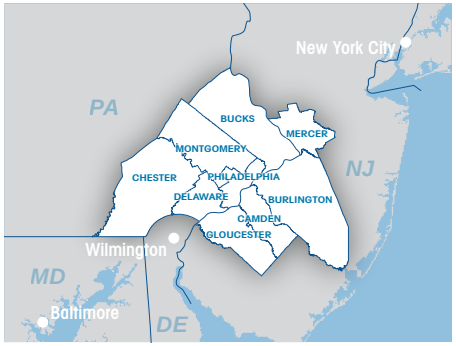
October 2013

PENNSAUKEN TRANSIT CENTER

Impacts & Opportunities

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION



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.

DVRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. DVRPC's website (www.dvrpc.org) may be translated into multiple languages. Publications and other public documents can be made available in alternative languages and formats, if requested. For more information, please call (215) 238-2871.

Acknowledgements

DVRPC would like to acknowledge the following individuals for their contributions to this study.

Vivian Baker, *New Jersey Transit*

Larry Cardwell, *Pennsauken Township*

Terry Carr, *Pennsauken Township*

Andrew Clark, *New Jersey Department of Transportation*

Greg Fidyk, *South Jersey Transportation Authority*

John Hainesworth, *Cross County Connection Transportation Management Association*

Andrew Levecchia, *Camden County Improvement Authority*

Lou Millan, *New Jersey Transit*

Carole Miller, *South Jersey Transportation Authority*

Contents

Figures and Tables

Executive Summary

The Pennsauken Transit Center (PTC) is a new rail transit facility constructed by New Jersey Transit (NJ Transit) at the crossing of the Atlantic City Rail Line (ACRL) and the RiverLINE in Pennsauken, New Jersey. Opened in October 2013, PTC consists of two stations serving the ACRL, which provides heavy rail service between Philadelphia, Pennsylvania and Atlantic City, New Jersey, and the RiverLINE, which provides light rail service between Trenton, New Jersey and Camden, New Jersey. These stations are connected by a series of elevators and stairs to facilitate transfers between the two rail lines.

PTC was constructed on previously vacant land at the corner of Derousse and Zimmerman avenues just northeast of the intersection of the Atlantic City Rail Line and RiverLINE. The transit center is located roughly 1,500 feet from the Pennsauken waterfront via Derousse Avenue. North and east of Derousse Avenue lies the residential neighborhood of Delair. South and west of Derousse Avenue, the study area is composed of a mix of industrial and vacant lands, including the Hess Terminal and petroleum processing facility and one of Pennsauken's industrial parks.

PTC will become an important part of the regional transit network with the potential to reshape travel patterns and local land use decisions. PTC will improve local transit access in parts of Camden and Burlington counties by providing new RiverLINE and ACRL stations. In addition, by enabling transfers between these two transit lines, PTC will enhance access to many major employment and recreational destinations throughout the region. Analysis conducted for the 2009 Environmental Assessment estimates that transit travel times to destinations such as Trenton, Atlantic City, and University City in Philadelphia could be reduced by 15 to 33 percent, depending on the destination.

The Delaware Valley Regional Planning Commission (DVRPC) has conducted this study of PTC to identify potential impacts and opportunities created by the transit center. Throughout the study, DVRPC worked closely with a Study

Advisory Committee comprised of representatives from Pennsauken Township, Camden County, NJ Transit, the New Jersey Department of Transportation (NJDOT), Cross County Connection Transportation Management Authority (CCCTMA), and the South Jersey Transportation Authority (SJTA). The study team established several objectives for the study:

- Document a wide variety of existing conditions,
- Investigate transit-supportive strategies to facilitate public transit access and use,
- Identify economic development opportunities within the station area, and
- Involve local communities and their residents in station area planning.

This study seeks to summarize the planning context of the study area by inventorying several topics related to the future use and development of the area surrounding PTC. The document also outlines several strategies designed to enhance the effectiveness of PTC as a transit facility, while integrating it into the surrounding community. These strategies, presented in Section Three, focus on improving station access, identifying development opportunities, marketing the station, and promoting transfer activity by increasing ACRL service.

SECTION ONE

Introduction

The Pennsauken Transit Center (PTC) is a new rail transit facility constructed by New Jersey Transit (NJ Transit) at the crossing of the Atlantic City Rail Line (ACRL) and the RiverLINE near the corner of Derousse and South Zimmerman avenues in Pennsauken, New Jersey. PTC consists of two stations serving the ACRL, which provides heavy rail service between Philadelphia, Pennsylvania and Atlantic City, New Jersey, and the RiverLINE, which provides light rail service between Trenton, New Jersey and Camden, New Jersey. These stations are connected by a series of elevators and stairs to facilitate transfers between the two rail lines. An overview of the regional transit network is provided in Figure 2.

An Environmental Assessment of the project was published by the U.S. Department of Transportation, Federal Transit Administration, and NJ Transit in August 2009. Construction on the transit center began in October 2009 and was completed in October 2013. The project, built over two phases, is expected to cost approximately $40 million and was largely funded by the American Recovery and Reinvestment Act of 2009.

PTC is the 21st station on the RiverLINE and the third RiverLINE station within Pennsauken. The other township stops are the Pennsauken/Route 73 Station, located approximately 2.75–miles north, and the 36th Street Station, located approximately 1.5–miles south. PTC is also the ninth station along NJ Transit's Atlantic City Line and the fourth in Camden County. The two nearest stops along the ACRL are the 30th Street Station in Philadelphia, approximately 10 miles west, and the Cherry Hill Station, which is approximately 4.5 miles east.

Ridership forecasts were conducted as part of the Environmental Assessment. These forecasts anticipate that 570 riders will board the ACRL and RiverLINE at the transit center on a typical weekday in the target study year of 2015. Four hundred and twenty (74 percent) of these passengers are expected to board locally, while 150 (26 percent) are expected to transfer from one rail line to another.

Project Background and Significance

PTC will help achieve several important objectives, including enhancing access to mass transit, reducing regional automobile traffic, and decreasing energy consumption and greenhouse gas emissions. PTC will improve local transit access in parts of Camden and Burlington counties by providing new RiverLINE and ACRL stations.

In addition, PTC becomes the fifth transfer facility available to passengers of the RiverLINE and ACRL, joining 30th Street Station, the Trenton Transit Center, the Walter Rand Transportation Center, and Lindenwold Station. By becoming the first facility to facilitate transfers between the RiverLINE and ACRL, PTC will enhance access to many major employment and recreational destinations throughout the region.

For example, PTC provides a transit connection between areas in Burlington and Mercer counties along the RiverLINE with Atlantic City and parts of Philadelphia. PTC also links Atlantic City, Atlantic County, and western Camden County with the state capital, Trenton, and provides enhanced access to the Northeast Corridor, NJ Transit's most traveled route, linking Trenton and New York City. See pages six and seven for more information on important regional destinations.

The ability to transfer between the ACRL and RiverLINE in Pennsauken could result in significant travel time savings for many transit users. Analysis done for the Environmental Assessment estimates that travel times to destinations such as Trenton, Atlantic City, and University City in Philadelphia could be reduced by 15 to 33 percent, depending on the destination.

Prior to the PTC opening, RiverLINE passengers wishing to access the ACRL between Atlantic City and Lindenwold needed to transfer to PATCO at the Walter Rand Transportation Center in Camden, and transfer again at Lindenwold. PTC will reduce or eliminate the need to transfer and can reduce one-way travel time by 16 to 20 minutes.

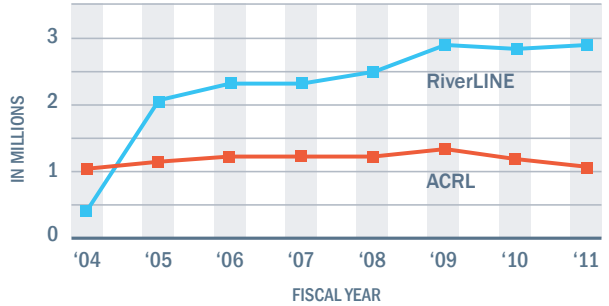
Both local riders and RiverLINE users in Burlington County can save seven to 14 minutes on trips to the University City area of Philadelphia. Typically, this trip requires transferring to PATCO at the Walter Rand Transportation Center, and then transferring again at 8th Street in Philadelphia to the SEPTA Market-Frankford line. With a single transfer at PTC, RiverLINE users will be able to access 30th Street Station 17-33 percent faster than they can today.

The Transit Center will also decrease travel times to Trenton and other points along the RiverLINE for people living or working in Atlantic or Camden counties. Passengers can save between 8 and 21 minutes each way during trips to Trenton.

These time savings will encourage potential transit riders near the station, as well as along the RiverLINE and ACRL, to consider using mass transit rather than automobiles for some of their travel needs. Overall, the ridership forecast suggests that approximately 820 automobile trips will be diverted each day due to the opening of PTC. These trips will primarily be diverted from Atlantic City, the University City area of Philadelphia, and locations along the RiverLINE.

The forecast also shows that 50 existing ACRL riders will divert their boardings from the Cherry Hill and Lindenwold stations to PTC because of the proximity of the new station to their origin. The increase in transit use attributed to PTC is expected to reduce annual vehicle miles traveled (VMT) by 9.7 million miles in 2015.

FIGURE 1: TRANSIT RIDERSHIP



The Pennsauken Transit Center allows passengers to transfer between the RiverLINE and Atlantic City Rail Line. RiverLINE ridership has grown significantly since the light rail line opened in 2004. During that same period, ridership on the Atlantic City Line has remained relatively flat.

Source: NJ Transit

The Pennsauken Transit Center under construction in August 2013.

Source: DVRPC

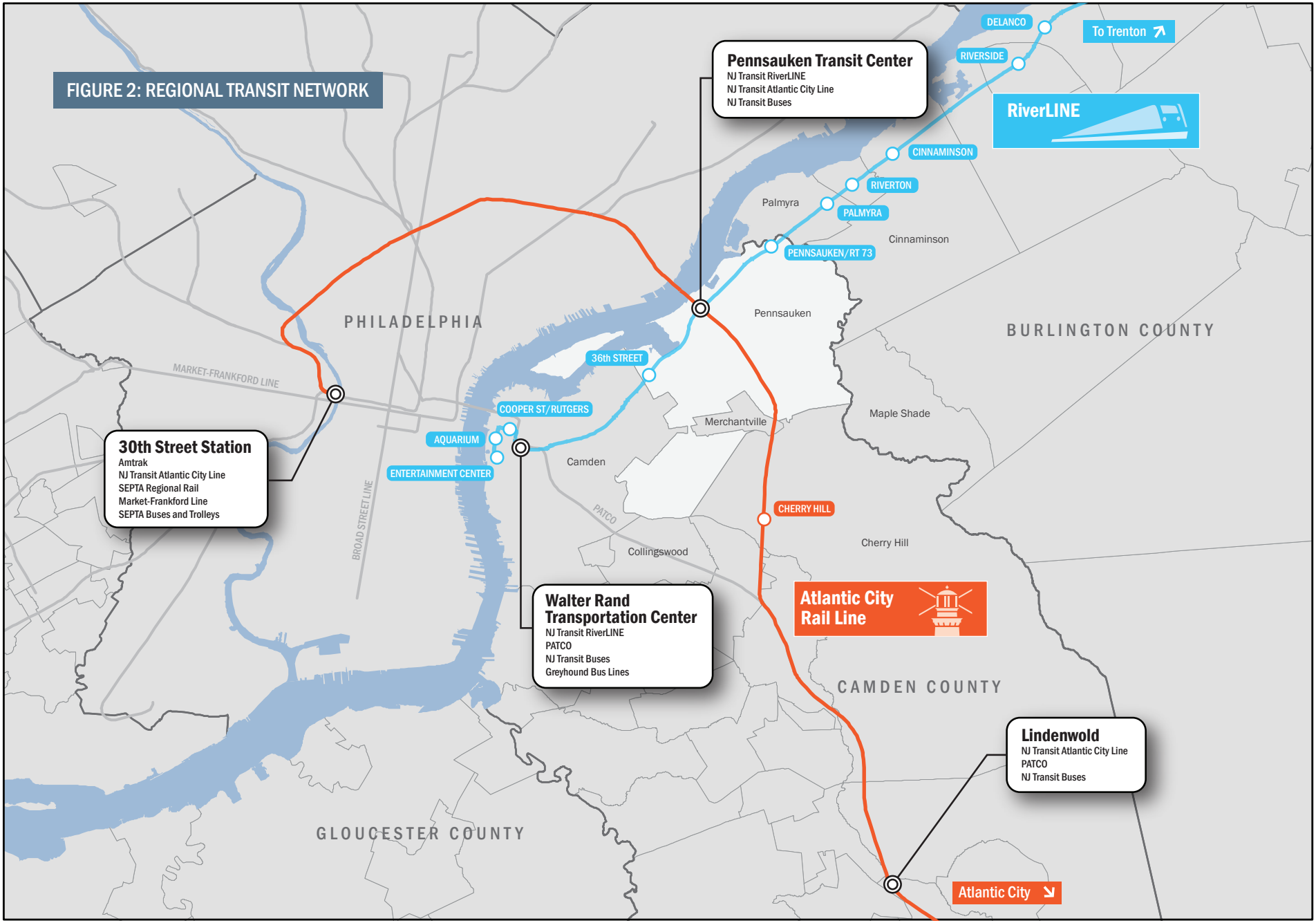


FIGURE 2: REGIONAL TRANSIT NETWORK
Pennsauken Transit Center
NJ Transit RiverLINE
NJ Transit Atlantic City Line
NJ Transit Buses
RiverLINE
DELANCO
To Trenton
RIVERSIDE
CINNAMINSON
RIVERTON
PALMYRA
PENNSAUKEN/RT 73
Palmyra
Cinnaminson
Pennsauken
PHILADELPHIA
BURLINGTON COUNTY
36th STREET
MARKET-FRANKFORD LINE
COOPER ST/RUTGERS
AQUARIUM
ENTERTAINMENT CENTER
Merchantville
Maple Shade
Camden
BROAD STREET LINE
PATCO
CHERRY HILL
Cherry Hill
Collingswood
30th Street Station
Amtrak
NJ Transit Atlantic City Line
SEPTA Regional Rail
Market-Frankford Line
SEPTA Buses and Trolleys
Walter Rand Transportation Center
NJ Transit RiverLINE
PATCO
NJ Transit Buses
Greyhound Bus Lines
Atlantic City Rail Line
CAMDEN COUNTY
Lindenwold
NJ Transit Atlantic City Line
PATCO
NJ Transit Buses
GLOUCESTER COUNTY
Atlantic City
dvrpc
MILE
0
1
N

Regionally Significant Destinations

The Pennsauken Transit Center will be a valuable addition to the regional transit network. The new facility will make getting to important employment, educational, and cultural centers in New Jersey, Pennsylvania, and beyond easier for both RiverLINE and Atlantic City Line passengers. In particular, PTC will significantly improve travel times to three important destinations: Trenton, Atlantic City, and University City. These destinations are briefly profiled below. The graphic on the opposite page depicts travel times between PTC and these destinations, as well as the projected time savings for passengers using PTC to reach these destinations.

