Gloucester County Transit Expansion Framework Study

July 2012

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For:

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Gloucester County, NJ

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Borough of Glassboro

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Section 1: The Gloucester-Camden Transit Expansion: An Introduction

The Gloucester County Transit Expansion Framework Study is the culmination of a 6-month regional planning project that supports ongoing efforts to extend light rail service from Camden to Glassboro, New Jersey. Once constructed, the 18-mile line will link Glassboro to Camden via the Conrail right of way. In Camden, it will connect with the existing Port Authority Transit Corporation's (PATCO) High Speed Line that runs between Philadelphia and Camden County. It will also connect to New Jersey Transit's RiverLINE, which moves passengers between Camden and Trenton.

This report is part of a wide range of planning efforts which will give communities ample time to anticipate the issues associated with transit expansion and capitalize on the opportunities. This study provides participating municipalities a framework for developing conceptual ideas of how the rail line could function in each of their communities. Since exact station locations are not confirmed, in-depth vision plans for the eleven stations are not yet warranted. Instead, this document is a comprehensive documentation of existing conditions and an assessment of Transit-Oriented Development (TOD) readiness. Each municipality should use this as a guide for making decisions regarding the location of station stops and the potential for development / redevelopment around those stations.

1 Study Overview

Problem Statement

The Glassboro-Camden corridor (which includes portions of I-676, I-76, I-295, I-95, Route 42, and Route 55) carries commuters to and from Philadelphia, and serves as a major route to the Jersey Shore. The portion of I-76 between I-295 and the Walt Whitman Bridge ranks as the most congested freeway segment in the nine-county DVRPC region in terms of vehicle-hours of congestion. In other words, more people are affected by congestion on this segment of highway between 5 and 6 pm than anywhere else in the region. Although the area has bus service, they are frequently caught in the same congestion as private vehicles.

Unfortunately, congestion is only expected to increase in the future. According to DVRPC studies, Gloucester County is the fastest-growing county in the nine-county region, with an estimated 37.7% increase in population from 2009-2035 (an increase of more than 81,000 residents). As the County is the only one in the region not currently serviced by rail infrastructure, the transportation options for these new residents will be limited and congestion issues will continue.

In contrast, the Glassboro-Camden Line (GCL) will reduce congestion; improve commuter options to and from Philadelphia; and link residents with employment, retail, and entertainment nodes along its corridor. Moreover, the GCL will create opportunities for development and redevelopment near stations while providing municipalities more options for accommodating projected growth.

History

In 1993, New Jersey Transit (NJT), Delaware River Port Authority (DRPA), and Delaware Regional Valley Planning Commission (DVRPC) studied several rail and bus alternatives within a 36-mile corridor in South Jersey. The resulting *Burlington-Gloucester Corridor Study* identified a variety of bus, High Speed Line, and light rail alternatives. In 2005, DRPA released its *Southern New Jersey to Philadelphia Transit Study* that identified a list of alternatives to address the need for rapid transit service in a 700 square-mile study area extending from Millville, New Jersey to Center City Philadelphia. Six alternatives were developed for a sub-study-area that included Camden and Gloucester counties (termed Southern New Jersey). Following technical analysis, public agency involvement, and public outreach the DRPA and PATCO commissioned SVT Incorporated to conduct an alternative analysis on five possible lines. In 2009, STV completed the 2-year *Southern New Jersey to Philadelphia Mass Transit Expansion Alternative Analysis Study*.

Ultimately Alternative 4, a diesel light rail service operating from the Walter Rand Transportation Center in Camden to Ellis Street in Glassboro, was selected as the recommended alternative to improve transit service and accessibility in Southern Jersey. This alternative was judged to result in lower total capital costs, lower annual operating costs, more new transit riders, and the greatest support from the agencies and members of the public.

As the expansion of transit service in southern New Jersey continued, additional planning and feasibility studies were required. Concurrent with the preparation of this report, DRPA is commissioning an Environmental Impact Statement (EIS) in accordance with the requirements of the National Environmental Policy Act (NEPA). Moreover, in 2012 DVRPC produced a sister document to this one that examined the proposed station stops in Camden County. Those interested in a complete overview of all the stations on the Glassboro-Camden Line should consult that document as well.

Process

After an open bidding process, the County of Gloucester hired Group Melvin Design in late 2011 to conduct the Gloucester County Transit Expansion Framework Study. Following preliminary research and data gathering, Group Melvin Design worked with the staff of the Gloucester County Planning Division to conduct the Study. GMD presented an overview of the project to the Gloucester County Planning Board and met with municipal representatives from communities along the Rail Corridor. An Advisory Committee consisting of representatives from the DVRPC, the County Land Development Review Committee, NJTransit, NJDOT, DRPA, as well as representatives from the Borough of Glassboro, Mantua Township, Pitman Borough, Woodbury City, Borough of Wenonah, Woodbury Heights, and Borough of Westville were invited to provide guidance on the process and the product. GMD collected local and regional data through in-person interviews, fieldwork, and digital research. GMD also gathered GIS data from a variety of sources and conducted an extensive review of relevant planning documents, including county and municipal Master Plans, Redevelopment Plans, zoning codes, and previous transit expansion studies.

Funding

This study is funded through the Delaware Valley Regional Planning Commission's (DVRPC) Transportation and Community Development Initiative (TCDI) grant program.

2 Gloucester County Snap Shot

Demographics

Gloucester County has an attractive environment with a varied landscape and an abundance of developable land. The County enjoys close proximity to Camden, Philadelphia, Atlantic City, and Wilmington. Because of these and other conditions, the County witnessed considerable growth from 1970 to 2000, a trend that is likely to continue. According to DVRPC forecasts, Gloucester County is expected to see a 37.7% population change from 2009 – 2035, resulting in more than 81,000 new residents. Figure A shows the population projections for all municipalities that either have a station or have areas that are within a 1/2-mile of a station.

However, not all municipalities have an equal share of land to accommodate for growth. Map A (page 6) shows the projected population change as a proportion of land for each municipality. As this map demonstrates, some municipalities along the GCL will have more new residents per square mile than their neighbors. Transit-Oriented Developments, which centralize higher density development near transit nodes, provide excellent opportunities to accommodate this growth while supporting regional transit investments.

Employment

Growth in the County will not be limited to residential development. According to DVRPC, Gloucester will experience a 34.8% expansion in employment between 2005 and 2035. Again, this growth is not equal across all municipalities. Figure B breaks down the projected employment growth by municipality, while Map B (page 7) puts this data into perspective by showing it as a proportion of land within each municipality. Those municipalities expecting large increases in employment, or those with limited space to accommodate it, should explore how to position job growth so it will capitalize on and support efforts to expand transit to Gloucester County.

Transit

Thirteen NJ Transit bus routes serve the County. Two additional routes, 316 and 551, serve the Avondale Park-n-Ride in Camden County and are convenient to portions of Gloucester County. NJ Transit Bus Route 410, operating between Bridgeton and Philadelphia, serves the only officially designated park-and-ride lot in the County. However, there are many locations throughout the County where residents transform private parking lots into informal park-n-rides.

Population Growth

Figure A

Municipality	2005	2035	Change
Deptford Township	29,457	34,996	19%
Borough of Glassboro	19,103	25,983	36%
Harrison Township	11,291	20,433	81%
Mantua Township	15,028	22,806	52%
Borough of Pitman	9,162	10,075	10%
Borough of Wenonah	2,310	2,639	14%
West Deptford Township	20,709	26,956	30%
Borough of Westville	4,423	4,997	13%
Woodbury	10,334	10,466	1%
Woodbury Heights	2,993	3,136	5%

Source: DVRPC, Gloucester County Transportation Needs Study, 2011

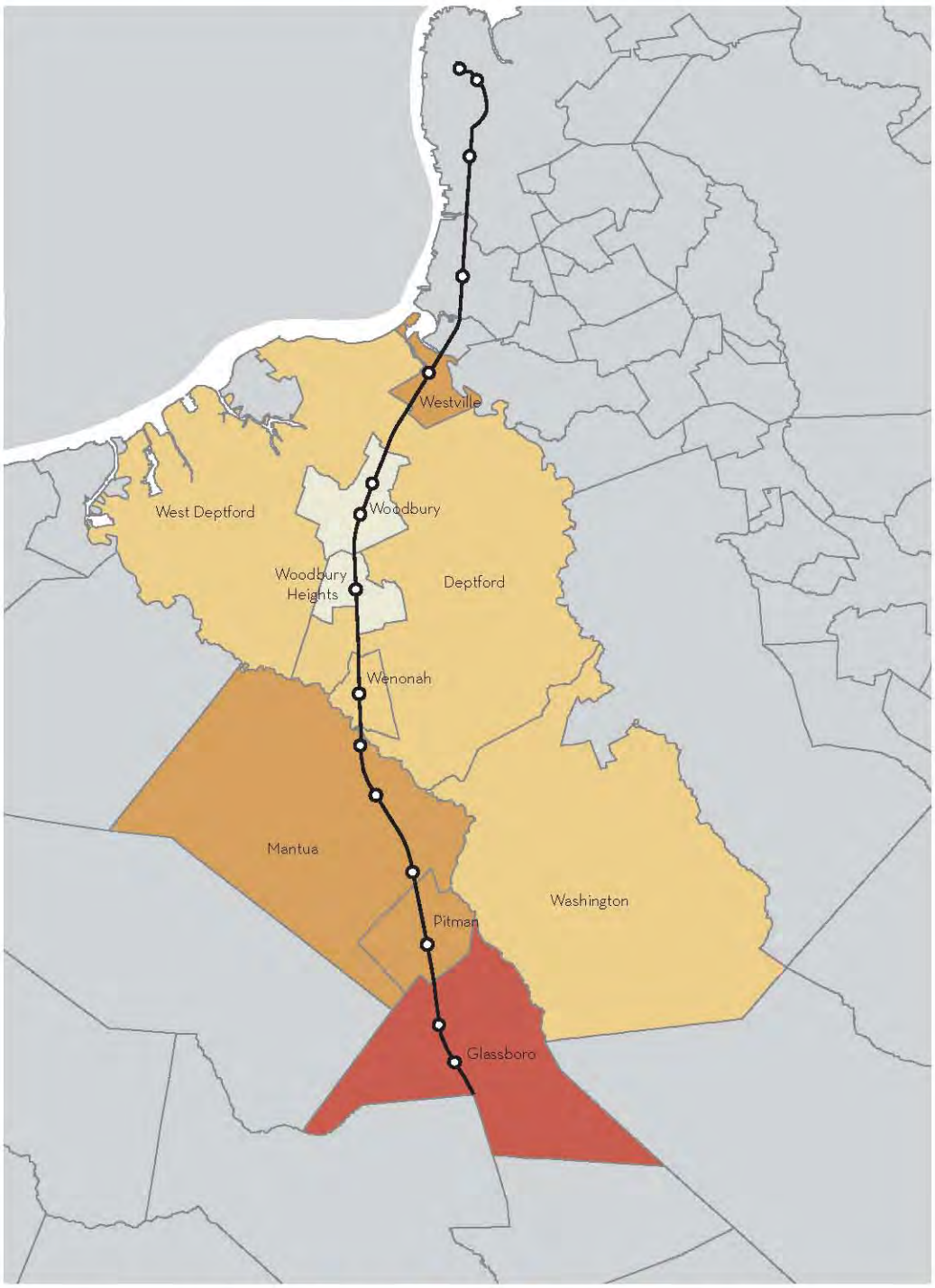
Employment Growth

Figure B

Municipality	2005	2035	Change
Deptford Township	13,968	16,321	17%
Borough of Glassboro	8,667	9,926	15%
Harrison Township	2,744	5,532	102%
Mantua Township	7,228	11,683	62%
Borough of Pitman	3,148	3,252	3%
Borough of Wenonah	731	910	24%
West Deptford Township	9,858	13,715	39%
Borough of Westville	2,635	2,748	4%
Woodbury	10,815	11,526	7%
Woodbury Heights	1,615	1,823	13%

Source: DVRPC, Gloucester County Transportation Needs Study, 2011

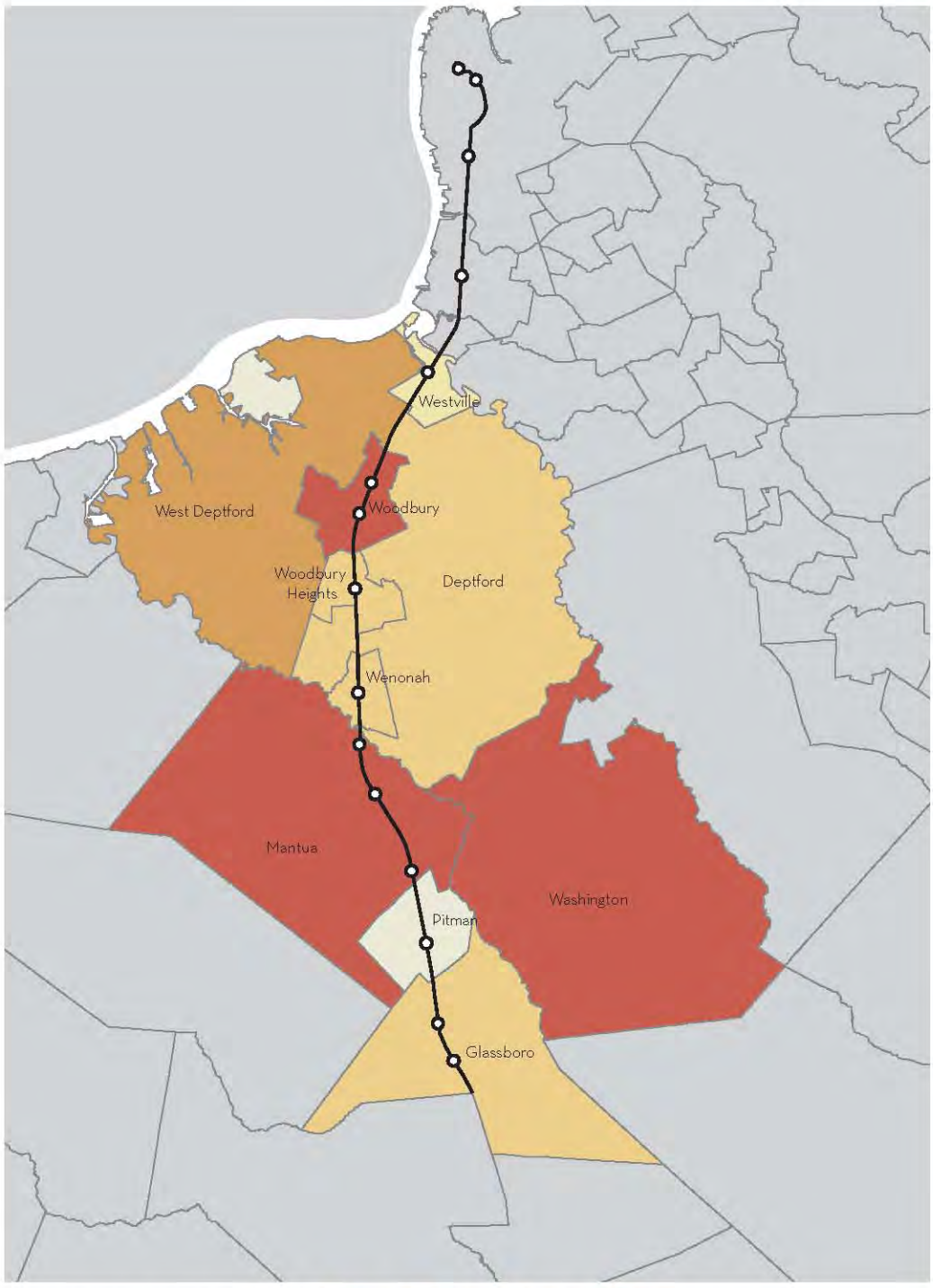
Map A | Estimated population growth (2009-2035) per square mile



4 miles

Source: DVRPC 2011 Gloucester County Needs Study

new residents per square mile: 0 - 124 | 125 - 249 | 250 - 374 | 375 - 500 | 500 - 750



4 miles

Source: DVRPC 2011 Gloucester County Needs Study

new employment per square mile: 0 - 59 | 60-119 | 120-179 | 180-239 | 240+

Transit (continued)

Eleven of the County's thirteen bus routes are north-south routes operating to/from Camden and/or Philadelphia. At the Rand Transportation Center in Camden, riders can transfer from NJ Transit Buses to PATCO's Lindenwold High Speed Line and to NJ Transit's Atlantic City Rail Line and RiverLINE.

In Gloucester County, a diverse group of residents ride transit. For example, data from the 2005 – 2010 American Community Survey indicates that individual income is not a good predictor of who will ride transit. Figure C shows the breakdown of transit ridership based on income as well as the proportion of each income group relative to the whole. It is interesting to note that those who make less than $15,000 represent both an equal proportion of the population and an equal proportion of transit riders as those who make more than $75,000. As such, it can be assumed that transit expansion efforts will provide benefits to residents of all income groups.

Commuting

To better evaluate development / redevelopment opportunities along the GCL, it is worth understanding countywide commuting patterns. This will provide municipalities an understanding of the services centers that residents access during their daily commute. Moreover, it may help them understand the types of development that the GCL will induce.

According to the 2006-2010 American Community Survey, 91% of residents who lived in the 18 municipalities in the study area worked in the MSA. Thus few residents are making long journeys to work in other major metropolitan areas. However, only 14% of residents actually worked in one of the principal cities of the MSA (as defined by census). Meaning few Gloucester residents make the journey into Philadelphia, Camden, or Wilmington.

Instead, just under half (46%) of all trips to work were within the County itself. The picture becomes even more interesting when it is noted that very few residents (17%) actually work in the same municipality in which they reside. As a result, about 29% of all trips to work in the County are intra-municipal trips.

Examining transit data reveals that 30% of Gloucester County residents who took transit to work had a final destination inside the County. Thus, as individual municipalities plan the area around their stations, they may find it relevant to investigate how it will serve a significant population of riders who are not traveling into major regional centers but instead making short intra-county journeys.

Transit and Income

Figure C

Income	Percentage of the population as a whole	Percentage of Transit Ridership
$1 to $9,999 or loss	13%	8%
$10,000 to $14,999	6%	11%
$15,000 to $24,999	11%	8%
$25,000 to $34,999	12%	17%
$35,000 to $49,999	17%	16%
$50,000 to $64,999	14%	6%
$65,000 to $74,999	7%	21%
$75,000 or more	20%	21%

2005-2010 American Community Survey

Location of Work

Figure D

Work Location of Gloucester County Residents	Percentage of Population
Worked in County	46%
In Minor Civil Division*	17%
Outside Minor Civil Division but in County	29%
Worked in MSA city	14%
Worked in other MSA	9%
Other	31%

* Minor Civil Divisions correspond to local municipalities

2005-2010 American Community Survey

3 Previous Studies and Plans

Glassboro-Camden Line Studies

Camden County Transit Expansion Framework Study (2012)

The Camden County Transit Expansion Framework Study is the sister document. Prepared by DVRPC, the document follows a similar outline to this one. It is designed to provide participating municipalities in Camden County the opportunity to develop conceptual ideas of how the rail line could function in each of their communities. Those interested in a complete view of all stations on the GCL should consult that document as well.

Gloucester County Transportation Needs Study (2011)

The *Gloucester County Transportation Needs Study* was prepared for the Gloucester County Planning Division (GCPD) and was undertaken to develop a long-range multi-modal / smart growth vision for the County. The document analyzes demographics, land use, human and natural environments, transportation systems, and growth and development forecasts to support decision making as part of an update to the County Master Plan. As such, the report is an excellent source of countywide existing conditions data.

In this report, DVRPC staff prepared estimates of station patronage and vehicular activity for the 14 proposed station locations on the GCL. This analysis included a preliminary examination of TOD potential at each stop and recommendations for station amenities (e.g. kiss-and-ride loops and bike racks). In general, "TOD potential along the GCL Corridor County was determined to be mixed." They determined that TODs had the highest probably of success in areas where population and jobs were already concentrated, and where stations were located near existing centers of mixed-use activity. According to their study, Cooper Street and Pitman station locations had the highest support for TODs, with Crown Point Road, Red Bank Avenue and Rowan University station also possessing demographic characteristics supportive of TODs.

Southern New Jersey to Philadelphia Mass Transit Expansion Alternative Analysis Study (2009)

NJ Transit and DRPA commissioned STV Incorporated to prepare the *Southern New Jersey to Philadelphia Mass Transit Expansion Alternative Analysis Study*. This alternatives analysis study was a continuation of the Southern New Jersey to Philadelphia Transit Study completed in October 2005 (below), which strongly endorsed pursuing increased rail transit options to address transportation and mobility needs. This 2005 report was the result of the 1997 *Burlington, Camden and Gloucester Transit Major Investment Study*, prepared by NJ Transit, which identified the need for transit accessibility in this corridor.

The AA study uses population/employment data, land use, transit patterns, environmental conditions, and public and stakeholder outreach to evaluate alternatives for transit in Gloucester County. The following alternatives were examined:

Alternative 1: A projected $2.4 billion dollar rapid transit rail line similar to the PATCO High Speed Line. The line would run from Philadelphia to Williamstown via Route I-676, NJ Route 42, and the Atlantic City Expressway.

Alternative 2: A project $2.1 billion dollar rapid transit rail line similar to the PATCO High Speed Line. The line would run from Philadelphia to Glassboro via Route I-676, NJ Route 42, and NJ Route 55.

Alternative 2A: A $2.5 billion rapid transit rail line similar to PATCO High Speed Line. The line would run from Philadelphia to Glassboro via Route I-676, NJ Route 42, NJ Route 55 and the Conrail RR Right-of-Way.

Alternative 3: A $3.7 billion rapid transit rail line similar to the RiverLINE. The line would run from Philadelphia to Glassboro via the Conrail Right-of-Way

Alternative 4: A $1.3 billion diesel light rail similar to the RiverLINE. The line would run from Camden to Glassboro via the Conrail Right-of-Way

Based on the analysis presented in the alternatives analysis report, DRPA began planning efforts that would link Gloucester County communities to the existing PATCO High Speed Line in Camden with a Diesel Light Rail that would run on the Conrail Railroad Right-of-Way (Alternative 4). That alternative had the lowest capital costs and lowest operating costs of the four alternatives studied.

Southern New Jersey to Philadelphia Transit Study (2005)

In 2005, STV Incorporated delivered the *Southern New Jersey to Philadelphia Transit Study* to the DRPA and PATCO. The feasibility study assessed the need for transit improvements in four areas: Southern New Jersey, Camden Waterfront, Market West (Center City Philadelphia), and Philadelphia Waterfront. The project included public outreach, an inventory of existing conditions, and a list of transportation alternatives for the region. Six alternatives were developed for the Southern New Jersey portion of the study area, including a proposal for a Diesel Light Rail that would run from Glassboro to Philadelphia via Conrail Railroad Right-of-Way and NJ Route 55 (now called the Glassboro-Camden Line). In that option, service would have traveled along the existing PATCO High

Speed Line alignment to Walter Rand Transportation Center and City Hall in Camden, then 8th & Market, 9th/10th & Locust, 12th/13th & Locust and 15th/16th & Locust in Center City Philadelphia. It was a variation on these six alternatives that STV would later examine in the Southern New Jersey to *Philadelphia Mass Transit Expansion Alternative Analysis Study* (2009).

State and Regional Planning

New Jersey State Development and Redevelopment Plan (Draft 2012)

The *New Jersey State Development and Redevelopment Plan* provides a blueprint for growth and development in the state level. By establishing goals, objectives, and implementation strategies, the document serves as a connection between the State Planning Act and the state's annual capital budget plan. As a result, projects that may require state funding should consult this document to understand how they may fit into a broader statewide redevelopment strategy.

According to the document, New Jersey will, "focus its policies and investments on vibrant regions by fostering targeted job growth, supporting effective regional planning and preserving the State's critical resources." The vision is to make New Jersey, "the national leader in coordinated private and public investment which supports sustainable communities that attract and provide strong economic opportunities, preserve our State's natural resources, and create healthier communities to work, reside and recreate."

In support of these goals and visions, municipalities along the GCL should consider two Guiding Principles for State Decision Making. The first is Spatial Efficiency. According to the draft, the State of NJ will place value on the economic, social, and environmental benefits of investing in areas where infrastructure already exists. The goal is to support efforts to control long-term costs of public services, reinvigorate existing communities, and protect important natural resources. The second is Sustainability. According to the plan, the State will be making decisions that take into account social, economic, and environmental protection and enhancement. Since transit is often linked with both spatial efficiency and sustainability efforts, participating municipalities are advised to consider state funding as a means of supporting development and redevelopment associated with transit expansion.

Connections: DVRPC's Long Range Plan (2009)

Connections: The Regional Plan for a Sustainable Future is the region's long-range land use and transportation plan. Utilizing population and employment forecasts, the document creates a vision for the region's future that focuses on growth management, resource protection, development of livable communities, and the establishment of a modern, multimodal transportation system. The Glassboro-Camden Line is listed as a Major Regional Transit Project in New Jersey between 2010 and 2025. Published in 2009, the plan projected that the GCL might receive as much $500 million in state funds and $260 million in external funds (2009 dollars). Furthermore, DVRPC anticipated that additional federal funding might be available for the project.

New Jersey Statewide Transportation Improvement Plan (2008-2011)

Federal legislation requires that each state develop one multimodal STIP for all areas of the state. In New Jersey, the STIP consists of a listing of statewide line items and programs. This one-volume guide provides information on both federally and state funded projects broken down by agency or authority.

Gloucester County falls into the Metropolitan Planning Area (PA1). The state's intentions in Metropolitan Planning Areas are to: "Provide for much of the state's future redevelopment; revitalize cities and towns; promote growth in compact forms; stabilize older suburbs; redesign areas of sprawl; and protect the character of existing stable communities."

New Jersey Bicycle and Pedestrian Master Plan (2004)

The New Jersey Department of Transportation in partnership with New Jersey's three regional Metropolitan Planning Organizations (MPO) developed the New Jersey Bicycle and Pedestrian Master Plan. The document presents a vision and an action plan for improving the bicycling and walking systems in the state of New Jersey. The primary goal of the plan is to provide clear guidance on the most efficient and effective use of federal, state, and local resources to implement bicycle and pedestrian initiatives. As such, the plan provides an excellent resource for municipalities that wish to enhance their transit planning efforts with regional, state, and federal efforts.

County Multi-Purpose Trail Plan (pending)

Currently, plans are underway to connect and extend the trail and bikeway network in Gloucester County. Tentatively, the new system would link Woodbury Heights to Newfield through Wenonah, Mantua, Pitman, and Glassboro, among others. Municipalities and other entities should investigate how these multi-purpose trail opportunities can be developed in conjunction with rail expansion to provide increased mobility and recreation options for citizens of the County.

4 Understanding Transit-Oriented Development

Transit-Oriented Development (TOD)

Transit-Oriented Development (TOD) is the most commonly used term to describe a compact, mixed-use community, centered around a transit station. As Bernick and Cervero explain in *Transit Villages in the 21st Century* (New York: McGraw Hill, 1997), they are also defined by their use of design to invite, "residents, workers, and shoppers to drive their cars less and ride mass transit more." Although not an absolute necessity, it is commonly assumed that TODs will have higher density development nearest the station, with progressively lower densities moving away from the station.

TOD has gained recent support from Smart Growth advocates, New Urbanists, and others because it is viewed as an alternative to suburban land use-patterns that have produced congestion for all and reduced access to services for those with limited mobility options. Moreover, many TOD advocates argue that the over appropriation of space for driving and parking, along with the speed at which cars travel, has lead to communities with poor aesthetic qualities.

Justifications for TODs

A community that is designed to encourage transit ridership can be very effective tool for supporting the goals of transit expansions like the Glassboro-Camden Line. However, the benefits are not limited to improved transit service and reduced auto congestion. The construction of more dense communities allows municipalities to take otherwise developed land and use it for parks or open space. Moreover, TODs help reduce the demand for new roads, sewers, and other municipal services because they tend to concentrate development in existing communities. Thus, encouraging TODs is often viewed by municipalities as a way of efficiently using scarce municipal resources.

There are many economic and social justifications for TODs. Car-oriented single-use development has been criticized because it forces residents to spend a significant portion of their income on transportation. By traveling fewer miles in a car or even eliminating the use of one, residents in TOD areas make money available for other purchases that they would have otherwise spent on gas and repairs. Moreover, since TODs are designed with local serving retail (like coffee shops, banks, post offices, dry cleaners, and day care centers) near housing, they generate more walking trips where people are likely to run into their neighbors. This creates a greater sense of community and improved social networks.

Finally, municipalities should strongly consider the advantages of TODs for people without access to cars (such as children), people with disabilities, the elderly, and low-income residents. These populations benefit greatly from increased transit access because they become less dependent on others for transportation. Furthermore, their access to local and regional services is greatly enhanced when those transit options are easily accessible in close geographic proximity to their place of residence.

Key Concepts in TOD

The growth of TODs has also resulted in a new set of terms and concepts use to understand its benefits. What follows is an explanation of four concepts that are pervasive in the discussion how best to implement TODs.

¼ Mile Walk Radius

It is commonly accepted that people are willing to walk between 1/4-mile and a 1/2-mile to access transit (about a 5- or 10-minute walk for an able-bodied person). In this study, circles with 1/4-mile and 1/2-mile radii are used to approximate a comfortable walking distance and the extents of TOD potential. However, it should be noted that actual walking distances within these areas can be longer.

Density

Population density and housing unit density are statistics used to gauge how much transit service can be supported in a geographic area. The more population that lives within a comfortable walking distance of a transit node, the better the transit service will be. The following figure is derived from work originally published by Pushkarev and Zupan in 1977. It outlines the average housing unit density within a 1/2-mile of a station needed to support different types of transit service. These are not hard and fast rules, but instead offer guidelines for evaluating the type of service that can be supported in a community. For further examination of the topic it is also worth reviewing the Transit Cooperative Research Program's Report 16: Transit and Urban Form (1996) sponsored by the Federal Transit Administration.

Figure E: Density and Transit Service

Transit Mode	Average Minimum Density within 1/2-mile radius (Housing Units per Acre)
Minimum Local Bus (20 buses per day)	4
Intermediate Local Bus (40 buses per day)	7
Frequent Bus (120 buses per day)	15
Light Rail	9
Rapid Transit	12

*Public Transportation and Land Use Policy.*Pushkarev and Zupan in 1977

Walkability

Walkability is a measure of how pleasant a street or geographic area is to walk. The term, however, can be allusive since there are myriad factors that affect the pedestrian experience. Moreover, the importance of different urban elements changes based on location and purpose of the street. Nonetheless, there have been a number of attempts to quantify walkability. The most popular is Walk Score, an index that ranks communities based on how many businesses, parks, theaters, schools and other common destinations are within walking distance of a given starting point. Although this is a valuable resource, it does not examine street design, sidewalk condition, and other factors that affect the likelihood that pedestrians will use a street.

Walkable areas are paramount for the success of TODs because so much depends on residents choosing to walk (or bike) instead of drive. As will be discussed below, mixing residential, office, retail and even industrial to allow residents easy access to services can enhance walkability. However, building and street design are equally important for encouraging people to walk. As such, municipalities who are looking to create TODs (or simply to enhance existing assets) should carefully consider street design strategies that can improve pedestrian connections between transit and amenities.

Mixed-Use

Mixed-use development is the process of locating two or more use types (residential, office, retail, and/or industrial) in the same building or in close proximity to one another. Thus a building can be referred to as mixed-use, as can a neighborhood or district. This style of development is often placed in contrast to single-use development where large geographic areas are zoned to only allow residential, commercial, or industrial development.

Mixed-use development is often favored over single-use districts because it promotes an urban environment where people are always on the street. During the day, people going to work and accessing retail services populate the street. In the morning and at night, it is residents who do so. This constant activity not only makes a street more interesting but also insures that it is under constant surveillance. This vigilance reduces crime and other deviant behavior that is more likely on vacant un-supervised streets.

At the same time, mixed-use is an important element in promoting walkability. People are not willing to walk long distances to access local services, so retail must be located in close proximity to residential development. Whether retail should be located in the same building as residential depends on local conditions. However, even separating uses out by block can reduce the benefits of mixed-use development and is advised against.

RiverLINE Successes

Opened in 2004, the New Jersey Transit RiverLINE has provided many opportunities for Transit-Oriented Development (TOD). The line is delivering on its projected ridership: over 40 round trips per day are made, accommodating 9,000 passenger trips per day (close to its capacity of 11,000). Moreover, it has spurred TOD projects in most of the communities where it stops.

According to an Rutgers University Study funded by NJTransit, public officials and members of the development community noted that the RiverLINE contributed to the economic revitalization of the towns and increased the desirability of living nearby. Residents generally viewed it positively, and 72% of households believed that it improved the quality of life in town. (*Economic Development Benefits of New Transit Service: RiverLINE*, Chatman and DiPetrillo, June 2010) Data from a second study shows that average home values within a 4-mile radius of RiverLINE stations increased after the completion of the line. Specifically, properties within a quarter mile of a station appreciated at the highest rate, perhaps a result of their close proximity to both stations and proposed and completed TOD. (*Evaluating the Economic Impacts of Light Rail: A first look at New Jersey's RiverLINE*, Chatman, Tulach, Kim, 2011)

One of the prevailing notions about transit expansion is that by connecting urban centers with their outlying areas, there will be an increase in crime in station communities. Fortunately, these fears have been unsubstantiated, both locally and nationally. There has been no increase in crime in communities served by the RiverLINE. And a recent study by researchers at UNC-Charlotte shows that, nationally, there is no data to suggest a link between crime and transit expansion. (Billings, Leland, and Swindell, *The Effects of the Announcement and Opening of Light Rail Transit Stations on Neighborhood* Crime, 2011)

One example of the catalytic economic development potential of transit expansion along the RiverLINE is the Burlington Transit Village. Designated a Transit Village by NJ DOT in 2007, Burlington received a $100,000 grant for TOD planning. As a result, vacant and under-utilized parcels in the vicinity of the station have been redeveloped into commercial and multi-family residential uses. One $9 million investment saw over 50 rental units created as part of adaptive reuse projects within close proximity to the station. This was accompanied by proposals for 180 townhomes and flats. South of Burlington, another TOD project resulted in a 911-unit development of apartments and townhomes, which is currently going in directly across the street from Cinnaminson Station. In addition to residences, nearly 100,000 square feet of frontage is available for commercial space.

Section 2: Station Analysis

The following sections provide a station-by-station analysis that will help municipalities develop conceptual ideas about how the GCL could function in their community. When developing a vision for the station area, municipalities should consider a wide range of factors including: land use, zoning, population density, existing transit access and use, location of amenities, location of historic assets, and current environmental conditions. For this reason, this report provides a map of each of these elements along with an analysis that places the information into context.

However, it should be noted that there are other elements not included in this report that must come into consideration as station planning continues. As a recent Federal Transit Administration Report (July, 2011) noted, stations and station access on the GCL must also be planned within the context of anticipated freight operations. That may require grade separations, pedestrian protection signage, and devices that are designed to meet specific station needs. In some cases, this may require a location-specific operational hazard analysis, something not included in this report. Likewise, in concurrence with this report, Delaware River Port Authority (DRPA) has commissioned an Environmental Impact Statement (EIS) which will most like have findings that local municipalities will find relevant to station area planning.

0 Introductions to Proposed Stations

Station Types

Of the fourteen stations proposed on the Glassboro-Camden Line (GCL), eleven lie within Gloucester County. Figure O.a is an abridged version of a table prepared by the Delaware Valley Regional Planning Commission and presented in their Transportation Needs Study. DVRPC attributed station classifications to PATCO and labeled them as "preliminary." The following analysis will further examine these classifications and help municipalities understand how transit expansion can be integrated into their communities.

Station Locations

The purpose of this report is to provide a overview analysis of the areas around the proposed station locations. Although such analysis may reveal issues with the proposed station location, it is not the task of this report to make recommendations about the suitability of alternative station locations. Instead, the exact station locations will be determined after the completion of the Environmental Impact Statement (EIS) which will most likely incorporate the analysis put forth in this document.

Areas in Need of Redevelopment and Areas in Need of Rehabilitation

Some of the communities along the rail line are utilizing Rehabilitation or Redevelopment designations to assist in revitalization projects that would not otherwise happen in the private market. Redevelopment designations require studies to show how parcels within the area meet specific criteria outlined by the State's Local Redevelopment and Housing Law (LRHL). Rehabilitation areas are easier to assign, requiring less stringent criteria and a designation by the Planning Board without a full study. Once an area is designated either in need of Redevelopment or Rehabilitation, municipalities must create a Redevelopment Plan in order to take advantage of the tools available. Once a Plan has been created, municipalities have the ability to designate a master redeveloper, offer tax exemptions or abatements, to acquire and convey property, and, in the case of an area in need of Redevelopment, to acquire property via eminent domain. A Redevelopment Plan for an area in need of Rehabilitation permits a municipality to use all the powers of Redevelopment except for the use of eminent domain.

Possible Station Types

Figure 0.a

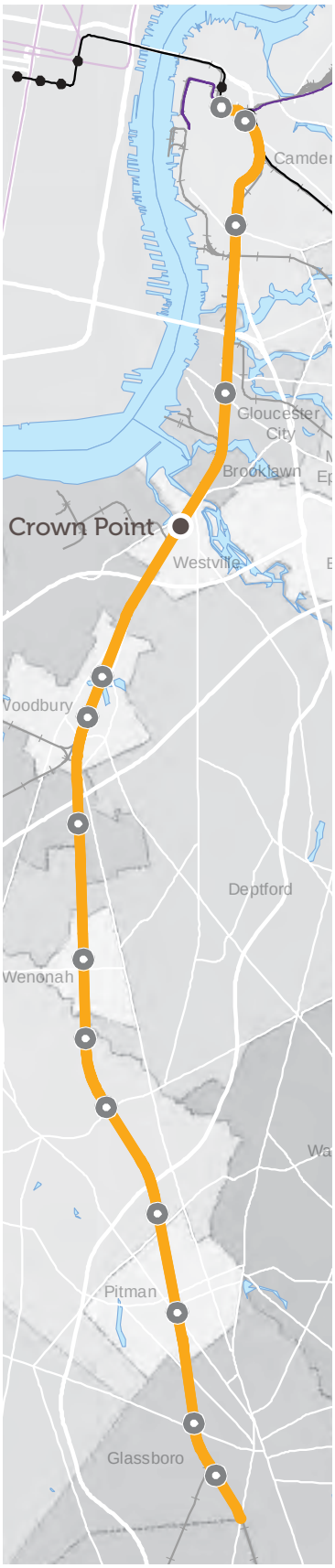
Station Name	Station Type	Bus Connections	
		Nearby	Direct
Crown Point Road	Park-n-Ride	401, 402, 408, 410, 412	
Red Bank Avenue	Park-n-Ride	401, 402, 410, 412, 455, 463	
Woodbury (Cooper Street)	Park-n-Ride		401, 402, 410, 412, 455, 463
Woodbury Heights	Park-n-Ride	412	
Wenonah	Walk-up		412
Mantua Boulevard	Park-n-Ride		412*
Sewell	Park-n-Ride		412*
Mantua/Pitman	Park-n-Ride	313. 408	412*
Pitman	Walk-up		313, 408, 412
Rowan University	Walk-up	408	313, 412
Glassboro	Terminal	313, 408	412

Park-n-ride stations are those that have an allocation of parking spaces at the station

Source: DVRPC, Gloucester County Transportation Needs Study (2011)

1 Crown Point Road

Borough of Westville, NJ



Overview

The Crown Point Road Station is located near civic institutions and a number of well-designed open spaces. Moreover, it is close to a walkable central business district where the municipality has made investments that include streetscaping, facade improvement programs, and the purchasing of property east of Pine Street and west of Broadway (See Land Use) for parking.

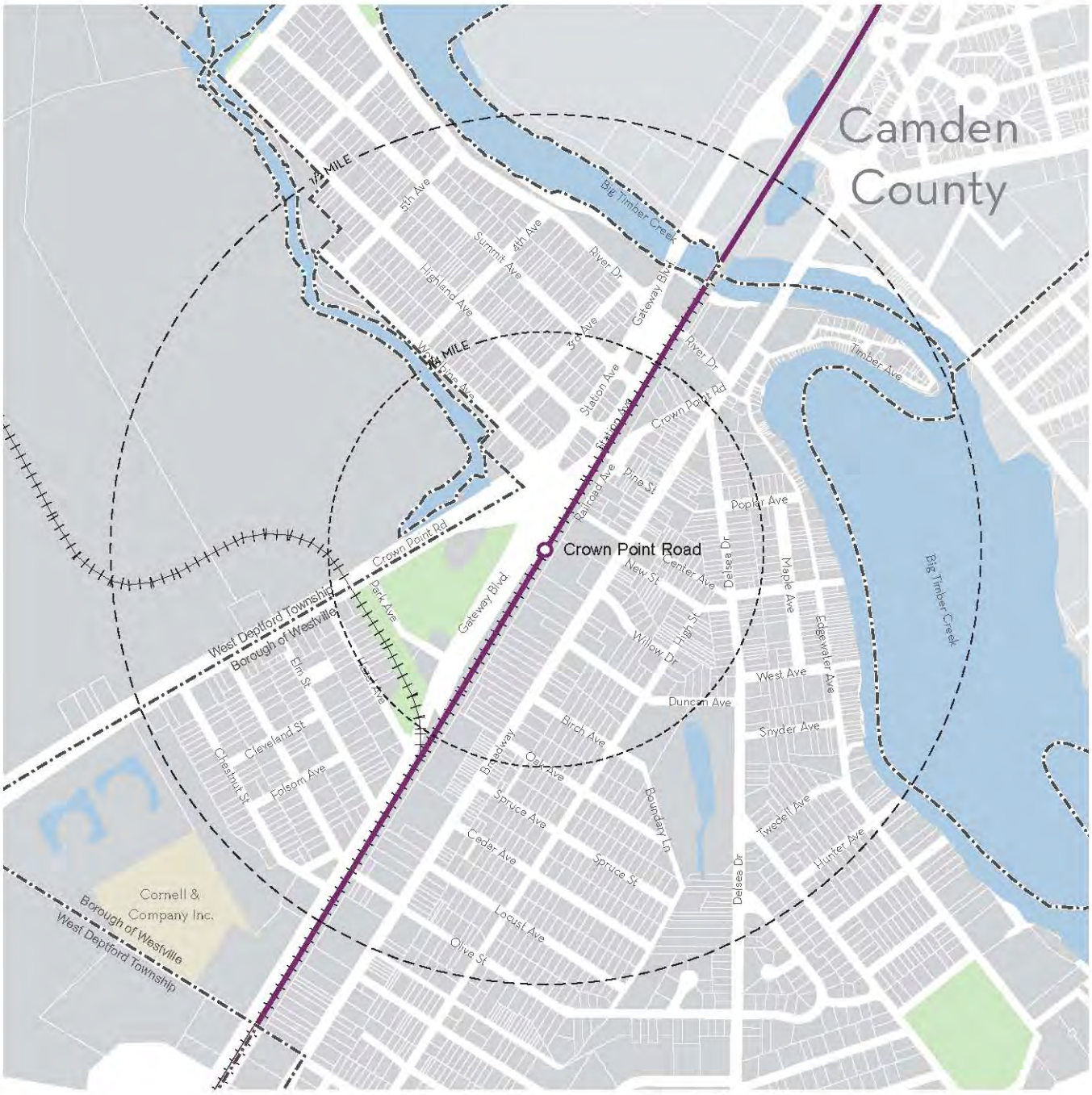
The pedestrian-oriented form of this downtown area continues along most of Broadway but stops just south of New Street. Auto-oriented buildings then line the eastern edge of Broadway, right in front of the proposed station location. Unless the gateway is improved or the station is located elsewhere, there will only be a soft connection between the downtown and transit.

In 2005, the Borough approved a Redevelopment Plan that was later amended and reaffirmed in 2011. There are some vacant lots that fall within this Redevelopment Area, but many are also within either the 100- or 500-year floodplain. A few blocks north of the proposed station, the municipality owns a number of parcels east of Pine Street and west of Broadway that are currently dedicated to parking. According to stakeholder interviews, there are also some properties for sale along the north side of Pine Street that are in the Redevelopment Area. Many of these parcels do not fall within the floodplain and may be good places to support transit expansion efforts.

Although the Borough is primarily comprised of single-family homes, there are a few apartment structures that help to increase residential density near the station. Continuing the trend of locating apartment units near the proposed station location could be an excellent way for the municipality to accommodate for new growth, reinforce transit expansion efforts, and increase the number of pedestrians along its principal business street.

If the current station location is approved, environmental factors represent the greatest threat to (re)development and transit success. Most of the parcels that fall within a 1/4-radius of the proposed station are within either a 100-year or 500-year floodplain, including the vacant parcel in front of the proposed station. These environmental conditions will make constructing and insuring improvements more expensive.

When moving east-west across Gateway Boulevard and Station Avenue, pedestrians face a number of obstacles that will inhibit their ability to access the proposed station location (See Circulation). Efforts to make the station more accessible to those on the west side of the Borough should increase the number of riders. Such efforts may be combined with efforts to increase pedestrian safety for school children which may also create a stronger connection between the town's business district and its residents.



The proposed Crown Point Road Station is located in the Borough of Westville. Although the 1/2-mile Crown Point Study Area includes portions of West Deptford Township and Camden County, these areas are either industrial landscapes or undevelopable (see Land Use).

Community Form: Civic/Institutional






Civic and Institutional buildings in the Crown Point Study Area have varied architectural styles. However, with some exceptions, most buildings have a small landscaped building setbacks; have entrances at the front of the building; are the taller buildings in town (but do not exceed 3 stories); and have on-street parking.

Community From: Commercial




The proposed satiation lies just outside of Westville's principal business district, where commercial uses are aligned along wide sidewalks. Buildings are connected, have varied facades, large storefront windows, entrances at the front, parking on the street, and signage that is parallel to the building facade. Auto-oriented commercial buildings proliferate outside of this core. They have parking that separates the building from the sidewalk, limited storefront windows, and signage that is large and perpendicular to the building facades. Through the area, some commercial / office uses now occupy previously residential structures.

Community Form: Residential






Although the majority of residential buildings in the Borough are single-family structures, there are some multi-family units. Single-family homes in the northwestern section of Westville are larger and can often exceed two stories. In contrast, buildings in the southeast tend toward one- or two-stories. All multi-family units in the area are three stories. In most cases, apartment buildings have units with windows that open onto the street, but building entrances may open onto parking lots.

Community Form: Open Space





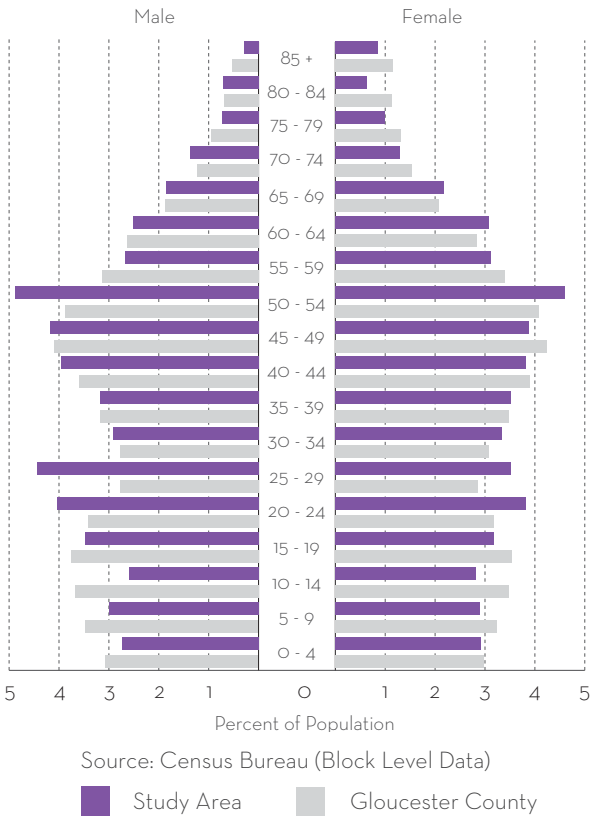

The Crown Point Study Area encompasses a number of excellent public spaces, including a park that runs along the Big Timber Creek. This park is well-maintained and has excellent views of Philadelphia. Similarly, the southeast section has Thomas West Pond: a well-maintained park that has a water feature and is near the elementary school.

Demographics

In 2010, there were 3,832 people living in the Crown Point Study Area. They primarily lived in one- and two-person households, and the mean household size for the study area was 2.4. About 63% of residents owned the home in which they lived. The averaged mean household income from 2005 to 2010 of the Census Tract that intersects with the study area (Tract 5001) was $49,854, compared to $70,514 for the County.

From 2000 to 2010, the study area population shrank by 260 residents (approximately 6%). Average household size decreased slightly. However, the proportion of all household sizes remained constant as did the percentage of residents who owned their home. Like many station areas in this report, there were many more Hispanic/Latino residents in 2010 than in 2000. White residents were the only racial group that lost population during this 10-year period.

Figure 1.a: Population Pyramid



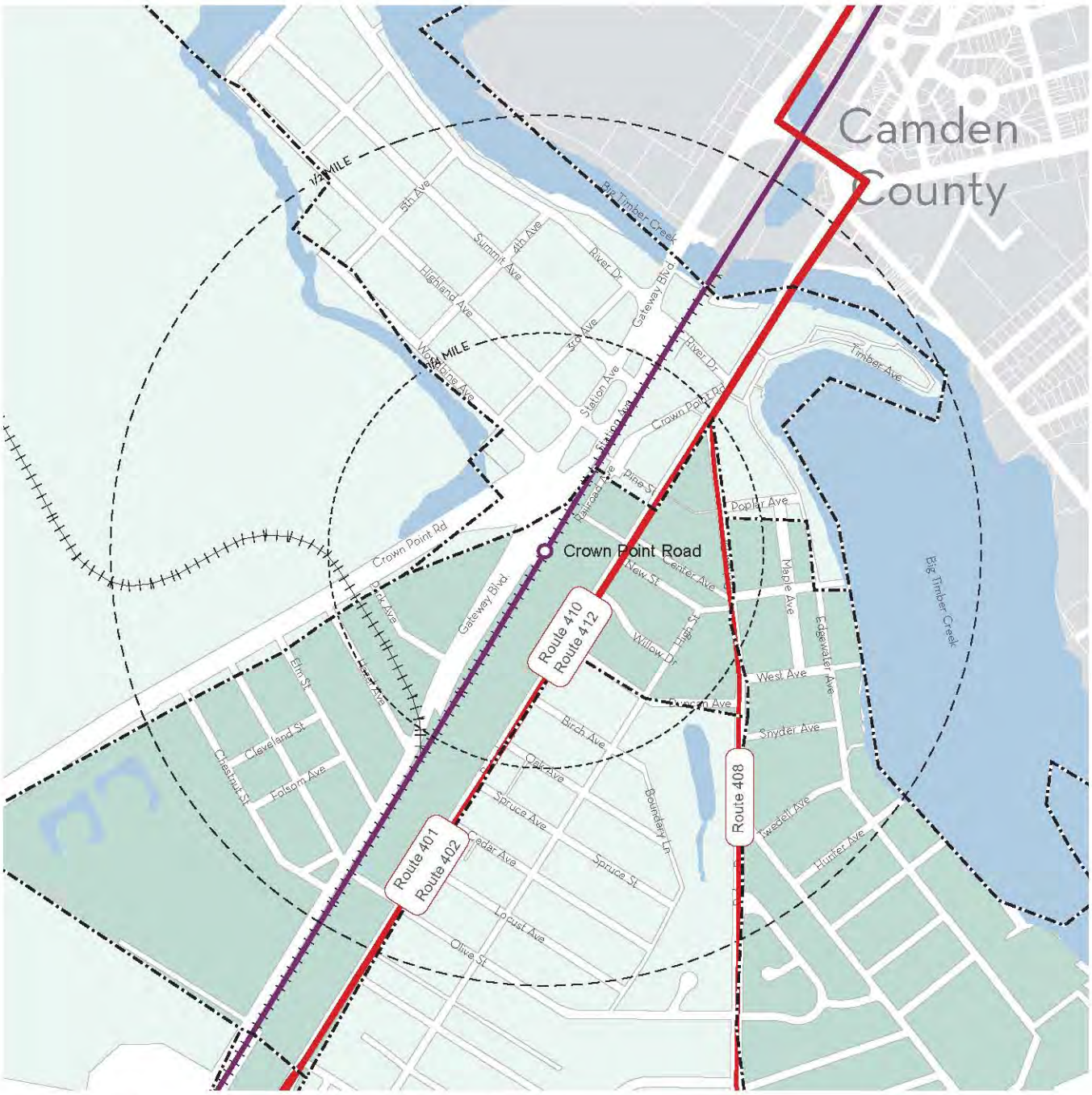
Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and how communities can expect to age. The Crown Point Study Area population pyramid indicates that population will most likely be static and that growth will only occur if new residents move into the area. It also shows that the area has a high proportion of residents between the ages of 50 and 54. If these residents stay, in 10-years the study area will have a large portion of retired age residents who will confront mobility issues as they continue to age.

