



2007
Accessibility and Mobility Report



*Transportation
Justice*



A Study of the
WILMAPCO Region

Prepared by the staff of the
Wilmington Area Planning Council



2007 Accessibility and Mobility Report:

A Transportation Justice Study of the WILMAPCO Region

Prepared by the staff of the Wilmington Area Planning Council

Project Manager

William Swiatek, Transportation Planner

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Wilmington Area Planning Council
850 Library Avenue, Suite 100
Newark, Delaware 19711

Phone: 302-737-6205
Fax: 302-737-9584
www.wilmapco.org

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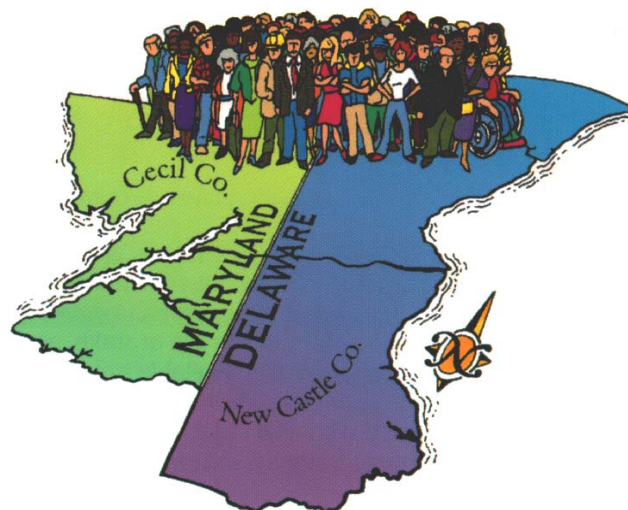
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Introduction: Who is WILMAPCO?

The Wilmington Area Planning Council (WILMAPCO) is a federally mandated Metropolitan Planning Organization (MPO) consisting of two counties; Cecil County, Maryland and New Castle County, Delaware. Our mission is to serve the citizens and stakeholders of the Wilmington region by carrying out a comprehensive, continuing and cooperative regional transportation planning process consistent with federal transportation legislation. To that end, WILMAPCO informs and involves the public on transportation planning decisions, guides the investment of federal transportation funds, coordinates transportation investments with local land use decisions, and promotes the national transportation policy expressed in federal transportation law.

WILMAPCO is responsible to all the citizens of the region to ensure the development of the best transportation plan for the region. The implementation of the transportation plan is carried out by WILMAPCO's member agencies. We collect, analyze and evaluate demographic, land use and transportation-related data and seek public input to understand the transportation system requirements of the region. Understanding these requirements allows for the development of plans and programs and the implementation of a transportation system that provides for the efficient transport of people, goods and services.



What is Environmental Justice?

Environmental Justice (EJ) entails the fair treatment of people from all races, cultures, and incomes regarding the development of environmental laws, regulations, and policies. An outgrowth of Title VI of the Civil Rights Act of 1964, EJ can primarily be thought of as measures ensuring the non-discriminatory distribution of federal funds.

WILMAPCO incorporates EJ into all relevant aspects of our planning process. Our policy is based around the three core principles of EJ set forth by the Federal Highway Administration and Federal Transit Administration:

- *Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.*
- *Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.*
- *Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.*

WILMAPCO produced its first EJ report, “Environmental Justice: Transportation Equity Analysis for the WILMAPCO Region” in May of 2003. Delineating concentrations of minority and low-income populations in our region, the report evaluated our plans and programs against EJ principles. It then provided an overview of public participation activities and described the monitoring tools to be used to measure implementation.

WILMAPCO consistently strives to better integrate EJ into our transportation plans. To that end, we broadened the spectrum of communities considered “transportation constrained” from just those required by federal mandate. Separate from EJ populations, these *Transportation Justice* (TJ) populations are hereafter: the elderly, the disabled, and households without an automobile. Using methodology similar to our initial EJ report, the present study assesses the accessibility and mobility needs of TJ populations in the WILMAPCO region.

Executive Summary

The WILMAPCO region is today in the midst of a major demographic shift. Slowing birth rates and longer life expectancies are expected to rapidly age our population. Whereas our older community constituted 11% of our total population in 2000, that figure is projected to soar beyond 20% by 2030. As the chances of becoming disabled increase with age, we too can expect a higher proportion of our population to suffer from a physical disability. How can we prepare for this shift as a region? Is our transportation infrastructure capable of handling the needs of our older community today or in the future? Does our infrastructure support the present and future needs of other Transportation Justice (TJ) groups—the disabled and households without an automobile? The present report initiates a process to address these concerns.

The report begins by identifying general concerns and problems faced by TJ groups, both nationally and regionally. Isolation—the undesired separation from family, friends, and services—is the most constant theme. This separation most often results from the lack of access to, or the ability to operate a private automobile. Short of calling for the distribution of private vehicles to all those without, the provision of a fleet of private drivers, or the continued expansion of big budget Paratransit services, WILMAPCO's TJ Report tackles the issue from a "universal design" perspective. Practical, cost-effective measures, such as: improved access to bus stops, greater frequencies of fixed-route buses to and from key locations, and enhanced walkability within and around "targeted" neighborhoods will work best to improve mobility and combat isolation.

Using 2000 Census data, these "targeted" neighborhoods within our region (specifically, block-groups where significant portions of our three groups are found) are identified, mapped and analyzed. These targeted areas, deemed to support either "moderate" or "significant" concentrations of TJ populations, are the foundation of the study. Located along the I-95 corridor in our region's north, they cut across class and racial boundaries. For example, the Trolley Square neighborhood in western Wilmington boasts no unemployment and a rate of poverty half of its county's average. Eastside, however, suffers economically. Over half of its residents live below poverty and one out of five is unemployed. Racial diversity thrives. Significant TJ areas located in Wilmington's Eastlake and Prices Run are predominately black (85-94%) whereas other neighborhoods, such as Richardson Park (94%) and South Elkton (87%) are overwhelmingly white. Populations within TJ areas also display wide ranging commuting types and average travel times. For example, 26% of Eastside's residents commute to work via public transit, while 0% did in South Elkton. Travel times to work varied still more. While a few neighborhoods enjoy public transit commuting times less than 20 minutes, others top one hour.