Atlantic City

Atlantic City is a renowned entertainment destination on New Jersey's southern coast. Its most important industries are gambling and hospitality, with over 30 million visitors each year enjoying the many casinos, upscale hotels, shows, restaurants, shopping, and beaches that Atlantic City offers. Two other less visible industries, distilling and deep sea fishing, are also contributors to the local economy.

In recent years, over $1.7 billion has been locally invested, as Atlantic City competes for business with casinos in nearby states. The population of Atlantic City is just under 40,000 residents, and many people commute into the city to work each day—the casinos alone employed 38,000 people in 2012.

Other major employers include the Convention Center and the many retailers and restaurants located in the city's shopping districts. Access to Atlantic City is provided by three roadways (Atlantic City Expressway, White Horse Pike, and Black Horse Pike), air (Atlantic City International Airport), bus (Atlantic City Bus Terminal), or rail (NJ Transit's Atlantic City Rail Line).

Trenton

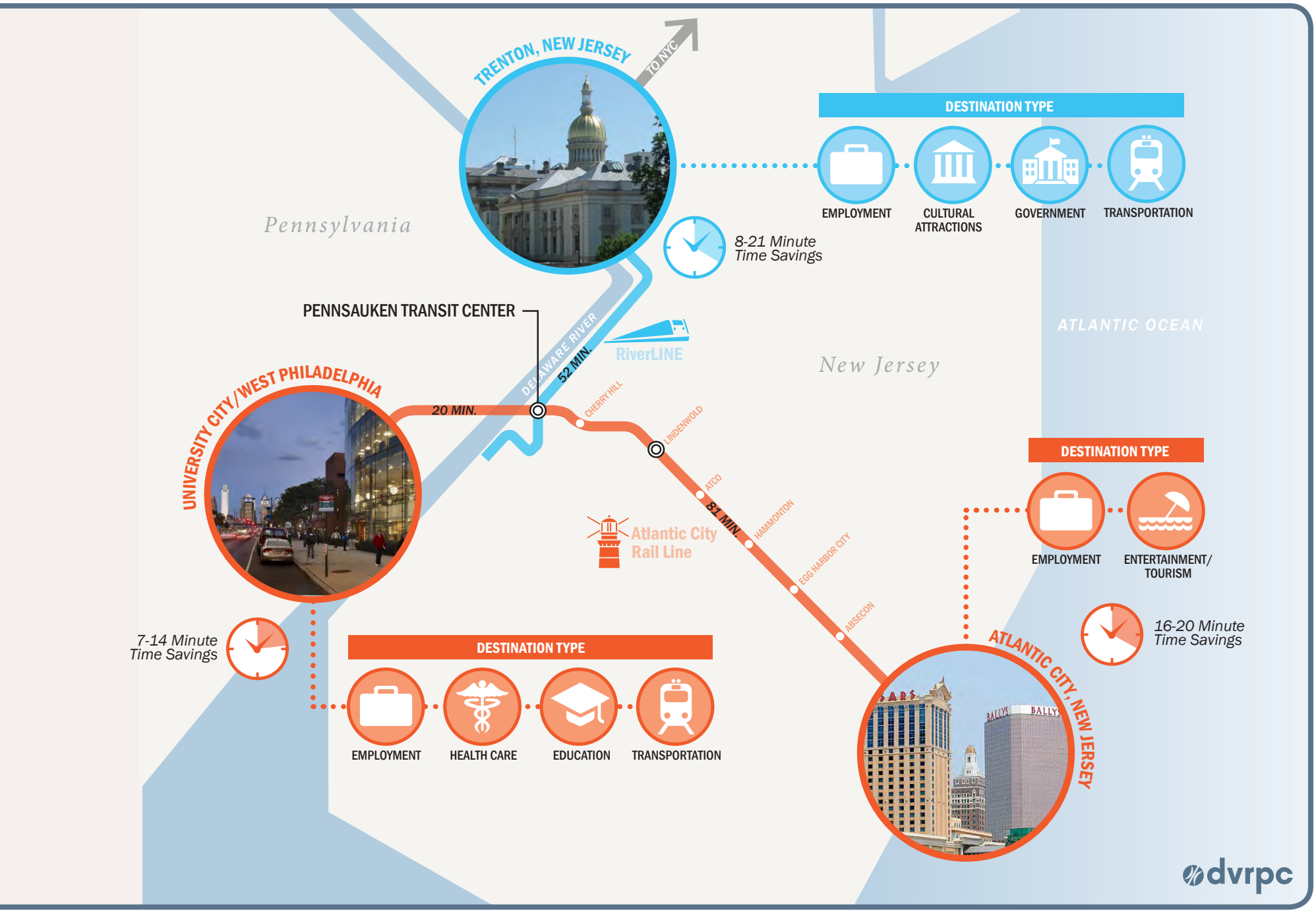
The City of Trenton, population nearly 85,000, is the capital of New Jersey and home to the state's government offices. Despite its history as a major manufacturing hub, Trenton's major industries are public administration, health care, services (accommodations, food, administrative, waste management, etc.), and education. Over 20,000 people enter the city each day to work, most of them for the state, which is the city's largest employer.

Others come to Trenton to visit sites of cultural importance, which include the Frederick Law Olmsted-designed Cadwalader Park, the New Jersey State House, the New Jersey State Library, the New Jersey State Museum, the William Trent House, and the Trenton City Museum. Trenton is well-served by the region's transportation network and is accessible by car (Routes 1, 29, and 129, and Interstate 195), air (Trenton-Mercer Airport), bus (NJ Transit and SEPTA routes, or rail (NJ Transit's Northeast Corridor Line, SEPTA's Trenton Line, and the RiverLINE light rail).

University City/West Philadelphia

Philadelphia's University City, a major education and medical hub, is home to approximately 50,000 residents and another 50,000 students. For over 20 years, it has been growing at a faster rate than the rest of the city, and now employs about 70,000 people. Much of this growth is due to the presence of innovative institutions such as the University of Pennsylvania, Drexel University, the University of the Sciences, the Science Center, Penn Medicine, the Wistar Institute, and Children's Hospital of Philadelphia, which have invested in large-scale research and development projects. In the past three years, $3 billion has been spent on research and development, and nearly half of all National Institutes of Health investments in the entire state of Pennsylvania are located here. Other recent investments have produced more than 5.1 million square feet of new and soon-to-be completed construction, more than 27 acres of new green space, and a 15 percent increase in full service restaurants.

University City enjoys excellent access via the regional highway system. Within University City, there are 25 miles of bike lanes, and the area is served by numerous SEPTA buses, trolleys, and the subway. Rail travelers use 30th Street Station, the second busiest in the country, which is served by SEPTA, NJ Transit, and Amtrak trains. The LUCY shuttle runs on two loops through University City and is free to employees of the University of Pennsylvania, University of Pennsylvania Health System, University City Science Center, and VA Medical Center.


TRENTON, NEW JERSEY
TO NYC
Pennsylvania
DESTINATION TYPE
EMPLOYMENT
CULTURAL ATTRACTIONS
GOVERNMENT
TRANSPORTATION
8-21 Minute Time Savings
PENNSAUKEN TRANSIT CENTER
DELAWARE RIVER
52 MIN.
RiverLINE
ATLANTIC OCEAN
New Jersey
UNIVERSITY CITY/WEST PHILADELPHIA
20 MIN.
CHERRY HILL
LINDENWOLD
ATCO
81 MIN.
HAMMONTON
EGG HARBOR CITY
ABSECON
Atlantic City Rail Line
DESTINATION TYPE
EMPLOYMENT
ENTERTAINMENT/ TOURISM
16-20 Minute Time Savings
7-14 Minute Time Savings
DESTINATION TYPE
EMPLOYMENT
HEALTH CARE
EDUCATION
TRANSPORTATION
ATLANTIC CITY, NEW JERSEY
dvrpc

Station Design and Construction

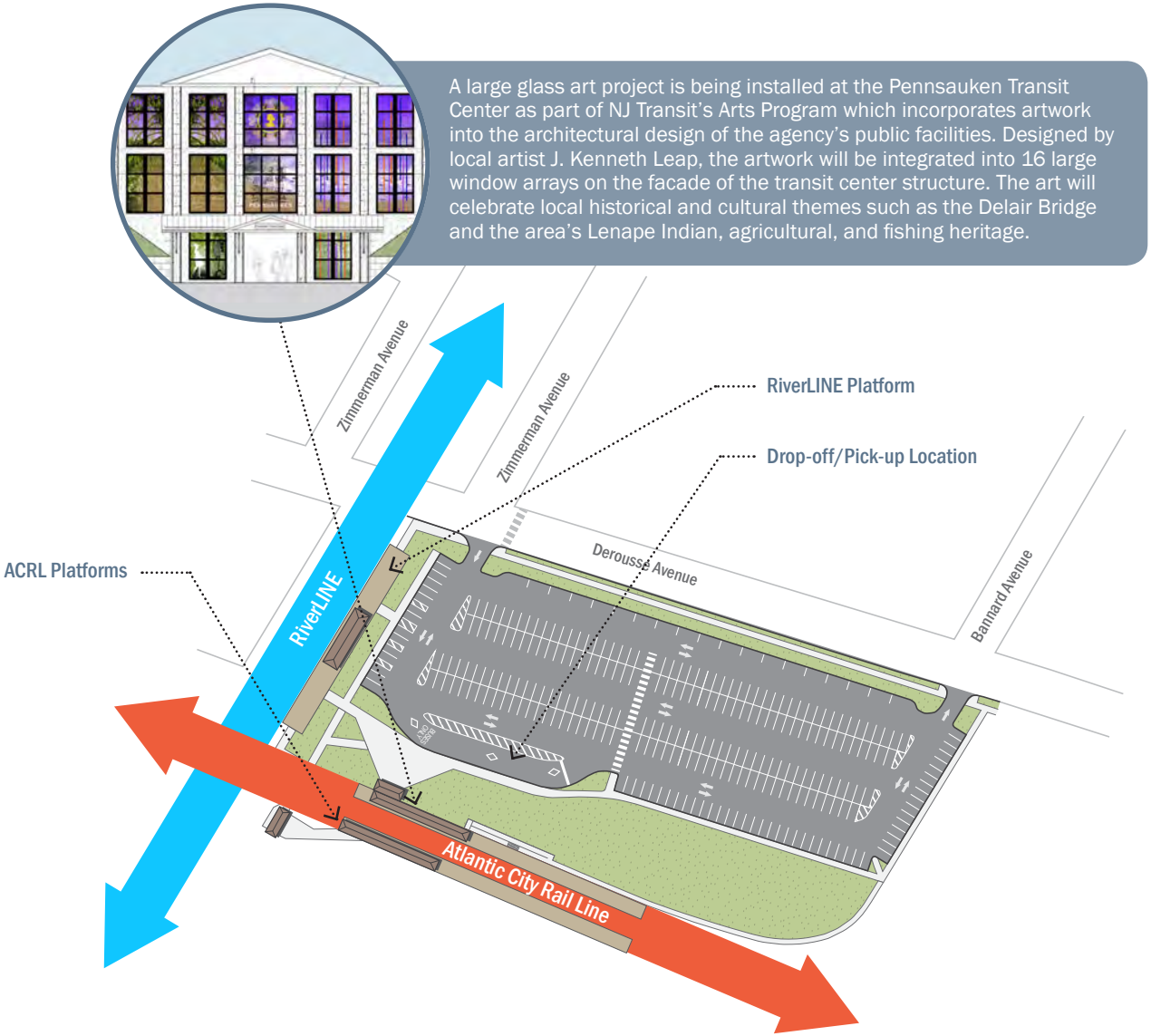
The transit center consists of two new interconnected stations. See Figure 3 for a diagram of the transit center. The RiverLINE station is composed of a single, 200-foot-long, floor-level platform with a 60-foot canopy for weather protection. Elevated 38 feet above grade, the ACRL station is composed of two 300-foot-long, high-level, side platforms with 100-foot canopies. These stations are linked by two sets of stairs and two elevators.

PTC includes a 283-space commuter parking lot, located along Derousse Avenue between Bannard and South Zimmerman avenues. The park-and-ride lot accommodates bus service and facilitates the drop-off/pick-up of passengers as well. The station includes bike racks, benches, trash receptacles, brick pavers, closed circuit security cameras, ticket vending machines, and public art.

PTC includes Americans with Disabilities Act (ADA) compliant lighting, access ramps, signage, and communication systems. Both rail lines will continue to operate as they currently do.

Construction of PTC began in October 2009. The facility was built on previously vacant land at the corner of Derousse and Zimmerman avenues just northeast of the intersection of the ACRL and RiverLINE (See Figure 4). The transit center is located roughly 1,500 feet from the Pennsauken waterfront via Derousse Avenue. North and east of Derousse Avenue lies the residential neighborhood of Delair. South and west of Derousse Avenue, the study area is composed of a mix of industrial and vacant lands, including the Hess Terminal and petroleum processing facility and one of Pennsauken's industrial parks.

FIGURE 3: PTC STATION DESIGN



dvrpc

Aerial Source: DVRPC, 2010

dvrpc

0 200 400 800 FEET

N

Study Overview

PTC will be an important part of the regional transit infrastructure, with the potential to reshape travel patterns and local land use decisions. The Delaware Valley Regional Planning Commission (DVRPC) conducted this study to identify potential impacts and opportunities created by the transit center. Throughout the study, DVRPC was guided by a Study Advisory Committee, comprised of representatives from Pennsauken Township, Camden County, NJ Transit, the South Jersey Transportation Authority (SJTA), Cross County Connection Transportation Management Authority (CCCTMA), and the NJ Department of Transportation (NJDOT).

The study team established several objectives to be pursued throughout the study:

- Document a wide variety of existing conditions in the study area,
- Investigate transit-supportive strategies to facilitate public transit access and use,
- Identify economic development opportunities within the station area, and
- Involve local communities and their residents in the development of station area planning.

As part of the study process, a public meeting was held on November 14, 2012, at the Pennsauken Library. Approximately 25 people attended this meeting, including township officials and members of the Township Committee. This meeting allowed the study team to educate citizens and officials on the development of the transit center, as well as its potential impacts. Citizens provided their feedback on a number of topics and helped identify several potential issues to investigate.

DVRPC staff also presented information about this study to Pennsauken's Business, Industry, and Government (BIG) Council on February 13, 2013. Pennsauken's BIG Council is an organization focused on business and economic development in the township. This meeting allowed DVRPC to publicize the transit center, while also gathering input from the business community.

The remainder of this document will outline the existing conditions within the study area and explore potential opportunities created by the new transit center. Section Two focuses on establishing the current context of the study area by examining a variety of characteristics, such as zoning, land use, and economic conditions. The third section will focus on identifying potential opportunities created by PTC, both in the station area and throughout the region.

SECTION TWO

Planning Context

To understand how the Pennsauken Transit Center may begin to impact Pennsauken Township and regional travel behavior, it is necessary to understand the current land use and transportation context. This section of the document presents an inventory of the existing conditions of the area surrounding PTC. In some cases, the study focuses on the area within one-half mile of the station because this is the area most directly linked to a transit station. In other cases, a larger area is considered to present a more comprehensive view of land use and travel patterns.

The 2009 Environmental Assessment analyzed a number of potential environmental issues as they related to the siting and construction of the facility. This study seeks to build on this foundation by expanding the analysis of some topics contained in the Environmental Assessment and by considering several additional topics. The topics covered here were selected because of their ability to inform a forward-looking assessment of opportunities created by PTC.

