Haverford Road

COMMERCIAL CORRIDOR ANALYSIS

February 2013

DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

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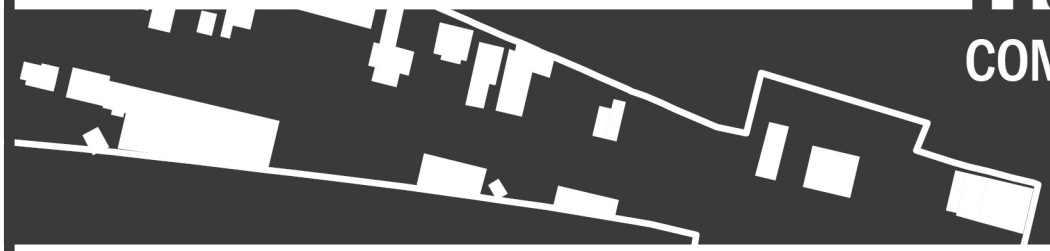

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DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

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DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

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

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Executive Summary

Commercial strip corridors are a common sight throughout the region. While many remain successful, some commercial strips have experienced disinvestment. Revitalizing these corridors has become an important goal for many towns and cities. Aging commercial corridors remain key parts of the regional transportation network and are often bordered by neighborhoods that depend on the services and convenience retail they supply.

Haverford Road is an important commercial corridor through Haverford Township in Delaware County. A portion of Haverford Road was recently analyzed as part of DVRPC's *US 30 (Lancaster Avenue) Corridor Study* (Publication #11003B). This study, the *Haverford Road Commercial Corridor Analysis*, was initiated as part of the implementation of the US 30 Study and focuses on the commercial core of Haverford Road between Hathaway Lane and Eagle Road/Wynnewood Road. This 0.4-mile stretch of Haverford Road is bounded by the Ardmore Junction Norristown High Speed Line (NHSL) Station and the Wynnewood Road NHSL Station. The corridor contains a range of auto repair and maintenance facilities, home furnishing and building material stores, and food and beverage-related businesses.

Recent municipal efforts to improve this corridor, and other business districts within the township, have included the formation of a Citizens Task Force for Commercial Revitalization, the creation of the Haverford Partnership for Economic Development (HPED), and the drafting of design guidelines for Eagle Road and Haverford Road.

This study seeks to build on these efforts and the US 30 Corridor Study by developing strategies to enhance the pedestrian environment, promote revitalization of commercial properties, and improve access to transit. This document is divided into three sections: Existing Conditions, Market Profile, and Improvement Strategies. The first section provides an overview of the current condition of the study area. Section Two presents an inventory of commercial tenants and identifies competing business districts and shopping centers in the area.

The final section includes a number of recommendations developed by the study team. One of the principal strategies detailed in this section is the potential implementation of a road diet along a stretch of Haverford Road between Ardmore Avenue and Karakung Drive. Haverford Road currently consists of four travel lanes. A road diet in this location would convert Haverford Road into two travel lanes, one center turning lane, and new flexible shoulder space. This roadway reconfiguration could be a cost-effective way to better satisfy the needs of all users, while maintaining an adequate level of service for motorists. Additional recommendations deal with enhancing the retail composition and physical character of the corridor.

Section One

EXISTING CONDITIONS

This analysis of Haverford Road was initiated as part of the implementation of recommendations from the US 30 (Lancaster Avenue) Corridor Study (Publication #11003B). The US 30 Corridor Study was conducted by DVRPC to help coordinate transportation and land use planning for an 11-mile stretch of Lancaster Avenue between 52nd Street in West Philadelphia and Old Eagle School Road in Radnor Township.

Although the primary focus of the US 30 Study was the area immediately adjacent to Lancaster Avenue, the study team also investigated a portion of Haverford Road in Haverford Township between the Haverford Station of SEPTA's Norristown High Speed Line (NHSL) and the Wynnewood Road Station of the NHSL. Home to Haverford College and the Merion Golf Club, this stretch of Haverford Road includes a mix of auto-oriented commercial uses and residential areas. The US 30 Corridor Study offered a number of broad recommendations designed to improve the pedestrian environment of Haverford Road and enhance access to nearby NHSL stations.

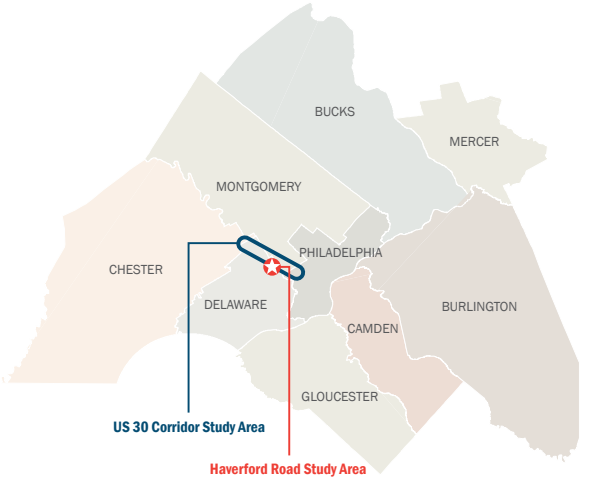
Recent attempts to revitalize older business districts, such as Haverford Road, in the township began with a grassroots effort. In 2005, a Citizens Task Force for Commercial Revitalization was formed by the Haverford Township Civic Council. In response to its work over a number of years, the Haverford Township Planning Commission worked with Thomas Comitta Associates to formulate a Comprehensive Plan Addendum designed

to enhance and revitalize two key commercial corridors: Eagle Road and Haverford Road. The Comprehensive Plan Addendum contains a series of design guidelines that establish a long-term vision for Haverford Road as a mixed-use multimodal corridor that capitalizes on its existing transit infrastructure. Since that time, a nonprofit corporation, the Haverford Partnership for Economic Development (HPED), has been formed to continue facilitating business district revitalization and economic growth.

This document, the Haverford Road Commercial Corridor Analysis, seeks to build on the efforts of the Citizens Task Force for Commercial Revitalization, the guidelines outlined in the Comprehensive Plan Addendum, and the recommendations contained in the US 30 Corridor Study. This study focuses on the commercial core of Haverford Road between Hathaway Lane, near the Ardmore Junction Station of the NHSL, and Eagle Road/ Wynnewood Road, near the Wynnewood Road Station of the NHSL. This area is one of Haverford Township's principal commercial areas, yet the existing character of the corridor does not currently support the township's vision.

This analysis will assist Haverford Township and the HPED by developing strategies to enhance the pedestrian environment, promote revitalization of commercial properties, and improve access to transit.

FIGURE 1: Regional Setting



Study Area

Haverford Township is an established community in the northern portion of Delaware County. The Haverford Road Study Area (Figure 2) stretches for approximately 0.4 miles along Haverford Road. Bookended by parking areas for the Ardmore Junction and Wynnewood Road NHSL stations, the study area boundary follows the rear parcel lines for the properties that front onto Haverford Road. A portion of the study area, north of Haverford Road, is located in the Ardmore census-designated place. Known locally as the South Ardmore neighborhood, this area is served by the South Ardmore Betterment Alliance (SABA).


FIGURE 2: Study Area
Chestnutwold Elementary School
Historic Pont Reading House
SEPTA Busway
LORRAINE AVE
ROSEMONT AVE
BELMONT AVE
WYNNEWOOD RD
KENILWORTH RD
WILLOW AVE
HAVERFORD RD
NORRISTOWN HIGH SPEED LINE
Wynnewood Road
EAGLE RD
Ardmore Junction
WYNNEFIELD DR
HATHAWAY LN
SEPTA Busway
Merwood Park
Study Area
Feet
0 50 100 200
dvrpc
Aerial Source: DVRPC, 2010

Existing Land Use

As illustrated in Figure 3, land uses within the Haverford Road Study Area are almost entirely commercial. These commercial uses include a variety of auto repair and maintenance facilities, home improvement and furnishings stores, and food and beverage-related businesses. Most of these businesses include dedicated surface parking stalls or lots adjacent to their establishments. Four commercial properties are currently inactive and contain vacant or underutilized buildings. More specific information on these retail and commercial properties is contained in Section Two.

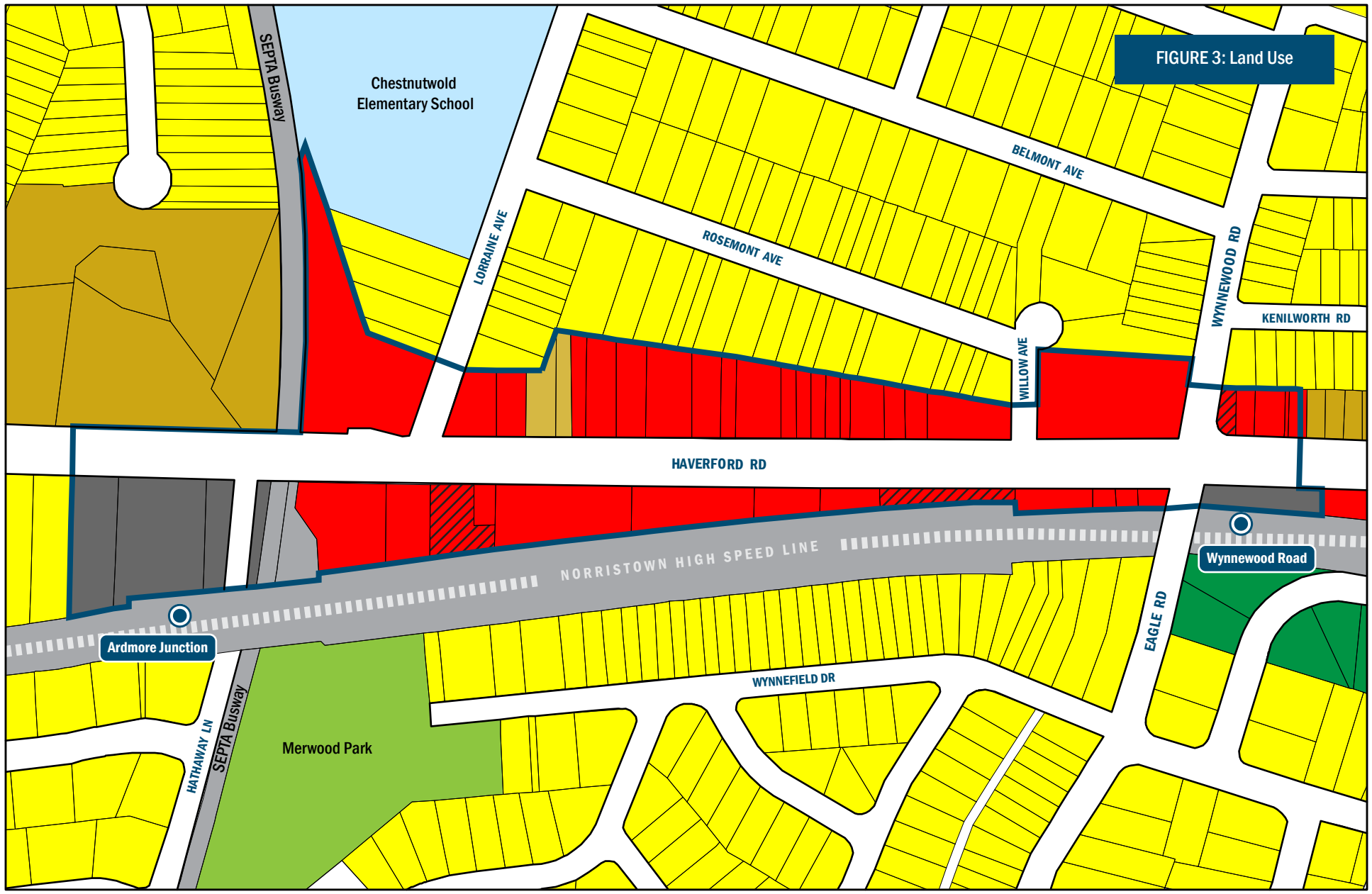
The non-commercial uses present in the study area include the parking and transportation-related facilities associated with the NHSL and SEPTA Suburban Busway, as well as a small amount of multifamily housing on the north side of Haverford Road east of Lorraine Avenue. There is little green space along the corridor and the high percentage of impervious coverage contributes to local stormwater management issues.

The area surrounding the study area is primarily residential. The mature neighborhoods surrounding Haverford Road feature single-family homes on small lots and pockets of multifamily housing. Chestnutwold Elementary School is located north of the study area along Lorraine Avenue, and Merwood Park, a municipal park with a variety of recreational fields and facilities, is located south of the study area along Hathaway Lane.

Commercial uses continue along the south side of Haverford Road to the east of the study area. Although this area is not analyzed in this Study, the commercial properties here share many similarities to the commercial uses found in the study area. Many of the recommended strategies outlined later in this document may also be applied to this portion of Haverford Road.

Looking north along Haverford Road. The study area contains a mix of active and vacant commercial properties.

