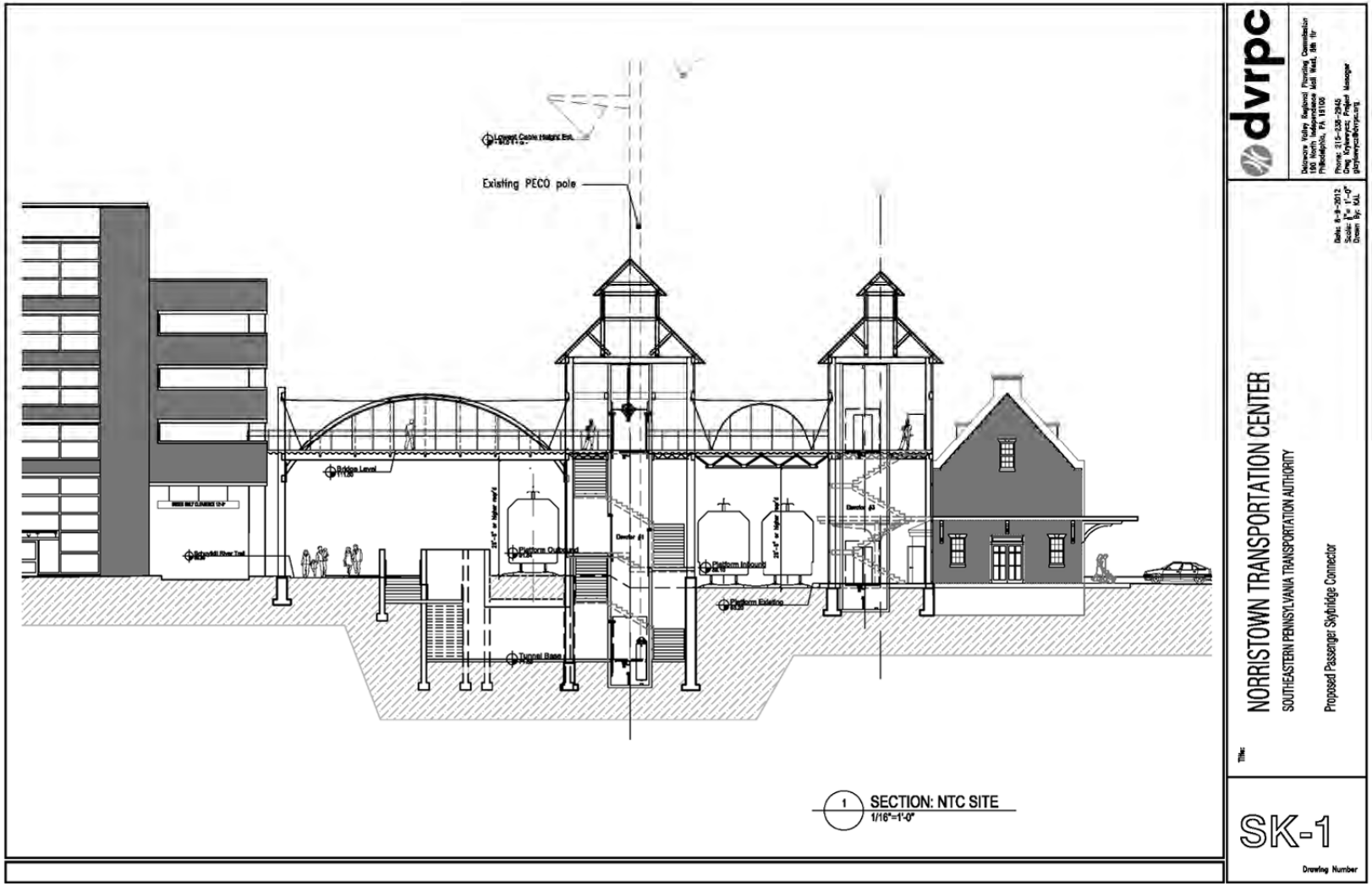
Freight Building Preliminary Concept Plan