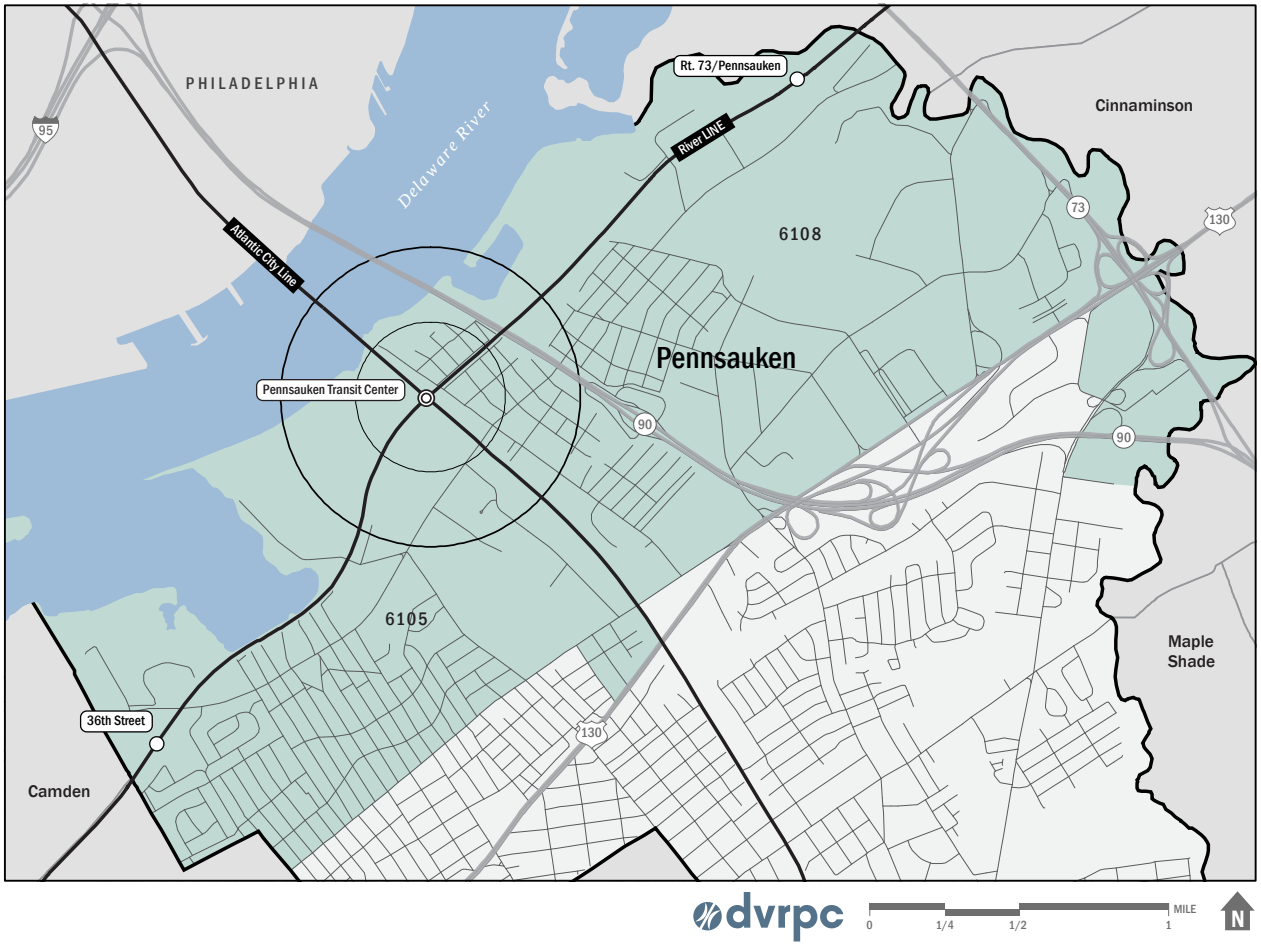
Demographics

PTC is situated in an area of the township with relatively low residential density. Its proximity to the waterfront and industrial land limits the residential population of the areas immediately adjacent to the station. For example, the area within one-half mile of the station has a population density of 1,560 people per square mile, less than half of the average density of Pennsauken itself (3,438 people per square mile). According to the 2010 Census, approximately 985 people live within one-half mile of the transit center.

For the purpose of demographic analysis, the study area was expanded to include all of Census Tracts 6105 and 6108 (see Figure 5). A comparison between this area, Pennsauken Township, and Camden County is displayed in Table 1. Approximately 27 percent, 9,733 people, of Pennsauken's population reside in this western portion of the township. Overall, the study area grew by 408 residents (four percent) between 2000 and 2010. Other census tracts within Pennsauken lost population during that time period, resulting in an overall population increase of 148 (0.4 percent) for the township. While the average household size and median household income are largely consistent with the township and county, the study area includes a larger concentration of African-American and Hispanic populations than these comparative areas.

Figure 6 displays the age distribution for the expanded study area. Just over one-quarter of the population is between the ages of 45 and 64. Children, 14 and under, account for 22 percent of residents. The study area also includes 1,070 residents (11 percent) age 65 and over. DVRPC's recent *NJ Transit RiverLINE Survey* (March 2012, Publication 1105) found that the average age of a surveyed RiverLINE rider was 42 years old, and that nearly half of RiverLINE riders were between the ages of 35 and 54. A similar survey of ACRL passengers conducted in September 2012 found that the average age

FIGURE 5: CENSUS TRACTS



The green area corresponds to Census Tracts 6105 and 6108, the area used for the analysis on the next page.

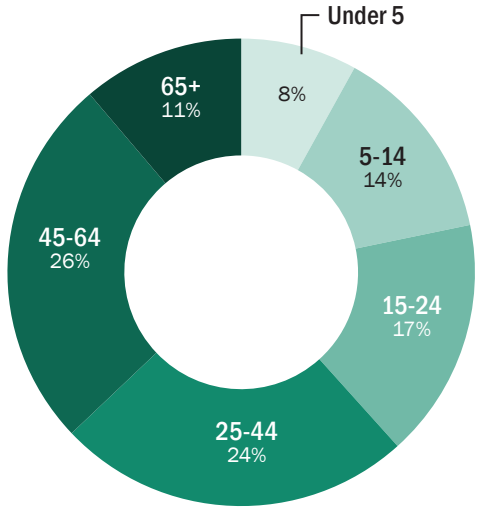
TABLE 1: POPULATION AND HOUSEHOLD CHARACTERISTICS

	STUDY AREA*	PENNSAUKEN TOWNSHIP	CAMDEN COUNTY
POPULATION			
2010	9,733	35,885	513,657
RACE & ETHNICITY			
White	36.5%	47.6%	65.3%
African-American	33.6%	26.9%	19.6%
Asian	7.3%	7.7%	5.1%
Other	22.6%	17.8%	10.0%
Hispanic (may be of any race)	33.6%	26.9%	14.2%
HOUSEHOLDS			
2010	3,315	12,966	190,670
Average Household Size	2.9	2.8	2.7
MEDIAN HOUSEHOLD INCOME			
2010 Inflation-Adjusted Dollars	$55,750 - $58,290	$57,241	$60,976
HOUSING			
Housing Units	3,315	13,275	204,943
% Owner-Occupied	83.9%	80.9%	69.7%
% Renter	16.1%	19.1%	30.3%

* Census Tracts 6105 and 6108

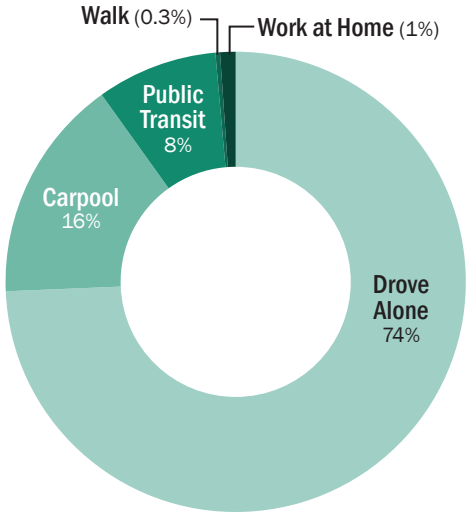
Source: U.S. Census Bureau: 2010 Census and 2006-10 American Community Survey

FIGURE 6: STUDY AREA AGE



Source: U.S. Census Bureau, 2006-10 American Community Survey

FIGURE 7: STUDY AREA JOURNEY TO WORK



Source: U.S. Census Bureau, 2006-10 American Community Survey

of ACRL riders was 46 years old.

As illustrated in Figure 7, the majority of residents (74 percent) commute to work by driving alone. The study area includes two existing RiverLINE stations, Route 73/ Pennsauken and 36th Street, and 8.3 percent of residents report using public transportation to get to work.

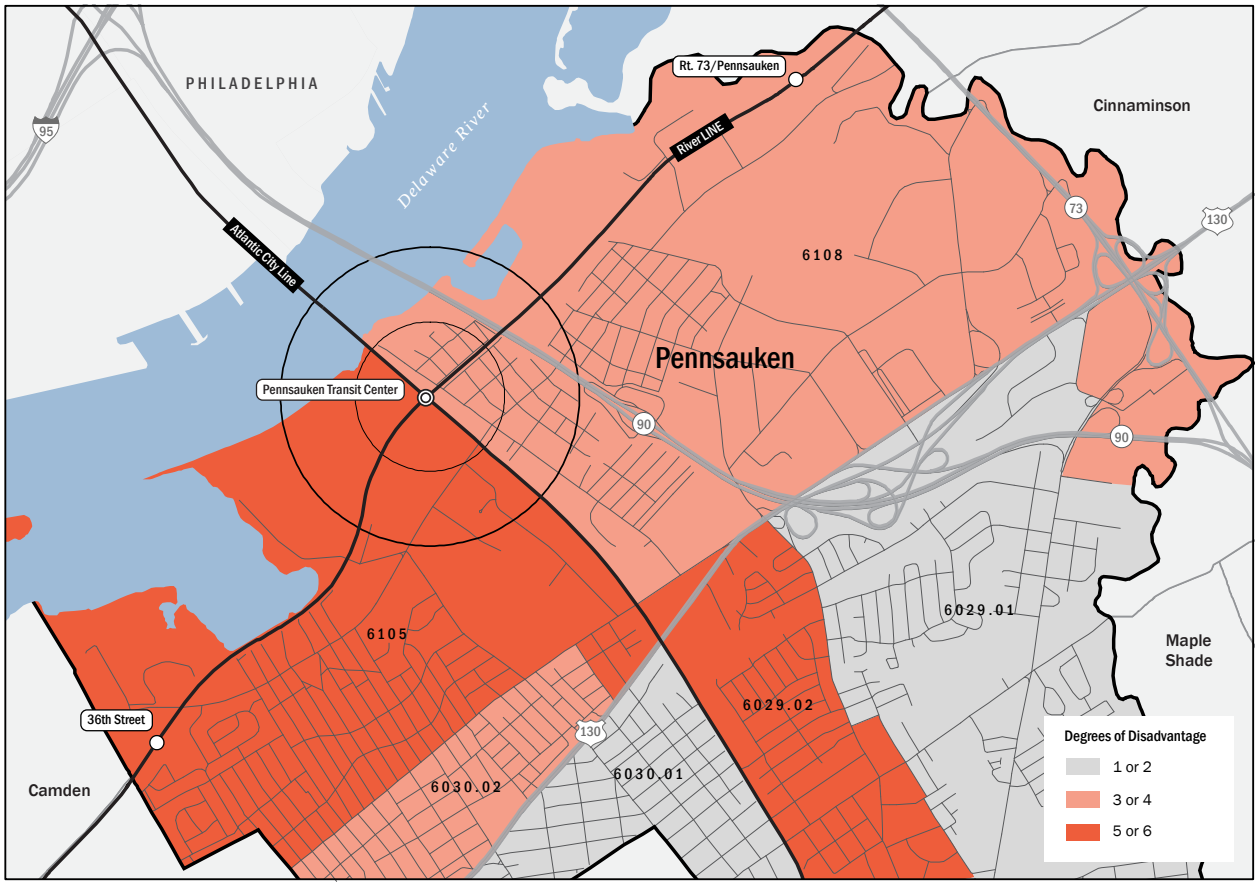
Environmental Justice

As the Metropolitan Planning Organization (MPO) for the nine-county region, DVRPC is charged with evaluating plans and programs for environmental justice (EJ) sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed an EJ methodology that quantifies levels of disadvantage within the region for several potentially disadvantaged groups: carless households, the elderly (over 75 years of age), female heads of household with children, Limited English Proficiency (LEP) households, households in poverty, Hispanic, and non-Hispanic minorities. Collectively, this group of factors is referred to as Degrees of Disadvantage (DoD). Census tracts with a population that exceeds the regional average for any of these factors are considered EJ-sensitive.

The DoD for the Pennsauken census tracts surrounding PTC are shown in Figure 8. Census Tract 6105, south of the Atlantic City Line, exhibits six DoD, while census tract 6108, north of the ACRL, exhibits three DoD.

Figure 9 illustrates the types and severity of EJ factors affecting the study area by comparing the potentially disadvantaged population within Census Tracts 6105 and 6108 to the regional threshold. For example, the percentage of carless households in both census tracts is below the regional threshold of 14.4 percent. However, study area concentrations of three DoD factors significantly exceed regional averages: female heads of household with children, Hispanic, and non-Hispanic minority. Levels of LEP are also nearly three times higher than the regional threshold in Census Tract 6105.

FIGURE 8: DEGREES OF DISADVANTAGE BY CENSUS TRACT



Source: 2010 Census Data

FIGURE 9: DEGREES OF DISADVANTAGE FACTORS

Source: DVRPC, 2010 Census Data

High concentrations of disadvantaged populations within an area may translate into higher levels of transit dependency. The additional transit access provided by PTC will significantly improve job access and mobility for disadvantaged populations in the vicinity of the station. The relatively large Hispanic population, as well as the LEP characteristics of the population, may suggest that strategies used to market the station need to address potential language barriers in the surrounding neighborhoods.

Land Use

Land uses surrounding PTC are illustrated in Figure 10. The study area is roughly bisected by the ACRL into northern and southern portions with very different characters. South of the ACRL, the study area is dominated by the presence of large industrial properties. North of the ACRL, the study area is comprised primarily of a residential neighborhood with a mix of other uses and wooded areas. In addition to serving as a dividing line between dominant uses, the elevated nature of the rail line creates a buffer that visually separates the industrial and residential portions of the study area.

The one-half mile circle centered on PTC in Figure 10 encloses approximately 500 acres. Ninety-six of these acres (19 percent) are comprised of water. Public rights-of-way comprise roughly 59 acres (12 percent). Of the remaining 345 acres, approximately 104 acres (30 percent) of land is being used for industrial purposes. This land includes heavy industrial uses associated with the Hess terminal along the waterfront and a petroleum storage and processing facility located directly south of PTC, and light industrial uses associated with the Hess terminal along the waterfront and the Pennsauken Industrial Park located east of River Road and south of the ACRL.

Approximately 70 acres (20 percent) of the study area is dedicated to residential development. This development is characterized by single-family detached homes on quarter-acre and smaller lots. Homes in this established area are typically two stories and were largely constructed between 1920 and 1980.