The recently renovated Chestnutwold Elementary School is located on Lorraine Avenue just outside the study area.



Source: DVRPC

Zoning

Aside from the Ardmore Junction Station parking area, the study area is zoned commercial (see Figure 4). Properties west of Wynnewood Road have been designated C1, Limited Commercial District. This district is intended to promote commercial development appropriate for major arterial routes. These developments should complement each other and adjacent land uses.

East of Wynnewood Road, the study area contains several parcels zoned C2, Neighborhood Commercial District. This zone is designed to provide retail and service facilities, which primarily serve the daily needs of the immediate surrounding neighborhood.

D.M.I. Home Supply and Rental Center is one of the largest commercial properties in the study area.

TABLE 1: Area and Bulk Standards

Standard	C1 Limited Commercial	C2 Neighborhood Commercial
Lot Size	10,000 sf minimum	7,500 sf minimum
Street Front	100 ft minimum	50 ft minimum
Building Coverage	20% maximum	20% maximum
Front Yard	20 ft minimum	20 ft minimum
Side Yard	15 ft aggregate, 7 ft minimum each	7 ft minimum each
Rear Yard	15 ft minimum	15 ft minimum
Height	45 ft max or 3 stories	45 ft max or 3 stories
Impervious Surface	65% maximum	70% max

Source: Haverford Township


FIGURE 4: Zoning
R6
INS
R3
R4
BELMONT AVE
LORRAINE AVE
ROSEMONT AVE
WYNNEWOOD RD
KENILWORTH RD
WILLOW AVE
C1
C2
HAVERFORD RD
R5
INS
NORRISTOWN HIGH SPEED LINE
Wynnewood Road
Ardmore Junction
EAGLE RD
WYNNEFIELD DR
R6
R4
ROS
HATHAWAY LN
R2
C1: Limited Commercial
C2: Neighborhood Commercial
R2: Low Density Residential
R3: Low/Med Density Residential
R4: Low/Med Density Residential
R5: Low/Med Density Residential
R6: Medium Density Residential
INS: Institutional
ROS: Recreation & Open Space
Feet
0 50 100 200
dvrpc
Source: DVRPC, Haverford Township

Transportation Facilities

Street Network
Haverford Road is an east-west arterial through Haverford Township. Recent traffic counts indicate that more than 17,000 vehicles travel through the study area on Haverford Road on a typical weekday. To the west, Haverford Road turns into County Line Road and connects to US 30 (Lancaster Avenue). To the east, Haverford Road continues into West Philadelphia.

The study area is bisected by Wynnewood Road/Eagle Road. Traveling north, Wynnewood Road represents an important connection to Lancaster Avenue. South of the study area, Eagle Road is a major connector to the West Chester Pike.

Passenger Rail
The NHSL runs on a dedicated right-of-way just south of Haverford Road and offers service to and between the Norristown Transportation Center and the 69th Street Transportation Center in Upper Darby, Pennsylvania. Two NHSL stations are located within the study area. The Ardmore Junction Station is located at the intersection of Hathaway Lane and Haverford Road. Local, express, and limited trains all stop at this station. Free daily parking for 161 cars is available in a surface lot between the station and Haverford Road.

The Wynnewood Road Station is located at the intersection of Haverford Road and Eagle Road. This station is served by local service only and contains 32 free daily parking spaces. Both station parking lots are typically 100 percent occupied on weekdays. Headways range from four to seven minutes during peak times and roughly 10 to 20 minutes during other times at the Ardmore Junction Station. Time between service can be longer at the Wynnewood Road Station. Weekday passenger volumes for both stations are presented in Table 2.

Parking for both NHSL stations is at capacity. One potential area for a new commuter parking lot is located south of the Wynnewood Road Station off of Dogwood Circle. The open space identified in Figure 5 is owned by the township and abuts the southbound platform of the NHSL. Access and traffic concerns will need to be evaluated to determine if additional parking is feasible at this location.

Bus Service
SEPTA bus service in the study area is provided by Route 103. This bus runs from the Suburban Square shopping center in Ardmore to the 69th Street Transportation Center. A portion of Route 103 is run on an exclusive busway. This busway cuts across Haverford Road just east of the Ardmore Junction Station and travels parallel to Hathaway Lane. The lone stop for this route in the study area is located outside of the Ardmore Junction Station. According to SEPTA's 2011 Automated Passenger Count (APC) data, 33 passengers board the bus and 42 alight the bus at this location on a typical weekday.

TABLE 2: Weekday NHSL Passenger Volume (2010)

Type	Ardmore Junction	Wynnewood Road
Northbound Alights	432	107
Northbound Boards	103	5
Southbound Alights	100	11
Southbound Boards	422	102

Source: SEPTA

The Wynnewood Road Station of the NHSL.

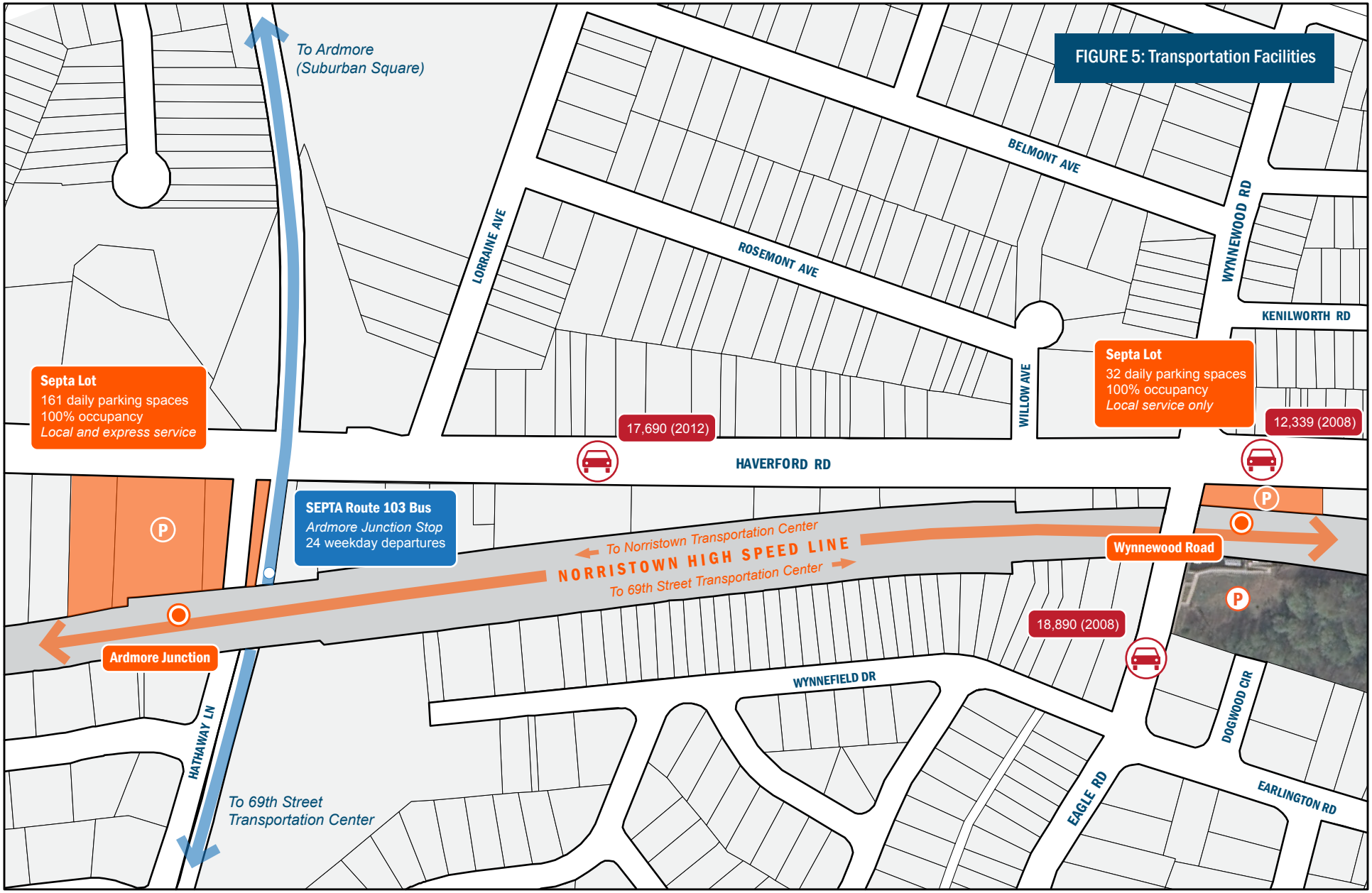


FIGURE 5: Transportation Facilities
To Ardmore
(Suburban Square)
BELMONT AVE
WYNNEWOOD RD
LORRAINE AVE
ROSEMONT AVE
KENILWORTH RD
WILLOW AVE
Septa Lot
161 daily parking spaces
100% occupancy
Local and express service
Septa Lot
32 daily parking spaces
100% occupancy
Local service only
17,690 (2012)
12,339 (2008)
HAVERFORD RD
SEPTA Route 103 Bus
Ardmore Junction Stop
24 weekday departures
To Norristown Transportation Center
NORRISTOWN HIGH SPEED LINE
To 69th Street Transportation Center
Wynnewood Road
Ardmore Junction
18,890 (2008)
WYNNEFIELD DR
DOGWOOD CIR
HATHAWAY LN
EAGLE RD
EARLINGTON RD
To 69th Street
Transportation Center
SEPTA NHSL
SEPTA Bus Route 103
SEPTA Parking Lot
AADT (Year)
Potential New Parking Area
Feet
0 50 100 200
dvrpc
Source: DVRPC, SEPTA

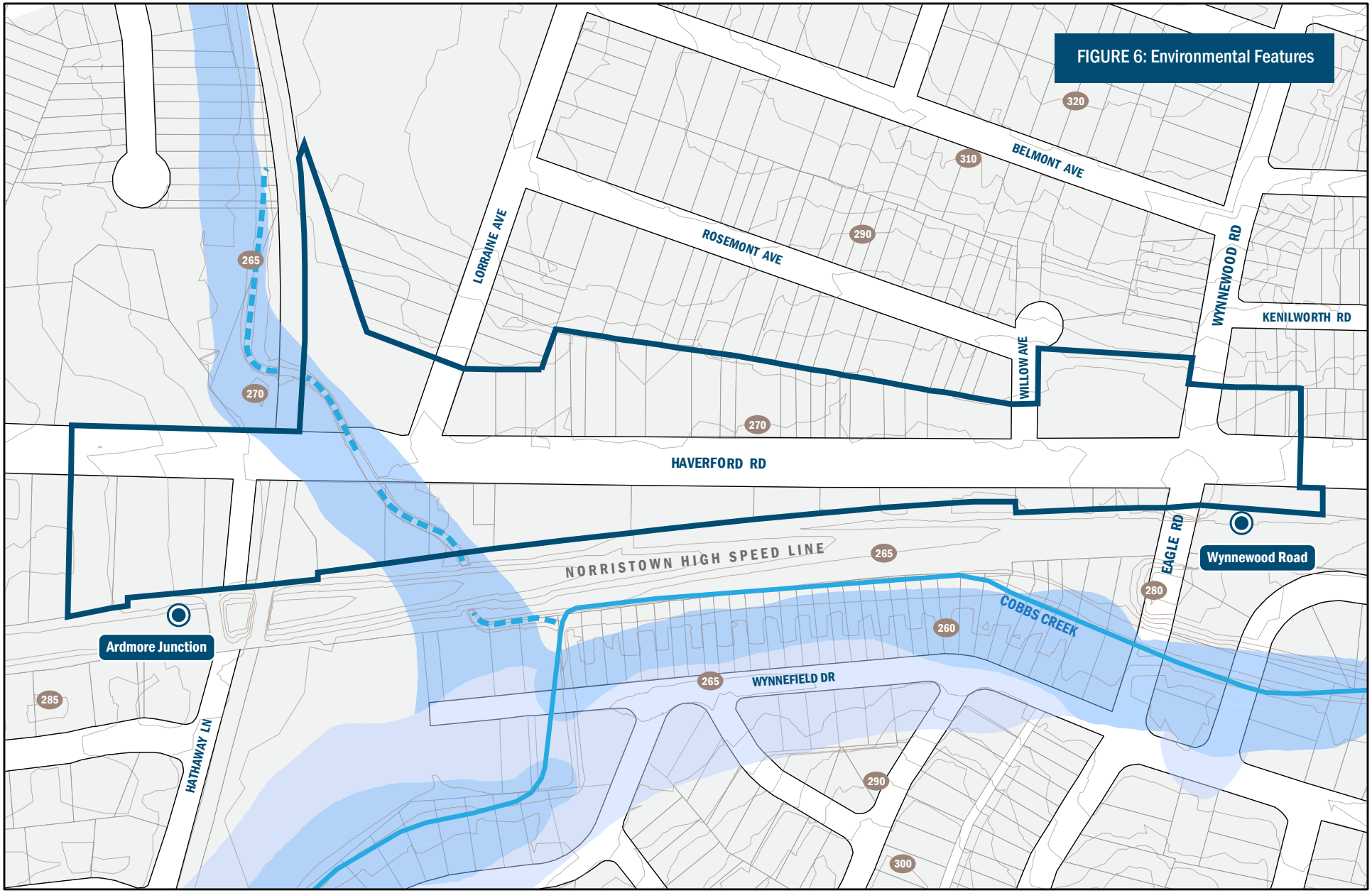
Environmental Issues

Flooding is the principal environmental concern for properties within and near the study area. Cobbs Creek, a tributary of Darby Creek in Delaware County, runs just south of the study area, as illustrated in Figure 6. In this vicinity, Cobbs Creek runs between the NHSL tracks and residential properties to the south. A tributary associated with Cobbs Creek bisects the study area near Lorraine Avenue. This tributary is open at certain locations and covered in others, such as when it crosses Haverford Road.