The accessibility of bus stops within these TJ areas, measured as the percentage of households within walking distance to a stop, is then detailed. Overall, bus stops were, on average, much more accessible within TJ areas than outside. However, room for improvement does exist. Most significantly, two moderate TJ areas (Latimer Estates and Webster Farms) were found to fall below the regional average for accessibility. This analysis was also extended beyond our TJ areas to include existing and planned age-restricted communities in New Castle County. Significantly, we found that only one age-restricted community ("Crossings at Christina") located south of Newark was within walking distance to a bus stop.

Observing first hand the infrastructure in place, practical recommendations for improving walkability within significant TJ areas were then made. These included measures to ease access to bus stops, retail outlets, and parks. Pedestrian and bicycle crashes between 2000 and 2005 were also provided for each neighborhood, with specific attention to intersections showing high crash rates. Consider, as an example, the Browntown neighborhood in Wilmington. It was noted that pedestrian movement across Maryland Avenue (SR 4), a busy commercial strip, was difficult and dangerous—impeding access to shops, schools, parks, and bus stops. In total, 47 pedestrian and bicycle collisions occurred across the area, most along SR 4. Recommended improvements ranged from the addition of signalized crosswalks at key intersections to the clearing of overgrown vegetation along a stretch of sidewalk.

Next, the frequencies and destinations of bus routes serving significant TJ areas were analyzed. Recommendations were made to consider improving frequencies for routes with slower frequencies and/or to provide direct service to a key regional destination, if it was not served. Prices Run and Eastlake in Wilmington, for example, were found to have fairly limited service regionally. Besides the consideration of upgrading frequencies on several lines, connections were recommended to: the Concord Pike commercial corridor, the Kirkwood Highway commercial corridor (beyond just Prices Corner), Newark, and the Christiana Mall. These locations represent key regional destinations that were not served directly from Prices Run or Eastlake—forcing patrons to utilize two or more buses to reach them.

In the final stage of our analysis, the results of a brief "Senior Transportation Survey" were provided. Findings from the survey supported our approach to the needs of TJ populations. Of respondents from New Castle County, for example, 44% felt improvement was necessary in the fixed-route bus service. Specifically, 26% faced difficulty reaching their fixed route stops. Reasons cited for difficulties reaching stops included: lack of sidewalks, deteriorating conditions of existing sidewalk, and busy intersections. Additional criticisms of the system were: the lack of Sunday bus service, poor transit linkages, and the tardiness of Paratransit services. Most troubling, however, was the quarter of our region's seniors who were found to presently face transportation dilemmas.

Overall recommendations found within the TJ report can be found below:

- Practical, cost-effective measures, such as: improved access to bus stops, greater frequencies of fixed-route buses to and from key locations, and enhanced walkability within and around “targeted” neighborhoods will work best to improve mobility and combat isolation of TJ populations.
- Costs associated with DART’s Paratransit service may render it economically unsustainable. DART should consider restructuring the system. Alternatives to Paratransit should be explored.
- Identified TJ areas with high commuting times should become prime candidates for additional service.
- TJ areas, in which transit use or walking trips to work are low, should be examined for improvements.
- Target specific TJ areas where the percentage of households within walking distance to a bus stop is low for additional bus routes and stops.
- Expansion of fixed-route bus service in the central and southern portions of New Castle County should prioritize service to age-restricted communities and senior centers. As a pre-requisite, however, developers of these communities must include access points for service.
- Re-examine the layout of intersections with high numbers of bicycle and pedestrian crashes. A table of the identified intersections can be found in the appendix.
- Improve walkability and bus frequencies and destinations within significant TJ areas, via targeted recommendations made in Section 3. These recommendations can be found in tabular form within the appendix.
- Begin a dialogue to address the transportation concerns raised by respondents to our senior transportation survey. Specifically, these relate to issues of access to services and the adequacy of New Castle County’s fixed-route transportation infrastructure.

Following a summary of these recommendations, the report closes with a section devoted to funding options and another section which outlines future actions. These actions will ensure that TJ continues to influence the planning process at WILMAPCO in the years to come.

Section 1: Transportation Justice Communities: Towards a Rationale

I have no transportation problems at present, but I can see a time when I might have as I get older and no longer drive.

-Senior resident, Wilmington

While the transportation challenges faced by zero-car households are obvious, those of the elderly and disabled may be less clear. In this section the case will be made for the inclusion of elderly and disabled in our defined Transportation Justice (TJ) community.

The Elderly

Our older population must negotiate a transportation system designed to service the needs of younger adults. High rates of senior isolation and driver fatalities are unfortunate outcomes. Coupled with a projected increase in the senior population in the decades to come, the need for special attention becomes apparent.

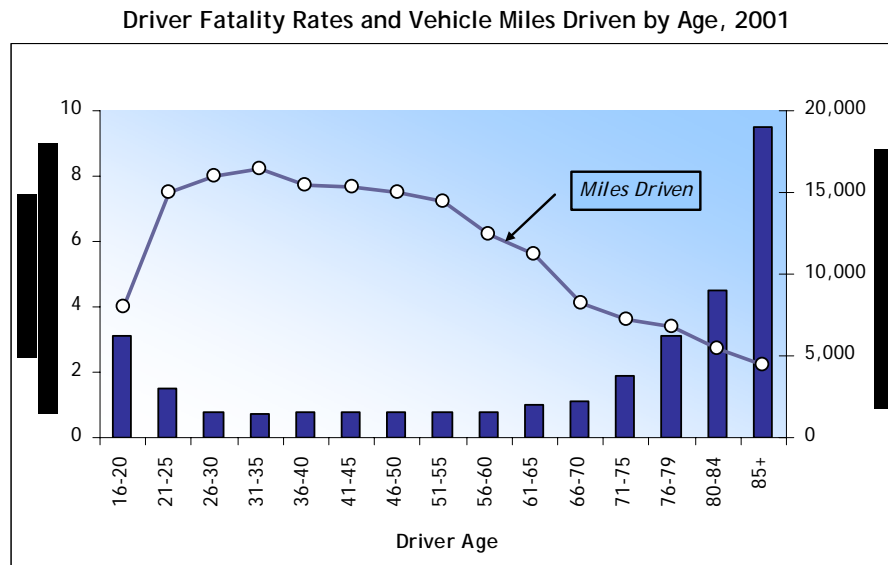
In their analysis of data from the National Household Transportation Survey of 2001, the Surface Transportation Policy Project (STPP) quantified the reality of elderly isolation.¹ According to their results, more than one out of five (21%) Americans over the age of 65 do not drive. This segment of the older population is effectually “sidelined”—in part due to a lack of transportation choices. More than half (54%) of these older non-drivers stayed at home on any given day. Subsequently, they experience a lower quality of life. Consider these facts: Older non-drivers make 15% fewer trips to their medical doctors than do older drivers, 65% fewer social trips, and fewer than half as many shopping and restaurant trips.