Figure 1.b: Demographic Data

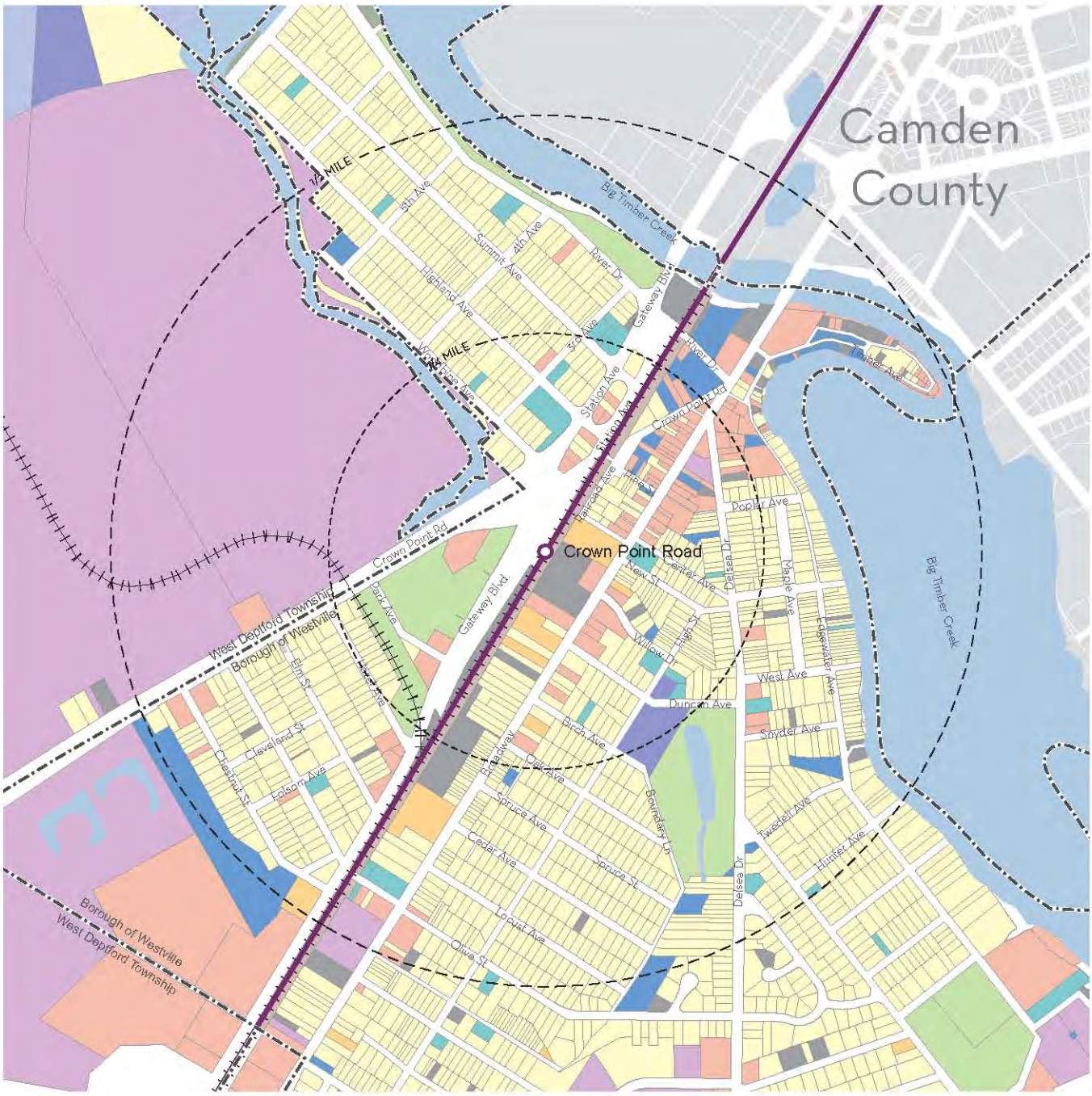
		2000	2010
Population	Total Population	4,092	3,832
Race	White alone	3,805 (93%)	3,396 (89%)
	Black or African American	127 (3%)	210 (5%)
	American Indian and Alaska Native	7 (0%)	8 (0%)
	Asian	47 (1%)	65 (2%)
	Native Hawaiian and Pacific Islander	1 (0%)	1 (0%)
	Some other race	57 (1%)	90 (2%)
	Population of two races	48 (1%)	61 (2%)
Hispanic / Latino	Hispanic Population	117 (3%)	223 (6%)
Household Size	1-person household	530 (32%)	499 (32%)
	2-person household	470 (29%)	463 (29%)
	3-person household	256 (16%)	268 (17%)
	4-person household	219 (13%)	210 (13%)
	5-person household	99 (6%)	73 (5%)
	6-person household	50 (3%)	32 (2%)
	7 or more person household	21 (1%)	27 (2%)
	Average Household Size	2.5	2.4
Housing Tenure	Owner	1029 (63%)	989 (63%)
	Renter	616 (37%)	583 (37%)

Source: Census Bureau (Block Level Data)

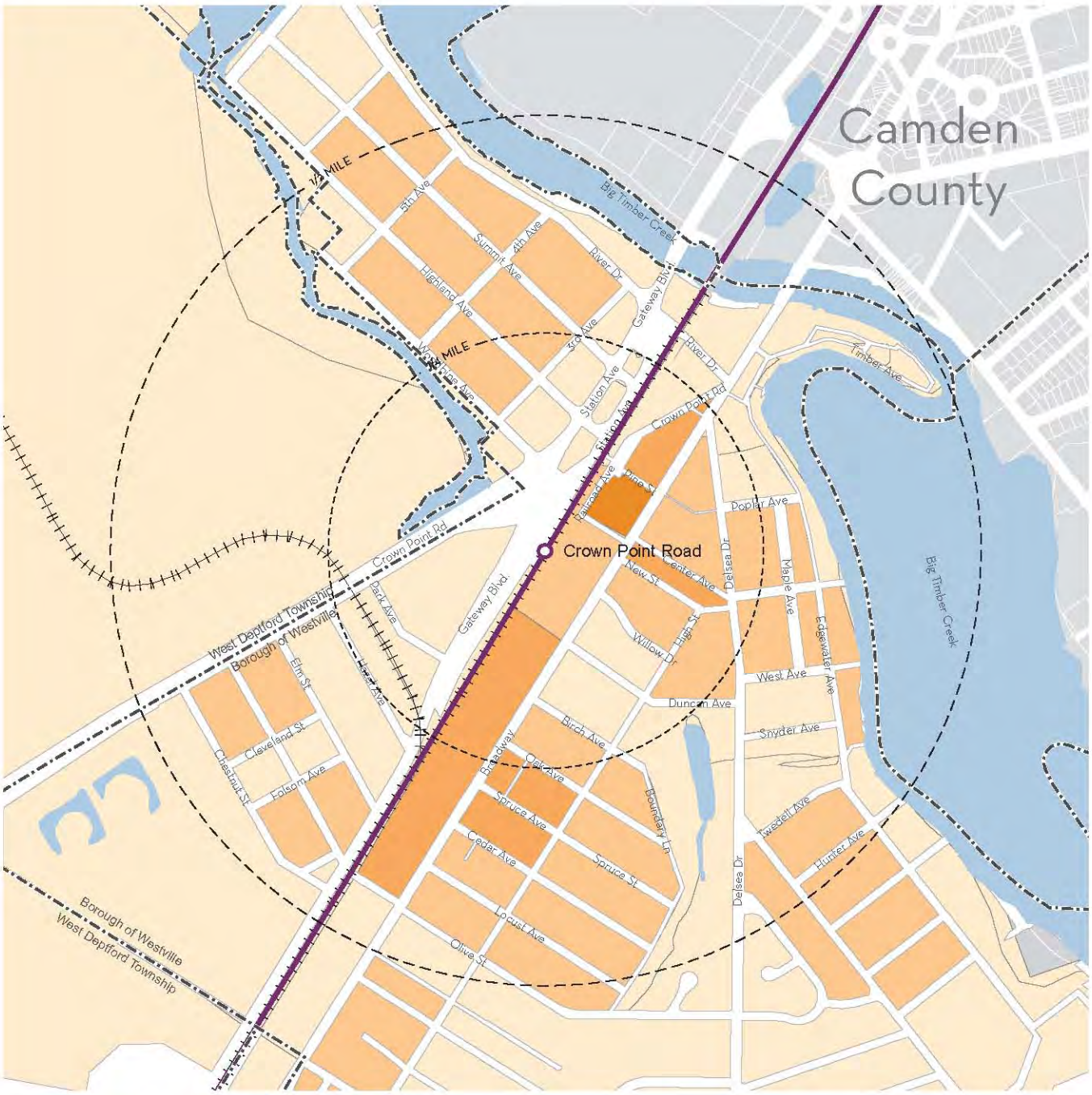
As tentatively positioned, the Crown Point Station would provide transit access to a few community assets, including the Parkview Elementary School. However, it would not provide transit access within 1/2-mile of one of the County's major employers, Cornell & Company. With more than 200 employees, it would be prudent to investigate how many of them would take transit to work if there was a conveniently located station near their place of employment.



Crown Point Study Area has moderate transit service. Combined, the four buses that run along Broad Street pass through the study area an average of six times every hour between 6 am and 9 am on their way to the Walter Rand Transportation Center in Camden. As of 2000, this level of service resulted in a very mild level of transit use among residents, with no census block group having more than 6% of its residents taking transit to work.

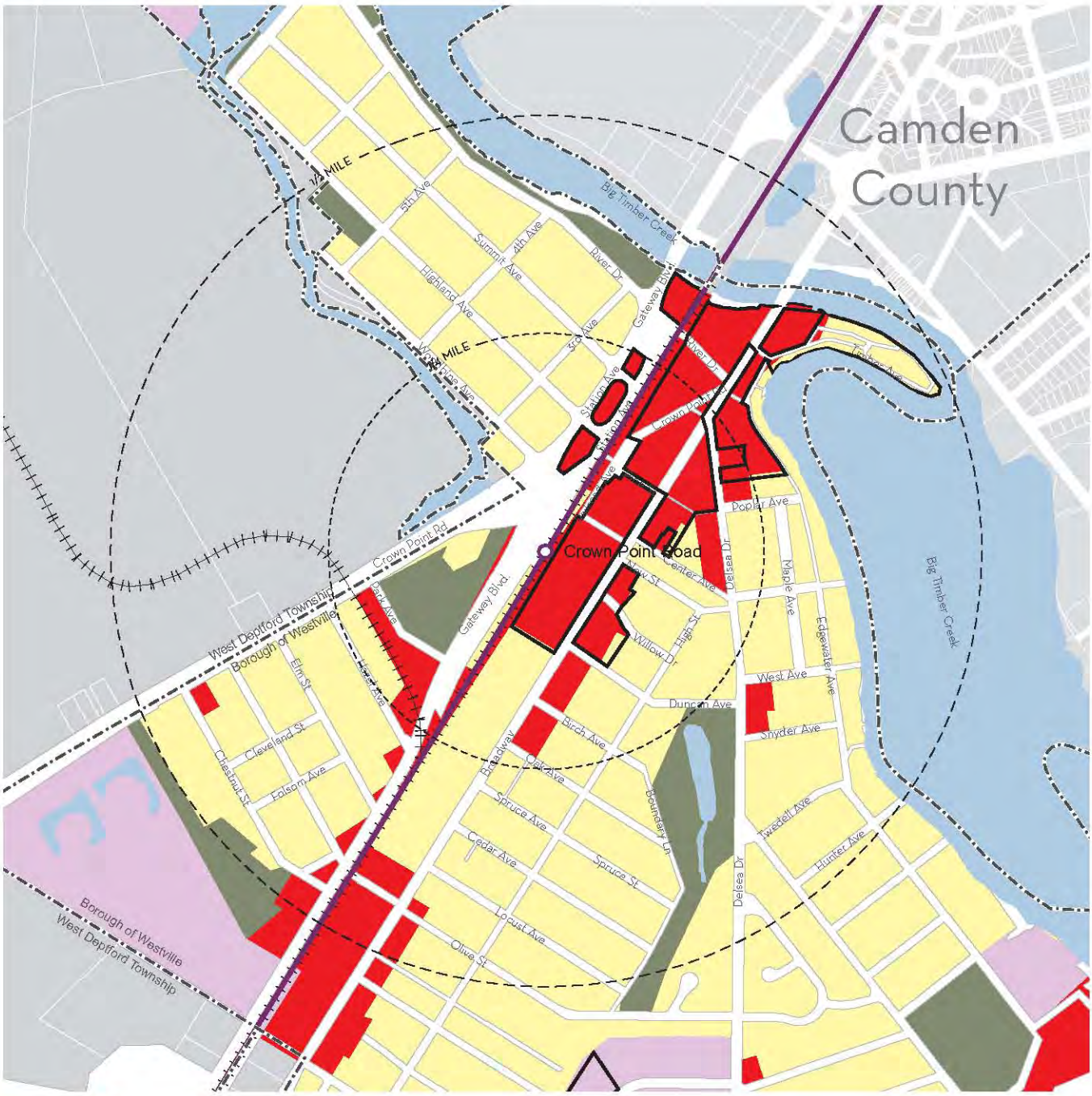


The Crown Point Study Area is primarily a single-family residential community. The northern section of Broadway is the area's principal commercial district. The stretch from New Street to Delsea Drive has a traditional urban form. Since the proposed station is on the edge of this district, businesses and transit riders could both benefit from streetscaping and improved pedestrian connections to the station. If the community were interested in utilizing residential density to capitalize on and support transit expansion, following this precedent would increase the number of residents living in close proximity to the station. Such development would likely increase walk-up ridership and the number of patrons who live within walking distance of the municipality's main commercial strip.



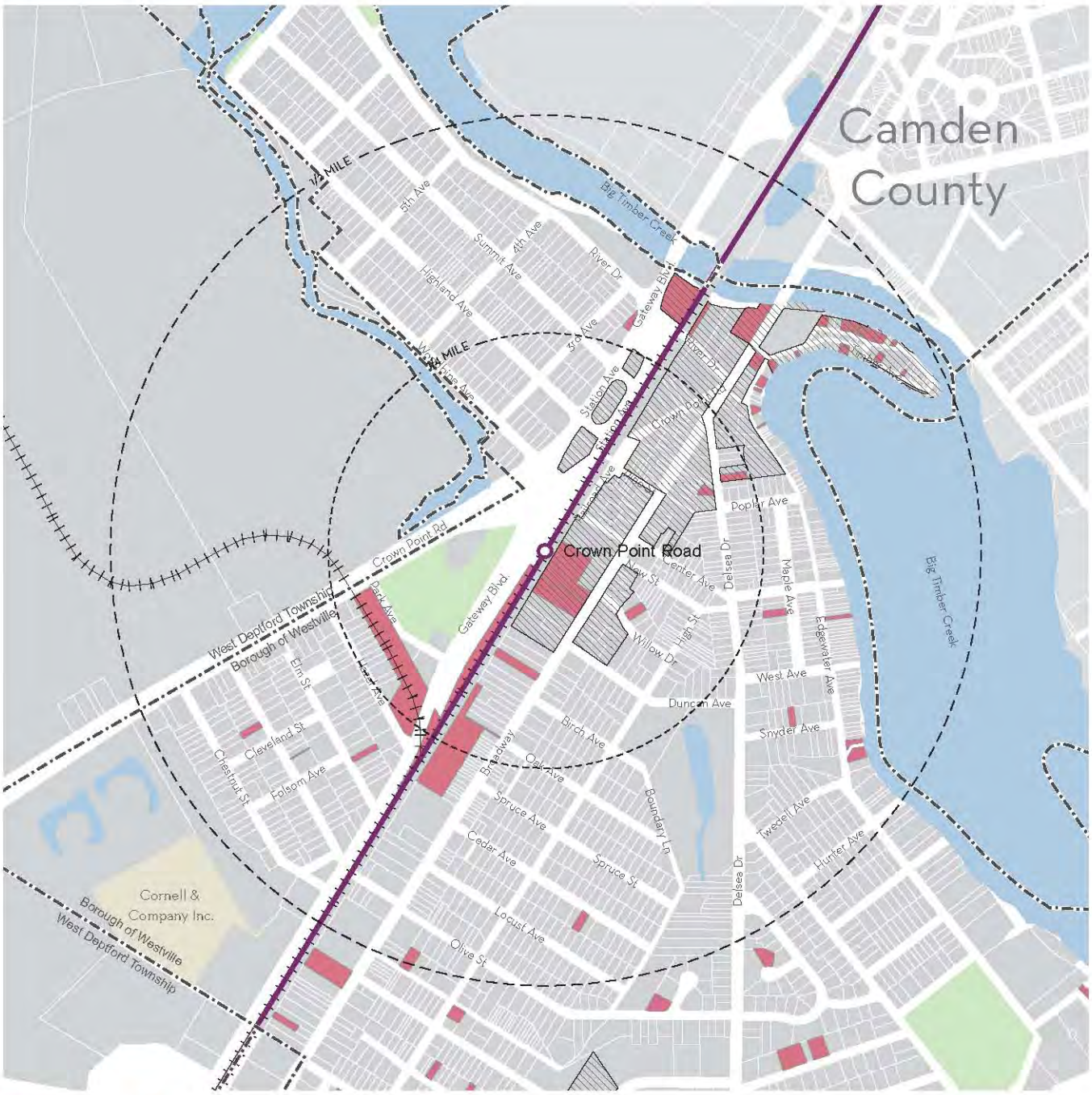
Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. There are some blocks within the study area that have more than 9 housing units per acre, the threshold for light rail service.* However, as a whole, the study area does not exceed 9 units/acre and thus will require a park-n-ride facility.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Source: Borough of Westville

Zoning extends the business district down Broadway to include the parcels to the east of the station. This C3 zoning allows for, banks, restaurants, retail stores, dry cleaning, trade/business schools, professional offices, and age-restricted housing among other uses. According to community interviews, there are more than 200 multi-family buildings in the Borough. However, neither the R-1 nor the C-3 designation currently allows for new multi-family construction without a variance. Mixed-use buildings are permitted in the Downtown Business Overlay Zone, an area that creates additional guidelines and restriction between the downtown business area of Broadway between the Big Timber Creek and Duncan Avenue.



Source: New Jersey MOD - IV Property Assessment Records, Borough of Westville Redevelopment Plan

The entire Borough of Westville has been declared an Area in Need of Rehabilitation, a designation that allows the Borough to undertake neighborhood revitalization/redevelopment strategies, but does not allow it to acquire/assemble land. However, in 2005 a number of parcels were designated Areas in Need of Redevelopment. This designation provides municipalities with a means to address conditions of deterioration and lack of proper land use and also grants them the power to acquire private property for the purposes of redevelopment (through negotiation or condemnation). In 2011, that resolution was reaffirmed but amended to lift the designation from 23 properties.

Environmental Justice

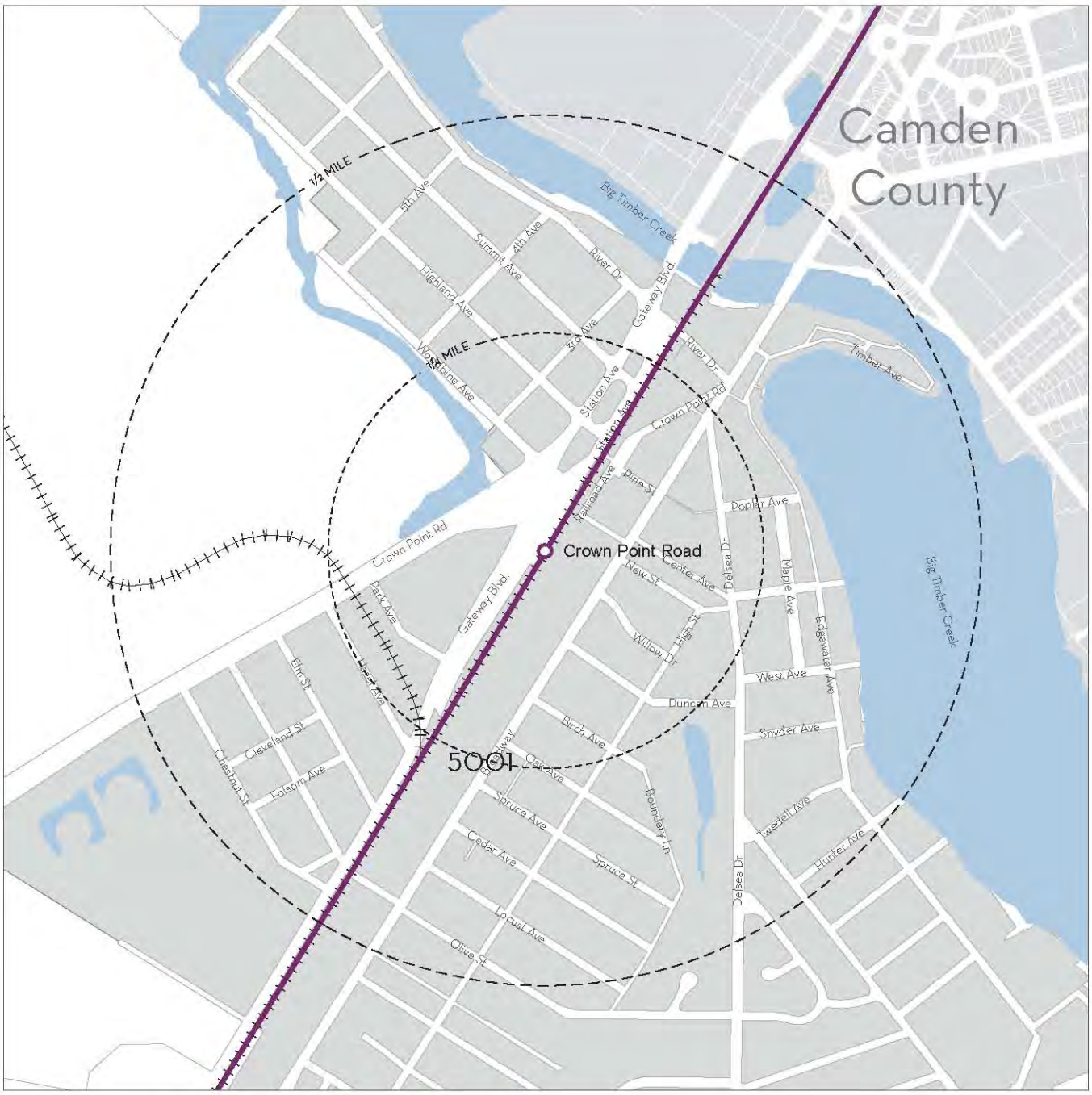
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The table on this page displays the key demographic factors used to compute the DOD score with those factors that exceed the regional threshold highlighted in orange. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 1.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5001
non-Hispanic minority	24.9%	4.5%
carless households	16.0%	12.6%
households in poverty	10.9%	7.6%
persons with a physical disability	7.7%	9.1%
female head of household with child	7.4%	6.0%
Hispanic	5.4%	3.1%
elderly	6.6%	20.0%
limited English proficiency	2.4%	0.5%

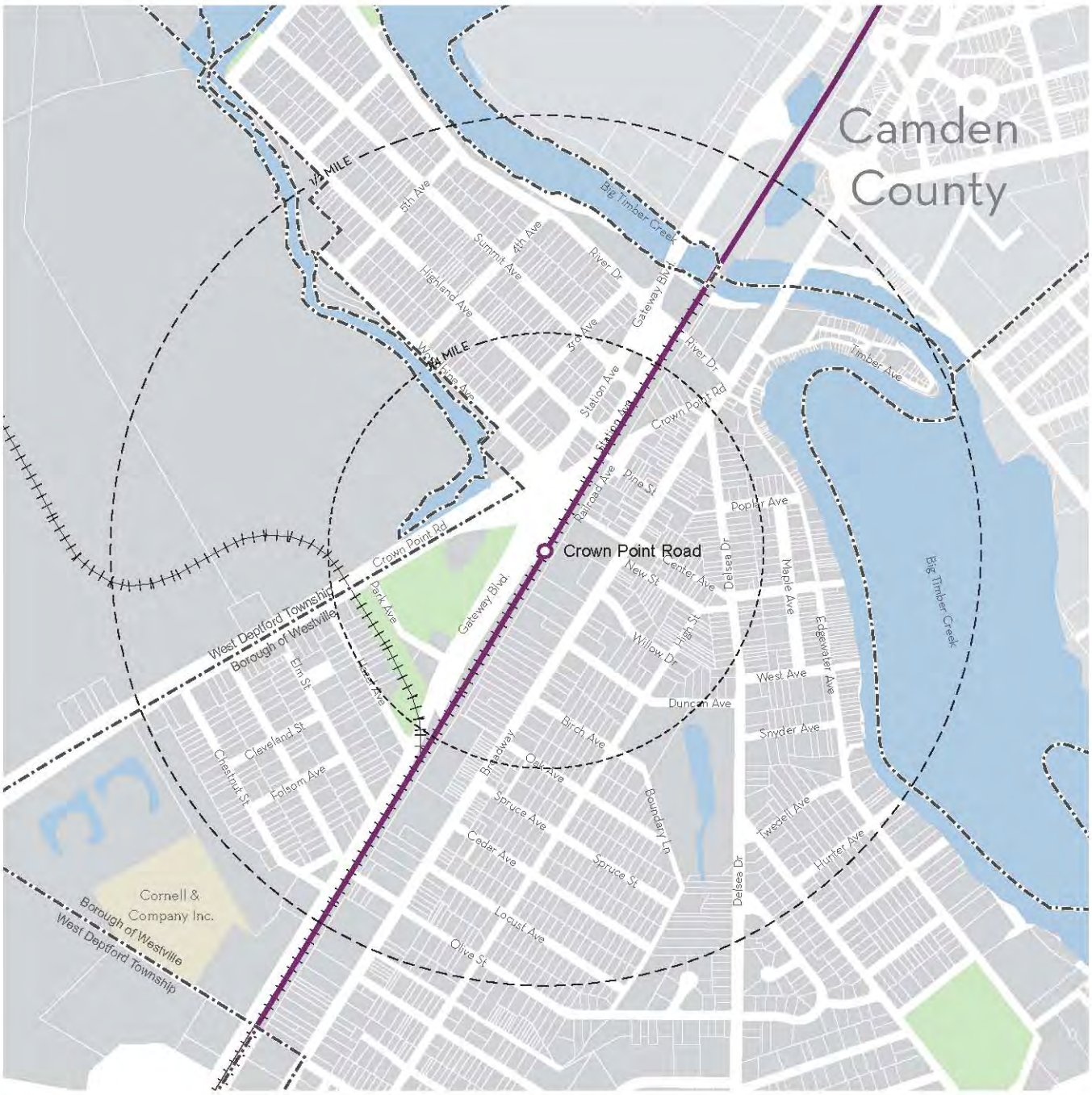
Source: DVRPC



In the case of the Crown Point Study Area, there is not a high concentration of historically discriminated against populations. The only populations that exceed the regional threshold are persons with a physical disability and the elderly. These populations are likely to see substantial benefits from increased transit access only if land use, transportation infrastructure (such as sidewalks), and station amenities are carefully planned to accommodate for their needs. It should also be noted that the area is likely to see an increase in the number of people over the age of 60, as illustrated in the demographics section. As such, environmental justice issues may become even more pertinent over the next 10 years.

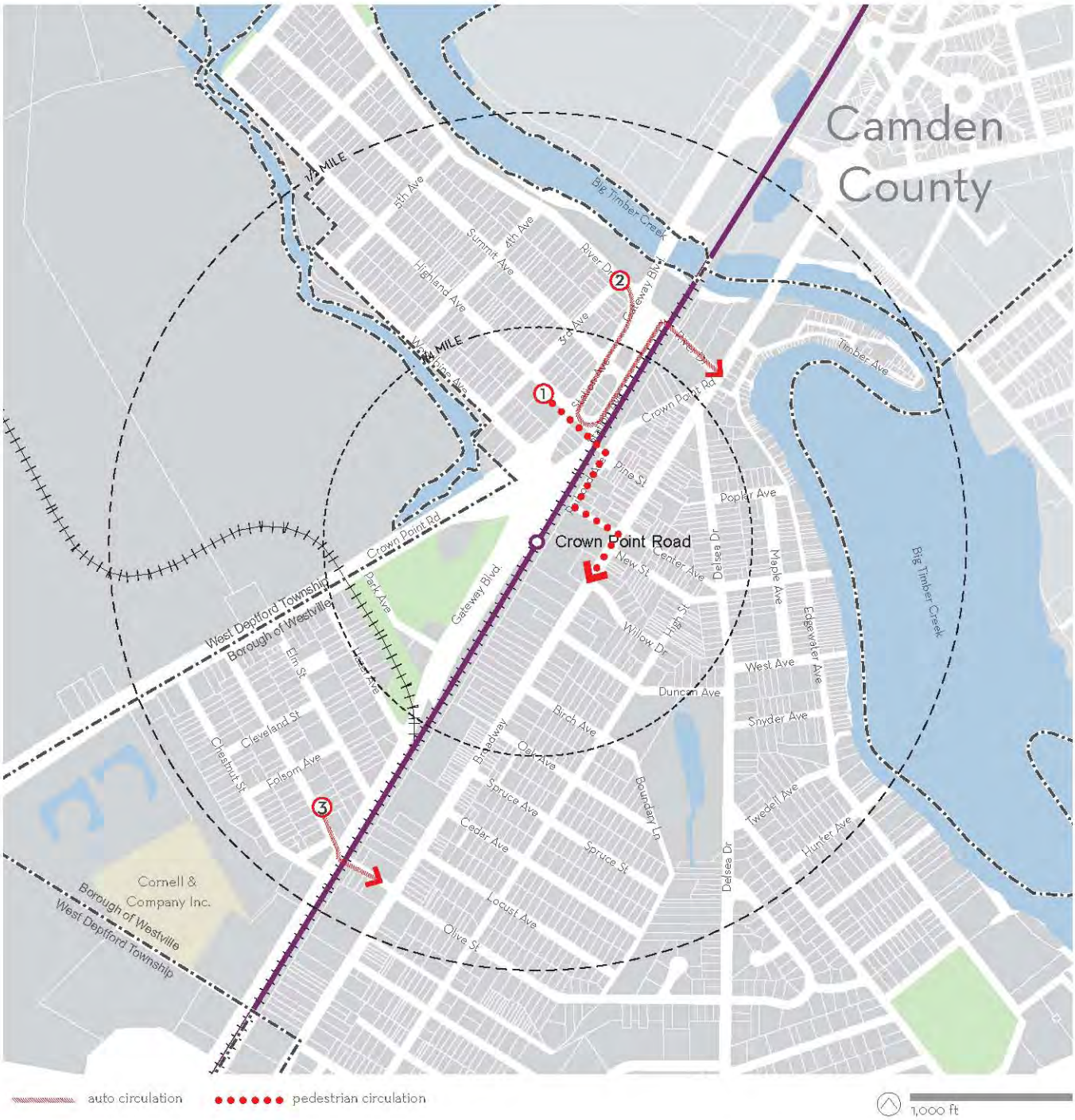
Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The area around the proposed station is located within a 100-year floodplain (an area of land that has a 1% chance of flooding each year). Furthermore, many parcels within a 1/4-mile of the proposed station fall within a 500-year floodplain (areas where there is a 0.2% chance of flooding every year). So too are many of the vacant parcels within the redevelopment boundary. In contrast, the vacant parcels further south along the railroad are not within a flood plain. As decisions are made about locating the station, the cost of construction and insurance should be factored into how strong of a (re)development impact transit expansion will have.



Source: Gloucester County Cultural Resource Survey

There are no historically protected buildings within the Crown Point Study Area.



Although there is a stoplight at Highland Avenue and Station Avenue, pedestrians cross approximately 300 feet of visually unappealing landscape (no trees, grass only landscape, entrances to parking lots, and surface parking) before even entering the east side of the Borough (1). Once across the tracks, there is no right-of-way link to the proposed station location. Thus pedestrians would have to walk up to Broadway to access the station. However, there is no crosswalk at the intersection of Crown Point Road, Pine Street, and Railroad Avenue. Similarly, auto circulation is designed so that cars coming from the eastern portion of the municipality have only one, very circuitous route, to cross Highland Avenue and Station Avenue (2). The next nearest crossing of Gateway Boulevard (3) is almost 3/4 of a mile further south. Efforts to make the station more accessible to those on the west side of the Borough should increase the number of riders and may also create a stronger connection between the Borough's business district and its residents.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 1.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed station location is adjacent to a vacant parcel that falls within the Borough's Redevelopment Area. This site would have to be acquired to be used for station-adjacent amenities. It also sits within a floodplain, as do many of the parcels within a 1/4-mile of the station. This will make constructing and insuring improvements more expensive. Finally, residents who live west of the rail line will have issues accessing the site via car or by foot. Bike lanes are non-existent in the Borough, a condition typical in northern Gloucester County.

Land Uses in the area is supportive of TOD but could be greatly improved. Although apartment, multi-family, and row-home development exists in the area, more would be required to support a walk-up station. The business district has seen major improvements and is very walkable, but the pedestrian connections between the station location and the downtown are inhibited by auto-oriented retail. Efforts to strengthen connections to major local amenities and employers would go a long way in improving the viability of a TOD in the area.

Market and Policy Factors

The designation of the entire Borough as an Area in Need of Rehabilitation and some lots as Areas in Need of Redevelopment, including many parcels within a 1/2 mile of the station, gives the Borough a great deal of leverage when moving forward with any TOD plans. However, current zoning does not allow multi-family residential construction and such development must receive a zoning variance.

The Broadway has undertaken streetscaping improvements and a facade revitalization program. The Borough currently has a FTA grant for improvements along Delsea Drive from Poplar to Big Timer.

Figure 1.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	2
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	2
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential employment density is sufficient to generate significant transit ridership and support local retail.	2
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	2
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	3
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	2
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	2
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	3

Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

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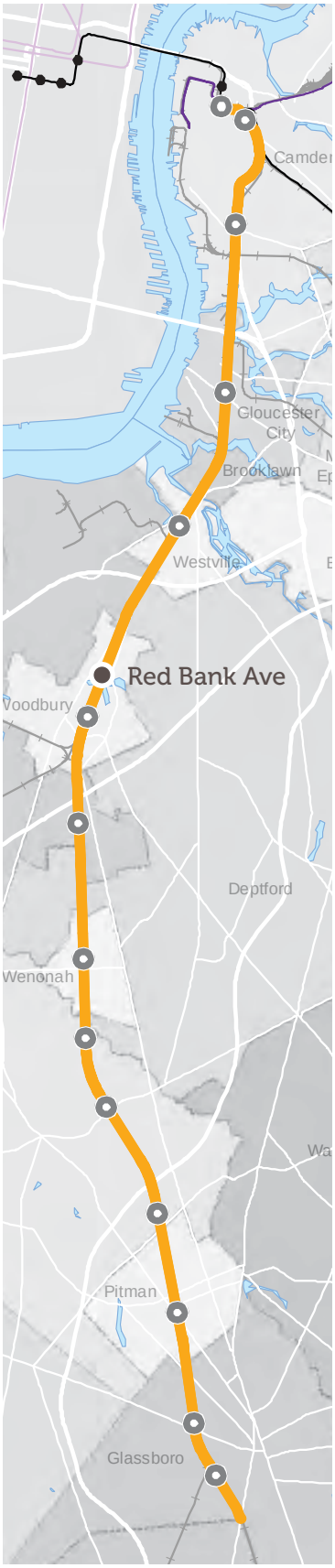
2 Red Bank Avenue

City of Woodbury, NJ



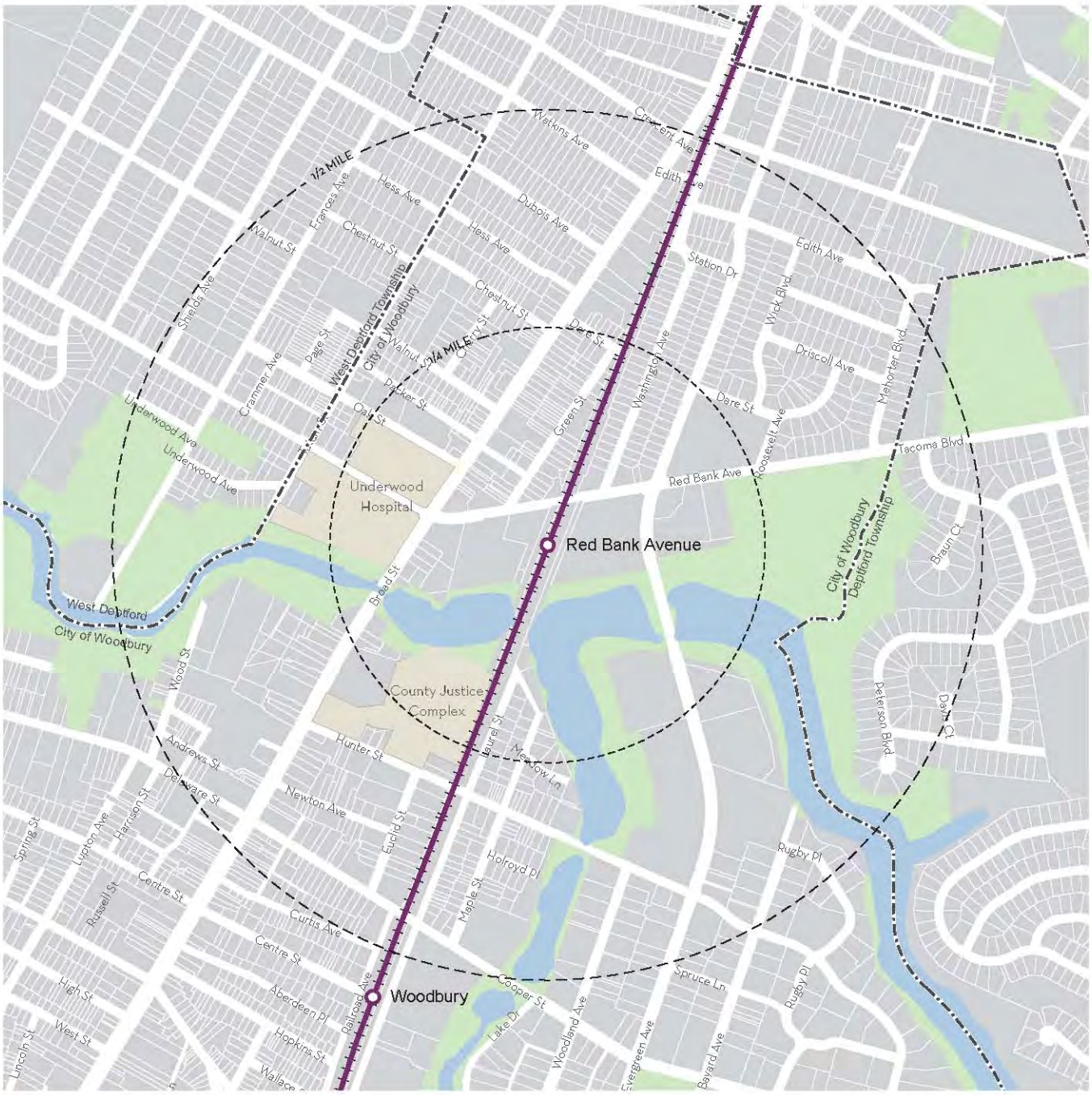
Overview

The Red Bank Avenue Study Area is well located to provide transit access to one of the County's major employers, Underwood Hospital. The demographics of the area show there is a large proportion of residents between the age of 20 and 34, a group that is one of the most likely to take transit to work. This high concentration of young residents may be one reason why more than 6% of residents in many of the Census Block Groups near the station took transit to work in 2000.

In support of Redevelopment, the City of Woodbury has adopted a plan that would increase mixed-use construction at higher densities around the station, an effort that is highly supportive of transit-oriented development. However, currently the pedestrian connection between the hospital and the station is lined with auto-oriented commercial buildings that are not constructed to capitalize on foot traffic. Furthermore, unit density in this area is not high enough to support a walk-up station.

Within limited vacant parcels, the largest opportunities for (re)development occur within the Redevelopment Area. The City clearly intends that these parcels support and capitalize on transit expansion and has plans for how to make that happen. It should, however, also consider how to strengthen pedestrian connections between transit and residential areas not in the Redevelopment Area, as well as how transit might support the use of the community's extensive open space assets.

As the municipality moves forward with these and other plans, it should make note of the high concentrations of historically disadvantaged groups within the study area. Given the close proximity to Underwood Hospital, transit expansion may be an excellent opportunity to support the needs of those over 75 years of age, those without a car, and persons with a physical disability, among others.



Source: Gloucester County

The proposed Red Bank Avenue station is located in the City of Woodbury (hereto referred to as Woodbury or the City). The majority of the 1/2-mile radius around the station that makes up the Red Bank Avenue Study Area is within the City. However, sections of the study area are also in West Deptford Township and Deptford Township. One of Gloucester County's major employers, Underwood Hospital, is located within a 1/4-mile of the station.

Community Form: Civic/Institutional






The Red Bank Station Study Area contains a number of institutions, the most significant being Underwood Hospital. That principal building of the hospital rises five stories, has vertical elements that break up its facade, has a landscaped building setback, and is serviced by both structured and surface parking. Other institutional buildings in the area do not exceed three stories, but do contain many of these architectural and urban design elements.

Community Form: Commercial






The Red Bank Study Area does not count on the same historic town center that characterizes many of the other station's study areas. Instead, retail is auto-oriented with parking separating the buildings from the sidewalk. Signage is typically oriented to automotive traffic, and as such is separate from the building, oriented perpendicular to the facade, and elevated above the first story.

Community Form: Residential






A typical residential unit in the study area is a single-story, single-family home, although two-story structures are not uncommon. Most have a landscaped building setback (grass) and off-street parking, sometimes in a garage. Row-homes, like their detached counterparts, do not tend to exceed one story. Multi-family apartments, however, are three stories and do not front the street but instead open onto a surface parking lot.

Community Form: Open Space






The study area counts on a mix of passive and active parks. The Broad Street Lake and Stewart Lake form an attractive landscape within a 1/4-mile of the station and provide an excellent opportunity for creating a visually interesting location to board and disembark the train.

Demographics

In 2010, just over 5,400 people lived in the Red Bank Study Area. Just over half of all residents in the area lived in 1- or 2-peroson households, and 60% of residents owned the home in which they lived. The two census tracts that most overlap with the study area have widely disparate household incomes. Although, mean incomes for the two tracts are more closely aligned, this data suggest that efforts to expand rail service into this area will increase transit access for a wide range of households.

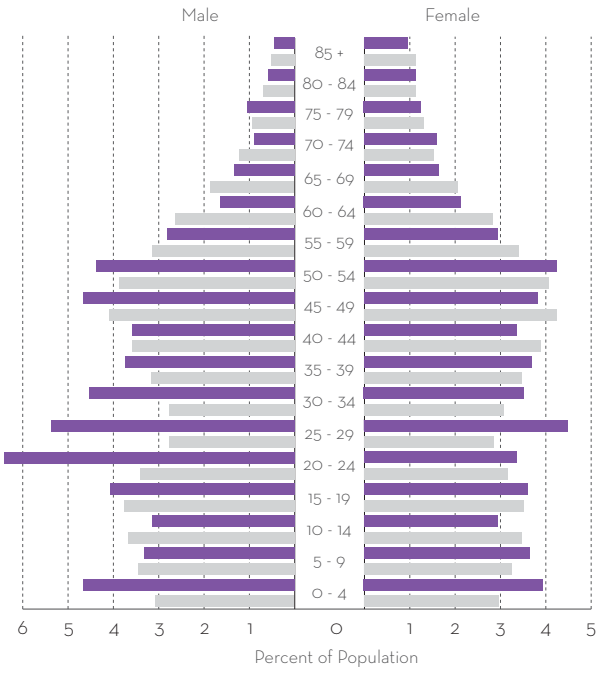
Figure 2.a: Income Data

HOUSEHOLD INCOME	5010.01	5010.02	Gloucester County
Median	$83,646	$40,484	$70,500
Mean	$78,566	$58,624	$83,765

Source: Census Bureau (Tract Level Data)

From 2000 to 2010, the study area lost just 14 residents. Over that same time period, average household size remained essentially constant, yet there was an increase in the number of 1-person households, and a decrease in the number of 2-person ones. There was a 6.8% decrease in the number of households that owned the home in which they lived, possibly due to the housing crisis.

Figure 2.b: Population Pyramid



Source: Census Bureau (Block Level Data)

Study Area Gloucester County

The population pyramid for this study area reveals important data regarding transit expansion. Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

The Red Bank Study Area has a large proportion of younger residents, especially men between the ages of 20 and 34. Across the US, people between the ages of 25 and 34 ride transit more than any other age group (US Census). As a result, there may be a major opportunity to create transit accessible living that is tailored to a population less likely to have a family (the average age to marry for men is 28 for men and 26 for women).

Figure 2.c: Demographic Data

		2000	2010
Population	Total Population	5,435	5,421
Race	White alone	4,434 (82%)	3,920 (72%)
	Black or African American	820 (15%)	1,052 (19%)
	American Indian and Alaska Native	13 (0%)	19 (0%)
	Asian	22 (0%)	51 (1%)
	Native Hawaiian and Pacific Islander	3 (0%)	1 (0%)
	Some other race	55 (1%)	155 (3%)
	Population of two races	88 (2%)	185 (3%)
Hispanic/Latino	Hispanic Population	181 (3%)	534 (10%)
Household Size	1-person household	546 (27%)	733 (35%)
	2-person household	653 (33%)	560 (27%)
	3-person household	325 (16%)	361 (17%)
	4-person household	259 (13%)	265 (13%)
	5-person household	143 (7%)	115 (5%)
	6-person household	43 (2%)	40 (2%)
	7 or more person household	19 (1%)	24 (1%)
	Average Household Size	2.7	2.6
Housing Tenure	Owner	1,334 (67%)	1,243 (59%)
	Renter	654 (33%)	855 (41%)

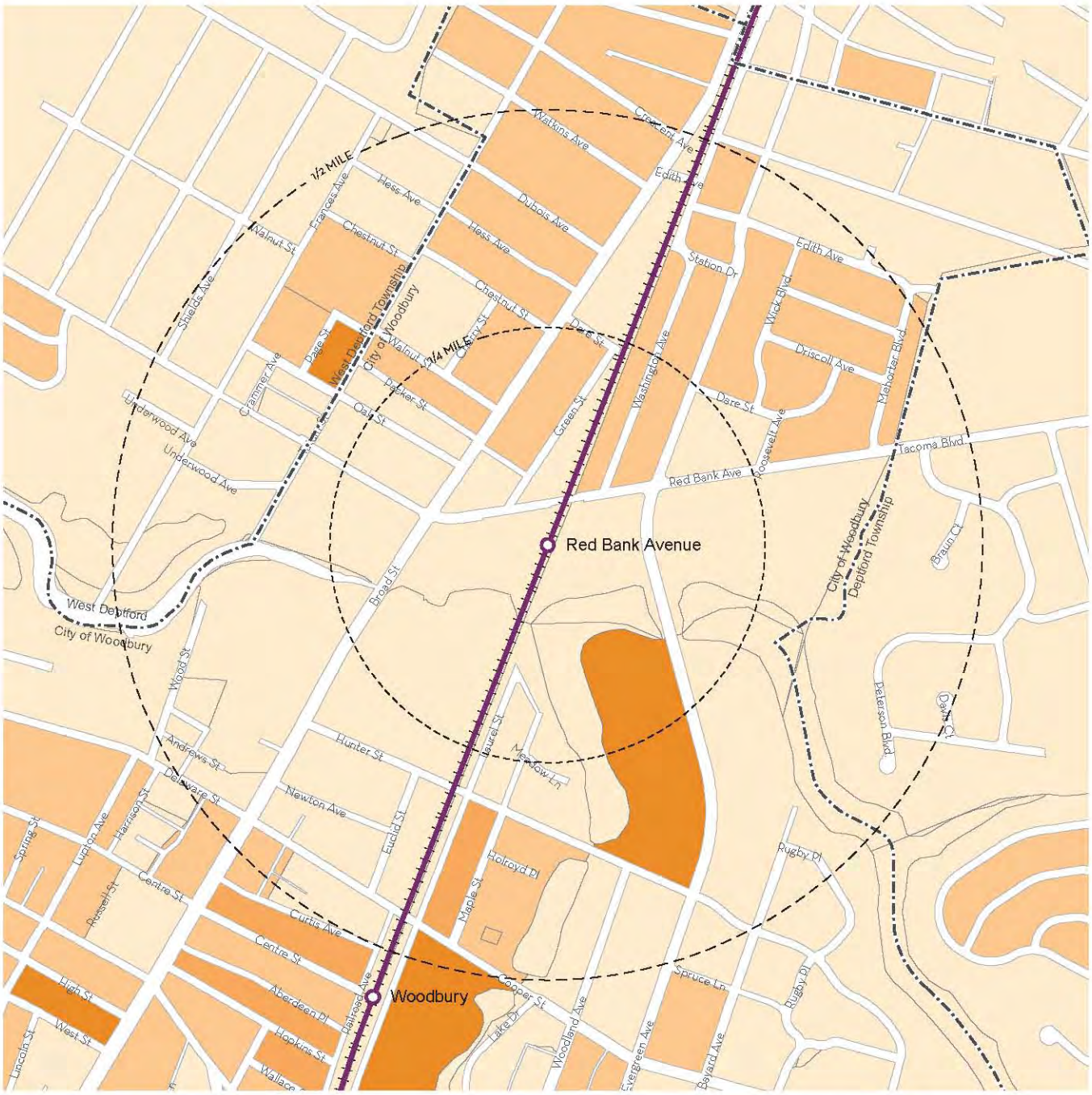
Source: Census Bureau (Block Level Data)

Moreover, people between the age of 20 and 34 are more likely to live in smaller households and more likely to rent. In the study area more than 40% of households rent, and there has been an increase in the number of 1-person households from 2000 to 2010. Regardless, it would be prudent to understand how this group is currently utilizing the existing housing and to know whether transit expansion could provide (re)development opportunities to meet their needs.

The proposed location of the Red Bank station will provide transit access to a wide range of community assets, including schools, recreation areas, and local police services. The close proximity of Underwood Hospital, one of the largest employers in the County, means that the Red Bank Station will be a regional destination for transit riders. As a result, the largest opportunity for (re)development is most likely on E. Red Bank Avenue between the station and the hospital where the auto-oriented commercial uses (see Community Form) are not currently designed to capitalize on pedestrian traffic.

