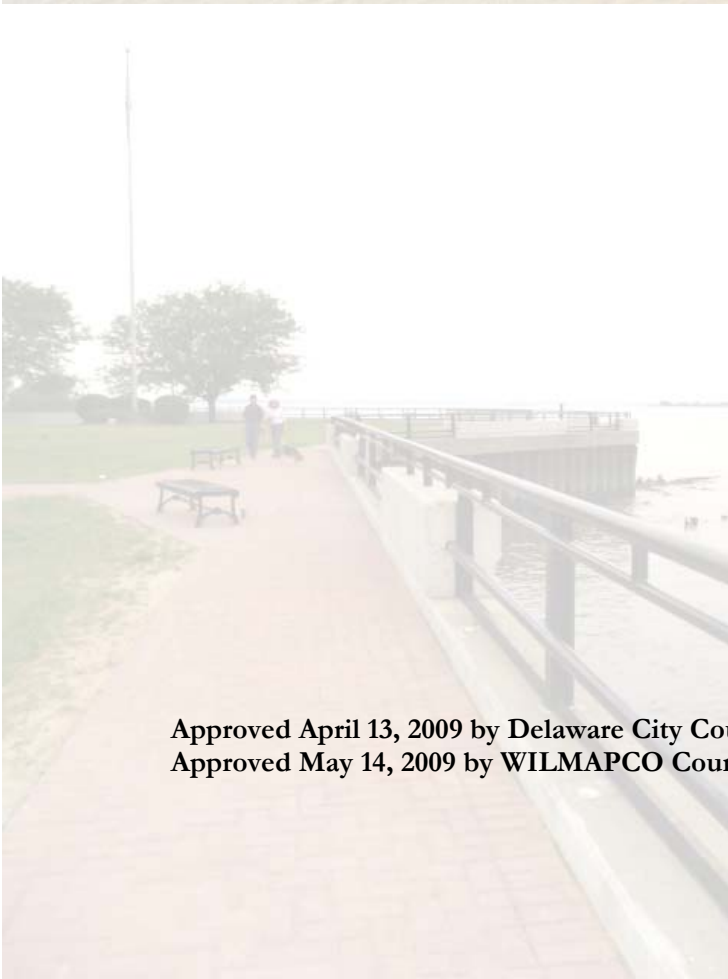


# DELAWARE CITY TRANSPORTATION PLAN

---

PREPARED BY WILMAPCO  
FOR DELAWARE CITY



Approved April 13, 2009 by Delaware City Council  
Approved May 14, 2009 by WILMAPCO Council

<b>INTRODUCTION .....</b>	<b>3</b>
<b>REGIONAL CONTEXT.....</b>	<b>6</b>
<b>LOCAL CONTEXT – ISSUES AND OPPORTUNITIES .....</b>	<b>12</b>
<b>ROADWAY CIRCULATION.....</b>	<b>22</b>
<b>PARKING .....</b>	<b>26</b>
<b>PEDESTRIAN AND BICYCLE FACILITIES.....</b>	<b>27</b>
<b>TRANSIT .....</b>	<b>30</b>
<b>MOBILITY FRIENDLY DESIGN .....</b>	<b>32</b>
<b>IMPLEMENTATION ACTION PLAN .....</b>	<b>33</b>

---

## INTRODUCTION

---

### A HISTORIC CITY WITH MODERN TRANSPORTATION NEEDS

Delaware City is a community blessed with a rich history and architectural heritage still evident in the homes and buildings along the wide tree-lined streets, many of which date back to the 1820s. The community's land use and transportation system were developed and have evolved through careful planning and sensible urban design.

Transportation was key in the development of Delaware City. The Newbold family purchased a tract of land, Newbolds Landing, in 1801 and drew plans for the town in 1826 with the expectation that it would eventually grow to rival Philadelphia as a Delaware River port and commercial center. Its strategic location at the eastern terminus of the Chesapeake and Delaware Canal in 1829 caused Delaware City to become both an operating base and a way station for significant shipping-related activities. From 1840 -1880 Delaware City was famous for popularizing peaches nationwide, shipping them to many ports from New York to Baltimore. Fish caught by Delaware City fishermen were shipped from the town, with the sturgeon roe shipped as far away as Germany and Russia to be packaged and marketed as caviar. Historically, other small industries were located near the Delaware and Pennsylvania Railroad, which opened a line into Delaware City in 1873. A Trolley line is established in 1900, running from Delaware City to New Castle and Wilmington.

Transportation changes eventually led to the community retaining its quaint, small town feel. In 1927 a new tidal canal opened, bypassing the town. In 1931, the trolley line was discontinued and in 1946 the rail line was abandoned. Subsequent major transportation expansions in New Castle County happened away from Delaware City—I-95, Route 13 and Route 1—leaving the community largely unchanged in appearance from its early days.

Today, Delaware City retains the compact, walkable character first planned in the early 1800s. Yet residents depend on trips beyond Delaware City for employment, shopping and services; currently private vehicles are the only option for these trips. In addition, tourists are currently drawn to Delaware City to visit the Fort Delaware State Park and these trips are by private vehicles.

The future success of Delaware City depends on maintaining and enhancing its transportation system to serve the current and future mobility needs of both residents and visitors. For residents, this will entail providing a safe mix of transportation choices including walking, driving, bicycling and transit. Transportation improvements will be needed to serve tourism, which will continue to be a major component of Delaware City's economy and will likely expand in the future as plans for park improvements along the C & D Canal and a Scenic Byway along Route 9 are implemented.

### THE PLANNING TEAM

Thus, the *Delaware City Transportation Plan* was prepared by the Wilmington Area Planning Council (WILMAPCO) in cooperation with Delaware City to address the mobility needs of the community.

**WILMAPCO** is designated by the Governors of Delaware and Maryland as the Metropolitan Planning Organization (MPO) for New Castle County, DE and Cecil County, MD and is responsible for transportation planning in the region. **Delaware City** provides some transportation services such as local road maintenance, parking and sidewalks. **DelDOT** is responsible for providing transportation services throughout the State of Delaware. **Delaware Transit Corporation** (DTC) administers all DelDOT transit programs, including service in the predominantly urbanized area north of the Chesapeake & Delaware canal in New Castle County. This study was a joint effort between WILMAPCO and Delaware City in cooperation with DelDOT and DTC.

## **DELAWARE CITY COMPREHENSIVE PLAN**

The plan further analyzes issues raised in the Delaware City Comprehensive Plan. Transportation goals in the Comprehensive Plan include:

- Provide safe and reliable circulation within the City utilizing all transportation modes
- Improve transportation links to areas outside of the City
- Ensure sufficient parking to accommodate residents and tourists

Additional relevant goals address town center revitalization, economic development, historic preservation, recreation and open space, and public safety.

## **WILMAPCO REGIONAL TRANSPORTATION PLAN**

The plan will also help to implement the WILMAPCO Regional Transportation Plan (RTP) by linking transportation and land use, improving mobility in the community and managing the transportation system. The RTP recognizes that strengthening our communities through improved traffic flow, transit, walking and bicycling facilities along with improved visual appearance can encourage the use of non-automobile modes, promote economic development, and reduce the need for costly roadway expansions.

## **PLANNING PROCESS**

Based upon public input and technical analysis, this plan:

- Confirms and identifies transportation local issues within town boundary and potential long range annexation area.
- Identifies local streets of regional significance.
- Confirms and identifies transportation issues in greater Delaware City area including Route 9 Corridor.
- Compiles relevant transportation and land use data.
- Identifies and analyzes potential solutions.
- Reaches agreement on a transportation action plan for Delaware City that includes the best set of multimodal solutions.

The plan addresses the issues raised in the Delaware City Comprehensive Plan:

- Develop a coordinated plan to make Delaware City more bicycle and pedestrian-friendly, including assessing the condition of the city's existing sidewalks and crosswalks. Consider the establishment of bike routes on underutilized rights-of-way.
- Coordinate with DART to provide public transportation service in Delaware City.
- Pursue a dialogue with DART First State to connect Delaware City to transit destinations throughout New Castle County.
- Develop a comprehensive corridor design for Washington Street and seek its designation as a regionally significant road to allow the state to improve and maintain the corridor.
- Request that DelDOT construct traffic-calming features on SR 9 entering the town to reduce the speed of through-traffic.
- Play as active a role as possible in the ongoing trail and recreation studies and improvements expected along the C&D Canal
- Continue to seek state improvements to SR 9 and SR 72 to ensure that those roadways remain passable in major flood events as evacuation routes.

- Encourage pedestrian and bicycle interconnections, and the presence of sidewalks and bike-paths, in any adjacent development, particularly in identified areas of concern.
- Encourage developers to provide sidewalk, curb, drainage, and parking infrastructure where deemed appropriate.
- Identify potential sites for additional parking.
- Determine the feasibility of implementing a strategy of shared parking.

Other recommendations relate to traffic, bicycle and pedestrian safety, Route 9 scenic byway, mobility-friendly design standards, emergency evacuation routes, and connectivity to and use of potentially annexed land. Transportation improvements can support the economic vitality of the downtown, as well as promote tourism.

Public involvement was a key part of this Plan's development. Using Planning Commission meetings, a joint public workshop with the University of Delaware, a focus group with area businesses, and a Walking Workshop we engaged the community throughout the planning process. In addition, a survey was distributed to all residents and businesses in Delaware City.

## **PRODUCTS**

This report includes discussion of transportation problems in Delaware City, relevant transportation and land use data, recommended solutions and discussion of public involvement during the study process.