Whereas seniors without access to automobiles face isolation, those who do get behind the wheel face an increased risk of death. The chart below illustrates this point. Though vehicle miles driven decrease with age, rates of driver fatalities skyrocket. While the chart is based on national statistics, similar findings were made within WILMAPCO’s region. In the State of Delaware, those over the age of 65 comprised 7% of all crashes in 2004.² They also made up 7% of all personal injury crashes and property damage crashes. In terms of fatal

¹ Bailey, Linda. “Aging Americans: Stranded without Options.” Surface Transportation Policy Project. April 2004.

² Delaware’s Annual Traffic Statistical Report, 2004.

crashes, however, the elderly represented 18% of deaths. Research has shown that the increase in older driver death is due to the greater fragility of older bodies—and thus a decreased chance to survive impacts.³



Source: STPP, 2004

Compounding the issues of elderly transportation are projected demographics. Following national trends, the over-65 contingent of WILMAPCO's regional population is expected to surge. Projections indicate that seniors will account for nearly 21% of our community by 2030, up from 11% in 2000. See the following table for a more detailed breakdown.

Past and Projected Over 65 Population in the WILMAPCO Region

Year	>65 Population	% of Total
1990	50,332	11.2
2000	67,087	11.4
2010	81,240	12.4
2030	152,614	20.2

Source: WILMAPCO, 2006

The Disabled

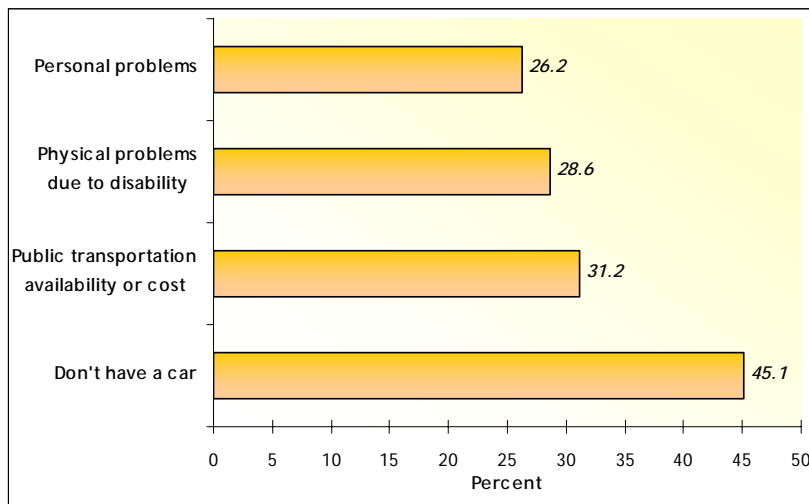
Like the elderly, those with disabilities encounter transportation infrastructure largely designed to facilitate the transport of the non-disabled. Non-voluntary

³ Safe Mobility for a Maturing Society: Challenges and Opportunities. U.S. Department of Transportation. November 2003.

isolation from friends, family, and the wider community is a regrettable outcome.

Data from the Bureau of Transportation Statistics (BTS) illustrates the problem.⁴ According to a 2002 survey, over half a million disabled Americans never leave their homes due to transportation difficulties. As shown in Figure 2, the top two reasons were directly related to existing transportation infrastructure. Nearly half (45%) did not own a car and about one-third (31%) placed blame on the non-availability or high expense of public transportation.

Reasons Expressed by Persons with Disabilities for Never Leaving Home



Source: BTS, 2002

Isolation faced by the disabled, due in part to our poor infrastructure, has ramifications on overall quality of life. Trends quantifying the “transportation gap” between the disabled and non-disabled can be observed through the National Organization on Disability surveys.⁵ Comparing results over the last several years, the group found that inadequate transportation was consistently considered a problem for about one-third of the disabled. Moreover, a growing number were unable to socialize with friends at least twice a month.

As with the senior community, sheer numbers come into play. Put simply, the chances of becoming disabled increase with age. According to a 2004 report from the National Council on Disability, 19% of those between the ages of 16 and 64 have a disability.⁶ That percentage can be compared to 42% of those

⁴ “Transportation Difficulties Keep Over a Half a Million Disabled at Home.”

Issue Brief, Bureau of Transportation Statistics, Number 3. April 2003.

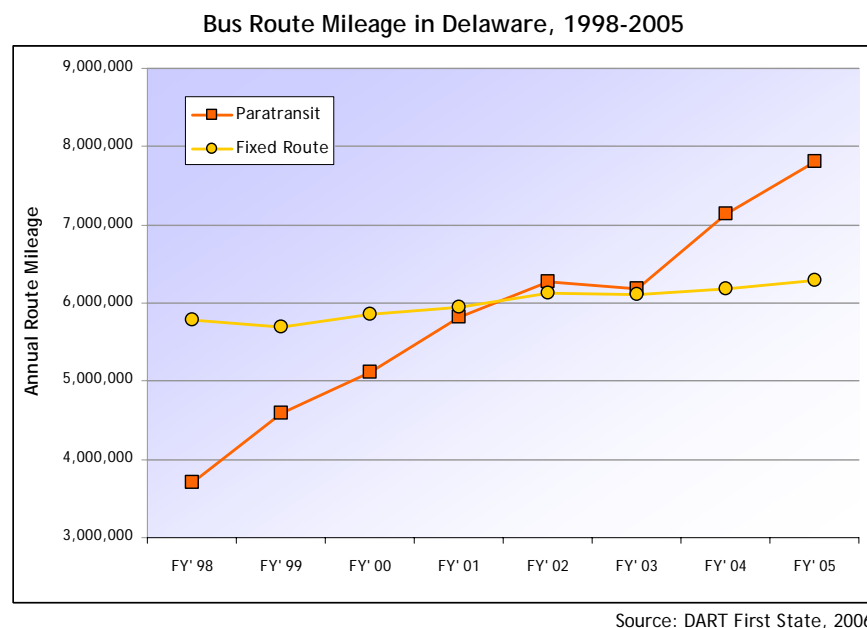
⁵ National Organization on Disability/ Harris Survey of Americans with Disabilities. 1998, 2001, 2004.