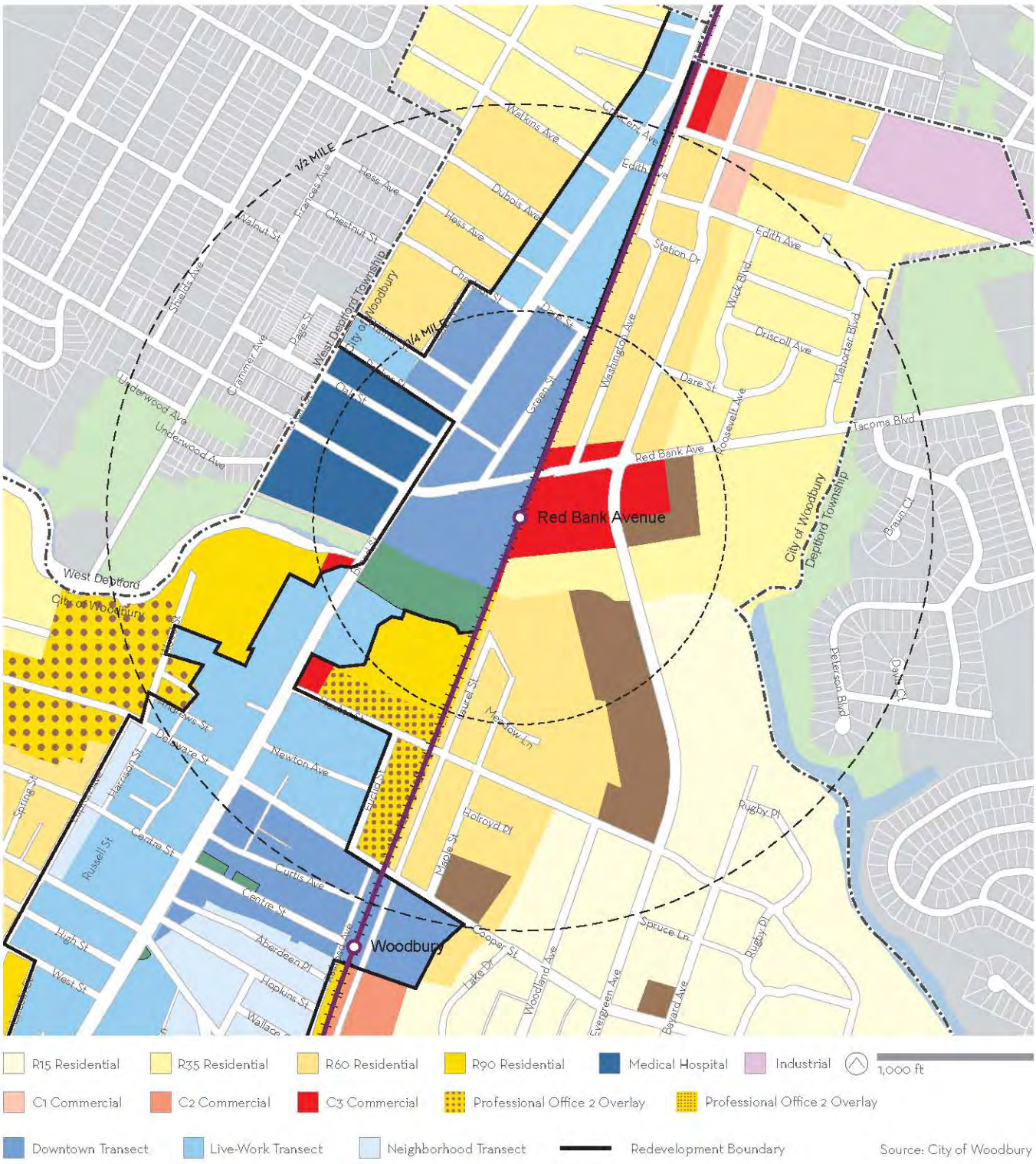
Relative to other station areas, the Red Bank Avenue Study Area has strong transit access. The area is serviced by NJTransit Bus Routes 401, 402, 410, and 412 that run north-south (terminating in Camden). NJTransit Bus Route 455 starts in Woodbury and runs to the Cherry Hill Mall, while Route 463 starts in Woodbury and runs to the Avondale park-n-ride. In 2010 many residents who resided within station adjacent blocks rode transit to work, including 6% of residents who reside in the same Census Block Group as the proposed station. This is significantly higher than 2.5%, the mean for the County as a whole. The combination of high area ridership and the possibility for bus-to-rail transfers suggest efforts to increase service and support transit through development will result in high ridership rates.

The proposed station would provide transit service within 1/4-mile principally to institutional and commercial uses, with major portions of this area dedicated to open space or recreational uses. This improves the likelihood that the station will be a destination stop along the rail service. As mentioned in the County Snapshot section, this may result in (re)development opportunities that service residents who do not commute to major retail centers but instead make intra-county trips. If the station is also envisioned to be a point of departure, the auto-oriented commercial lots near the station may be an opportunity to provide mixed-use development and a park-n-ride facility as illustrated in the Redevelopment Plan.



Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. Few blocks within the study area that have more than 9 housing units per acre, the threshold for light rail service.* As such, park-n-ride and bike-parking services may be required. For those blocks in the northern section of the study area that do have more than 9 units per acre, improved connections to the station will most likely lead to higher numbers of walk-up/bike-up riders.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Residential zoning is split into three zones: R60 (minimum lot size of 6,000 sqft), R35 (minimum lot size of 3,500 sqft), and R15 (minimum lot size of 1,500 sqft). As mapped, higher densities are allowed near Broad Street and the proposed station. However, in 2010 the City of Woodbury adopted a Redevelopment Plan and corresponding Form-Based Code. One of the objectives of the plan was to create an activity node at the intersection of North Broad at Red Bank Avenue. To support this objective, the downtown transect is dense and consists of mixed-use buildings up to five stories in height. Such zoning is highly conducive to expanded transit service and will establish stronger pedestrian connections between the hospital and the station.

vacant land | community identified development opportunities | Area in Need of Redevelopment

1,000 ft

Source: New Jersey MOD - IV Property Assessment Records

A major section of the Red Bank Study Area is currently within the Woodbury Redevelopment Area. Although there are no large vacant parcels, there are significant (re)development opportunities. Specifically, the Redevelopment Plan envisions new mixed-use construction at the southeast corner of East Red Bank and North Broad. The plan also envisions space for a parking structure to service the train station and community facilities that improve access to Stewart Lake. Such efforts would be strongly supportive of transit expansion.

Environmental Justice

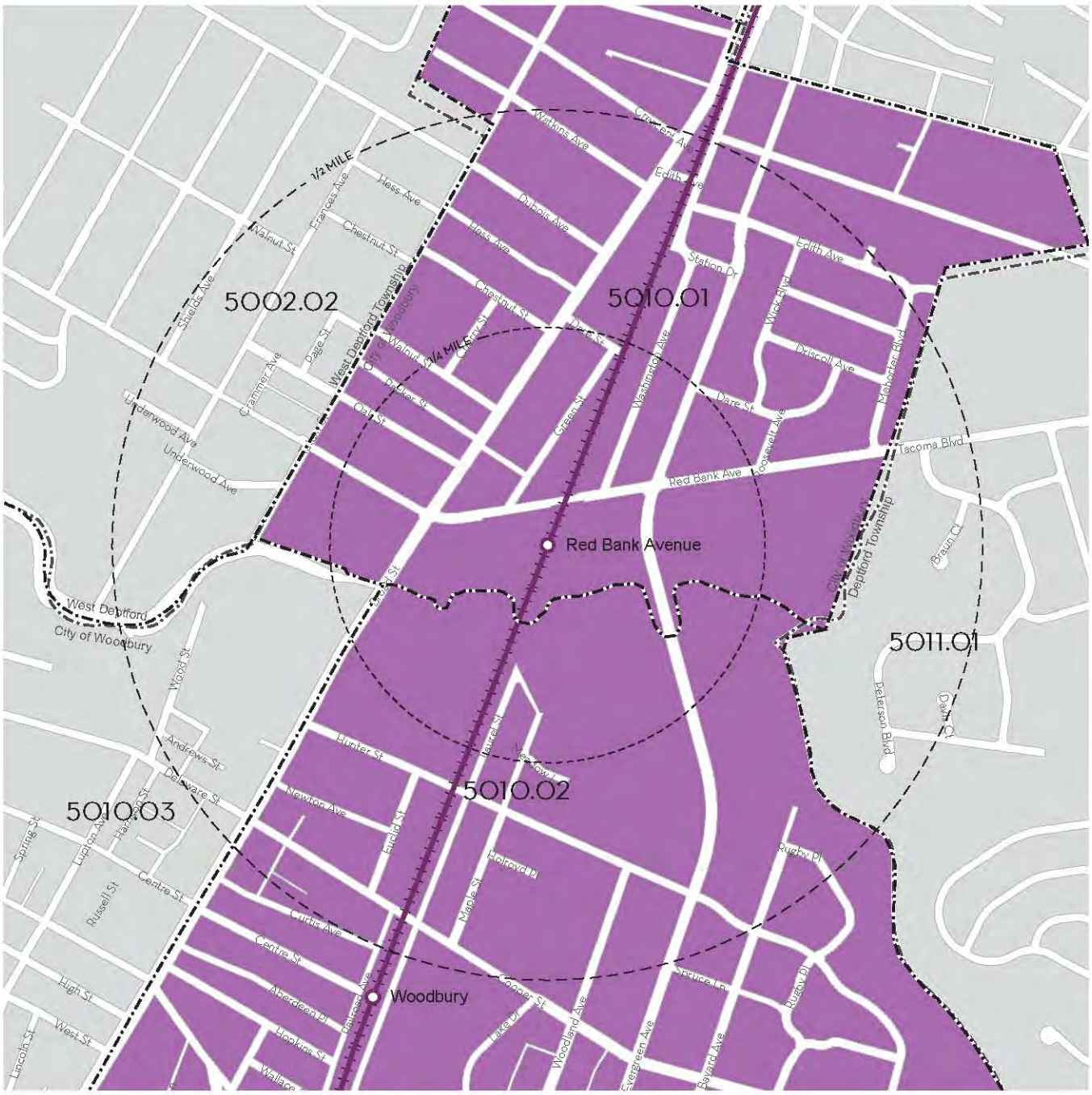
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The table on this page displays the key demographic factors used to compute the DOD score with those factors that exceed the regional threshold highlighted in orange. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

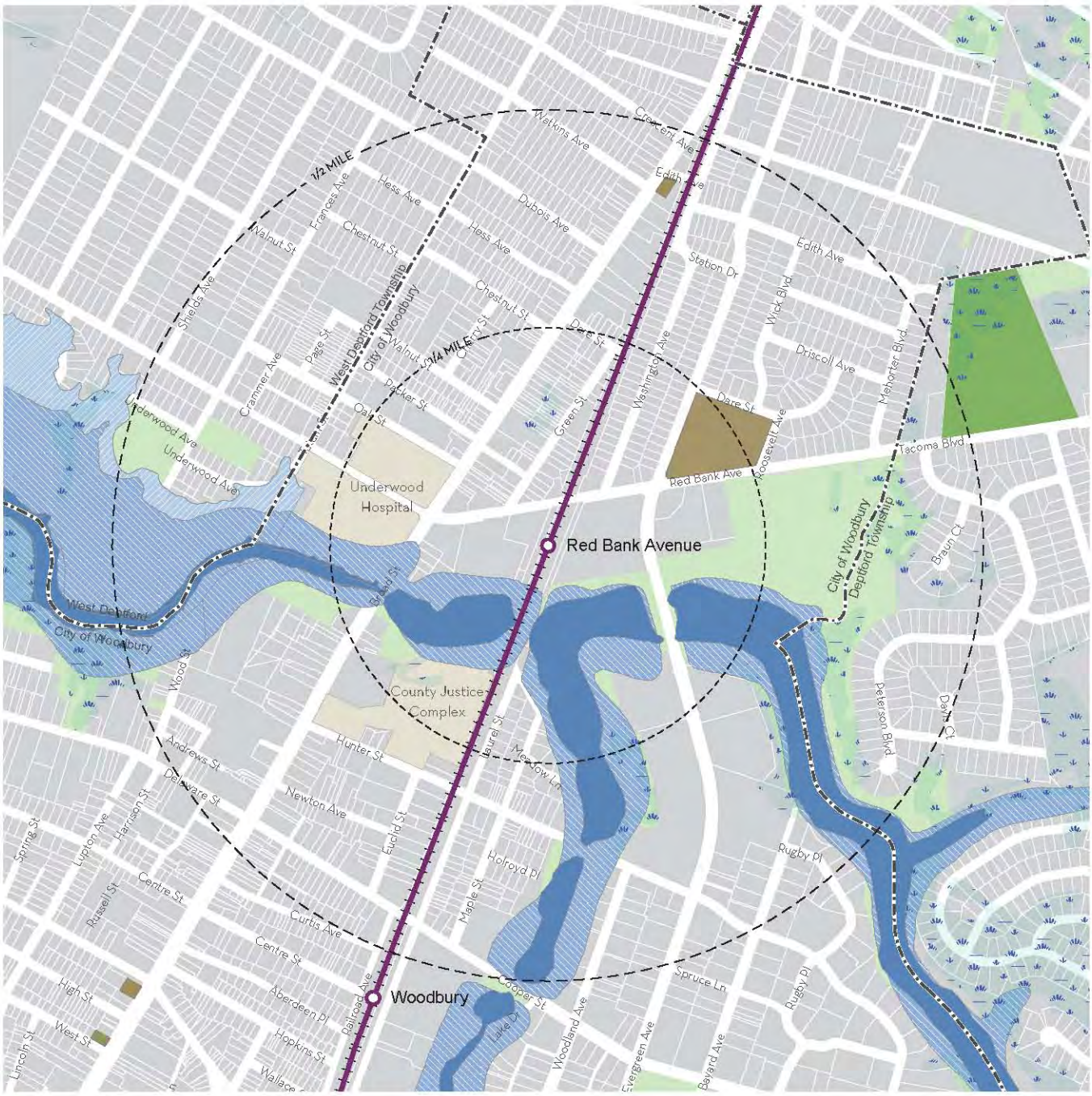
Figure 2.d: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5010.01	Census Tract 5010.02
non-Hispanic minority	24.9%	16.5%	39.4%
carless households	16.0%	16.8%	28.9%
households in poverty	10.9%	16.9%	22.7%
persons with a physical disability	7.7%	12.0%	8.1%
female head of household with child	7.4%	6.8%	16.3%
Hispanic	5.4%	7.1%	3.2%
elderly	6.6%	8.0%	46.0%
limited English proficiency	2.4%	0.4%	1.2%

Source: DVRPC



The Red Bank Study Area intersects five census tracts as displayed on in the Environmental Justice Map. However, only two tracts (2010.01 and 5010.02) have significant overlap with the study area. Both tracts received a DOD score between five and six. Of particular importance are the almost 30% of residents in tract 5010.02 who have no car, the large number of residents in both tracts who have a physical disability, and the extensive number of elderly residents in tract 5010.02. All of these populations will benefit from increased transit options. However, the elderly and those with a physical disability may require more specialized amenities and services to support their transit needs.



Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The proposed Red Bank Avenue station is not located in a floodplain or wetland. Most of the land that does fall within either the 100-year or 500-year floodplains is in dedicated open space. Thus transit expansion will not likely induce (re)development in those areas. There are two contaminated sites within the study area, the largest of which is currently home to the National Guard and is not likely to be redeveloped as a result of transit expansion.

Listed Historic Buildings | Eligible Historic Buildings | Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

There are a number of historic properties located just over 1/4-mile away from the proposed station location. According to the municipality, all proposed exterior changes and alterations to a property located within the district must be reviewed by the City's Historic Preservation Commission and approved by the City's Planning Board. If there is (re)development as a result of transit expansion, some of it may have to abide by these requirements. However, none of the most immediate opportunities for redevelopment identified earlier fall within this district.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 2.e summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed site location is adjacent to parcels that fall within the City of Woodbury's Redevelopment Area. As that plan demonstrates, there is ample opportunity for more mixed-use development along East Red Bank Avenue while still allowing for a park-n-ride facility. Nonetheless, the proposed station location would place the station at an elevated section of the rail. Thus construction would have to occur to facilitate access.

Land Uses in the area is currently supportive of TOD, with a major activity center located within a 1/4-mile of the station. Moreover, much of the existing residential density within a 1/2-mile of the station is high enough to support walk-up service. However, there are areas that could be improved. Specifically, there is limited residential space within 1/4-mile of the proposed station area. Moreover, the urban form of many buildings along the major commercial corridors is oriented to automotive traffic and does not support a walkable urban environment.

Market and Policy Factors

Existing policy is currently highly supportive of transit-oriented development. The designation of major areas around the station as Redevelopment Areas provides the City of Woodbury the power and opportunity to make major investments to support rail. Moreover, their existing Redevelopment Plan is designed with transit expansion in mind. Thus, there are already policies in place to guide development to improve many of the issues raised in this section.

Underwood Hospital continues to grow and make real-estate investments in the area. There is currently a plan for three lit crosswalk at pedestrian crossings, and a bike trail is being planned along the Creek and Lake system. The City is exploring the creation of a Parking Authority to bring the management and creation of parking under one authority. Finally, NJDOT is currently working on a re-channelization of Broad Street to reduce travel to one direction in each way with a center turn lane and bike lanes on either side.

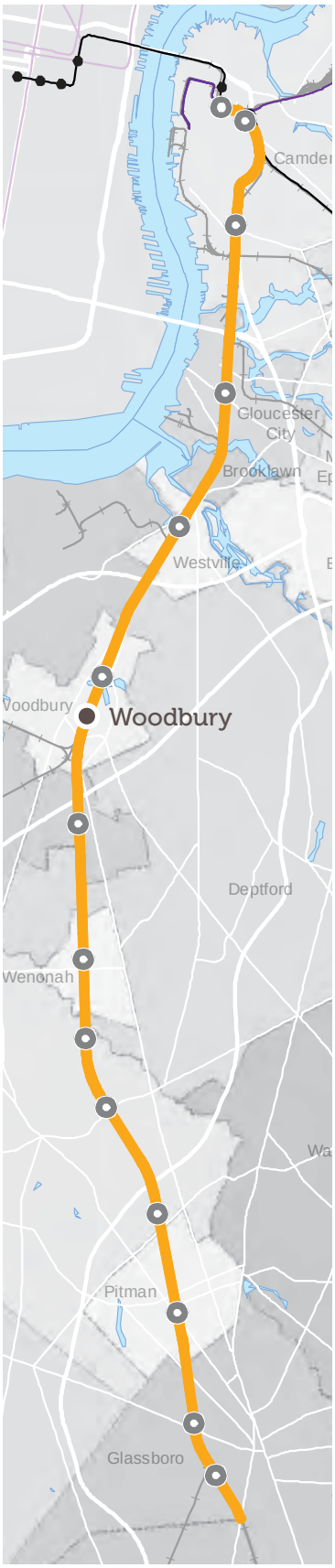
Figure 2.e: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	2
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	2
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	2
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	3
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	2
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	1
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	1
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	1
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

3 Woodbury

City of Woodbury, NJ



Overview

As the seat of Gloucester County, the City of Woodbury will have to make important decisions regarding station location and potential (re) development opportunities. The City counts on a strong business district along South Broad Street, an area that is also home to many municipal and county buildings. If the station were placed at its current location, three schools, a police department, and the Gloucester County Justice Complex and administrative offices would receive higher quality transit service within walking distance.

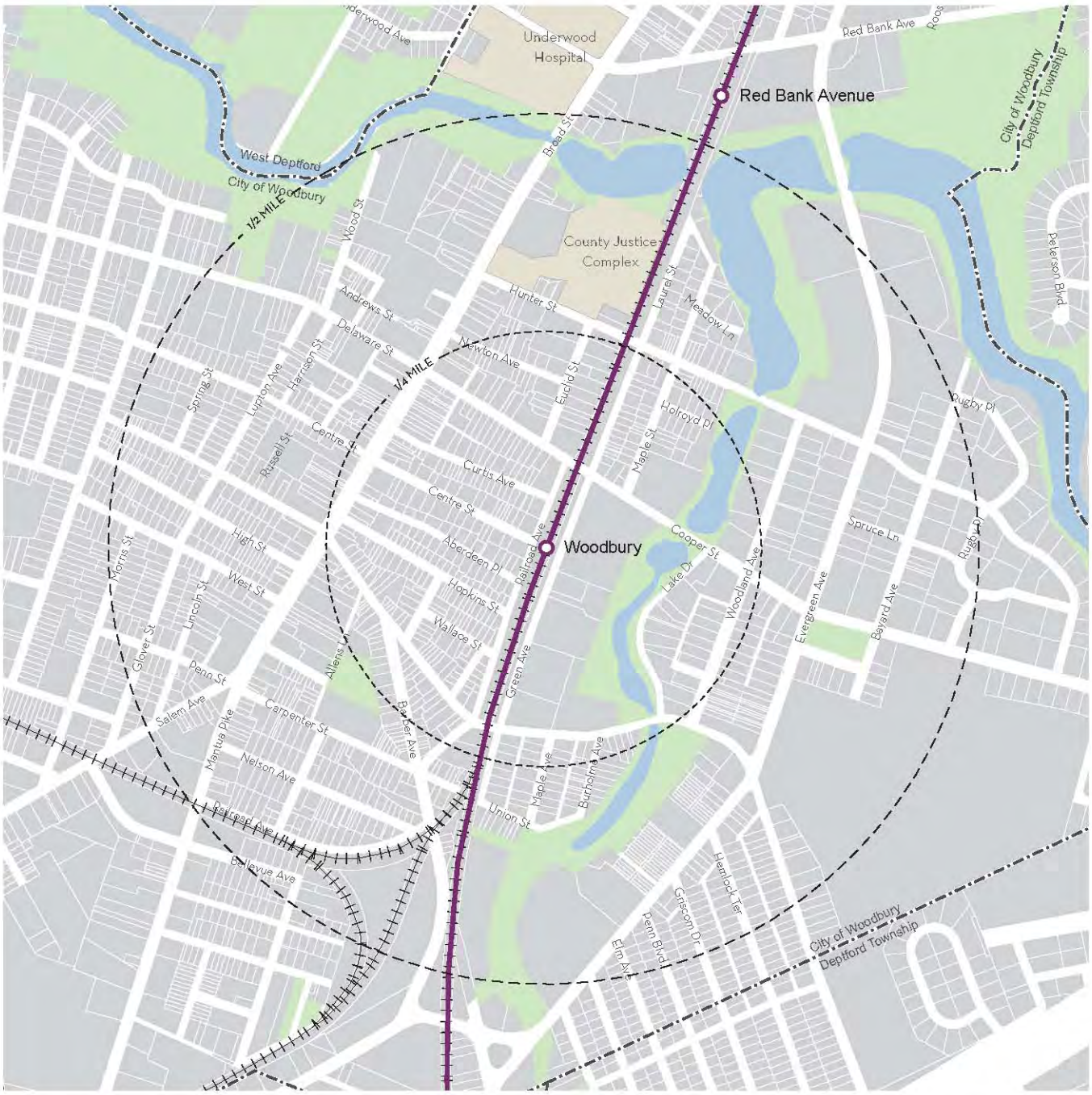
As of 2000, transit ridership in the study area was strong, with more than 12% of residents in the census tract containing the station commuting to work by transit. Although overall housing unit density is not sufficient to support walk-up light rail service, some blocks immediately adjacent to the station do have enough units per acre to expect some walk-up riders. Moreover, land use patterns and countywide commuting flows suggest that Woodbury may be an intra-regional destination.

Moreover, major areas around the station have been designated as Areas in Need of Redevelopment and a Plan for Redevelopment has been approved. This provides the City of Woodbury the power to support substantial changes in the area through tax incentives and/or the acquisition of land. The existing Redevelopment Plan is designed with transit expansion in mind and a form-based code has been written that covers much of the study area.

Despite these strengths, the municipality will have to carefully manage possible development pressure caused by transit expansion. A majority of the parcels located within 1/4 mile of the station lie within a historic district, public open space, or flood plain. Moreover, few parcels are currently vacant. As a result, there may be major obstacles to new construction or redevelopment.

The most immediate opportunities for supporting transit expansion lie in reinforcing connections between existing assets (like the CBD) and the station, while utilizing existing parking as a park-n-ride lot. Long-term efforts to accommodate (re)development near the station will require planning efforts that take into account the form and land-use mixture that will best support transit goals while meeting the needs of the community to preserve its natural and historic assets.

As the municipality moves forward with these and other plans, it should make note of the high concentrations of historically disadvantaged groups within the study area. Given the important location of the station with regards to both retail and government services, transit expansion may be an excellent opportunity to support the mobility needs of those over 75 years of age, those without a car, and persons with a physical disability, among others.



water | open space | major county employers

1,000 ft

Source: Gloucester County

The proposed station and the 1/2-mile radius that constitutes the Woodbury Study Area lie wholly within the City of Woodbury.

Community Form: Civic/Institutional




The City of Woodbury has a mix of contemporary and historic cultural and civic buildings that follow a traditional urban form: they have a small landscaped building setback; entrances at the front of the building; are the tallest buildings in town (but do not exceed 3 or 4 stories); and have street parking or parking in the rear of the building. Some buildings also have additions that blend traditional and contemporary architecture.

Community Form: Commercial





Many of the Woodbury Study Area commercial buildings lie along Broad Street, which acts as the towns "main street." Along this strip buildings tend to be between 2 and 3 stories, are built to the property line, have shop windows that take up a large percentage of grown floor facade space, and have street parking or parking in the rear.

Community Form: Residential






The single-family homes in the Study Area vary in character and form. Many units do not exceed one story, sit on smaller lots, and have parking on the street. In the historic area, buildings tend to be two stories, have short building setbacks, and have porches. In residential areas to the west of the train tracks, lot sizes are larger, buildings are set back further, and parking is off-street. The multi-family / attached units in the study area do not exceed two stories and often front internal parking lots instead of the street.

Community Form: Open Space






The Woodbury Study Area counts on a diversity of Open Spaces. Passive spaces include Broad and Stewart Lake that maintain a natural looking environment that allows residents to walk close to the water. The Woodbury Junior/ Senior High School also has a major sports complex that includes a multi-sport stadium with grass field and track.

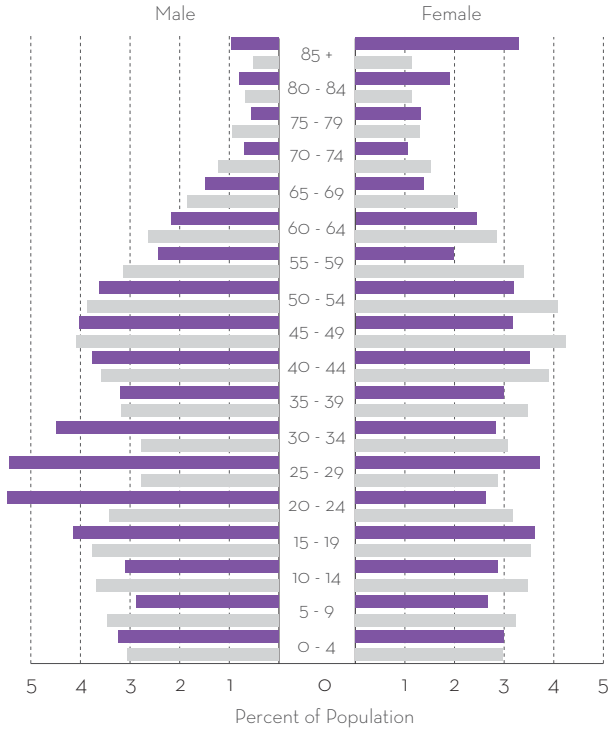
Demographics

In 2010, there were 5,453 residents in the Woodbury Study Area. Forty-four percent of them lived in 1-person households, and a majority of them rented the home in which they lived. The averaged median household income between 2005 and 2010 for the census tract (5010.02) that best overlaps with the study area was $40,484, which was well below the median of $70,514 for the County. However, the census tract also has a mean household income of $58,624, indicating that there are some wealthier households within the tract that might make it closer to the County mean.

From 2000 to 2010, the study area saw a loss of 314 residents (5.4%). However, the area had a large increase in the number of Hispanic/Latino residents, as well as an increase in the number and proportion of Black/African-Americans. Household size decreased slightly over that same time period. This was due to 94 more one-person households, and 147 and 24 fewer two- and three-person households, respectively. There was also a shift in housing tenure, with fewer households owning their own home in 2010 than in 2000.

The population pyramid for this study area reveals important data regarding transit expansion. Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 3.a: Population Pyramid



Source: Census Bureau (Block Level Data)

Study Area Gloucester County

In the case of the Woodbury Study Area, the population pyramid reveals a high proportion of young men between the ages of 15 and 25. However, it would be prudent to understand how this group is currently utilizing the existing housing and to know whether transit expansion could provide (re) development opportunities to meet the unique needs of this population.

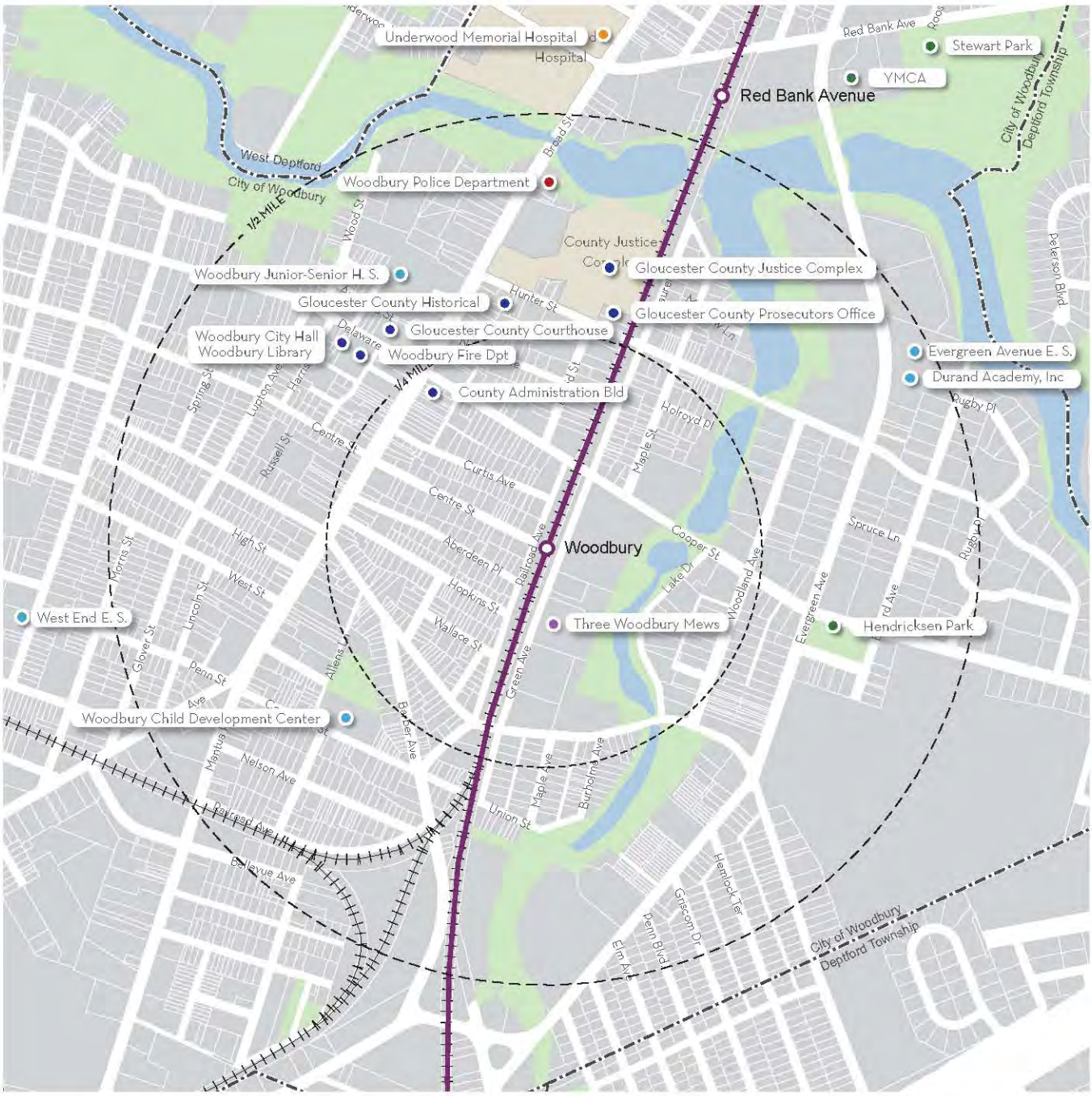
The population pyramid also reveals a high proportion of people over the age of 80, especially women. This is most likely attributed to Three Woodbury Mews, a senior living

Figures 3.b: Demographic Data

		2000	2010
Population	Total Population	5,767	5,453
Race	White alone	3,845 (67%)	3,095 (57%)
	Black or African American	1,658 (29%)	1,823 (33%)
	American Indian and Alaska Native	14 (0%)	15 (0%)
	Asian	31 (1%)	52 (1%)
	Native Hawaiian and Pacific Islander	4 (0%)	11 (0%)
	Some other race	90 (2%)	195 (4%)
	Population of two races	125 (2%)	231 (4%)
	Hispanic Population	264 (5%)	652 (12%)
Household Size	1-person household	850 (37%)	994 (44%)
	2-person household	672 (29%)	525 (23%)
	3-person household	357 (15%)	333 (15%)
	4-person household	245 (11%)	235 (10%)
	5-person household	132 (6%)	120 (5%)
	6-person household	36 (2%)	41 (2%)
	7 or more person household	24 (1%)	28 (1%)
	Average Household Size	2.5	2.4
Housing Tenure	Owner	1134 (49%)	973 (43%)
	Renter	1182 (51%)	1303 (57%)

Source: Census Bureau (Block Level Data)

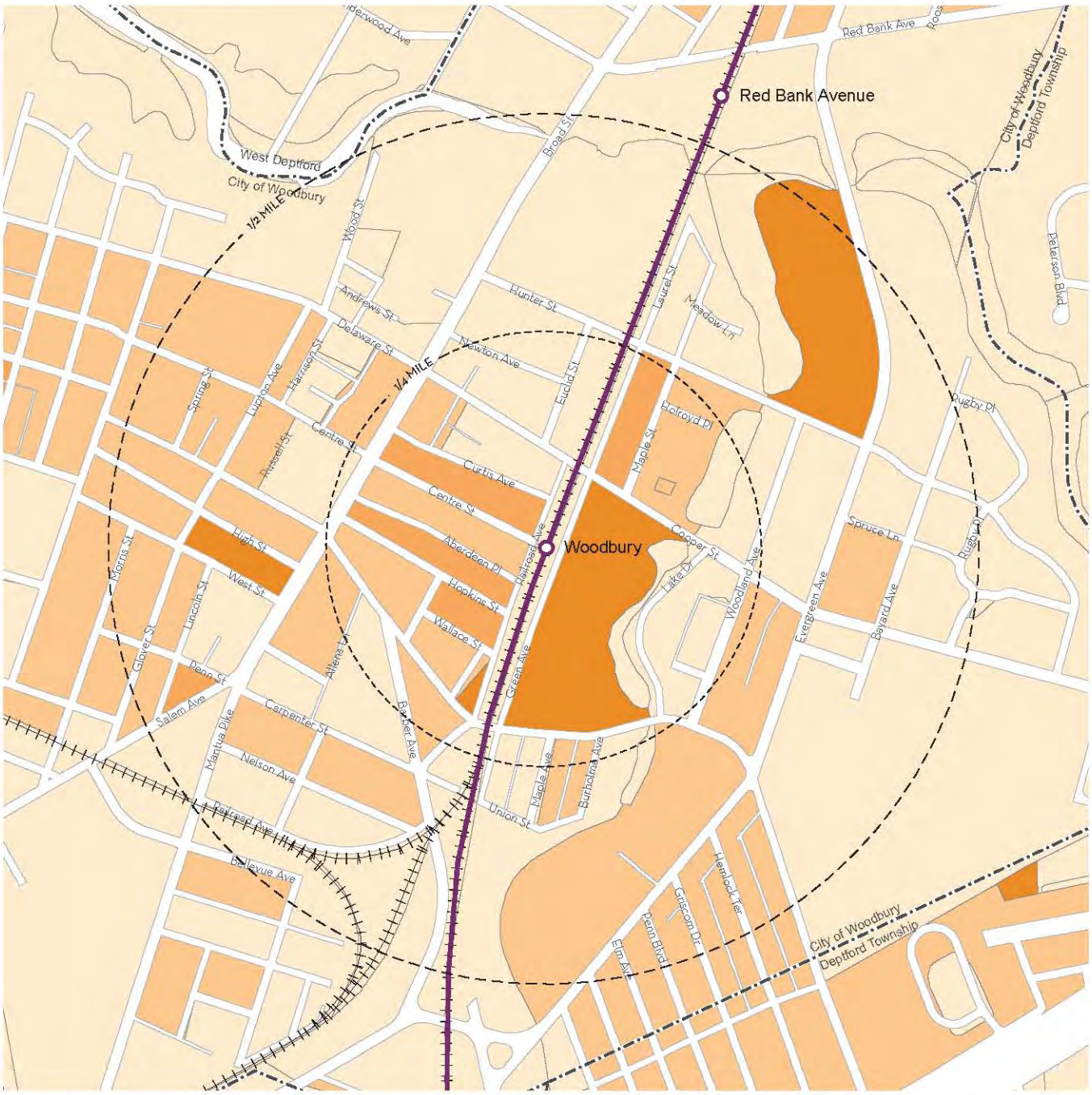
center located near the station (see Community Assets Map). The high concentration of a population that tends to have mobility limitations and limited access to personal vehicles will demand that efforts to expand transit must include strategies to expand services to a wide range of age groups.



The proposed Woodbury station is well located to provide transit access to a number of community assets. Two public schools are within a 1/2-mile radius of the station. So too is the Duran Academy, a private institution that provides learning opportunities to individuals with pervasive development disorders. Moreover, the immediate proximity of the Three Woodbury Mews nursing home may be an excellent opportunity to provide transit access to the elderly, an issue raised in the Environmental Justice section of this chapter. Finally, the County Justice Complex, which is also home to administrative services, is just over 1/4-mile away from the proposed station.

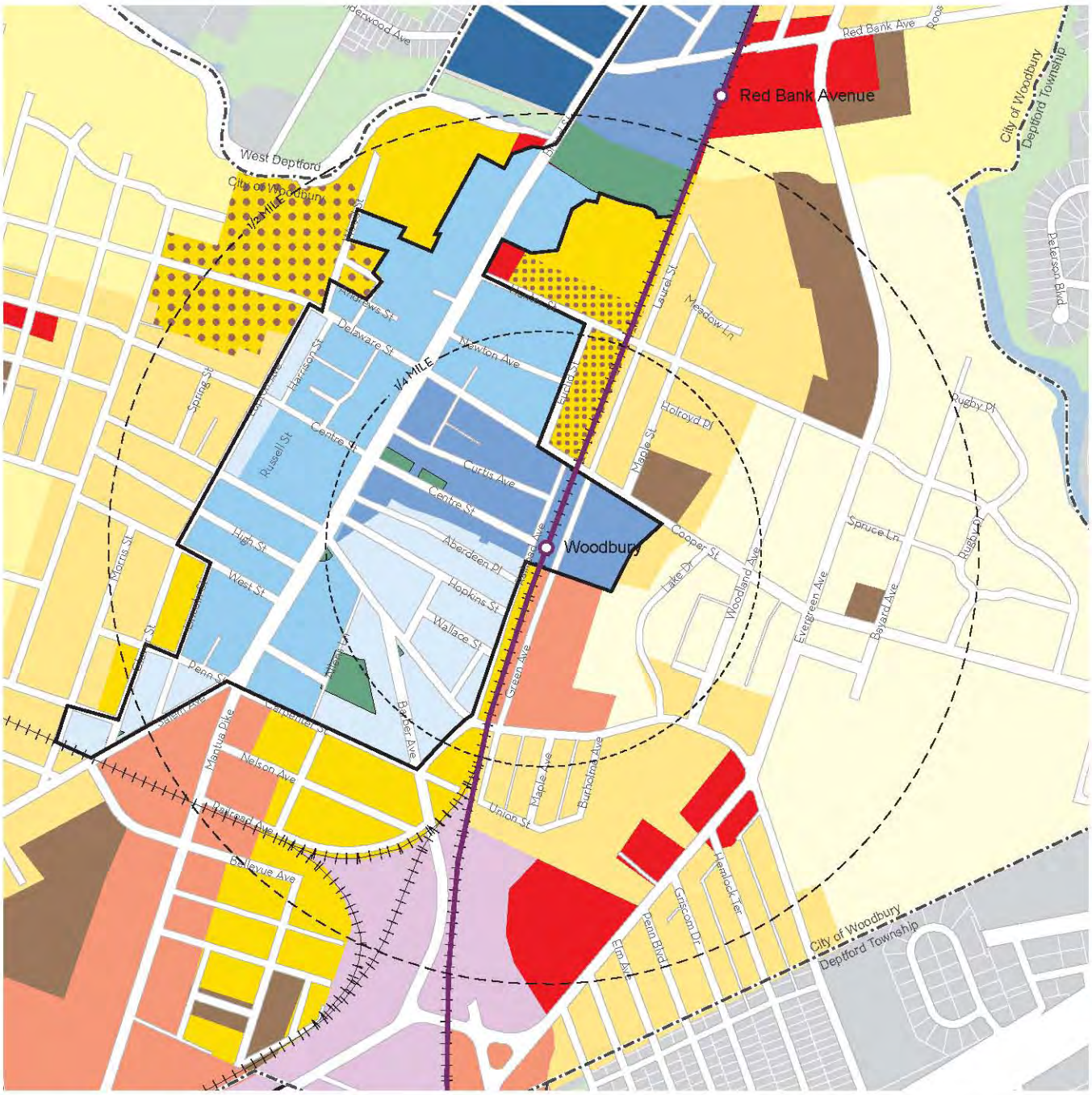
Relative to other station areas, the Woodbury Study Area has strong transit access. The area is serviced by NJTransit Bus Routes 401, 402, 410, and 412 that run north-south (terminating in Camden). NJTransit Bus Route 455 starts in Woodbury and runs to the Cherry Hill Mall, while Route 463 starts in Woodbury and runs to the Avondale park-n-ride. The American Community Survey estimates that in 2000 approximately 12% of residents of the block group that contains the proposed station took transit to work. This is significantly higher than 2.5%, the mean for the County as a whole. Moreover, a wide demographic of local residents will most likely see the benefit of rail expansion. According to the 2005-2010 ACS, of those who took transit to work in the study area, professionals represented 39% of riders, service employees represented 40%, and production employees represented 20%.

The Woodbury Business District is a commercial corridor that extends along South Broad Street. This stretch is home to many government uses that service both the municipality and the County (many within a 1/2 mile of the station). As discussed in the Density section, the Woodbury Study Area will most likely require a park-n-ride station since housing density is not sufficient to support walk-up service. However, the passenger traffic generated by this commercial center should make Woodbury a sub-regional destination. Thus planning efforts that focus on streetscaping and wayfinding that connect the station to the CBD will most likely improve access to jobs and government services while activating the station area.

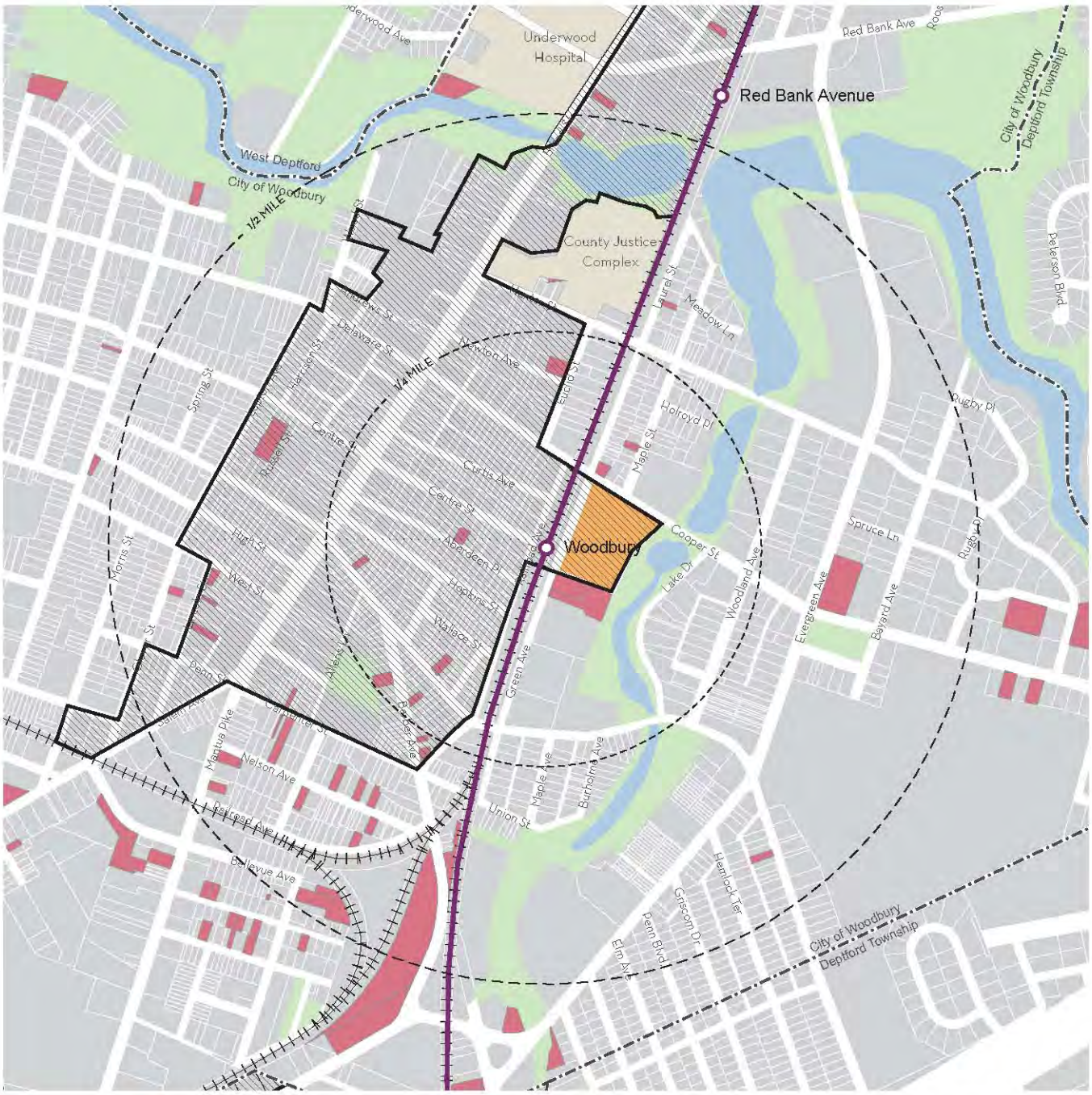


Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. There are blocks within the study area that have more than 9 housing units per acre, the threshold for light rail service.* Additionally, the study area has approximately 5,000 residents, a reasonable size population to support TODs. However, the 1/2-mile study area as a whole only has an average of 2.68 housing units per acre, a density that would suggest the need for a park-n-ride station. Thus, the community should consider adding more residential units with access to the station to encourage walk up service, providing park-n-ride options near the station, and/or facilitating transit services that feed the light rail station.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Current zoning in Woodbury allows for a mix of commercial, professional, and residential development within close proximity to the proposed station. The area to the East of the rail line is zoned for lower densities, which may limit future development opportunities in that area. However, in 2010 the City of Woodbury adopted a Redevelopment Plan and corresponding Form-Based Code. This code created different Transects that regulate both use and building form. For the Woodbury Study Area, the code will allow for higher density and more mixed uses, both of which are highly supportive of transit expansion.



Source: New Jersey MOD - IV Property Assessment Records

Major sections of the Woodbury Study Area are currently within the Woodbury Redevelopment Area. The plan envisions increased activity along South Broad, and redevelopment near the proposed station. To support this objective, the Downtown Transect is dense and consists of mixed-use buildings up to five stories in height. Such zoning is highly conducive to expanded transit service and will establish stronger pedestrian connections between the station and the County Justice Complex, Underwood Hospital, and the City's central business and civic center.