SOURCE: MONTOGOMERY COUNTY 2012

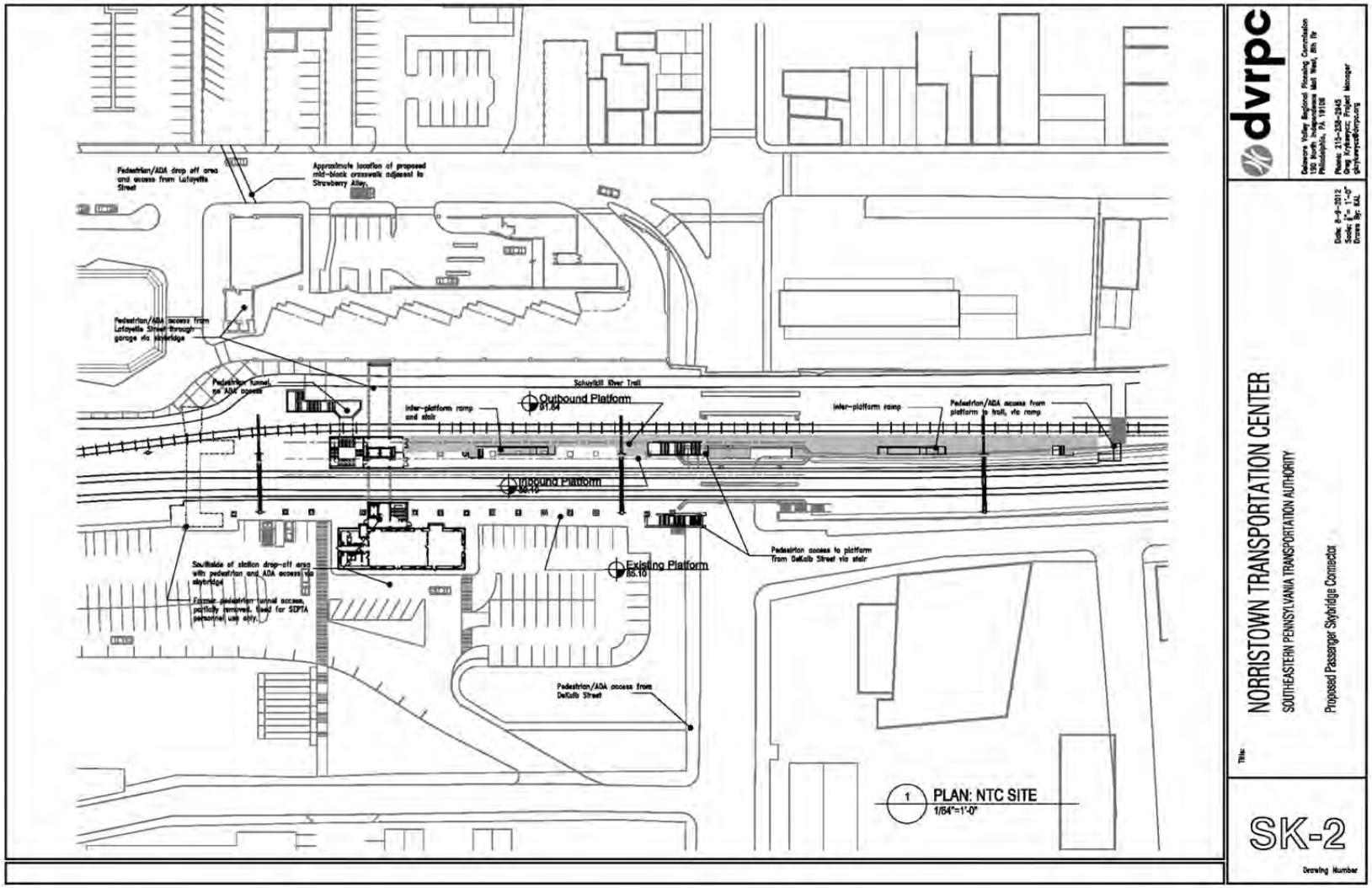
Schematics for DVRPC Regional Rail reconfiguration and Skybridge concept plan