The 100- and 500-year floodplains illustrated in Figure 6 coincide with these local waterways. Flooding has been cited as a major concern by nearby residents and may be affecting the development potential of commercial properties within the study area. Presently, the large amount of paved area within the study area exacerbates local stormwater management problems. Using green infrastructure techniques to decrease impervious coverage along the corridor may be an important strategy for the future sustainability of the area.

South of Haverford Road, Cobbs Creek runs between the NHSL tracks and homes on Wynnefield Drive.

A tributary to Cobbs Creek runs through properties near the western edge of the study area.



100 Year Floodplain

500 Year Floodplain

Stream

5 Foot Elevation Contour

280 Elevation

Tributary

Feet
0 50 100 200

dvrpc

Source: DVRPC, FEMA

Pedestrian Environment

The pedestrian infrastructure of a particular place is composed of the network of sidewalks, crosswalks, and trails that are used by pedestrians. The quality of these components and the completeness of the overall network define an area's pedestrian environment. Pedestrian facilities are especially critical along and near Haverford Road. Several photos from the study area are found on the next page. Because parking is limited at both the Ardmore Junction and Wynnewood Road stations, many passengers travel to and from the station on foot. Furthermore, according to the 2006-2010 American Community Survey, over five percent of commuters living within a half-mile of either study area NHSL station walked to work.

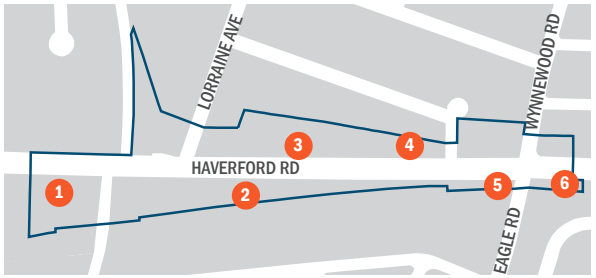
Within the study area, the pedestrian environment is severely impaired by the quality and condition of sidewalks and crosswalks. No dedicated pedestrian sidewalk exists along much of the south side of Haverford Road. Rather, pedestrians walk along a paved area between the roadway and the buildings that front onto Haverford Road. These buildings generally have very shallow setbacks, and in some locations, pedestrians must circumnavigate obstacles, such as utility poles and cars parked in front of commercial establishments. The paved area is also frequently interrupted by curb cuts and offers no buffer from passing traffic.

Larger building setbacks on the north side of Haverford Road generally create more space for pedestrians. A dedicated sidewalk is located between a series of surface parking areas and the street, with no buffer from passing traffic. Parking areas are accessed through numerous curb cuts. Like the south side of the street, the slope of the pedestrian walkway is impacted by the location of driveways. At each curb cut, the walkway slopes toward the street, creating potential hazards for pedestrians.

The study area contains three signalized intersections along Haverford Road: Hathaway Lane (Ardmore Junction Parking Lot), Lorraine Avenue, and Wynnewood Road/Eagle Road. Although each of these intersections include marked crosswalks, crosswalk striping is deteriorating and difficult to see in certain locations. None of the intersections include pedestrian countdown signals.

An unsignalized pedestrian crosswalk is located just east of the SEPTA busway, approximately 100 feet east of the Hathaway Lane intersection. Pedestrians also use the SEPTA busway as a recreational trail and to access Merwood Park, just southeast of the Ardmore Junction Station.

FIGURE 7: Pedestrian Environment Locator Map



The numbers above identify the locations of the photos shown on the next page.

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Sign and utility poles act as obstacles along the southern side of Haverford Avenue near the Ardmore Junction Station.

Vehicles parked in front of this automobile repair facility often compete with pedestrians for valuable space.

Sidewalks are present on the north side of Haverford Road, but there is no buffer between pedestrians and passing traffic.

In many places, sidewalks rise and fall at parking lot access points creating potential hazards for pedestrians.

Crosswalks at the intersection of Haverford Road and Wynnewood Road/Eagle Road need to be repainted.

Cars parked at the Wynnewood Road Station obstruct pedestrians.

Section Two

MARKET PROFILE

The ability of a commercial area or business district to be successful is largely influenced by its accessibility, the mix of retail establishments, site planning and design, and the quality of the shopping experience. This market profile is intended to identify the relative strengths and weaknesses of the study area by inventorying commercial properties, analyzing local demographics, and assessing competition from nearby shopping areas.

Commercial Inventory

Figure 8 identifies commercial properties within the study area and groups them into several broad categories. The study area currently contains 23 active commercial establishments and three vacant commercial properties. Businesses related to automobile repair and maintenance represent the largest share of commercial properties. These seven businesses (shown in red) include a car wash, gas station, car rental center, and three repair facilities.

Four restaurants and one bar (shown in blue) are located within the study area. Three of these establishments are grouped together on the north side of Haverford Road, east of Wynnewood Road. Peppers Café, located at 2528 Haverford Road, is a small restaurant with limited seating and an outdoor deck. The Rusty Nail Tavern frequently hosts live music and is the lone bar within the study area.

The study area contains four businesses related to home furnishings and building materials. Highlighted in orange, these establishments include a home improvement store, flooring center, paint store, and a custom iron work studio.

Four businesses fall into the food and beverage store category. Fruit and Veggies is a small food market located at 2535 Haverford Road. A 7-Eleven convenience store is located just east of the Ardmore Junction Station. Ardmore Park Beverage is a beer distributor located at 2511 Haverford Road, and The Head Nut is a nut, candy, and coffee shop located at the intersection of Haverford Road and Eagle Road.

Three businesses did not fit neatly into any of the broad categories described above. Dolan Appliance Service operates out of 2533 Haverford Road, while a small insurance office is located adjacent to Ardmore Park Beverage, at 2511 Haverford Road. A custom golf club manufacturer is located at 2538 Haverford Road.

Three of the four currently vacant properties are located on the south side of Haverford Road. Of these, two properties, 2600 Haverford Road and 2522 Haverford Road, were once automobile repair facilities. The vacant building at the intersection of Haverford Road and Wynnewood Road, 2377 Haverford Road, contains a recently renovated commercial space on the first floor and apartment on the second floor. This location once served as a pharmacy and the building is now being actively marketed.

The Whistle Clean Car Wash is located at the intersection of Haverford Road and Lorraine Avenue.

The Head Nut is a local landmark located at the corner of Haverford Road and Eagle Road.

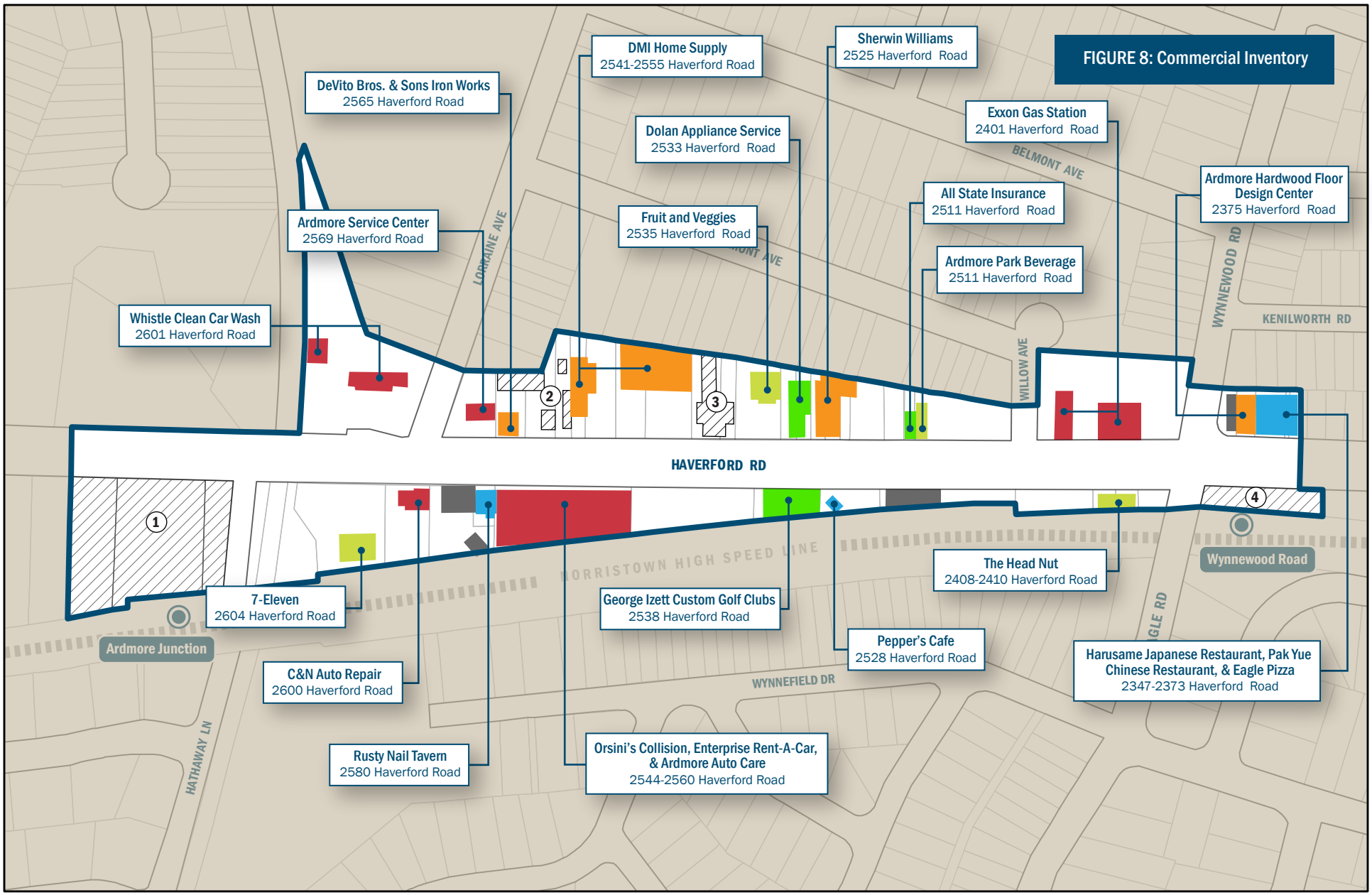


FIGURE 8: Commercial Inventory
DeVito Bros. & Sons Iron Works
2565 Haverford Road
DMI Home Supply
2541-2555 Haverford Road
Sherwin Williams
2525 Haverford Road
Exxon Gas Station
2401 Haverford Road
Dolan Appliance Service
2533 Haverford Road
Ardmore Hardwood Floor Design Center
2375 Haverford Road
All State Insurance
2511 Haverford Road
Ardmore Service Center
2569 Haverford Road
Fruit and Veggies
2535 Haverford Road
Ardmore Park Beverage
2511 Haverford Road
Whistle Clean Car Wash
2601 Haverford Road
LORRAINE AVE
BELMONT AVE
WILLOW AVE
WYNNEWOOD RD
KENILWORTH RD
HAVERFORD RD
1
2
3
4
NORRISTOWN HIGH SPEED LINE
Ardmore Junction
Wynnewood Road
7-Eleven
2604 Haverford Road
George Izett Custom Golf Clubs
2538 Haverford Road
The Head Nut
2408-2410 Haverford Road
Pepper's Cafe
2528 Haverford Road
Harusame Japanese Restaurant, Pak Yue Chinese Restaurant, & Eagle Pizza
2347-2373 Haverford Road
C&N Auto Repair
2600 Haverford Road
WYNNEFIELD DR
HATHAWAY LN
Rusty Nail Tavern
2580 Haverford Road
Orsini's Collision, Enterprise Rent-A-Car, & Ardmore Auto Care
2544-2560 Haverford Road
Auto Repair & Maintenance
Home Furnishing and Building Materials
Food and Beverage Store
Restaurant or Bar
Vacant Commercial
Other Commercial
Non-commercial Property
1. Ardmore Junction Station Parking
2. Residential Property
3. Haverford School District
4. Wynnewood Road Station Parking
Feet
0 50 100 200
dvrpc
Source: DVRPC

Demographics

The Haverford Road commercial corridor functions similarly to a neighborhood shopping center. The stores and businesses located there primarily serve the needs of nearby residents and employers. For this reason, DVRPC analyzed key demographic characteristics for those living within two-miles of the study area, an area that includes portions of Haverford Township and Lower Merion Township. Findings are presented in Table 2 and Figures 9 and 10. An understanding of the population and households within this market area will be useful to local officials and commercial developers as they plan to meet current and future retail demand in the area.