Environmental Justice

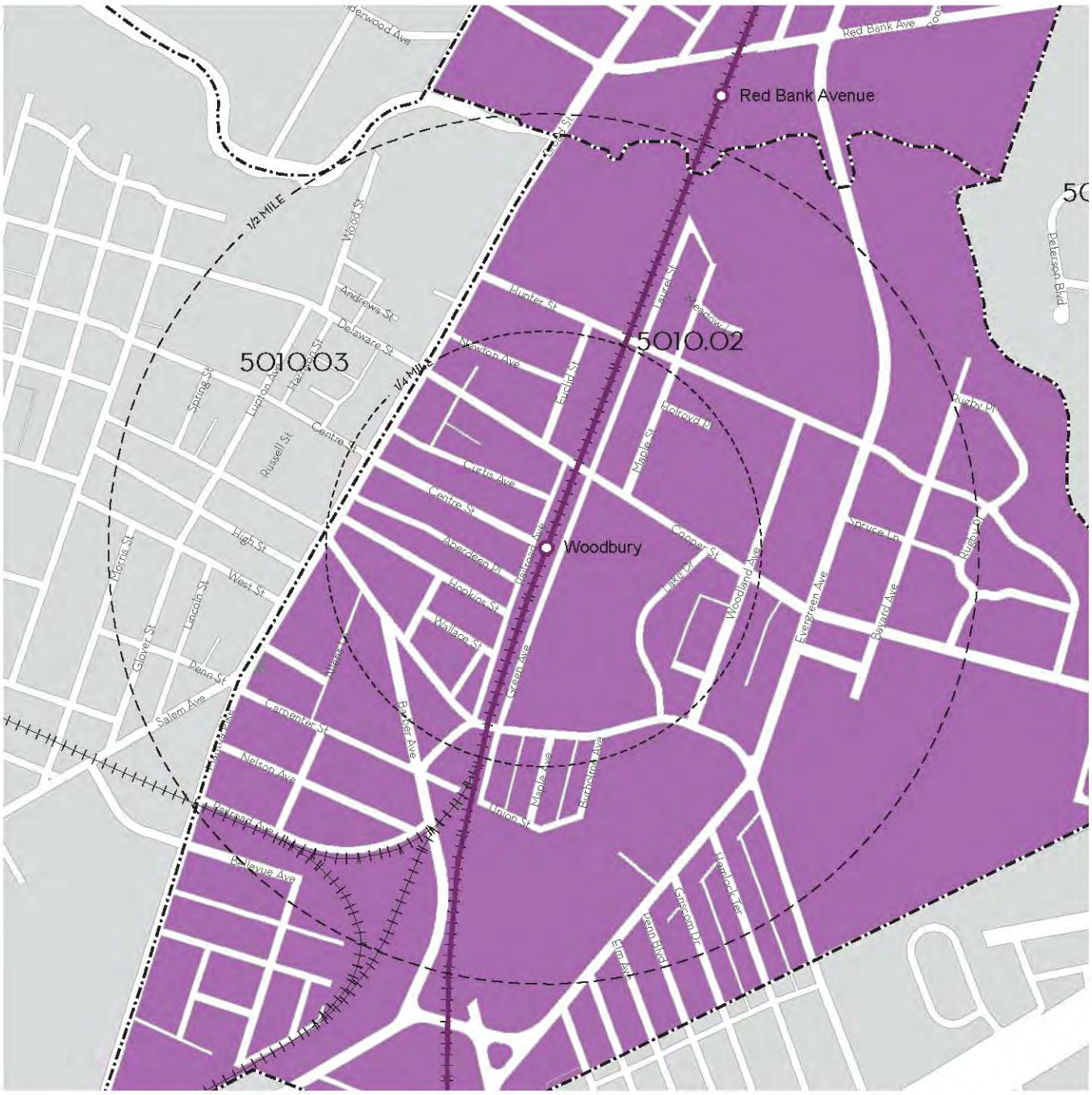
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 3.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5010.03	Census Tract 5010.02
non-Hispanic minority	24.9%	16.0%	39.4%
carless households	16.0%	12.9%	28.9%
households in poverty	10.9%	6.8%	22.7%
persons with a physical disability	7.7%	8.0%	8.1%
female head of household with child	7.4%	8.7%	16.3%
Hispanic	5.4%	2.9%	3.2%
elderly	6.6%	6.0%	12.7%
limited English proficiency	2.4%	1.8%	1.2%

Source: DVRPC



The Woodbury Study Area intersects two census tracts as displayed on in the Environmental Justice Map. The proposed Woodbury station is located within one of the few census tracts in this study that received a DOD rating above 5. The high concentration of carless households and elderly citizens highlights the need to play close attention to non-automotive connections when evaluating future development. This is further reinforced by the high concentrations of low-income and disabled populations who are often transit dependent. As the planning process continues, the town would be well advised to pay close attention to these populations to insure they have an equal and fair opportunity to meet their daily mobility needs.

water | 100 year flood plain | 500 year flood plain | wetlands

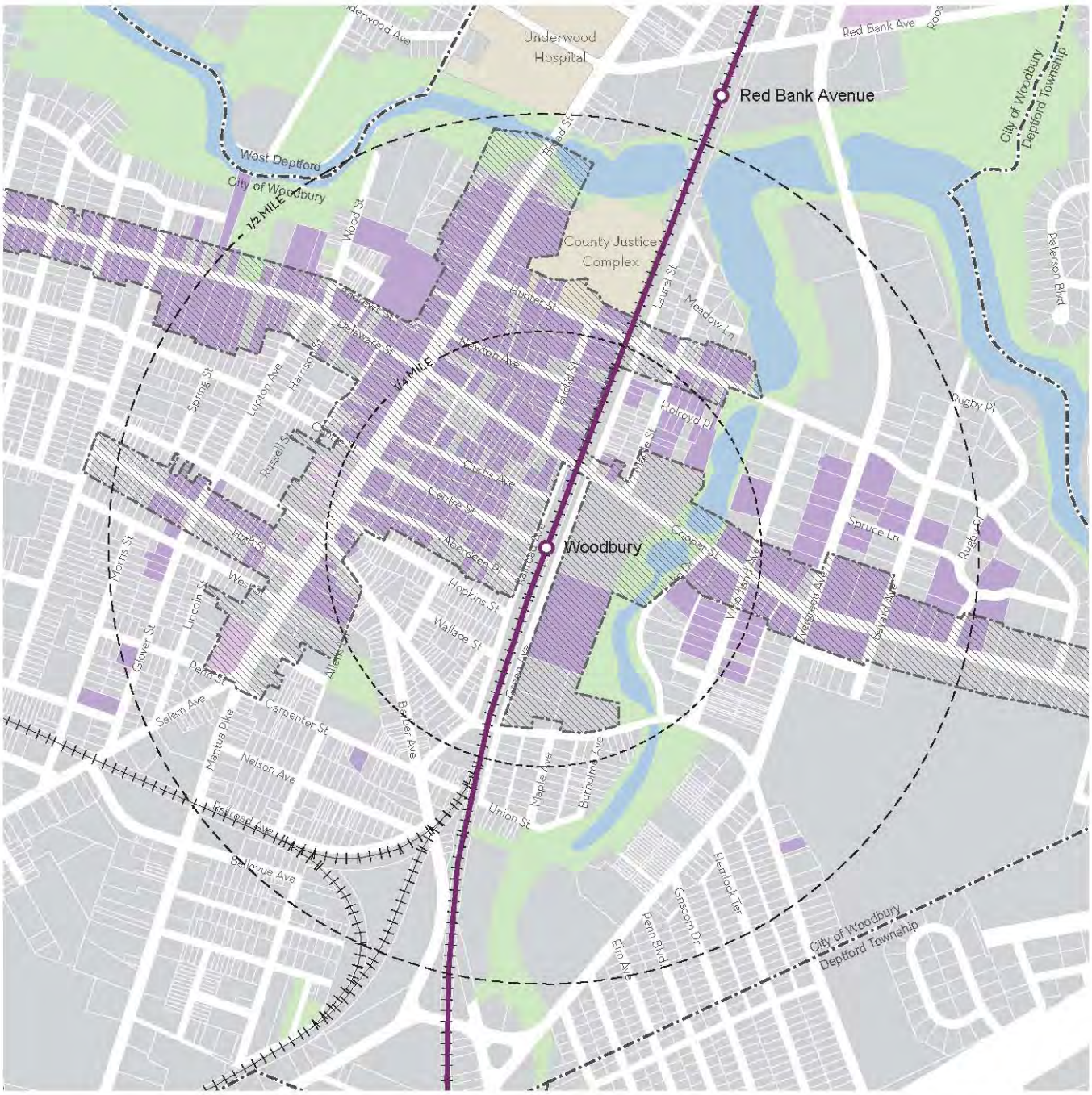
open space | golf course | natural heritage site | permanently preserved open space

known contaminated sites

1,000 ft

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The area around the proposed Woodbury station does not contain a significant number of contaminated sites, nor is there a threat that the station will flood. Station adjacent land that lies within this flood plain is currently owned by a government agency and set aside for open space. As such, it is unlikely that any future development would begin to encroach onto this land.



Source: Gloucester County Cultural Resource Survey

As the above map demonstrates, the station lies on the edge of a major historic district. According to the municipality, all proposed exterior changes and alterations to a property located within the district must be reviewed by the City's Historic Preservation Commission and approved by the City's Planning Board. Although the station is not in this district, all adjacent parcels are, and development that is spurred by transit expansion may have to abide by these requirements.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 3.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

As the Woodbury's Redevelopment Area plan demonstrates, there is ample opportunity for more mixed-use development adjacent to the station and for improving connections between South Broad and the station. However, few of these parcels currently sit vacant and it is unclear if there would be major obstacles to acquiring this land for purposes of Redevelopment.

Land Uses in the area is somewhat supportive of TOD, with a major activity center located just over a 1/4-mile of the station. The residential blocks located directly adjacent to the station have the unit density necessary to support walk-up service while Three Woodbury Mews senior living center provides close transit access for elderly residents. However, overall unit density in the Study Area is not strong enough to support primarily walk-up ridership and pedestrian connection between the downtown and the station could be improved.

Market and Policy Factors

The designation of major areas around the station as Redevelopment Areas provides the City of Woodbury the power and opportunity to make major investments to support rail. Moreover, the Redevelopment Plan is designed with transit expansion in mind.

There has been significant public investment in the area. Pedestrian improvements include a plan for three lit crosswalks at pedestrian crossings and sections of a bike trail are being planned along the Creek and Lake system. Moreover, the City is exploring the creation of a Parking Authority to bring the management and creation of parking under one authority. Finally, NJDOT is currently working on a re-channelization of Broad Street to reduce travel to one direction in each way with a center turn lane and bike lanes on either side. There has also been moderate development pressure in the area including the redevelopment of the GG Green Building on South Broad as a possible affordable senior housing project.

Figure 3.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	**2**
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	**1**
	Infrastructure	Adequate sewer and water infrastructure are already in place.	**1**
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	**1**
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	**2**
	Supportive Density*	Current or planned residential employment density is sufficient to generate significant transit ridership and support local retail.	**2**
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	**2**
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	**3**
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	**2**
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	**2**
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	**2**
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	**1**
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	**1**
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	**1**

Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

4 Woodbury Heights

Woodbury Heights, NJ

Overview

The proposed station in Woodbury Heights is well located to provide transit access to a number of community amenities. Moreover, Woodbury Heights has taken the step to declare many parcels within the study area as Areas in Need of Redevelopment. This will give the Township a number of tools to guide development so it both benefits from and supports transit expansion.

Nonetheless, the current zoning code only allows for single-family housing units, commercial structures are not allowed to occupy more than 50% of a lot, and existing residential density is not sufficient to support walk-up service. As a result, the station will most likely require a park-n-ride amenity, although it is not immediately apparent where it would be located.

Since Woodbury Heights is a walking school district, the community has expressed concern that kids would be walking across the tracks in the mornings and afternoons for school. This is worth investigating, since a safer crossing will increase pedestrian activity and improve connections to the station.

The community has identified the most immediate opportunity for (re) development as the large vacant industrial parcel next to the rail line, known as the MAMCO site. This area was previously slated for an age-restricted residential development. The developer has since determined that the plan is no longer viable and filed a builder's remedy suit to pursue a change in uses allowed on the site. The developer and the Borough are currently in negotiations to allow for a mix of market-rate and affordable multi-family residential units. It would be prudent to examine how this development will both capitalize on and support transit expansion.

water open space major county employers

1,000 ft

Source: Gloucester County

The proposed Woodbury Heights station and the 1/2-mile radius that constitutes its study Area is located primarily in the Borough of Woodbury Heights. However, portions of the Woodbury Heights Study Area fall within Deptford Township.

Community Form: Civic/Institutional





Industrial / Redevelopment

The Woodbury Heights Study Area has only a few civic and community buildings. These buildings are one and two story structures that vary in architectural style. The district does have two large industrial parcels, one of which currently sits vacant (both shown above). The vacant parcel sits behind a heavily vegetated buffer and is located adjacent to the rail lines.

Community Form: Commercial






Commercial buildings in the Woodbury Heights Study Area lie principally on Woodbury-Glassboro Road (see Land Use). These buildings have an auto orientation, with parking separating buildings from the street, large signage oriented perpendicular to the street, and grass only buffers between street and sidewalk. These buildings do not tend to exceed one story.

Community Form: Residential






Almost all residential units in the study area are single-family homes. Architecture varies, but buildings tend to be one or two stories, with large landscaped setbacks (grass), and off-street parking.

Community Form: Open Space





The study area counts on a few active and passive open spaces. Veterans Park runs parallel to the train tracks and includes a memorial. The playground is located on the grounds of the elementary school.

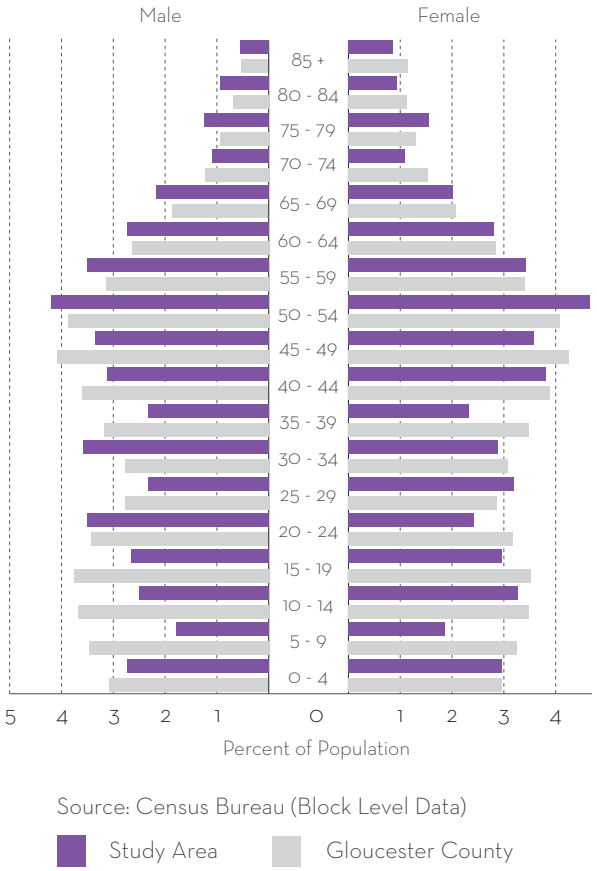
Demographics

The majority of Woodbury Heights Study Area residents lived in either 1- or 2-person households and more than 91% lived in a home that they owned. Census Tract 5009 is the one that best overlaps with the study area. The averaged mean median household income from 2005 to 2010 for that census tract was $80,411, which is well above the median of $70,514 for the County. Moreover, because the mean income ($90,687) for that tract exceeds the median, we can assume there are some very high-income earners in the study area.

From 2000 to 2010, the study area saw a 2 percent gain in its population. Along with this population gain, there was also a slight decrease in the average household size and a small decrease in the proportion (but not number) of households that owned their own home.

The population pyramid for this study area reveals important data regarding transit expansion. Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 4.a: Population Pyramid



In the case of Woodbury Heights Study Area, the population pyramid reveals a high proportion of men and women between the ages of 50 and 69. If this population stays in the area, within 10 years the study area will be home to a high proportion of people who typically experience mobility issues. Thus there may be an opportunity to use rail expansion as a means of increasing transit access for the elderly.

The population pyramid also reveals that the Woodbury Heights Study Area has a low proportion of men and women below the age of 30. Typically, a population pyramid of this shape indicates a shrinking population that will not maintain itself unless new residents move into the area. Thus, there may be opportunities to expand the residential base through (re)development associated with transit expansion.

Figure 4.b:Demographic Data

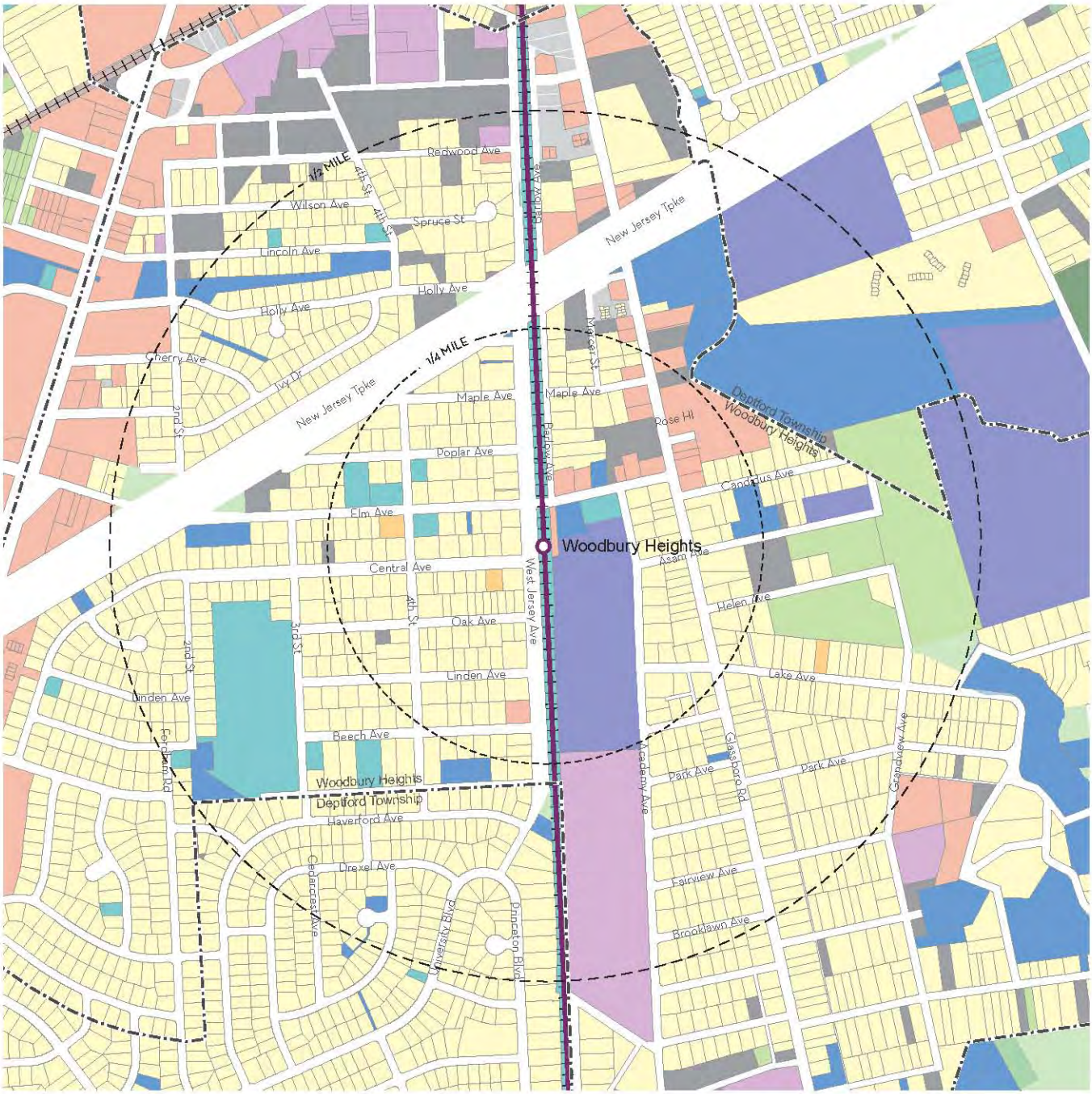
		2000	2010
Population	Total Population	2,940	3,001
Race	White alone	2,790 (95%)	2,746 (92%)
	Black or African American	71 (2%)	122 (4%)
	American Indian and Alaska Native	11 (0%)	13 (0%)
	Asian	36 (1%)	57 (2%)
	Native Hawaiian and Pacific Islander	0 (0%)	1 (0%)
	Some other race	14 (0%)	7 (0%)
	Population of two races	18 (1%)	52 (2%)
Hispanic / Latino	Hispanic Population	0 (0%)	87 (2%)
Household Size	1-person household	161 (16%)	204 (19%)
	2-person household	305 (31%)	327 (31%)
	3-person household	196 (20%)	216 (20%)
	4-person household	196 (20%)	175 (16%)
	5-person household	93 (9%)	92 (9%)
	6-person household	38 (4%)	34 (3%)
	7 or more person household	11 (1%)	16 (2%)
	Average Household Size	2.9	2.8
Housing Tenure	Owner	927 (93%)	971 (91%)
	Renter	73 (7%)	93 (9%)

Source: Census Bureau (Block Level Data)

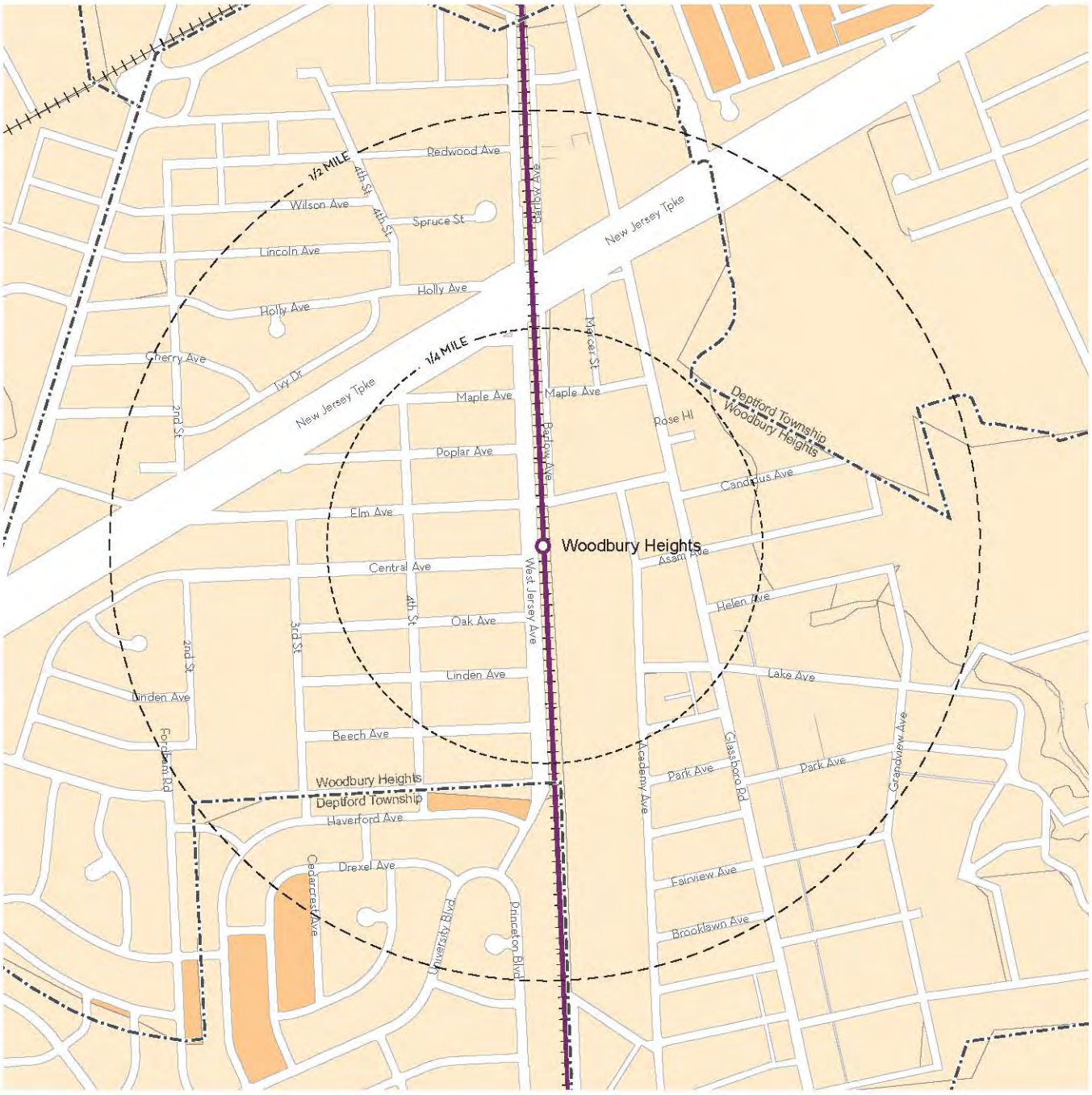
The proposed station would provide excellent transit access within 1/4-mile to the few community services in the area. Moreover, the proposed station would provide transit service within 1/2-mile of the Gateway Regional High School, an institution that allows non-residents to attend. Thus, some students may find increased transit access as a result of rail expansion.

Source: 2000 American Community Survey, NJ Transit

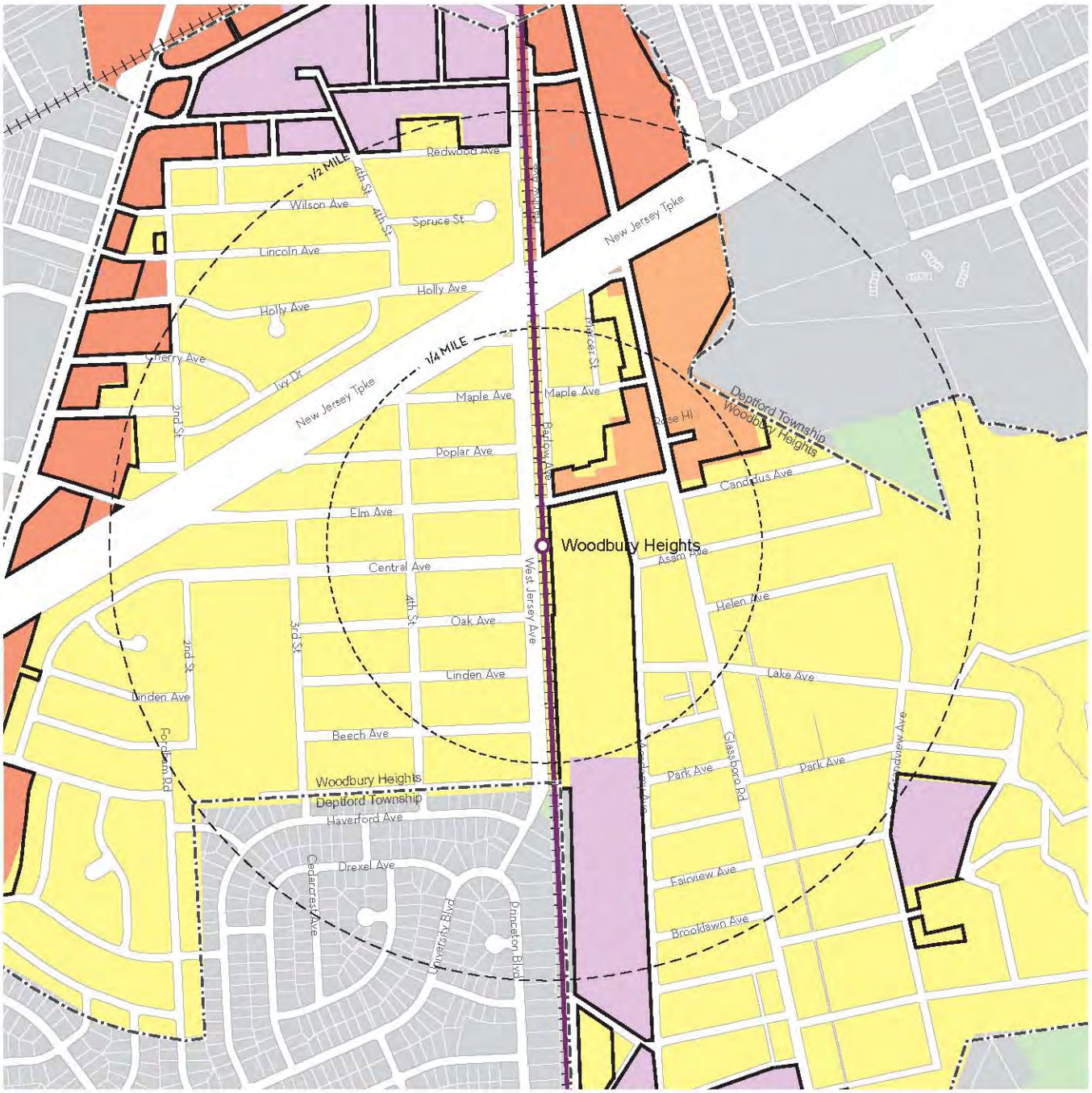
The Woodbury Heights Study Area has limited transit service. NJTransit's Route 412 is the only bus that services the area, which may explain the low level of transit trips-to-work. Improved transit service to the area may help to induce further transit ridership. However, park-n-ride facilities, residential development near the station, and improved local transit connections may be needed to expand the market area for transit use and increase the proportion of residents who take transit to work.



The majority of land in the Woodbury Heights Study Area is dedicated to single-family homes. Commercial development is principally located on Glassboro Road. However, there is a large industrial parcel near the rail station that currently sits vacant. This parcel provides the largest opportunity for redevelopment and may be a good location for higher density residential units and possibly some pedestrian-oriented local servicing retail. It might also be worth investigating whether moving the station so that it is adjacent to this site would induce it's redevelopment.

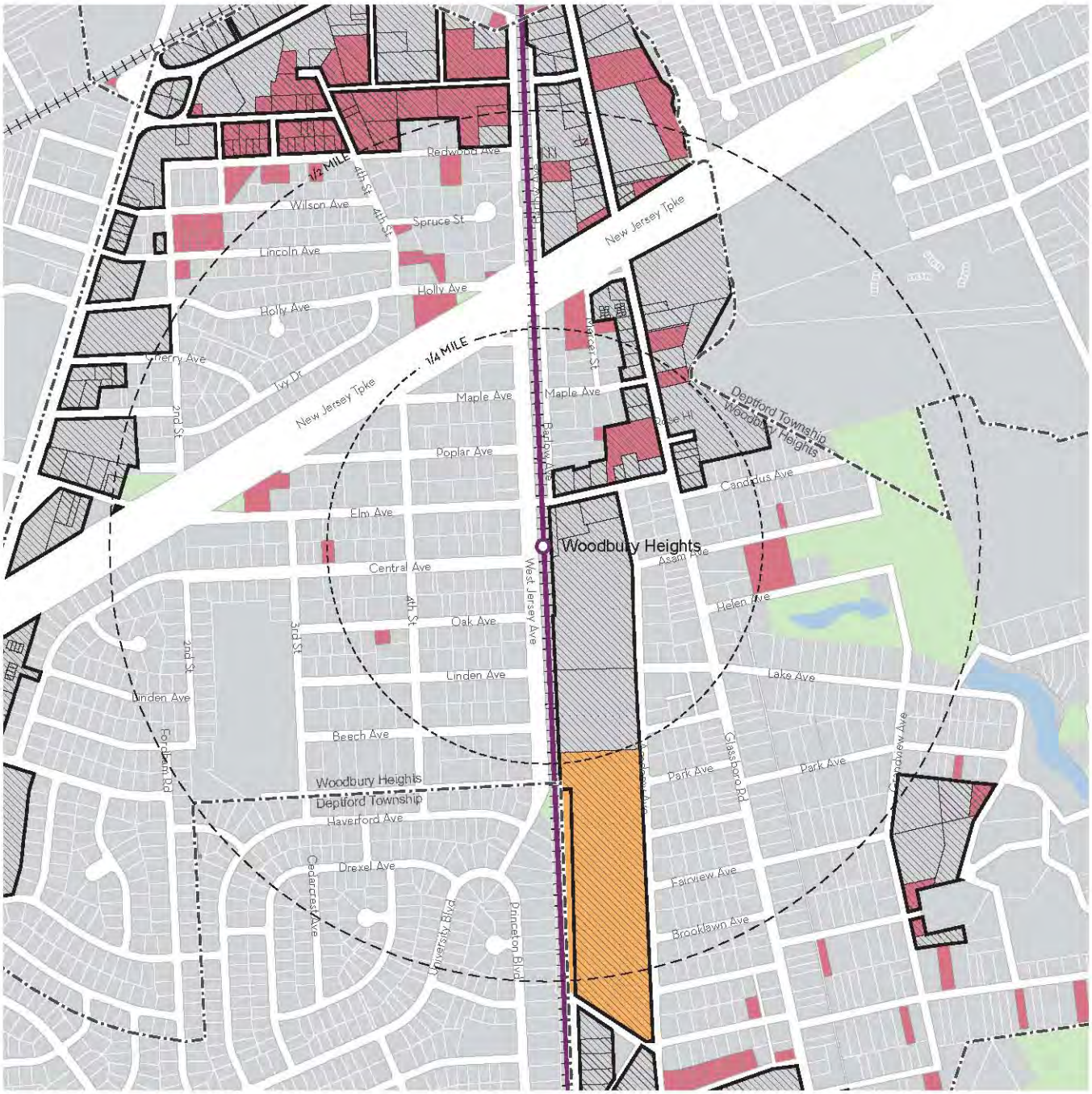


Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. In the case of the Woodbury Heights Study Area, average housing unit density falls below 9 units per acre, and it is likely that a park-n-ride facility to will be needed to facilitate ridership.



Source: Woodbury Heights

Current residential zoning in Woodbury Heights only allows for single-family detached structures on 9,000 square foot lots, a type of zoning that is not conducive to transit use. Furthermore, commercial buildings are limited to 50% of the lot, regardless of whether they fall in Highway Commercial or Community Commercial zones. Finally, the code does not allow for mixed-use development within the community. If these zoning regulations persist in the area around the station, they will make transit-oriented development that supports walk-up ridership difficult to achieve.



vacant land | community identified development opportunities | Area in Need of Redevelopment

1,000 ft

Source: New Jersey MOD - IV Property Assessment Records

In 2000, the Woodbury Heights adopted a resolution declaring a number of the properties within the study area as Areas in Need of Redevelopment. This area includes many vacant parcels as well as a vacant industrial site identified as an opportunity by the community. This designation gives Woodbury Heights a wide range of powers that will significantly improve its ability to capitalize on transit expansion. However, the municipality might benefit from a more extensive plan for redevelopment that includes zoning code updates and specific recommendation to address the upcoming transit line.

Environmental Justice

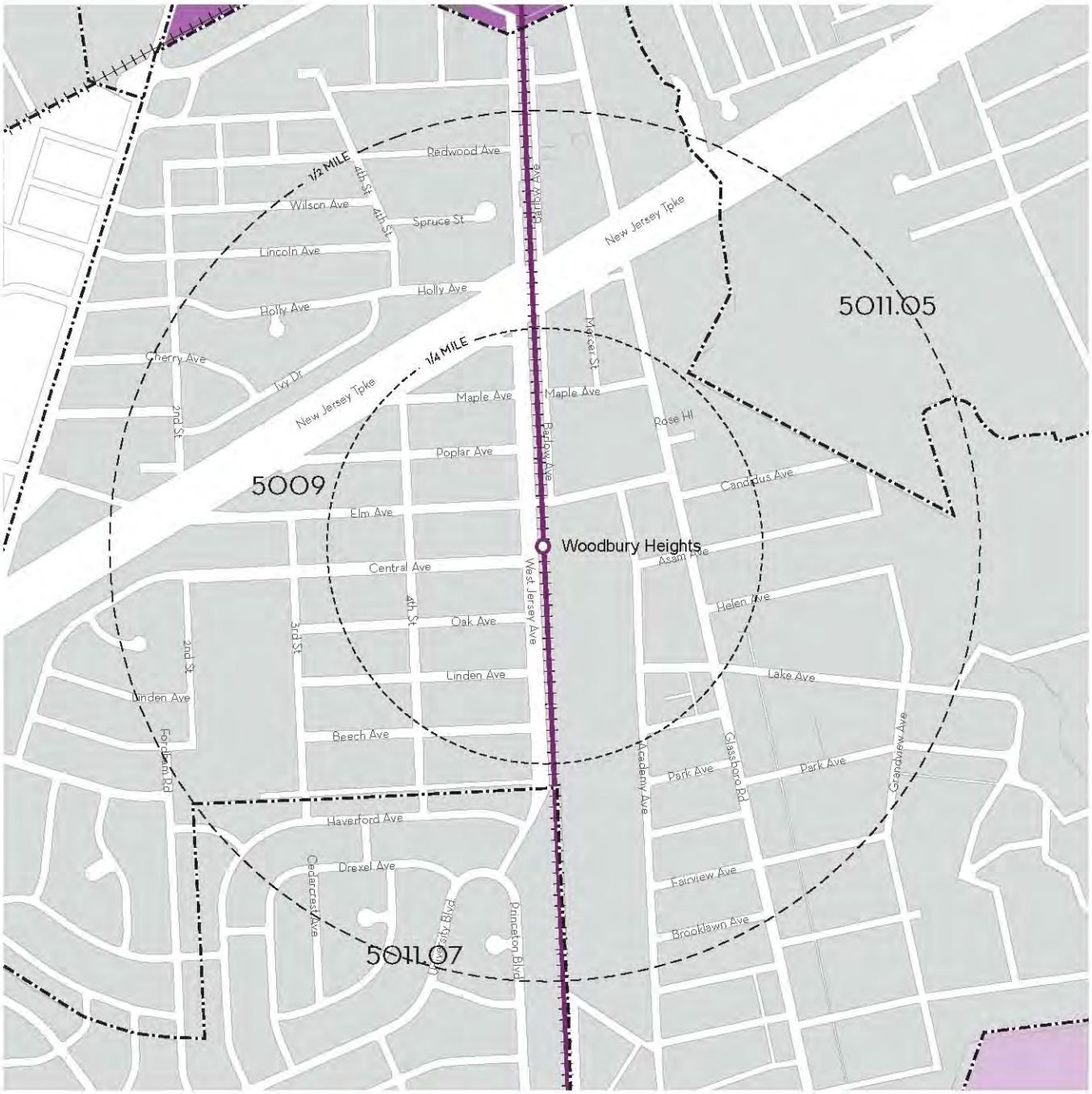
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 4.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5009
non-Hispanic minority	24.9%	3.7%
carless households	16.0%	2.9%
households in poverty	10.9%	4.3%
persons with a physical disability	7.7%	8.0%
female head of household with child	7.4%	2.9%
Hispanic	5.4%	0.6%
elderly	6.6%	5.0%
limited English proficiency	2.4%	0.2%

Source: DVRPC

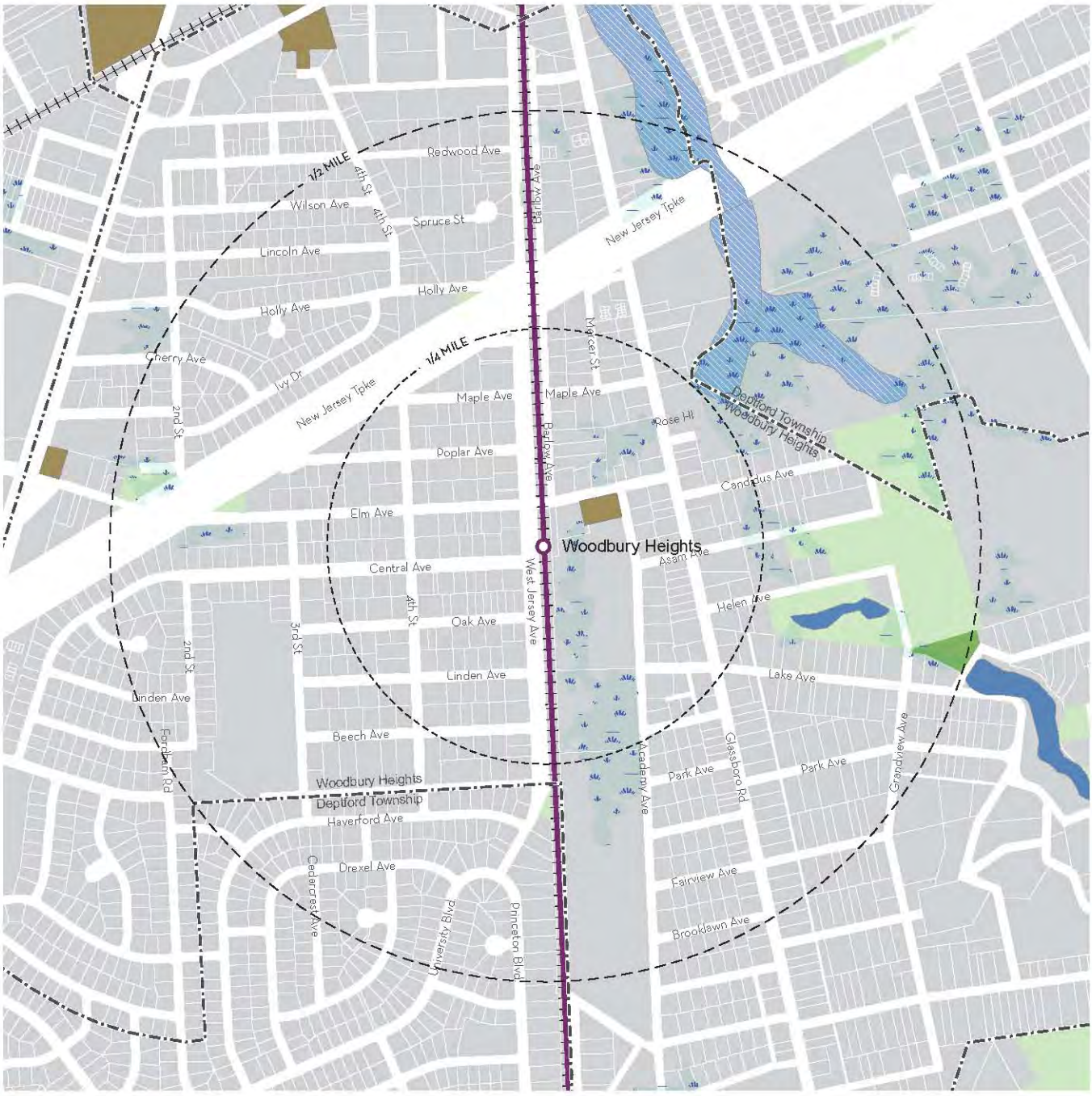


Degrees of Disadvantage: 0 | 1-2 | 3-4 | 5-6 | 7-8

1,000 ft

Source: DVRPC

The Woodbury Heights Study Area does not have a high proportion of historically disadvantage populations. Persons with a physical disability were the only population that exceeded regional thresholds. Efforts to expand rail into this area should work with the community to ensure that this group will be able to enjoy the benefits of transit expansion.



Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The proposed station location is adjacent to both a wetlands and a contaminated site. The industrial parcels identified as a redevelopment opportunity by the community are not identified as contaminated but does overlap with a wetland.

Listed Historic Buildings Eligible Historic Buildings Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

There are no historical buildings or monuments that would affect (re)development opportunities in the study area.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 4.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The Woodbury Heights Study Area contains a number of vacant parcels that could be improved as the result of transit expansion, although most of these parcels are more than 1/4-mile away from the proposed station. As located, the proposed station would provide strong access to existing amenities. There are no major constraints to accessing the site.

Current land use patterns indicate that the station will require a park-n-ride facility. However, it is not immediately clear where such facility might be located. There is some parking near the proposed station, currently used by those accessing the municipal building. However, it seems unlikely that this lot has a sufficient number of spaces to serve both the municipal building and the station.

Market and Policy Factors

Current zoning prohibits many of the residential and commercial building types that are needed to make transit-oriented development projects successful. However, with the designation of some parcels as Areas in Need of Rehabilitation, the Township has a number of tools that can help encourage such development. The next step may be a more detailed plan for that area that will adjust zoning and make specific recommendations for how new development can both benefit from and support transit expansion.

The large vacant parcel to the south of the station area, known as the MAMCO site, was previously slated for an age-restricted residential development. The developer has since determined that the plan is no longer viable and filed a builder's remedy suit to pursue a change in uses allowed on the site. The developer and the Borough are currently in negotiations to allow for a mix of market-rate and affordable multi-family residential units.

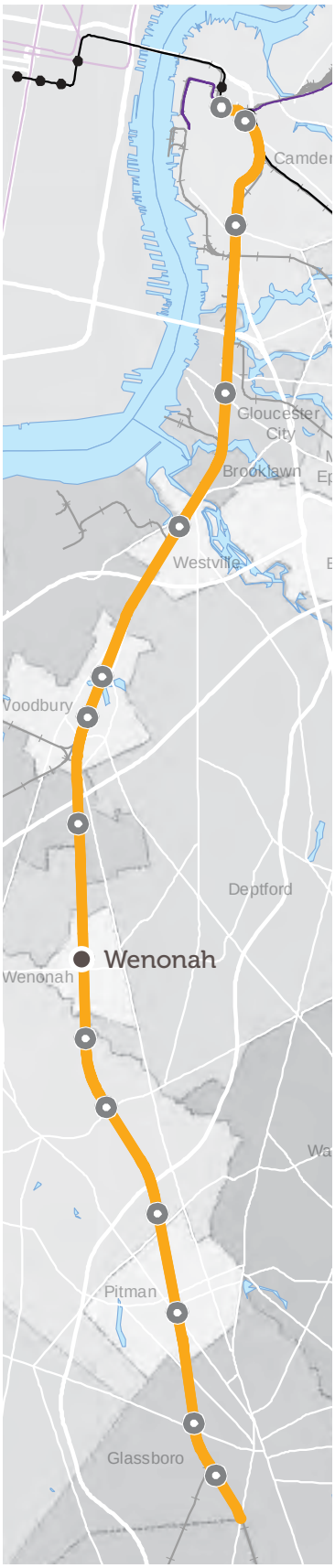
Figure 4.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	1
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	3
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	3
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	3
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	2
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	3
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	2
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	2
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

5 Wenonah

Borough of Wenonah, NJ



Overview

The greatest strength of the Wenonah area is its historic town center where the station is currently proposed. As the 1998 Master Plan notes, historically the town center was the area where residents accessed commercial enterprises that made living in Wenonah on a day-to-day basis possible. Essentially this was the location of the Borough's local serving retail. When residents required more-than-daily necessities, they would commute to Woodbury, Camden, and Philadelphia because they were accessible by train and carriage.

As a result, the Borough's greatest opportunity lies in reinforcing this historical condition by capitalizing on transit expansion to expand local serving retail in the town center. This may require an updated Master Plan or rezoning, as those areas depicted as Commercial Areas in the land use plan are limited to those parcels that had commercial spaces in 1998.

If the Borough undertakes planning efforts to capitalize on and support transit expansion, it may also want to focus efforts on how to improve pedestrian/bike connections to transit. The low-density, landscaped character of the study area means that many residents could enjoy a safe walk or bike through much of the area. As such, minor pedestrian and bike connections near the station and along major rights-of-way may result in increased numbers of transit riders.

The Wenonah station falls within the Borough of Wenonah, as does the majority of the Wenonah Study Area.

Community Form: Civic/Institutional






There are few cultural and civic institutions in the Wenonah Study Area. These buildings tend to be between one and two stories with stone or brick facades. They generally have entrances that front the street, landscaped building setbacks with grass and trees, and on-street parking.

Community Form: Commercial






Commercial buildings in the area tend to be pedestrian-oriented structures: buildings are built to the property line, have large shop windows, entrances that face the street, and on-street parking.

Community Form: Residential






Single-family homes are the predominant building type in the study area. Most buildings that house more than one unit were converted from single-family homes during the Depression. A few houses that were originally built as single-family attached can found within a two-block radius of the town center. Single-family homes tend to fall into two types: (1) large homes built on a sizable lot with off-street parking and a large landscaped (grass) setback, or (2) modest single-family unit with a smaller landscaped (grass) setback that may not have off-street parking.

Community Form: Open Space





The study area encompasses a number of active and passive recreational spaces. Along with a baseball diamond, the Township has a green buffer that runs along its western and southern edges.

Demographics

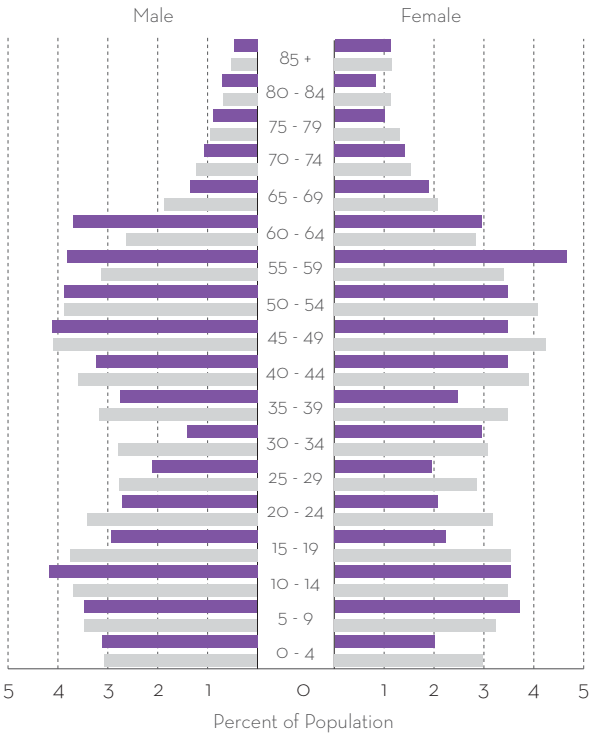
The Wenonah Study Area is comprised primarily of households that own the home in which they live. Almost 70% of households have between 2 and 4 people living in them. Like many station areas in this report, there was a significant increase in the number of Hispanic/Latino residents between 2000 and 2010, although the proportion of all racial groups remained constant.

With a median household income of $103,403, the study area had one of the highest averaged median household incomes from 2005 to 2010 in this study. Moreover, the averaged mean household income for that same period was $129,874, indicating that there were some households that earn enough to positively skew the median more than $20,000.

Between 2000 and 2010, the study area lost approximately 27 residents (less than 1%). Mean household size remained static as did the proportion of all household sizes.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 5.a: Population Pyramid



The Wenonah Study Area has a high proportion of residents over the age of 45. There is also an exceptionally high proportion of men and women between the age of 55 and 60. Finally, the population pyramid tightens significantly for both men and women between the ages of 15 and 35.

Some of this may be explained by the cost of housing in Wenonah, which may only allow older, more financially established families to purchase homes. The low proportion of people between the ages of 15 and 35 may be explained by the fact that children who grow up in the area move out to go to college or enter the work force. Finally, the significant drop in the proportion of residents beginning at age 65 may be explained by parents selling their homes once their children have moved away and locating in areas that better meet their needs as they move into retirement.