Commercial uses account for approximately three percent of the study area. Aside from a few casual restaurants, commercial uses near the station feature businesses that support industrial and construction activities rather than neighborhood goods and services. Closest to the station, a trucking terminal and truck maintenance facility occupies the parcel north of PTC along Derousse Avenue. Similarly, a company specializing in high-pressure breathing air systems machinery and service is located at the northwest corner of the intersection of Derousse Avenue and River Road. In general, Pennsauken's consumer retail uses are clustered along Westfield Avenue, the township's traditional retail district located one and a half miles southeast of PTC, and in strip commercial development along Route 130.

A few community uses are found within the study area. A church now occupies a former commercial building at the northeast corner of the intersection of Derousse Avenue and River Road. Delair Elementary School and its associated recreation fields are located southeast of PTC along Derousse Avenue between Holman Avenue and Forrest Avenue. The new Pennsauken Community Recreation Facility is located south of the Pennsauken Industrial Park, just off the map shown in Figure 10. This 23-acre facility opened in September 2010 and includes athletic fields, a playground, a skate park, and a multi-use exercise path.

Nearly 60 acres (17 percent) of the study area is classified as wooded area. The majority of this land exists along the waterfront west of Adams Street south of the Betsy Ross Bridge and west of the RiverLINE north of the Betsy Ross Bridge.

Finally, a substantial portion (66 acres, 19 percent) of the study area is comprised of vacant land. This includes large former industrial parcels, such as the inactive portion of the Hess property located just south of the Hess Terminal. This property is part of a larger waterfront redevelopment area that will be discussed in the next subsection. Smaller vacant parcels include the properties on the southwest and southeast corners of the intersection of River Road and Derousse Avenue. A long thin vacant parcel is also located along Derousse Avenue between the waterfront and the trucking terminal adjacent to PTC.

Zoning

Pennsauken Township is divided into four planning districts: Browning, Colonial, Cooper, and Village. The PTC study area straddles the Browning and Colonial planning districts. Eight zoning districts and one special management area are found within the study area.

Two districts relate to industrial land uses: Heavy Industrial and Limited Industrial. Pennsauken's Heavy Industrial district, designated for areas such as the active and inactive Hess properties west of the ACRL, is intended to accommodate the township's most intensive manufacturing and processing uses. Limited Industrial zoning has been designated for the Pennsauken Industrial Park. This designation allows any uses permitted in C-2 Commercial Districts, as well as a number of other specified uses, such as scientific and industrial research and the light manufacturing and processing of several types of products.

Three residential districts, corresponding to increasing levels of residential density, are located in the study area. Single-family detached homes are allowed in R-2, R-3, and R-4 districts; however, the area and bulk standards for these dwellings vary for each district (see Table 2). Single-family detached homes, garden-type multifamily buildings, and townhomes are also allowed in the R-4 district. The majority of land zoned residential within the

PTC is bordered by an established residential neighborhood to the east.

The Hess oil terminal and storage facility is located directly west of PTC.

The study area includes a large industrial park located southeast of the station.

Source: DVRPC

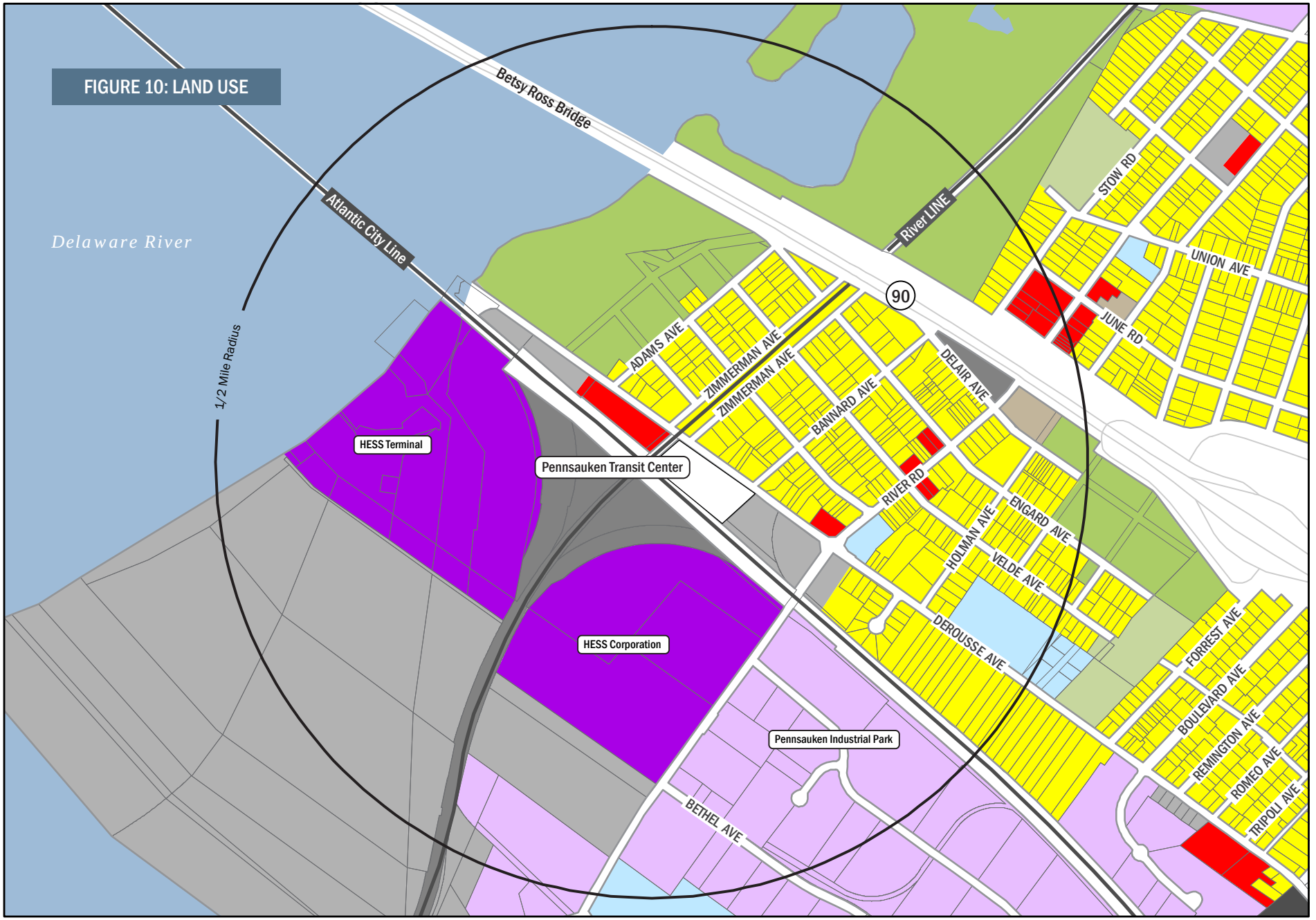


FIGURE 10: LAND USE
Delaware River
Betsy Ross Bridge
Atlantic City Line
River LINE
1/2 Mile Radius
90
STOW RD
UNION AVE
JUNE RD
ADAMS AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
BANNARD AVE
DELAIR AVE
HESS Terminal
Pennsauken Transit Center
RIVER RD
HOLMAN AVE
ENGARD AVE
VELDE AVE
DEROUSSE AVE
HESS Corporation
FORREST AVE
BOULEVARD AVE
REMINGTON AVE
ROMEO AVE
TRIPOLI AVE
Pennsauken Industrial Park
BETHEL AVE
Commercial
Community
Heavy Industrial
Light Industrial
Recreation
Residential
Transportation
Utility
Vacant
Wooded
dvrpc
0 200 400 800
FEET
N

study area is designated as R-3.

C-1 Commercial districts have been designated along River Road. This designation allows a wide variety of retail establishments, business and professional offices, restaurants, and personal service shops. In general, C-1 establishments are limited to a height of 35 feet and lots of at least 5,000 square feet.

The Township 1 district designates land used for schools, municipal uses, community centers, noncommercial parks, and other recreational uses.

The Waterfront Overlay District was added to the township code in 2002. This district designates areas appropriate for redevelopment, as determined by the 2001 *Redevelopment Plan for the Township of Pennsauken Waterfront Study Area*. The Redevelopment Area covers roughly two square miles and is located southwest of the ACRL and extends to the City of Camden between River Road and the Delaware River, including Petty's Island. Near PTC, the Redevelopment Area includes the inactive Hess properties, as well as an industrial parcel formerly used by Texaco. The Redevelopment Plan encourages a new mix of uses for this primarily industrial area that will provide "extraordinary public opportunities for recreation," while leading to the substantial economic enhancement of the area. The Waterfront Overlay District contains a variety of permitted uses such as marinas, retail sales and service, office buildings, sports arenas, hotels, and R-4 residential uses. More information on development proposals for this Redevelopment Area will be presented later in this document.

In addition to their base zoning regulations, waterfront parcels within the study area are further regulated as a Waterfront Management Area. These additional regulations were developed by the New Jersey Department of Environmental Protection (NJDEP) according to guidelines of the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Commerce. The purpose of this

TABLE 2: RESIDENTIAL AREA AND BULK STANDARDS

	R-2	R-3	R-4			
	Single-Family Detached	Single-Family Detached	Single-Family Detached	Single-Family Semidetached	Multifamily Garden-type	Townhouse
STANDARD						
Height	35 ft	35 ft	35 ft	2 Stories	2 Stories	2 Stories
Lot Size	6,000 sf	5,000 sf	5,000 sf	4,500 sf	2 acres	2,000 sf
Lot Width	60 ft	50 ft	50 ft	45 ft	250 ft	20 ft
Front Yard	30 ft	25 ft	25 ft	20 ft	50 ft	20 ft
Side Yard (Aggregate)	18 ft	18 ft	18 ft	-	100 ft	-
Rear Yard	35 ft	30 ft	30 ft	35 ft	50 ft	35 ft
Building Coverage	30%	35%	35%	35%	20%	40%
Lot Coverage	65%	70%	75%	80%	50%	80%
Density Limit	-	-	-	-	15 families/acre	10 families/acre

Source: Pennsauken Township, NJ

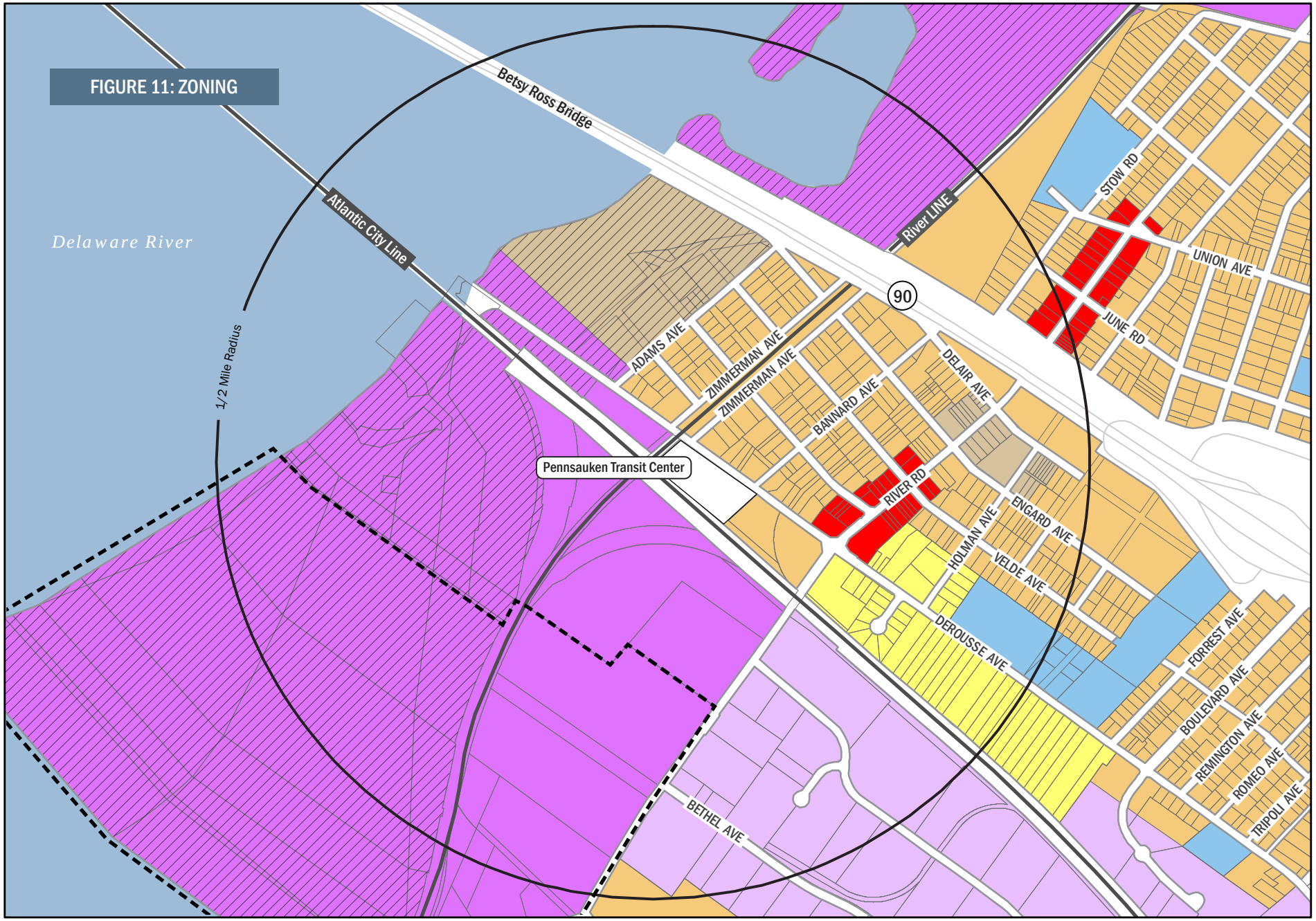


FIGURE 11: ZONING
Delaware River
Betsy Ross Bridge
Atlantic City Line
River LINE
1/2 Mile Radius
90
Pennsauken Transit Center
STOW RD
UNION AVE
JUNE RD
ADAMS AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
BANNARD AVE
DELAIR AVE
RIVER RD
HOLMAN AVE
ENGARD AVE
VELDE AVE
DEROUSSE AVE
FORREST AVE
BOULEVARD AVE
REMINGTON AVE
ROMEO AVE
TRIPOLI AVE
BETHEL AVE
Heavy Industrial
Limited Industrial
Township 1
Commercial 1
Waterfront Management Area
Residential 2
Residential 3
Residential 4
Waterfront Overlay
dvrpc
0 200 400 800 FEET
N

management area is to ensure that the conservation and environmental protection of the waterfront is considered whenever new development is evaluated for this area. The management area carries a series of use, bulk, and pedestrian access regulations intended to promote innovative water-dependent and water-related uses that will guarantee that future residents of Pennsauken benefit from the access to and enjoyment of the township's riverfronts.

Transportation

PTC is located on Derousse Avenue, a collector street that links a number of local residential streets near the station. River Road, CR 543, functions as a minor arterial that extends from Camden to Mansfield Township in Burlington County. Locally, River Road runs parallel to the RiverLINE and is an important route for vehicles, including trucks, traveling to the industrial park and properties surrounding the station. Located just over one mile east of PTC, Route 130 is a U.S. Highway and a major north-south arterial that extends over 80 miles between Pennsville Township, Salem County, and North Brunswick, Middlesex County. In Camden and Burlington counties, Route 130 provides important links to NJ Routes 90 and 73, as well as Interstate 676.