TABLE 3: Population and Household Characteristics

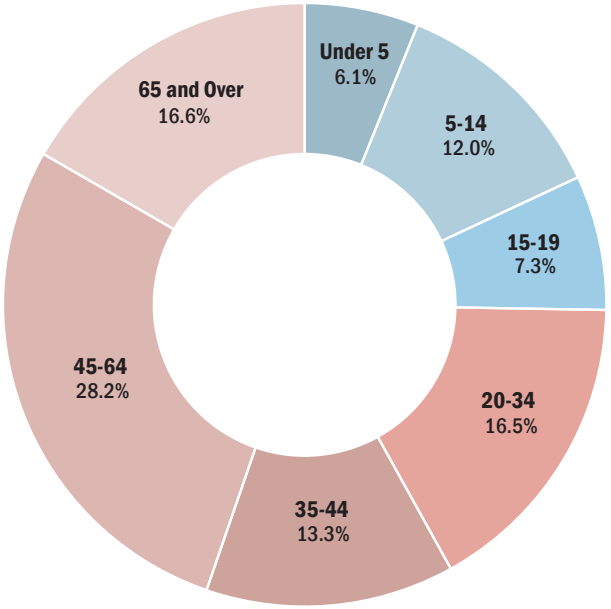
	Market Area*	Haverford Township	Lower Merion Township
Population			
2010	63,703	48,491	57,825
Race & Ethnicity			
White	87.6%	88.2%	83.4%
African-American	4.8%	5.0%	7.3%
Asian	5.2%	3.9%	6.5%
Other	2.4%	3.0%	2.8%
Hispanic (may be of any race)	2.5%	1.9%	3.0%
Households			
2010	25,052	18,215	22,716
Average Household Size	2.5	2.7	2.5
Median Household Income			
2010 Inflation-Adjusted Dollars	$53,340—$148,402**	$86,451	$111,165
Housing			
Housing Units	25,888	18,350	24,095
% Owner-Occupied	78.8%	85.9%	76.1%
% Renter	21.2%	14.1%	23.9%

* The Market Area is composed of 17 census tracts. Some of these census tracts include areas further than two miles from the study area.
** Range of median household incomes for census tracts within a 2-mile radius of the study area
Source: U.S. Census Bureau: 2010 Census and 2006-2010 American Community Survey

Key Findings

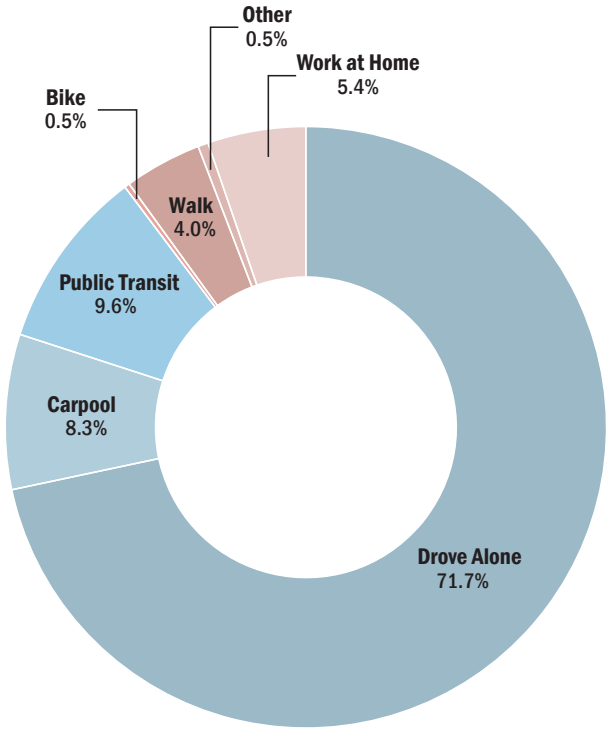
- The population within a two-mile radius of the study area is 63,703. There are over 25,000 households within the market area. The average household size is 2.5, which is similar to the averages for Haverford and Lower Merion.
- Like the surrounding communities, the population of the market area is primarily White with small African-American and Asian minorities. 2.5 percent of area residents are Hispanic.
- Nearly 30 percent of the market area falls between the ages of 45 and 64. Approximately 18 percent of residents are children under 14. The market area also contains a relatively large number of seniors (65 and over).
- The majority of residents commute to work by driving alone. However, the market area also contains sizable portions that take public transit or walk to work. Over five percent of residents work at home.

Figure 9: Market Area Age Composition



Source: 2006-2010 American Community Survey

Figure 10: Market Area Journey to Work



Source: 2006-2010 American Community Survey

Commercial Survey

The Haverford Road commercial area is just one of many commercial centers found in Haverford Township and the neighboring communities of Lower Merion and Philadelphia. In 2006, the Haverford Civic Council Revitalization Task Force identified 10 business districts within Haverford Township. Figure 11 highlights nine of these business districts that fall within a two-mile radius of the study area. The study area largely corresponds with Business District 4, Haverford Road Middle. Business District 9, Lancaster Avenue, overlaps with the larger Bryn Mawr shopping district in Lower Merion Township. Figure 11 also includes two additional business districts located in Lower Merion Township, Ardmore and Wynnewood.

While the Haverford Road commercial area does not currently have a strong identity, Figure 11 illustrates that it competes with several nearby shopping areas, some of which function as cohesive business districts. For example, Ardmore and Bryn Mawr have cultivated distinctive retail identities based on their traditional main street feel.

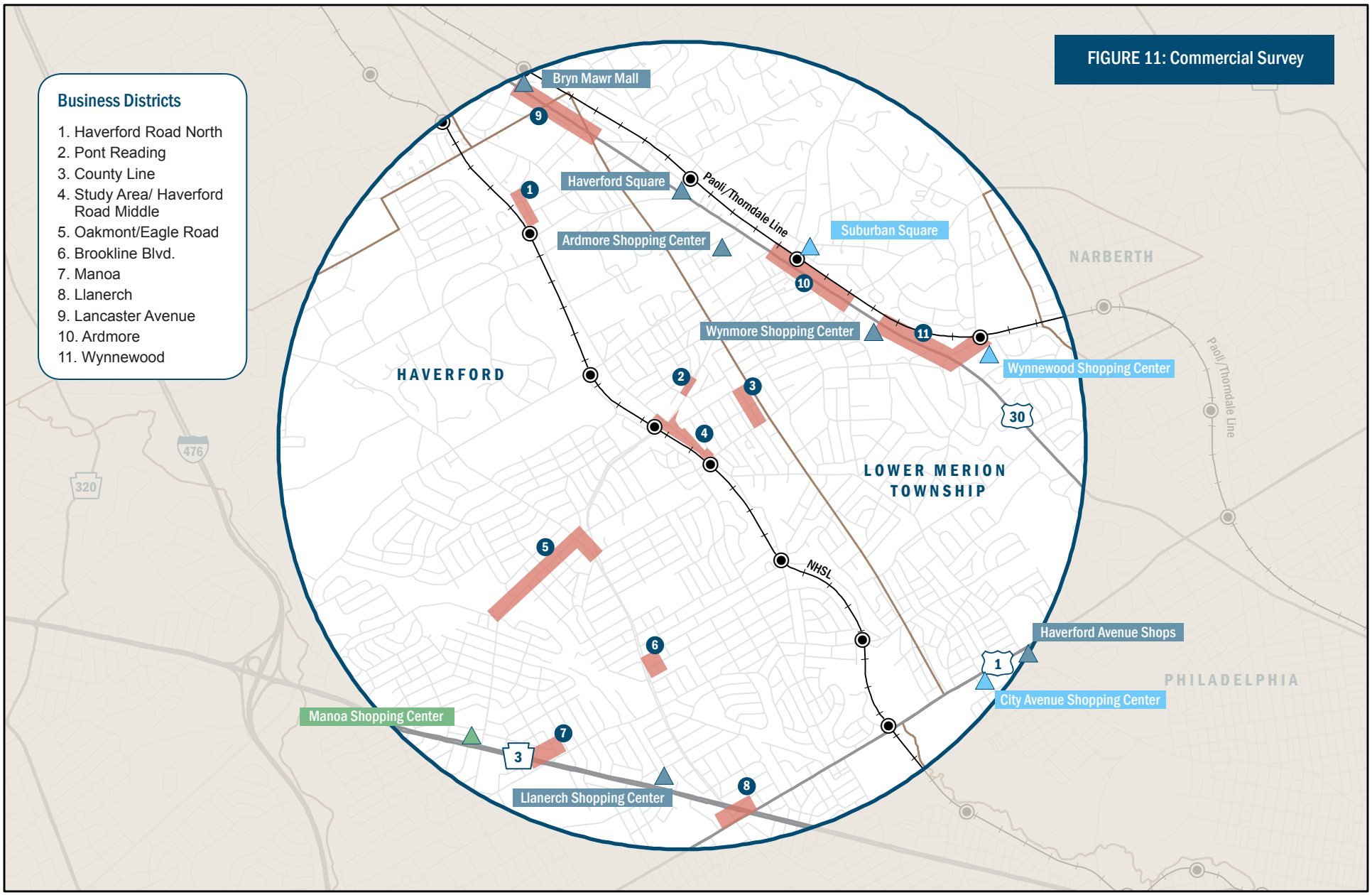
The study area also competes with several conventional shopping centers located in the market area. These shopping centers are identified in Figure 11 by colored triangles correlating to their status as a neighborhood, community, or regional center. The general characteristics of these types of shopping centers are identified in Table 4.

Additional strip commercial development is located along major arterials such as US 30 (Lancaster Avenue) and Route 3 (West Chester Pike). Neighborhood commercial areas, such as the study area, however, tend to be located on minor arterials and cater to the retail and service needs of the local neighborhoods.

TABLE 4: General Characteristics of Shopping Centers

Type of Center	Gross Leasable Area (s.f.)	Site Area (acres)	Market Radius (miles)	Population Required
Neighborhood	30,000–100,000	3–10	1.5	3,000–40,000
Community	101,000–300,000	10–30	3–5	40,000–150,000
Regional	301,000–750,000	10–60	8–10	150,000+

Source: National Research Bureau, 2004



Source: DVRPC, Haverford Township Civic Council's Citizens' Task Force for Commercial Revitalization

Constraints and Opportunities

This analysis of the Haverford Road Market Area highlights several constraints and opportunities facing the commercial corridor.

Constraints

- The Haverford Road commercial corridor is a collection of businesses that do not currently have a distinctive identity. Some buildings are in need of aesthetic improvements.
- The study area is composed of a series of small and shallow parcels, which limit development options and parking capacity at many locations.
- Poor pedestrian infrastructure discourages walking along the corridor and forces shopping trips to be made by automobile.
- The study area contains a relatively low diversity of retail uses. Nearly half of businesses are related to automobile maintenance or home improvements.
- Flooding concerns may limit new investment along the corridor.

Opportunities

- The Haverford Road commercial corridor is well located on a highly traveled street and is surrounded by prosperous, relatively high-density neighborhoods.
- The study area contains two popular NHSL stations. Businesses catering to commuters may represent a significant opportunity to the corridor.
- The focus on auto maintenance and home improvement may provide an opportunity for branding the corridor. Enhancing and marketing the agglomeration of these businesses may allow the study area to define itself as an important destination for these valuable goods and services.
- Enhancing pedestrian and bicycle access along the corridor will allow nearby residents to make some shopping trips on foot and bicycle. Likewise, safer pedestrian connections may encourage commuters to visit nearby shops before or after work.

Section Two

IMPROVEMENT STRATEGIES

Commercial revitalization is the process of restoring economic vitality to an underperforming retail area. In its 2006 Assessment Summary Report, the Citizens' Task Force for Commercial Revitalization identified six goals for the Township's business districts:

- Create attractive, walkable, and interesting business districts.
- Attract the types of businesses that appeal to consumers and residents.
- Create a business-friendly reputation for Haverford Township.
- Address parking issues in many of the township business districts.
- Revitalize vacant and underutilized storefronts.
- Create a marketable identity for all of the township's business districts.

These goals are appropriate as we consider the future of the Haverford Road commercial corridor. However, as identified in Section One of this document, the study area faces several constraints. Additionally, it does not possess the traditional main street characteristics that are found in some nearby successful shopping districts. Nor does it enjoy the expansive parking areas found in local shopping centers. Revitalizing this 'in between' commercial area will require thinking creatively about the problems and opportunities of the site.