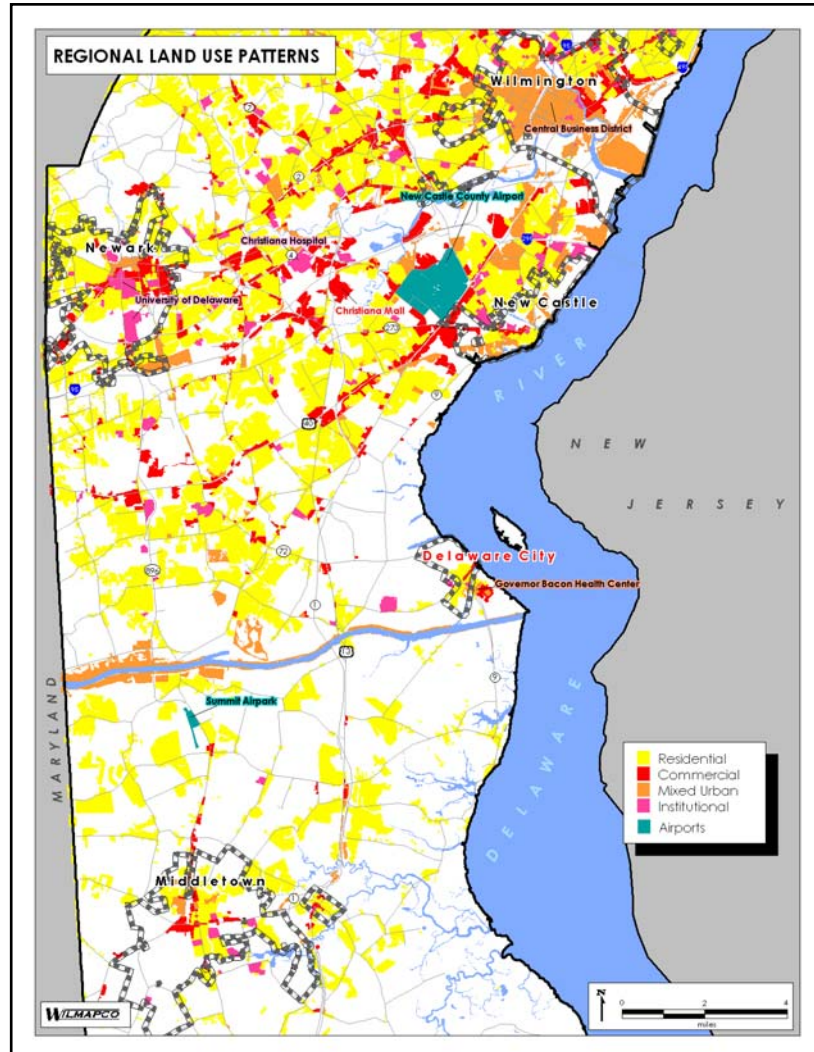
---

## REGIONAL CONTEXT

---

### REGIONAL LAND USE

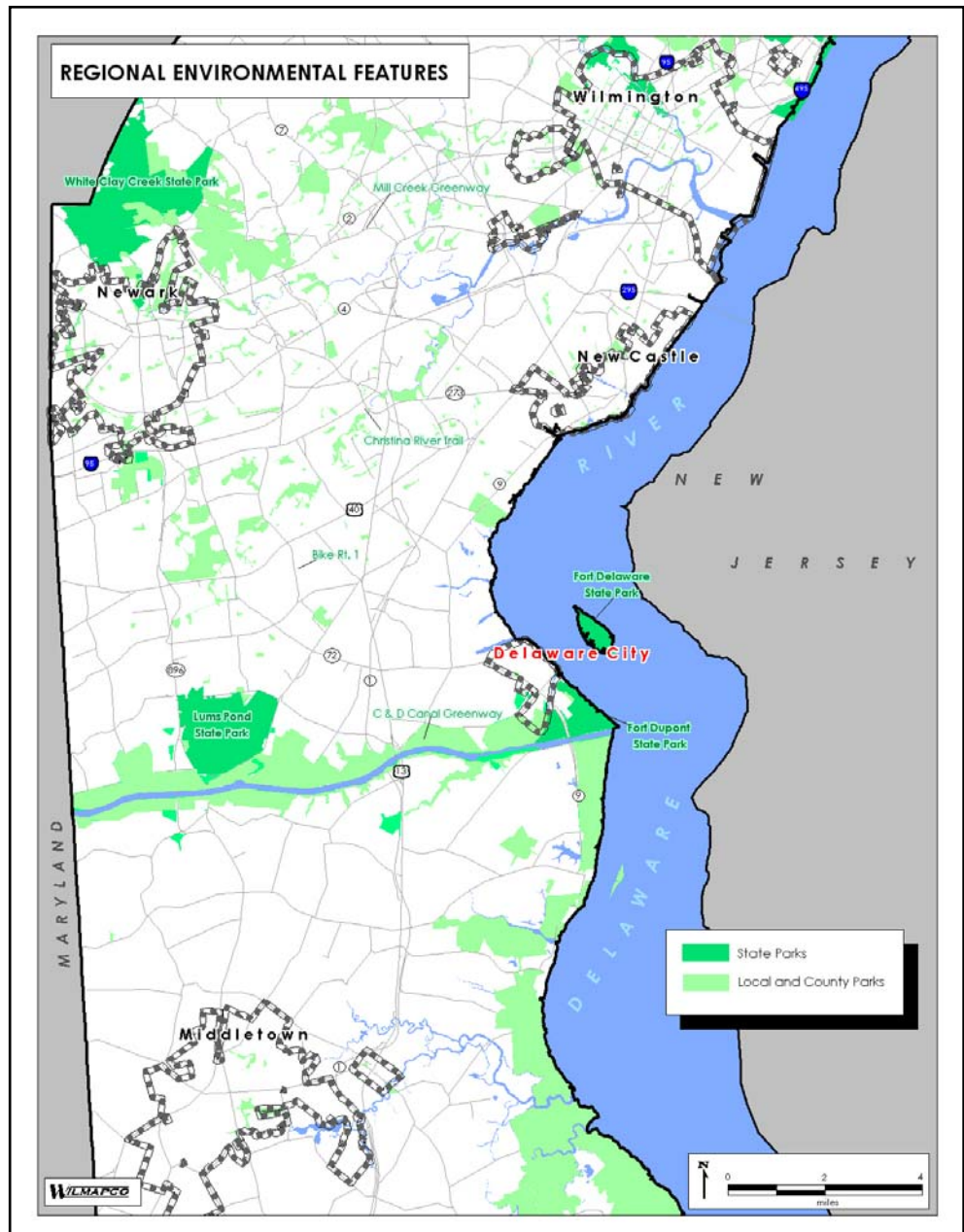
The U.S. Census Bureau estimates that just over 1,500 people resided within Delaware City's boundaries in 2005. Situated along the banks of the Delaware River just north of the Chesapeake and Delaware (C & D) Canal, the town is isolated from the major population and employment centers in New Castle County. As **Map 1** shows, the majority of residential and commercial activity exists well to Delaware City's north. Thus the town is not greatly impacted by through traffic to and from these centers. As population within the county continues its expansion south and tourist opportunities within the town mature, however, the town may experience heightened volumes in future years.



*Map 1: Regional Land Use Patterns*

## REGIONAL ENVIRONMENTAL FEATURES

Environmental features influence the location and intensity of future development. Their characteristics have direct implications on the transportation systems available to a region, given the obvious limitations they may impose and the need to conserve them as environmental resources. **Map 2** illustrates park and open space features in the lands surrounding Delaware City. An extensive patchwork of these features exists south of the town, around the C & D Canal. With the Delaware River buffering the town's east, most future development will be forced to the north and west of town.



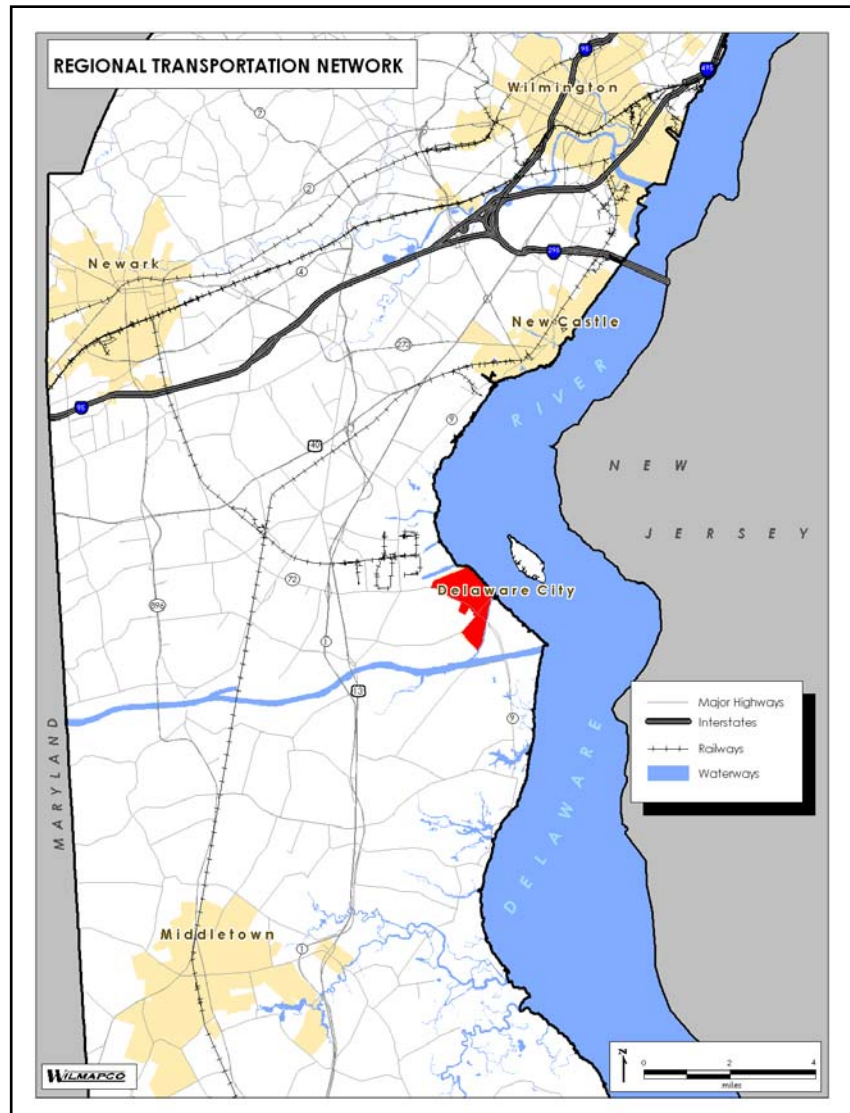
Map 2: Regional Environmental Features

## REGIONAL TRANSPORTATION NETWORK

Generally, New Castle County's heaviest traffic flows through a network of roadways within the I-95 corridor, connecting Newark and Wilmington. On summer weekends, vacationers travel to the Delaware beaches, creating heavy streams southward.

**Map 3** displays the region's transportation network. Major west-east routes to Delaware City's north include: U.S. 40, SR 273, I-95, SR 4, and SR 2. North-south routes are: SR 896, SR 1, U.S. 13, and SR 9. Delaware City is accessible via SR 9, which runs adjacent to the Delaware River from Wilmington to Lewes. From the west, SR 72 from Newark leads into SR 9 northwest of town. Cox Neck Road (not labeled) flows westward from Delaware City, connecting into U.S. 13.

State Route 9 (which traverses Delaware City) serves as an alternative to the sometime congested SR 1 and U.S. 13. Thus one transportation issue in Delaware City involves the future ability of SR 1 and U.S. 13 to adequately accommodate the north-south traffic flow in the region.



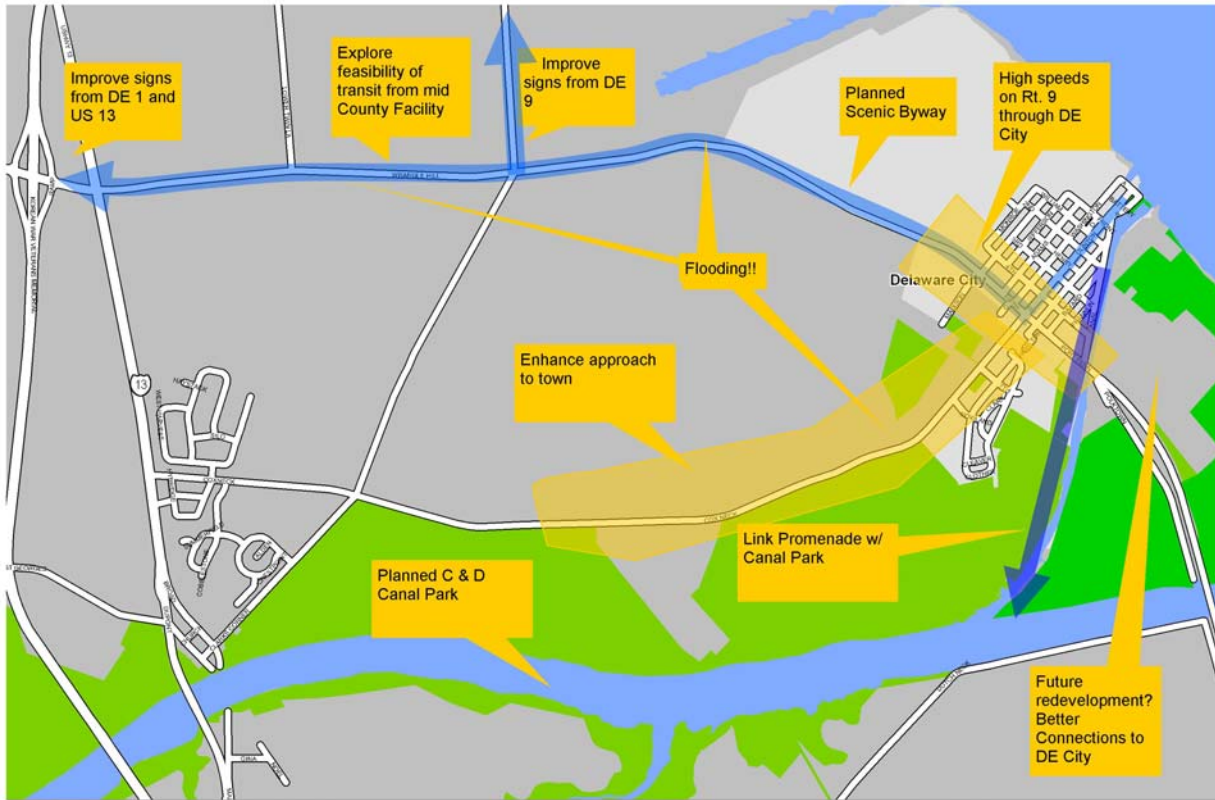
*Map 3: Regional Transportation Network*

As the land use and environmental context show, Delaware City itself is not significantly influenced by regional travel patterns. Consequently, the majority of traffic volume generated (with the exception of summer beach travel) consists of either an origin or destination local to the town. The average commute to work in Delaware City edged just over 26 minutes in 2000, two minutes longer than the county average. This figure quantifies the isolation some town residents experience from the county's employment and activity centers.

The Department of Transportation has developed a state-wide Long Range Transportation Plan and WILMAPCO has developed a Transportation Improvement Program and Regional Transportation Plan consistent with the needs of the region and Delaware City. Regional transportation concerns relevant to the town are listed below.



## Delaware City Transportation Issues—Regional



### Transit

Regional transit service includes DART First State/Delaware Transit Corporation bus and paratransit service. DART primarily serves northern New Castle County, the Dover area and resort service in Sussex County. Only paratransit service goes directly to Delaware City although the DTC long-range plan calls for future transit service to Delaware City and expanded southern New Castle County service. Existing commuter rail service links Newark, Churchmans Crossing, Wilmington and Claymont, and Philadelphia. Future proposals call for extending regional service south to Middletown and Dover and west to Baltimore, although none of these improvements has been funded.

Recommendations for Delaware City are described later in this Plan in the section about Transit.

### Flooding and Emergency Evacuation

Delaware City's geography makes it sensitive to flooding. Located upon the edge of the Atlantic Coastal Plain, no point within the town reaches 50 feet above sea level. Significant portions of the town are composed of marine tidal plain and marsh deposits and floodplains. Flood-prone areas include: Dragon Creek, Red Lion Creek, the C & D Canal, and areas alongside the Delaware River. Most of the town, especially its outlying areas, falls within FEMA's 100-year flood plain. Delaware City's core lies within the 500-year flood plain.