Figure 5.b:Demographic Data

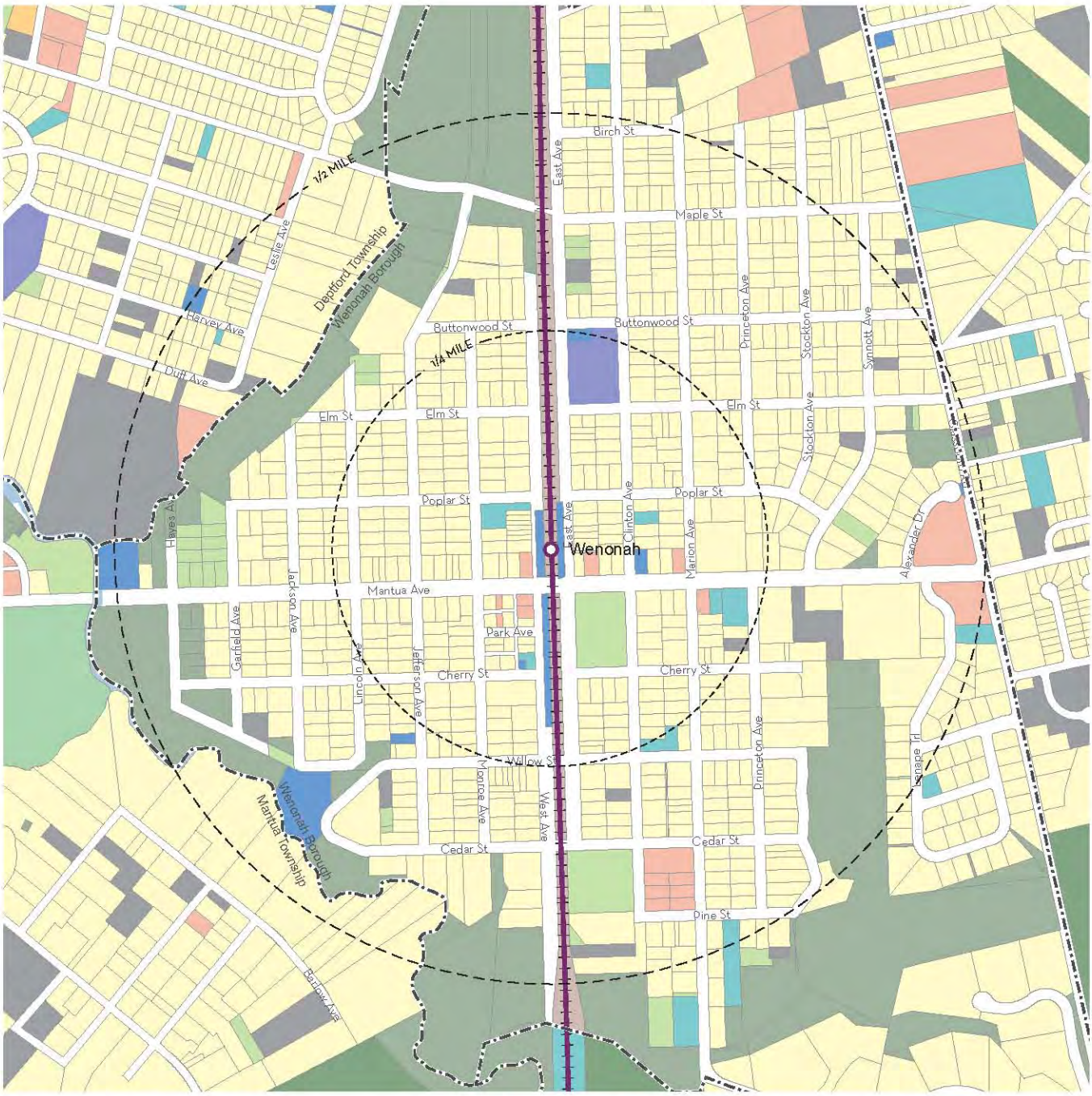
		2000	2010
Population	Total Population	3,307	3,280
Race	White alone	3,082 (93%)	2,978 (91%)
	Black or African American	180 (5%)	207 (6%)
	American Indian and Alaska Native	1 (0%)	2 (0%)
	Asian	22 (1%)	28 (1%)
	Native Hawaiian and Pacific Islander	0 (0%)	1 (0%)
	Some other race	2 (0%)	13 (0%)
	Population of two races	20 (1%)	51 (2%)
Hispanic / Latino	Hispanic Population	22 (1%)	188 (6%)
Household Size	1-person household	233 (20%)	240 (20%)
	2-person household	397 (33%)	401 (34%)
	3-person household	221 (19%)	204 (17%)
	4-person household	197 (17%)	210 (18%)
	5-person household	103 (9%)	94 (8%)
	6-person household	32 (3%)	33 (3%)
	7 or more person household	10 (1%)	10 (1%)
	Average Household Size	2.8	2.8
Housing Tenure	Owner	1,044 (88%)	1,061 (89%)
	Renter	149 (12%)	131 (11%)

Source: Census Bureau (Block Level Data)

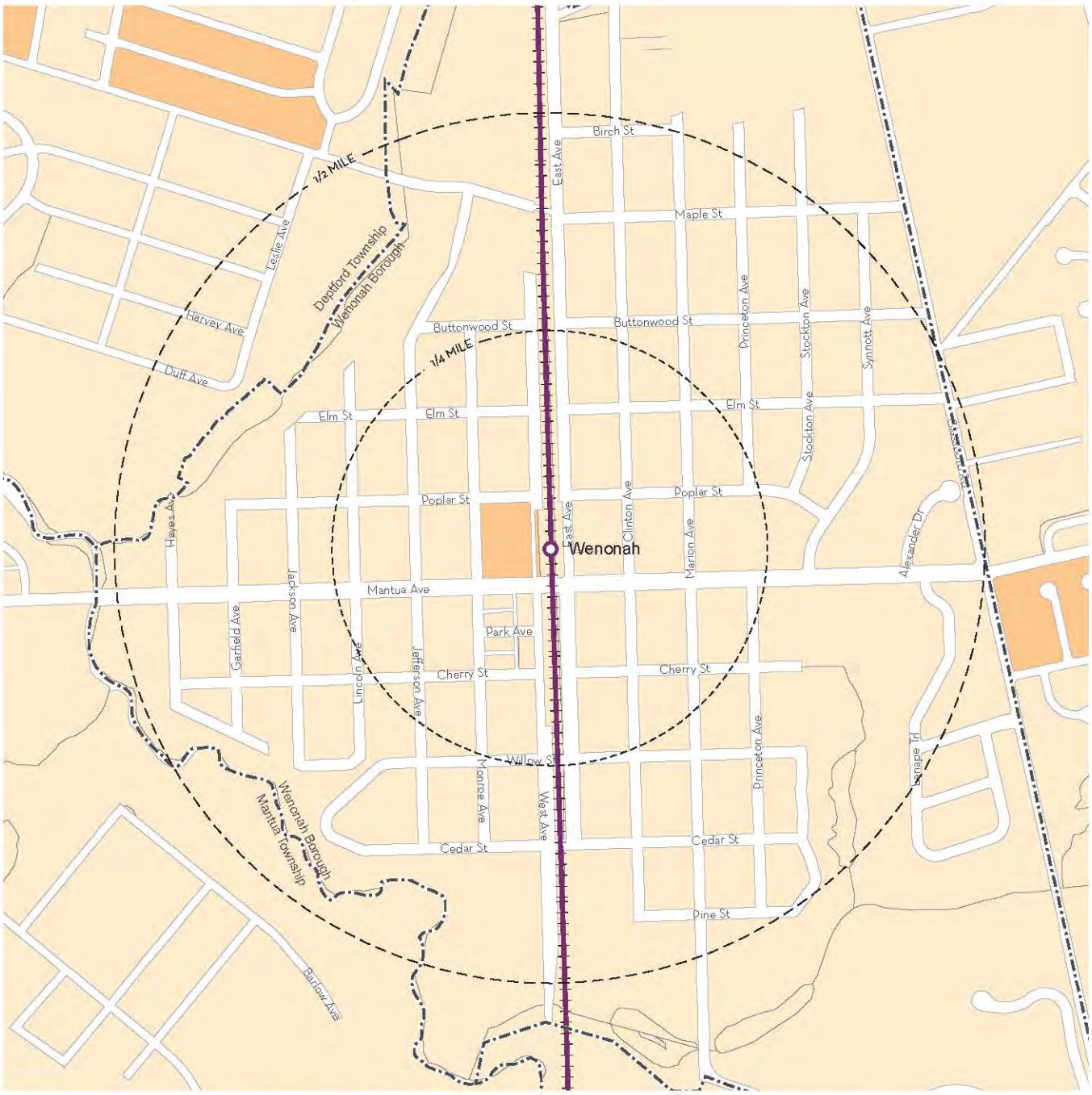
Given this, it would be prudent to investigate whether residents between the ages of 55 and 65 will stay in the study area. If they do, there may be increased demand to serve a larger percentage of the population that confronts mobility issues associated with aging. Likewise, it may be worth investigating the reasons why people between the ages 15 and 35 are under-represented in the area, and whether transit expansion will create demand for housing options for young-adults who are attracted by expanded transit options but who may seek smaller housing arrangements.

The proposed station location will provide improved transit access to the few community assets located in Wenonah. Most importantly, it will provide transit access within 1/4-mile of the Borough County Clerk's office and the Wenonah Police Department.

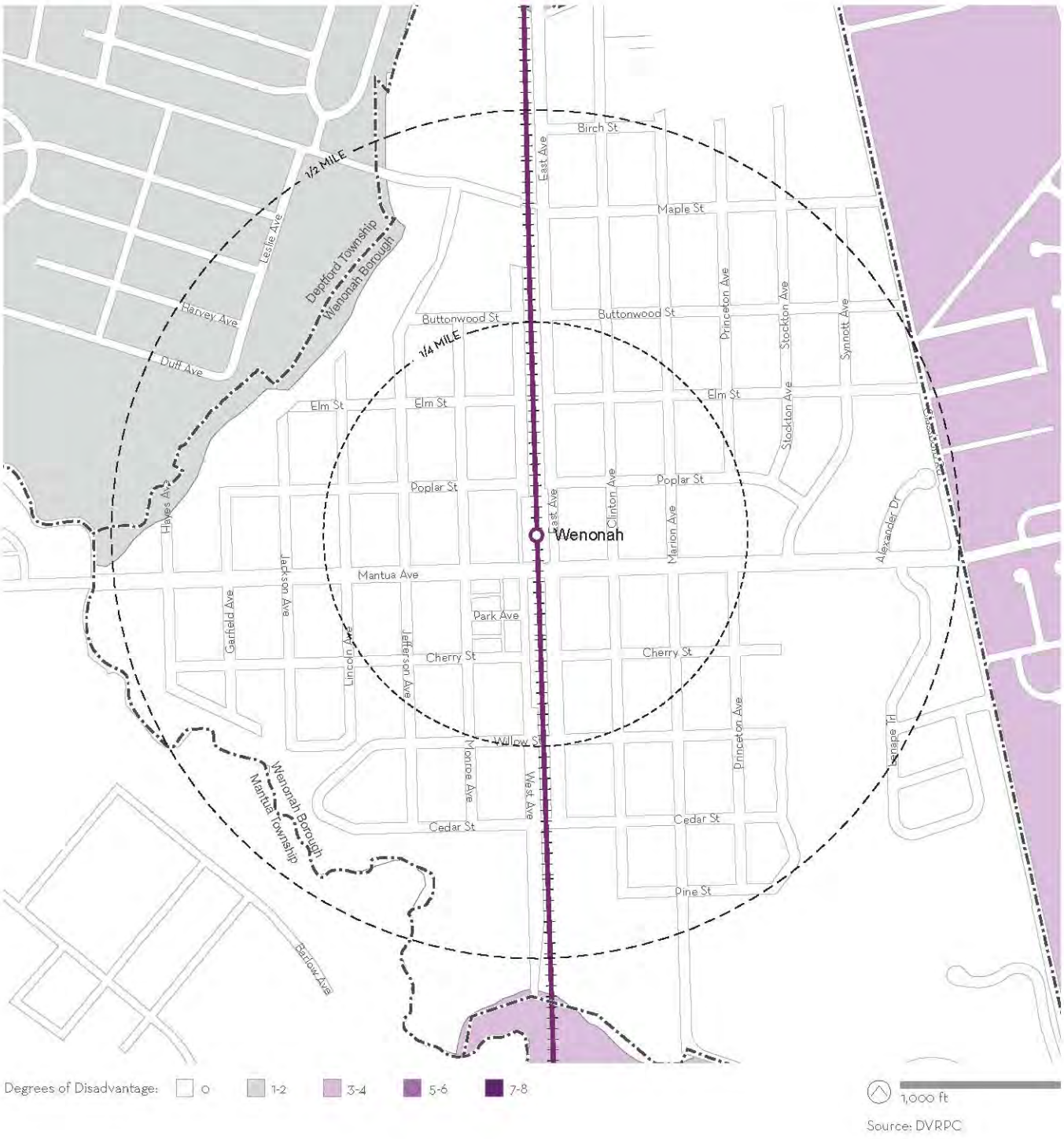
The Wenonah Study Area receives limited transit service: only one NJTransit Bus (Route 412) cuts through the area. This limited service, along with the low-density urban form, most likely explains why no Census Block Group in 2000 had more than 6% of residents taking transit to work.



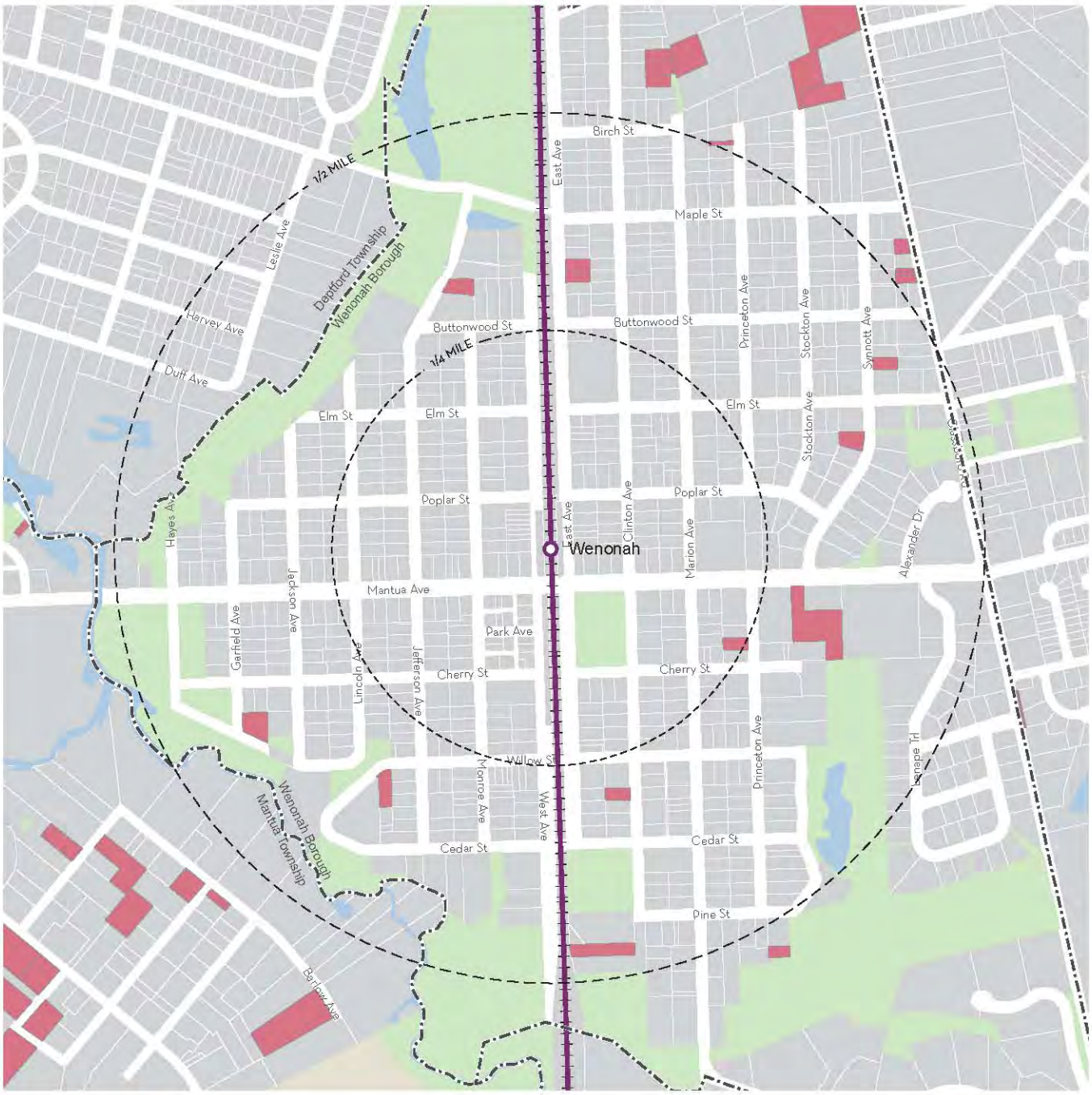
The overwhelming majority of land within the study area is dedicated to single-family housing. There are a few scattered commercial uses, some of which are located near the proposed station location. As a result, the station will not serve as a regional destination and will almost certainly act primarily as a point of departure. This may create an opportunity for local serving retail, such as a coffee shop or small convenience store, that provides services to commuters.



Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. Wenonah was originally designed with 11,250 sqft lots, which resulted in approximately 3.5 units per acre. Although some assemblage and subdivision has occurred, only one block in the study area has more than 4 units per acre. As a result, if Wenonah becomes a walk-up station, it will not likely see the same level of ridership as other stations along the GCL.



The Census tract (5008) that best intersects with the Wenonah Study Area has no historically disadvantaged population that exceeds regional thresholds. Nonetheless, the study area will most likely see an increase in the number of elderly residents within the next ten years (see Demographics). As such, efforts to expand rail into this area should ensure that this group will be able to enjoy the benefits of transit expansion.



Source: New Jersey MOD - IV Property Assessment Records

The Wenonah Study Area has a limited number of vacant sites or areas that demonstrate immediately opportunity for redevelopment as the result of transit expansion. Nonetheless, the Professional Office zoning designation does allow for the conversion of existing dwelling units into commercial uses. This zoning strategy may be an effective mechanism by which the community can allow for more mixed-use around the station to service the needs of transit riders while still maintaining the architectural character of the buildings in the area.

Environmental Justice

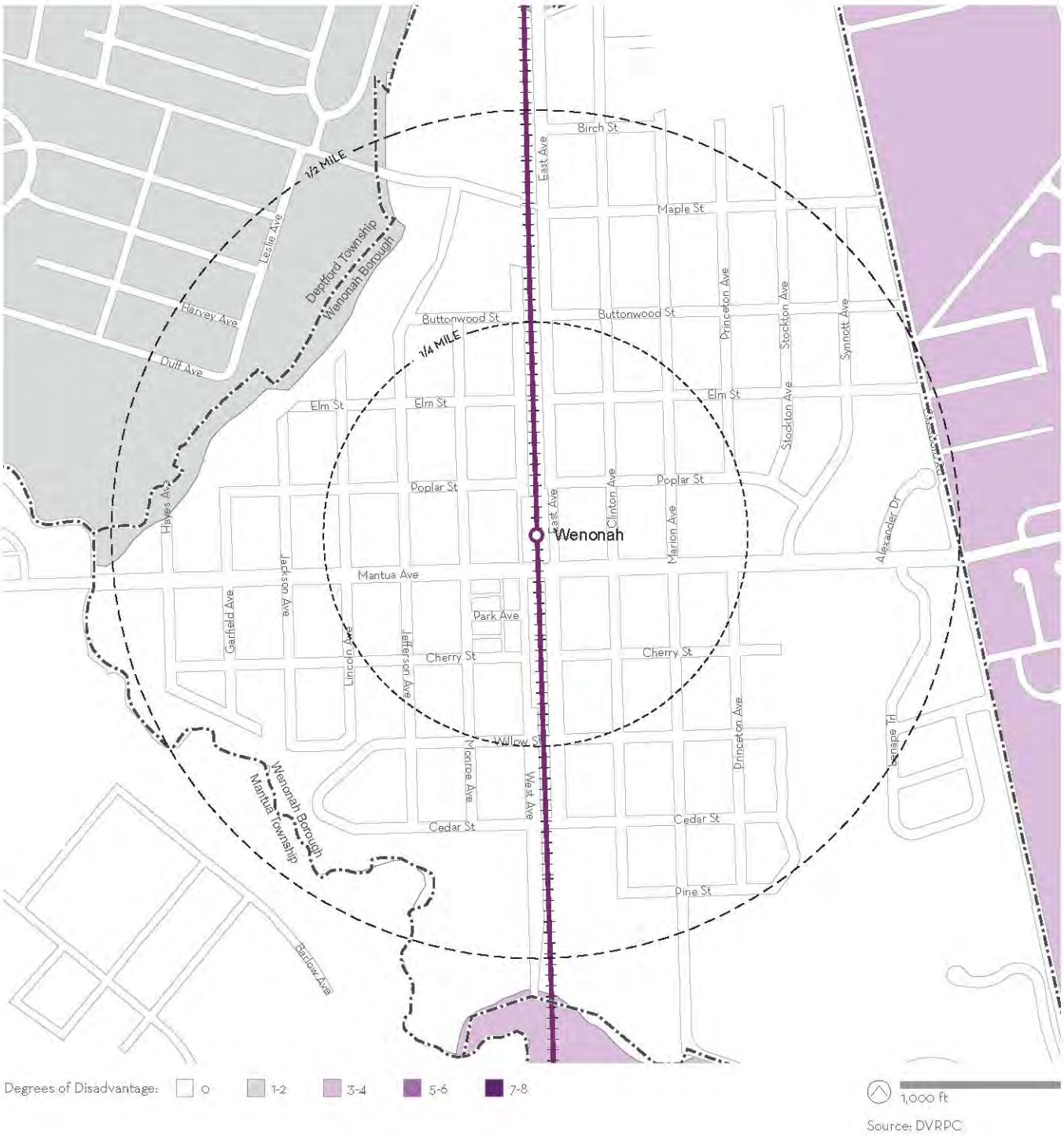
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

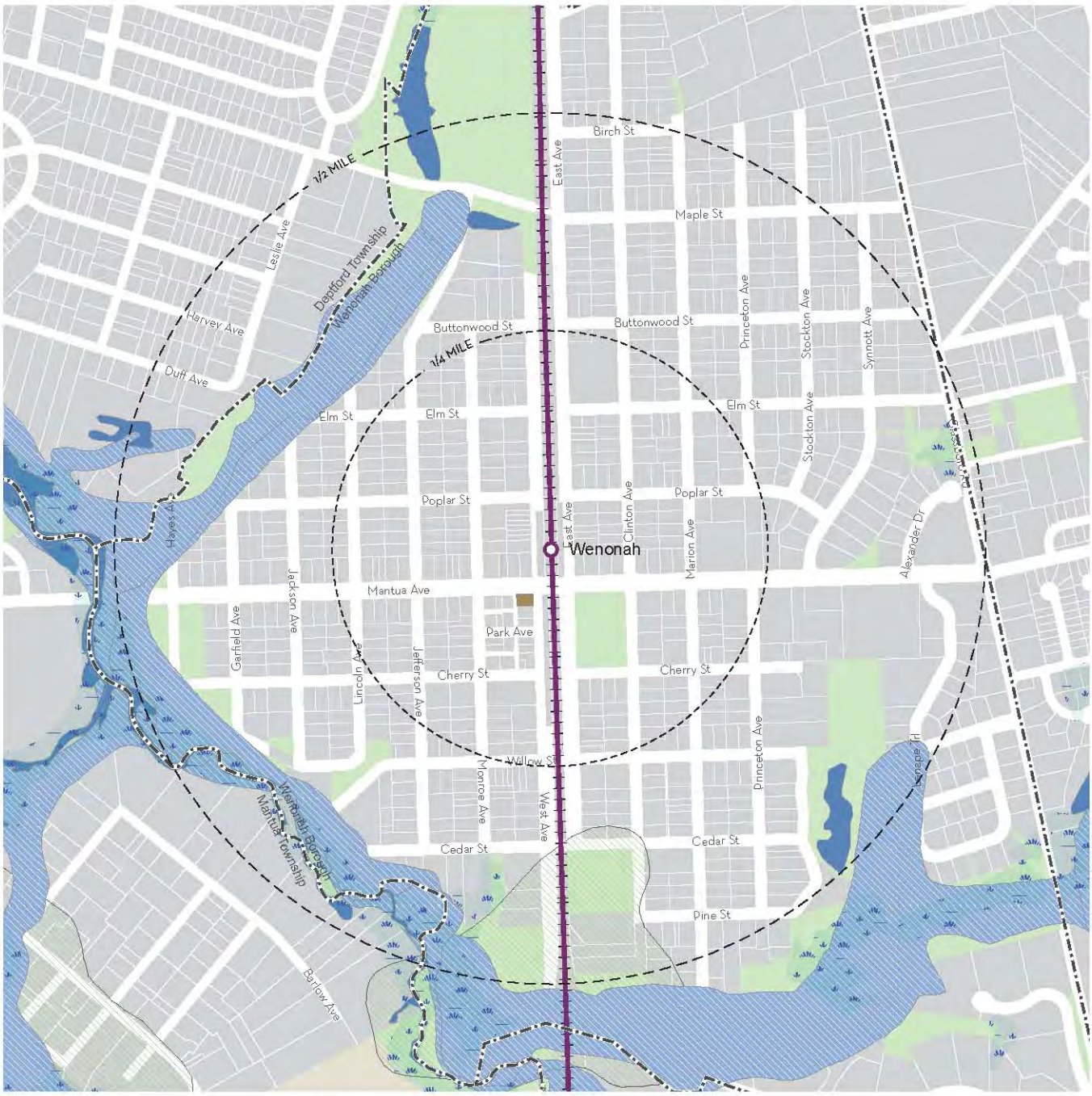
Figure 5.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5008
non-Hispanic minority	24.9%	2.1%
carless households	16.0%	2.1%
households in poverty	10.9%	2.0%
persons with a physical disability	7.7%	4.2%
female head of household with child	7.4%	4.0%
Hispanic	5.4%	0.3%
elderly	6.6%	5.0%
limited English proficiency	2.4%	0.2%

Source: DVRPC



The Census tract (5008) that best intersects with the Wenonah Study Area has no historically disadvantaged population that exceeds regional thresholds. Nonetheless, the study area will most likely see an increase in the number of elderly residents within the next ten years (see Demographics). As such, efforts to expand rail into this area should ensure that this group will be able to enjoy the benefits of transit expansion.



water | 100 year flood plain | 500 year flood plain | wetlands

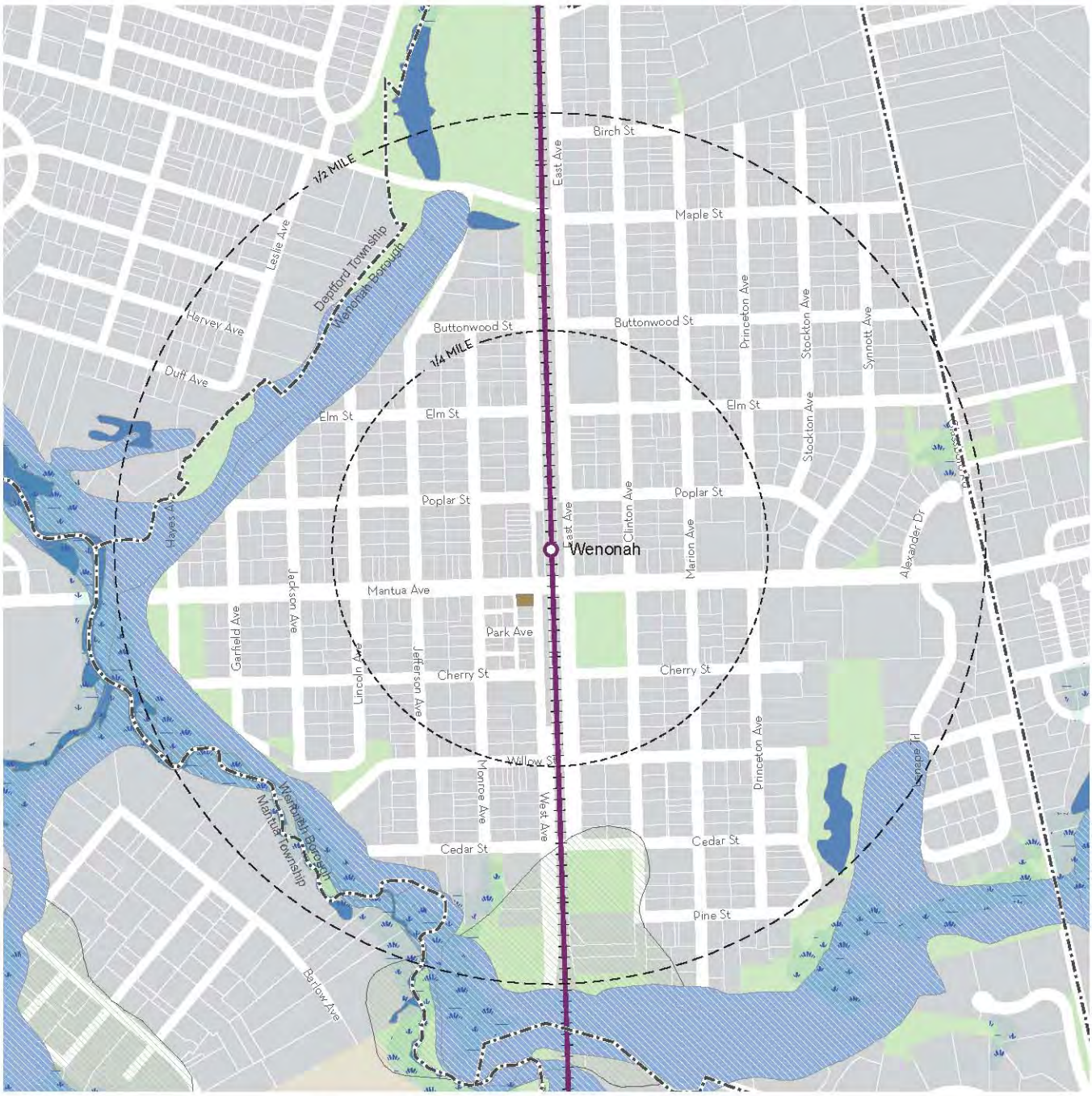
open space | golf course | natural heritage site | permanently preserved open space

known contaminated sites

1,000 ft

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The majority of floodplains and wetlands in the Wenonah Study Area are currently zoned for conservation. As such, it is unlikely that any development as a result of rail expansion will encroach into these areas.



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The majority of floodplains and wetlands in the Wenonah Study Area are currently zoned for conservation. As such, it is unlikely that any development as a result of rail expansion will encroach into these areas.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 5.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The Borough was originally planned as a low-density residential development and has continued to stay that way. As a result, the current land use and housing density is not conducive to transit-oriented development. Furthermore, there are few vacant parcels or underutilized sites within the study area that could be redeveloped to capitalize on and support transit expansion. With that noted, the area directly adjacent to the station does have some commercial, office, and civic uses that should benefit from transit expansion.

Despite the fact that study area is an automotive-oriented town, sidewalks are ubiquitous and many residents would have a pleasant walk to the station. Community stakeholders have noted, however, that the speed of traffic can be an issue on Maple, as it is used as a cut-through between 45 and Woodbury-Glassboro Road. Some parking exists near where the historic station lies (near Borough Hall and Police Station). There are no dedicated bike lanes.

Market and Policy Factors

The 1998 Wenonah Master Plan argued against increased density in the area. As a result, zoning is designed to limit development to single-family homes and, at times, their conversion into two-family homes. Most of the areas not designated residential are in the same area where the station is proposed. In this town center, the Professional Office designation allows for the conversion of residential units to commercial office space. However, the commercial areas depicted on the land use plan are those that existed in 1998 and no new commercial areas were proposed. If these policies remain, there will be little opportunity for the Borough to capitalize on the development opportunities brought by transit expansion.

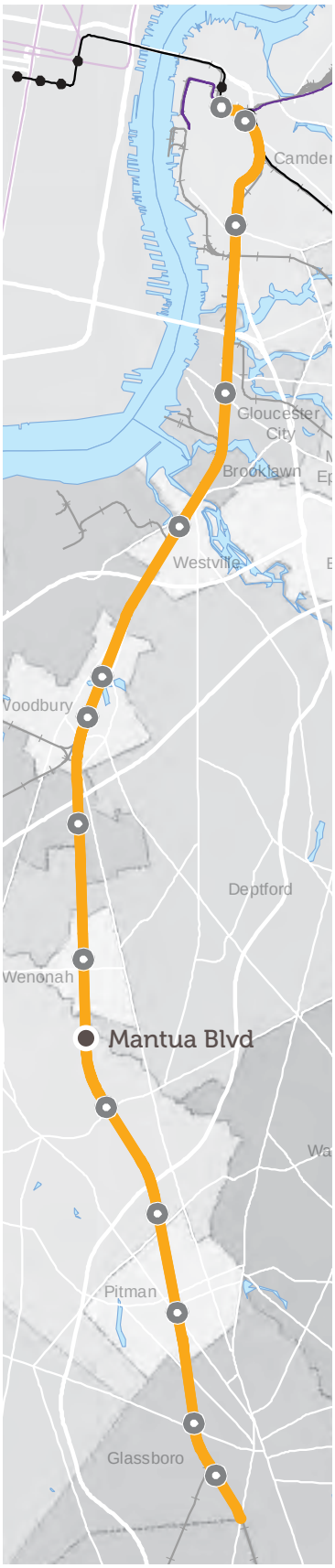
Figure 5.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	3
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	1
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	3
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	3
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	3
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	3
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	3
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	3
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

6 Mantua Boulevard

Mantua Township, NJ



Overview

The Mantua Boulevard Study Area has large areas of land that are vacant, underutilized, or dedicated to farming. As a result, it has capacity to accommodate the short-term need for a park-n-ride facility to accommodate drivers from Wenonah, Sewell, and other adjacent areas. Since the area is home to one of the municipality's largest employers, the station will most likely be a destination for at least some travelers even if no father development occurs. However, as the municipality contemplates the need to accommodate both new residents and jobs, it may also wish to consider the long-term value of this area as a location for new residential, retail, and/or commercial development. Such long-term efforts can be coordinated with the immediate need for a park-n-ride.

Currently, the lack of public transit options and the auto-orientation of Mantua Boulevard do not support transit expansion efforts. Furthermore, if efforts are made to allow more residential construction near the station, it would be prudent to expand zoning to allow lots smaller than 1/4 acre, and permit multi-family housing or mixed-use development.

The most immediate opportunity in the study area will be connecting existing area employers to the station. To accomplish this, some land acquisition may be necessary to provide street access, and improvement must be made to Mantua Boulevard to allow for pedestrian connections. Obviously, the easy access to low-density residential areas will also mean that land should be allotted for a park-n-ride facility.

As the municipality moves forward with these and other plans, it should be aware that many of the parcels within the Mantua Boulevard Study Area are in floodplains, wetlands, and/or natural heritage sites. This includes the largest vacant parcel in the study area, as well as residentially zoned areas adjacent to the proposed station location. Although these conditions do not prohibit development per se, they will have an impact on both what is environmentally and financially feasible.

Source: Gloucester County

Although the proposed Mantua Boulevard Station lies within Mantua Township, major sections of the 1/2-mile radius around the station that make up the Mantua Boulevard Study Area are in Deptford Township or Wenonah Borough. Delaware Valley Wholesale Florist, one of the County's largest employers, is located just over 1/4-mile away from the proposed station. It should be noted that as located, the proposed station has no street access.

Community Form: Commercial





Large office buildings and structures associated with agricultural production make up the majority of commercial buildings in the area. Office buildings tend to two to be three stories, with large landscaped setbacks and surface parking that separates them from the street. At times, they have long portions of unbroken facades that are sometimes masked with landscaping.

Community Form: Open Space

There is no dedicated recreational space within the study area.

Community Form: Civic/Institutional

There are no major civic or institutional buildings in the study area.






Almost all residential units in the study area are single-family homes. Architecture varies, but buildings tend to be one or two stories, with large landscaped setbacks (grass or flower garden), and off-street parking.

Demographics

The study area has a small population of approximately 816 residents. More than 58% live in two- or three-person households and more than 90% own the home in which they live.

From 2000 to 2010, the study area lost 203 residents (20%). Residents in 2010 lived in similar household sizes and owned their home at similar rates as previous residents. Nonetheless, there was a small decrease in the average household size.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

The population pyramid for the Mantua Study Area shows that people over the age of 55 are extremely over-represented when compared to the County. This is especially true of men ages 70-74 and women over the age of 85. As such, efforts to expand rail into this area should ensure that a group that typically faces mobility issues will be able to enjoy the benefits of transit expansion.

Figure 6.a: Population Pyramid

Figure 6.b:Demographic Data

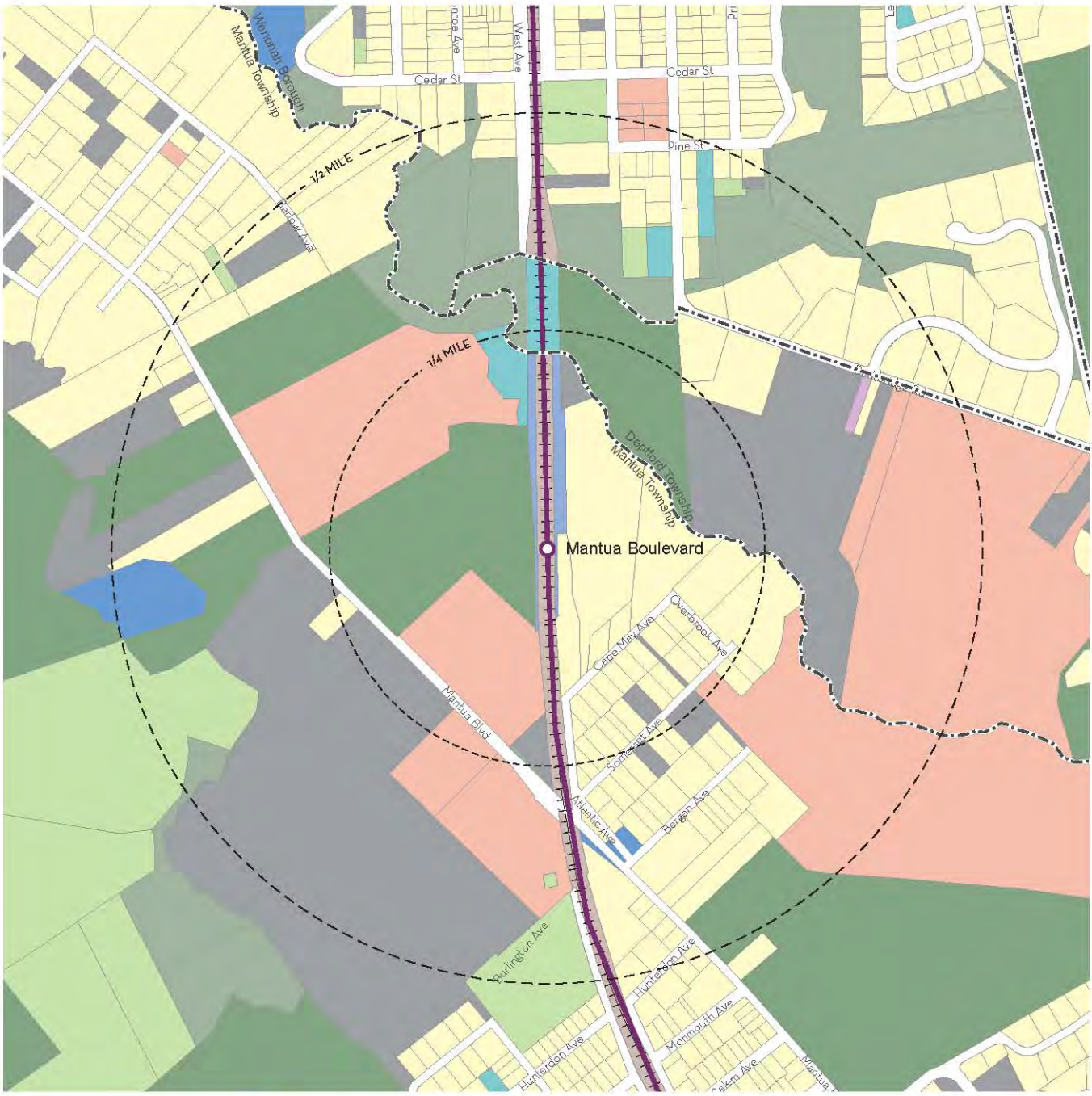
		2000	2010
Population	Total Population	1,019	816
Race	White alone	993 (97%)	794 (97%)
	Black or African American	16 (2%)	6 (1%)
	American Indian and Alaska Native	1 (0%)	2 (0%)
	Asian	2 (0%)	6 (1%)
	Native Hawaiian and Pacific Islander	0 (0%)	0 (0%)
	Some other race	0 (0%)	1 (0%)
	Population of two races	7 (1%)	7 (1%)
	Hispanic Population	0 (0%)	11 (1%)
Household Size	1-person household	48 (13%)	46 (15%)
	2-person household	123 (35%)	113 (37%)
	3-person household	74 (21%)	64 (21%)
	4-person household	69 (19%)	50 (17%)
	5-person household	30 (8%)	23 (8%)
	6-person household	10 (3%)	5 (2%)
	7 or more person household	2 (1%)	1 (0%)
	Average Household Size	2.9	2.7
Housing Tenure	Owner	322 (90%)	276 (91%)
	Renter	34 (10%)	26 (9%)

Source: Census Bureau (Block Level Data)

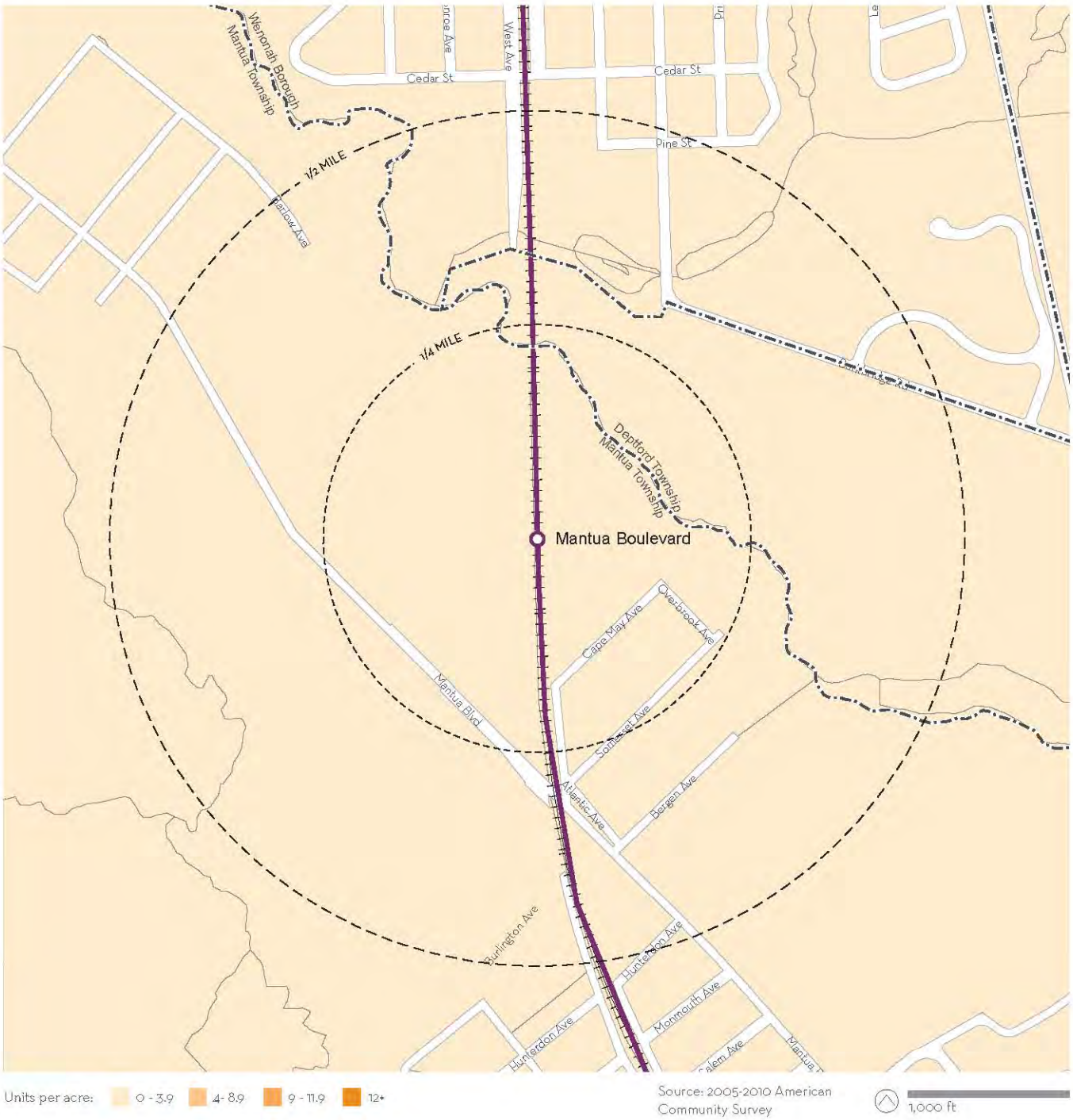
The proposed location would provide transit access to a number of employers, including Delaware Valley Wholesale Florist, one of the County's major employers. As such, it would be prudent to investigate whether this station will function both as a park-n-ride as well as a destination for local workers. If this is the case, one of the major opportunities for supporting and capitalizing on transit expansion will be improving pedestrian connections between these employers and the station on Mantua Boulevard, a major thoroughfare that lacks sidewalks.

Source: 2000 American Community Survey, NJ Transit

The study area is not serviced by transit which is most likely the reason all block groups in the study area had low levels of transit ridership in 2000.

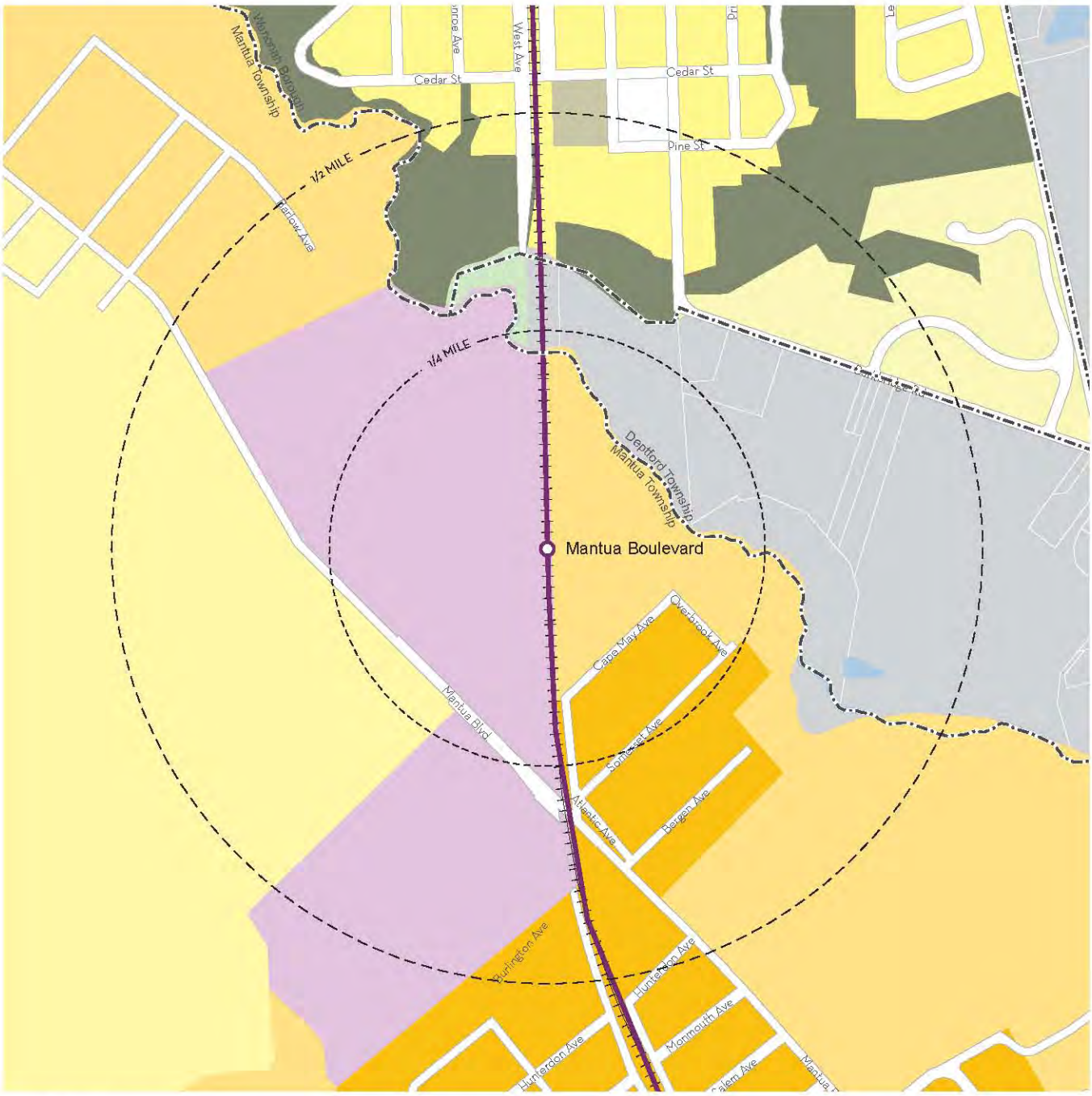


The majority of land in the study area is dedicated to farming or commercial uses. However, there are two large sections of vacant land within 1/2-mile of the station. These areas provide opportunities for a wide variety of development that might include residential or commercial construction. Moreover, the residential area east of the station may also be an opportunity for redevelopment as the land has yet to have been subdivided. If developed, it would connect the station to the vacant parcels further east of the station.

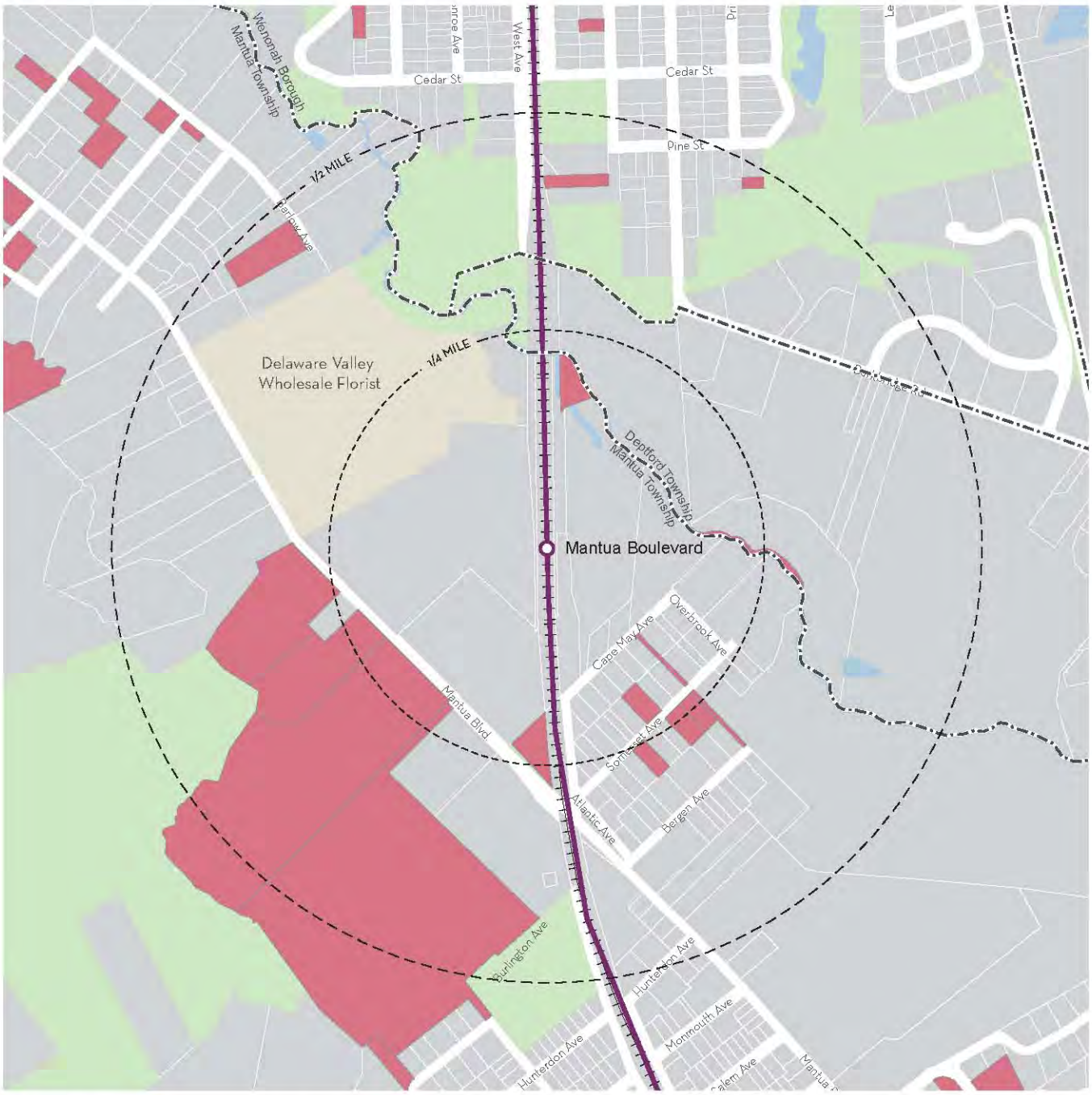


Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. In the case of the Mantua Boulevard Study Area, there are no blocks with 9 units per acre that have the necessary density to support walk-up service. * As a result, the station will almost certainly require a park-n-ride facility to facilitate ridership. However, this data is less important for Mantua, since there is significant of opportunity for new development associated with transit expansion.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Minimum lot size for areas zoned as high-density residential areas is 1/4 acre. Medium density zoning requires 1/2-acre lots and low density requires 1-acre parcels. With the largest opportunity for development currently zoned as low-density residential, it is unlikely that future construction will be able to support and capitalize on transit expansion without changes to the zoning code.



Source: New Jersey MOD - IV Property Assessment Records

The most evident opportunity for development is the large parcel adjacent to the station that is currently dedicated to farming and zone industrial. Such land in close proximity to the station could be one of the most significant opportunities for redevelopment along the GCL. The community previously identified an office building adjacent to the tracts and Mantua Boulevard as an opportunity for redevelopment, however that site was recently acquired at action. The large vacant parcel currently zoned for low-density residential is also an opportunity, although there are many environmental conditions that might hamper its development (see Environmental).