⁶ “Livable Communities for Adults with Disabilities.” National Council on Disability. December 2, 2004.

over 65 and 54% of those over 75. It follows that we will also witness a greater percentage of disabled with the projected increase in members of our senior community.

While solid Paratransit systems currently operate within the WILMAPCO region to service the transportation needs of the disabled, questions of economic sustainability loom. The Delaware Transit Corporation (DART) facilitates one of the nation's leading Paratransit services, meeting the needs of the majority of our region's transportation challenged. However, rising costs and an even greater need in the years to come cast doubt on the future operation of the system.

Consider these facts. In 2006, the cost of a Paratransit trip in New Castle County exceeded \$27, while the cost to the rider was \$2. In contrast, a fixed route trip costs DART about \$4, while the cost to the rider is \$1.15. At the same time, Paratransit route mileage has seen a steady increase since 1998—eclipsing the fixed routes in 2002 and trending upwards (illustrated in the chart below.) Between 1996 and 2002, Paratransit witnessed a 131% increase in users, compared to less than a 19% rise for the fixed routes. This increase is due to greater demand and a screening process that accepts 98% of all applicants.⁷ Thus, more and more of DART's budget is siphoned off to meet Paratransit demands, placing fixed-route riders at a disadvantage. Today, between 30-40% of DART's operations costs are directly associated with Paratransit, though its riders account for only about 3% of total ridership.



⁷ Denson, Carol, Patricia Tressell, and Keith Casey. "ADA Eligibility Process Control Model for DART First State Paratransit." Center for Disability Studies, University of Delaware. June 2004.

A restructuring of DART's Paratransit system should be considered. Limiting the service to the Americans with Disabilities Act (ADA) service area (within $\frac{3}{4}$ of a mile of existing transit route), while difficult to implement, could be considered. Another option would be a new fare schedule, with premium fees for trips located outside the ADA area. Medical trips and commuter trips could be prioritized during peak service hours. A system of scheduled trips for those of lower priority outside the ADA service area might also be created. This may increase efficiency and on-time performance for Paratransit riders, and facilitate service expansion for fixed route patrons. Acknowledging the potential fiscal limitations of Paratransit, this report will approach meeting the existing and future needs of the disabled and elderly differently.

Alternative "universal design" measures, such as improved access to fixed route stops, greater frequencies of fixed route bus trips, and enhanced walkability within transportation constrained communities will be explored in the sections to come. If implemented, these measures will support necessary Paratransit services by channeling would-be users into the conventional transportation system.



The Route 19 pushes along Old Capitol Trail, west of Elsmere

Section 2: Identification of Transportation Justice Areas

We need more connecting transportation for Conowingo, Perryville, and Port Deposit.

-Senior resident, Conowingo

In order to address the needs of our elderly, disabled, and zero-car household communities, it was necessary to identify concentrations of these populations within our region. This was accomplished through an examination of 2000 U.S. Census data via our Geographic Information Systems (GIS) software. After these concentrations were delineated, they were ranked as "significant" or "moderate," and then comparisons were made.

Transportation Justice Groups and a Scoring Methodology

Before defining concentrations of Transportation Justice (TJ) groups within the WILMAPCO region, a demographic profile of their community was completed. Using county-level data from the 2000 U.S. Census, the resulting tables below display the population size of each TJ group in our region.

Population over the Age of 65 in 2000

	Population	Over Age 65	Percent
USA	281,421,906	34,991,753	12.4%
New Castle Co., DE	500,265	57,903	11.6%
Cecil Co., MD	85,951	8,995	10.5%
WILMAPCO	586,216	66,898	11.4%

Source: U.S. Census

Disabled Population over the Age of 5 in 2000

	Over Age 5	Disabled	Percent
USA	257,167,527	49,746,248	19.3%
New Castle Co., DE	458,998	77,673	16.9%
Cecil Co., MD	79,151	14,486	18.3%
WILMAPCO	538,149	92,159	17.1%

Source: U.S. Census

Zero-Car Households in 2000

	Occupied Housing Units	Zero-Car	Percent
USA	105,480,101	10,861,067	10.3%
New Castle Co., DE	188,935	16,684	8.8%
Cecil Co., MD	31,223	1,869	6%
WILMAPCO	220,158	18,553	8.4%