Thus, the potential for heavy flooding within Delaware City is a reality. Of concern is the ability of residents to effectively evacuate following a significant rain event. Recent storms have flooded SR 9, Cox Neck, SR 72 and even US 13, isolating Delaware City and blocking its evacuation routes.

It is recommended that Delaware City continue to coordinate with New Castle County, DEMA and DelDOT on emergency planning and that DelDOT implement flood mitigation on identified evacuation routes. The town should review county evacuation routes and offer constructive feedback on their applicability. Delaware City officials and residents must be conscious of the town’s precarious location and the need to act quickly if significant flooding is forecasted.



**Tourism and Economic Development**

Delaware City will rely on its tourist industry for future economic development. Improved wayfinding signs combined with signing of the Route 9 Scenic & Historic Byway and implementation of the C & D Canal Park may substantially boost tourism in Delaware City. The revitalization of the town’s historic core to both attract tourists and service residents is key. Part of this revitalization should include enhanced way-finding signage from principal travel routes. Enticing signs should be placed on U.S. 13, U.S. 40, SR 9 and SR 1 to market Delaware City to potential visitors.



*Sample highway wayfinding sign*

The Chesapeake & Delaware Canal runs 14 mi. from Delaware to Maryland, connecting the Delaware River with the Chesapeake Bay. The canal offers commercial and natural history, wildlife and boat viewing opportunities, and an opportunity for unique and scenic walking and cycling routes. A plan has been developed to develop recreational opportunities along the canal including biking and hiking trails, paved pathways and parking.

The construction of an interconnecting trail network along the C & D Canal branch to Delaware City represents an opportunity to attract tourists and serve as a hub for tourists exploring the planned park. A short extension of the Canal Promenade, along the town’s southern border, to link into the Canal’s trail system is sensible and critical. Signage along the Canal trails directing pedestrians and bicyclists to Delaware City once the connection is established should also be a priority. Overall, this link will both provide the potential for additional tourists to the town and enhance the quality of life of town residents.

The designation of SR 9 as a scenic byway also supports economic development in Delaware City. Scenic and Historic Highway designation provides official recognition of the special nature of a roadway corridor. The designation, though honorary, heightens awareness and recognition of the community and boosts community pride. Transportation issues identified in this Plan can be further refined through the Corridor Management Plan for the scenic byway.

Additional community benefits of designation include the opportunity to apply for Federal Highway Administration Grant funding for creating a corridor plan, assistance from state offices of economic development and tourism, identification on state highway maps, leading to more tourism opportunities.

The natural and historic qualities of the 52-mile Route 9 corridor are regionally and nationally significant. Route 9 is a “green oasis” noted for its serenity and natural beauty. Delaware is fortunate to have Route 9 with its natural areas, working farms and natural areas, sanctuaries, refuges and important habitat along the Atlantic Flyway that run through the corridor of preserved coastal areas.

Because of the importance of history, preservation and stewardship to the Route 9 community an amazing concentration of historic towns, sites, events and buildings exists today. Delaware City should continue to coordinate with the Route 9 Byway Committee to develop the specific corridor management plan recommendations to preserve and enhance the scenic corridor.

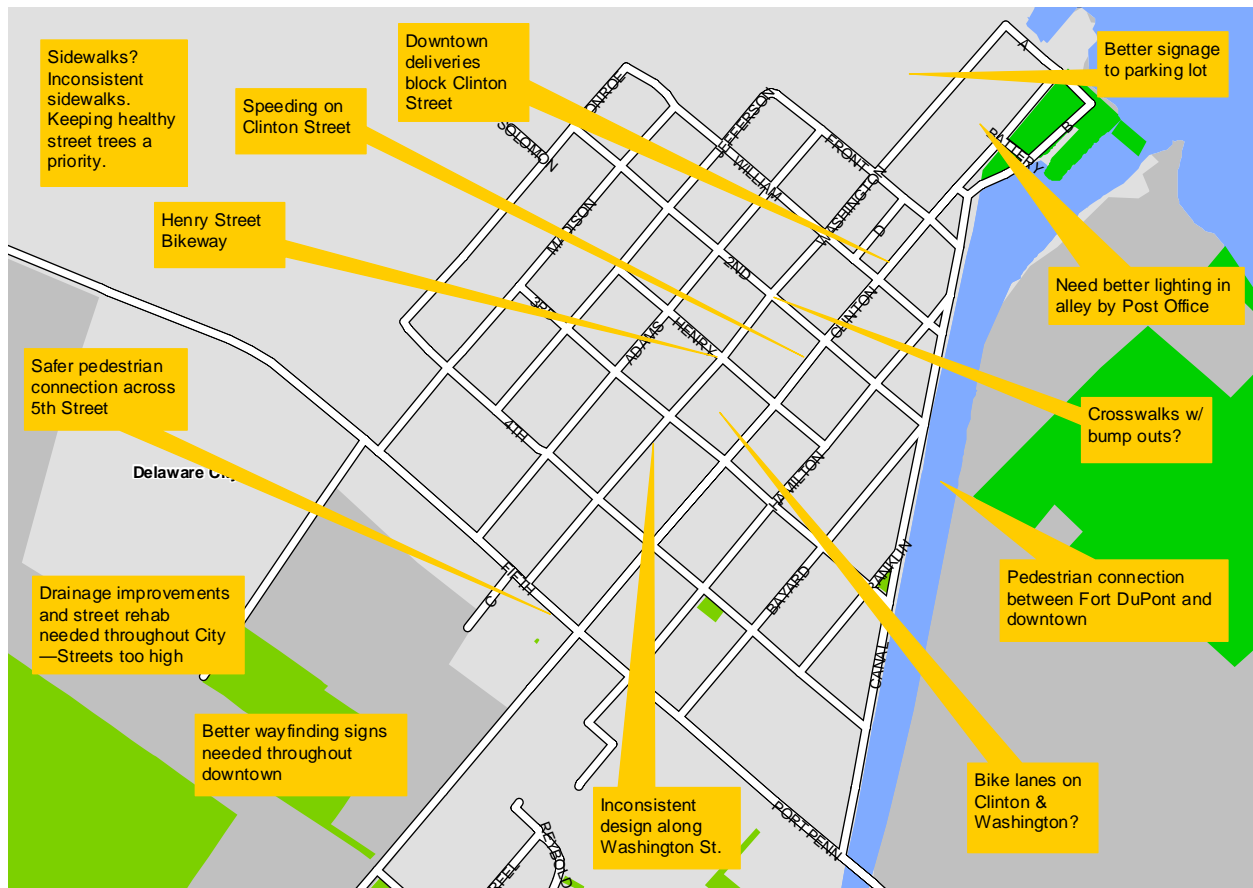
---

## LOCAL CONTEXT – ISSUES AND OPPORTUNITIES

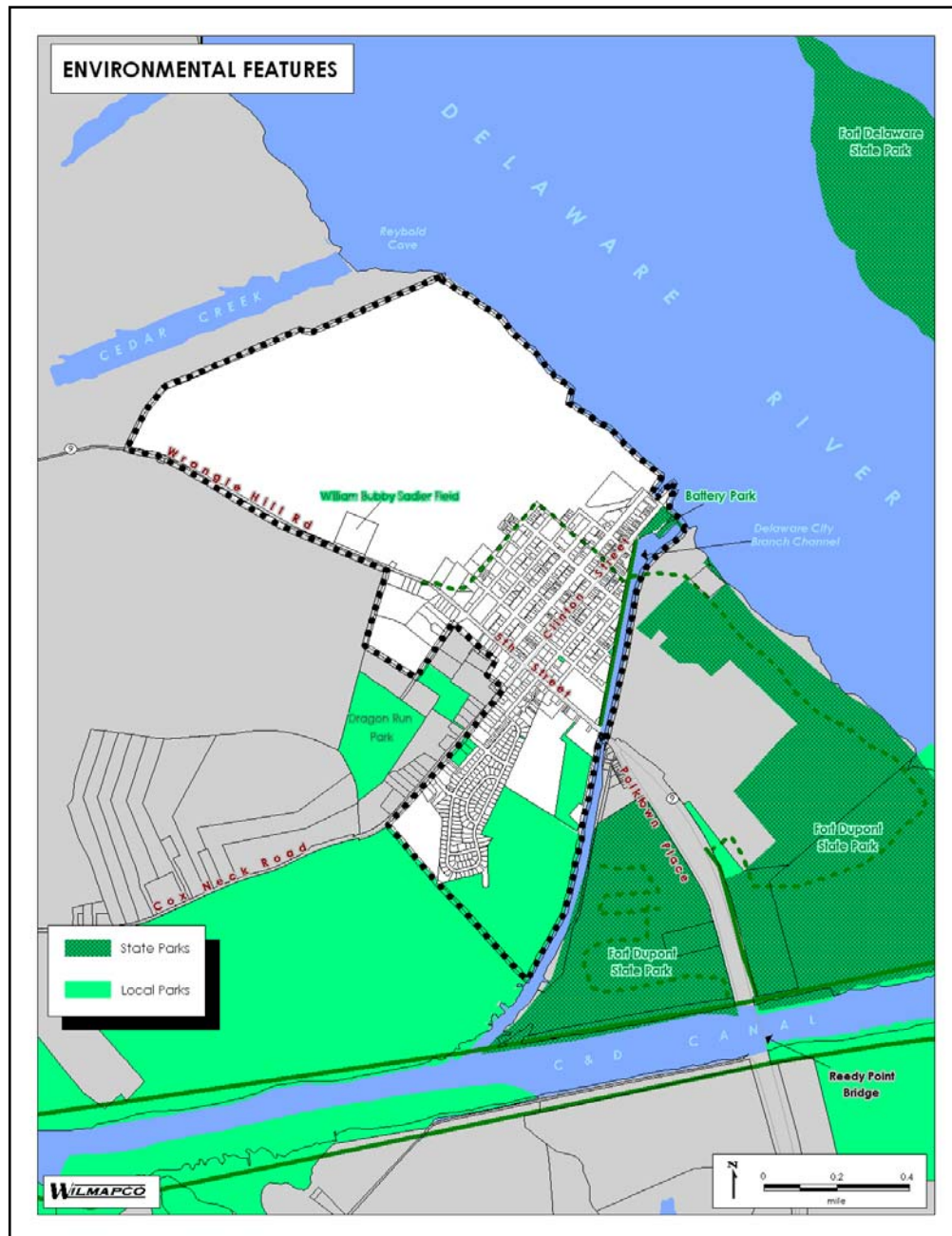
---

Transportation systems do not exist in a vacuum. They are directly influenced by both the physical infrastructure and the society which they serve. Physical infrastructure includes the environment, structures, and the road and rail network.