PEDESTRIAN SKYBRIDGE CROSS-SECTION



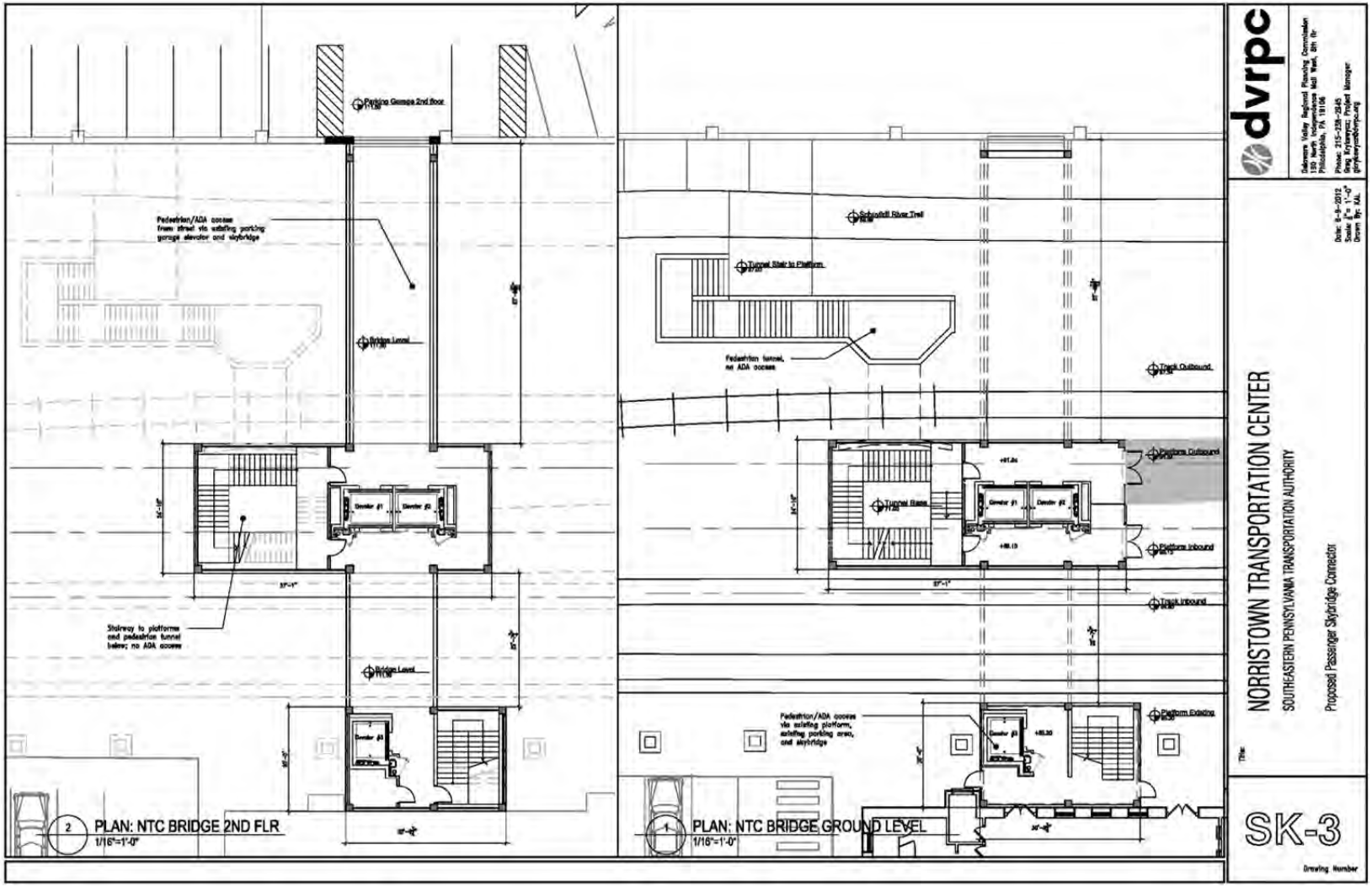
SOURCE: DVRPC 2012

NTC SITE PLAN AERIAL VIEW WITH PEDESTRIAN SKYBRIDGE



SOURCE: DVRPC 2012

PEDESTRIAN SKYBRIDGE AERIAL VIEW



SOURCE: DVRPC 2012

Appendix B

Detailed SEPTA Improvement and Concept Plan Cost Estimate

The cost estimate compiled by SEPTA can be found below, inserted directly as-is from the SEPTA original. The first column, *CBS Position Code*, indicates the primary proposed task at NTC as a whole number, while the subsequent items with decimals indicate tasks included in the primary price and also add to the primary total cost. The second column indicates the quantity of items to complete the task, and the third column is a description of the task. The fourth column describes the type of estimate for each task. When *Detail* is listed in this column, the estimate for the task is built with hard values for labor, materials, and equipment, and the estimate is based on past experience, like a schematic drawing. When *Plug* is listed in the fourth column, the design, labor, equipment, and materials costs for the task has to evolve further and is more of an estimate placeholder, or best guess. The fifth column shows the unit cost, and the sixth column shows the total cost, or the number of units multiplied by the unit cost needed for the task.

Conceptual Design 3rd Party Construction Cost Estimate Value is $21,648,297

Estimate Summary
SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY
Job Code: DVRPC SEPTA RRD Norristown Station Plan September 2012
Description: Stategic Planning Concept for Norristown Regional Railroad Station