In addition to the local road and highway network, the transportation context of the extended study area also includes other forms of transit and local pedestrian and bicycle facilities. Figure 12 illustrates the local transit network.

Rail Transit

As discussed above, PTC will function as a station for both the RiverLINE and ACRL. The RiverLINE is a diesel light rail system that connects the cities of Camden and Trenton, New Jersey. The rail line opened in March 2004 and carried 2.8 million passengers in FY 2012. During that time, the RiverLINE averaged 8,638 weekday riders and 5,733 and 4,393 riders on Saturday and Sunday, respectively. End-to-end travel times for the 34-mile route are scheduled for 65 to 68 minutes, depending on the day and time of travel. Service is offered from just before 6 a.m. to approximately 9:30 p.m. on weekdays and Sundays. Saturday service begins before 6 a.m. and concludes between midnight and 1 a.m. on Sunday morning. Fifteen-minute headways are scheduled during morning and afternoon peak hours, with service offered every 30 minutes during off-peak hours and on weekends. Adult one-way tickets cost $1.50 regardless of the distance traveled.

The ACRL is a heavy rail line that operates between Philadelphia and Atlantic City, a trip scheduled for one hour and 35 minutes. In Pennsylvania, the ACRL shares track with SEPTA and Amtrak before crossing the Delaware River on the Delair Bridge. In New Jersey, the ACRL shares right-of-way with the PATCO speedline between Haddonfield and Lindenwold and largely runs parallel to the White Horse Pike between Lindenwold and Atlantic City. NJ Transit took over operations of the ACRL from Amtrak during the 1990s, and the line carried one million passengers in financial year 2012. During that time, the ACRL averaged 3,450 weekday riders and 3,300 and 2,950 riders on Saturday and Sunday, respectively. There are 12 Atlantic City-bound departures and 13 Philadelphia-bound departures each day. Headways between trains range from 53 minutes to two hours and 30 minutes. Passenger fares depend on the distance traveled and range from $1.50 for one-way travel between Atlantic City and Absecon, to $10 for one-way travel between Atlantic City and Philadelphia.

NJ Transit's April 2008 ridership forecast anticipates that 570 riders will board the ACRL and RiverLINE at PTC on a typical workday in the target study year of 2015. Four hundred and twenty (73 percent) of these riders are expected to board locally while 150 (27 percent) are expected to transfer from one line to another. The ridership forecast also suggests that 50 existing ACRL riders will divert their boardings from the Cherry Hill and Lindenwold stations to PTC due to the station's proximity to their residences.

Bus Service

Beginning in fall 2013, NJ Transit's Route 419 will be modified to provide direct bus service to PTC. The Camden-Pennsauken Transit Center-Burlington route will travel between Walter Rand Transportation Center in Camden and Burlington City seven days a week. The bus will reach PTC via Derousse Avenue and travel on a loop through the parking lot. End-to-end travel times are scheduled for approximately one hour and 10 minutes.

Two additional NJ Transit buses travel through the extended study area. Route 404 provides service between Walter Rand Transportation Center in Camden and the Cherry Hill Mall in Cherry Hill, New Jersey seven days a week. This route offers limited service within the study area to both industrial parks on weekdays. Route 452 provides service between the 36th Street Station of the RiverLINE , the Cramer Hill neighborhood in Camden, and downtown attractions, such as the Susquehanna Bank Arts Center, Adventure Aquarium, and Campbell's Field.

Employee Shuttle

The South Jersey Transportation Authority (SJTA) operates a shuttle route in Camden County that links the Route 73/Pennsauken Station of the RiverLINE to the Pennsauken Industrial Park located northeast of PTC along Hylton Road. The shuttle service, known as TransIT Link, runs from 6:30 a.m. to 6 p.m. After serving the Pennsauken Industrial Park, the TransIT Link shuttle continues onto the Moorestown Industrial Park, located along Church Road in Moorestown, New Jersey.

STJA officials served as part of the steering committee for this study and expressed an interest to partner with NJ Transit and employers in the industrial park located adjacent to PTC to investigate shuttle service originating from PTC.

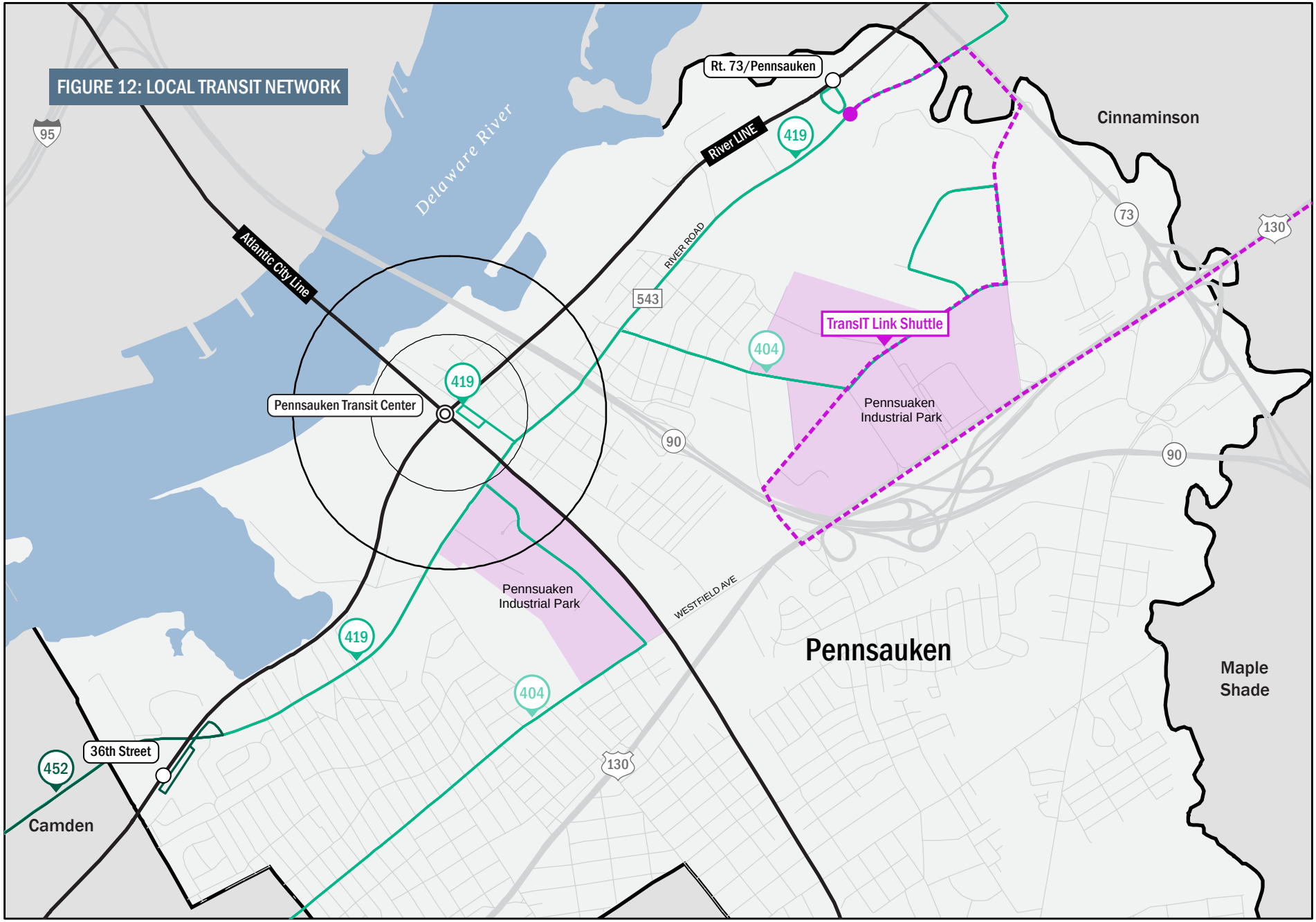


FIGURE 12: LOCAL TRANSIT NETWORK
Delaware River
Rt. 73/Pennsauken
River LINE
419
Cinnaminson
95
Atlantic City Line
RIVER ROAD
543
73
130
TransIT Link Shuttle
404
Pennsauken Transit Center
Pennsauken
Industrial Park
90
WESTFIELD AVE
Pennsauken
Maple
Shade
36th Street
452
Camden
NJ Transit Bus Line
Bus Route
SJTA TransIT Link Shuttle
dvrpc
0
1/4
1/2
1
MILE
N

Pedestrian Environment

The pedestrian infrastructure of a particular place is composed of the network of sidewalks, crosswalks, and trails that facilitate travel on foot. The quality and interconnectedness of these individual elements help define an area's pedestrian environment. In general, the residential areas north and east of PTC contain significantly better pedestrian facilities than those found in the industrial areas south of the station. Gaps in the sidewalk network are illustrated with a dashed line in Figure 13. Figure 13 also highlights primary and secondary pedestrian connections between the station and the surrounding neighborhoods.

Anyone walking to PTC must walk along Derousse Avenue at some point. Aside from a stretch of Derousse Avenue between Adams Avenue and the waterfront, the north side of Derousse has continuous sidewalks. Sidewalks on the south side of Derousse are inconsistent, however. New sidewalks are being constructed adjacent to the transit center as part of the construction, but they are not connected to sidewalks in either direction. Pedestrians traveling to the station will likely walk along the north side of Derousse Avenue and cross at Bannard or Zimmerman avenues.

River Road is also an important route for pedestrians because it links PTC to neighborhoods north of Derousse Avenue and Route 90. North of Derousse Avenue, River Road has sidewalks on both sides, but the higher volume of traffic, faster vehicle speeds, and the lack of a buffer from the passing traffic detract from the pedestrian environment. South of Derousse Avenue, no sidewalks exist along River Road, and traveling on foot to destinations such as the industrial park is hazardous and discouraged. The intersection of River Road and Derousse Avenue is wide, approximately 75 feet from curb to curb, but the presence of transverse crosswalk lines and pedestrian signals help make it more manageable for walkers. The crosswalk markings, however, are in need of repainting, and this intersection may be a candidate for an enhanced treatment that increases the visibility of the crosswalks. On one occasion, the study team also observed a malfunction of the pedestrian signals, where the walk sign turned off during the middle of the pedestrian phase.

The secondary pedestrian connections depicted in Figure 13 function as pedestrian collector streets that link local residential streets to Derousse Avenue and River Road. In general, these neighborhood streets, including Adams, Bannard, and Holman avenues, are pleasant, with continuous sidewalks.

Bicycle Environment

The only designated bicycle or trail facility in Pennsauken Township is a portion of the Merchantville Trail, located on the border of Pennsauken and Merchantville. There are no bicycle facilities currently in the vicinity of the transit center.

DVRPC, however, is working with Camden County to develop a county-wide bicycle and multi-use trails plan. Several of the facilities identified in this plan will help improve bicycle access to PTC.

Striped bicycle lanes, separated from vehicular traffic, are recommended for River Road from the Burlington County Line to State Street in the City of Camden. Derousse Avenue, from Westfield Avenue to the riverfront, is a recommended route in the plan. The road is not wide enough for a dedicated bicycle lane, but the presence of the transit center makes this an important route for cyclists. As described in the county's master plan, there are several treatments that may be appropriate for these recommended routes. In this case, basic wayfinding signage could identify PTC and the bicycle lanes on River Road. Additional treatments could involve installing share-the-road signs or adding shared lane markings, commonly referred to as sharrows, to Derousse Avenue. Sharrows direct cyclists where they should be riding in the roadway and alert motorists to the potential presence of cyclists.

The south side of Derousse Avenue, near the River Road intersection, lacks sidewalks.

Looking north along River Road as it travels beneath Route 90/Betsy Ross Bridge.

Source: DVRPC

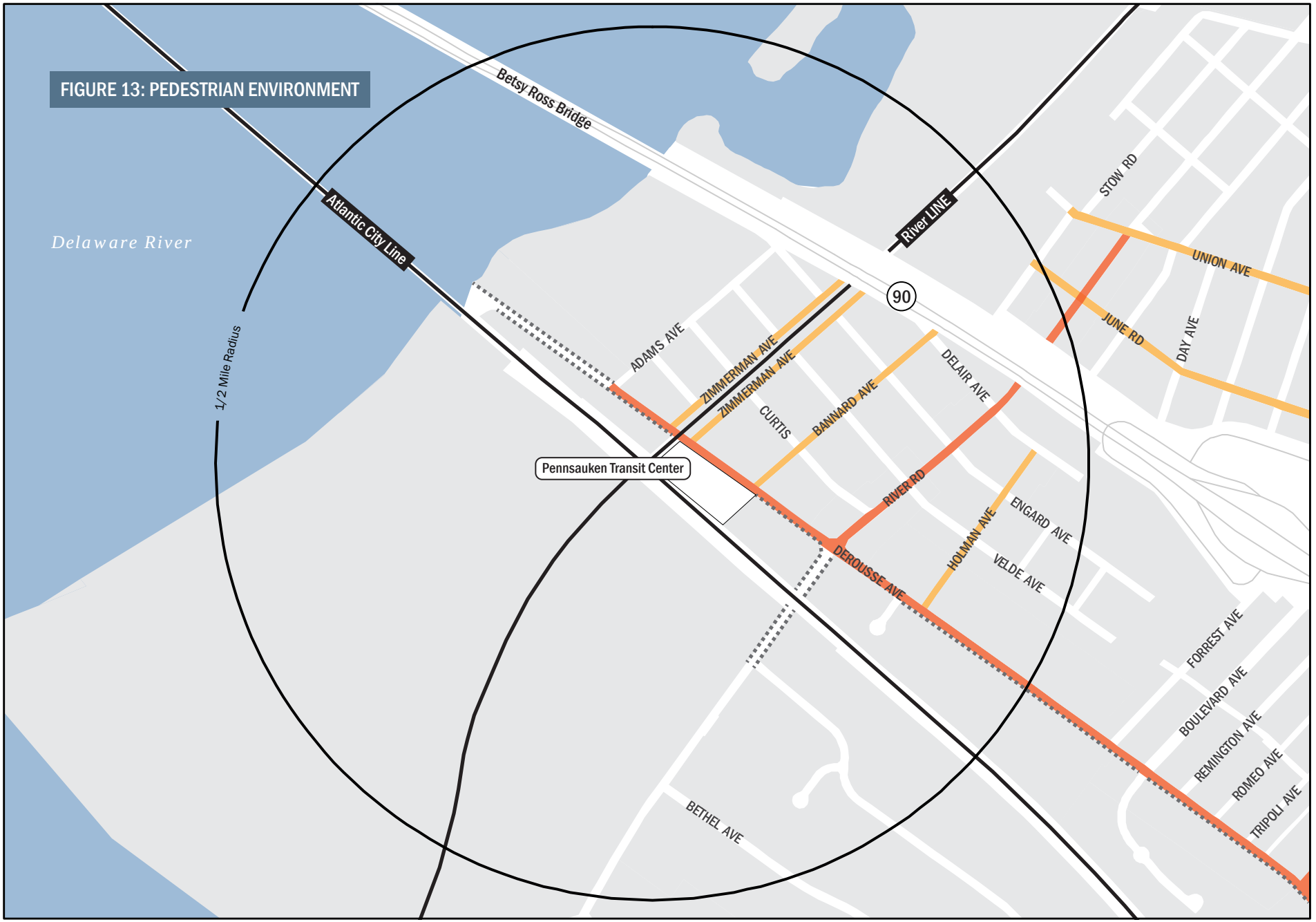


FIGURE 13: PEDESTRIAN ENVIRONMENT
Betsy Ross Bridge
Atlantic City Line
River LINE
Delaware River
1/2 Mile Radius
90
STOW RD
UNION AVE
JUNE RD
DAY AVE
ADAMS AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
CURTIS
BANNARD AVE
DELAIR AVE
Pennsauken Transit Center
RIVER RD
HOLMAN AVE
ENGARD AVE
VELDE AVE
DEROUSSE AVE
FORREST AVE
BOULEVARD AVE
REMINGTON AVE
ROMEO AVE
TRIPOLI AVE
BETHEL AVE
Primary Pedestrian Connection
Missing Sidewalk
Secondary Pedestrian Connection
dvrpc
0 200 400 800 FEET
N

Waterfront trail planning has been an ongoing process for many South Jersey municipalities. The Pennsauken Waterfront Trail is a proposed trail segment that would pass through the study area. When complete, the trail would extend from the Palmyra Cove Nature Park in Palmyra to the Camden Greenway being planned in Camden.