### Delaware City Transportation Issues—Local

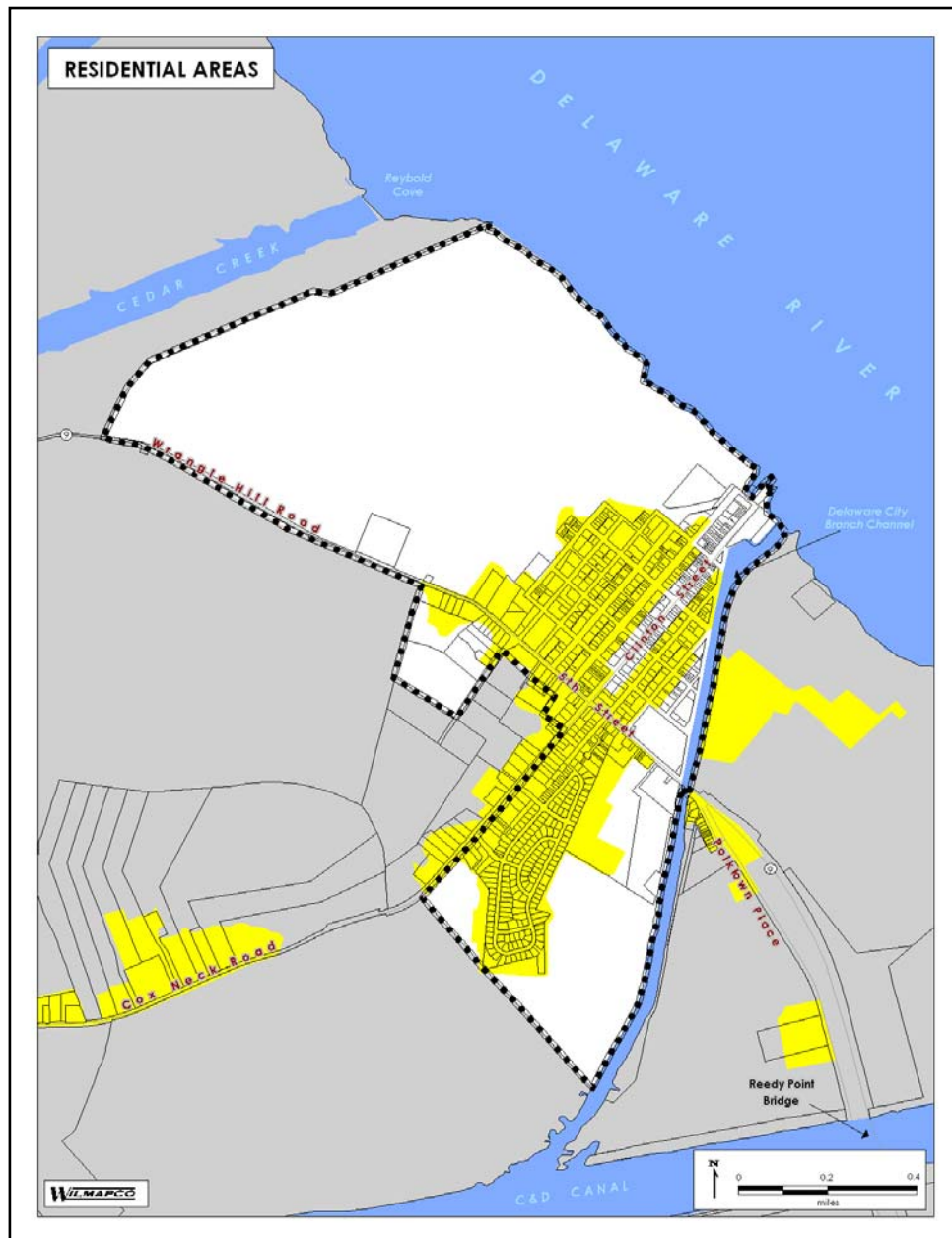


Both natural and man-made environments enrich Delaware City. Local and State Parks are displayed on **Map 4**. The swampy C & D Canal Wildlife Area, which occupies the length of the canal, stretches north to the town's southwestern border. Across the Branch Channel, to Delaware City's southeast, is the 322 acre Fort DuPont State Park. The small, but idyllic Battery Park (located on the far northern end of Clinton Street) overlooks the Delaware River and the mouth of the Branch Channel. Just offshore on Pea Patch Island, the infamous Fort Delaware draws tourists and Civil War enthusiasts from across the nation. Other parks and bits of open space dot Delaware City and its hinterlands—notably the Delaware City Athletic Field and Dragon Run Park. The town's borders also fall within the Coastal Heritage Greenway, the national Millennium Trail, and the proposed Heritage National Park.

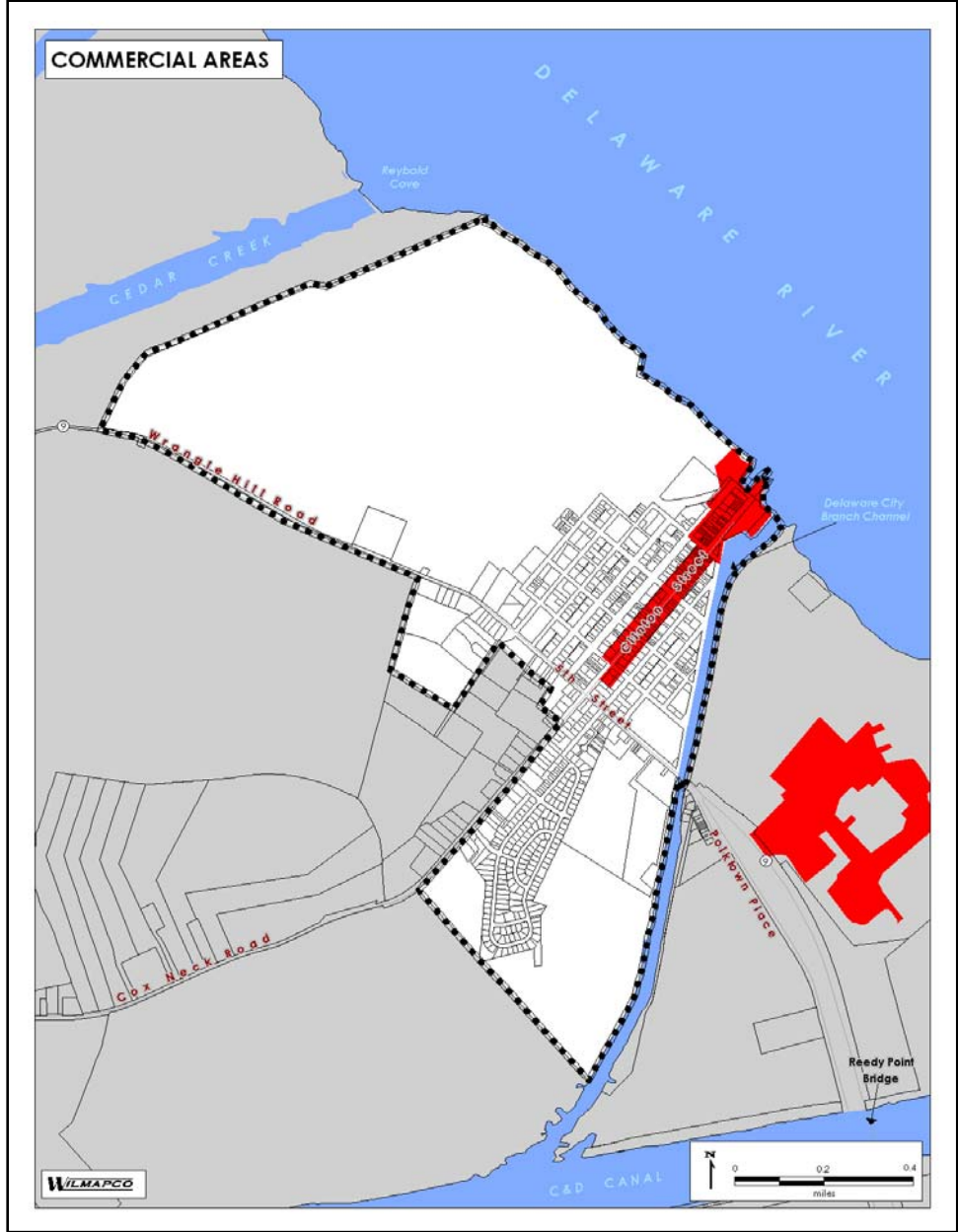


Map 4: Delaware City Environmental Features

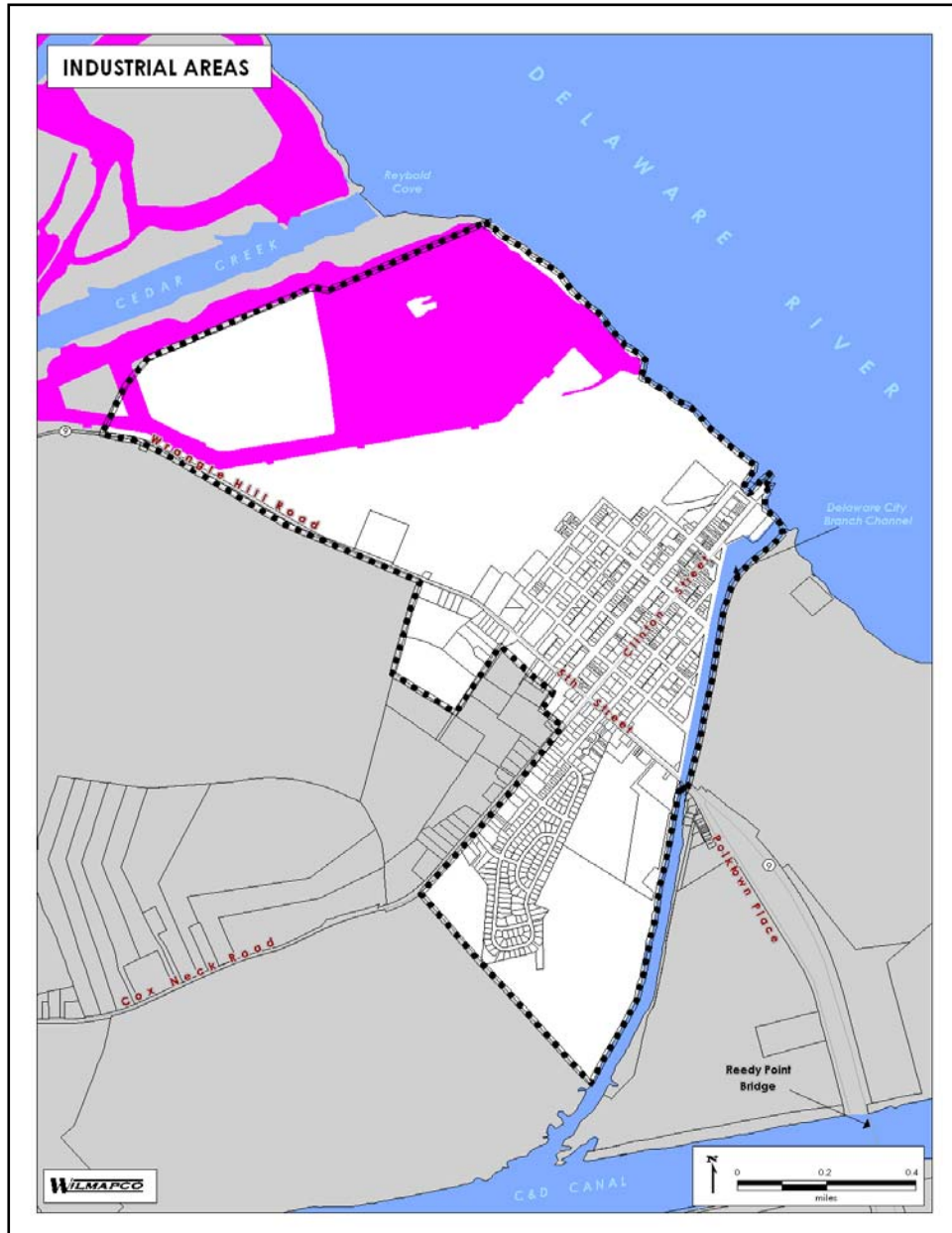
Several land uses are found in and around Delaware City. Residential areas (**Map 5**) dominate the town's core, with dwelling units occupying a virtual buffer around Clinton Street. Commercial uses (**Map 6**), confined to the immediate western and eastern side of Clinton Street, service these residents, the surrounding communities, and tourists. Industrial-zoned (**Map 7**) land associated with a local oil refinery is situated in Delaware City's northern third. A mix of land uses (**Map 8**) bordering the Branch Channel smooth out the eclectic mixture.