Environmental Justice

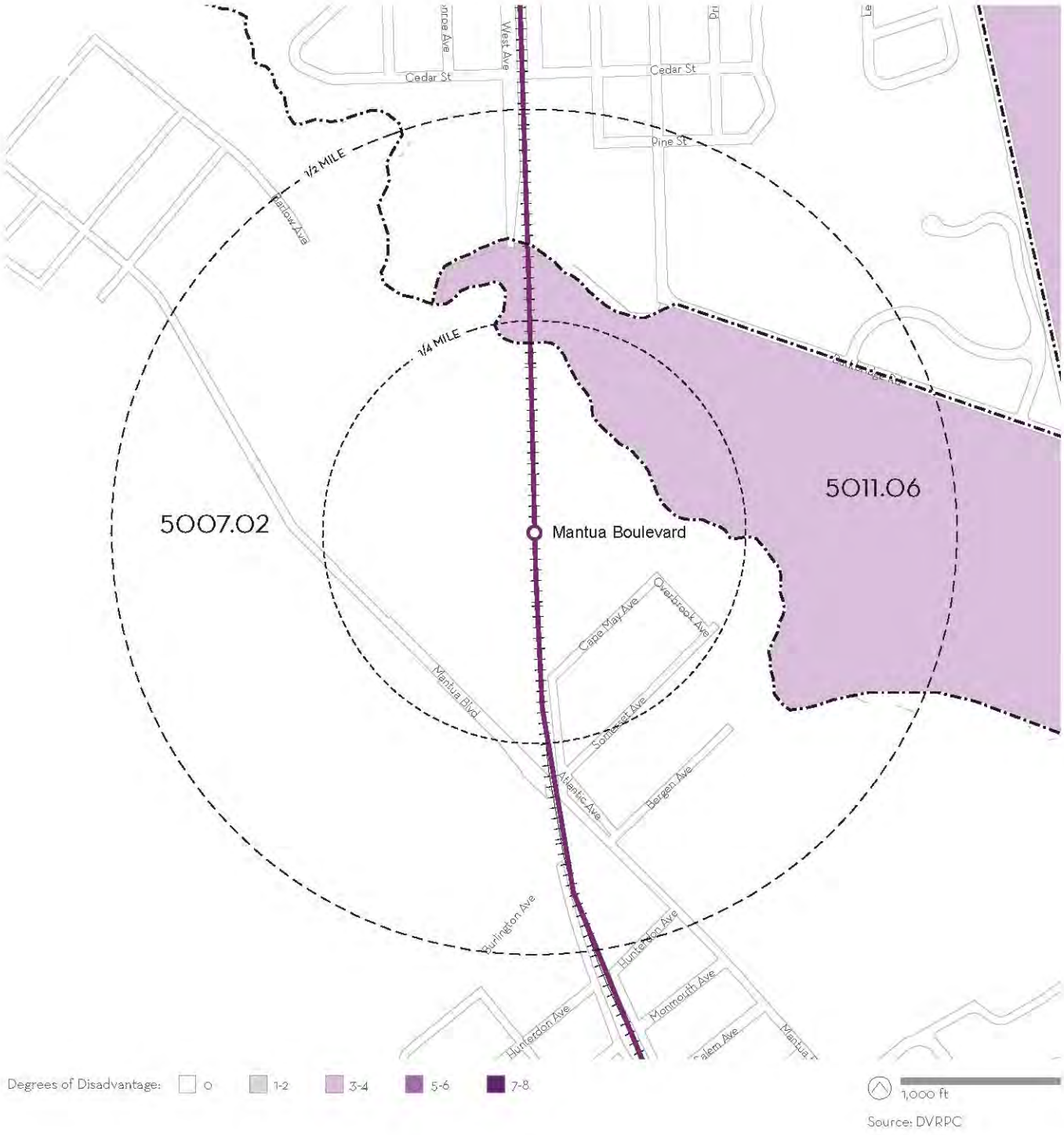
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 6.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5011.06	Census Tract 5007.02
non-Hispanic minority	24.9%	37.2%	3.0%
carless households	16.0%	5.3%	2.6%
households in poverty	10.9%	3.9%	4.1%
persons with a physical disability	7.7%	8.5%	5.9%
female head of household with child	7.4%	7.3%	5.7%
Hispanic	5.4%	0.8%	1.6%
elderly	6.6%	5.0%	32.0%
limited English proficiency	2.4%	0.1%	0.6%

Source: DVRPC

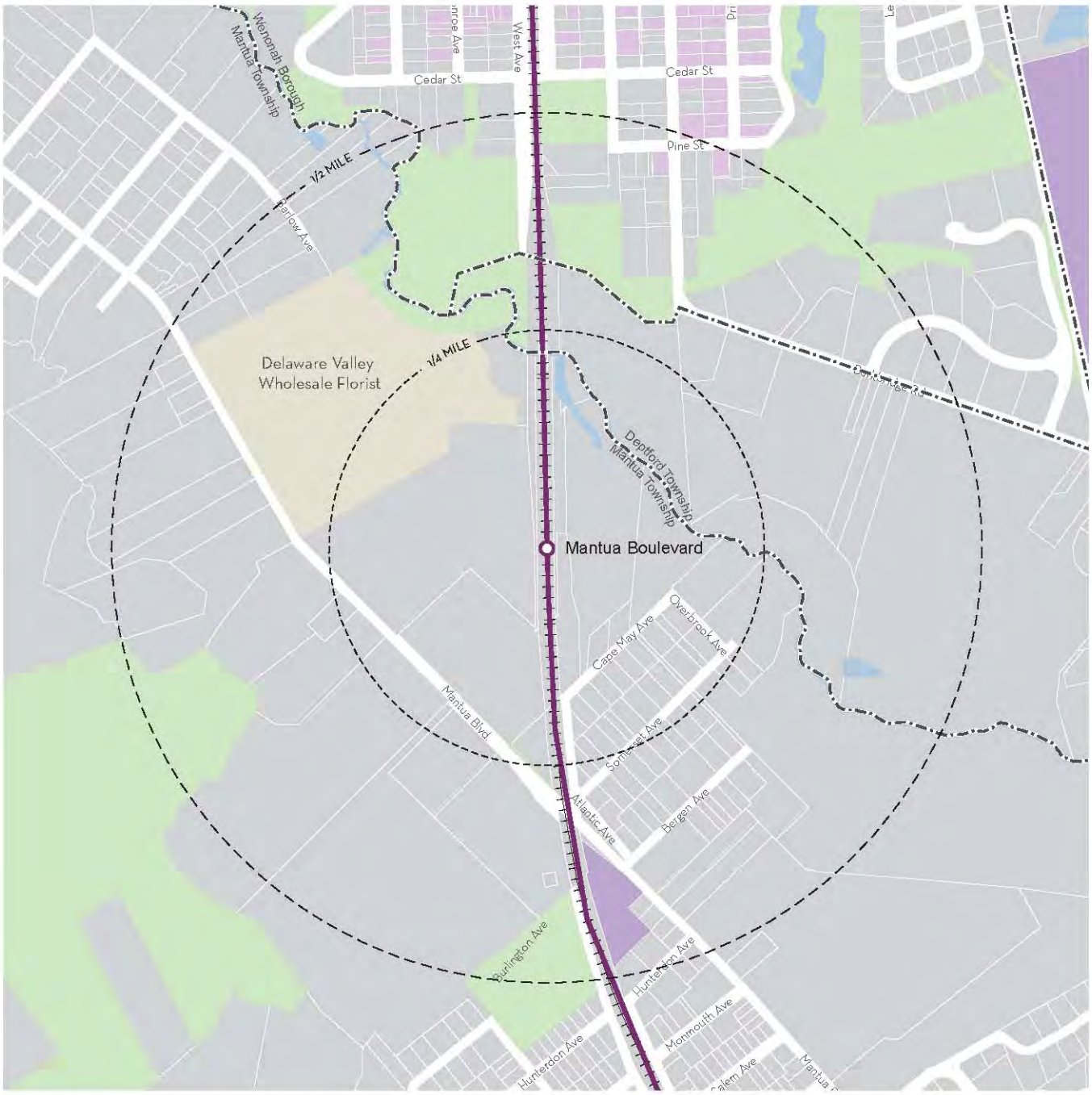


Source: DVRPC

Census Tracts 5011.06 and 5007.02 are large tracts that cover more than 9 square miles of the County. Thus, they may not accurately represent the study area. Of the two, Census Tract 5007.02 best overlaps with the study area. In this tract, only the proportion of elderly people exceeds regional thresholds. This information was confirmed in the Demographics section of this report. Thus, efforts to expand transit into the area should ensure that this population is not excluded from enjoying the benefits of light rail service.

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

Although the proposed station location is not located in a floodplain, wetland, or natural heritage site, many of the parcels within the Mantua Boulevard Study Area are. This includes the residential area to the east of the station. Furthermore, the largest vacant parcel in the study area overlaps a natural heritage site. These areas are identified by the Office of Natural Lands Management (ONLM) as critically important to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities. In this case, the area is given a B5 rating indicating that it is, "of general biodiversity interest."



Listed Historic Buildings | Eligible Historic Buildings | Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

There are few historic districts or historically significant buildings in the study area.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 6.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The Mantua Boulevard Study area currently has ample land for (re) development opportunities brought about by transit expansion. The proposed station would also provide transit access to a number of local employers, including Delaware Valley Wholesale Florists, one of the County's largest employers. However, there is currently no road access to the proposed station location and there are no sidewalks along Mantua Boulevard. Land use and residential density suggest a park-n-ride facility will be necessary.

Market and Policy Factors

The smallest lot allowed by zoning is 1/4 acre. There is no allowance for multi-family housing or mixed-use construction. The Township has not taken steps to create a zoning code, Master Plan update, or TOD plan to support and capitalize on transit expansion efforts.

Figure 6.d: TOD Score Card

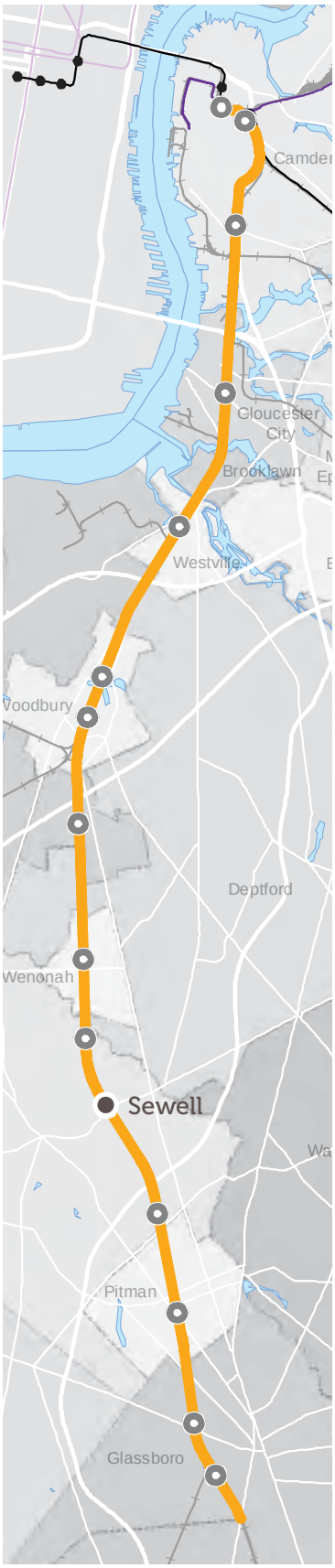
	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	3
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	3
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	3
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	3
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	3
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	3
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	3
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	3
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	3

Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

7 Sewell

Mantua Township, NJ



Overview

The proposed Sewell station is located near what serves as the town center. As a result, there are more uses permitted in the area within 1/4-mile area that surrounds the station than in much of the study area. Within a short walking distance of the proposed station location there are a number of vacant parcels that provide an excellent opportunity for (re)development to capitalize on and support transit expansion. The traditional street grid that connects the study area will help support these efforts, allowing for a diversity of routes between homes and the station.

Despite these strengths, the parcels directly adjacent to the proposed station are zoned for a maximum of four residential units per acre. Zoning does not allow for commercial structures, let alone mixed-use development. As such, it would be prudent to consider whether the station should be located further south, so that it is located within the Community Commercial zoning area. Alternatively, the Community Commercial Zoning could be extended further north to encompass the area around the station.

The vacant parcels in close proximity to the study area represent the greatest opportunity for (re)development in the area. The Borough may want to consider updating the Master Plan, making zoning changes, and/or designating some areas as Areas in Need of Redevelopment in order to develop the policy tools necessary to capitalize on transit expansion.

Source: Gloucester County

The proposed Sewell station is located in the Township of Mantua as is the 1/2-mile radius that makes up the Sewell Study Area.

Community Form: Civic/Institutional





There are few community or civic buildings in the Sewell Study Area. The elementary school has both a historic building and modern addition. The few civic buildings do not exceed two stories, and tend to have brick facades and off-street parking.

Community Form: Commercial



There are only five commercial lots within the study area. These buildings tend to be converted residential structures or incorporate residential architectural styles.

Community Form: Residential






There are many residential building types in the study area but almost all of them are single-family units. In general, these structures do not tend to exceed two stories with a pitch roof that extends building height up to three stories. Most have a landscaped setback (grass) and there is a mix of on- and off-street parking.

Community Form: Open Space



The study area contains a few recreational spaces, including a park with a number of baseball diamonds. There are very few public spaces for passive recreation.

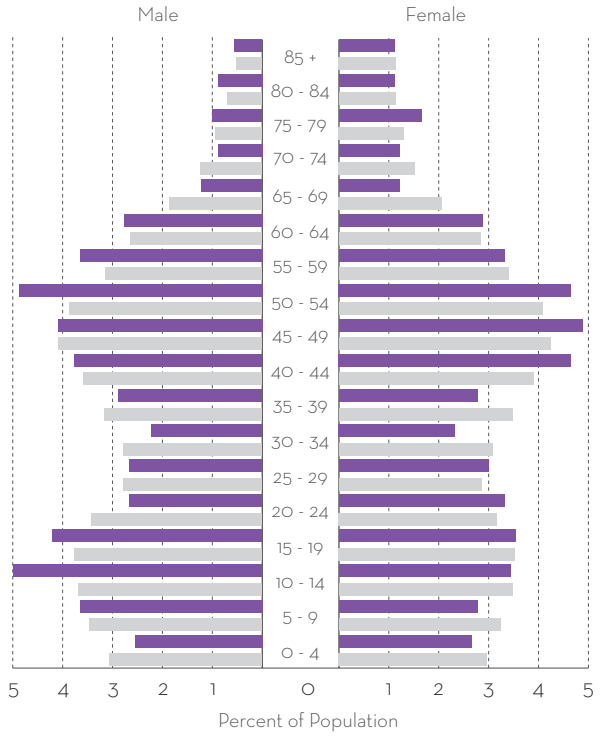
Demographics

There are just under 2,939 residents who live in the study area. About 65% of residents live in a household with 3 or fewer persons, and more than 90% owned the home in which they lived. The averaged median household income between 2005 and 2010 for residents within Census Tract 5007.02, the tract that the study area lies within, was $83,564. This was more than $13,000 above the median for the County ($70,514). However, the averaged mean household income over that same period was $100,301 more than $26,000 above the County mean, suggesting there are a few very high-income households that reside in the area. It should be noted, however, that Census Tract 5007.02 is very large and extends well beyond the study area.

From 2000 to 2010, the study area gained 545 residents, a gain of more than 20%. Residents in 2010 tended to live in very similar households as residents in 2000: the proportion of each household size remained static, as did the percentage of residents who owned their own home.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 7.a: Population Pyramid



Source: Census Bureau (Block Level Data)

Study Area Gloucester County

In the case of the Sewell Study Area, there are two groups that are over-represented as a proportion of the total population when compared to the County. Men and women, but women especially, between the ages of 40 and 54 make up a large share of the population. So do men between the ages of 10 and 19. Like the County, both men and women between the ages of 20 and 39 are under-represented.

Figure 7.b:Demographic Data

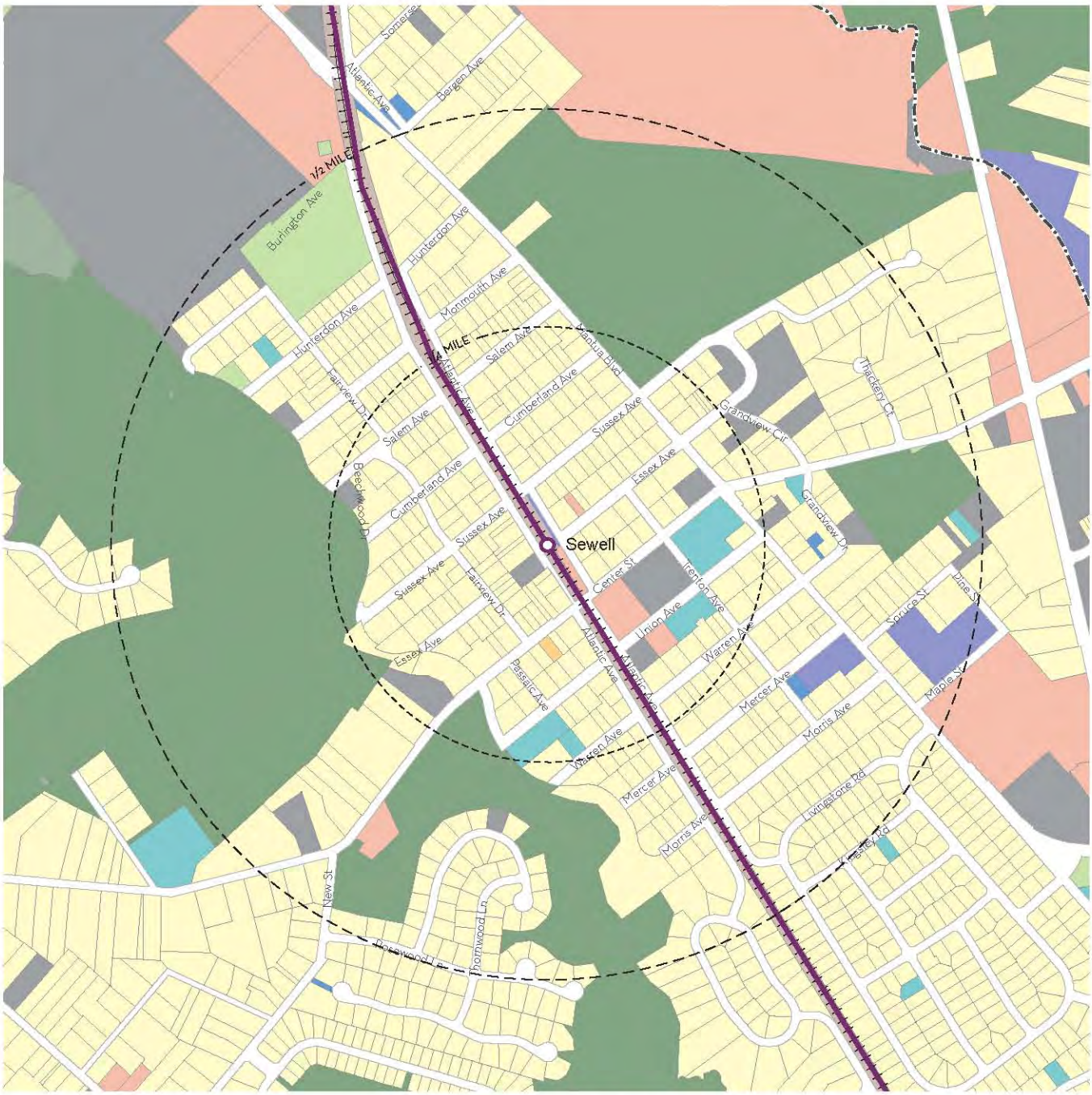
		2000	2010
Population	Total Population	2,394	2,939
Race	White alone	2,320 (97%)	2,838 (97%)
	Black or African American	38 (2%)	18 (1%)
	American Indian and Alaska Native	3 (0%)	9 (0%)
	Asian	16 (1%)	28 (1%)
	Native Hawaiian and Pacific Islander	0 (0%)	0 (0%)
	Some other race	3 (0%)	10 (0%)
	Population of two races	14 (1%)	35 (1%)
Hispanic / Latino	Hispanic Population	29 (1%)	80 (3%)
Household Size	1-person household	112 (14%)	135 (14%)
	2-person household	256 (32%)	294 (30%)
	3-person household	170 (21%)	201 (20%)
	4-person household	154 (19%)	219 (22%)
	5-person household	84 (10%)	94 (10%)
	6-person household	22 (3%)	28 (3%)
	7 or more person household	9 (1%)	13 (1%)
	Average Household Size	3.0	3.0
Housing Tenure	Owner	749 (93%)	919 (93%)
	Renter	58 (7%)	65 (7%)

Source: Census Bureau (Block Level Data)

Within this group of people between the ages of 40 and 54, the high proportion of residents between the ages of 50 and 65 is particularly important. If they stay in the study area, in 10 years it is likely that the area will have a significant number of elderly residents who will face mobility issues as a result of aging. As a result, efforts to expand transit service into the area should make efforts to insure that this population receives equal access and an opportunity to enjoy the benefits of light rail service.

The proposed station location will provide transit access within 1/2-mile to the only two major community assets in the area.

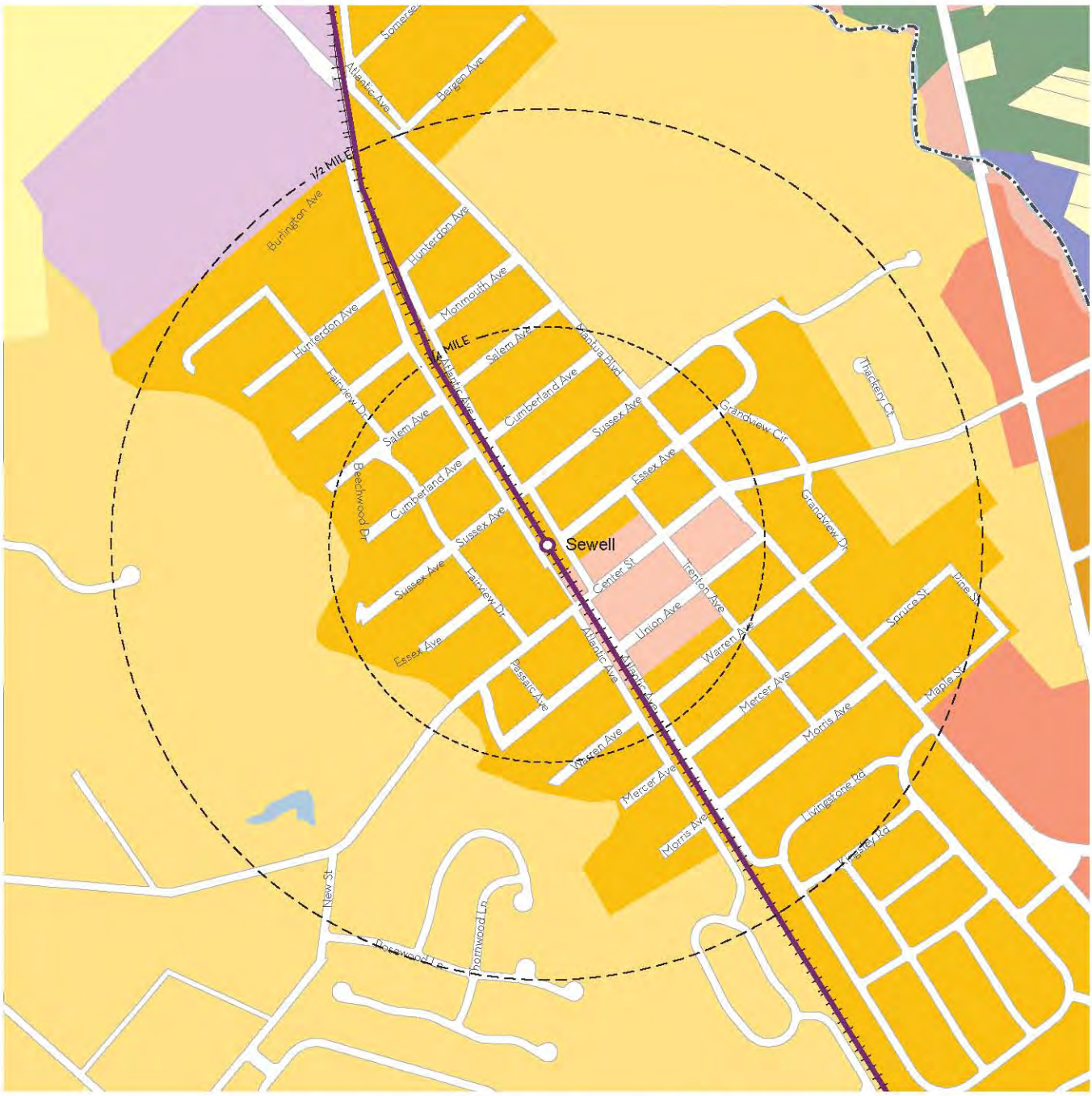
The study area is not serviced by transit which is most likely the reason all block groups in the study area had low levels of transit ridership in 2000.



The majority of land within the study area is either dedicated to single-family homes or wooded areas. There are a few commercial properties, most of which are located within 1/4-mile of the proposed station location. There are, however, a number of vacant parcels in close proximity to the station area that might provide excellent opportunities for (re)development as the result of transit expansion.

Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. In the case of the Sewell Study Area, there are no blocks with 9 units per acre.* As a result, the station will most likely require a park-n-ride facility to facilitate ridership.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



The minimum lot size for the high-density residential areas that make up the majority of the 1/4-mile radius around the station is a 1/4-acre. In practice, this has produced housing unit densities lower than 4 units per acre, as demonstrated by the Density Map. The medium-density zoning that covers much of the study area requires 1/2-acre lots. The Community Commercial zoning just south of the station allows for retail, dining, banking, professional office, and business services. Transit expansion efforts would be significantly improved if this zoning was extended around the station or the station was moved so that it was located within this district.

Source: New Jersey MOD - IV Property Assessment Records

There are a number of vacant parcels near the station that offer an opportunity for redevelopment as a result of transit expansion. This includes a small parcel adjacent to the station that might serve as a park-n-ride lot, an amenity that will most certainly be required. The Township may consider Redevelopment or Rehabilitation designations to facilitate development.

Environmental Justice

Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 7.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5007.02
non-Hispanic minority	24.9%	3.0%
carless households	16.0%	2.6%
households in poverty	10.9%	4.1%
persons with a physical disability	7.7%	5.9%
female head of household with child	7.4%	5.7%
Hispanic	5.4%	1.6%
elderly	6.6%	32.0%
limited English proficiency	2.4%	0.6%

Source: DVRPC

Degrees of Disadvantage: 0 | 1-2 | 3-4 | 5-6 | 7-8

1,000 ft

Source: DVRPC

Census Tract 5007.02 is a large tract that cover more than 4.5 square miles of the County. In this tract, only the proportion of elderly people exceeds regional thresholds. However, unlike in the Mantua Boulevard Study Area (which is also within Tract 5007.02), the demographic data does not indicate a high proportion of elderly residents. Regardless, over the next 10 years, it is likely that the number of elderly residents will increase (see Demographics), and efforts to expand transit into the area should ensure that this population is not excluded from enjoying the benefits of light rail service.

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The proposed station location does not lie within a floodplain or a natural heritage boundary. Moreover, many of the parcels within the study area that do, are government owned and/or are currently dedicated to open space. Thus most of the vacant parcels that represent the most immediate opportunity to capitalize on transit expansion are outside of environmentally sensitive areas.

Listed Historic Buildings | Eligible Historic Buildings | Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

There are no historic districts or historically significant buildings in the study area.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 7.a summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed station is located nearby a few existing commercial building and the local post office. With a number of vacant parcels within walking distance, it is well situated to induce development as a result of rail expansion. Sidewalks are ubiquitous and the road network throughout the town would provide residents a number of options for accessing the station. Moreover, the low-density suburban character of the streets would allow residents a safe biking option a majority of the way to the station. Nonetheless, bike lanes and improved street design around the station would greatly improve pedestrian/bike accessibility.

Currently, residential density is too low to support walk-up service, and a park-n-ride facility will be necessary. Although the area within 1/4-mile of the station contains some non-residential uses, none of them are oriented around the proposed station location.

Market and Policy Factors

The highest density residential zoning allowed in the study allows for a maximum of 4 units per acre, a residential density insufficient to support walk-up service. The area directly surround the proposed station location, the area with the greatest potential for (re)development, is zoned residential and as such would not allow residential densities of 9 units per acre nor would it allow mixed-use or commercial development. If this persists, the Borough will face significant challenges if they seek to capitalize on and support transit expansion efforts.

Currently there are proposed paving improvements along Atlantic Avenue and Center Street. However, NJDOT has identified traffic as an issue along Breakneck Rd/Blackwood-Barnsboro Road as it runs through Sewell and crosses the tracks.

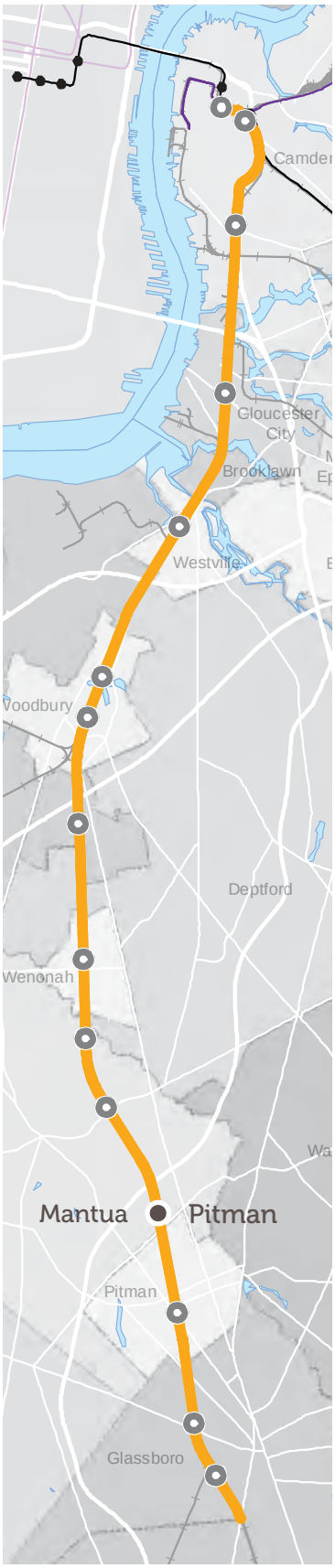
Figure 7.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	1
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	2
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	3
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	3
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	3
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	3
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	3
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	3
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

8 Mantua/Pitman (Potential)

Mantua Township, NJ



Overview

The proposed Mantua/Pitman Station is well located to promote development of vacant land and redevelopment of industrial uses. Unlike many other proposed stations, the area is not currently constrained by existing low-density residential development. As such, the station area could accommodate a large park-n-ride station, a high-density, mixed-use, transit-accessible community that absorbs population growth in the County, and/or a mixed-use employment center. These potential uses are not mutually exclusive, but their successful execution will require careful planning.

The study area contains large areas of vacant land in close proximity to Route 55, These physical opportunities are enhanced by Borough policy, which has designated the entire municipality of Pitman an Area in Need of Rehabilitation. Moreover, steps have been taken to amend this Redevelopment Ordinance to encourage development that is transit-oriented. As of 2011, the recommendations included allowing mixed-use, high-density development that encourages walkable uses, as well as the provision of a park-n-ride amenity near the station.

The road network is currently highly supportive of a park-n-ride station. Woodbury-Glassboro Rd provides excellent access to many neighboring communities. Moreover, the close proximity to Route 55 may allow transit expansion to intercept regional commuters Alternatively, zoning and road configuration represent the largest obstacles to transit oriented development. In order to support a walk-up station with corresponding mixed-use development, the Township of Mantua would have to create zones that do currently exist in the code. This may require either designating the area an Area in Need of Redevelopment or an update to their Master Plan. Moreover, the land available for TODs crosses municipal boundaries. As such, efforts to encourage development near the station would most likely have to be coordinated between Mantua and Pitman.

Environmental conditions represent the greatest threat to (re)development in the area. Specifically, wetlands cover portions of both areas deemed to be have the most immediate opportunity for (re)development. Moreover, the former Sony Factory is listed as a known contaminated site with "on-site sources of contamination." Without more information about the nature of that contamination, it is impossible to estimate the impact it will have on development.

Source: Gloucester County

The proposed location for the Mantua/Pitman station is located within the Township of Mantua, but a portion of the 1/2-mile radius that constitutes the Mantua/Pitman Study Area includes portions of the Borough of Pitman.

Community Form: Civic/Institutional

The only civic building in the area is the Masonic Temple pictured above.

Community Form: Industrial






The Mantua/Pitman Study Area is unique in that it has a large amount of industrial landscape. Most of the industrial activities occur in large warehouse style buildings, some of which have attached office spaces. Large surface parking can dominate the landscape, sometimes taking up more square footage than the buildings themselves. Other times, wooded areas surround industrial buildings and radius them from adjacent uses.

Community Form: Commercial

Commercial buildings in the Mantua/Pitman Study area are exclusively auto-oriented structures with parking lots that separate the building from the street. Most structures do not exceed one story and architectural details are limited.

Community Form: Residential

The residential buildings in the study area tend towards rural forms: they are located on large lots and are surrounded by productive landscapes. Those areas that do not have productive areas, tend to have large landscaped (grass) areas that surround the house. Structures do not often exceed one story and parking is off-street.

Demographics

The overwhelming majority of Mantua/Pitman Study Area residents live in a home that they own. Household size varies, but there is a higher proportion of residents living in 4-person households than in many of the other study areas along the GCL. Because the study area intersects with multiple large census tracts, it is impossible to get a good picture of the median household income for the area. However, only census tract 5013.01 had an averaged median household income between 2005 and 2010 below the median for the County, and all census tracts had a higher averaged mean household income than the County.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Although the population pyramid for the Mantua/Pitman Study Area is based on a small population, it can still reveal important information regarding the age composition of the area. Clearly, people from the age of 40 to 55 and those between the ages of 40 and 19 are overly represented

Figure 8.a: Population Pyramid

Figure 8.b:Demographic Data

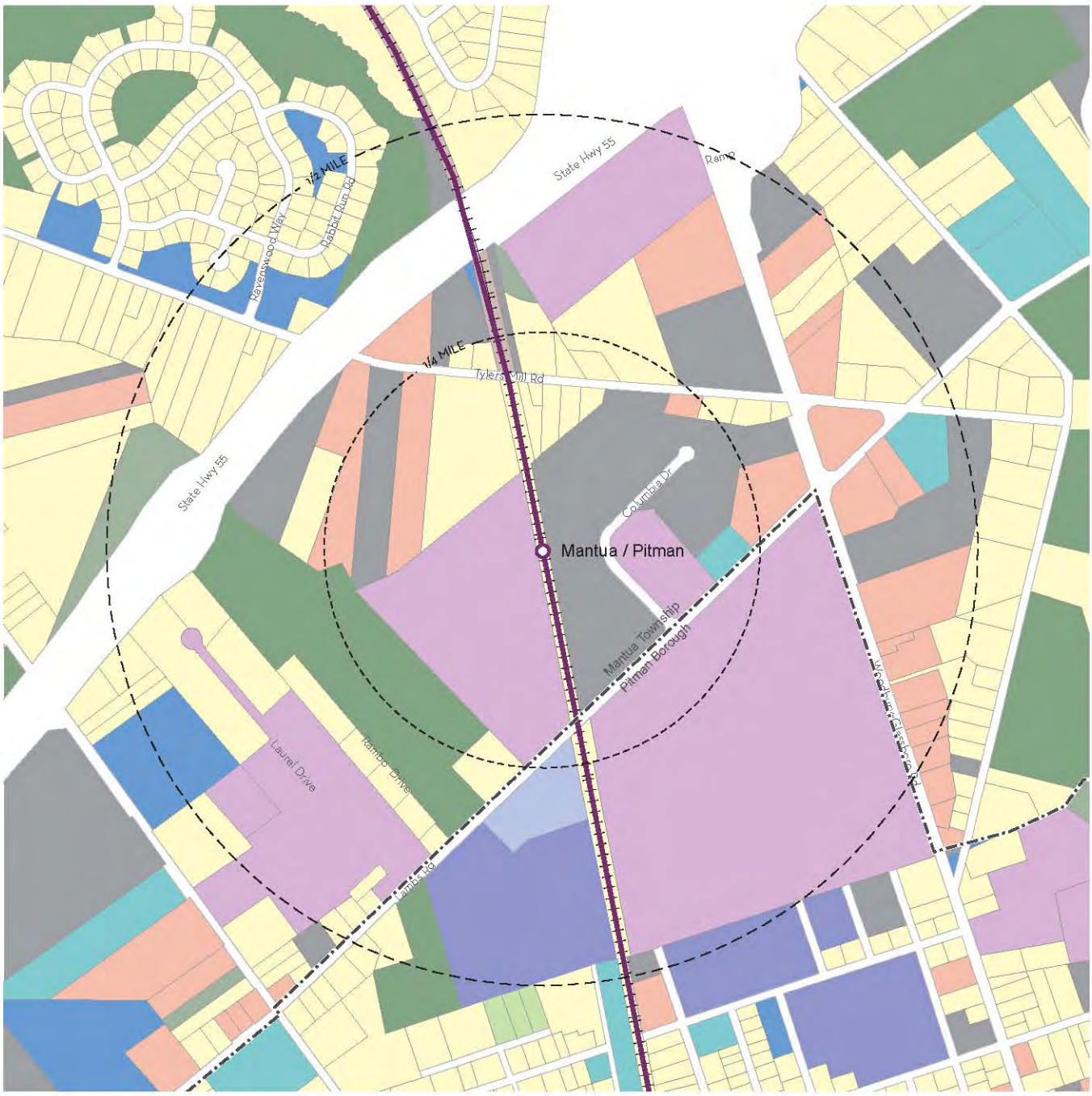
		2000	2010
Population	Total Population	1,171	1,140
Race	White alone	1,125 (96%)	1,087 (95%)
	Black or African American	13 (1%)	9 (1%)
	American Indian and Alaska Native	7 (1%)	9 (1%)
	Asian	17 (1%)	25 (2%)
	Native Hawaiian and Pacific Islander	0 (0%)	0 (0%)
	Some other race	3 (0%)	1 (0%)
	Population of two races	6 (1%)	8 (1%)
Hispanic / Latino	Hispanic Population	10 (1%)	24 (2%)
Household Size	1-person household	59 (15%)	59 (14%)
	2-person household	112 (29%)	150 (37%)
	3-person household	77 (20%)	70 (17%)
	4-person household	88 (23%)	88 (22%)
	5-person household	41 (10%)	26 (6%)
	6-person household	11 (3%)	10 (2%)
	7 or more person household	3 (1%)	4 (1%)
	Average Household Size	3.0	2.8
Housing Tenure	Owner	368 (94%)	389 (96%)
	Renter	23 (6%)	18 (4%)

Source: Census Bureau (Block Level Data)

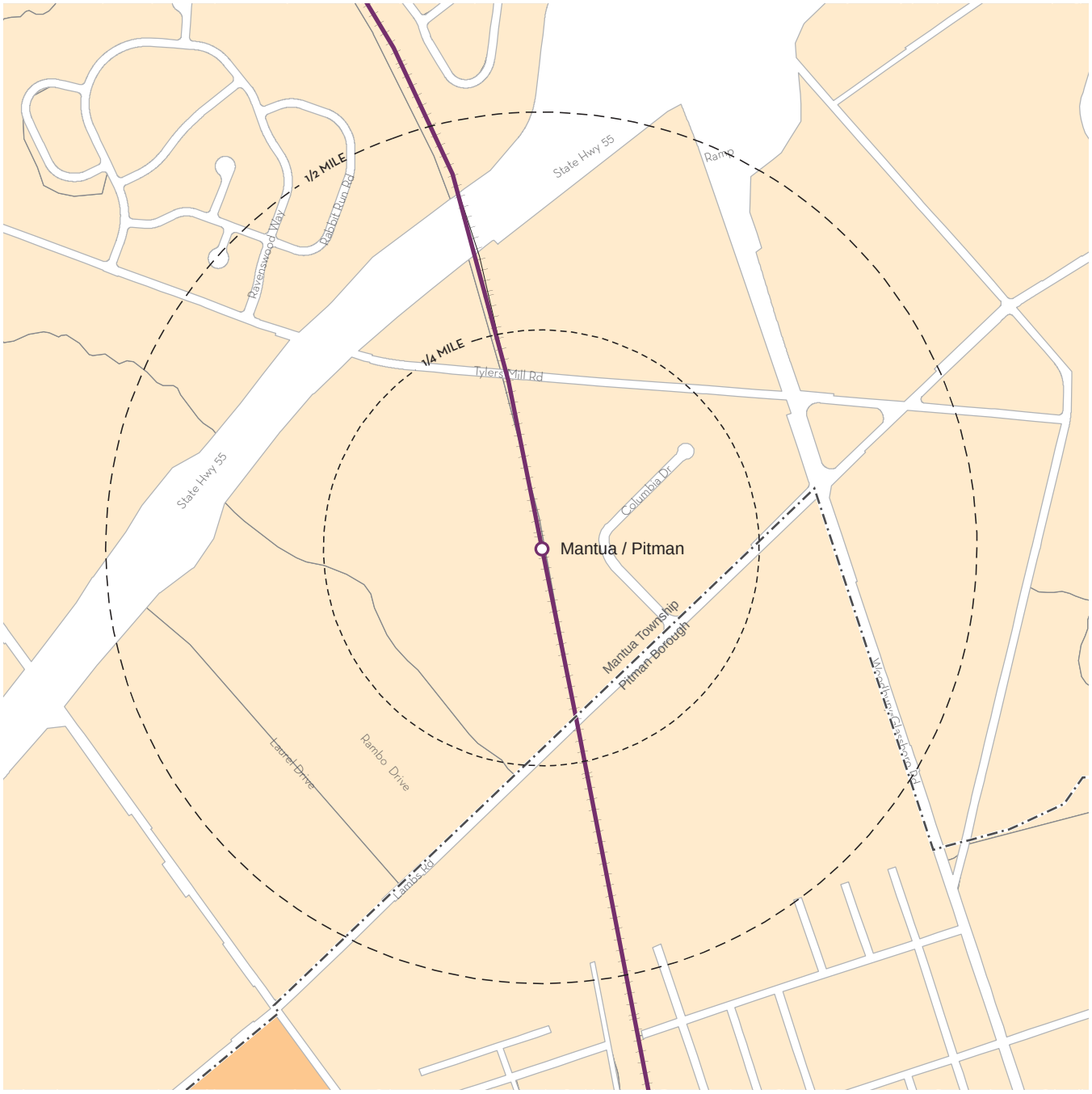
in the area. In contrast, there are few people between the ages of 20 and 39, or over the age of 55. This, combined with the household size data, suggests that the study area is home to many established families who have children in their teens. As such, it may be worth investigating why younger families have not chosen to locate in the area, and what affect that might have for future growth.

There are no community asset within the Mantua/Pitman Study Area.

The Mantua/Pitman Study Area is serviced by two NJTransit Buses: Route 313, which runs from Cape May to Philadelphia, and Route 412, which runs from Sewell to Philadelphia. The majority of the block groups that intersect with the study area had less than 3% of residents ride transit to work in 2000. However, two block groups in the south did have more than 6% of residents ride transit to work in that year, a positive sign for light rail expansion.

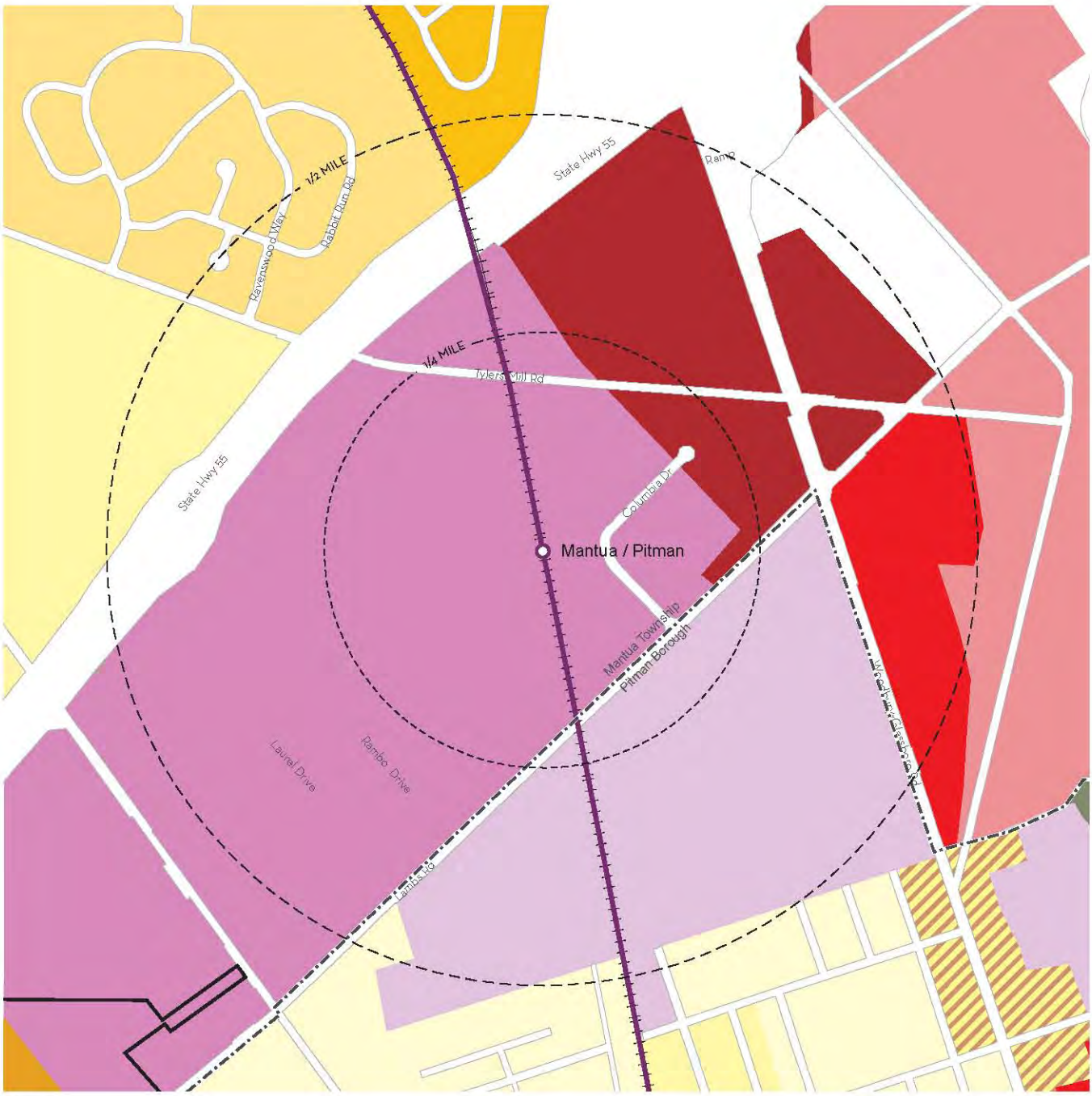


Unlike all other study areas in this report, the Mantua/Pitman Study Area contains very limited residential development. Instead, major areas are dedicated to farming and industrial uses.



Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. In the case of the Mantua/Pitman Study Area, there are no blocks with the 9 units per acre necessary to support a walk-up station.* Whether a park-n-ride facility will be required depends on the form, program, and density of new development and the need of residents outside the study area.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



If the proposed station were located at this site, zoning would most likely need to be updated. Currently, the industrial zoning that covers most of the study area would not permit residential or commercial development.

Source: New Jersey MOD - IV Property Assessment Records

Immediately adjacent to the station there are vacant parcels that could be one of the best opportunities for transit-oriented development along the GCL. Furthermore the community has identified the large industrial site across Lambs Road as a former Sony property that is poised for redevelopment. This area falls inside the Borough of Pitman, the entire extents of which have been declared an Area in Need of Rehabilitation. Thus, the Borough of Pitman is in a strong position to facilitate the redevelopment of this site into a high-density, transit-accessible, mixed-use community that supports transit expansion. However, such efforts must be coordinated with the Township of Mantua, since the proposed station and adjacent parcels fall within its border.

Environmental Justice

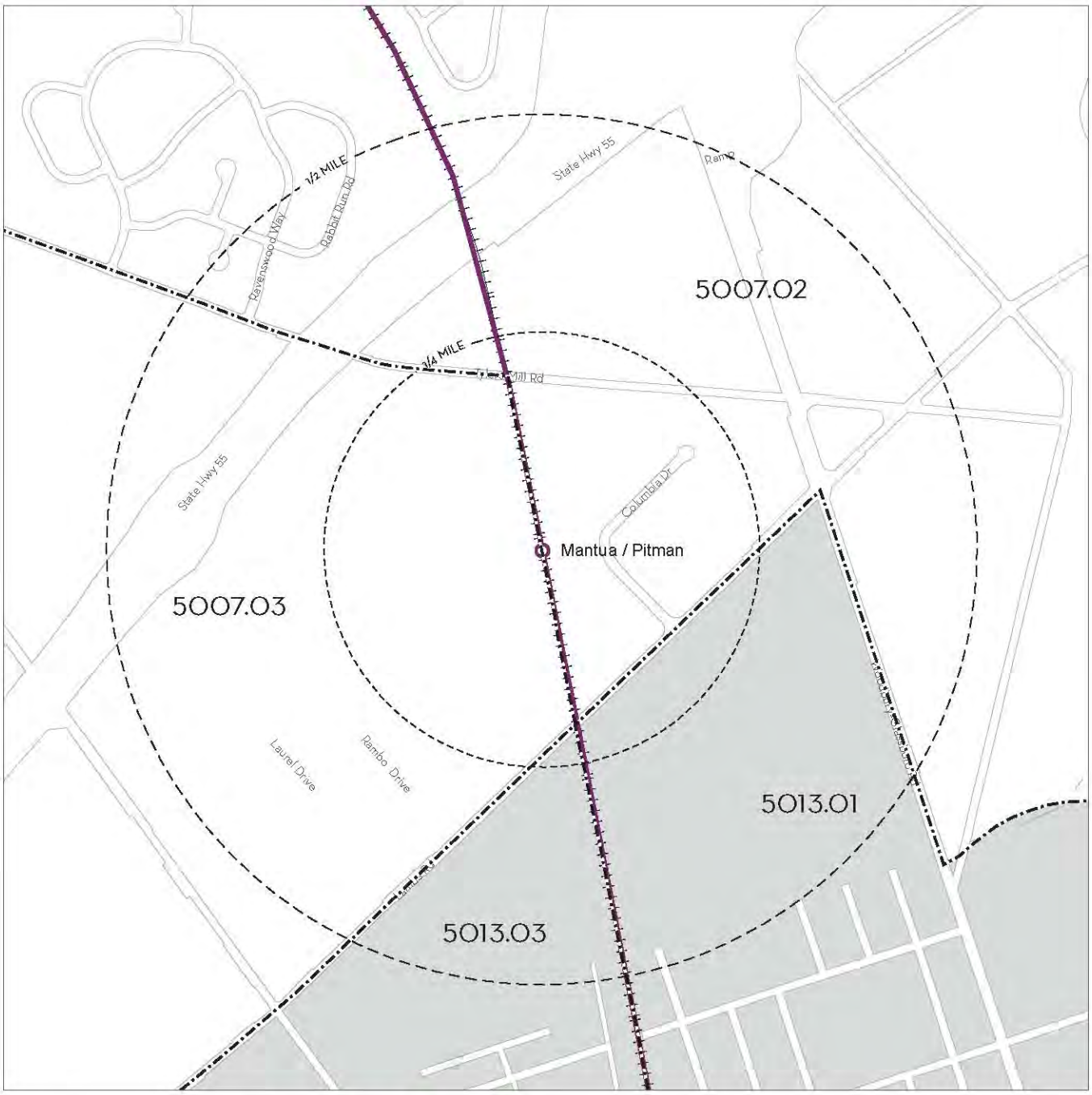
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 8.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5013.03	Census Tract 5007.02	Census Tract 5007.03	Census Tract 5013.01
non-Hispanic minority	24.9%	2.5%	3.0%	5.1%	0.3%
carless households	16.0%	6.1%	2.6%	0.0%	5.2%
households in poverty	10.9%	3.1%	4.1%	6.3%	4.5%
persons with a physical disability	7.7%	10.7%	5.9%	2.8%	6.9%
female head of household with child	7.4%	5.6%	5.7%	3.9%	6.9%
Hispanic	5.4%	1.6%	1.6%	0.0%	0.7%
elderly	6.6%	5.0%	32.0%	5.0%	7.0%
limited English proficiency	2.4%	0.2%	0.6%	0.4%	0.2%

Source: DVRPC



The Mantua/Pitman Study Area overlaps four census tracts, all of which cover large areas of land not included in the study area. As such, it is unclear whether they provide an accurate snap shot of the study area. Nonetheless, special attention should be paid to insuring that persons with a physical disability and the elderly are not excluded from enjoying the benefits of transit expansion.