Source: U.S. Census

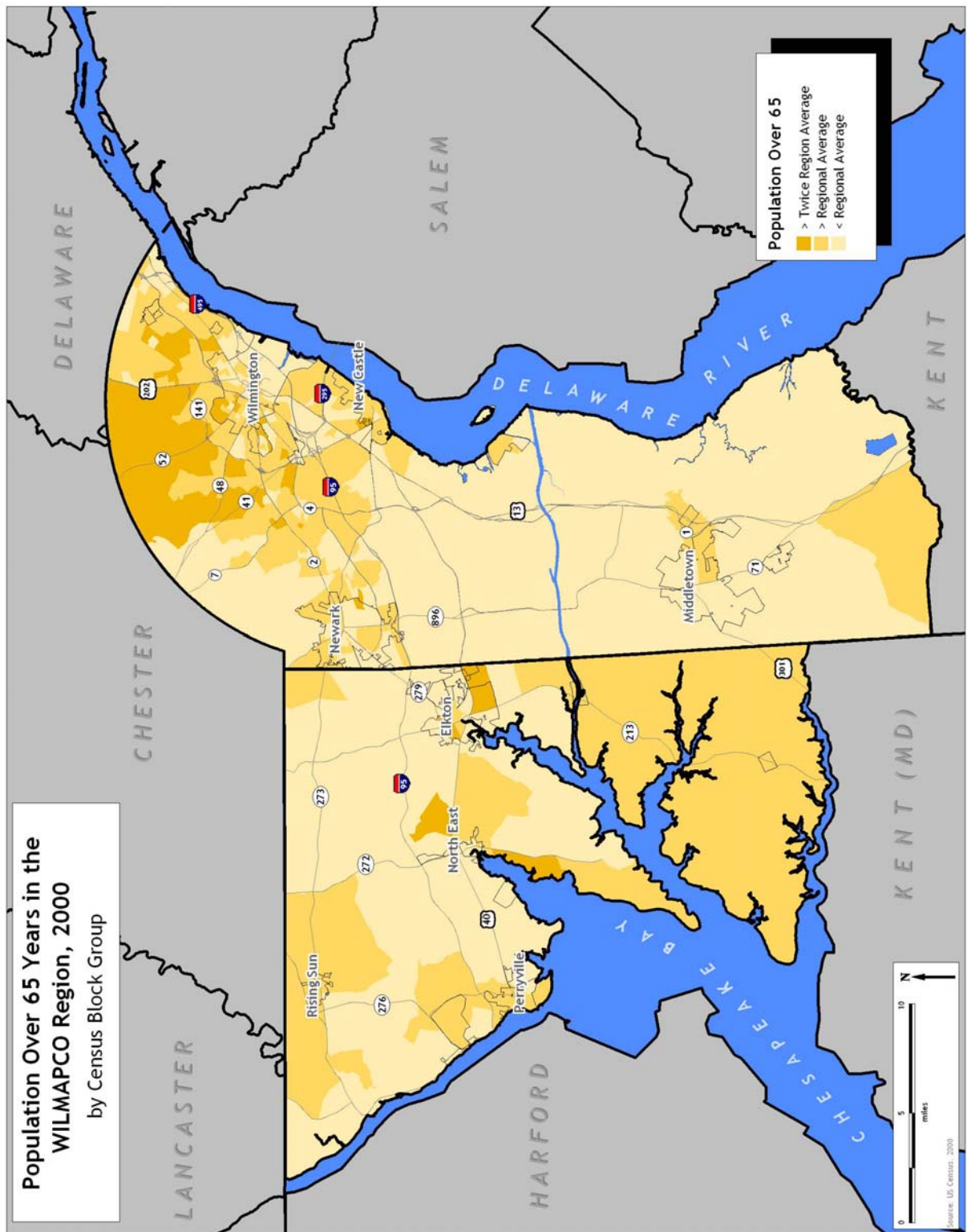
Interesting comparisons can be made from the above tables. The WILMAPCO region, for example, has a smaller percentage of all three TJ groups than the U.S. as a whole. Within the region itself, a greater percentage of seniors and households with no automobile can be found in New Castle County. Cecil County has a higher percentage of disabled.

Using the percentage of each group within the region (11.4% elderly, 17.1% disabled, and 8.4% zero-car households) as a base, maps were created to show the distribution of TJ groups in the region. These can be found on the following pages. Generally, the greatest concentrations of seniors can be found in northern New Castle County, especially between SR 48 and U.S. 202, and north of SR 141. Intense pockets of disabled were found in and around the cities of Wilmington and New Castle; zero-car households are most prominent in Wilmington and its inner suburbs and portions of Newark and Elkton.