Map 5: Delaware City Residential Areas

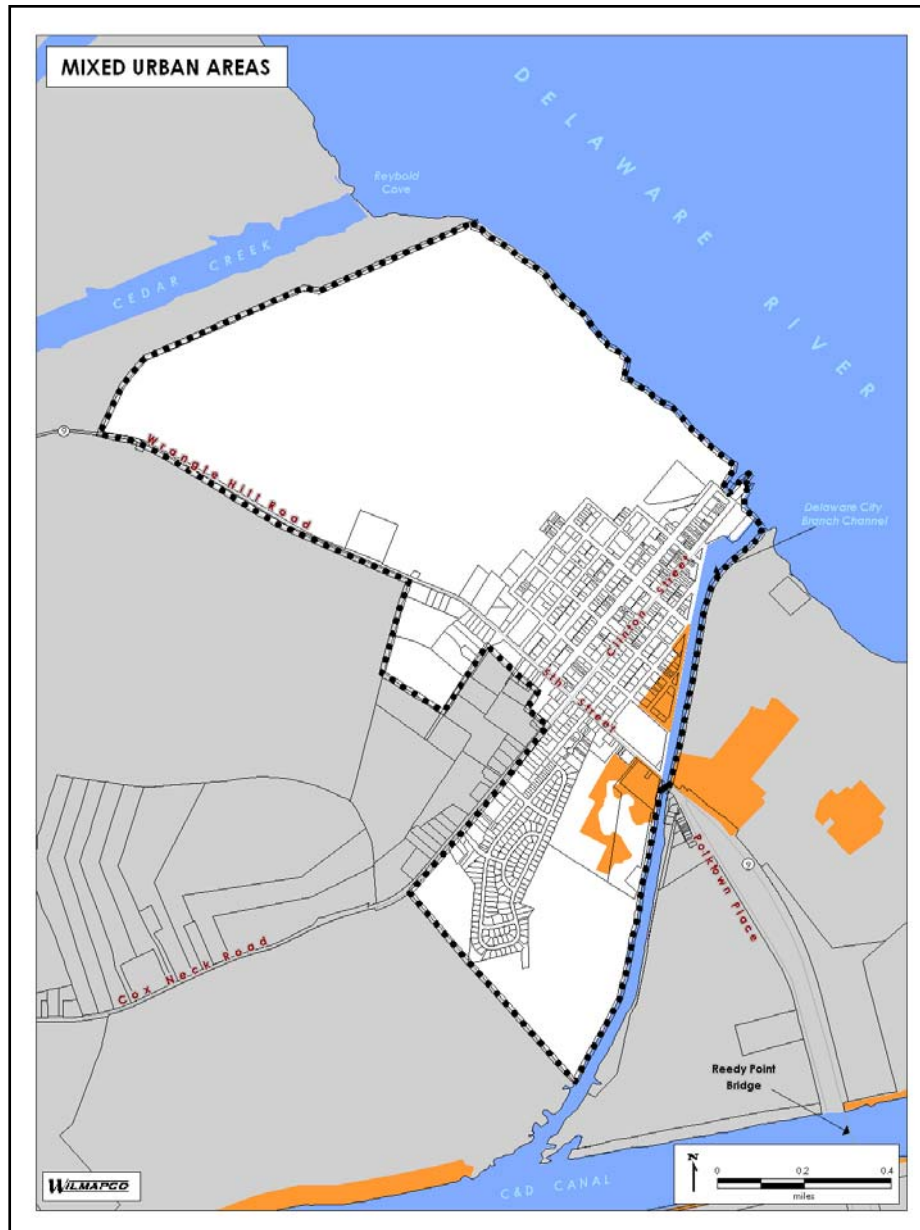


Map 6: Delaware City Commercial Areas



Map 7: Delaware City Industrial Areas

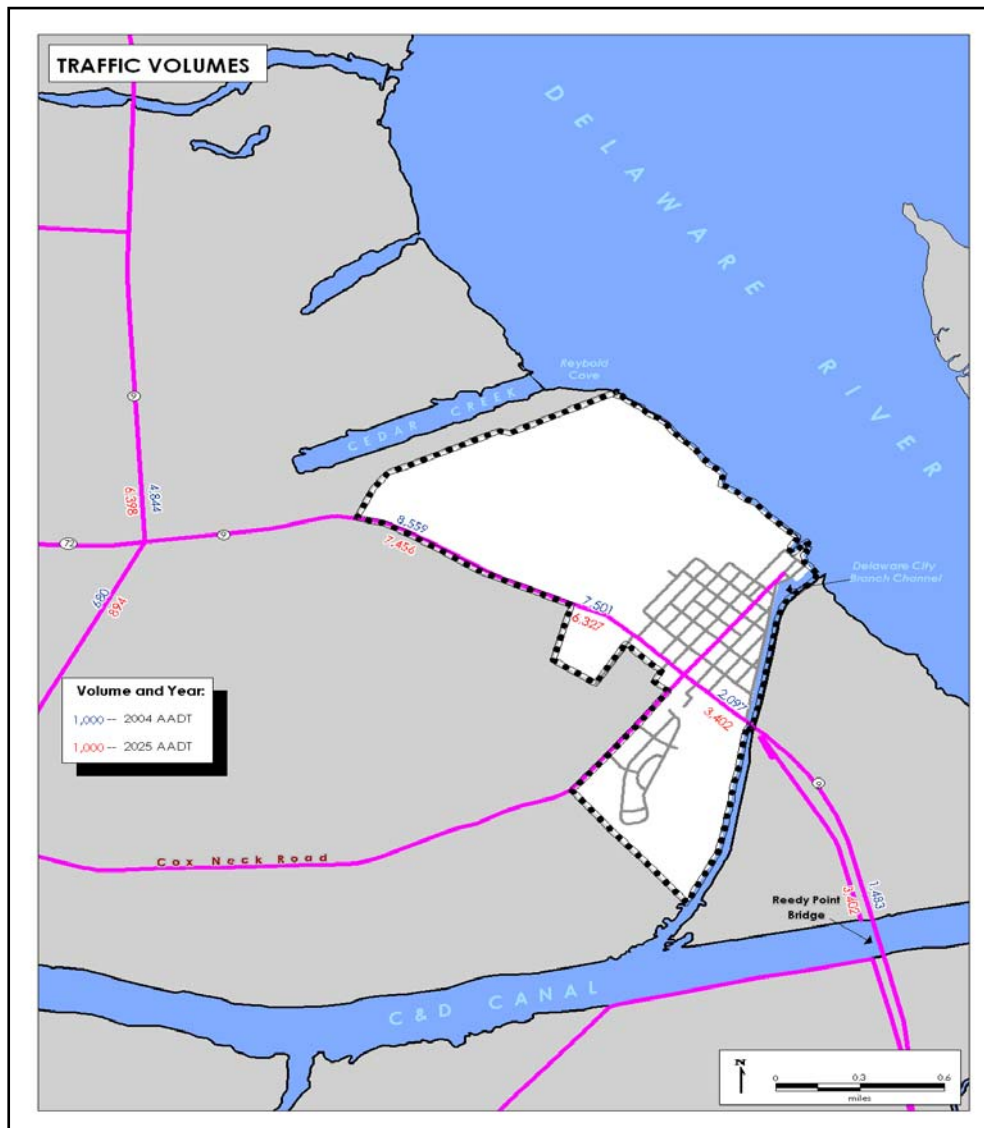




Map 8: Delaware City Mixed Urban Areas

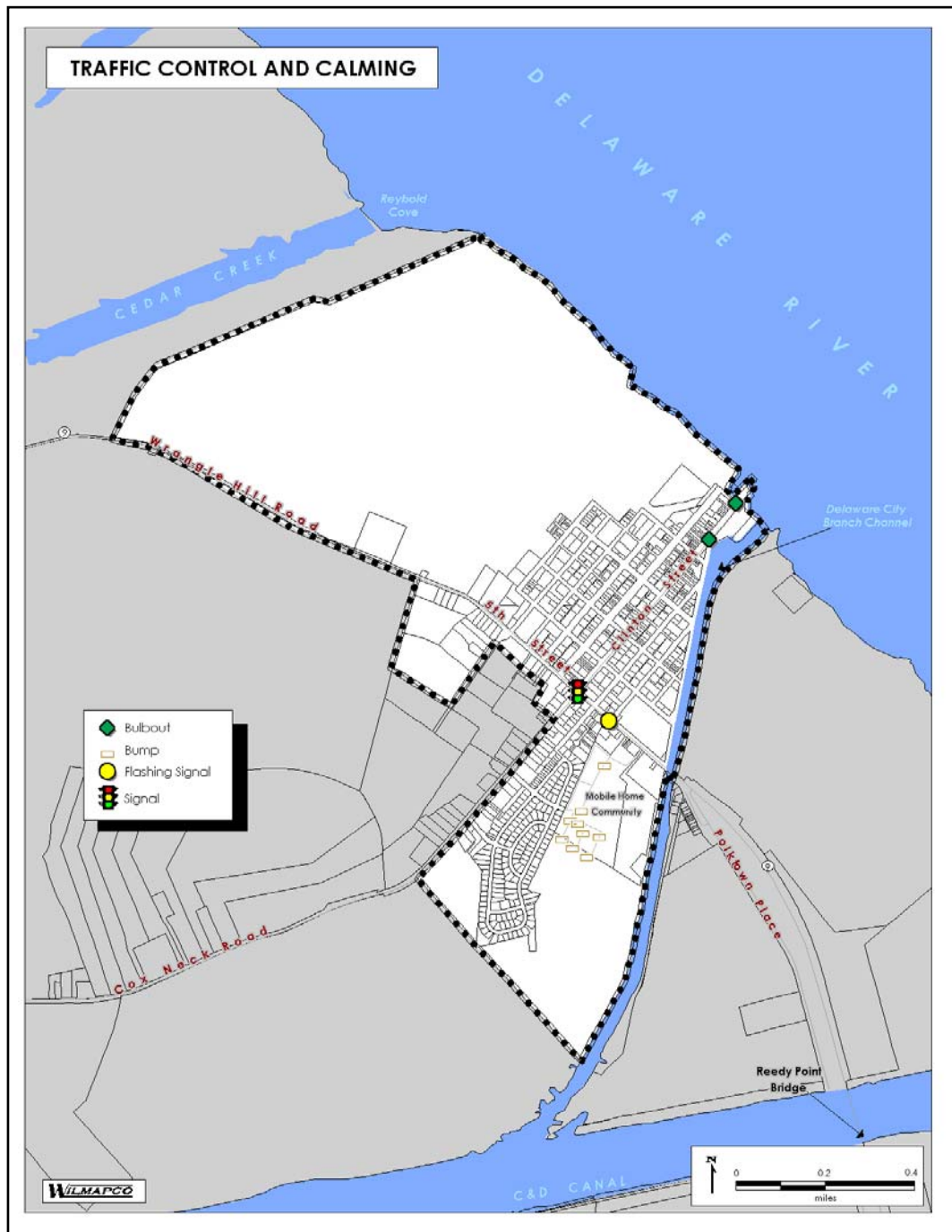
## LOCAL TRANSPORTATION NETWORK

Delaware City’s transportation network is comprised of two primary roadways and dozens of supporting local roads. State Route 9 (5<sup>th</sup> Street within Delaware City) is a primary north-south connector in Delaware and single busiest roadway in the town. Cox Neck Road (Clinton Street within Delaware City) is the town’s connection to the west. Average Annual Daily Traffic (AADT) totals from 2004 and projected figures for 2025 are displayed on **Map 9**. State Route 9 averaged over 7,500 vehicles per day along its northern stretch through Delaware City in 2004 and just over 2,000 towards the south. In the west, Cox Neck Road carried an average of about 1,600 vehicles. Model estimates for 2025 predict an overall decrease in traffic volumes within the town, with the exception of the southerly portion of SR 9. Volumes on that segment are projected to increase dramatically from about 2,000 AADT in 2004 to about 3,400 AADT in 2025.

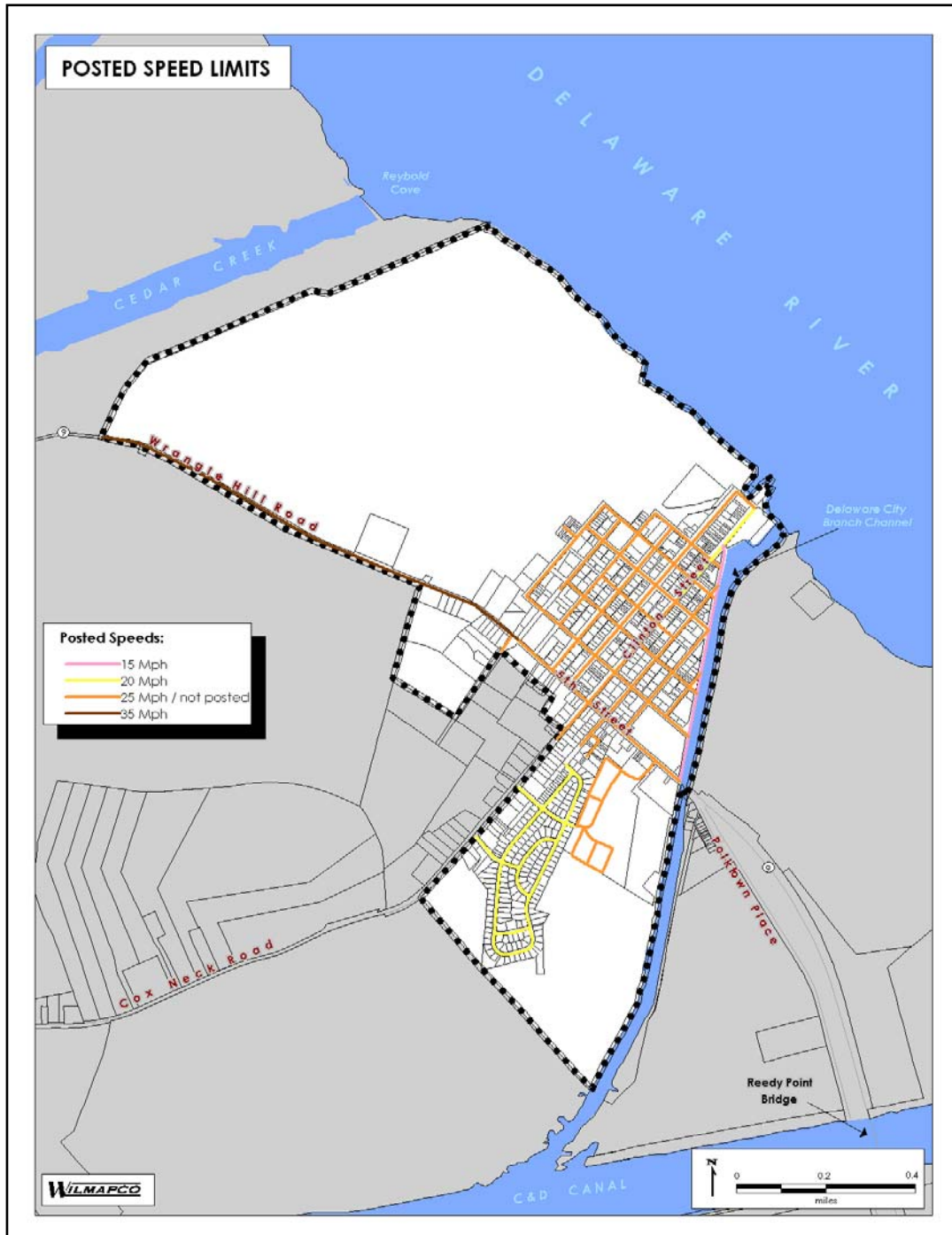


Map 9: Delaware City Average Annual Daily Traffic

Traffic within Delaware City should be slowed to provide safety to drivers, pedestrians, and bicyclists. A traffic signal regulates traffic where 5<sup>th</sup> Street and Clinton Street intersect. Other traffic control and calming measures include: a flashing signal at the intersection of 5<sup>th</sup> Street and Bayard Street, two bulbouts on the northern end of Clinton Street, and nine speed bumps within the Delaware City Mobile Home Community (**Map 10**). Speed limits range in the town from 15 miles per hour (Mph) on Canal Street to 35 Mph on SR 9 in northern Delaware City (**Map 11**). Most residential streets support speeds between 20 and 25 Mph, though many streets lack signage.