From Cost Item: 1 **To Cost Item: 0.10**

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
1	1.00	SubSet Total	Relocate PECO Monopole	Detail	272,202.87	272,202.87
1.1	1.00	Allowance	Bike Path - Maintenance & Protection of Traffic	Detail	9,852.87	9,852.87
1.2	1.00	Allowance	OutBound Platform - Maintenance & Protection of Traffic	Detail	5,189.01	5,189.01
1.3	1.00	LS	Demolish a Portion of the Platform & Canopy	Detail	20,724.24	20,724.24
1.4	1.00	Each	New 60" Caisson to 40'-0" Below Existing Grade	Detail	36,355.91	36,355.91
1.5	1.00	LS	Set New Monopole & Transfere Transmission Lines	Detail	166,582.67	166,582.67
1.6	1.00	Allowance	Temporarily re-establish OutBound Low Level Platform & Canopy	Detail	8,705.40	8,705.40
1.7	1.00	Each	Remove Old Monopole	Detail	17,897.39	17,897.39
1.8	1.00	Each	Demolish Old Monopole Foundation to 5'-0" Below Grade	Detail	6,895.38	6,895.38
2	1.00	SubSet Total	New Elevator / Stair Towers /w Fly Over, Pedestrian Tunnel and Adjacent Ramps & Stairways	Detail	4,911,906.87	4,911,906.87
2.1	1.00	Allowance	OutBound Platform - Re-Establish Maintenance & Protection of Pedestrian Traffic (Shortend Platform Area)	Detail	13,881.41	13,881.41
2.2	1.00	Allowance	InBound Platform - Establish Maintenance & Protection of Pedestrian Traffic (Shortend Platform Area)	Detail	11,435.70	11,435.70
2.3	1.00	Allowance	Existing Station House - Modify Track Side Canopy and Facade of New Elevator Stair Tower	Detail	143,200.69	143,200.69
2.4	1.00	Each	Tempoarily Close Track Side Station House Entrance	Detail	1,906.94	1,906.94
2.5	1.00	Each	Close Off One Access Stair at Existing Pedestrian Tunnel	Detail	6,716.38	6,716.38
2.6	1.00	Each	Elevator / Stair Tower at Existing Station House	Detail	1,111,991.76	1,111,991.76
2.6.1	360.00	SF	Install Sheeting & Shoring along Inbound Track (Assumed 8'-0" Deep)	Plug	50.75	18,270.00
2.6.2	80.00	CY	Excavate for New Elevator Stair Tower Adjacent to the Existing Station House	Detail	47.91	3,833.17
2.6.3	30.00	CY	Backfill	Detail	88.05	2,641.49

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
2.6.4	50.00	CY	Dispose of Excess Soils	Detail	17.66	882.88
2.6.5	40.00	CY	Form / Pour / Strip - New Elevator / Stair Tower - Foundations at Existing Station House	Detail	959.05	38,362.08
2.6.6	4.00	Flight	Precast Stair & Landings for Stair Tower at Existing Station House	Plug	3,500.00	14,000.00
2.6.7	35.00	Ton	Structural Framing - New Elevator / Stair Tower at Existing Station House Complete w/ Galv & Paint	Detail	4,522.78	158,297.25
2.6.8	1.00	LS	Wall Mounted Handrails, & Miscellaneous Metals - New Elevator / Stair Tower at Existing Station House	Detail	13,389.19	13,389.19
2.6.9	480.00	SF	Metal Roofing - New Elevator / Stair Tower at Existing Station House	Detail	33.50	16,078.08
2.6.10	1,512.00	SF	Glass & Glazing - New Elevator / Stair Tower at Existing Station House	Detail	63.65	96,237.60
2.6.11	1.00	Each	2 Stop MRL Elevator >25'-0" Vertical Travel	Plug	750,000.00	750,000.00
2.7	1.00	Each	Center Platform Elevator / Stair Tower, Pedestrian Tunnel and Associated Ramps & Stairway at New OB Track	Detail	3,307,345.25	3,307,345.25
2.7.1	4,875.00	SF	Install Sheeting & Shoring along Outbound Track (Assumed 15'-0" Deep)	Plug	46.25	225,468.75
2.7.2	280.00	CY	Excavate for New Pedestrain Tunnel (Assumed 10% Rock Excavation)	Detail	107.72	30,161.92
2.7.3	791.00	CY	Excavate for New Elevators / Stair Towers - Foundations at Center Platfrom (Assumed 10% Rock Excavation)	Detail	95.33	75,404.81
2.7.4	38.00	CY	Form / Pour / Strip Tunnel Floor, Walls & Roof	Detail	1,360.88	51,713.38
2.7.5	85.00	CY	Form / Pour / Strip Elevators / Stair Towers - Foundations at Center Platfrom	Detail	1,079.23	91,734.38
2.7.6	5.00	Flight	Precast Stair & Landings for Stair Tower at Center Platfrom	Plug	3,500.00	17,500.00
2.7.7	65.00	Ton	Structural Framing for - New Elevator / Stair Tower at Center Platform Complete w/ Galv & Paint	Detail	4,506.88	292,947.33
2.7.8	1.00	LS	Wall Mounted Handrails, & Miscellaneous Metals - New Elevator / Stair Tower at Center Platform	Detail	16,737.10	16,737.10
2.7.9	640.00	SF	Metal Roofing - New Elevator / Stair Tower at Center Platform	Detail	32.15	20,577.60