Economic Profile

The extended study area, comprised of Census Tracts 6105 and 6108, is an employment center for Pennsauken and Camden County. According to the National Establishment Time-Series (NETS) Database, the study area was home to 715 businesses in 2010. These businesses employ 12,132 people in an area with a residential population of only 9,733. The distribution of businesses with two or more employees is illustrated in Figure 14. Many of the largest employers are located within the study area's two industrial parks and the areas adjacent to Route 73 in the northern portion of the township. Fifty-four businesses, employing 353 employees, are located within one half-mile of PTC.

Businesses with two to 10 employees represent the largest percentage (50 percent) of employers within the study area. Figure 14 also identifies the top industries found within the study area in terms of the number of businesses and employees. Approximately 41 percent (295) of businesses fall into the services category, a broad classification that includes automotive repair shops, medical offices, and a variety of miscellaneous business services. In terms of the number of employees, manufacturing businesses employ the largest share (39 percent) of study area workers.

Tables 3 and 4 describe commuting patterns for all of Pennsauken using data from the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program. Table 3 identifies the work destination for residents of the township. Nearly 17 percent of Pennsauken's working population commute to Philadelphia for their job. Approximately 14 percent of working residents are employed within the township itself. Three of the top seven work destinations are locations served by the RiverLINE or ACRL: Philadelphia, Camden, and Golden Triangle. The Golden Triangle is a three-square-mile census-designated place in Cherry Hill, New Jersey roughly centered on the Cherry Hill Station of the ACRL. The Golden Triangle is home to several large shopping centers and includes commercial development along Route 70/Marlton Pike West and Haddonfield Road.

Table 4 shows where people who work in Pennsauken reside. Fourteen percent of people working in Pennsauken commute from Philadelphia. Pennsauken residents make up nearly 10 percent of those employed within the township. The third largest share of township employees comes from Camden. These origins suggest that the PTC can provide additional transit accessibility for commuters traveling to Pennsauken.

Environmental Considerations

The Environmental Assessment prepared for the Pennsauken Transit Center in 2009 contains a detailed survey of the environment surrounding the station and the potential environmental effects of constructing the station. It should be consulted for a more comprehensive assessment of environmental considerations in the study area.

Figure 15 illustrates some of the most pertinent environmental features related to future land use and development opportunities in the station area: floodplains, wetlands, and known contaminated sites. Areas in blue represent land classified within the 100-year floodplain. Large portions of waterfront are prone to flooding impacts, and any future development on these sites would need to be designed appropriately. Areas in

TABLE 3: WORK DESTINATION ANALYSIS

	Employees	%
DESTINATION		
Philadelphia, PA	2,218	16.7%
Pennsauken, NJ	1,810	13.6%
Camden, NJ	1,570	11.8%
Moorestown-Lenola CDP (NJ)	422	3.2%
Cherry Hill Mall CDP (NJ)	368	2.8%
Greentree CDP (NJ)	257	1.9%
Golden Triangle CDP (NJ)	244	1.8%

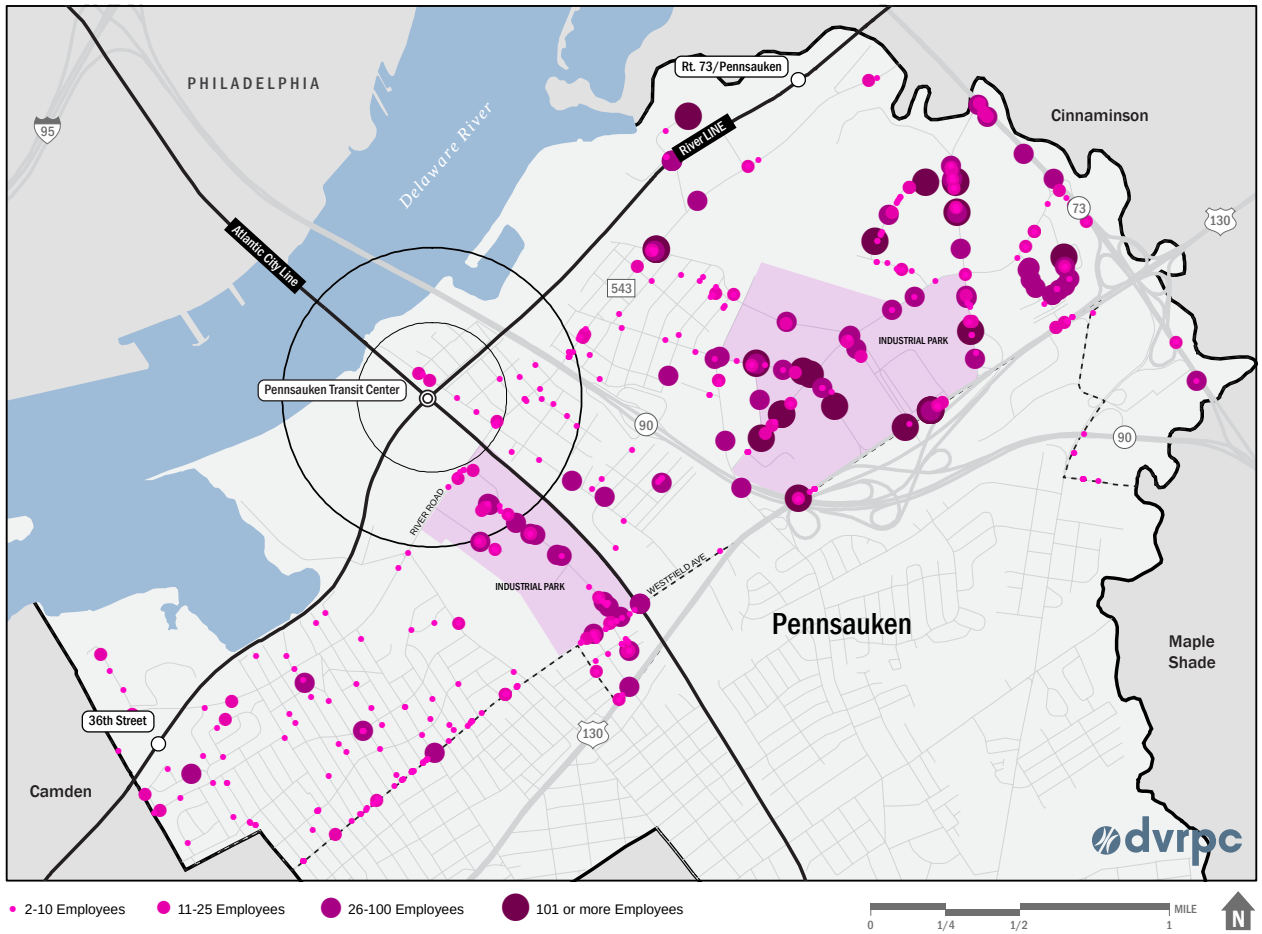
CDP stands for Census-designated place
Source: U.S. Census Bureau, 2011

TABLE 4: HOME DESTINATION ANALYSIS

	Employees	%
DESTINATION		
Philadelphia, PA	2,648	14.0%
Pennsauken, NJ	1,810	9.6%
Camden, NJ	1,736	9.2%
Cherry Hill Mall CDP (NJ)	210	1.1%
Collingswood, NJ	178	0.9%
Lindenwold, NJ	158	0.8%
Bellmawr, NJ	155	0.8%

CDP stands for Census-designated place
Source: U.S. Census Bureau, 2011

FIGURE 14: ECONOMIC PROFILE



Source: National Establishment Time-Series (NETS) Database, 2010 (Walls & Associates)

Total Businesses: 715
Total Employees: 12,132
Average Business Size: 17 people

Businesses by Size:
1 Employee (25%)
2-10 Employees (50%)
11-25 Employees (12%)
26-100 Employees (10%)
101 or more Employees (3%)

Top Industries (number of businesses)
1. Services (295)
2. Wholesale Trade (101)
3. Retail Trade (98)
4. Manufacturing (78)
5. Construction (60)

Top Industries (number of employees)
1. Manufacturing (4,708)
2. Services (2,592)
3. Wholesale Trade (1,589)
4. Retail Trade (1,381)
5. Transportation & Public Utilities (1,131)


FIGURE 15: ENVIRONMENTAL FEATURES
Delaware River
Betsy Ross Bridge
Atlantic City Line
River LINE
1/2 Mile Radius
90
STOW RD
UNION AVE
JUNE RD
ADAMS AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
BANNARD AVE
DELAIR AVE
RIVER RD
HOLMAN AVE
ENGARD AVE
VELDE AVE
DEROUSSE AVE
FORREST AVE
BOULEVARD AVE
REMINGTON AVE
ROMEO AVE
TRIPOLI AVE
BETHEL AVE
Georgia Pacific Company
REMEDIATION LEVEL: C1
Pennsauken Transit Center
Puchack Well Field
REMEDIATION LEVEL: C3
CJ Osborn Co.
REMEDIATION LEVEL: C2
Motiva Enterprises, LLC
REMEDIATION LEVEL: C3
Fish House Cove
100-year Floodplain
Wetlands
Known Contaminated Site
Natural Heritage Priority Site
dvrpc
0 200 400 800 FEET
N

green correspond to wetlands. Near PTC, wetlands are located on the triangular pieces of land immediately south of the ACRL and on the large waterfront parcel west of Adams Street north of the ACRL.

According to the NJ Department of Environmental Protection (NJDEP), the study area contains four contaminated sites of varying remediation levels. C3 sites are considered the most complex and potentially threatening sites. C3 sites may contain multiple contaminants with potential impacts to soils and ground water.

The study area also borders Fish House Cove, a large biologically diverse fresh tidewater marsh. Fish House Cove is a designated Natural Heritage Priority Site. This designation is used by the NJDEP Office of Natural Lands to identify important natural conservation areas that are home to rare plant and ecological communities. In 2005, NJ Transit constructed a 400-foot boardwalk that winds through the marshland and includes a riverfront observatory.

Development Context

In recent years, Pennsauken's redevelopment efforts in the vicinity of the transit center have primarily focused on waterfront properties. A waterfront redevelopment plan was drafted in 2001. Phase one of the plan addresses the area to the west of Derousse Avenue and extends to the City of Camden between River Road and the Delaware River, including Petty's Island. The plan encourages the environmental remediation of many of the formerly industrial uses, while promoting a variety of new businesses and land uses.

Subsequently, the Waterfront Master Plan was prepared for Pennsauken by a consultant team lead by Brown and Keener Urban Design in 2004. This Master Plan includes a series of recommendations for five major properties along the waterfront: Petty's Island, the Vineland Construction site, the Acme site, the Texaco site, and the Hess site. These sites are identified in Figure 16.

Petty's Island

Petty's Island is a 300-acre island across the river channel from the Cramer Hill neighborhood of Camden. Vehicular access to the island is via the 36th Street bridge. Approximately 146 acres of the island have been built upon, while the remainder is a combination of habitat and wetland. Existing land uses include an abandoned tank facility formerly used by Citgo and an active trucking and shipping facility operated by Crowley Marine Co.

Though listed as a potentially developable parcel in the 2004 plan, this study identifies the island as an open space and recreation opportunity because Citgo donated the island to the New Jersey Natural Lands Trust (NJNLT) in 2009. NJNLT holds a conservation easement for the entire island; however, CITGO is responsible for remediating the site before transferring full ownership to the trust. Crowley Marine has a lease on its industrial land until 2017. NJNLT is working with stakeholders to develop a long-term vision for public access to the island, which could include passive recreational opportunities, such as hiking trails, cultural programming, and an education center.

Vineland Construction

The Vineland Construction site is a 92-acre property that includes a variety of warehouse buildings and wetlands. A portion of the site remains active as a storage and trucking facility. The site has some frontage on both River Road and 36th Street and is located in close proximity to the 36th Street Station of the RiverLINE. The 2004 Master Plan recommends a mix of residential, recreation, and open space uses for this property and stresses the site's strategic location linking the Camden and Pennsauken waterfronts.

Acme Site

The Acme site is named for a vacant Acme building, which sits on a nine-acre parcel accessible from River Road and 47th Street. Like the Vineland site, this property is located close to the 36th Street Station of the RiverLINE. The Waterfront Master Plan recommends a mix of housing types for the site, with retail on the River Road frontage. Development plans for this site were presented to the township in April 2013. A developer is proposing to redevelop the property into a multifamily rental community. The development would consist of 75 units spread over eight three-story buildings, with a clubhouse, parking areas, and storm water management basins.

Texaco Site

The Texaco site is a 43-acre property located between Fish House Cove and the Hess site. Roughly half the site is composed of abandoned oil storage tanks and dock facilities, while the other half consists of wetlands and forest habitat. The only vehicular access to the site is via Cove Road, a small curving road that connects to River Road. The 2004 plan calls for a mix of uses that could include a public recreation facility, medium-density housing, and waterfront retail and restaurants.