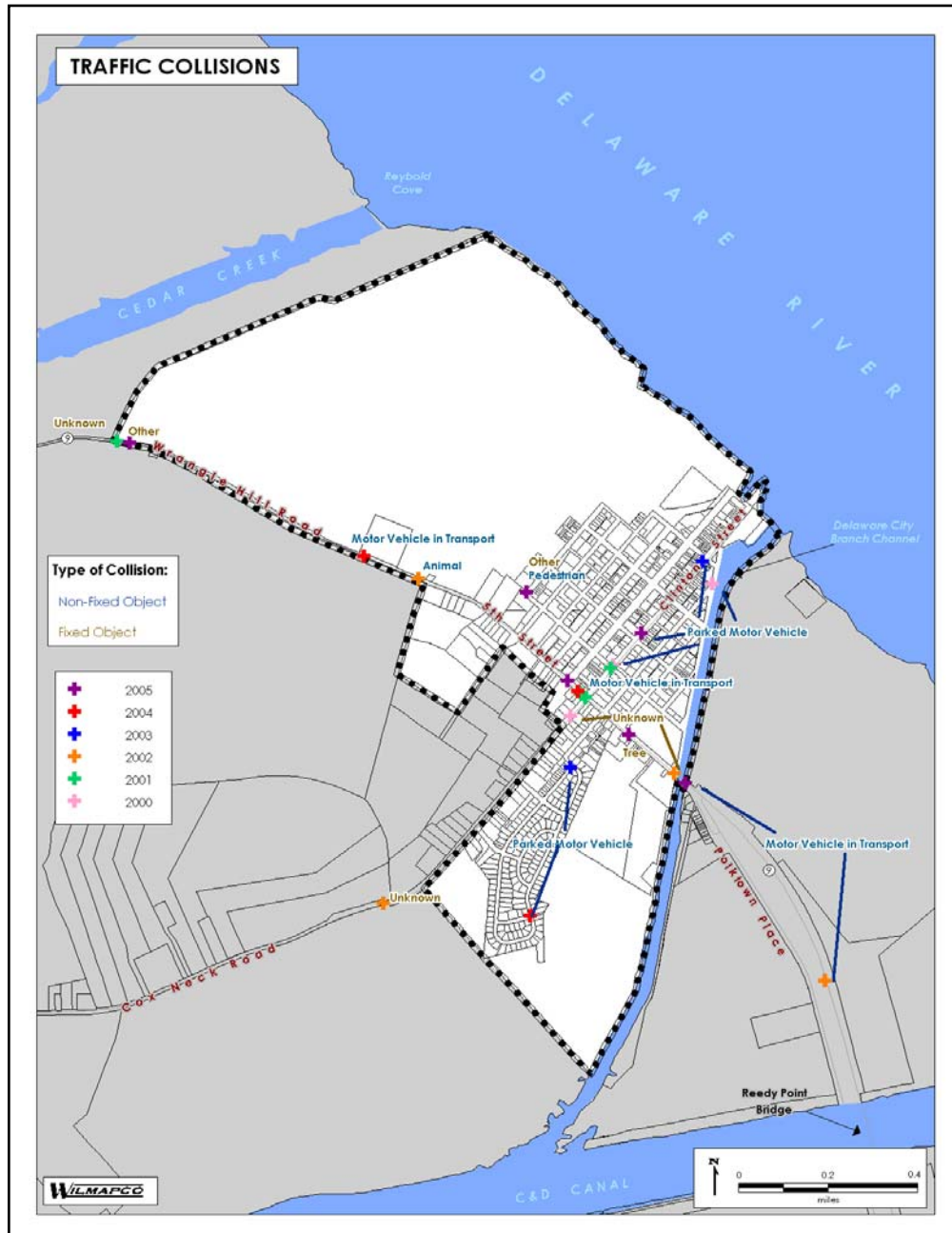


Map 10: Delaware City Traffic Control and Calming



Map 11: Delaware City Posted Speed Limits

Despite these safety measures, Delaware City has experienced a number of crashes (**Map 12**) over the past several years. Between 2000 and part of 2005, 22 collisions were reported within the town's boundaries, averaging four per year. Over half (13) occurred either on 5<sup>th</sup> Street or Clinton Street, including three at their intersection. Overall, six injuries resulted from the crashes as well as two deaths in March of 2005 when a tree was impacted along 5<sup>th</sup> Street. The most common crash type was a collision with a parked vehicle (9) followed by collisions with a vehicle in transport (7).



Map 12: Delaware City Traffic Collisions

---

## ROADWAY CIRCULATION

---

### ROUTE 9

Route 9 is a state maintained arterial roadway which serves as a main commercial corridor for Delaware City. Thus, Route 9 should serve both the needs of through traffic and that of Delaware City residents and visitors. Sidewalks should be extended to complete pedestrian facilities along both sides of Route 9 from Fort DuPont to northern edge of Delaware City or beyond. Striped bicycle lanes should also be extended through Delaware City, to implement the DelDOT Bicycle Plan and serve local trips.

Within Delaware City traffic calming should be installed, in accordance with the DelDOT Traffic Calming Manual. Appropriate devices include speed tables/raised crosswalks or narrowing the roadway using a center island or neckdown.

Ideal locations for traffic calming measures along Route 9 include places where there is pedestrian crossings: the intersection of Route 9 and Clinton and near the Delaware City Library. Traffic calming is also useful to transition faster regional traffic to appropriate slower, local speeds at the northern edge of town and approaching Delaware City near Fort DuPont.



*Existing Route 9*

*Existing  
neckdown on  
Clinton Street*



*Example raised crosswalk*



*Example center island*

## WASHINGTON STREET

Washington Street, running parallel to Clinton Street, serves as a main route between the historic commercial area and Route 9. With a parking lot at its terminus used by Fort Delaware State Park, restaurant and retail visitors, the street has more than simply local traffic. The community survey indicated that sidewalks, landscaping, parking, bicycle facilities, and road condition were top concerns for Washington Street, and these concerns were echoed at a “Washington Street Walking Workshop” held May 25.



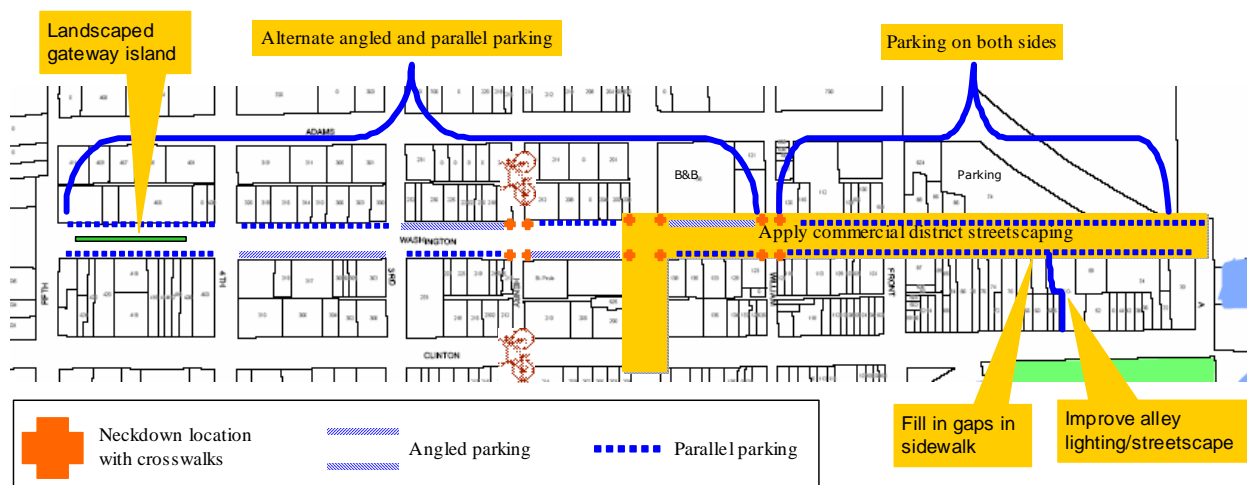
*Participants at Walking Workshop discuss options for Washington Street*

### Existing Conditions

With 100 foot right of way, the two-lane street is far wider than needed and lacks a consistent cross section. Thus, drivers lack clearly defined travel lanes and it is unclear where there is parallel or angled parking—leading to a jumbled mix of parked vehicles facing all directions. Sidewalks too are inconstant. Some areas have well-maintained sidewalks and some have hazardous, uneven sidewalks or none at all. Sidewalk materials are a mix of brick pavers and concrete. Drainage problems also exist, with houses getting flooded during heavy rains.

### Washington Street Proposal

The figure below shows concept design for Washington Street developed during the Walking Workshop. The concept envisions a street with travel options for cars, pedestrians and cyclists, environmentally appropriate landscaping and streetlights, and identifiable parking.



*Concept plan for Washington Street*

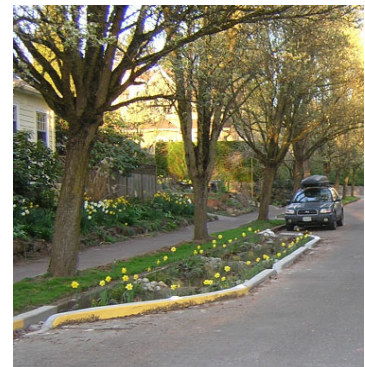
To traffic calm Washington Street, the concept uses a landscaped gateway near 5<sup>th</sup> Street to transition traffic from 35 mph to 25 mph. Parking is parallel on one side of each street and angled on the other; this configuration reverse sides each block to create a “Chicane” form of traffic calming. Chicanes are curb extensions that alternate from one side of the street to other forming s-shaped curves.

Back-in angle parking preferable to head-in angle parking, because it eliminates backing in to a lane of moving traffic and is similar to parallel parking to back in. Back-in angle parking is advantageous adjacent to the bike lane; motorists in a back-angle parking space have an unobstructed view of the roadway and bicycle lane.

**Other Design Elements**

**Landscaped Stormwater Curb Extensions**

Stormwater curb extensions are landscaped with plants that help filter pollutants from stormwater runoff. They improve water quality, reduce stormwater flow, and they look good.



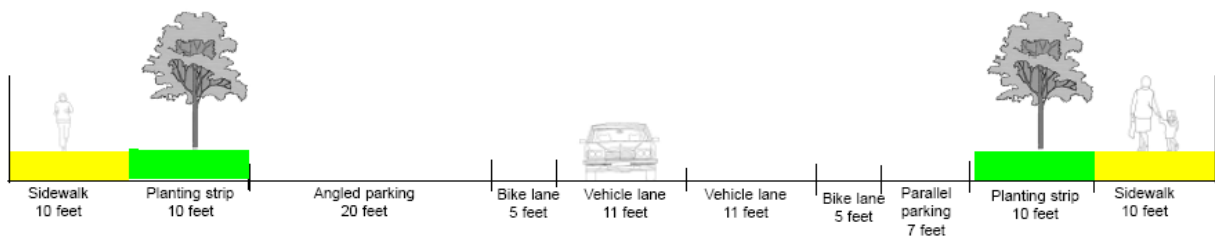
**Pervious pavement**

Consider pervious pavement for parking lanes to provide a visual contrast between the travel lanes and parking, while improving stormwater management.



**Curb Extensions**

Protect and define parking with curb extensions, signing and pavement markings. Curb extension also calm speeding traffic and shorten crossing distance for pedestrians.



*Proposed cross section for Washington Street*



## CLINTON STREET

Clinton Street serves as the “Main Street” for Delaware City. For residents, shops, Battery Park, and the post office are regular destinations. Visitors use Clinton Street to access For Delaware State Park, restaurants and shops.

Today, Clinton Street has an attractive streetscape in place that should be preserved and enhanced in the future. Wayfinding signage and additional crosswalks will enhance use of Clinton Street. Additional traffic calming may be desirable, such as additional neckdowns at intersections.