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
2.7.10	600.00	CY	Excavate for New Ramp & Stair Foundations, Walls & Steps / Ramp Adjacent to Garage (Assumed 10% Rock Excavation)	Detail	32.32	19,390.67
2.7.11	200.00	CY	Form / Pour / Strip Ramp & Stair Foundations, Walls & Steps / Ramp Adjacent to Garage	Detail	544.93	108,985.97
2.7.12	100.00	CY	Backfill	Detail	44.07	4,407.34
2.7.13	120.00	TN	Ramp & Stairway Canopy Columns & Roof Framing	Detail	4,238.63	508,635.20
2.7.14	3,200.00	SF	Metal Roofing - At OutBound Side Ramp & Stairway	Detail	28.12	89,990.40
2.7.15	32.00	Each	Metal Stair Nosing (Aluminum) 5'-0" Wide Each for CIP Steps	Plug	250.00	8,000.00
2.7.16	280.00	LF	Wall Mounted Steel Hand Railings	Detail	54.71	15,317.64
2.7.17	50.00	LF	Floor Mounted Steel Hand Railings	Detail	312.31	15,615.26
2.7.18	1,950.00	SF	Waterproofing at Step & Ramp Walls and Floor plus Tunnel Floor, Walls & Roof	Detail	58.85	114,757.50
2.7.19	2.00	Each	4 Stop MRL Elevator >38'-0" Vertical Travel	Plug	800,000.00	1,600,000.00
2.8	1.00	Each	Bridge from Garage 2nd Level to Center Platform Tower	Detail	86,227.80	86,227.80
2.8.1	1.00	LS	Create Opening in Precast Spandrel Panel at Garage	Plug	7,500.00	7,500.00
2.8.2	2.00	Each	Foundation at Garage	Detail	1,791.16	3,582.33
2.8.3	12.00	Ton	Steel Framing & Metal Decking, including Galv. & Paint	Detail	5,271.91	63,262.88
2.8.4	704.00	SF	CIP Floor Deck	Detail	16.88	11,882.59
2.9	1.00	Each	Bridge from Center Platform Tower to Tower at Existing Station House	Detail	99,200.94	99,200.94
2.9.1	19.00	Ton	Steel Framing & Metal Decking including Galv. & Paint	Detail	4,653.30	88,412.67
2.9.2	384.00	SF	CIP Floor Deck	Detail	28.09	10,788.28
2.10	3,500.00	SF	Anti-Graffiti Coating at Exposed Concrete Walls & Ceiling	Plug	5.00	17,500.00
2.11	1.00	Allowance	Signage	Plug	15,000.00	15,000.00
2.12	2.00	Each	Ventilation at Towers	Plug	10,000.00	20,000.00
2.13	1.00	Allowance	Drainage at Tunnel and Elevator Pits	Plug	15,000.00	15,000.00
2.14	1.00	LS	Electrical Distribution	Plug	10,000.00	10,000.00

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
2.15	1.00	Each	Alarm Systems	Plug	7,500.00	7,500.00
2.16	1.00	LS	Lighting at Tunnel and Adjacent Ramps & Stairs	Plug	25,000.00	25,000.00
2.17	2.00	Each	Lighting at Towers	Plug	10,000.00	20,000.00
3	1.00	SubSet Total	Demolish Bridge at DeKalb Street	Detail	47,339.49	47,339.49
3.1	1.00	Allowance	Maintenance & Protection of Traffic Close DeKalb For Weekend (Temporary Route at Rt 202 and Skuylkill Ave)	Detail	13,881.41	13,881.41
3.2	102.00	CY	Remove Track Bed Ballast and Soils Down the Decking	Detail	106.94	10,907.93
3.3	1,378.00	SF	Remove Floor Joists & Deck	Detail	10.47	14,430.40
3.4	3.00	Each	Remove Girders	Detail	1,202.53	3,607.60
3.5	6.00	Each	Remove Bearings	Detail	300.63	1,803.80
3.6	1.00	LS	8'-0" High Temporary Barricade Fence at Track Bed, Including Signage	Detail	2,708.35	2,708.35
4	1.00	SubSet Total	New Railroad Bridge at Dekalb Street Sta 12+25 to Sta 11+58	Detail	516,921.79	516,921.79
4.1	1.00	Allowance	Reconfiguration of Existing Abutment & Bridge Seat	Plug	100,000.00	100,000.00
4.2	1.00	LS	Bridge Girders / Floor Framing / Decking / Bearings / Galvanizing / Paint	Plug	400,000.00	400,000.00
4.3	100.00	Ton	Ballast Placement	Detail	31.42	3,141.79
4.4	53.00	LF	New Track	Plug	260.00	13,780.00
5	1.00	SubSet Total	New Pedestrian / Bike Bridge at DeKalb Street - 12' Wide	Detail	181,500.00	181,500.00
5.1	1.00	Allowance	Reconfiguration of Existing Abutment & Bridge Seat	Plug	25,000.00	25,000.00
5.2	1.00	Each	Prefab Bridge (Complete) w/ Installation	Plug	150,000.00	150,000.00
5.3	1.00	Allowance	Lighting	Plug	5,000.00	5,000.00
5.4	1.00	Allowance	Signage	Plug	1,500.00	1,500.00
6	1.00	SubSet Total	Rehab / Reinforce / Alteration Portion at Existing DeKalb Bridge & New HL Platforms	Detail	3,286,601.44	3,286,601.44
6.1	1.00	LS	Demolish Platform Canopy	Detail	17,797.24	17,797.24
6.2	1.00	LS	Demolish Low Level Platform	Detail	18,557.30	18,557.30