The study team has identified several strategies that could help enhance the accessibility, attractiveness, and vitality of the Haverford Road commercial corridor. These strategies address many of the goals identified by the Citizens' Task Force and include both physical and economic techniques. The strategies are organized into three broad categories: Roadway Reconfiguration, Commercial Revitalization, and Urban Design. The first section describes the potential benefits of a road diet along Haverford Road. The Commercial Revitalization section discusses various economic development strategies for the corridor. Finally, the Urban Design section contains recommendations to enhance the aesthetics, safety, and environmental performance of the study area.

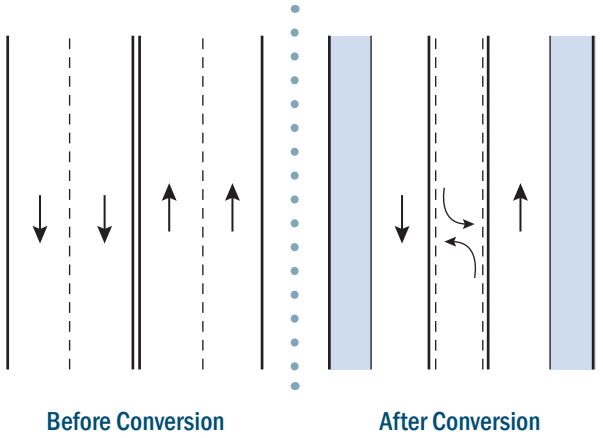
Roadway Reconfiguration

The lack of pedestrian and bicycle amenities limit mobility options along the Haverford Road commercial corridor. Implementing a road diet along Haverford Road may be a cost-effective way to better satisfy the needs of all users, while maintaining an adequate level of service for motorists. A road diet converts a four-lane roadway into a three-lane roadway. Because a road diet would alter the physical organization of Haverford Road, this strategy has the greatest potential to significantly change the character of the study area.

As illustrated in Figure 12, a road diet modifies the layout of an existing roadway to better accommodate non-vehicular travelers. Most commonly, the converted roadway consists of one travel lane in each direction, a center two-way-left-turn lane, and bicycle lanes. However, the additional space gained from the removal of the fourth lane can also be used as a shoulder and buffer for pedestrians or as additional sidewalk space. The center turn lane typically functions as an exclusive left-turn lane at intersections.

Haverford Road currently consists of four 10-foot travel lanes. After conversion, the street could include two 10-foot travel lanes, one 11-foot turning lane, and approximately four and a half feet of flexible space on each side of the road. Existing and typical proposed cross-sections of Haverford Road are illustrated in Figure 13. The additional space created by the removal of the fourth traffic lane could make Haverford Road more attractive to cyclists and walkers. Haverford Road has been identified by the Delaware County Bicycle Plan as part of the county's on-road bicycle improvement network. Creating a shoulder along the roadway for this stretch of Haverford Road will reduce speeding, create more room for cyclists, and help create a buffer between pedestrians and passing cars. Alternatively, the converted street may represent an opportunity to dedicate more physical space to pedestrians and landscaping along the corridor. For example, sidewalks could be added to the south side of the street or a planting strip could be installed along the north side of Haverford Road.

FIGURE 12: Typical Road Diet Conversion



A typical road diet converts a four-lane roadway into one travel lane in each direction and a center turn lane. The additional space gained (shown in blue) can be used for a shoulder, bicycle lanes, or wider sidewalks.

dvrpc

FIGURE 13: Existing and Proposed Cross-Sections

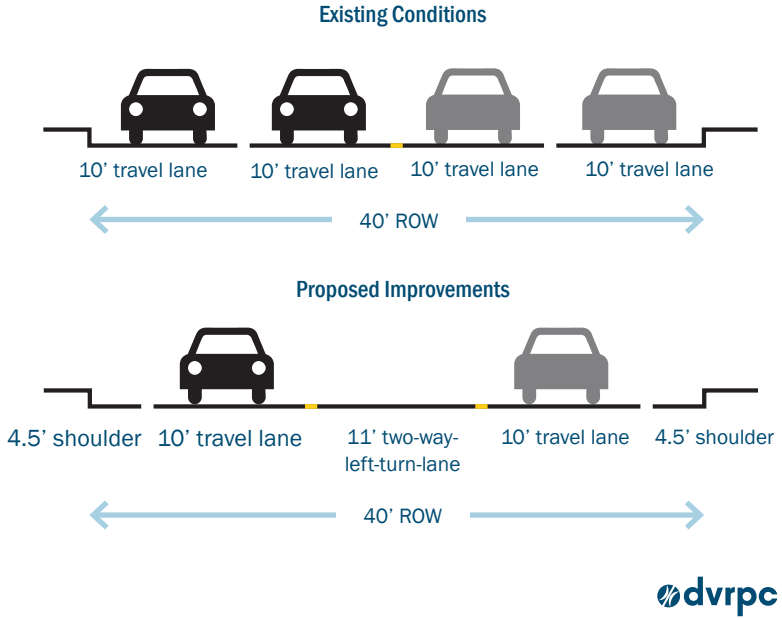
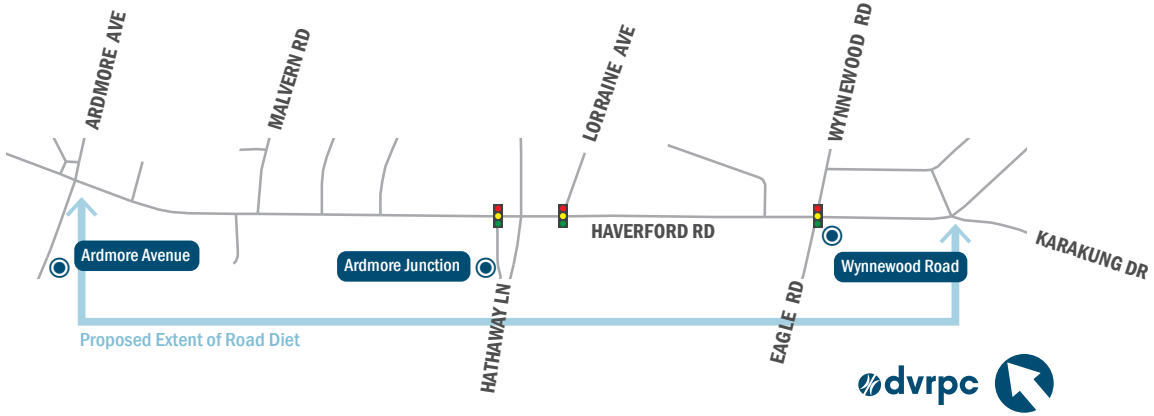


FIGURE 14: Potential Extent of Proposed Road Diet



Road Diet Analysis

DVRPC conducted a capacity analysis to evaluate the impact of a road diet on traffic operations along a 0.85-mile stretch of Haverford Road between Karakung Drive and Ardmore Avenue. These extents (see Figure 14) were chosen because they represent potentially appropriate transition areas. East of Karakung Drive, Haverford Road contains only one travel lane in each direction. Just west of Malvern Road, Haverford Road was recently restriped to eliminate one westbound lane and calm traffic between Malvern Road and Hazelwood Avenue. This section of Haverford Road includes three signalized intersections: Eagle Road/Wynnewood Road, Lorraine Avenue, and Hathaway Lane. This analysis focuses on understanding how a road diet might affect traffic volumes at these intersections, while providing the desired safety and community benefits.

DVRPC staff used a traffic engineering software package, Synchro/Sim Traffic 7, to conduct the capacity analysis, which considers performance measures, such as average vehicular delay, Level of Service (LOS), and travel time. The analysis required the current signal timing programs of all signalized intersections, which were provided by PennDOT, and the peak-hour turning movement volume data, which was acquired by DVRPC in March 2012. This information was used to establish an existing-conditions baseline, against which various road diet build alternatives could be compared. Three alternatives were identified for comparison: a basic road diet which converts Haverford Road from four lanes to three, the same road diet with signal timing improvements, and a road diet with both signal timing and additional targeted roadway improvements. The results of this analysis are summarized in Appendix A.

Figures 16 and 17 summarize overall delay for each of the three signalized intersections during the AM and PM peak hour. The analysis indicates that of these intersections, the largest amount of vehicular delay currently experienced during either peak hour is at the Eagle Road/Wynnewood Road intersection. That intersection's overall average delay in the PM peak hour is 84 seconds, for a LOS of F. Conversely, the overall average delays for the Lorraine Avenue and Hathaway Lane intersections do not exceed 11 seconds in either peak hour. Travel times along this stretch of Haverford Road range from three minutes to over five minutes, depending on the direction and time of travel.

The basic road diet alternative did not include timing or additional roadway improvements at the three signalized intersections. This alternative serves only to gauge the impacts of altering the roadway to one through lane in each direction. Performance measures at all three intersections deteriorate in this alternative, particularly at the Eagle Road/Wynnewood Road intersection, where its overall average delay in the PM peak hour increases by about 100 percent.

The second alternative, a road diet with signal timing improvements, represents a more accurate representation of a road diet. Revising signal timing to reflect new roadway alignments is a common practice due to its marginal effort and cost. In this alternative, overall average delays remain comparable for both Hathaway Lane and Lorraine Street, but exhibit dramatic improvement at the Eagle Road/Wynnewood Road intersection. At this intersection, overall average delays are reduced by over 40 seconds during the PM peak hour.

The third alternative incorporates additional physical roadway improvements with the road diet and signal timing to further mitigate delays. These targeted improvements include providing a second lane on the Lorraine Avenue approach to Haverford Road and adding right-turn-only lanes to Haverford Road on the southbound approaches to Hathaway Lane and Eagle Road/Wynnewood Road.

In this alternative, the anticipated overall average delay at the Eagle Road/Wynnewood Road intersection falls below the delay that is currently experienced, and the overall LOS improves from F to E. At the other two intersections, overall average delays remain comparable to existing conditions. Currently, southbound travel through this area during the PM peak hour takes approximately five minutes and 20 seconds. In this scenario, that travel time would decrease to three minutes and 54 seconds, a reduction of more than one minute. Of the three additional turn lanes discussed here, the southbound right-turn lane at the Eagle Road/Wynnewood Road intersection provides the greatest benefit to performance measures. It reduces the southbound Haverford Road PM peak-hour approach delay by approximately two minutes from existing conditions. Additional improvements at Hathaway Lane and Lorraine Avenue allow their affected approaches to perform comparably to existing conditions. Space for additional turn lanes on Haverford Road would necessarily detract from the shoulder and buffer space created by the road diet. The specific length of roadway required for right-turn-only lanes at Hathaway Lane and Wynnewood Road/Eagle Road was not assessed during this study.

FIGURE 15: Road Diet Simulation

These before and after images illustrate the conceptual design of a road diet on Haverford Road. The center turn lane allows motorists to access local businesses without stopping the flow of traffic.