Hess Site

The Hess site includes roughly 105 acres of unused land (shown in orange) just north of the Texaco site. Hess's active port and processing facility (shown in orange hatch) are included here because those properties were recently listed for sale along with the unused portion of the site. The township is unaware of any potential buyers and it is unclear if a new owner would continue industrial operations on the site. The vacant part of the property has been covered with clean fill, such that the top level of the fill is approximately eight feet above the natural grade. This portion of the site is accessible via Cove Road, while the active portions are accessible via

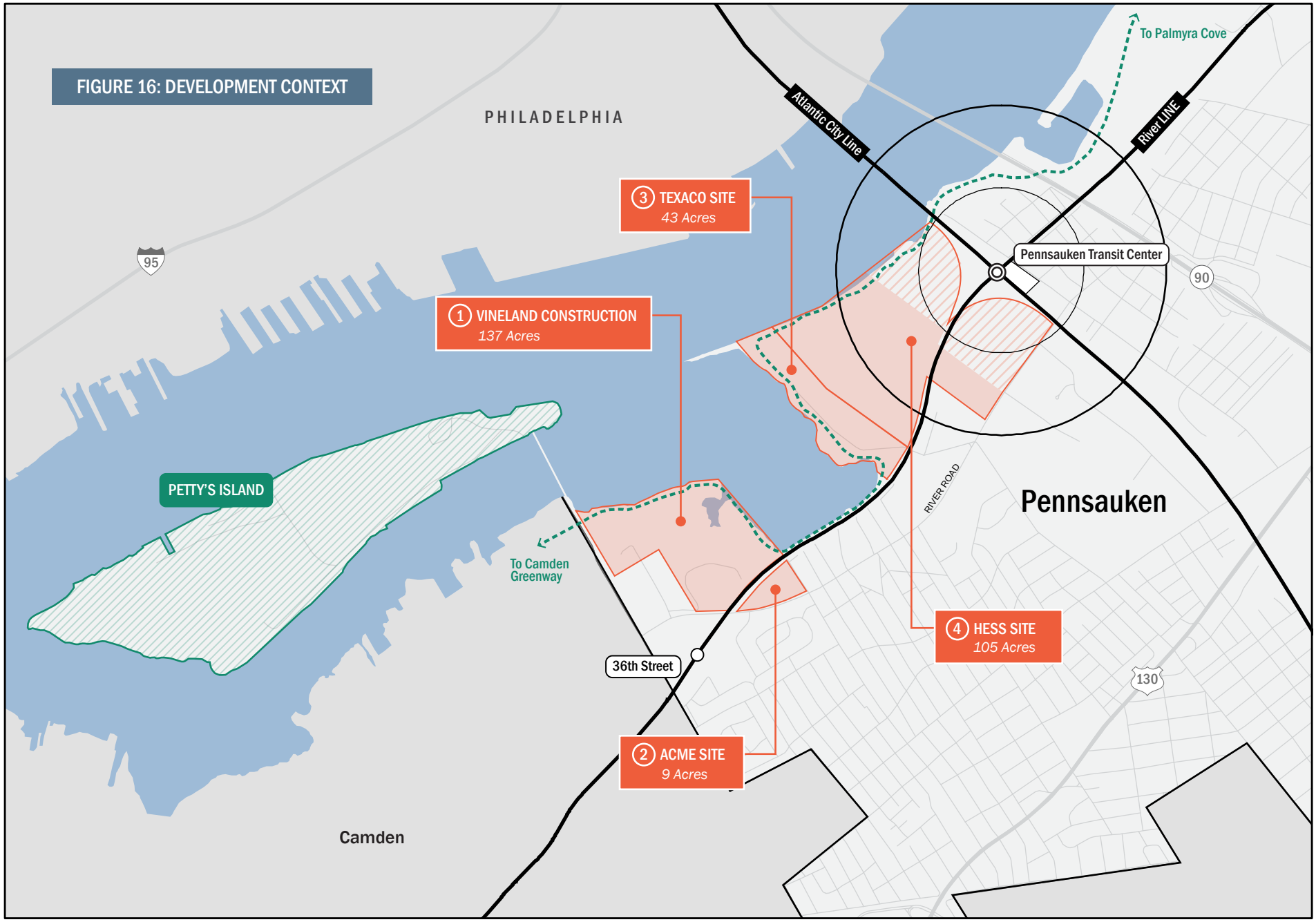


FIGURE 16: DEVELOPMENT CONTEXT
PHILADELPHIA
Atlantic City Line
River LINE
To Palmyra Cove
3 TEXACO SITE
43 Acres
95
Pennsauken Transit Center
90
1 VINELAND CONSTRUCTION
137 Acres
PETTY'S ISLAND
RIVER ROAD
Pennsauken
To Camden
Greenway
4 HESS SITE
105 Acres
36th Street
130
2 ACME SITE
9 Acres
Camden
Redevelopment Opportunity
Open Space & Recreation Opportunity
Proposed Waterfront Trail
dvrpc
0
1/4
1/2
1
MILE
N

River Road and Derousse Avenue. The Waterfront Master Plan recommends a mix of housing types and office space for this site. This potentially developable parcel is the closest large parcel to the transit center. If the entire parcel were to be redeveloped, new development on this site has the potential to reshape the character of the study area and provide a variety of transit-supportive uses adjacent to the PTC.

The 2004 plan makes provisions for public access to the waterfront and recommends a continuous riverfront trail throughout the area. These riverfront recommendations were also supported by the Camden County Open Space and Farmland Preservation Plan, published by DVRPC in May 2004 (Publication 04008). A township-wide trail, known as the Pennsauken Waterfront Trail, has been proposed for Pennsauken. This trail would connect the Palmyra Nature Cove in Palymra to the network of trails known as the Camden Greenway in the City of Camden. Currently, the only public waterfront access in Pennsauken is provided at the municipal boat ramp located at the end of Derousse Avenue. More information on the regional trail network, known as the Circuit, can be found at www.ConnectTheCircuit.org.

Opportunities and Constraints

This analysis of PTC study area has revealed several constraints and opportunities that will influence the future growth and development of the area.

Strengths

- Many businesses and employers are located in or near the station area.
- Station area includes a well-established residential neighborhood.

Weaknesses

- Station is adjacent to an active industrial area.
- A lack of large parcels with good access to the station limits transit-oriented development opportunities.
- Nearby redevelopment opportunities require access improvements and environmental remediation.
- Weak pedestrian connection to closest concentration of employers.
- Station somewhat tucked away from major roadways and population centers.

Opportunities

- PTC will provide greater transit access to employment, cultural, educational, and entertainment centers around the region. Area residents will benefit from two new transit stations. Other transit riders will benefit from the increased accessibility created by the ability to transfer between the RiverLINE and ACRL.
- Pennsauken may become a more desirable place to locate or expand a business because customers and employees now have more transportation options.
- The ACRL will provide an alternative for commuters looking to avoid congestion and delay created by construction work on I-95 in Philadelphia.
- PTC may help generate interest in redeveloping nearby waterfront parcels.
- Enhanced pedestrian and bicycle connections to the station can encourage neighborhood residents to use the station.
- Transit Center located near one of the few publicly accessible portions of Pennsauken's waterfront.
- Shuttle service from the station may help connect the station to nearby employment centers.

SECTION THREE

Opportunities and Strategies

PTC will become a critical link in the regional transit network and make public transportation more efficient, while reducing dependence on automobiles. PTC has the potential to promote local economic development that benefits Pennsauken Township and all of southern New Jersey. Working with the project steering committee, DVRPC staff has identified several opportunities to encourage transit use, improve accessibility to the station, and evaluate potential land use and policy changes. This section of the document outlines several strategies designed to realize the potential of PTC as a transit facility, while effectively integrating it into the surrounding community.

Transit Operations

As noted earlier, the ability to transfer between the RiverLINE and the ACRL at PTC can provide transit riders with significant time savings to several destinations throughout the region. However, transfer activity between rail lines may be constrained by the current ACRL service schedule. Service schedules for both the RiverLINE and ACRL are shown in Figure 14. Each dot on the ACRL portion of the schedule corresponds with expected arrival times at PTC. Currently, there are 12 Atlantic City-bound departures and 12 Philadelphia-bound departures each day. The amount of time between trains varies throughout the day. The shortest headways occur during the early morning, when Atlantic City-bound trains leave 30th Street Station 53 minutes apart at 5:38 a.m. and 6:31 a.m. During the middle of the day, however, headways lengthen to two hours and 30 minutes. These gaps in ACRL service limit the effectiveness of PTC as a transfer facility. Long wait times at PTC would offset the potential time savings that are theoretically made possible by the station and might dissuade some riders from using the facility.

Improved train frequencies on the ACRL was one of the subjects of NJ Transit's recent Atlantic City Rail Line Operations Study. The study identified service improvements designed to boost ridership, while controlling capital and operating costs. Adding service to the ACRL is a complex undertaking, which involves evaluating alternative operating speeds, vehicle technologies, capital and operating costs, and equipment storage. The study found that the most cost-effective scenario would increase ACRL train frequency to 20 round trips each day. Funding sources for any improvements, however, have yet to be identified. NJ Transit's current five-year capital plan is fully subscribed and does not include any funds for ACRL improvements.

Nonetheless, service improvements to the ACRL are critical to maximizing the transfer potential of PTC and the investment in the transit station. NJ Transit should continue to evaluate service options that increase frequency along the ACRL. Hourly service on the line would make scheduling more predictable and help to attract riders with other transportation options.

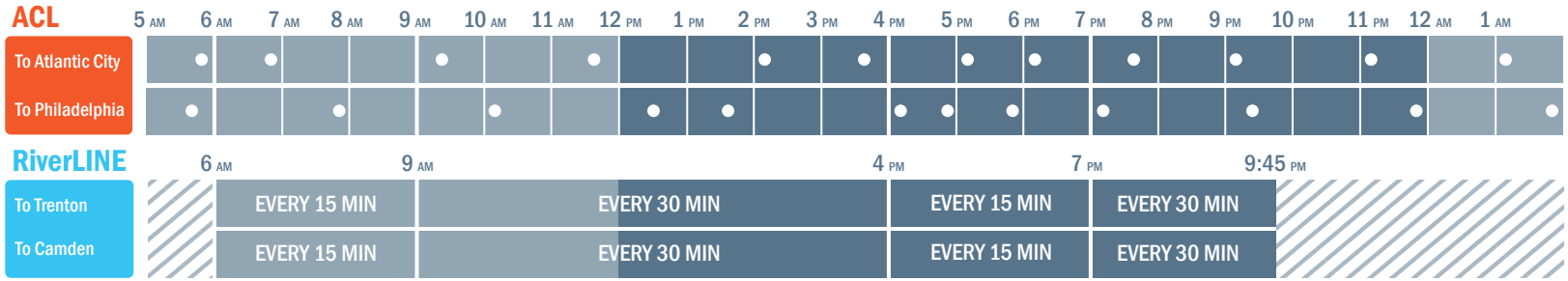
Accessibility

Riders need safe and convenient routes to transit. Enhancing accessibility to PTC requires thinking about the needs of pedestrians, cyclists, motorists, and local workers as they travel to and from the station.

Pedestrians

Pedestrians wishing to access the station will most likely be traveling from residential neighborhoods north of Derousse Avenue. The intersection of Derousse Avenue and River Road will be a critical crossing point for many

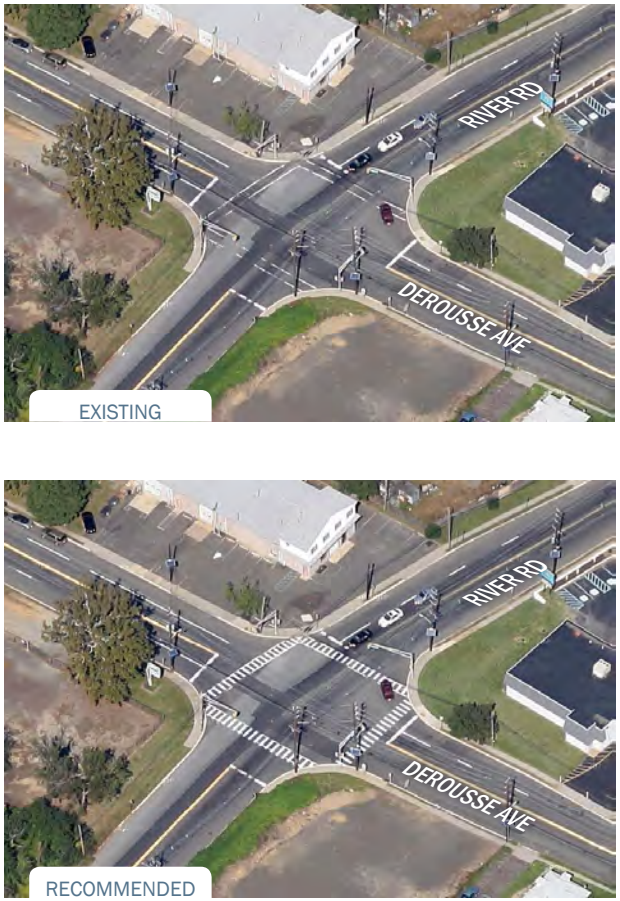
FIGURE 17: WEEKDAY TRANSFER PROFILE



Weekday schedules for the ACRL and RiverLINE are displayed in the graphic above. RiverLINE service largely corresponds with commuter demand during morning and evening peaks, while the ACRL service varies throughout the day. As currently construed, gaps in ACRL service constrain the ability of passengers to make timely transfers between the lines at certain times during the day.

Source: DVRPC, using NJ Transit schedules

FIGURE 18: DEROUSSE AVENUE AND RIVER ROAD INTERSECTION IMPROVEMENTS



Installing continental crosswalks at the intersection of River Road and Derousse Avenue can improve the visibility of crossing locations and encourage walk-up use of the station.

Aerial Imagery: Google Maps, 2013

PTC will bring more pedestrian traffic to the intersection of River Road and Derousse Avenue. The existing Walk/Don't Walk pedestrian signals are outdated and difficult to see during the day. New pedestrian countdown signals can provide pedestrians with more information and make crossing these wide streets safer.

Source: DVRPC and the Federal Highway Administration Manual on Uniform Traffic Control Devices

of these pedestrians. Recommended improvements to this intersection are identified in Figure 18. The existing transverse crosswalk stripes are deteriorated and no crosswalk exists across Derousse Avenue from the southeast to the northeast corners of the intersection. Each leg of the intersection should be striped, with longitudinal marking patterns, also referred to as continental crosswalks. Longitudinal crosswalk markings are generally recognized to provide higher visibility to crossing locations and are an appropriate treatment for this intersection.

Station users can also benefit from upgraded pedestrian signals. Pedestrian signals are especially critical at this intersection due to the width of intersecting roadways. The width of the streets and placement of the traffic lights make it difficult for a pedestrian standing at a corner to determine what color the light is in a given direction. The existing pedestrian signals include 'Walk' and 'Don't Walk' phases; however, the signals are dim and difficult to see during daylight hours. Pedestrian countdown signals encourage safer crossings because they inform walkers of the number of seconds remaining to complete their crossing of a street. Typical pedestrian signal indications and signal phases are depicted in Figure 18. Pedestrian countdown signals are recommended for each corner of the intersection. The timing of each phase should be evaluated to ensure that pedestrians have the appropriate amount of time to cross the street.

Sidewalk continuity was inventoried in Figure 13. The most critical gap exists on the south side of Derousse Avenue between PTC and River Road. This gap corresponds to a property owned by Hess that is frequently empty. The township should work with the current property owner to install sidewalks on this stretch of Derousse Avenue in order to complete the sidewalk network east of the station. In the event that this property were to be redeveloped in the future, sidewalks and pedestrian amenities should be required.

West of the station, no sidewalks exist between PTC and the waterfront. However, the public boat ramp located at the end of Derousse Avenue is a popular recreation destination. PTC will make this destination more accessible and may generate interest in additional waterfront access within the study area. As the township considers waterfront development options, pedestrian connections between PTC and the waterfront should be evaluated.

Employee Shuttles

Employee shuttles can help ensure that PTC becomes a valuable asset to businesses and employees located in the industrial park south of the ACRL between River Road and Westfield Avenue. South of Derousse Avenue, River Road has no sidewalks. Similarly, no pedestrian facilities exist within the industrial park itself making walking between PTC and employment destinations dangerous. Pennsauken Township, NJ Transit, SJTA, and the business community should evaluate the potential of a shuttle service similar to the TransIT Link that connects the Route 73/Pennsauken Station of the RiverLINE to the Pennsauken Industrial Park located along Hylton Road. Enhancing pedestrian connections to and within the industrial park may be a long term goal for local employers and the township.