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
6.3	1.00	SF	Demolish Existing Low Level Platform Framing at DeKalb Street	Detail	15,780.54	15,780.54
6.4	1.00	Each	Remove Top Portion of Parapet Wall	Detail	27,102.44	27,102.44
6.5	1.00	Each	Demolish North Stair from Low Level Platform to DeKalb Street	Detail	17,696.44	17,696.44
6.6	424.00	Each	Micro-Pile Foundations for H. L. Platfroms	Plug	2,500.00	1,060,000.00
6.7	154.00	CY	New North Stair from High Level Platform to DeKalb Street	Detail	560.32	86,288.69
6.8	35.00	CY	Extend Abutment for New Girder Seating	Detail	2,406.68	84,233.69
6.9	22.00	CY	Raise Abutment at InBound High Level Platform	Detail	3,022.13	66,486.87
6.10	1.00	Allowance	Clean / Repair / Reinforce Exposed Existing Girder at InBound Track	Plug	35,000.00	35,000.00
6.11	128.00	Ton	New Steel Framing for Inbound / OutBound High Level Platform	Detail	4,026.72	515,420.16
6.12	11,130.00	SF	New Precast Panels w/ Tactile - Decking 8" Thick for Inbound & Outbound High Level Platforms	Plug	35.00	389,550.00
6.13	64.00	Ton	New Canopy Framing for New High Level Platforms	Detail	4,026.72	257,710.08
6.14	11,130.00	SF	New Metal roofing for New High Level Platforms	Detail	22.53	250,728.00
6.15	1.00	LS	Steps w/ Railing to OutBound Platform	Plug	125,000.00	125,000.00
6.16	530.00	LF	Guardrail Between OutBound & InBound High Level Platform	Plug	225.00	119,250.00
6.17	1.00	Allowance	Lighting	Plug	75,000.00	75,000.00
6.18	1.00	Allowance	Signage	Plug	25,000.00	25,000.00
6.19	1.00	Allowance	CCTV / AVPA	Plug	100,000.00	100,000.00
7	1.00	SubSet Total	New Track Bed from Sta. 23 + 97.91 to Sta 12+80	Detail	3,873,825.34	3,873,825.34
7.1	1.00	LS	New Retaining Wall at DeKalb Street	Detail	126,757.53	126,757.53
7.1.1	74.00	CY	Foundation Excavation	Detail	67.93	5,026.99
7.1.2	74.00	CY	Form & Pour Foundations	Detail	434.64	32,163.21
7.1.3	33.00	CY	Form & Pour Wall	Detail	1,684.74	55,596.43