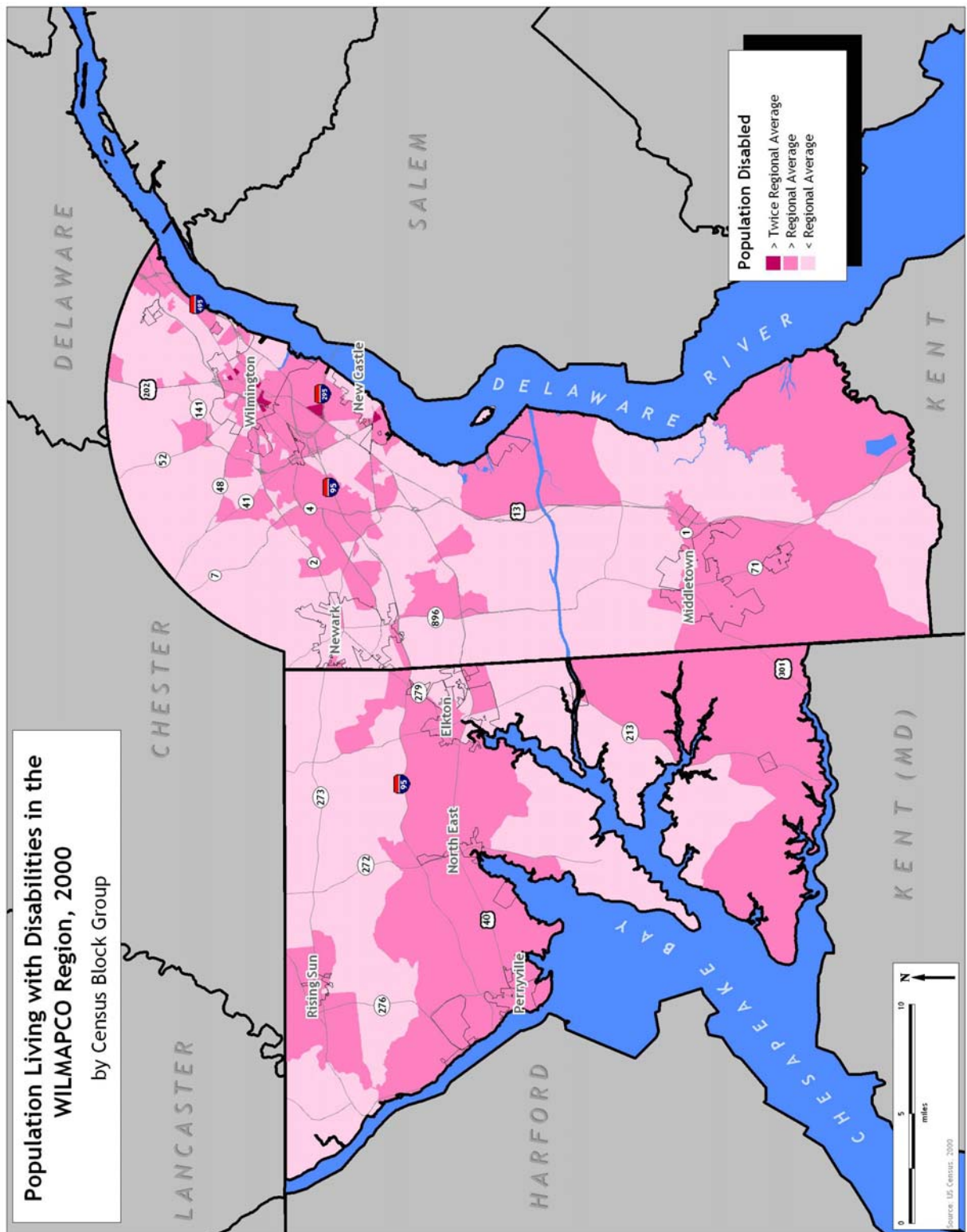


A senior shops on Union Street in Wilmington

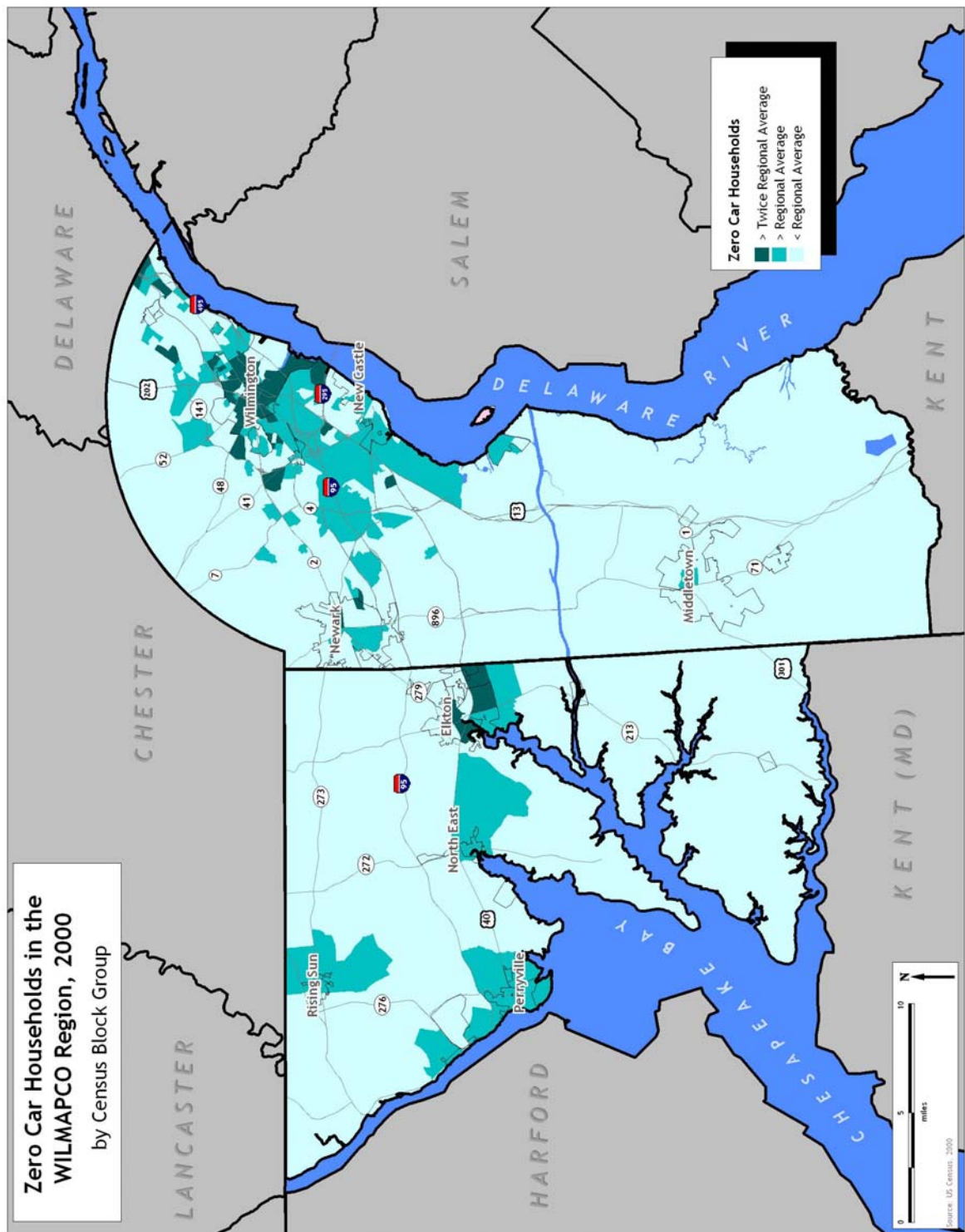
Map 1



Map 2



Map 3



A scoring system was employed to define TJ concentrations from these data. The table below illustrates the system.