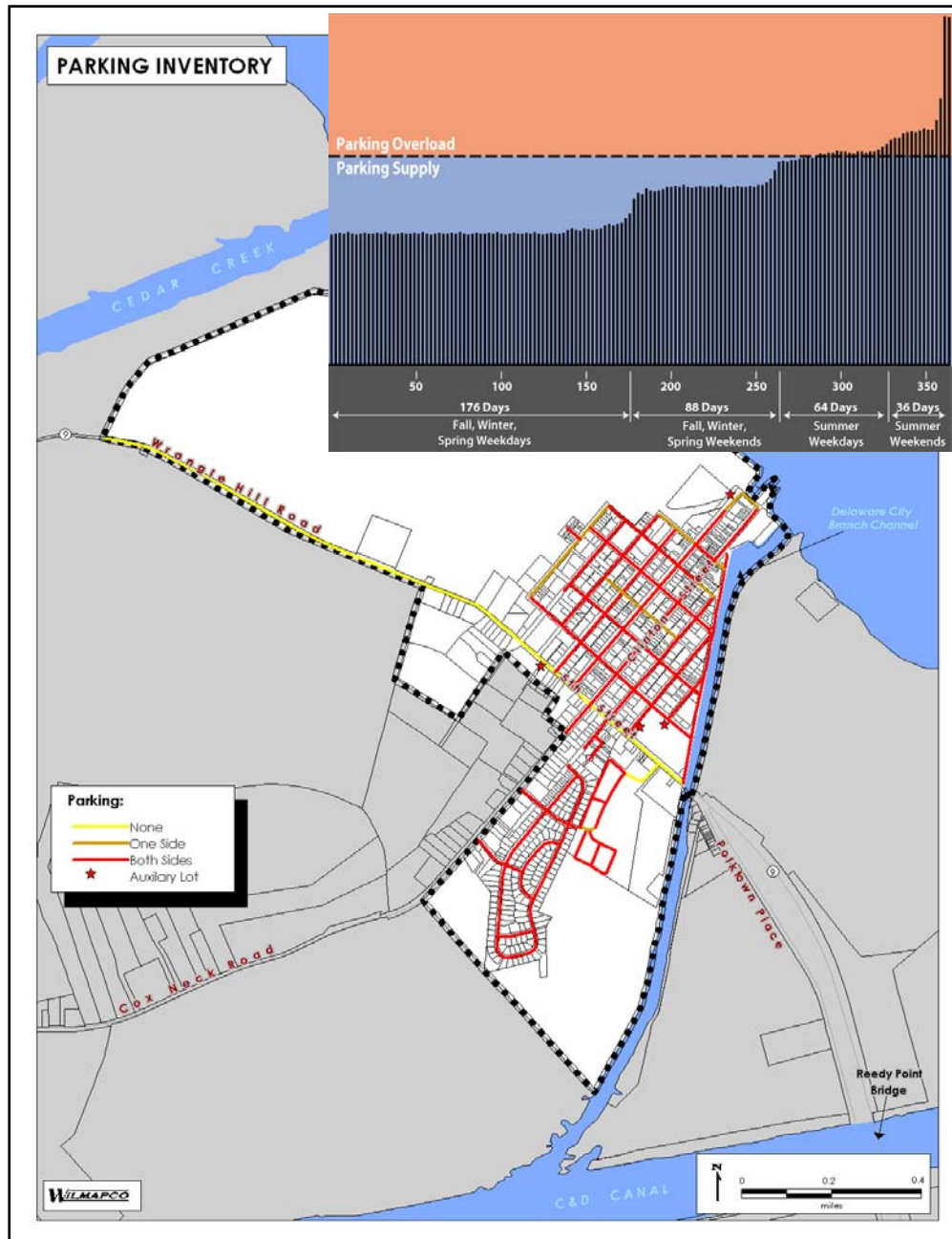


*Clinton Street*

## PARKING

A number of parking opportunities exist in Delaware City. As is evident from **Map 13**, the majority of the town's roadways support parking on either side, except for 5<sup>th</sup> Street, where on street parking is prohibited. For Monroe Street, the northern most residential street, parking is allowed on one side only. The same is true for segments and stretches of other town streets. Parking lots are on Washington Street, near Battery Park., at the library and at the 5<sup>th</sup> Street fire hall.

Delaware City should explore additional directional signs to parking and better delineation of spaces to maximize existing spaces. Visitors can be directed to the library, especially during summer weekends. When other lots are more full.



Building large additional supplies of parking is not recommended. Currently, parking demand typically does not exceed existing supply, except during the summer on weekends and during events. Thus, constructing additional parking may have a high cost and limited use.

*Map 13: Delaware City Parking Inventory*

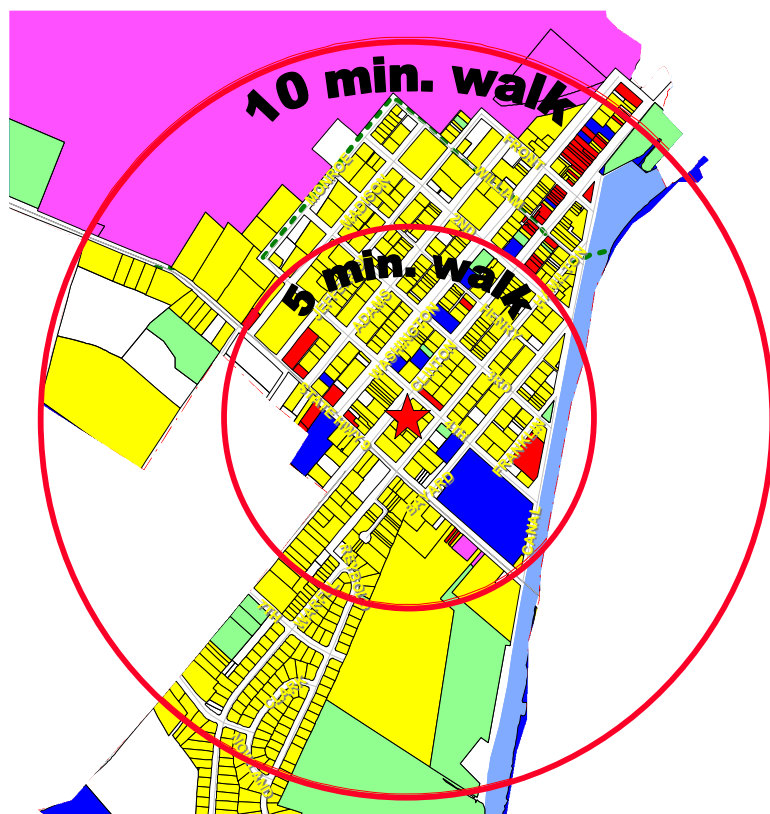
---

## PEDESTRIAN AND BICYCLE FACILITIES

---

### EXISTING CONDITIONS FOR BICYCLING AND WALKING

Delaware City's compact size makes walking and bicycling ideal for getting around town. Most of the town is accessible within ½ mile, or a 10-minute walk. Sidewalks, in various stages of disrepair, are in place throughout the town (see Map 14). Clinton and much of 5<sup>th</sup> Street have sidewalks along either side of the street. Washington Street, which runs parallel to Clinton Street, also has double-sided sidewalks for some of its length. Sidewalks line both sides of the streets within the Harbor Estates subdivision. Other areas of the town lack sidewalks entirely and only intermittent sidewalks exist in much of the residential areas to the south of Clinton Street and north of Washington Street. A pathway, known as the Canal Promenade, runs along Battery Park's waterfront.



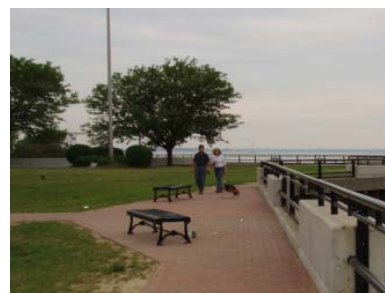
#### Proposed Improvements to the Bicycle and Pedestrian Network

Facilities for walking and cycling are critical for providing transportation choices, and may be the only option for those who are too young to drive, are not able to drive, or do not have access to an automobile; according to the 2000 Census, 21 percent of Delaware City residents are under 16 years, 12 percent are older than 65 years, 20 percent have some form of disability, and 7 percent of households report having no vehicle available.

Pedestrian and bicycling facilities can ease demand for parking and help foster the economy as business patrons can “park once” and walk to shops, restaurants and the park. Furthermore, once plans for the proposed trail along the C&D Canal have been implemented, Delaware City will likely become a destination for those seeking to walk and bicycle.

Proposed pedestrian and bicycle improvements include:

***Extend the Canal Promenade to the C&D Canal.*** This existing multi-use path should be extended to link the town with the network of trails being established along the C & D Canal. This project, to be implemented through a 2006 Delaware Land and Water Conservation Trust Fund Grant with matching funds from Delaware City, penalty funds and a variety of other sources, is a critical link between Delaware City and the C & D Canal.



***Improve bicycling conditions on Route 9.*** Delaware Route 9 through Delaware City is identified as regional bike route in the DelDOT Bicycle Plan. Currently, however, DelDOT has rated this route as having

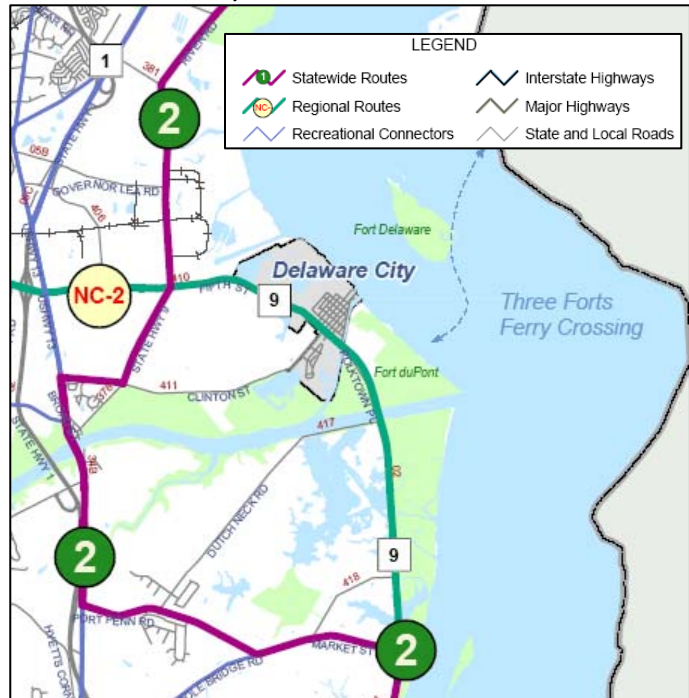
a “Below Average” bicycle level of service, with conditions unfavorable to even advanced cyclists. Elsewhere, Cox Neck Road, leading west from town was rated “Above Average.” This road has conditions described as ideal for on-road cycling. The Community Survey indicated a strong community support for better bicycling facilities both on Route 9 and on local streets.

Crossing the Reedy Point Bridge, just south of Delaware City, presents a particularly dangerous area for cycling. Narrowed travel lanes without shoulders or bike lanes make cyclists difficult for motorists to see and currently no pedestrian crossings exist across the Canal in Delaware. Short term, a bicycle detection system with signage, such as pictured below, is recommended.



*Example bridge bicycle detection signage*

Long term, DelDOT, Delaware City and the Army Corp of Engineers should coordinate to implement a cantilevered bicycle/pedestrian bridge at this location. The ability for pedestrians and cyclists to cross at either end of the Canal will be important for the success of the Canal Park.



*DelDOT Bicycle Plan*

**Henry Street “Bicycle Boulevard”.** Henry Street is made up of an alley-style street from Jefferson to Hamilton Streets, with the remainder—Jefferson to Monroe and Hamilton to Canal—now simply paper streets. This creates an ideal opportunity for an east-west bicycle route through the City.



*Example bicycle boulevard pavement marking*

A Bicycle Boulevard, sometimes called a bicycle priority street, is a street where all types of vehicles are allowed, but the roadway is modified as needed to enhance bicycle safety and convenience. Typically these modifications will also calm traffic and improve pedestrian safety. A “bicycle boulevard” design will provide a quality cross-town route, which will provide safe pedestrian and bicycle access to most destinations when linked to the Promenade.

During the design of the Bikeway consider the following:

- Make Henry Street one-way, with parking on one side.