Wayfinding

Within PTC, informational and directional signage will be installed to help riders navigate the station. However, community wayfinding signage installed at strategic locations outside of the station can enhance accessibility to PTC by directing various user groups (pedestrians, cyclists, and motorists) to the most direct ways to reach the transit center.

Wayfinding signage needs to address several types of transit riders, including first time and infrequent transit users. Visibility and legibility are essential to an effective signage system. Signs should maximize the use of well-known graphic symbols and logos and reinforce these visual elements with concise text. The size and type of sign used will likely depend on the location and the installation site, but post-mounted roadside signs may be the most appropriate.

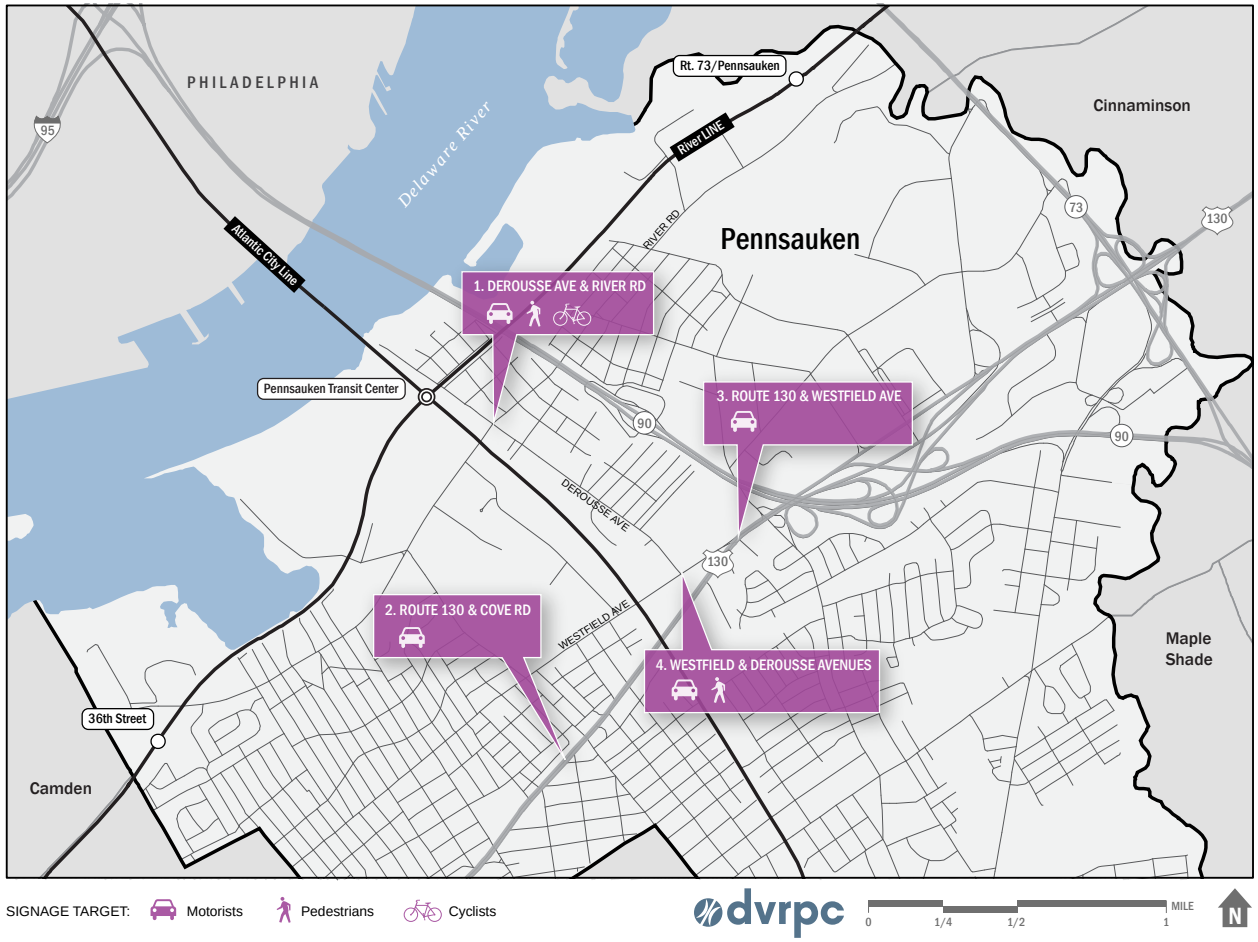
Figure 19 identifies four potential locations for PTC destination signage. The icons shown indicate the intended targets for each sign location. These locations were selected because they represent critical decision points for user groups. Signage at Derousse Avenue and River Road will link PTC to the local road network. Since motorists, pedestrians, and cyclists are all expected to use this intersection, signage should be legible to each of these users. Signs 2 and 3 are directed toward motorists using Route 130. Traveling south, motorists would turn onto Westfield Avenue to access PTC, while northbound drivers would use Cove Road. Finally, a sign at Westfield and Derousse avenues can target motorists and pedestrians traveling to the station along Westfield Avenue.

Developing a series of wayfinding signs for PTC is an opportunity for Pennsauken to consider creating a larger coordinated and continuous community signage system for the entire township. In addition to identifying the township's three transit stations, such a system could direct residents, visitors, and other road users to key civic, cultural, and recreational attractions, such as the municipal complex, Westfield Avenue shopping district, and the Pennsauken Community Recreation Facility.

Land Use and Development

PTC should have a positive impact on surrounding land uses and development. The transit access provided by PTC makes the study area an attractive candidate for transit-oriented development (TOD). TOD is generally defined as moderate- to high-density, mixed-use development within an easy walk of a transit station, usually five minutes or roughly one-quarter of a mile. TODs are designed with the pedestrian in mind and seek to facilitate transit use, while reducing dependence on automobiles. However, the existing development patterns and the lack of available sites in close proximity to the

FIGURE 19: WAYFINDING SIGNAGE LOCATIONS



Existing roadside and wayfinding signage for NJ Transit stations in Pennsauken, NJ.

Source: DVRPC

Wayfinding signage in Ardmore, PA, directs visitors to the train station, civic facilities, and parking locations.

Source: DVRPC

station limit opportunities for TOD in the near future.

Nonetheless, PTC will be a factor in the future development of several properties within the study area. Figure 20 identifies properties within one–half mile of the station with high or moderate susceptibility to change. Properties with high susceptibility to change include parcels in key locations that are currently vacant or home to low intensity uses. The first property identified in Figure 20 corresponds to two large formerly industrial sites operated by Texaco and Hess, respectively. These inactive properties fall within the Waterfront Redevelopment Area and were discussed in Section Two.

Properties two and three are active industrial sites operated by Hess. They are identified as moderately susceptible to change because they are currently listed for sale and could be redeveloped in the future, but environmental remediation may be necessary before these properties can be reused. Their road access and proximity to the transit center are strong assets. With their locational advantages, the redevelopment of these properties could help facilitate development of the waterfront properties to the south, while helping to link them to PTC.

Three properties north of the ACRL have been identified as highly susceptible to change. Property four is owned by the City of Camden Department of Utilities. This 10-acre property, zoned R-4, contains two small structures, but is primarily a mix of woods and wetlands. Currently, public access to the waterfront in Pennsauken is extremely limited. This property's location adjacent to the existing public boat ramp and transit center makes it a potentially attractive site for a new waterfront park, as well as a potential alignment for the Pennsauken Waterfront Trail.

Any discussions on the future of this site will need to address the current and future needs of Pennsauken and should include representatives from Camden County. Township officials should consider rezoning the property as a Township-1 district so as to preserve the site's wetlands and create the opportunity for a public park.

Properties five and six are underused and vacant properties at the southwest and southeast corners of the intersection of the intersection of River Road and Derousse Avenue. Property five is owned by Hess and may occasionally be used for truck and equipment storage. This parcel is zoned Residential 3. Property six, zoned Residential 2, is a vacant lot that is partially paved.

Low density residential development, as prescribed by the existing zoning, may not be the best future use of these properties. Zoning is an important tool for a municipality to implement the vision that they have for their community. The opening of PTC provides township officials with an opportunity to reassess zoning for these properties, as well as others throughout the study area. The township may wish to revise existing zoning regulations to encourage transit-supportive uses within the study area and discourage inherently auto-oriented uses. Examples of these uses are provided in Table 5. Transit-supportive uses tend to promote walkability and greater transit ridership, while providing opportunities for multi-purpose trips. Conversely, auto-oriented uses may consume larger amounts of land and result in low density development that requires travel by automobile. While some of the transit-supportive uses listed in Table 5 may not currently be appropriate for the study area, more transit-supportive uses could be encouraged in all six properties and other appropriate locations.

More broadly, Pennsauken may wish to investigate applying for Transit Village designation as part of NJDOT and NJ Transit's Transit Village Initiative. The Transit Village Initiative is a multi-agency partnership that creates incentives for municipalities to redevelop or revitalize the areas around transit stations using TOD design standards. The initiative encourages Smart Growth practices throughout the state by encouraging growth in areas where infrastructure and public transit already exist.

The public boat ramp at the end of Derousse Avenue provides strking views of the Delair Bridge (top), Betsy Ross Bridge (above), and the Delaware River. A large adjacent property owned by the City of Camden may be a suitable place to develop additional public access to the waterfront.

Source: DVRPC


FIGURE 20: SUSCEPTIBILITY TO CHANGE
Betsy Ross Bridge
Atlantic City Line
River LINE
Delaware River
1/2 Mile Radius
Pennsauken Transit Center
1
2
3
4
5
6
90
COVE RD
BETHEL AVE
ADAMS AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
ZIMMERMAN AVE
BANNARD AVE
RIVER RD
DELAIR AVE
ENGARD AVE
HOLMAN AVE
VELDE AVE
DEROUSSE AVE
STOW RD
BANNARD AVE
BRIDGEVIEW AVE
BARROWS AVE
UNION AVE
JUNE RD
DAY AVE
BALFOUR RD
EDEN LN
FORREST AVE
BOULEVARD AVE
REMINGTON AVE
ROMEO AVE
TRIPOLI AVE
Parcels with High Susceptibility to Change
Parcels with Moderate Susceptibility to Change
dvrpc
0 200 400 800 FEET
N

Municipalities must meet certain criteria and complete an application in order to be designated as a Transit Village. To be considered, municipalities must:

- Demonstrate a willingness to grow.
- Adopt a TOD redevelopment plan or TOD zoning ordinance that includes transit-supportive design guidelines and parking regulations.
- Identify specific TOD sites and projects.
- Identify bicycle and pedestrian improvements.
- Identify place-making efforts near the transit station.

Once designated, a municipality is eligible for technical assistance and priority consideration by agencies that make up the Transit Village Task Force. More information about the initiative can be found on the NJDOT website: www.state.nj.us/transportation/community/village.

Marketing and Outreach

The transportation improvements created by PTC have been documented in this study and in the 2009 Environmental Assessment. Marketing and outreach by NJ Transit, Pennsauken, and Camden County are essential to educating the public about the new facility and the access it provides. A series of wayfinding signs throughout the township is one strategy for marketing PTC. Additional marketing materials should be developed to inform existing and potential transit riders of the new facility. Advertising onboard RiverLINE and ACRL trains can help educate existing riders, while NJ Transit can work with its marketing partners to develop a strategy to reach potential riders.

One group of potential users may deserve special attention now and in the coming years. PennDOT has begun a long-term, multi-phase initiative to improve and rebuild I-95 in Pennsylvania. Five major projects to reconstruct the highway between I-676 and Cottman Avenue in Philadelphia are currently in varying stages of design or construction. These projects, although carefully planned to impact rush-hour traffic as little as possible, will affect commuters for the next decade. According to the U.S. Census, over 29,000 Camden County residents and nearly 18,000 Burlington County residents commute to Philadelphia for work. A significant number of these commuters will be impacted by the ongoing construction activities and may find transit service provided at PTC a desirable replacement for their vehicular commute. The Pennsauken Transit Center is the focus of DVRPC's July 2013 Congestion Management Process (CMP) newsletter. The newsletter, which examines how transit facilities such as PTC can help mitigate congestion in the Delaware Valley, can be downloaded from the DVRPC website: www.dvrpc.org/reports/NL12040.pdf.

Finally, PTC represents an important opportunity for Pennsauken Township to refine its identity and market itself to visitors and the business community. PTC will draw visitors from surrounding municipalities, many of whom may be unfamiliar with the township in general and the study area in particular. Due to its location, many residents may even be unfamiliar with the station location. PTC promises to be a modern and attractive facility; however, visitors' opinions of the township will also be influenced by the condition of the surrounding roadways and neighborhoods.

Placemaking is an approach to defining public spaces in a way that reflects the character and values of a community. Placemaking in Pennsauken may focus on communicating the township's quality of life, convenient location, and vibrant business community. Pennsauken may wish to pursue small-scale upgrades in the station area and along roadways linking PTC to major highways that bring benefits to public spaces and the people who use them. Sidewalk improvements, landscaping treatments, and decorative lighting are three relatively inexpensive strategies for improving public spaces and creating a sense of place. Township attractions and

TABLE 5: TRANSIT-SUPPORTIVE LAND USES

Transit-Supportive Land Uses
Multifamily and small-lot single-family residential; health care facilities; restaurants; personal services; retail shops; grocery stores; coffee shops; day care facilities; dry cleaners; financial institutions; health clubs; offices; neighborhood-oriented businesses

Inherently Auto-Oriented Land Uses
Automotive parts, repair, and service; drive-through facilities; gas stations; parking lots, low-density single-family residential; large-format retail; storage facilities; warehouses, strip malls

This sign near the Bordentown City station of the RiverLINE directs riders to commercial establishments and historic properties throughout the city.

Source: DVRPC

businesses can also be marketed toward users of the transit station through the use of informational signage.

PTC may also have broad economic development implications for Pennsauken and Camden County because it makes the township an even more attractive place to live or open a business. The township should develop marketing materials for the development and business communities that focus on the positive impact of its robust transit infrastructure.

Pennsauken Transit Center: Impacts and Opportunities

Publication Number 13051

Date Published October 2013

Geographic Area Covered Pennsauken Township, Camden County, NJ

Key Words Pennsauken Transit Center, Pennsauken Township, NJ Transit, RiverLINE, Atlantic City Rail Line, economic development

Abstract

This study was conducted by DVRPC to identify potential impacts and opportunities created by the opening of the Pennsauken Transit Center, a new rail transit facility being constructed by New Jersey Transit in Pennsauken, New Jersey. The Transit Center is composed of two interconnected stations that will allow riders to transfer between the RiverLINE and Atlantic City Rail Line. The study includes an overview of existing conditions in the study area, as well as a variety of strategies designed to improve access to transit and promote economic development in the township.

Staff Contact

Andrew Svekla, AICP
Senior Planning and Design Analyst
(215) 238-2810
asvekla@dvrpc.org

Delaware Valley Regional Planning Commission
190 N. Independence Mall West, 8th Floor
Philadelphia, PA 19106
Phone: (215) 592-1800
Fax: (215) 592-9125
Internet: www.dvrpc.org

190 N. Independence Mall West
8th Floor | Philadelphia, PA 19106
Phone 215.592.1800 | Web www.dvrpc.org