TJ Scoring System Based on Population Percentage per Block Group

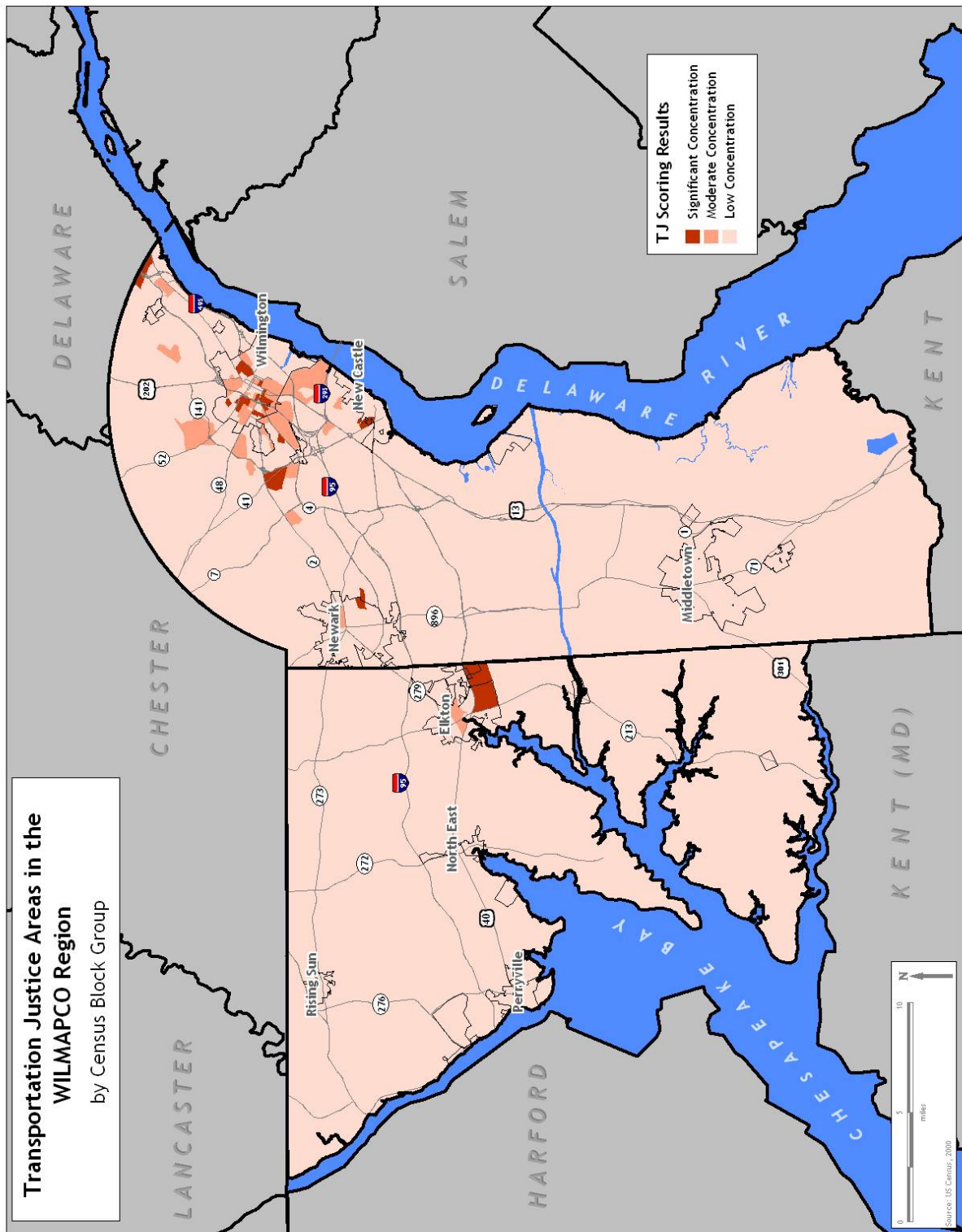
	> Average	Double Average
Elderly (65+)	1	2
Disabled	1	2
Zero-Cars	1	2
Total		6
0 to 3	Low	
4	Moderate	
5 to 6	Significant	

The scoring system, based on our 2003 Environmental Justice Report, is fairly simple. Block groups (the finest geography available for these data) where the percentage of a given population is greater than the regional average receive one point. Those where the percentage is more than double the regional average receive two. If a block group shows a percentage less than the regional average it receives no points.

Using this system, each of our region's 404 block groups were given points based on the percentage of elderly, disabled, and zero-car households found within them. Once completed, the scores were tallied. Block groups that scored less than 4 points were determined to have a "low" concentration of TJ groups, while areas which scored 4 points show "moderate" concentrations. Those with 5 or 6 points displayed a "significant" concentration.

Identified TJ concentrations were found solely in the northern half of the region, along the I-95 corridor from Elkton to the Delaware/Pennsylvania line. A map of the identified areas follows.

Map 4



Regional Demographic and Socio-Economic Survey

General comparisons can be made between areas of low, moderate, and significant TJ concentrations. These can be found in tabular form below.

Statistical Profile: TJ Areas, 2000			
	Level of Concentration		
	<i>Low</i>	<i>Moderate</i>	<i>Significant</i>
Total Block Groups	339	46	18
Population	510,537	53,698	20,328
Households	190,006	20,682	9,543
Percent Elderly	10.9%	13.1%	21.3%
Percent Disabled	15.4%	25.7%	30.1%
Percent Zero-Car HH	5.6%	24.4%	30.3%
Racial/Ethnic Breakdown			
White	80.2%	47.9%	51.2%
Black	14.2%	41.6%	43.0%
Asian	2.5%	1.0%	1.2%
Hispanic	3.8%	13.2%	5.7%
Economic Indicators			
Median HH Income	\$57,979	\$33,637	\$31,229
Percent of HH Below Poverty	6.0%	19.2%	19.4%
Mode of Transport to Work			
Drive Alone or Carpooled	91.7%	78.9%	83.0%
Public Transportation	2.7%	10.3%	6.9%
Walk	2.1%	6.3%	6.8%
Average Travel Time to Work (in minutes)			
Public Transportation	37	34	38
Non-Public Transportation	24	20	21
All Modes	24	23	23

Source: U.S. Census

As expected, the percentage of elderly, disabled, and zero-car households increased with the level of concentration. On average, 21% of the population in significant areas was over 65 and 30% were disabled. Households without an automobile also averaged 30%.

Racial and ethnic differences abound. Areas of low concentrations (scoring a 3 or below) overall had the highest percentage of whites (80%) the fewest percentage of blacks (14%) and Hispanics (4%), and the greatest percentage of Asians (3%). Moderate (a score of 4) and significant (5 or 6) areas of concentration were about equally divided between whites and blacks.

Hispanics were most prevalent in moderate areas, comprising 13% of their population.

Economic indicators show a steady decline moving from low to significant concentrations. Median household income declines from about \$58,000 in block groups of low concentration to a little over \$31,000 in those of significant TJ concentration. Similarly, poverty rates increase. Six percent of individuals within areas of low concentration fell below the poverty line, compared to 19% in significant TJ areas.