Aerial Imagery: Google Maps, 2013

FIGURE 16: AM Peak-Hour Overall Intersection Delay

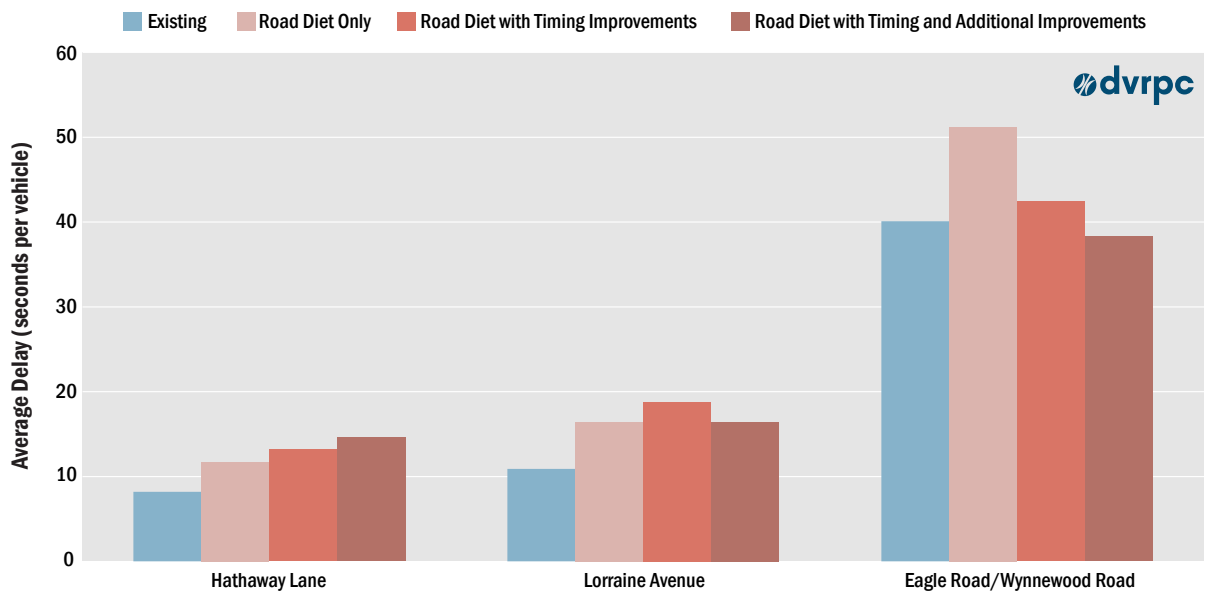
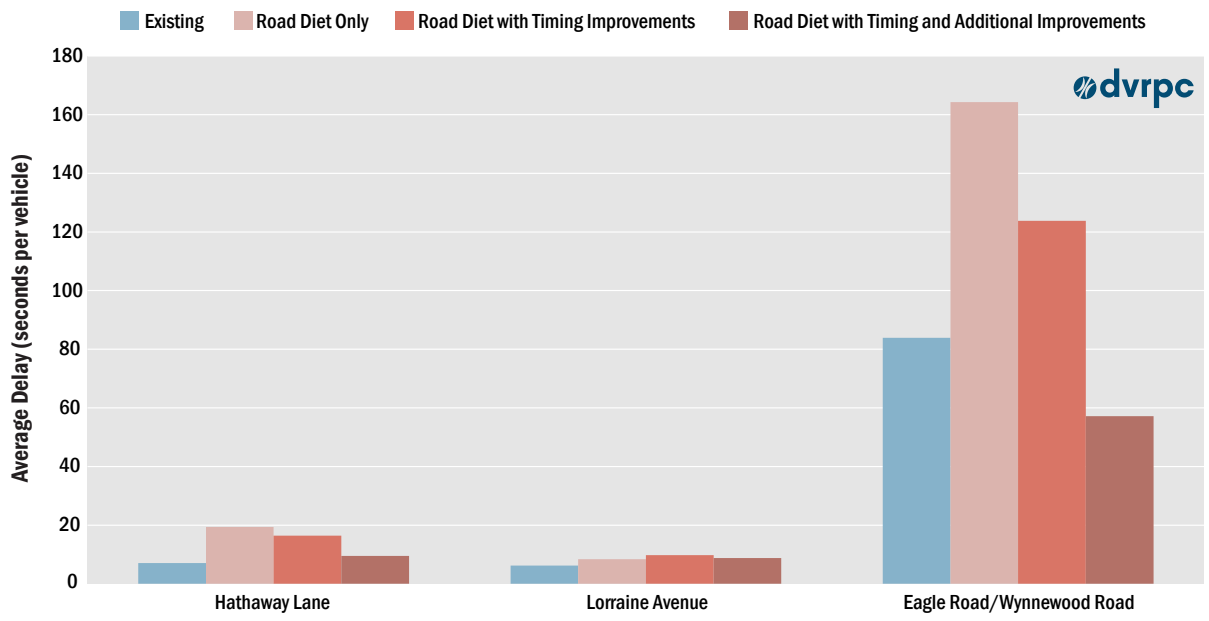


FIGURE 17: PM Peak-Hour Overall Intersection Delay



Road Diet Concerns

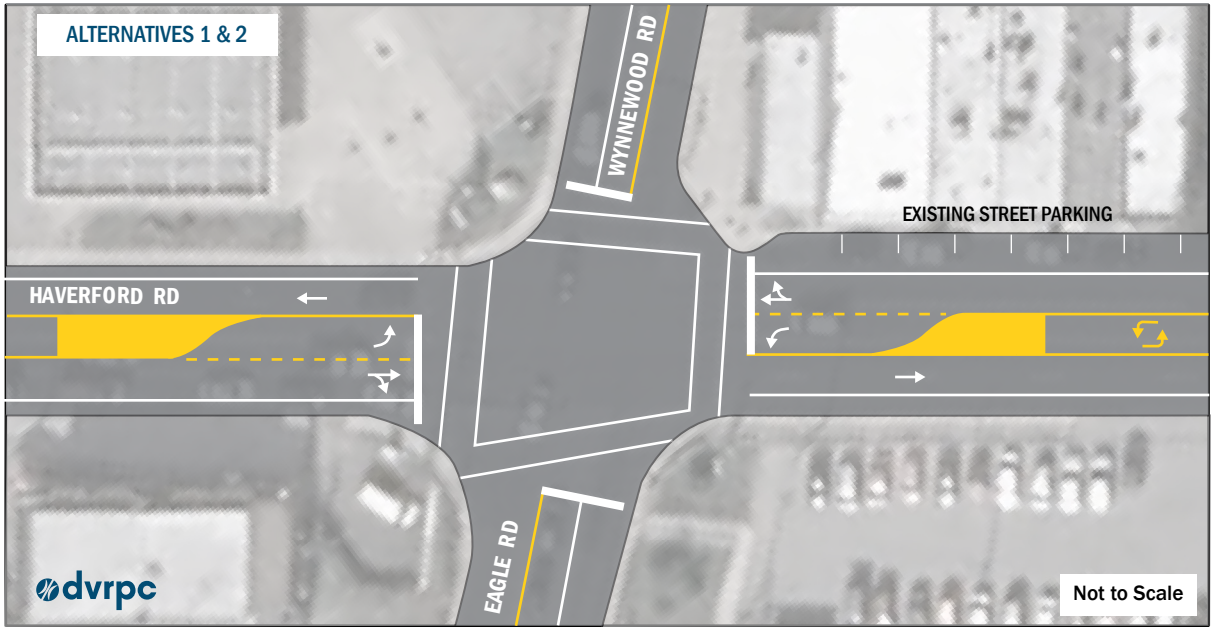
The potential implementation of a road diet may raise concerns related to traffic circulation and congestion. One of these concerns may be the potential for a road diet along Haverford Road to divert traffic onto a parallel route, such as Darby Road. While any reduction in roadway capacity has the potential to divert traffic, this does not appear to be a concern for Haverford Road. The modeling analysis of converting Haverford Road to a three-lane cross-section found improved traffic operations when compared to the existing condition. Furthermore, this portion of Haverford Road often functions as a three-lane cross-section due to vehicles turning left from the left travel lanes. Removing these vehicles from travel lanes, and implementing traffic signal efficiencies may offer improvements to traffic operations. At a minimum, no degradation in traffic operations is expected. DVRPC's Office of Modeling and Analysis forecasts only a modest increase of two percent in traffic volume along this corridor over the next 20 years. The analysis for this project suggests that a reconfigured Haverford Road could accommodate the forecasted increase in traffic volumes.

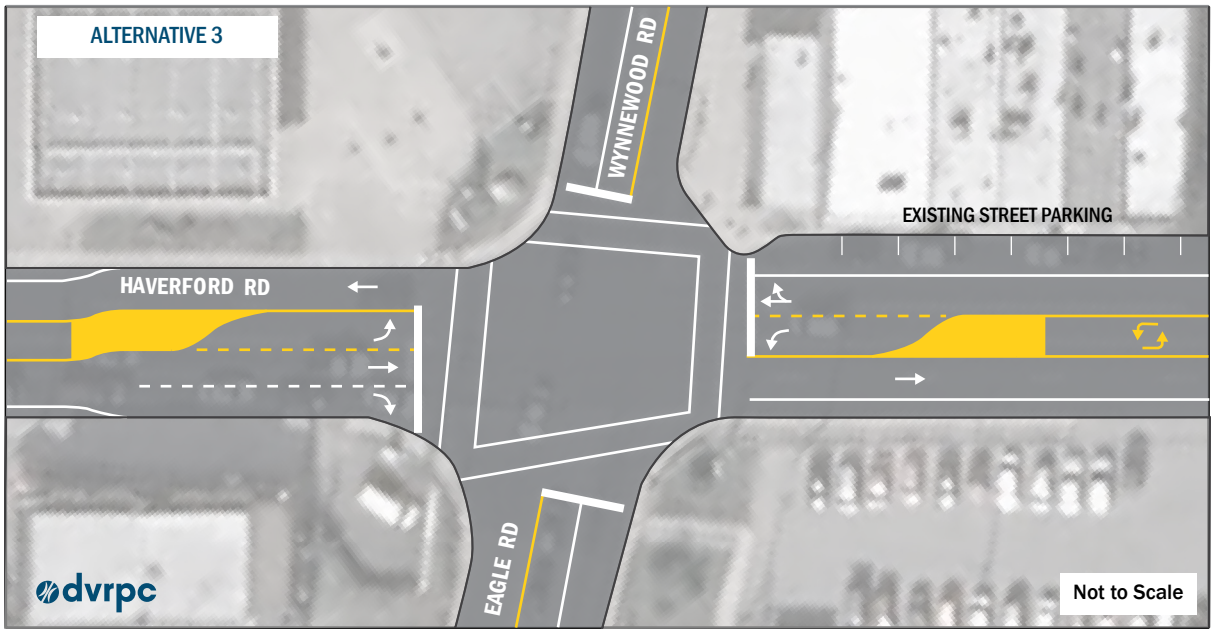
Another potential concern associated with road diet conversions is queue lengths at signalized intersections due to the reduced number of travel lanes used for queuing. This is an important concern because many commercial properties line the corridor and access to and from these properties must be accommodated. As part of the modeling analysis, average and 95th percentile queue lengths (distance in feet) for each approach were extracted from the model. These results are provided in Appendix A. The results show that some approaches may experience moderately longer queue lengths, while other approaches see their queue lengths reduced. Based on the analysis, the potential growth in queue length is not sufficient to disqualify consideration of a road diet. An added benefit of a

FIGURE 18 : Road Diet Alternatives–Haverford Road and Wynnewood Road/Eagle Road

The top graphic (Alternatives 1 & 2) illustrates how a basic road diet could be implemented at the intersection of Haverford Road and Wynnewood Road/Eagle Road. In this location, each center lane is used as a dedicated left-turn-only lane. In between intersections, the center lane acts as a two-way-left-turn lane, which allows vehicles to turn into commercial establishments on both sides of the street.

The bottom graphic (Alternative 3) illustrates how a basic road diet could be modified with the addition of a right-turn-only lane at the intersection of Wynnewood Road/Eagle Road. DVRPC analysis revealed that a road diet, even with signal timing improvements, could add significant delay at this intersection. The addition of a right-turn-only lane reduces overall delay at this intersection below current conditions and improves the overall LOS from F to E.





three-lane cross-section is that only a single driver's decision to provide a 'courtesy gap' —the term applied to drivers creating a gap in a traffic stream or queue—is required to allow a motorist to make a left turn or enter the flow of traffic from a business on Haverford Road.

Alternative three, with its signal timing and additional roadway improvements, is recommended as the desired roadway reconfiguration if a road diet is to be pursued along this stretch of Haverford Road. DVRPC's preliminary analysis suggests that this alternative could improve pedestrian safety and comfort along much of the corridor, while having a positive impact upon vehicular delay, LOS, and travel time. Furthermore, all of this alternative's improvements, including the additional turn lanes, may fit within existing right-of-way constraints and be constructed without significant capital costs. PennDOT performed a preliminary review of the data used to analyze the potential road diet in July 2012. Correspondence from PennDOT regarding this review can be found in Appendix B.

Commercial Revitalization

In older business districts, economic development efforts might include providing incentives to businesses to improve their appearance, marketing business districts, or creating zoning and tax policies that encourage good business practices. In 2007, the Citizens' Task Force for Commercial Revitalization published a report entitled Six-Point Economic Development Strategy. This document outlines a series of economic development strategies that are appropriate for the older business districts throughout Haverford Township. The study team has formulated additional strategies specifically to promote the revitalization of the Haverford Road commercial area by focusing on its existing assets.

Business District Organization
While the Haverford Partnership for Economic Development (HPED) was formed to facilitate business district revitalization throughout the township, the Haverford Road commercial area could benefit from better local business district organization. A merchant's association, or similar organization, can help individual businesses and service providers communicate better and begin to think beyond their individual storefronts. These types of organizations are often an effective way of creating a business and customer network, establishing a central point of contact, and prioritizing physical improvements.

Defining a Niche
The study area contains a mix of commercial uses with concentrations in both auto service and maintenance and home improvements and furnishings. These types of establishments either directly involve automobiles or generally require their use to transport items that may be heavy or bulky. As such, some of the existing businesses have not been adversely impacted by the current lack of pedestrian infrastructure.

Defining a retail niche for the study area that includes auto- and home-related businesses is a practical strategy that could enhance the vitality of the district by playing to its current strengths. Both shoppers and businesses can benefit from the juxtaposition of related stores. Pursuing this strategy, however, may be contingent upon ongoing efforts by the Township to transform the Oakmont Business District into a town center and the Eagle Road Corridor into the Township's main street. Auto-oriented businesses that were no longer appropriate for these areas might be a better fit for the Haverford Road commercial corridor.

However, rebranding the Haverford Road commercial area in this way should not preclude aesthetic and pedestrian improvements. All businesses, even auto-oriented ones, benefit from an attractive and accessible retail environment. Subsequent pages will contain recommendations that, in addition to the road diet previously described, are designed to enhance the physical environment.