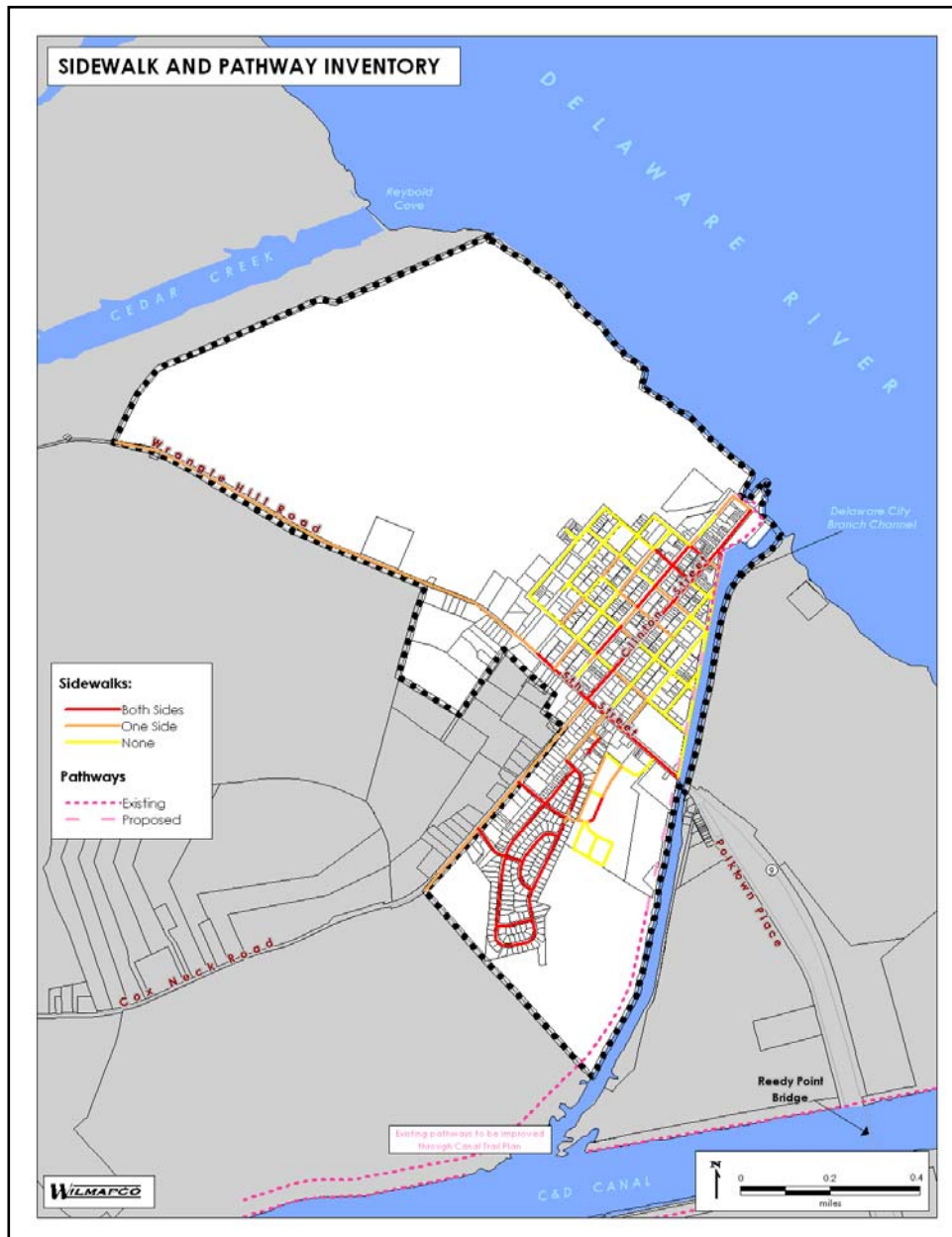


*Shared street sign*

- Consider stop signs for streets intersecting with Henry Street (or consider mini traffic circles at these intersections). Four-way stop should be located at Washington and Clinton streets.
- Use neckdowns at intersections and high visibility crosswalks
- Include special signage with directional information along route
- Consider diverters where Henry Street intersects with Clinton Street to force cars to turn while allowing bikes (and emergency vehicles) to continue straight.



*Example traffic diversion at intersection*



*Map 14: Delaware City Sidewalk and Pathway Inventory*

## TRANSIT

Delaware City is not served by public transit. This forces residents to rely on their automobiles more than the average county resident. However those who are too young to drive, unable to drive, or lack access to a vehicle may be left without adequate transportation. In 2000, for example, over 92% of the town’s workers either drove alone or carpooled. Compare this figure to the county’s average of less than 90%, Newark’s 78%, and

<b>Many in Delaware City May Not Have Access to Sufficient Transportation</b>	
Population under 16 years	21%
Population 65 years and over	12%
Residents with some form of disability	20%
Households with no vehicle available	7%
Source: 2000 Census	

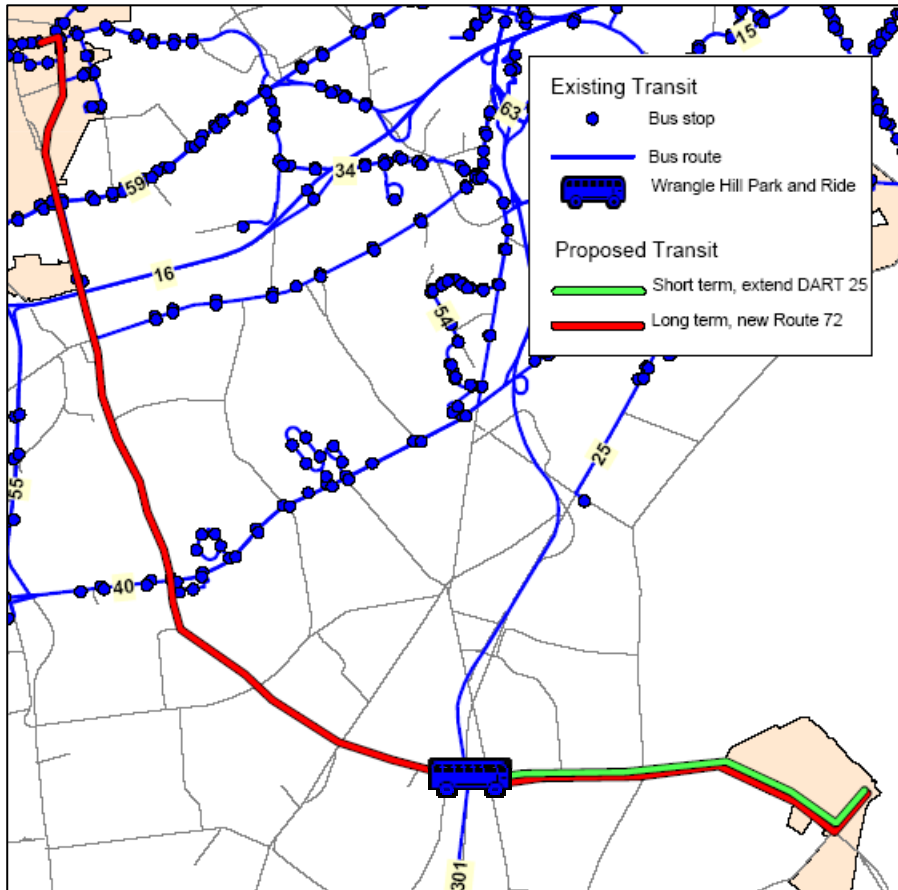
Wilmington’s 77%. Currently, the closest bus stop is located approximately 5 miles from Delaware City at the Tybouts Corner Park and Ride; this stop is served by DART Route 25 which travels up US 13 to Wilmington. Effective December 4, 2006 DART proposes extending this route to the Wrangle Hill Park and Ride, approximately 2.5 miles from Delaware City. This change is still not adequate to meet the transportation needs of the town’s residents.

WILMAPCO and DART surveyed residents about their transit needs. Sixty-four percent said that lack of transit is Delaware City’s greatest transportation need, 44 percent say transit is needed, and 25 percent say transit is Delaware City’s overall greatest need. Seventy percent say they would ride transit at least once a week if it were provided; 13 percent would ride three or four times per week; 28 percent would ride five times per week; and 16 percent would ride 6 times per week. Popular trip purposes were work, shopping and to medical appointments and popular destinations include Christiana Mall, Downtown Wilmington, Train Station/Park-N-Ride, and Newark. Most indicate they would depart Delaware City between 5 and 9 am and return between 3 and 7 pm. However, even with the current lack of direct service, 27 percent have used transit within the past 30 days.



*Residents without vehicles currently depend on neighbors and taxis for transportation*

DART First State plans to service the town by 2025. It is strongly recommended that bus service be extended into Delaware City as soon as possible. This will provide town residents a necessary alternative to car travel, enhance transportation equity, improve transit interconnectivity within the region, reduce air pollution, and lessen regional roadway congestion. The recent opening of the Wrangle Hill Mid-County Maintenance and Operations Transit Facility at the intersection of Route 13 and Route 72 provides greater opportunities to extend transit to Delaware City. In the short term, the DTC should consider extending the existing Route 25 bus from Wrangle Hill to Delaware City for several morning and evening trips; the route could travel along Route 72 to Route 9 south, and then extend to the end of Clinton Street. Long term, a Route 72 bus route would be desirable to link Delaware City, Route 40 area and Newark and serve a relocated Newark train station.



*Proposed transit routes*

---

## MOBILITY FRIENDLY DESIGN

---

### Future Development Pressures

The Delaware City Comprehensive Plan lays out a strategy to create a greenbelt around the City. From a transportation perspective, this will help to maintain the compact, walkable character that exists today. The Comprehensive Plan also discusses possible annexation and redevelopment of adjacent parcels, including the Governor Bacon/Fort DuPont site. Delaware City should adopt mobility friendly design standards to ensure that future development and redevelopment is done in a manner consistent with the existing community.

### Mobility Friendly Design

Mobility friendly design is needed to preserve and enhance Delaware City as a walkable, healthy, livable communities. Change is inevitable in any community, but a Delaware City changes in should be done in a way consistent with the things people appreciate the most about the community. According to the Local Government Commission, elements for livable transportation and related land use include:

- **Compact, Lively Town Center.** Buildings frame streets; block lengths are short. Mix of uses includes shops and downtown housing. Active merchant's association can help develop shopping district.
- **Many Linkages to Neighborhoods (including walkways, trails and roadways).** People have transportation choices including direct routes for walking. Sidewalks are five feet or wider, and most are buffered from streets by planting strips, bike lanes or on-street parking. Sidewalks should be made ADA accessible.
- **Low Speed Streets.** Traffic calming, street trees and visible signs of street life encourage motorist to respect the community.
- **Neighborhood Parks.** Most children are able to walk or bicycle to nearby parks. Most residents live near small parks or other well-maintained and attractive public spaces.
- **Public Places Packed with Children, Teenagers, Older Adults and People with Disabilities.** Many services and facility designs support and attract many children, teens, people with disabilities and senior citizens to most public spaces. Public restrooms, drinking fountains and sitting places are desirable.
- **Convenient, Safe and Easy Street Crossings.** Frequent, convenient, well-designed street crossings are needed by pedestrians.
- **Inspiring and Well-Maintained Public Streets.** Streets should reflect the community's character using murals, public art, banners, plantings and other design elements.
- **Land Use and Transportation Mutually Beneficial.** Compact development, infill, placement of mixed-use buildings close to the street, and mixed income neighborhoods promote a livable community. The buildings and roads should have a human scale, that compliments the surrounding neighborhoods. Encouragement of local stores help create community as well as convenience.
- **Celebrated Public Space and Public Life.** Streets, plazas, parks and waterfronts are fun, festive, secure, convenient, efficient, comfortable and welcoming places. Neighborhood events inspire community pride and should be held often.
- **Many People Walking.** Livable communities have places worth walking too, and attractive and safe routes to travel along.



## IMPLEMENTATION ACTION PLAN

This plan will be implemented through a combination of actions by public-private partnerships, Delaware City government, DelDOT, and other public agencies. Suggested funding sources include:

- ***WILMAPCO Transportation Improvement Program/DelDOT Capital Transportation Program***  
Funding can be used for more expensive projects in Plan, which go beyond limitations of other funding sources. Twenty-percent matching funds are required.
- ***Transportation Enhancement Fund***  
Eligible projects include pedestrian and bicycle facilities, pedestrian and bicycle safety education, acquisition of scenic or historic transportation sites, scenic or historic highway programs, landscaping and scenic beautification, historic preservation and rehabilitation of historic transportation facilities, conversion of abandoned railway corridors to trails, control and removal of outdoor advertising, and transportation museums. This federal funding program is administered by DelDOT and requires matching funds.
- ***Municipal Street Aid***  
State funded program provides municipalities annual assistance for street maintenance activities. Funding allocated based on road mileage maintained by jurisdiction and population.
- ***Community Street Fund***  
State funded program provides legislators funds to pay for transportation projects, typically within their district..
- ***Other funding sources***  
Private-public partnerships, federal grant programs (such as the TCSP program), and state greenway and trail grants should be explored to implement some proposals in the Plan.

Action	Responsible Party	Priority
Coordinate with New Castle County, DEMA and DelDOT on emergency planning and implement flood mitigation on identified evacuation routes.	Delaware City, New Castle County, DEMA and DelDOT	High
Extend public transit connection to Delaware City	Delaware Transit Corporation	High
Improve drainage in Delaware City	Delaware City	High
Improve wayfinding signage from SR 1, US 13 and SR 9 to promote Delaware City attractions	Delaware City, DelDOT, DEDO	Medium
Construct an interconnecting trail network along the C & D Canal branch between the C & D Canal and Delaware City	Delaware City, Army Corp of Engineers	Medium
Coordinate with the Route 9 Byway Committee on nomination and corridor management plan	Delaware Greenways, Delaware City	Medium
Improve Route 9 through Delaware City including traffic calming, pedestrian facilities and bicycle lanes	DelDOT	Medium
Improve the functioning of Washington Street with better defined parking, drainage, and pedestrian and bicycle facilities. Work with DelDOT to further explore the possibility of Washington Street becoming a state maintained facility.	Delaware City	Medium

<b>Action</b>	<b>Responsible Party</b>	<b>Priority</b>
Improve delineation of and wayfinding to existing parking to maximize available spaces	Delaware City	Medium
Prioritize sidewalk improvements throughout town which enhance pedestrian travel routes while protecting priority trees	Delaware City	Medium
Implement bicycle boulevard on Henry Street	Delaware City	Medium
Consider bicycle lanes on Clinton Street	DelDOT, Delaware City	Medium
Install pedestrian bridge between downtown and Fort DuPont	Delaware City, Delaware State Parks	Low