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

Many of the parcels in the Mantua/Pitman Study Area are in a wetland area. This wetland extends into both parcels identified as having the most immediate opportunities for (re)development. As decisions are made about the location of this, the cost of construction and insurance should be factored into how strong of a (re)development impact transit expansion will have. Moreover, the former Sony Factory is listed as a known contaminated site with "on-site sources of contamination." Without more information about the nature of that contamination, it is impossible to estimate the impact it will have on development.

Source: Gloucester County Cultural Resource Survey

There are no historic districts or historically significant buildings in the study area that would prohibit development as a result of transit expansion.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 8.d summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed station is currently well positioned to take advantage of vacant and underutilized land for either development or a park-n-ride. However, the station location is not connected to the street grid, which was designed to service industrial uses. As a result, streets lack sidewalks and are inhospitable to pedestrian use. This is supported by community stakeholders who identified Tylers Mill Road as a heavily trafficked road that they feel would have to be upgraded to handle additional traffic for a park and ride station. There are no bike lanes and transit service is limited.

Market and Policy Factors

Existing zoning would not allow for residential or commercial development with close proximity to the study area. Nor has the Township of Mantua taken the policy steps necessary to create a land use regulation that supports transit-oriented development. However, the entire extents of the Borough of Pitman have been declared an Area in Need of Rehabilitation. Thus, the Borough of Pitman is in a strong position to facilitate the redevelopment of areas into a high-density, transit-accessible, mixed-use community that supports transit expansion. Such efforts must be coordinated with the Township of Mantua, since the station and adjacent parcels fall within Mantua's borders area.

The County has acquired the right-of-way to widen Woodbury-Glassboro Road south of State Highway 55 to just south of 635.

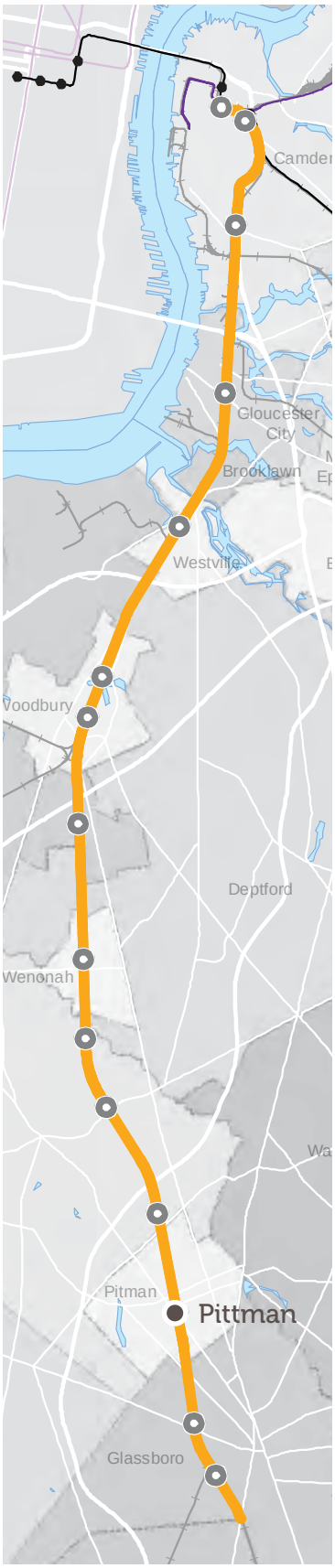
Figure 8.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	2
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	3
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	3
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	3
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	3
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	3
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	2
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	2
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	2
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

9 Pitman

Borough of Pitman, NJ



Overview

The Pitman Study Area has a strong and vibrant main street along Broadway that host many of the area's commercial establishments. Some of this has been the result of efforts to rebrand the area as Uptown and encourage arts oriented business to locate there. Land use is supported by zoning, which allows for a mix of development types to occur between the commercial core and the residential neighborhoods that surround it. Directly adjacent to this area is the Borough's historic district and a park which abuts the proposed transit station. The municipality has undertaken efforts to include TOD regulation in an update to the Rehabilitation Plan and has started studying possible station locations. Both of these efforts put the study area in an excellent position to capitalize on and support transit expansion.

Despite the strength of its zoning, Pitman does not currently allow for multi-family residential development within the study area (although the zoning does exist). Such development would further increase the number of customers who would access services on the Borough's main street while increasing the likelihood of walk-up transit ridership. Moreover, the TOD updates to the Redevelopment Ordinance have not been adopted and there is currently no plan to regulate bulk and design.

There are few vacant parcels within a 1/2-mile of the proposed station. As such, any market pressure that is induced by transit expansion will likely result in redevelopment rather than new development. Thus, the greatest opportunity brought about by transit expansion may be in redeveloping parcels that are not being used to the highest and best use.

Although physical and policy conditions support the notion that Pitman will be a walk-up station, the Borough may wish also to investigate shared parking strategies and other ways of accommodating more demand for limited park spaces. It is likely that some residents in the less dense areas outside of the 1/2-mile radius will want to take transit to work. However, the closest parking to the station, a few pull in spaces along Jersey Avenue, is currently used to access other services in the area.

The Pitman station and the 1/2-mile radius that constitutes the Pitman Study Area are completely within Pitman Borough.

Community Form: Civic/Institutional




Civic and Institutional buildings in the Pitman Study Area vary dramatically with regard to architectural form. More historic building tend to be constructed of red brick, and although there is no unity in terms of building set back or architectural detailing. The one feature that distinguishes civic buildings in the study area tends to be that they have at least one architectural element that exceeds the height of surrounding structures.

Community Form: Commercial





Although commercial buildings in the Pitman Study Area were built in a variety of different time periods, and thus have a number of different architectural styles, many follow a traditional urban form: they are built to the property line, they have long shop windows, awnings to protect pedestrians, entrances that open onto the sidewalk, and off-street parking.

Community Form: Residential






Residential structures in the Pitman Study Area vary considerably. There are a number of historic single-family homes that are two story buildings built with small side and front setbacks, porches, and no off-street parking. Some of the more contemporary single-family homes mirror the style of these historic buildings but with larger side and front setbacks. Finally, there are a few multi-family units in the area that range between two and three stories with entrances that open onto off-street parking lots.

Community Form: Open Space





The Pitman Study Area contains a number of passive and active recreation spaces, including a well-maintained "square" (actually a triangle) that once welcomed people as they disembarked from the train. These areas tend to have a mix of grass and garden landscapes. Many of the active spaces are also well-maintained and accessible within a short from the station.

Demographics

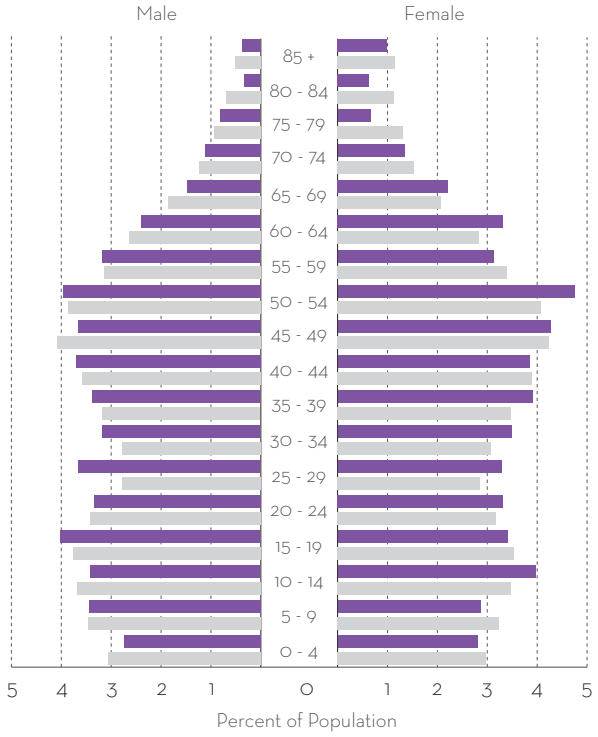
Just over 6,500 people live in the Pitman Study Area. A majority of the residents of the area owned the home where they resided and more than 55% lived in 1- or 2-person homes. Census Tract 5013.02, which is almost entirely contained in the study area, had an averaged mean household income from 2005 to 2010 of $57,000, well below the County mean over that same period ($70,514). However, Census Tract 5013.01, which shares about 1/2 its area with the study area, had an averaged mean household income during that time of just over $69,000.

Between 2000 and 2010, the study area lost more than 652 residents (9%). However, all non-white minority groups, except American Indian/ Alaska Natives, gained population over that same period. Household size decreased slightly in 2010, with only increases in the proportion of households with 3 or fewer persons. The number of residents who own their home remained constant.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

The Pitman Study Area has a similar age composition to the County. The consistent proportion of residents across age groups, with a steady decline starting at age of 55, suggests that the area has a stable population. As such, new growth will most likely only occur when new residents move into the area.

Figure 9.a: Population Pyramid



Source: Census Bureau (Block Level Data)

Study Area Gloucester County

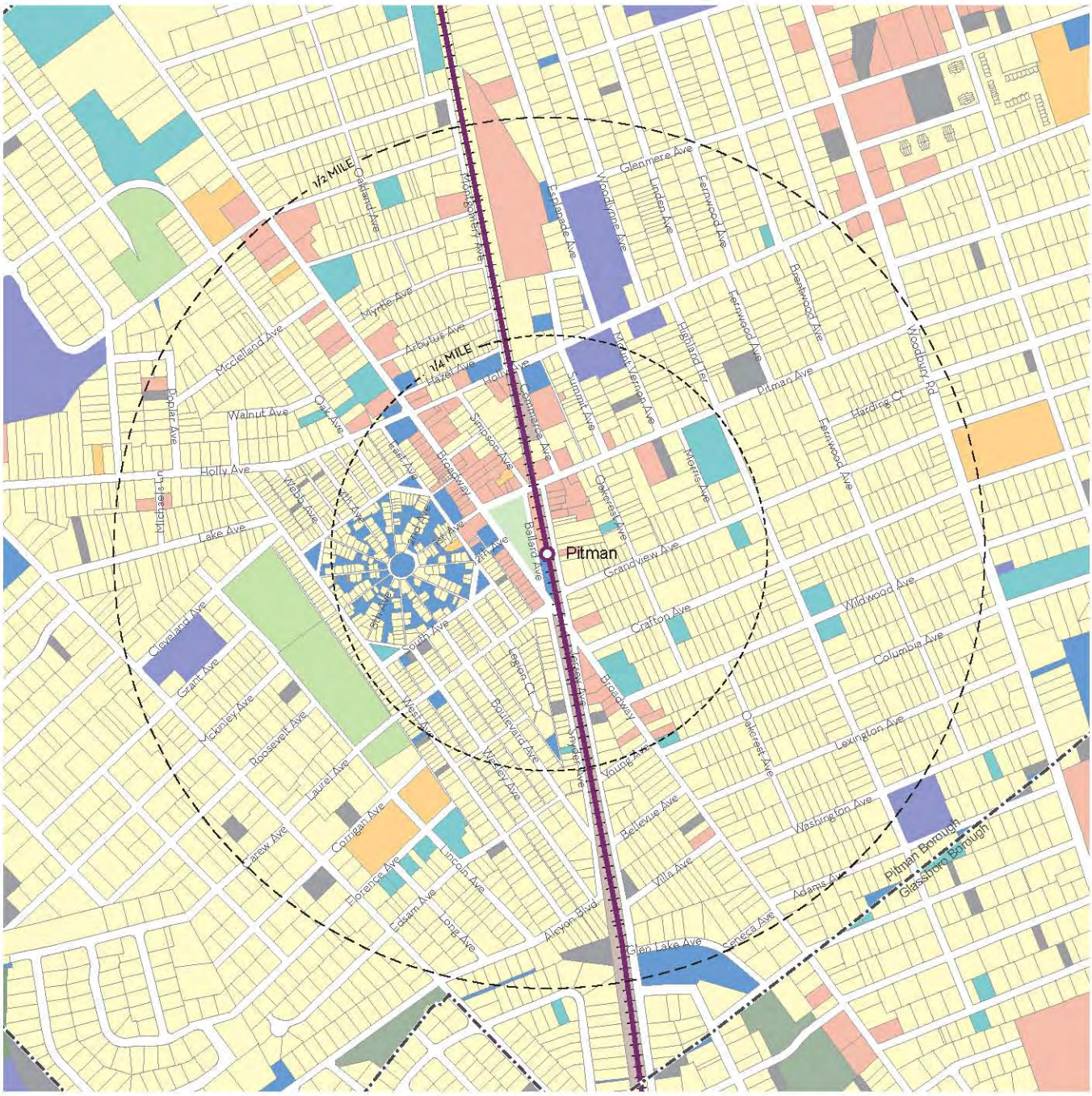
Figure 9.b:Demographic Data

		2000	2010
Population	Total Population	7,199	6,547
Race	White alone	7,006 (97%)	6,268 (96%)
	Black or African American	53 (1%)	71 (1%)
	American Indian and Alaska Native	9 (0%)	7 (0%)
	Asian	38 (1%)	43 (1%)
	Native Hawaiian and Pacific Islander	0 (0%)	0 (0%)
	Some other race	18 (0%)	55 (1%)
	Population of two races	75 (1%)	98 (1%)
Hispanic / Latino	Hispanic Population	105 (1%)	121 (2%)
Household Size	1-person household	660 (25%)	656 (26%)
	2-person household	765 (29%)	769 (30%)
	3-person household	455 (17%)	456 (18%)
	4-person household	435 (17%)	398 (16%)
	5-person household	203 (8%)	171 (7%)
	6-person household	62 (2%)	50 (2%)
	7 or more person household	30 (1%)	32 (1%)
	Average Household Size	2.8	2.6
Housing Tenure	Owner	1917 (73%)	1885 (74%)
	Renter	693 (27%)	647 (26%)

Source: Census Bureau (Block Level Data)

The proposed station location would provide excellent transit services to a number of community assets, including the Pitman Borough Office and Pitman Middle School. Moreover, the station is proposed next to a well-maintained park (see Community Form: Open Space).

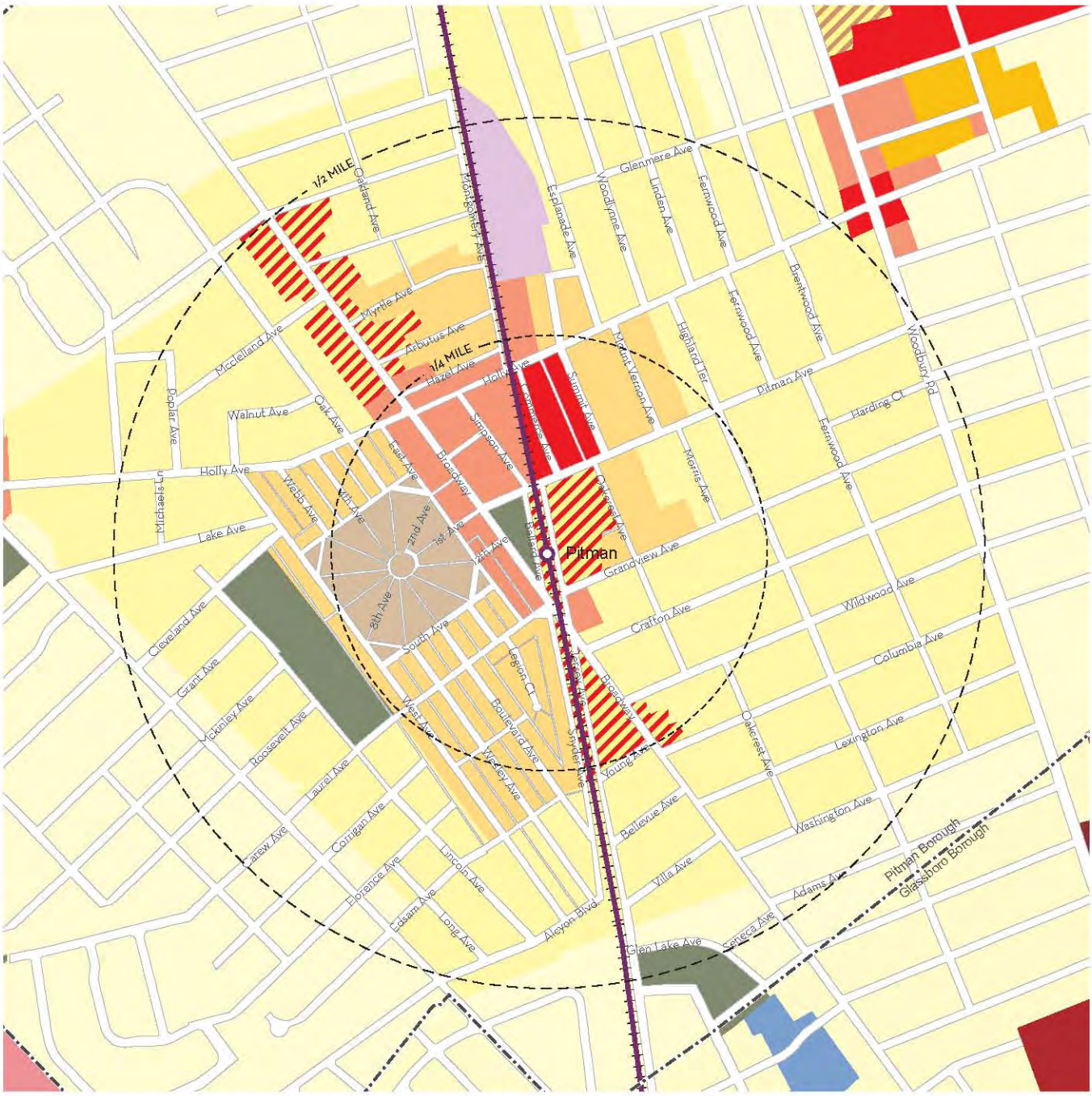
The Pitman Study Area is serviced by NJTransit Route 313, 408, and 412. Route 313 runs from Cape May to Philadelphia, Route 408 runs from Millville to Philadelphia, and Route 412 runs from Sewell to Philadelphia. The majority of the block groups that intersect with the study area had between 6% and 12% of residents take transit to work in 2000. This suggests that light rail service will likely be a welcomed improvement for transit commuters in the area.



The majority of land in the Pitman Study Area is dedicated to residential development. The Borough's main commercial street is Broadway, and much of the commercial development on that strip is located within 1/4-mile of the station. The few multi-family apartments in the area are not located on Broadway, but instead take up all or most of a block outside the commercial core.

Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. There are some blocks within the study area that have more than 9 housing units per acre, the threshold for walk-up light rail service.* There are also a number have between 4 and 9 units per acre. Blocks with higher unit densities tend to be closer to the commercial corridor and in the historic section of the Borough. As a whole, the study area may have the average housing unit density to support walk-up service but accommodations to allow higher density residential construction in the core would certainly help insure this.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Zoning currently allows commercial development in the downtown core (C1 and C2). The Transitional Residential Office is essentially a mixed-use zone. It allows any use permitted in the RA residential district, as well as professional office, civic, apartment, and day-care center, among others. Outside of this core, zoning limits development to single-family homes, semi-attached homes, and group homes. Finally, there is a substantial historic district that attempts to preserve an area that is on the New Jersey and national registers of historic places. Overall, this zoning facilitates a larger variety of uses and higher density closer to the station, a major goal of TOD design.

vacant land | community identified development opportunities | Area in Need of Redevelopment

1,000 ft

Source: New Jersey MOD - IV Property Assessment Records

In May 2010 the Borough of Pitman adopted a resolution declaring the entire Borough an Area in Need of Rehabilitation. This designation better enables the Borough to rehabilitate structures that are substandard or vacant, stimulate private investment through tax incentives, and regulate bulk and design standards. In 2011 proposed revisions to this plan, the Borough outlined a strategy to allow mixed-use development and increased density within a 1/2-mile of the station area. These revisions would require proposals within 1/4-mile of the station to be evaluated based on their ability to generate pedestrian traffic and would specifically prohibit auto-dependent uses.

Environmental Justice

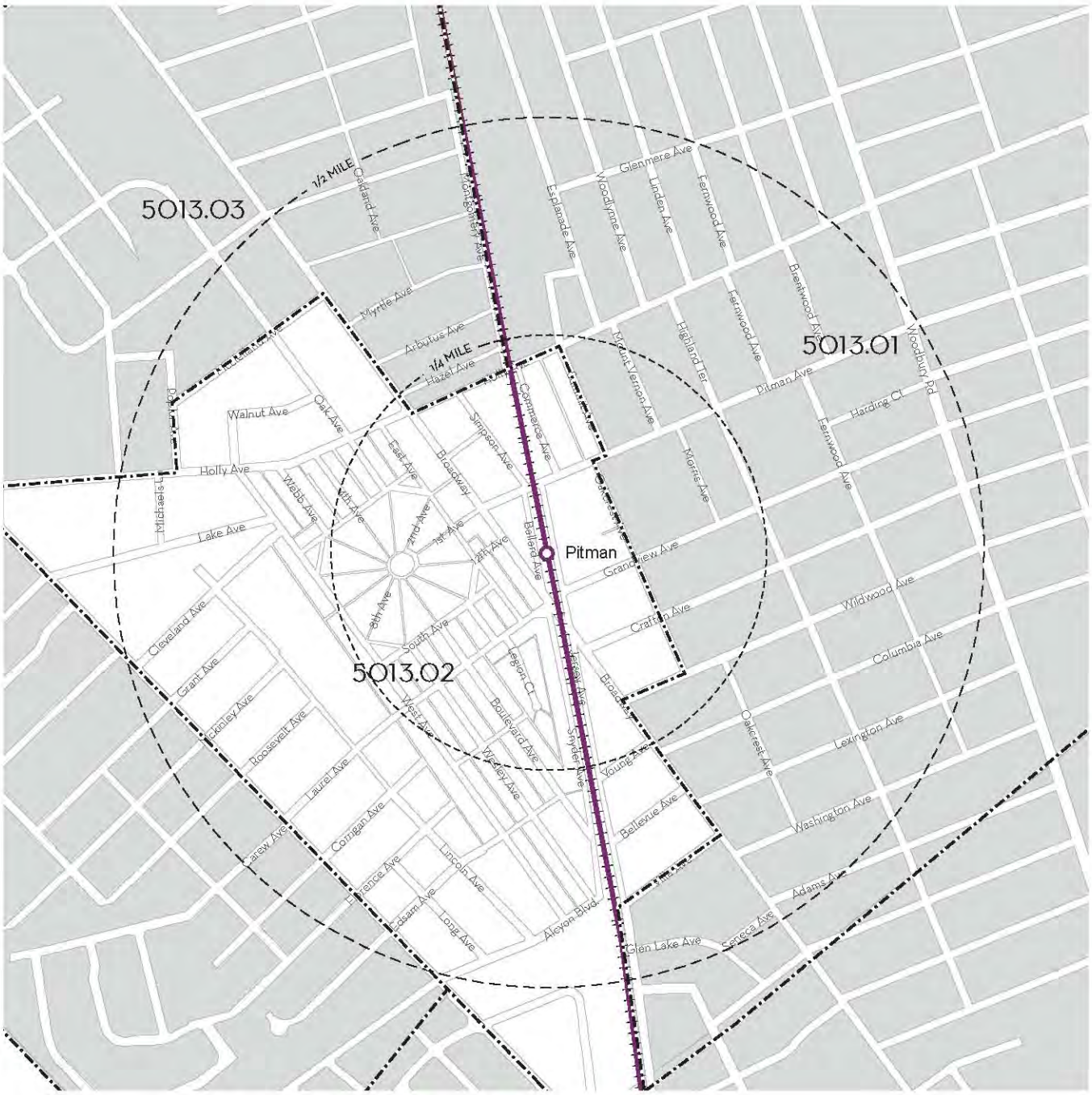
Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

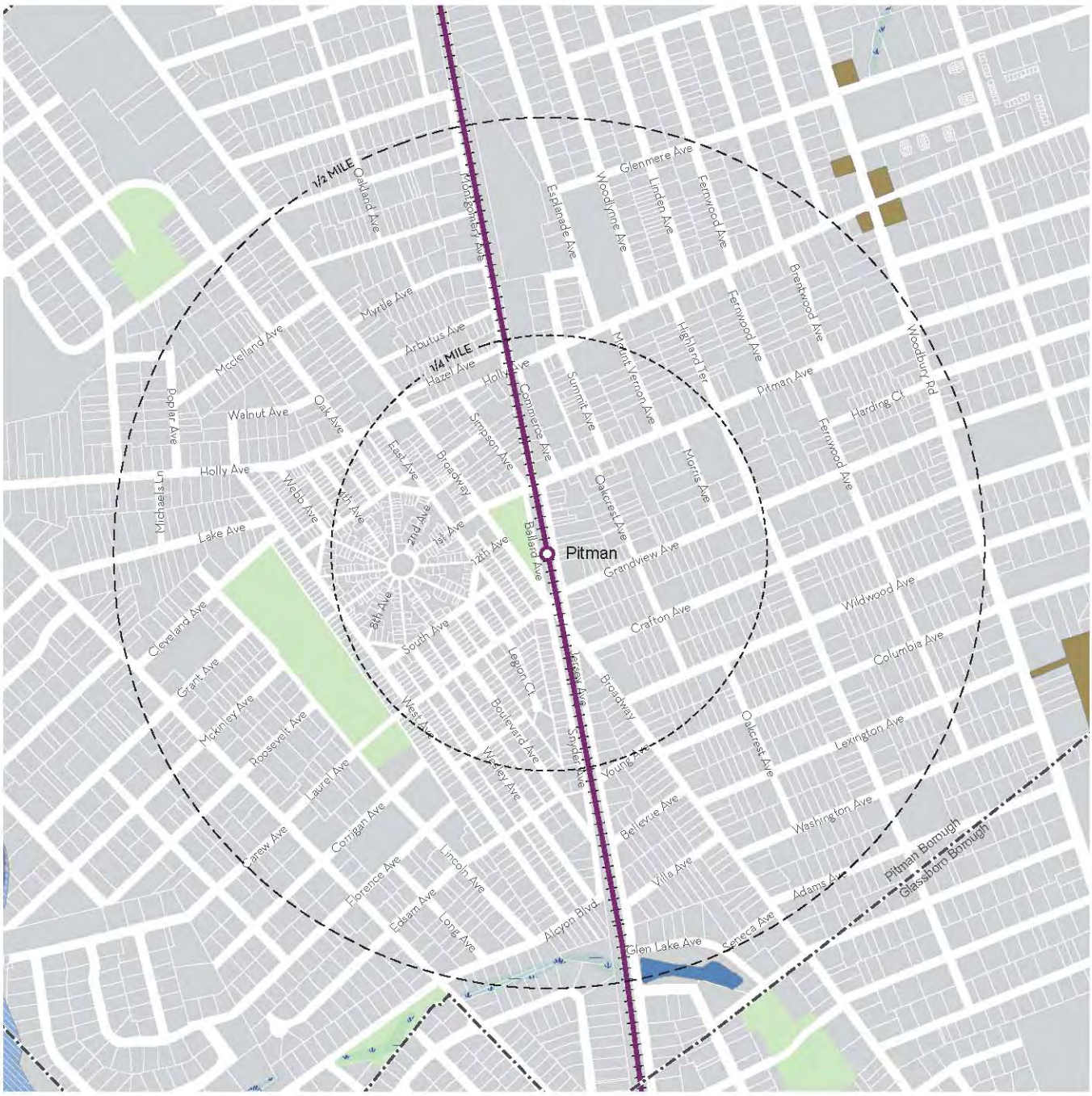
Figure 9.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5013.02	Census Tract 5013.01
non-Hispanic minority	24.9%	1.6%	0.3%
carless households	16.0%	8.2%	5.2%
households in poverty	10.9%	3.7%	4.5%
persons with a physical disability	7.7%	7.4%	6.9%
female head of household with child	7.4%	5.1%	6.9%
Hispanic	5.4%	3.4%	0.7%
elderly	6.6%	21.0%	7.0%
limited English proficiency	2.4%	0.8%	0.2%

Source: DVRPC



The two census tracts that intersect with the study area had DOD scores of 1 or less. In both census tract, elderly people were the only group that had a higher proportion of the population than regional thresholds. Since this population typically faces mobility issues and reduced access to personal vehicles, efforts to expand transit into the area should ensure that they are not excluded from enjoying the benefits of light rail service.



Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

There are no environmental conditions that would threaten the proposed station or constrain development opportunities brought about by transit expansion.

Listed Historic Buildings | Eligible Historic Buildings | Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

The station area and many adjacent parcels are within a codified historic district. Owners must get approval from the historic commission to make exterior modifications to buildings in this district. Thus any new development in this area brought about by transit expansion will likely have to conform to these requirements. However, there are no plans to use the old station building for transit operations. Thus this district should not interfere with transit expansion efforts.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 9.a summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The Pitman Study Area has a number of the physical factors that support transit. The proposed station is located in the heart of a traditional main street (called Uptown) that is very walkable. The area within 1/4-mile of the station contains a mix of land uses and the street grid is well designed to provide pedestrian and automotive connections to the station. Although there is no parking plan in place, patrons of Uptown businesses are able to park behind the shops and on street parking is provided.

Despite these positive physical factors, there are few available sites for new development. As such, any increased market pressure that comes from transit expansion will most likely require the redevelopment of parcels in the study area.

Market and Policy Factors

Current zoning is generally highly supportive of transit. Currently, there is no TOD specific planning but there are efforts underway to include TOD planning regulations in the ordinance declaring the Borough an Area in Need of Rehabilitation. Moreover, the town has received a grant from DVRPC contracted Land Dimension to begin station area planning efforts. The results of that work should be made available around the time of the publication of this study.

The station is located next to a walkable, mixed-use town center that is supported by zoning regulation. The town has undertaken economic development efforts to encourage arts related business to locate in this area, and rebranded the area as Uptown. As part of that effort, the Broadway Theater was reopened in 2006, with the support of the Greater Pitman Chamber of Commerce in cooperation with Heritage Foundation, Inc. According to local interviews, the theater is able to seat more than 900 people and regularly sells out shows.

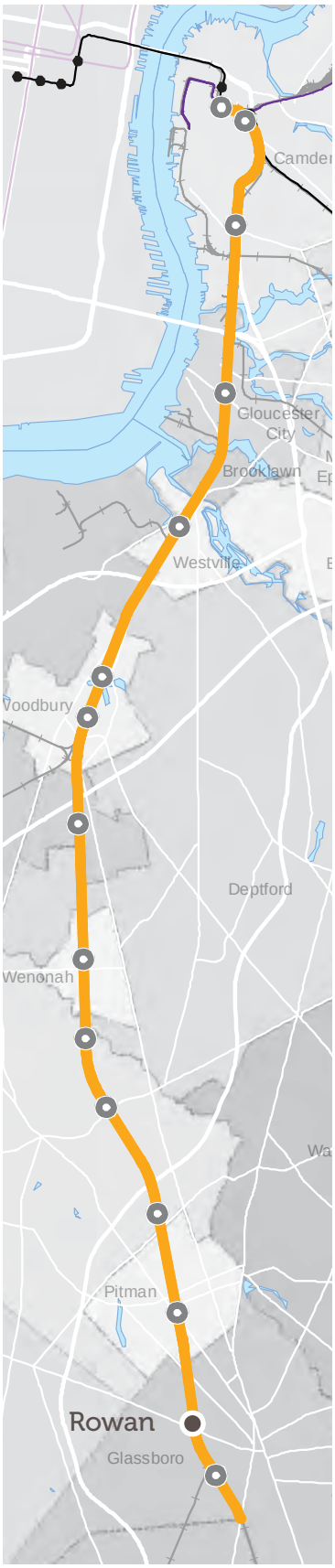
Figure 9.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	3
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	1
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	1
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	2
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	2
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	1
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	2
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	2
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	2
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	1
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	1
Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive			

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

10 Rowan University

Borough of Glassboro, NJ



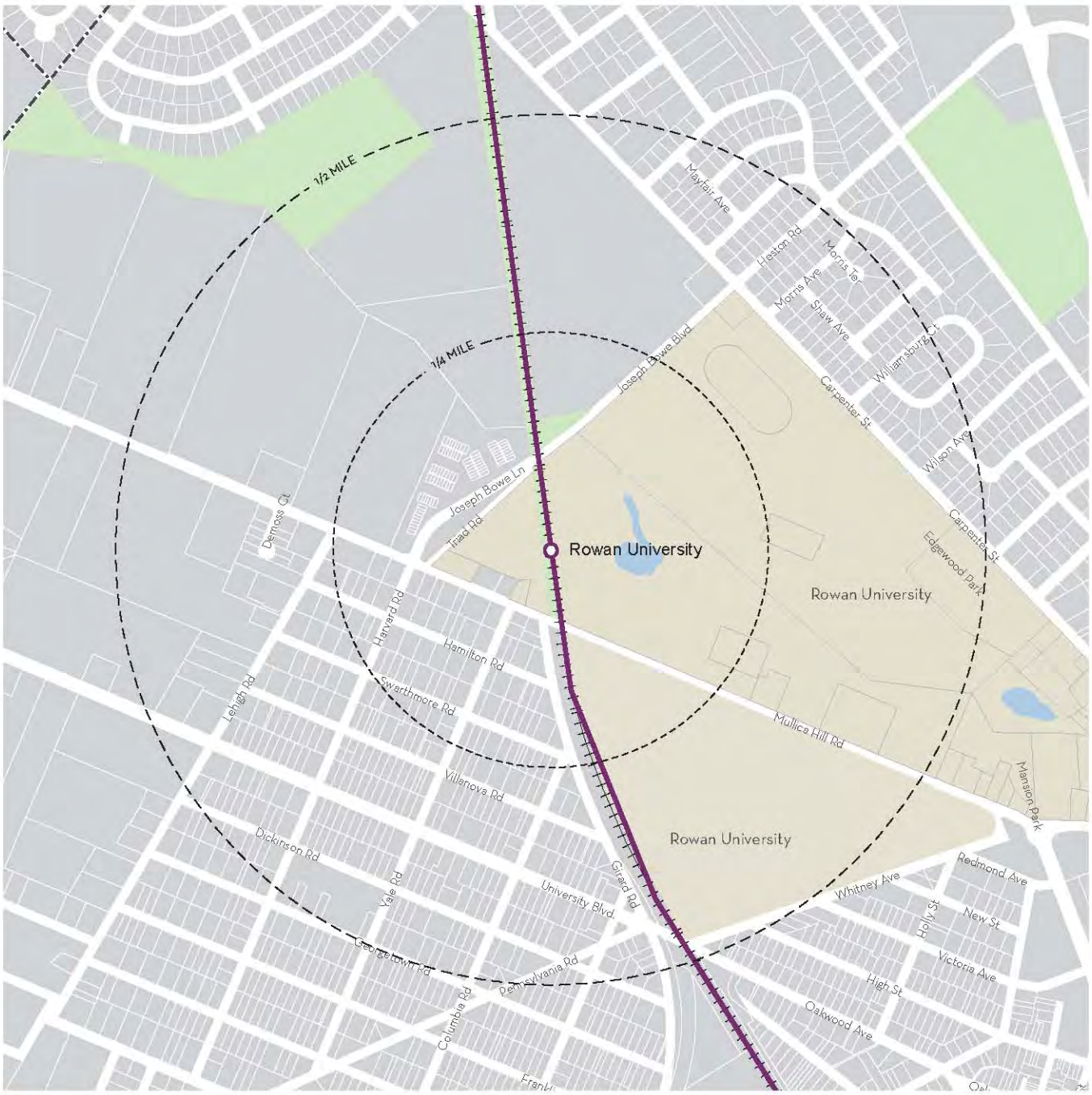
Overview

The proposed Rowan University Station is well position to be a destination station along the GCL. As of the 2011-2012 academic school year, 11,816 students (10,438 undergraduates), 1,049 faculty, and 766 staff utilized facilities on the University's two campuses (Camden and Glassboro). The Glassboro campus was also home to 3,837 students who lived in 8 residence halls and 5 apartment complexes. (www.rowan.edu/fastfacts, 6/2012) Beyond the University, the four other institutions of learning within the study area may also generate ridership.

Despite these strengths, riders who live in the area may face obstacles to accessing transit. The study area has a low housing unit density, poor transit connections, and lacks safe and convenient bicycle lanes. As such, these residents will most likely not walk or bike to the station but instead may look for ways of parking at or near the station, if they choose transit at all.

The University will most likely see development opportunities spurred by transit expansion. Since there is a large site currently dedicated to surface parking adjacent to the proposed station, they may also have the physical space to redevelop. For the municipality, opportunities lie in improving pedestrian connections to the surrounding neighborhood and the university, and in installing bike lanes. These efforts will not only help link the station with the major activity center, Rowan University, but will all improve the likelihood that all residents will be able to enjoy the benefits of transit expansion.

As the municipality moves forward with these and other plans, it should make note of the high concentrations of historically disadvantaged groups within the study area. Transit expansion may be an excellent opportunity to support the mobility needs of those over 75 years of age, those without a car, and persons with a physical disability, among others.



The proposed Rowan University Station, and the 1/2-mile radius that constitutes the Rowan University Study Area are completely within the Borough of Glassboro.

Community Form: Civic/Institutional






Rowan University is the major institutional presence in the study area. Although architectural details vary, most University buildings are modern with red brick facades. The University is arranged as a campus: there are some internal streets but pedestrian circulation is given a high priority and is often separated from automotive circulation. Although many buildings open onto an internal street or pedestrian network, buildings along major rights-of-way face the street. As a result, the campus has distinctive boundaries but does not look shut off from the surrounding areas.

Community Form: Commercial


There are only a few commercial sites in the study area. Those commercial buildings that do exist tend to be auto-oriented, with parking lots that separate the road from the building. In most cases, the buildings do not exceed one story.

Community Form: Residential






Residential construction in the area is diverse in style and form. There is a distinct residential community that includes exclusively one and two single-family homes with pitched roofs, off-street parking, and large landscaped (grass) setbacks. There are also high density attached homes and apartment complexes that primarily service university students. These developments have multiple units which open onto private surface parking lots. The architectural style of these units is varied, but they generally do not exceed two stories plus a pitched roof. Finally, there are a few homes on large lots that also include farms or productive landscapes.

Community Form: Open Space



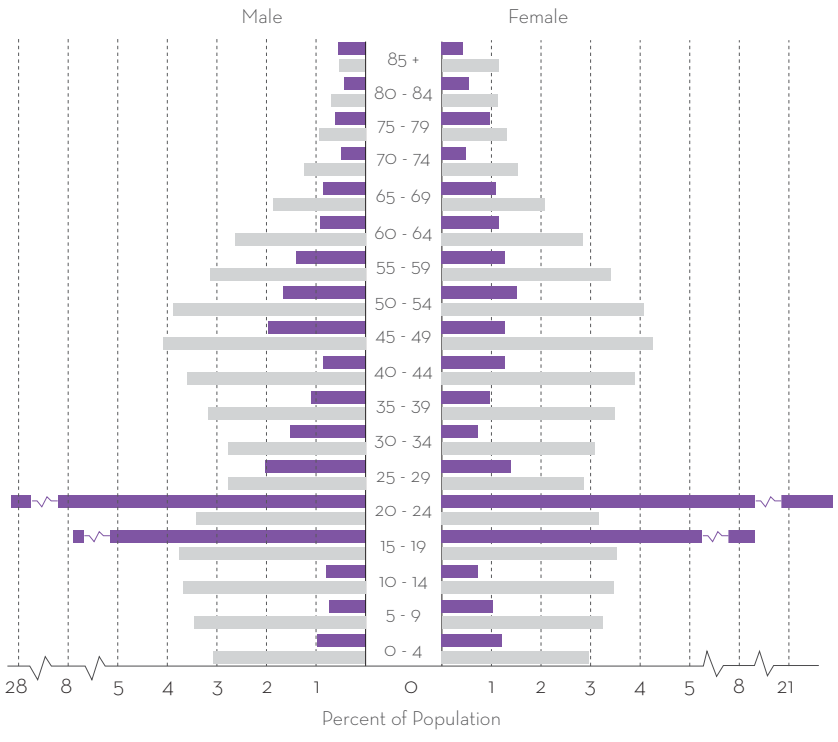
The university and high school both have athletic fields. It is unclear whether the wider community can access these facilities. There are also some landscaped spaces (mostly grass) throughout the university that are open to the public.

Demographics

The Rowan University Study Area is home to just over 4,482 residents. Although the study area intersects with multiple census tracts, Tract 5014.04 has the most overlap and gives the best picture of the area. The averaged mean household income between 2005 to 2010 for that tract was $26,667. The number of student age residents who live in the area most likely explains this extremely low-household income relative to the County and the high percentage of renters.

From 2000 to 2010, demographic data indicates that the study area lost 1,449 residents (25%). The large discrepancy between 2000 and 2010 populations is the result of two factors. In 2000, the Rowan University Area was represented by Tract 5014.04 Block 34015 and had a total population of 1,997 residents. In 2010, the Blocks that made up that same area (Tract 5014.04 Blocks 1000, 1001, 1002, 1005, 1006, and 1012) had a combined total of 711 residents, a difference of more than 1,286 residents. According to the University, the Glassboro campus was also home to 3,837 students, a population that is difficult to count and may not have been accurately recorded by the Census. The second issue relates to how the Census drew Blocks in 2010. Tract 5014.03 Block 3000 in 2000 was divided into many smaller Blocks in 2010. Since counts were taken from all blocks that fell within or *intersected* the 1/2-mile radius, population data in 2000 included counts of a larger geographic area than in 2010.

Figure 10.a: Population Pyramid



From 2000 to 2010, the proportion of households that rented their homes decreased by 5% and the average household size decreased by 0.3, with moderate increase in 2-person households. Over this same period, White residents became a larger proportion of the population, and the number off all non-white racial groups decreased.

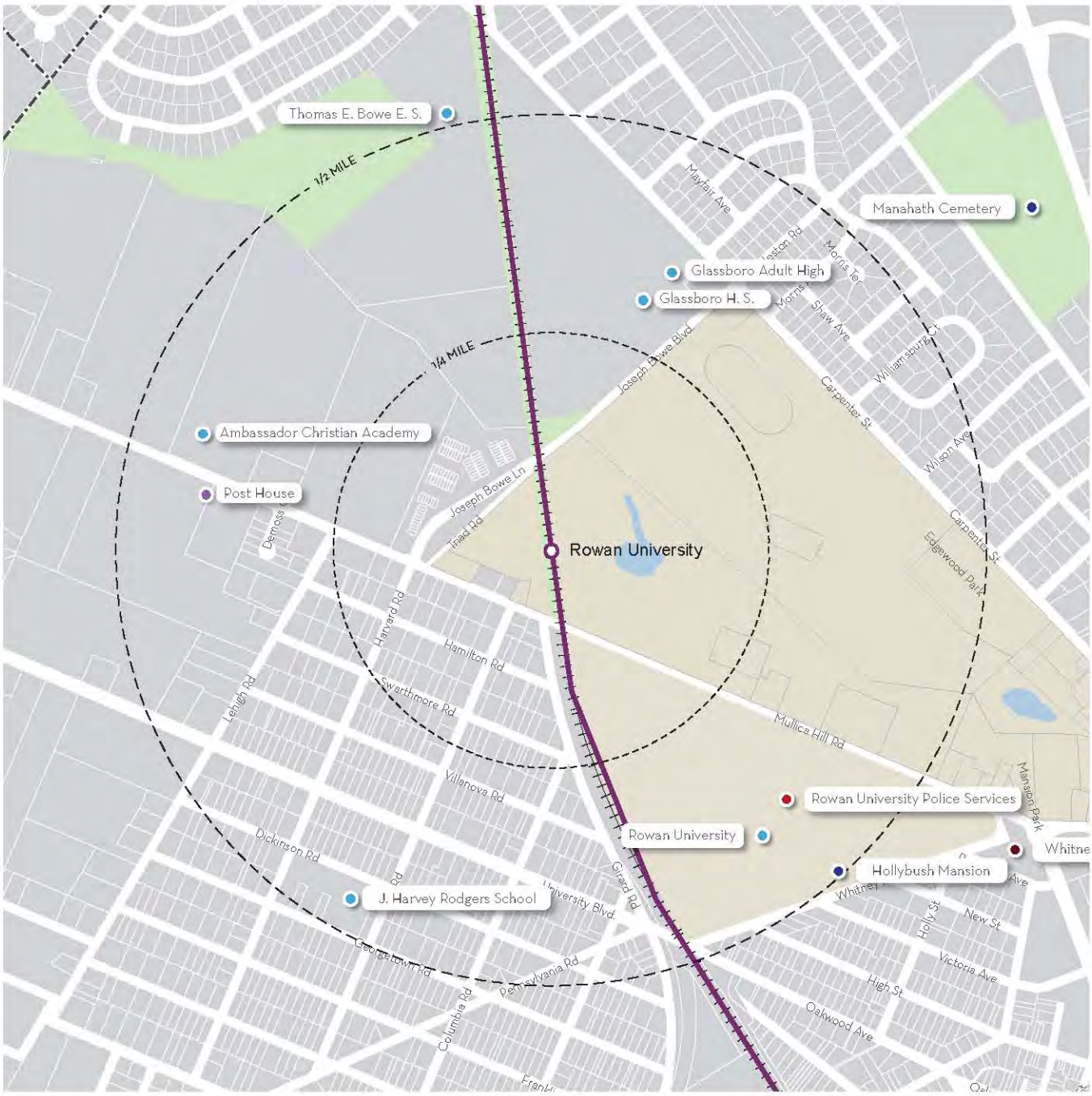
Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 10.b:Demographic Data

		2000	2010
Population	Total Population	5,931	4,482
Race	White alone	4,817 (81%)	3,812 (85%)
	Black or African American	748 (13%)	373 (8%)
	American Indian and Alaska Native	13 (0%)	6 (0%)
	Asian	155 (3%)	119 (3%)
	Native Hawaiian and Pacific Islander	8 (0%)	3 (0%)
	Some other race	107 (2%)	77 (2%)
	Population of two races	83 (1%)	84 (2%)
Hispanic / Latino	Hispanic Population	245 (4%)	241 (5%)
Household Size	1-person household	322 (23%)	248 (22%)
	2-person household	476 (34%)	419 (37%)
	3-person household	255 (18%)	175 (15%)
	4-person household	239 (17%)	230 (20%)
	5-person household	67 (5%)	49 (4%)
	6-person household	28 (2%)	18 (2%)
	7 or more person household	14 (1%)	7 (1%)
	Average Household Size	4.2	3.9
Housing Tenure	Owner	724 (52%)	656 (57%)
	Renter	677 (48%)	490 (43%)

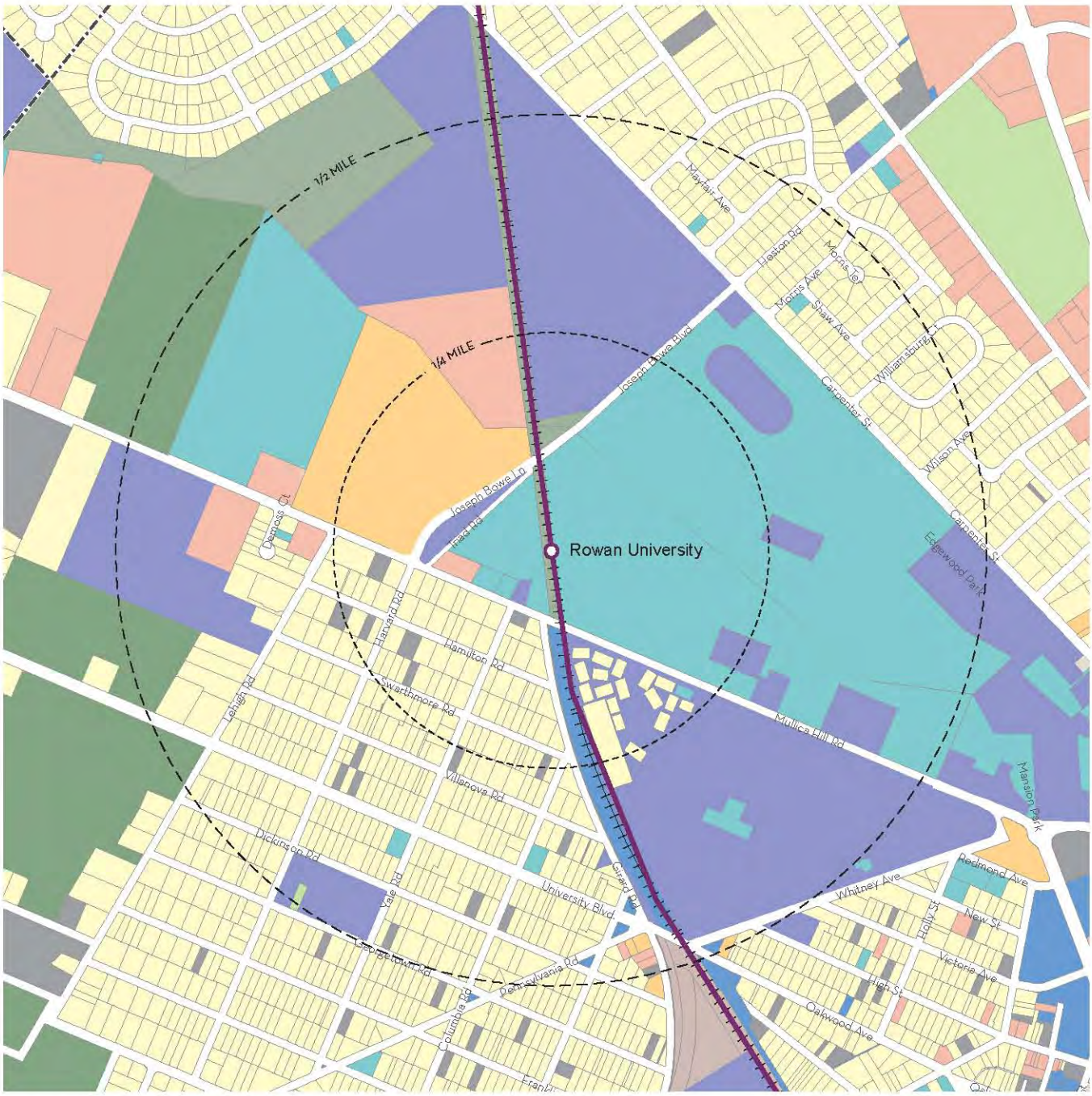
Source: Census Bureau (Block Level Data)

As expected, the Rowan University Study Area has a disproportionately high number of college student aged individuals. Men and women between the ages of 20 and 24 constitute almost half of all study area residents. Interestingly, few people in this age group remain in the study area after age 25 (presumably after graduation). As transit expansion efforts continue, the Borough may wish to investigate how this younger population will use transit. Information regarding the time of day they will use the station, what amenities they may be able to access at or near other station areas, and what station adjacent services (like bike parking) they may require will the Borough plan so that it can support and capitalize on transit expansion.



The majority of community assets in the area are education related. Beyond Rowan University, there is also a high school, an adult high school, an elementary school, and a kindergarten and 4th - 8th grade private academy. Since these institutions bring both students and staff into the area, this station may act as a regional destination during the day. Alternatively, at night the station may get more use by resident students who wish to access larger metropolitan areas. Such a combination of uses at different times of the day will help activate the station.