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
7.1.4	450.00	SF	Waterproof Inside Wall Face w/ Drainage Line	Detail	61.42	27,639.94
7.1.5	500.00	SF	Restore Walkway	Detail	12.66	6,330.96
7.2	240.00	LF	New Interior Ramp from 12+80 to 14+50 w/ Partial Open Ceiling w/ All Fill at Cut	Detail	5,852.16	1,404,517.60
7.2.1	309.00	CY	Form & Pour Floor / Walls / Ceiling	Detail	1,093.29	337,825.48
7.2.2	35,940.00	Ton	Structural Fill included in General Fill at Cut	Detail	18.62	669,305.24
7.2.3	480.00	LF	Wall Mounted Handrail	Plug	165.00	79,200.00
7.2.4	4,400.00	SF	Waterproof Corridor Envelope	Detail	61.20	269,286.88
7.2.5	3,280.00	SF	Paint Walls & Ceiling	Plug	5.00	16,400.00
7.2.6	1.00	Allowance	Signage	Plug	7,500.00	7,500.00
7.2.7	1.00	LS	Lighting	Plug	25,000.00	25,000.00
7.3	1.00	Each	New Retaining Wall at Cut From Sta 22+40 to Sta 17+50	Detail	1,396,272.17	1,396,272.17
7.3.1	1,450.00	CY	Excavate for Foundations	Detail	34.67	50,269.87
7.3.2	1,450.00	CY	Form / Pour Foundations	Detail	276.29	400,613.38
7.3.3	514.00	CY	Form / Pour Walls	Detail	769.20	395,367.12
7.3.4	8,820.00	SF	Waterproofing at Walls	Detail	60.81	536,301.80
7.3.5	490.00	LF	Drainage at Interior	Plug	28.00	13,720.00
7.4	18,616.00	Ton	Track Ballast	Detail	15.51	288,730.40
7.5	1.00	Each	New Switch	Plug	250,000.00	250,000.00
7.6	1,117.91	LF	New Track	Plug	260.00	290,656.60
7.7	1,117.91	LF	New 8' CL Fence Along Top of Retaining Wall	Plug	33.00	36,891.03
7.8	1.00	Allowance	Restoration of Bus Loop Road and Pedestrian Pathways	Plug	75,000.00	75,000.00
7.9	1.00	Allowance	Signage	Plug	5,000.00	5,000.00
8	1.00	SubSet Total	New Track Bed from Sta. 11 + 58 to Sta 0 + 00	Detail	1,075,290.02	1,075,290.02
8.1	1.00	LS	Demolition	Detail	34,500.00	34,500.00
8.1.1	1.00	LS	On Grade CIP Stair & Canopyto Existing Pedestrian Tunnel	Plug	10,000.00	10,000.00

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
8.1.2	1.00	Each	Move COM Hut	Plug	15,000.00	15,000.00
8.1.3	1.00	LS	Demolish Misc Small Structures / Fencing	Plug	9,500.00	9,500.00
8.2	835.00	CY	Cut / Fill	Detail	48.16	40,215.90
8.3	1.00	Each	New Retaining Wall Sta 8+50 to Sta 5+79	Detail	413,315.85	413,315.85
8.3.1	300.00	CY	Excavate for Foundations	Detail	67.03	20,107.95
8.3.2	250.00	CY	Form / Pour Foundations	Detail	516.20	129,050.13
8.3.3	80.00	CY	Form / Pour Walls	Detail	1,476.10	118,087.78
8.3.4	2,160.00	SF	Waterproofing at Walls	Plug	60.00	129,600.00
8.3.5	270.00	LF	Drainage at Interior	Plug	28.00	7,560.00
8.3.6	270.00	Each	Fence Along Top of Retaining Wall	Plug	33.00	8,910.00
8.4	1,715.00	Ton	Track Ballast	Detail	16.90	28,978.27
8.5	1.00	Each	New Switch	Plug	250,000.00	250,000.00
8.6	1,128.00	LF	New Track w/ Ties	Plug	260.00	293,280.00
8.7	1.00	Allowance	New Pedestrian Pathways at Plaza	Plug	15,000.00	15,000.00
9	1.00	SubSet Total	Close Existing Pedestrian Tunnel and Conversion to SEPTA Storage	Detail	45,000.00	45,000.00
9.1	1.00	Allowance	Close and Fill Steps at Dog Leg	Plug	7,500.00	7,500.00
9.2	1.00	Each	New Ships Ladder to Tunnel	Plug	3,500.00	3,500.00
9.3	1.00	Each	New Street Level Enclosure	Plug	24,000.00	24,000.00
9.4	1.00	Allowance	Lighting	Plug	5,000.00	5,000.00
9.5	1.00	Allowance	Fire Alarm	Plug	5,000.00	5,000.00
10	1.00	SubSet Total	New Payment Technology Systems / Equipment	Detail	32,500.00	32,500.00
10.1	1.00	Allowance	Conduit for Power & Data Lines	Plug	25,000.00	25,000.00
10.2	1.00	Allowance	Patch Panel	Plug	7,500.00	7,500.00
11	1.00	SubSet Total	Inbound Parking Lot Improvements	Detail	219,400.65	219,400.65
11.1	389.00	SY	Furnish & Spread Strip Topsoil	Detail	12.86	5,002.49