Retail Alignment

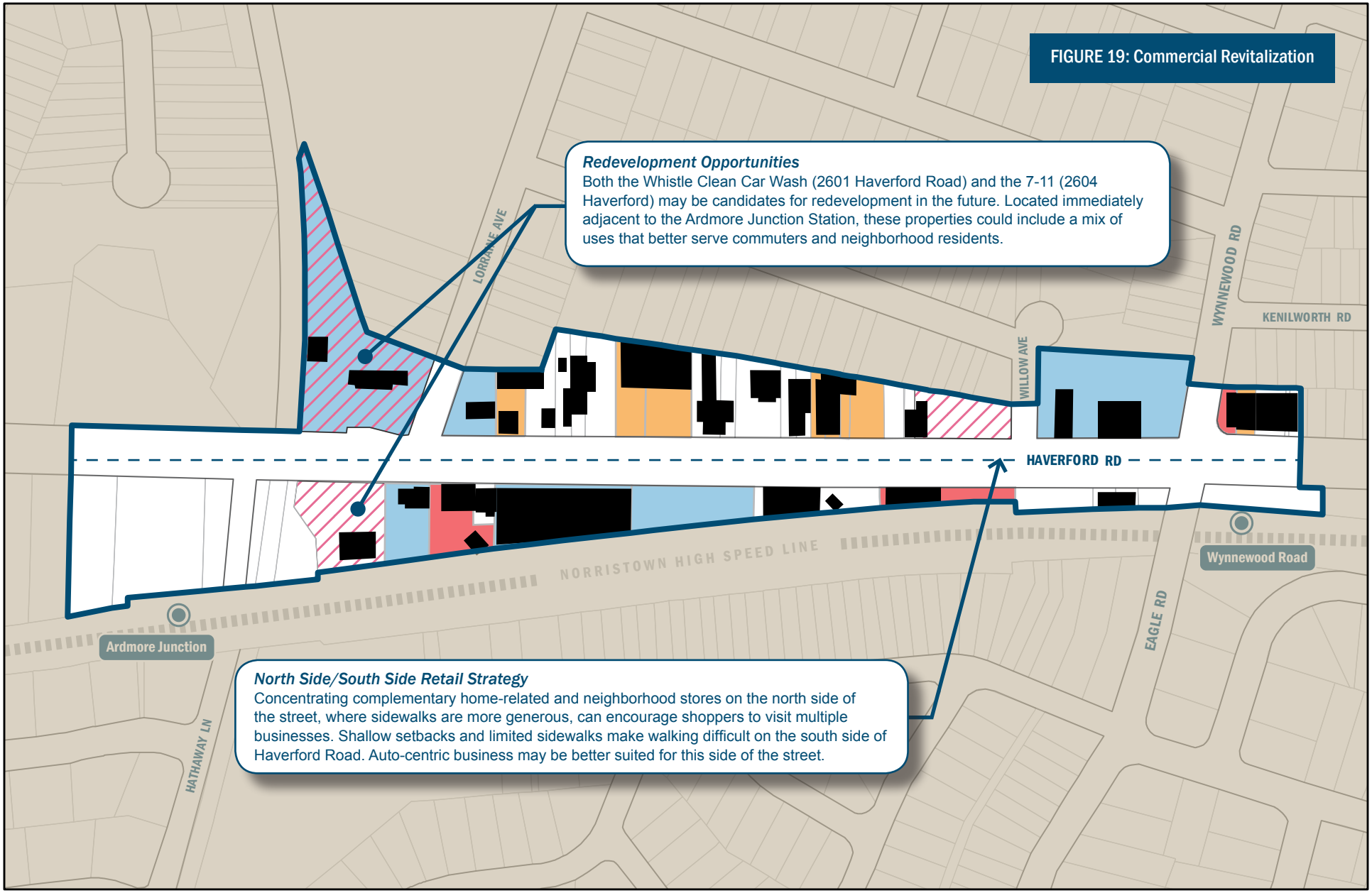
If this vision for the study area were to be pursued, some reorganization of the district may be desirable. Most of the home-related stores are currently located on the north side of the street. Auto-related uses are found on both sides of the street, but the south side, with its shallow setbacks and limited sidewalks, may be better suited for these types of businesses. The study area could benefit from a retail strategy that concentrates home-related stores on the north side of the street and auto-related businesses on the south side. This arrangement would allow shoppers to walk more easily between complementary stores on the north side of the street, where sidewalks are more generous, while preserving the existing mix of businesses.

Such a north-south retail strategy can be pursued by recruiting appropriate businesses for current and future commercial opportunities. Currently, two vacant sites that might be appropriate for an auto service business area located on the south side of the street: 2590 Haverford Road and 2522 Haverford Road. Similarly, home-related businesses may be targeted as vacancies arise and businesses turn over on the north side of the street.

Redevelopment

In addition to the vacant commercial properties noted above, the study area contains three sites that may be candidates for redevelopment. The Whistle Clean Car Wash, 2601 Haverford Road, and 7-Eleven, 2604 Haverford Road, properties both contain limited building improvements. These relatively large parcels are located near the Ardmore Junction Station and may represent valuable redevelopment sites in the future.

The Haverford Road Design Guidelines call for the creation of a transit-oriented development (TOD) gateway at the Ardmore Junction Station. One or both of these sites may be appropriate for a mixed-use development that takes advantage of its location near the NHSL. These sites, particularly the Whistle Clean Car Wash, could also be an attractive site for a home-related business that fits within the retail strategy proposed here. While convenience retail, such as the current 7-Eleven, meets some of the needs of commuters and neighborhood residents, an enhanced retail option could improve the transit experience of NHSL commuters.



Source: DVRPC

The parking lot located on the north side of Haverford Road near Willow Avenue is another potential redevelopment site. Currently, this parking lot partially serves the adjacent Ardmore Park Beverage, but this corner lot could be a part of a new commercial development.

Marketing
Creating a retail focus and an identity for the Haverford Road commercial area is crucial to the long-term success of the study area. Marketing the district as an important destination for home- and auto-related businesses can help create a unified identity and promote the area to consumers and business owners. Study area businesses may be able to work with the HPED to develop a marketing strategy.

Branding the study area can also take on a physical component. Gateway and business signage can help unify a business district and reinforce a commercial identity.

Business Recruitment
Recruiting new businesses for the study area could become easier if a specific retail focus were to be established. HPED may play a role in recruiting businesses for each of the township's business districts and having retail focus may help guide the process.

However, even if a retail focus were established for the study area, other types of businesses should not be precluded from entering the district. The study area's close proximity to dense residential neighborhoods and a commuter transit line make it an appropriate place for a variety of businesses. A 2006 survey of shoppers in the Oakmont/Eagle Road Business District captured the sentiment that some retail was oversupplied in that area. Specifically, dry cleaners, beauty salons, and nail salons were identified as services that existed in abundance. Interestingly enough, none of these types of businesses is currently located in the study area. These types of shops, and other retail that caters to commuters and residents, may fill a valuable retail gap that currently exists near Haverford Road. These types of businesses, however, may be more adversely impacted by the current unattractive commercial setting than the auto-related uses found there now.

Urban Design

The Assessment Summary Report, completed by the Citizens' Task Force for Commercial Revitalization in 2006, included the results of a survey distributed to residents and shoppers. The results highlight many of the issues facing the study area today. The Haverford Road business district scored poorly on a number of factors. According to the Assessment Summary Report:

> "It scored the worst of the districts on trees and greenery, outdoor seating, safety, and walkability. It was second worst in general attractiveness, signage, and exterior cleanliness. Later in the survey, residents complained about the appearance of the 7-Eleven, the railroad bridge, the auto body shops, and the Head Nut."

These concerns largely deal with the physical form and organization of the Haverford Road commercial area. The following recommendations focus on physical improvements to the study area, which would make it a more desirable place to shop and conduct business. They are intended to supplement the Design Guidelines included as part of the Comprehensive Plan Addendum. These recommendations complement the roadway reconfiguration strategy described earlier, but may also be implemented on their own.

Walkability

- Investigate road diet along Haverford Road to help create a buffer between traffic and pedestrians.
- The south side of Haverford Road is especially problematic for pedestrians. One alternative could be placing the southern sidewalk directly in front of businesses so that pedestrians walk between parked cars and the building.
- Install pedestrian signal heads at the intersections of Haverford Road and Wynnewood Road and Haverford Road and Lorraine Avenue.
- Install advance Pedestrian Crossing Ahead (W11-2) sign in both directions approaching the midblock crosswalk near the Ardmore Junction Station.
- Install continental crosswalk markings for improved visibility at the intersections of Haverford Road and Wynnewood Road and Haverford Road and Lorraine Avenue.
- Demarcate "Pedestrian Route" with signs at the Hathaway Avenue underpass.

Streetscape and Street Walls

- Figure 19 identifies a contextual build-to-line for properties along Haverford Road. As redevelopment occurs and new buildings are constructed, buildings should be built to this line to help create a continuous street wall.
- Whenever buildings cannot be located close to the street, use vegetation, fences, or other techniques to continue the street wall.

Infill Buildings

- Due to space and parking constraints, new buildings should be two-stories, with a smaller building footprint. Second stories can provide additional space for office, residential, or live/work uses.

Access Management

- Narrow or consolidate excessively wide or duplicative curb cuts along Haverford Road. Figure 19 identifies potentially excessive curb cuts, which detract from the pedestrian environment.

Parking

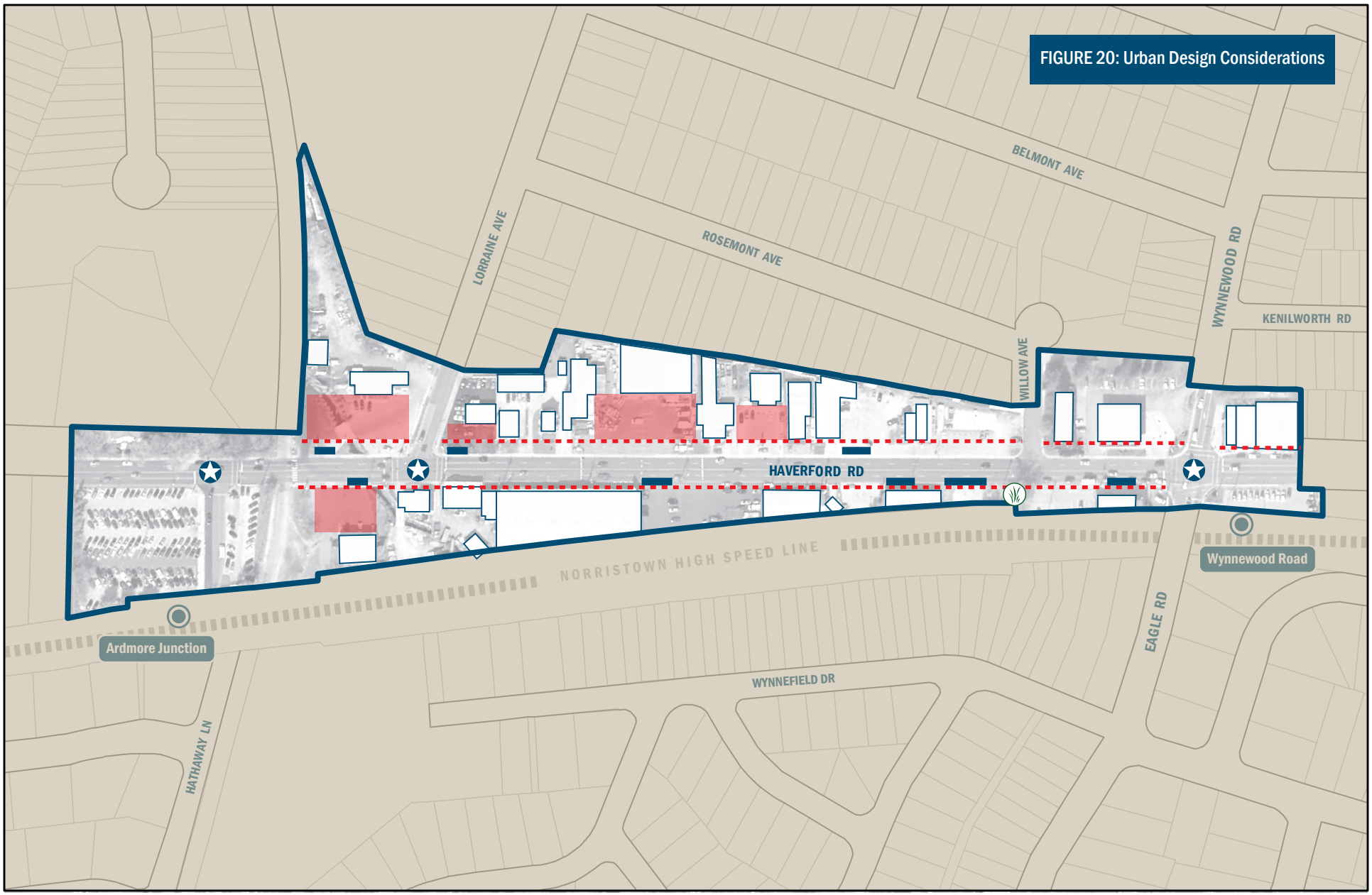
- Place parking for new buildings to the side or rear of buildings.
- Consider opportunities for shared parking as new buildings are constructed.
- Use vegetation and fencing to screen parking areas where possible.