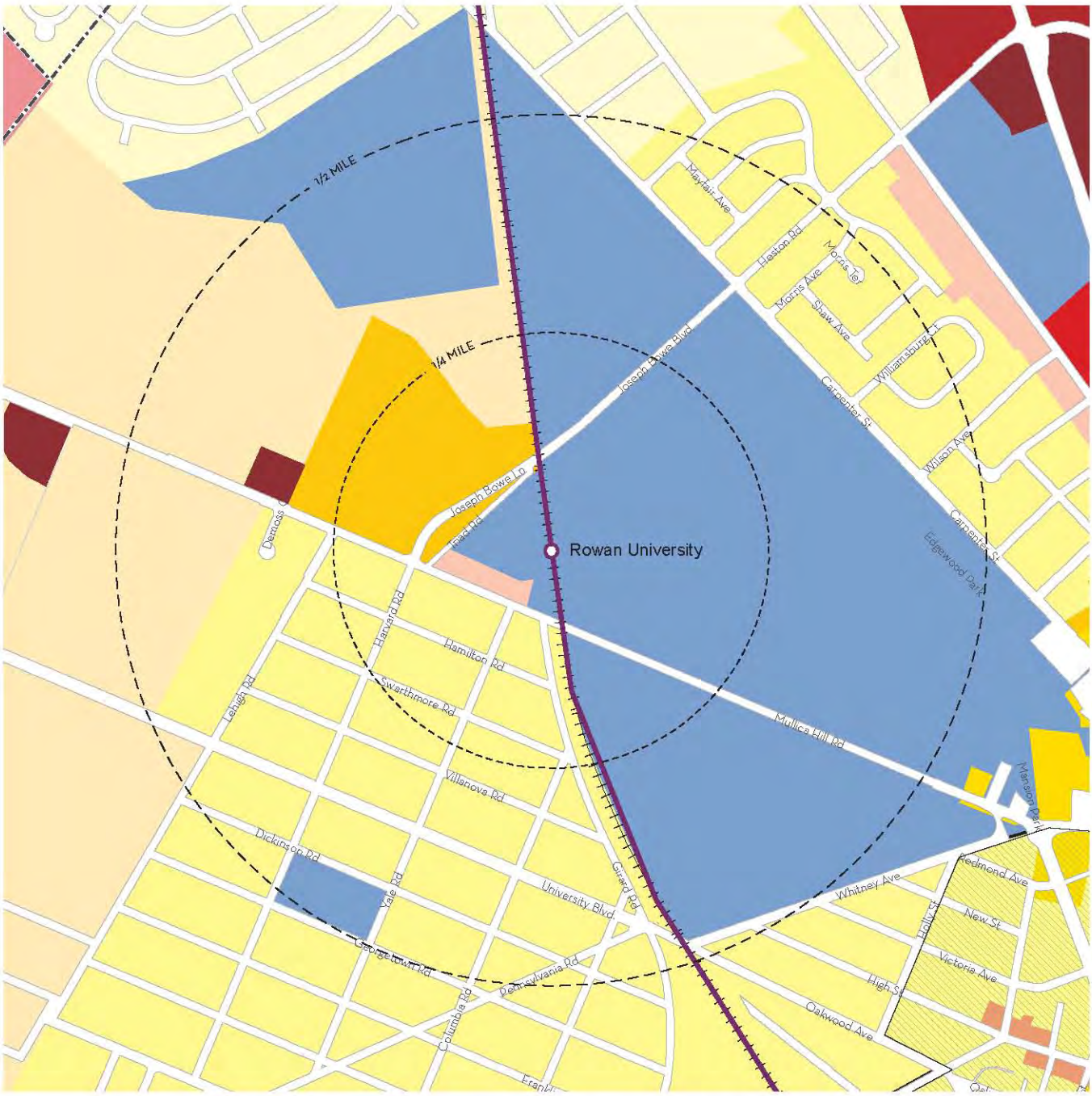
The Rowan Study Area is serviced by two NJTransit Buses: Route 313, which runs from Cape May to Philadelphia, and Route 412, which runs from Sewell to Philadelphia. In 2000, no block group had more than 3% of its population take transit to work. In 2009, the Borough undertook a Trolley Feasibility Study. The conclusion of that investigation was that two routes, a Brown and a Gold Loop, should circulate around the campus and connect the area to the corner of College Ave and Main Street, near the new Rowan Boulevard development and the Borough's historic downtown. If this plan were to come to fruition, it would help to connect the Rowan Station to both the downtown area and university.



The majority of the land in the study area is dedicated to schools and related tax-exempted property owners. There is a large area of apartment housing as well as a section of mostly single-family residential housing units. Most notably absent from the area are many parcels dedicated to retail services, which calls into question how students and local residents fulfill their daily living needs.

Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. Only two blocks in the study area have more than 9 units per acre, the density required to support a walk-up station.* However, it should be noted that this station is likely to serve as a destination, and thus this data is less important than in other areas. Area residents wishing to take transit will most likely seek park-n-ride options at other station locations.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



The majority of non-publicly zoned land in the Rowan University Study Area is zoned R2 Medium Density Residential. This designation limits residential development to single- and two-family homes. Single-Family homes have a minimum lot size of 7,500 square feet, which limits development to a maximum of 5 units per acre. The R4 Garden Apartment zoning, however, requires a minimum of 5-acre lots but up to 12 units/acre, a density more than sufficient to support a walk-up station. The small amount of neighborhood convenience zoning, as the name implies, allows principally for local serving retail.

Source: New Jersey MOD - IV Property Assessment Records

On February 3, 2003 the Borough of Glassboro adopted Resolution 59-03 declaring the entire Borough an Area in Need of Rehabilitation. This designation better enables the Borough to rehabilitating structures that are substandard or vacant, stimulate private investment through tax incentives, and regulate bulk and design standards. Since there are few vacant parcels in the study area, it is likely that any increased market pressure that results from transit expansion will require redevelopment of existing parcels or new development on the Rowan University Campus. There area to the east of the proposed station is currently a large surface parking lot.

Environmental Justice

Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 10.c: Degrees of Disadvantage

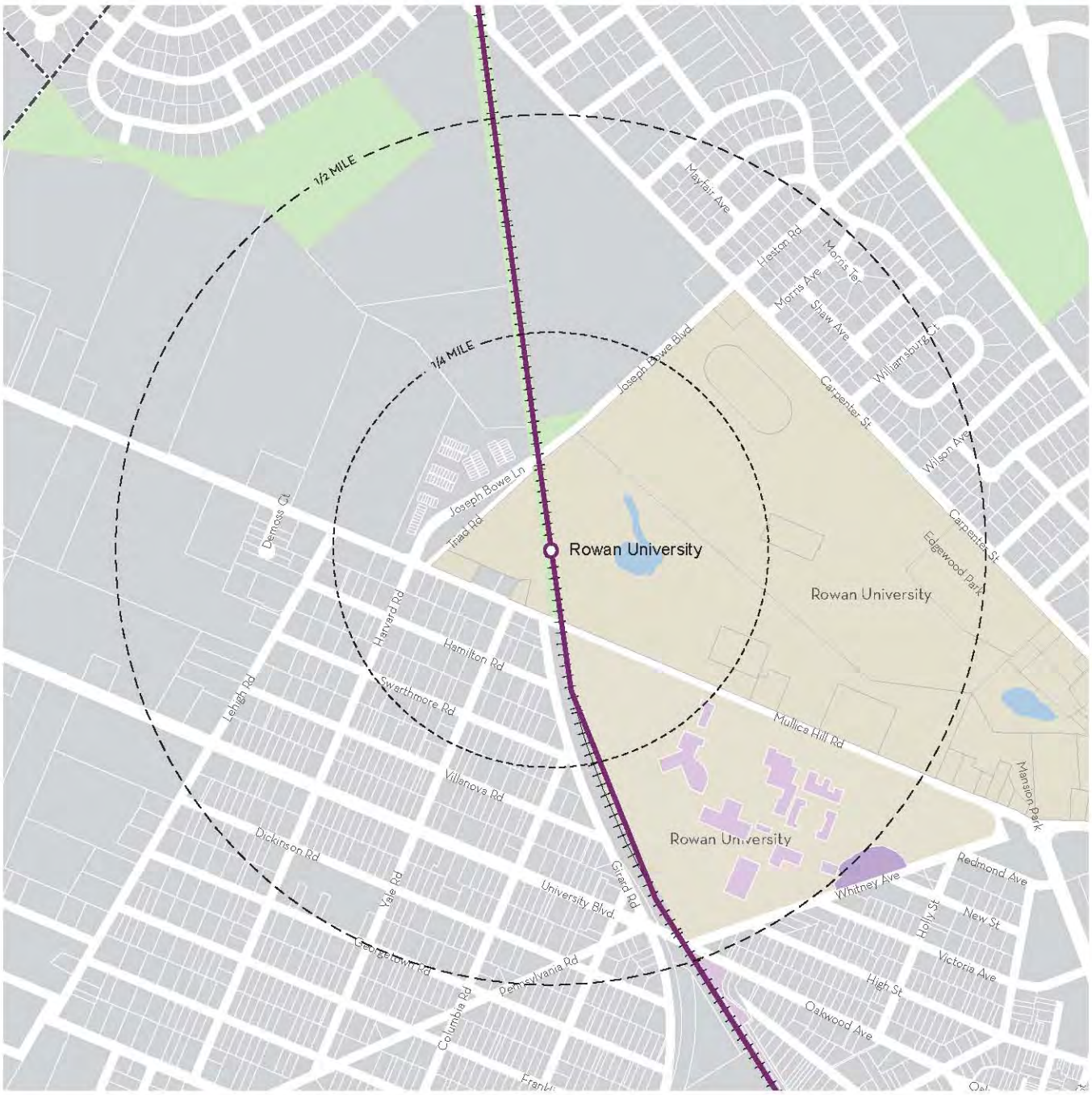
Degrees of Disadvantage	Regional Threshold	Census Tract 5014.04	Census Tract 5014.03
non-Hispanic minority	24.9%	13.3%	27.3%
carless households	16.0%	4.8%	13.0%
households in poverty	10.9%	36.3%	15.3%
persons with a physical disability	7.7%	1.8%	7.4%
female head of household with child	7.4%	5.0%	11.8%
Hispanic	5.4%	4.4%	7.0%
elderly	6.6%	21.0%	68.0%
limited English proficiency	2.4%	0.5%	2.2%

Source: DVRPC

Both Census Tract 5014.03 and 5014.04 include large areas not within the study area. However, they may still be good reflections of the character of the study area. Tract 5014.03 has high concentrations of many historically disadvantaged groups. It is of special note that both tracts have proportions of households in poverty and proportions of elderly people that exceed the regional threshold. Since both of these populations tend to face mobility issues, efforts to expand transit into the area should ensure that they are not excluded from enjoying the benefits of light rail service.

Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

Although the proposed station is located near a floodplain and wetland, it is unlikely this will be a threat to either the station or development as the result of transit expansion.



Listed Historic Buildings | Eligible Historic Buildings | Historic District

1,000 ft

Source: Gloucester County Cultural Resource Survey

The only historically eligible sites are located on the Rowan University Campus, and thus are not likely to face development pressure as a result of transit expansion.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 10.a summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed station location is on the Rowan University Campus adjacent to a large surface parking lot. Since there are few vacant parcels in the area, station adjacent development will most likely have to further the goals and objectives of the University.

As located, there is currently no right-of-way that allows for access to the station. The proposed location is within easy walking distance of many University buildings. Although the campus is mixed use, the surrounding area is made up of low density residential and there is limited commercial development near the station.

The area receives limited transit service and does not have the land use density needed to support a walk-up station. However, it may be more important to understand pedestrian connectivity since this station will most likely be a destination on the GCL. The University itself is a walkable environment, with many dedicated pedestrian paths. Alternatively, some of the single-family housing blocks lack sidewalks, there are no dedicated bicycle lanes in the study area, and the limited retail is in the area is not oriented to take advantage of pedestrian traffic.

Market and Policy Factors

The entire Borough of Glassboro has been designated an Area in Need of Rehabilitation. This designation better enables the Borough to rehabilitating structures that are substandard or vacant, stimulate private investment through tax incentives, and regulate bulk and design standards.

Figure 10.d: TOD Score Card

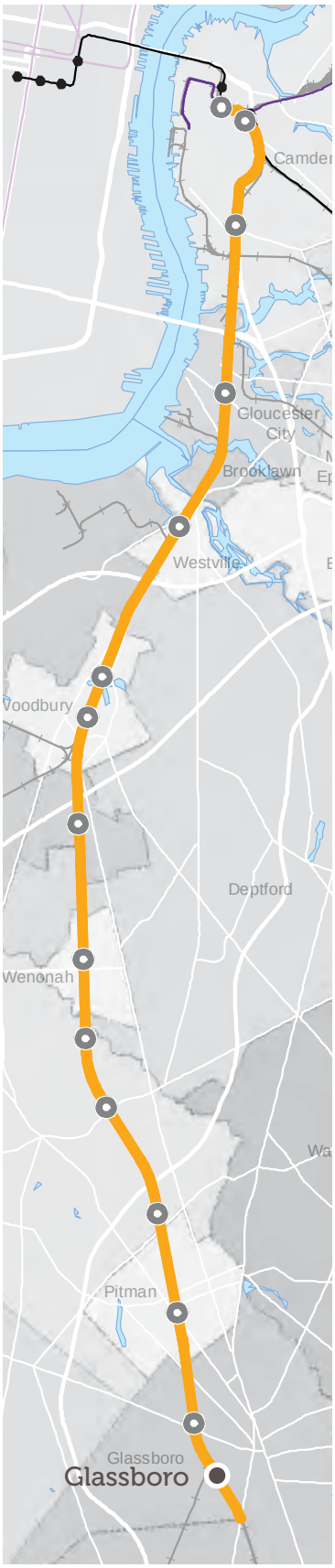
	TOD Factors	Highly Supportive Characteristics (not a description of this station's characteristics)	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	2
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	2
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	2
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	2
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	3
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	2
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	1
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	1
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	2

Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.

11 Glassboro

Borough of Glassboro, NJ



Overview

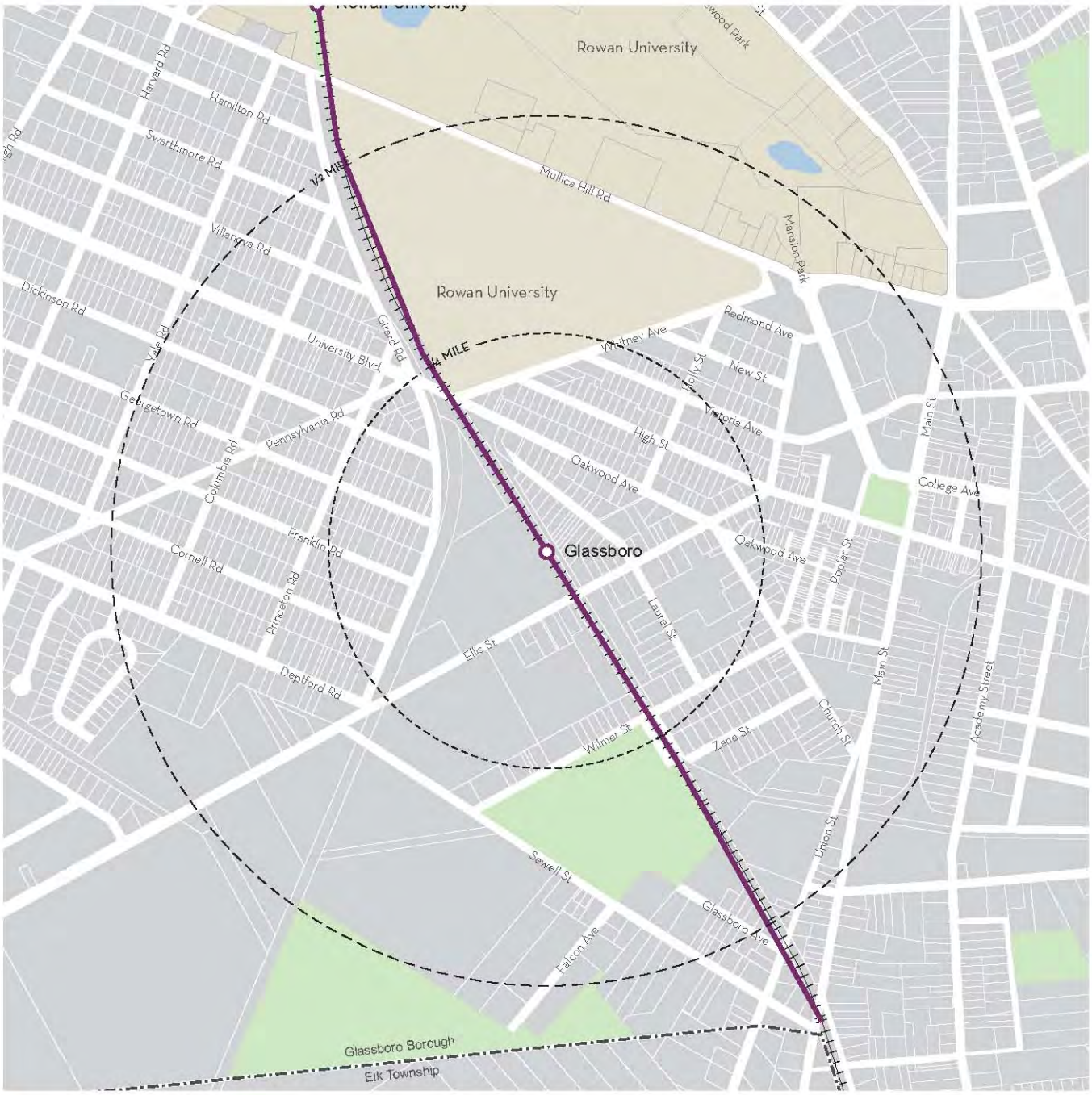
The proposed Glassboro station is well positioned to be a destination along the GCL. The area is within a 1/2-mile of Rowan University. It has also seen major investments, most notably Rowan Boulevard, a $300 million redevelopment project linking the University with Glassboro's downtown retail district in an effort to create a "quintessential college town". (www.rowan.edu) This area is designed to be a dense, walkable, mixed-use neighborhood, and will help to support the GCL with development that both capitalizes on and supports transit expansion. Furthermore, the community has also identified the Route 55 Industrial Center, just south of the Sports complex, as an area that has capacity and may see more use because of transit expansion.

Despite these strengths, transit riders who live in the area may face obstacles to accessing the station. The study area has a low housing unit density, poor transit connections, and lacks safe and convenient bicycle lanes. As such, residents who live in the single-family units will most likely not walk or bike to transit but may instead look for ways of parking at or near the station. Moreover, most of the amenities and major public investments in the area are located more than a 1/4-mile from the station.

Beyond the investments associated with Rowan Boulevard, there are opportunities to improve pedestrian connections to both the surrounding neighborhood and the University, install bike lanes, and possibly include a park-n-ride or bike-n-ride facility. These efforts will help link the station with the major activity centers in the area like Rowan University and the Rowan Boulevard Transit Village.

The municipality has a number of tools available to address the issues raised in this section. In 2000, the Borough of Glassboro declared some parcels within the Central Business District as Areas in Need of Redevelopment. Thus, there is great potential for public support of development opportunities just east of the proposed station. This designation does not, however, extend to include the proposed station, the parcels immediately adjacent to it, or any areas west of the train tracks. For those areas, the Borough will have to rely on the powers obtained when the entire Borough was designated an Area in Need of Rehabilitation.

As the municipality moves forward with these and other plans, it should make note of the high concentrations of historically disadvantaged groups within the study area. Of particular concern in this study are carless households, households in poverty, persons with a physical disability, and the elderly, because these groups typically face mobility issues. In this case, all of these groups exceed regional thresholds in at least one, if not all three, census tracts that intersect the study area.



The Glassboro Station and the 1/2-mile radius that constitute the Glassboro Study Area lie completely within the Borough of Glassboro.

Community Form: Civic/Institutional



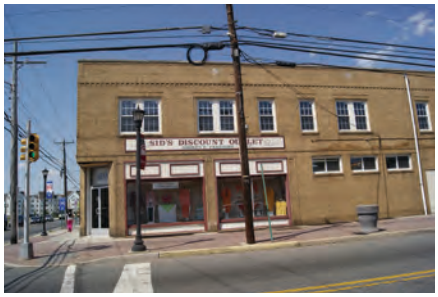


Rowan University is the major institutional presence in the Glassboro Study Area. Although architectural details vary, most buildings are architecturally modern with red brick facades. The University is arranged as a campus: there are some internal streets but pedestrian circulation is given a high priority and is often separated from automotive circulation. There are also a number of civic buildings in the area, including the town hall. In general, they tend to be pedestrian oriented, one to three story buildings.

Community Form: Commercial







Commercial buildings in the area vary in architectural style but are generally consistent in urban form: most are between two and three stories, built to the property line, have shop windows, and have off-street parking. This may be due to the fact that most newly constructed commercial buildings are part of the *Rowan Boulevard Transit Village*, which attempts to create a dense, walkable urban fabric that draws inspiration from traditional urban form.

Community Form: Residential






Residential structures in the area vary significantly. There are large sections of the study area that fall within single-family neighborhoods. However, the Rowan Boulevard Apartments have introduced more dense living options into the area. There are also a number of on-campus living facilities, including 8 residence halls.

Community Form: Open Space



There are a number of passive and active open spaces in the Glassboro Study Area. Most significantly, the Glassboro Sports complex provides baseball, football, and tennis courts within a 10-minute walk of the study area. In front of the Town Hall, there is also space that is not currently landscaped, but is planned to serve as an open landscaped plaza. Currently, the Borough uses the open space adjacent to the Barnes & Noble as its town square.

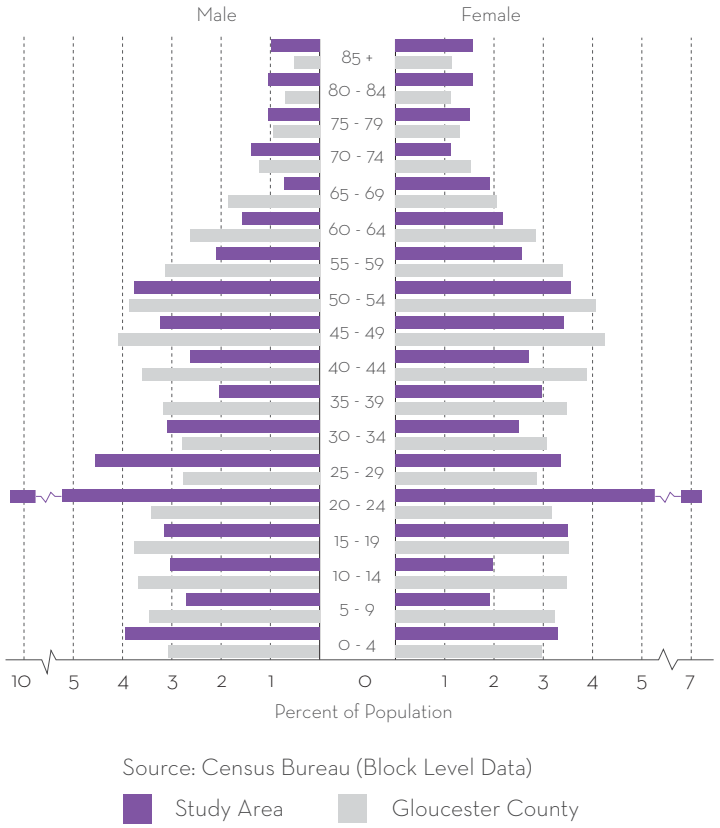
Demographics

The Glassboro Study Area has a total population of 4,364. From 2000 to 2010, the study area saw a loss of 1,205 residents (21%). The large discrepancy between 2000 and 2010 populations is the result of population counts on the Rowan University Campus. In 2000, the Rowan campus was represented by Tract 5014.04 Block 34015 and had a total population of 1,997 residents. In 2010, the Blocks that made up that same area (Tract 5014.04 Blocks 1000, 1001, 1002, 1005, 1006, and 1012) had a combined total of 711 residents, a difference of more than 1,286 residents. According to the University, the Glassboro campus was also home to 3,837 students. This tends to be a population that is difficult to count and may not have been accurately recorded by the Census.

The household composition in 2000 and 2010 was proportionately very similar, with more than half of all residents living in 1- or 2-person households. Likewise, household tenure saw very little change from 2000 to 2010, with only a small increase in the percentage of people who own their home.

Population pyramids show the distribution of various age groups in a geographic area. They are used to show which populations are over or under-represented, to make predictions about the future growth, and to understand how communities can expect to age.

Figure 11.a: Population Pyramid



As expected, the Glassboro Study Area has a disproportionately high number of college student aged individuals. As a result, men and women between the ages of 20 and 24 constitute just under a fifth of all residents. However, unlike the Rowan University station, the rest of the population pyramid is very similar to the County. This indicates that the area around the proposed Glassboro station is more diverse and more stable.

Nonetheless, it would be prudent to understand how this demographic will use transit. Exploring what time of day they will use the station, what amenities or services they can access at other stations, and what types of station amenities they will require (such as bike parking facilities) will help the Borough to capitalize on and support transit expansion efforts.

Figure 11.b:Demographic Data

		2000	2010
Population	Total Population	5,569	4,364
Race	White alone	4,299 (77%)	3,231 (74%)
	Black or African American	970 (17%)	761 (17%)
	American Indian and Alaska Native	13 (0%)	2 (0%)
	Asian	82 (1%)	79 (2%)
	Native Hawaiian and Pacific Islander	4 (0%)	2 (0%)
	Some other race	97 (2%)	163 (4%)
	Population of two races	104 (2%)	117 (3%)
Hispanic / Latino	Hispanic Population	237 (4%)	316 (7%)
Household Size	1-person household	330 (26%)	252 (26%)
	2-person household	363 (28%)	296 (30%)
	3-person household	240 (19%)	181 (19%)
	4-person household	224 (17%)	138 (14%)
	5-person household	67 (5%)	58 (6%)
	6-person household	41 (3%)	28 (3%)
	7 or more person household	29 (2%)	23 (2%)
	Average Household Size	4.3	4.5
Housing Tenure	Owner	707 (55%)	572 (59%)
	Renter	587 (45%)	404 (41%)

Source: Census Bureau (Block Level Data)

The Glassboro Study Area contains a number of community assets beyond Rowan University. However, many of them are more than a 1/4-mile away from the station, and some lay just over a 1/2-mile away. Within a 1/2-mile of the proposed station lies the Glassboro Sports Complex, the Municipal Courts, and the Glassboro Police Department, and many other civic assets.

Transit to Work: 0-2.9% 3-5.9% 6-8.9% 9-11.9% 12-17%

NJ Transit Bus:

Proposed Trolley Route (Brown) Proposed Trolley Route (Gold)

1,000 ft

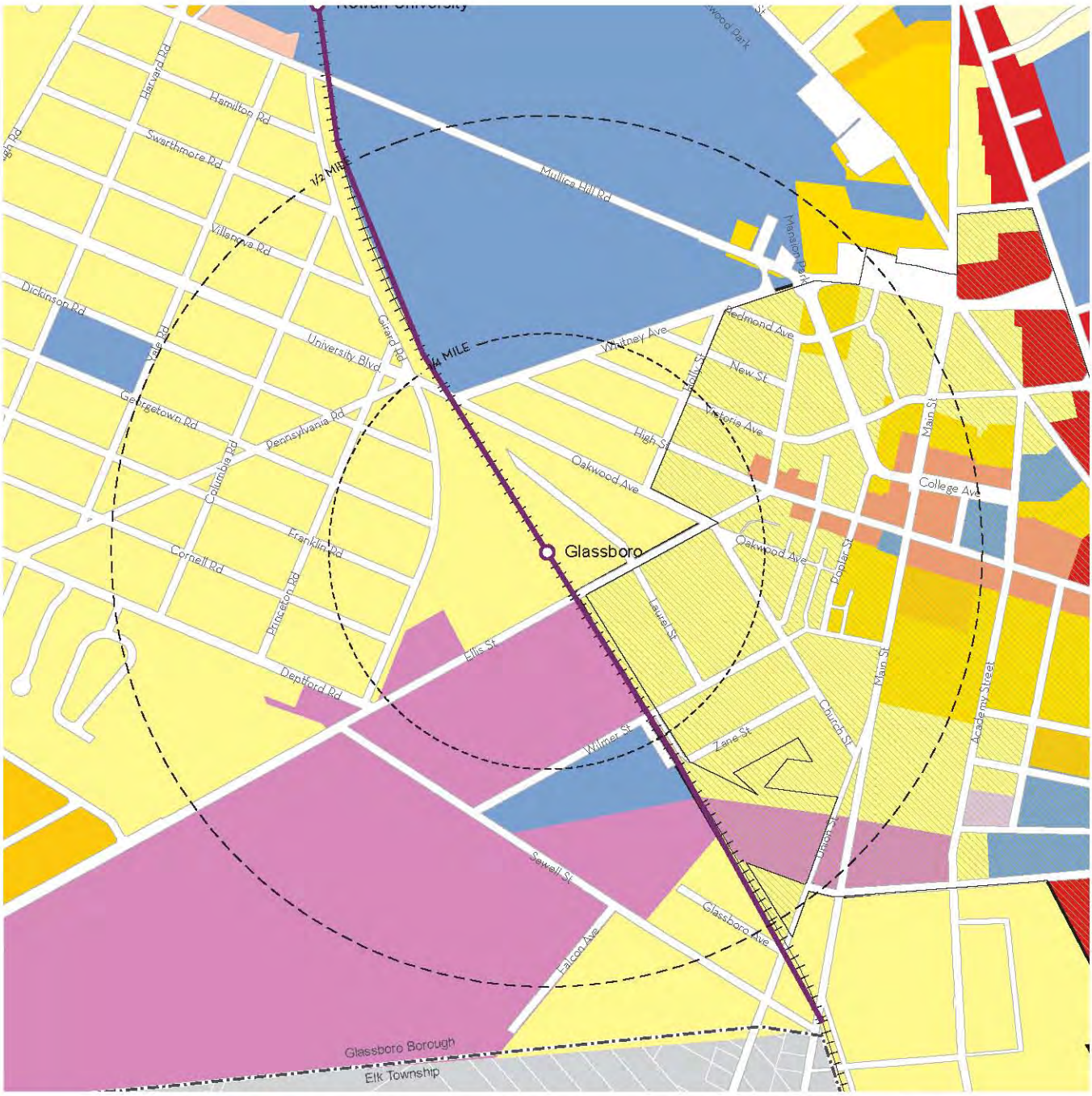
Source: 2000 American Community Survey, NJ Transit

The Glassboro Study Area is serviced by two NJTransit Buses: Route 313, which runs from Cape May to Philadelphia, and Route 412, which runs from Sewell to Philadelphia. In 2000, no block group had more than 3% of its population take transit to work. In 2009, the Borough undertook a Trolley Feasibility Study. The conclusion of that investigation was that two routes, a Brown and a Gold Loop, should circulate around the campus and connect the area to the corner of College Ave and Main Street, near the new Rowan Boulevard development and the Borough's historic downtown. If this plan were to come to fruition, it would help to connect the Glassboro Station to both the downtown area and university, which lie more than 1/4-mile from the station.

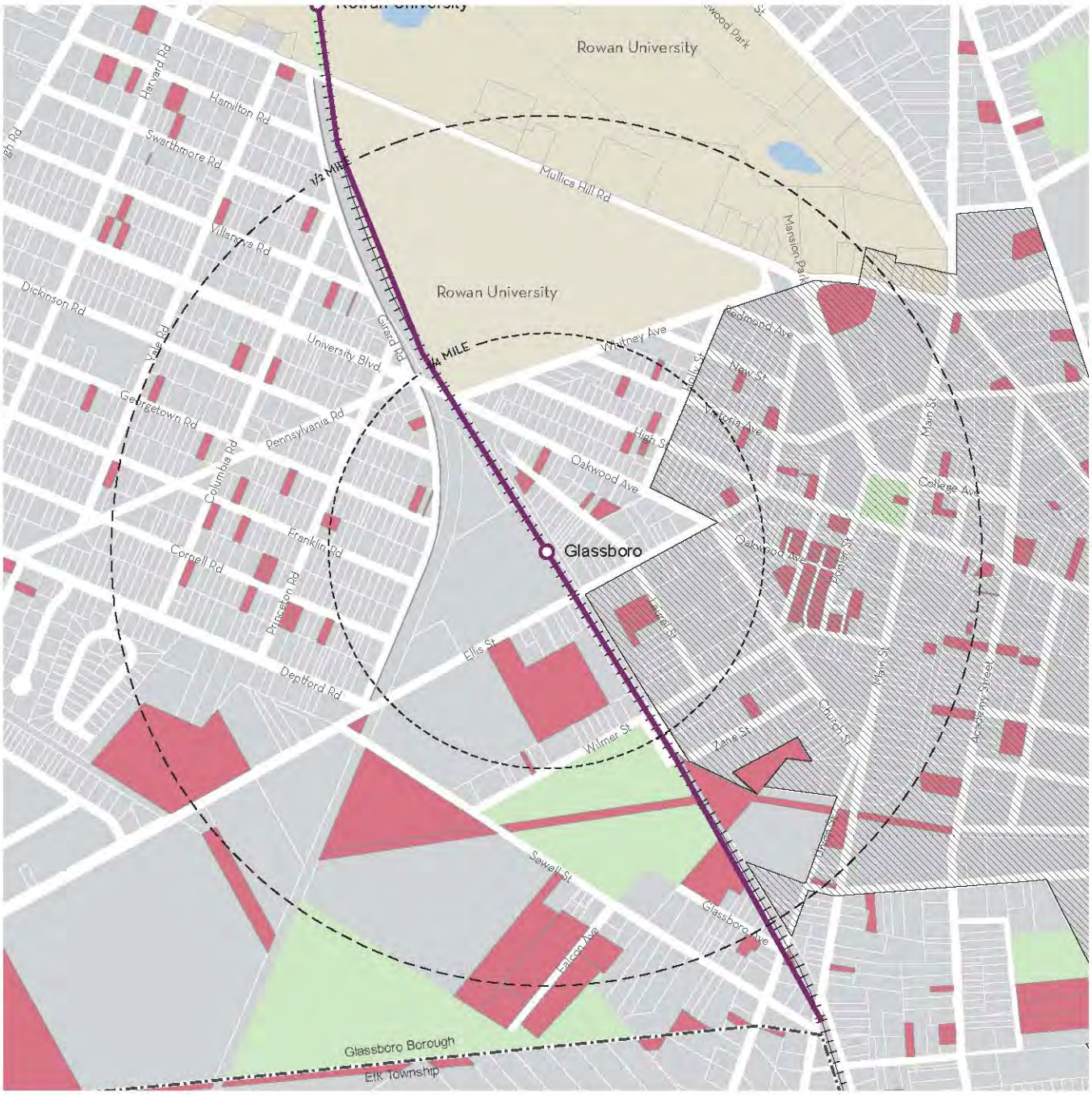
The majority of land in the study area is dedicated to either school or single-family residential construction. However, there are large areas of industrial and large commercial land usage. Near the intersection of High street and Main Street there is a grouping of commercial properties that make up the downtown. The large concentration of public properties near that same intersection make up the Rowan Boulevard project and will include mixed-use residential/commercial development. The large parcel to the west of the proposed station is currently not developed and is owned by Rowan University. Thus, any future development on this site will likely have to further the goals and objectives of the University.

Housing units per acre is a common standard used to determine what type of transit services can be supported by a given geographic location. Only a few blocks in the study area have more than 9 units per acre, the density required to support a walk-up station.* If efforts continue to build high-density residential buildings, the study area could have enough density be a walk-up destination and departure station.

* This threshold was originally developed in work published by Pushkarev and Zupan in 1977. For further examination of the topic see also Transit Cooperative Research Program Report 16: Transit and Urban Form (1996)



Much of the study area is dedicated to R2 - Medium Density Residential, which allows no more than 5 units per acre. However, the Borough also has a Traditional Neighborhood Development (TND) Overlay that provides for a flexible, place-based zoning that is intended to encourage walkable neighborhoods by allowing for compact development that offers a mix of housing types. This is an optional overlay that may only be used on the noncommercial portions of a tract that is also utilizing the provisions of a Planned Retirement Community (PRC) Overlay District, which exists in the southeastern section of the study area.



vacant land | community identified development opportunities | Area in Need of Redevelopment

1,000 ft

Source: New Jersey MOD - IV
Property Assessment Records

Over the past decade, the Borough of Glassboro has been working to declare parcels within the Central Business District as Areas in Need of Redevelopment. Several Redevelopment Plans have been prepared to address specific areas within the CBD. The largest of these is the Rowan Boulevard project, a mixed-use development intended to create a stronger connection between Rowan and Downtown Glassboro; as of the date of this publication, three parcels have been developed with housing, academic offices, and retail uses. This Redevelopment designation does not, however, extend to include the proposed station, the parcels immediately adjacent to it, or any areas west of the train tracks. For those areas, however, the Borough may rely on the powers obtained when the entire Borough was designated an Area in Need of Rehabilitation; this should improve the ability of the municipality to use transit expansion as a mechanism for catalyzing (re)development.

Environmental Justice

Title VI of the Civil Rights Act states that "no person in the United States, shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." DVRPC, as the MPO for the Delaware Valley region, is charged with evaluating plans and programs for sensitivity to historically disadvantaged populations. Accordingly, DVRPC has developed the EJ methodology that qualifies levels of disadvantage within the region for eight potentially disadvantaged groups: non-Hispanic minorities, carless households, households in poverty, persons with a physical disability, female heads of household with children, Hispanic, elderly over 75 years of age, and limited English proficiency households. Note that these ratings speak only to the concentration of historically disadvantaged groups and not directly to their fair or unfair treatment in this area.

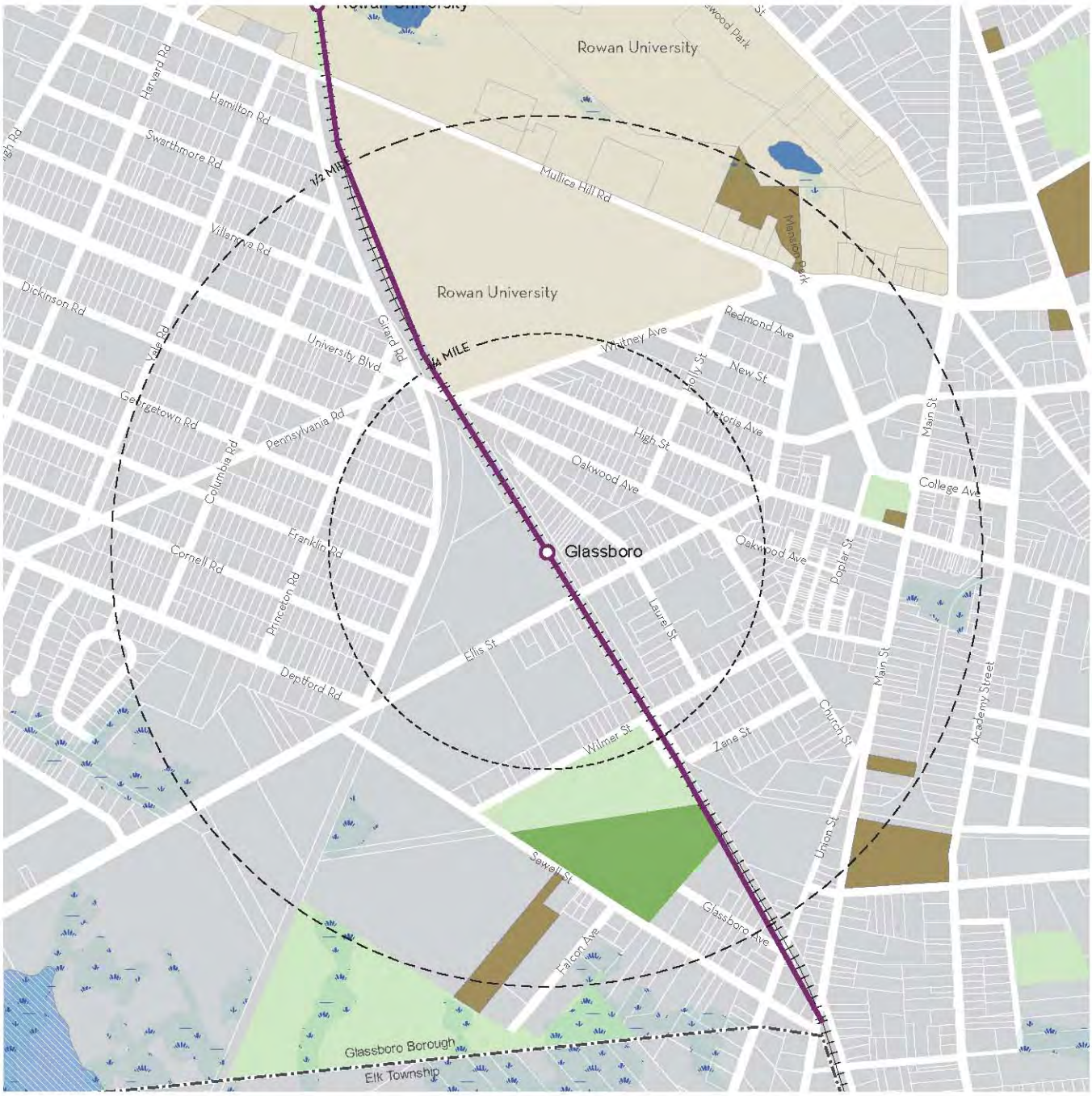
DVRPC combines data from the 2000 Census on the eight potentially disadvantaged groups to create a Degree of Disadvantage (DOD) score that rates each tract on a scale from 0 to 8. The Figure on this page displays the key demographic factors used to compute the DOD score. This data can be used by local officials and interested parties to evaluate whether disadvantage groups bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Figure 11.c: Degrees of Disadvantage

Degrees of Disadvantage	Regional Threshold	Census Tract 5014.04	Census Tract 5014.03	Census Tract 5014.02
non-Hispanic minority	24.9%	13.3%	27.3%	43.7%
carless households	16.0%	4.8%	13.0%	18.1%
households in poverty	10.9%	36.3%	15.3%	17.8%
persons with a physical disability	7.7%	1.8%	7.4%	14.4%
female head of household with child	7.4%	5.0%	11.8%	15.2%
Hispanic	5.4%	4.4%	7.0%	4.9%
elderly	6.6%	21.0%	68.0%	9.0%
limited English proficiency	2.4%	0.5%	2.2%	0.3%

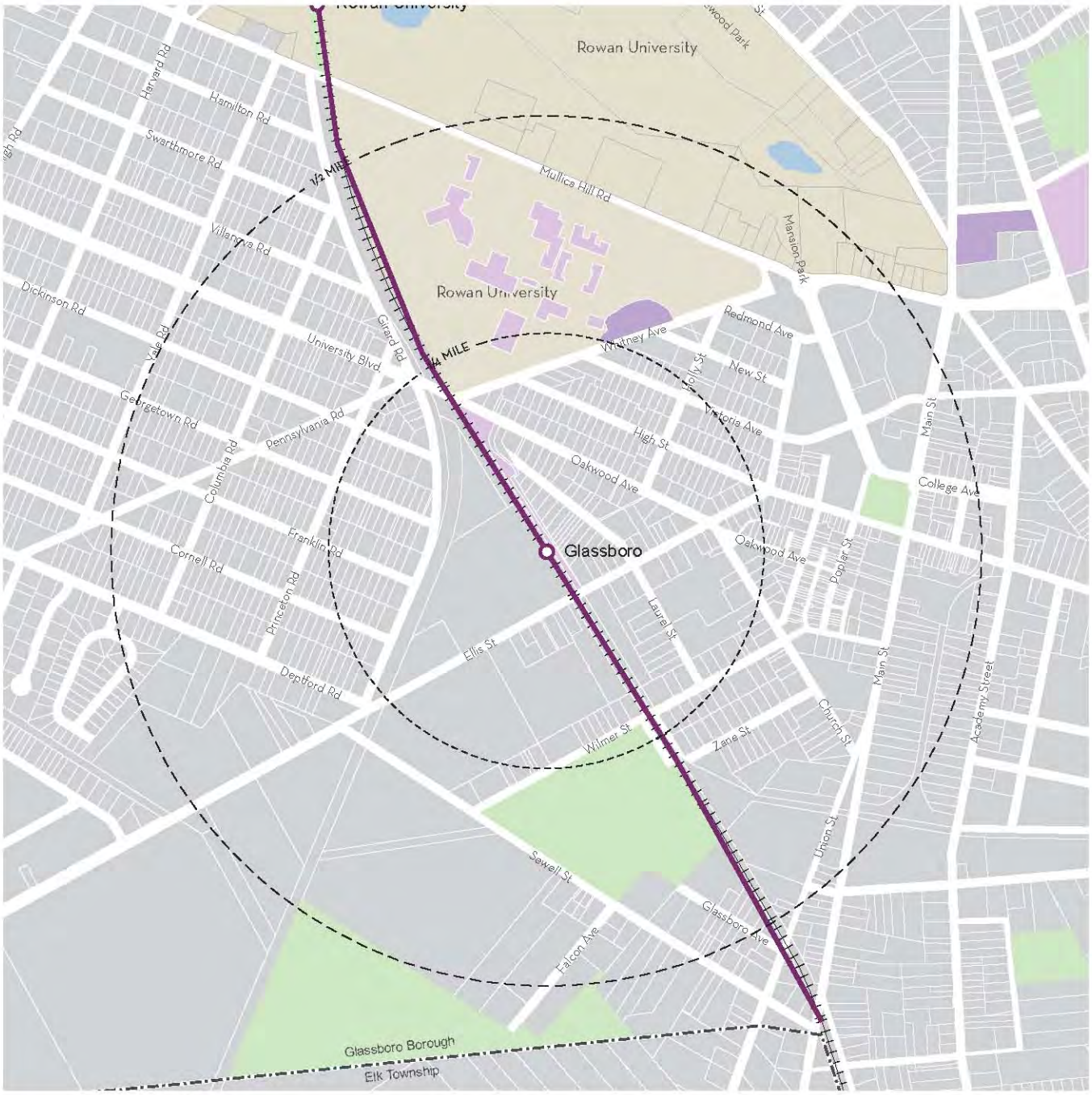
Source: DVRPC

Since the Glassboro Study Area overlaps three census tracts, it is not clear that the Environmental Justice data will provide an accurate understanding of the 1/2-mile radius around the study area. With that noted, it is clear that the broader area around the station is home to a number of historically disadvantage groups. Of particular concern in this study are carless households, households in poverty, persons with a physical disability, and the elderly, because these groups typically face mobility issues. In this case, all of these groups exceed regional thresholds in at least one, if not all three, census tracts that intersect the study area.



Sources: FEMA, New Jersey Department of Environmental Protection, NJ Office of Natural Lands Management, Gloucester County Office of Land Preservation

The proposed station location is not within a floodplain or environmentally sensitive area. However, there are a few known contaminated sites within the study area that may be more costly to (re)develop than other sites.



Source: Gloucester County Cultural Resource Survey

The only listed historic building in the area is the Hollybush Mansion. There are a few eligible historic buildings in the study area, all of which are on the Rowan University Campus. Thus there is little threat that new redevelopment spurred by transit expansion would endanger historic assets.

TOD Assessment

In addition to documenting the existing conditions of each proposed station area, this study provides a preliminary assessment of the potential for TOD within each station area. The appropriateness of TOD at a given transit station depends on a variety of factors. This assessment focuses on a series of physical station area characteristics and market and policy factors, which can influence the success of TODs.

Figure 11.a summarizes the TOD Assessment of the proposed station area. The second column describes highly supportive characteristics for each TOD factor listed in column one. Areas were given a rating of 1 if they match most or all of these characteristics. They were given a 2 if they matched some of them, and a rating of 3 if they matched few or none. This type of analysis is often done to evaluate the appropriateness of TOD near an existing transit station. In this case, these ratings evaluate the station area based on the assumption that a transit station exists at the proposed location and reasonable accommodations have been made to allow access to the site.

Physical Factors

The proposed location is adequately located to service the major activity nodes in the study area, but many of the major community assets lie more than 1/4-mile away from the station. The proposed station is in a primarily residential area, although it is just under 1/2-mile from the existing downtown. There are efforts are currently underway to build a high-density mixed-use neighborhood just over 1/4-mile way from the proposed station location. This *Rowan Boulevard* development will add density and retail development that will support transit expansion efforts.

There is currently no street access to the station. Regardless of how that access established, departing transit riders will most likely have to walk through an area that is mostly single-family homes to access area amenities. With that said, the street network is well established and provides a pedestrian-oriented environment. The Borough has been planning for parking and there are plans for a parking garage associated with the Rowan Boulevard Develop.

Market and Policy Factors

Current Zoning includes the Traditional Neighborhood Development (TND) Overlay allows for dense, walkable urban environments. However, this overly only affects residentially zoned parcels. Moreover, it does not overlap the residentially zoned area immediately adjacent to the station and thus will not affect the most critical area for TOD development.

The entire Borough of Glassboro has been designated an Area in Need of Rehabilitation. This will better enable the Borough to rehabilitate structures that are substandard or vacant, and stimulate private investment by assembling sites. However, unlike the Borough of Pitman or the City of Woodbury, Glassboro has not go so far as to amend or update the Redevelopment Plan to specifically encourage the use and form next to the station that will lead to more transit-oriented development.

Figure 11.d: TOD Score Card

	TOD Factors	Highly Supportive Characteristics	Score
STATION AREA	Site Availability	Area contains vacant or underutilized sites for redevelopment. Issues such as size, shape, and ownership provide minimal obstacles to land assembly.	1
	Station Access	Access to proposed station area is not constrained by existing development, roadway configuration, transportation infrastructure, or other physical barriers.	2
	Infrastructure	Adequate sewer and water infrastructure are already in place.	1
	Connectivity	Proposed station is within an easy walking distance (roughly 1/2 mile) of existing activity centers.	1
	Mix of Land Uses	Area contains a complementary mix of uses including a range of housing options, office, shops, markets, restaurants, and services. The greatest diversity of uses is located within 1/4 mile of the proposed station. Development has elements that create a self-sufficient community where many daily needs can be accomplished without need for a car.	2
	Supportive Density*	Current or planned residential and employment density is sufficient to generate significant transit ridership and support local retail.	2
	Transit	Area is serviced frequently by multiple modes of transit. Intermodal connections are easy.	2
	Bicycle Orientation	Bicycle routes and linkages are continuous, safe, convenient, and attractive.	3
	Pedestrian Orientation	Area is designed with the pedestrian in mind. Streets, sidewalks, and crosswalks are interconnected and provide multiple routes for reaching destinations. Buildings are located close to each other, appropriately articulated, and built close to the street. Parking lots in front of buildings are avoided.	2
	Parking	Parking is thoughtfully designed and managed to support density, mix of uses, and pedestrian environment.	2
MARKET & POLICY	Growth Pressure	New multifamily residential, office, commercial, or institutional development is proposed or recently constructed.	1
	Public Investment	Area has recently received or will receive some form of public investment. Investments may include items such as infrastructure improvements or streetscaping enhancements.	1
	Zoning, Ordinances, & Policies	Existing regulatory framework generally supports mixed land uses, higher densities, compact development, and transit prioritization that is characteristic of TOD.	2
	TOD or Redevelopment Plan	Neighborhood or redevelopment plan has been drafted that supports the creation of TOD.	1

Ratings: 1 = Highly Supportive, 2 = Somewhat Supportive, 3 = Not Supportive

* There are many ways to measure transit-supportive density, including the total number of housing units within a half-mile radius of a transit station. The organization Reconnecting America has developed seven TOD Place Types and corresponding targets for the number of dwelling units. These targets range from 1,500 to 4,000 units for Transit Neighborhoods and 2,000 to 5,000 units for Mixed Use Neighborhoods, two TOD Place Types relevant to the GCL station areas. For more information, see Reconnecting America's Station Area Planning: How To Make Great Transit-Oriented Places, available at: www.reconnectingamerica.org/assets/Uploads/tod202.pdf.