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
11.2	140.00	LF	Demolish Curb	Detail	5.26	736.77
11.3	420.00	SF	Demolish Concrete Walk	Detail	4.34	1,823.33
11.4	389.00	SY	Demolish Asphalt Paving at Old Entrance Drive	Detail	26.76	10,409.47
11.5	2,000.00	SF	New On Grade Concrete Walk w/ Steps from Schuylkill Avenue	Detail	11.04	22,079.38
11.6	880.00	LF	New Concrete Curb	Detail	31.04	27,318.67
11.7	6,583.00	SY	Mill Parking Lot	Detail	3.73	24,583.88
11.8	1.00	Allowance	Patch Soft Areas (Allowance)	Plug	5,000.00	5,000.00
11.9	6,583.00	SY	Overlay w/ New Wearing Course	Detail	8.54	56,197.85
11.10	3,000.00	LF	Parking Slot Striping	Detail	1.73	5,186.34
11.11	1.00	Allowance	Landscaping - Planting & Lawn Seeding	Plug	25,000.00	25,000.00
11.12	400.00	LF	Railing a Walkway from Schuylkill Avenue	Detail	40.16	16,062.48
11.13	1.00	Allowance	Signage	Plug	20,000.00	20,000.00
12	1.00	SubSet Total	Catenary / Signal Work From Sta 23 + 97.91 to Sta 0 + 00	Detail	690,000.00	690,000.00
12.1	23.00	Each	New Cantilever Catenary Pole at New OutBound w/ Catenary Wire	Plug	15,000.00	345,000.00
12.2	1.00	Allowance	Ajustment to Existing Catenary	Plug	45,000.00	45,000.00
12.3	1.00	Allowance	Demolition of Existing Catenary	Plug	25,000.00	25,000.00
12.4	1.00	Allowance	New Signal / Train Control Equipment	Plug	205,000.00	205,000.00
12.5	1.00	Allowance	Move Existing COM Hut	Plug	15,000.00	15,000.00
12.6	1.00	Allowance	Adjustment to SEPTA Traction Power Over Build 2,300' +/-	Plug	55,000.00	55,000.00
13	1.00	SubSet Total	Bike Path Re-Location / Landscaping	Detail	56,168.17	56,168.17
13.1	915.00	SY	New Asphalt Paving (Assumed 4" Sub Base, 1 1/2" Base Course and 1 1/2" Wearing)	Detail	31.33	28,668.17
13.2	1.00	Allowance	Landscaping	Plug	22,500.00	22,500.00
13.3	1.00	Allowance	Signage	Plug	5,000.00	5,000.00

Conceptual Design 3rd Party Construction Cost Estimate Value is $21,648,297

CBS Position Code	Quantity	UM	Cost Item Description	Cost Source	Unit Cost	Total Cost
14	1.00	Each	Pedestrain Bridge to Converted Freight Building	Detail	160,000.00	160,000.00
14.1	1.00	Each	Bridge Structure (Assumed 20' Span), including Abutments, Path & Apurtenances	Plug	150,000.00	150,000.00
14.2	1.00	Each	Miscellaneous Improvements / Landscaping at Trail to Freight Building	Plug	10,000.00	10,000.00
0.2	1.00	Lump Sum	PRIME BOND	Detail		118,069.04
Notes: *Brime Bond is the nonrmal requirement for a Payment & Performance Bond on SEPTA's Projects to be paid by the Prime Contractors. It is set at 0.55%.*						
0.3	1.00	Lump Sum	PRICE % ADD-ON	Detail		4,329,659.48
Notes: *Contingency is set at 20% for Direct & Indirect Costs for the Conceptual Design. As the design progresses the Contingency is reduced.*						
0.4	1.00	Lump Sum	JOB FINANCING	Plug		0.00
0.5	1.00	Lump Sum	INDIRECT COST ESCALATION	Detail		0.00
0.6	1.00	Lump Sum	DIRECT COST ESCALATION	Detail		0.00
0.7	1.00	Lump Sum	INDIRECT COST ADD-ON	Detail		311,046.58
Notes: *Overhead is set at 6% of both Indirect and Direct costs.*						
0.8	1.00	Lump Sum	JOB MANAGEMENT & EQUIPMENT	Detail		0.00
0.9	1.00	Lump Sum	GENERAL EXPENSE	Detail		0.00
0.10	1.00	Lump Sum	DIRECT COST ADD-ON	Detail		1,520,865.66
Notes: *Profit is set at 10% including Indirect and Direct Costs.*						

Resource	Total
Labor	2,999,671.86
Owned Equipment	505,676.81
Rented Equipment	27,688.82
Supplies	68,749.36
Materials	4,880,184.72
Subcontract	3,236,529.00
Fees	4,748,714.15
Allowance	5,123,818.39
Custom Category1	46,117.50
Undefined	11,146.78

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Abstract: This project included both a detailed analysis of operations and passenger activity at Norristown Transportation Center (NTC) and the development of a conceptual program of improvements to enhance the facility and its integration with the Norristown community over time. The recommendations detailed here would represent improvements to circulation that encourage increased transit ridership, development potential of the area surrounding NTC, improved quality of life and perception of safety, and economic viability. Taken in its entirety, the concept plan would represent a significant level of investment; however, it is also modular, such that individual elements of the plan can be pursued strategically as funding becomes available.

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