Landscaping and Stormwater Management

- Space constraints make planting street trees difficult. Encourage commercial property owners to install and maintain planters.
- Encourage existing buildings to install green roofs where possible and require new buildings to install green roofs.
- Investigate the feasibility of installing green infrastructure, such as a rain garden, on the south side of Haverford Avenue on the overgrown piece of land between the vacant auto mechanic and the Head Nut.
- Consider including green infrastructure, such as porous pavement and stormwater planters, when repairing or repaving surface parking lots.

Identity and Wayfinding

- Selecting and marketing retail focus areas can help establish a unique identity for the study area. Physical elements, such as signage, street lights, and landscaping, can help reinforce this identity for visitors.
- Develop and install gateway treatments at prominent locations, such as Hathaway Lane, Lorraine Avenue, Wynnewood/Eagle Road, and Karakung Drive. Appropriate gateway treatments might include signage, landscaping, public art, or lighting.



Source: DVRPC

Next Steps

The recommended strategies discussed here aim to enhance the pedestrian environment, promote revitalization of commercial properties, and improve access to the Ardmore Junction and Wynnewood Road stations of the NHSL. The process of refining and implementing these recommendations will require cooperation between township officials, local merchants, and PennDOT. Throughout this process, DVRPC can support these revitalization efforts by acting as a technical resource and identifying potential funding sources.

Appendix A

Synchro and SimTraffic Analysis

Summary

SYNCHRO Summary

		Existing		Build							
		Existing 4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		*3-Lane "Road Diet" Cross-Section with Signal Timing Improvements*		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
AM Peak Hour	Ardmore Ave.	68	E	68	E	63.6	E	67.7	E	72.7	E
	Hathaway Ln.	8.2	A	11.7	B	13.2	B	14.6	B	15.4	B
	Lorraine St.	10.9	B	16.4	B	18.8	B	16.4	B	17.9	B
	Eagle Rd./Wynnewood Rd.	40.1	D	51.2	D	42.4	D	38.3	D	41.1	D
PM Peak Hour	Ardmore Ave.	80.1	F	80.1	F	50.7	D	51.4	D	54.8	D
	Hathaway Ln.	7.1	A	19.4	B	16.4	B	9.5	A	9.8	A
	Lorraine St.	6.2	A	8.4	A	9.8	A	8.8	A	9.1	A
	Eagle Rd./Wynnewood Rd.	83.9	F	164.3	F	123.8	F	57.2	E	61.6	E

SimTraffic Summary

		Existing		Build							
		Existing 4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		*3-Lane "Road Diet" Cross-Section with Signal Timing Improvements*		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
AM Peak Hour	Ardmore Ave.	207.9	F					171.2	F	162.4	F
	Hathaway Ln.	7.9	A					9.5	A	10.2	B
	Lorraine St.	8.3	A					16.4	B	9.8	A
	Eagle Rd./Wynnewood Rd.	27	C					23.5	C	24.3	C
PM Peak Hour	Ardmore Ave.	93.9	F					57.8	E	68.9	E
	Hathaway Ln.	8.1	A					9.6	A	9.6	A
	Lorraine St.	6.4	A					11.3	B	10.6	B
	Eagle Rd./Wynnewood Rd.	39.1	D					37.4	D	43.7	D

SimTraffic Queue Length Analysis (Distance in Feet)

Ardmore Avenue Intersection

		Existing		Build							
		4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		3-Lane "Road Diet" Cross-Section with Signal Timing Improvements		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
AM Peak Hour	Haverford Rd (NBL)	161	442					111	302	142	400
	Haverford Rd (NBTR)	501	821					438	716	487	804
	Haverford Rd (SBL)	63	110					75	143	78	148
	Haverford Rd (SBT)	75	136					137	220	157	314
	Haverford Rd (SBTR)	92	155					69	138	77	204
	Ardmore Ave (EBL)	111	152					109	149	111	149
	Ardmore Ave (EBTR)	1,435	1,634					1,410	1,710	1,377	1,725
	Ardmore Ave (WBL)	26	81					29	92	35	103
	Ardmore Ave (WBTR)	214	353					225	366	249	447

		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
PM Peak Hour	Haverford Rd (NBL)	88	236					66	125	75	187
	Haverford Rd (NBTR)	381	639					261	432	266	425
	Haverford Rd (SBL)	106	170					104	174	102	171
	Haverford Rd (SBT)	553	975					478	839	653	1,272
	Haverford Rd (SBTR)	579	991					369	672	538	1,114
	Ardmore Ave (EBL)	49	102					63	126	68	132
	Ardmore Ave (EBTR)	149	254					165	284	171	287
	Ardmore Ave (WBL)	59	149					65	158	66	153
	Ardmore Ave (WBTR)	439	812					462	889	528	996

CL = cycle length

SimTraffic Queue Length Analysis (Distance in Feet)

Hathaway Lane Intersection

		Existing		Build							
		4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		3-Lane "Road Diet" Cross-Section with Signal Timing Improvements		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
AM Peak Hour	Hathaway Ln (EBL)	66	127					75	141	70	129
	Hathaway Ln (EBR)	45	88					52	103	55	107
	Haverford Rd (NBL)							19	51	19	49
	Haverford Rd (NBLT)	38	84								
	Haverford Rd (NBT)	30	79					39	92	46	95
	Haverford Rd (SBT)	64	128					138	267	137	263
	Haverford Rd (SBTR)	54	115								
	Haverford Rd (SBR)							18	85	14	68

		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
PM Peak Hour	Hathaway Ln (EBL)	32	71					32	69	35	80
	Hathaway Ln (EBR)	29	52					33	65	35	75
	Haverford Rd (NBL)							48	87	46	91
	Haverford Rd (NBLT)	54	117								
	Haverford Rd (NBT)	23	87					21	90	27	115
	Haverford Rd (SBT)	105	252					217	414	231	450
	Haverford Rd (SBTR)	133	289								
	Haverford Rd (SBR)							40	123	36	121

CL = cycle length

SimTraffic Queue Length Analysis (Distance in Feet)

Lorraine Avenue Intersection

		Existing		Build							
		4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		3-Lane "Road Diet" Cross-Section with Signal Timing Improvements		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
AM Peak Hour	Lorraine St (WBL)							16	43	17	47
	Lorraine St (WBR)							19	44	19	43
	Lorraine St (WBLR)	37	83								
	Haverford Rd (NBT)	59	123								
	Haverford Rd (NBTR)	80	145					162	259	157	238
	Haverford Rd (SBL)							71	30	72	126
	Haverford Rd (SBLT)	73	143								
	Haverford Rd (SB T)	27	90					25	65	25	69

		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
PM Peak Hour	Lorraine St (WBL)							17	47	16	46
	Lorraine St (WBR)							39	97	43	98
	Lorraine St (WBLR)	53	115								
	Haverford Rd (NBT)	64	117								
	Haverford Rd (NBTR)	80	135					200	380	204	405
	Haverford Rd (SBL)							51	95	54	102
	Haverford Rd (SBLT)	62	135								
	Haverford Rd (SB T)	25	91					13	42	14	45

CL = cycle length

SimTraffic Queue Length Analysis (Distance in Feet)

Wynnewood Road/Eagle Road Intersection

		Existing		Build							
		4-Lane Cross-Section		*3-Lane "Road Diet" Cross-Section*		3-Lane "Road Diet" Cross-Section with Signal Timing Improvements		*3-Lane "Road Diet" Cross-Section with Signal Timing and Physical Improvements*		*3-Lane "Road Diet" Cross-Section with All Improvements*	
		2012 Volumes								2030 Volumes	
		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
AM Peak Hour	Eagle Rd (EBL)	93	174					87	163	90	164
	Eagle Rd (EBTR)	159	284					159	319	164	329
	Wynnewood Rd (WBL)	8	40					9	50	10	59
	Wynnewood Rd (WBTR)	168	269					172	279	176	306
	Haverford Rd (NBL)							28	69	28	66
	Haverford Rd (NBLT)	99	154								
	Haverford Rd (NBTR)	100	143					143	185	144	185
	Haverford Rd (SBL)							63	120	63	122
	Haverford Rd (SBLT)	104	190								
	Haverford Rd (SBT)							76	149	83	163
	Haverford Rd (SBTR)	112	192								
	Haverford Rd (SBR)							28	70	28	61

		Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th	Avg.	95th
PM Peak Hour	Eagle Rd (EBL)	88	171					121	215	128	222
	Eagle Rd (EBTR)	217	393					348	682	362	704
	Wynnewood Rd (WBL)	16	63					15	54	18	65
	Wynnewood Rd (WBTR)	355	563					438	747	466	844
	Haverford Rd (NBL)							64	99	65	97
	Haverford Rd (NBLT)	114	168								
	Haverford Rd (NBTR)	87	136					149	186	150	183
	Haverford Rd (SBL)							33	96	41	114
	Haverford Rd (SBLT)	265	456								
	Haverford Rd (SBT)							244	458	277	522
	Haverford Rd (SBTR)	314	509								
	Haverford Rd (SBR)							121	253	135	288

CL = cycle length

Appendix B

PennDOT Preliminary Review of Haverford Road Reconfiguration

OS-2 (10-08)

pennsylvania
DEPARTMENT OF TRANSPORTATION
www.dot.state.pa.us

July 31, 2012

DELAWARE COUNTY, HAVERFORD TOWNSHIP
SR 1001 (HAVERFORD ROAD)
ROAD DIET EVALUATION OF HAVERFORD ROAD
TRAFFIC LOG NO.: D12-XXX XP
PRELIMINARY REVIEW

Delaware Valley Regional Planning Commission
Michael Becker
190 N. Independence mall West, 8th Floor
Philadelphia, PA 19106-1520

Dear Mr. Becker.:

The Department has reviewed the submitted DRAFT of the Road Diet Evaluation of Haverford Road, dated May 29, 2012, and the associated Synchro files. Currently Haverford Road, from S.R. 1018 (Ardmore Avenue) to S.R. 1005 (Eagle Road/Wynnewood Road) is a four lane roadway. As presented the "Road Diet" project would remove one lane creating a three lane section. The submitted DRAFT also includes discussion of a scenario where a second lane is provided on the Lorraine Avenue approach to Haverford Road, and the exiting (fourth) lane on Haverford Avenue is maintained as a right turn lane on the southbound approaches to Hathaway Lane and Eagle Road/Wynnewood Road to provide.

The results of the submitted analyses indicate that the "Road Diet" scenario which includes the additional improvements has the potential to operate in a manner consistent with or better than existing conditions; however the Department requests that the technical items noted below be addressed and the results of the analyses revised as appropriate:

1. Verify that the maximum green times are coded appropriately for the Haverford Avenue approaches to Ardmore Avenue and Eagle Road/Wynnewood Road.
2. Verify that consistent phasing is assumed for both morning and evening periods at Eagle Road/Wynnewood Road.
3. The assumed minimum green time should not be less than 12 seconds for any phase.
4. Due to the variations in traffic volume seeding associated with SimTraffic it is recommended that results are based on an average of multiple simulations; preferably five.

Additionally, it is suggested that future submissions include graphics illustrating the counted and projected traffic volumes, as well as the existing and proposed lane configurations.

Engineering District 6-0 | 7000 Geerdes Boulevard | King of Prussia, PA 19406-1525 | 610.205.6661

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the submission of a final analysis. Please feel free to contact me if you have any questions pertaining to the technical aspects of this review.

Respectfully,

Francis J. Hanney
District Traffic Services Manager
Engineering District 6-0

cc: L.R. Belmonte
Traffic Services File
Haverford Township
Delaware County Planning Commission

Haverford Road Commercial Corridor Analysis

Publication Number 13009

Date Published February 2013

Geographic Area Covered Haverford Township, Delaware County, PA

Key Words Commercial corridor, Norristown High Speed Line (NHSL), Haverford Township, Haverford Road, commercial revitalization, road diet, smart growth

Abstract

This study was conducted by DVRPC to generate and evaluate potential improvements to a portion of Haverford Road between Hathaway Lane, near the Ardmore Junction Station of the Norristown High Speed Line (NHSL), and Wynnewood Road/Eagle Road, near the Wynnewood Road Station of the NHSL. This study was initiated as part of the implementation of recommendations from the recently completed *US 30 (Lancaster Avenue) Corridor Study* (Publication #11003B). The Haverford Road Commercial Corridor Analysis contains strategies designed to enhance the pedestrian environment, promote revitalization of commercial properties, and improve access to the Ardmore Junction and Wynnewood Road Stations of the NHSL.

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