The mode of transportation to work also differed sharply between the three levels of concentration. Car travel dominated areas of low concentration, the mode of choice for 92% of all commuters. While driving alone or carpooling was still the most common form of travel for workers in moderate and significant TJ areas, public transportation and walking were more widespread. The average travel time to work was 23 minutes for moderate and significant concentrations, a minute less than areas of low concentration. Public transit patrons in significant TJ areas were faced with the longest commutes at 38 minutes. Enhanced service in significant areas should decrease travel times and encourage new users.

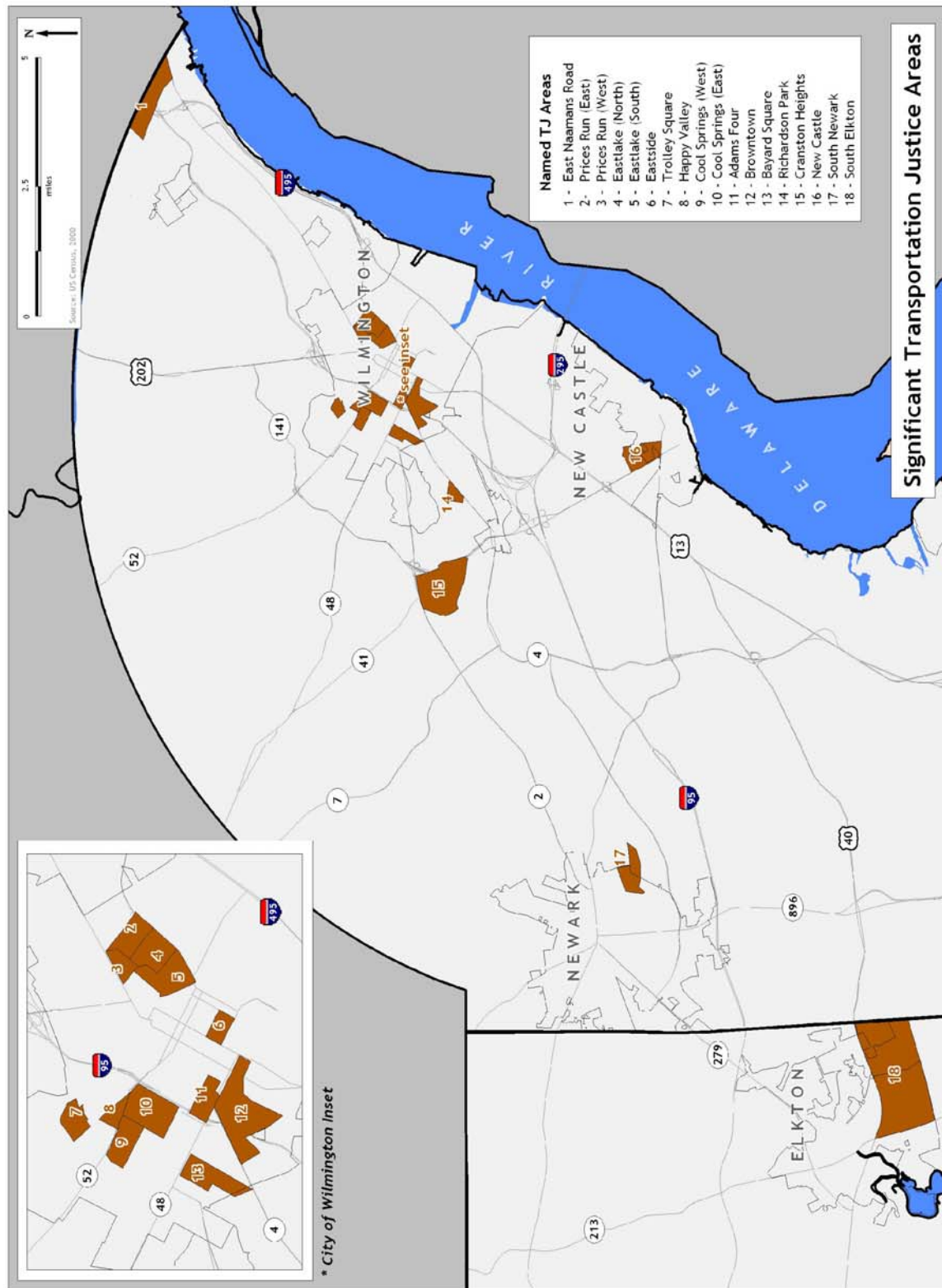
Detailed Demographic and Socio-Economic Survey

In total, 46 block groups were classified as moderate and 18 as significant TJ areas. Through isolating only the most significant concentrations, a more detailed demographic and socio-economic analysis can be provided.

Map 2 displays these areas. Names were given to each of the identified block groups to ease comparisons. Twelve of the 18 identified block groups fell within the City of Wilmington's boundaries. The remaining areas represent pockets of concentration across the northern swath of the WILMAPCO region.

Demographic and socio-economic diversity exist across significantly concentrated TJ areas and are illustrated in the subsequent tables. Population sizes for each of the TJ groups are listed along with the respected scores for each variable and a socio-economic breakdown.

Map 5



Demographic and Socio-economic Breakdown of Significant TJ Areas

Place Name	Population	Elderly	% Elderly	E Score	Disabled	% Disabled	D Score	Zero Car HH	% Zero Car HH	ZC Score	Total TJ score
Adams Four	1,008	201	19.9%	1	272	27.0%	2	192	37.9%	2	5
Bayard Square	1,195	212	17.7%	1	365	30.5%	2	123	22.6%	2	5
Browtown	721	109	15.1%	1	250	34.7%	2	52	19.3%	2	5
Cool Springs (East)	2,329	449	19.3%	1	592	25.4%	2	355	33.4%	2	5
Cool Springs (West)	783	256	32.7%	2	171	21.8%	1	151	35.0%	2	5
Cranston Heights	1,527	182	11.9%	1	456	29.9%	2	112	18.2%	2	5
East Naamans Road	2,031	452	22.3%	1	523	25.8%	2	217	19.8%	2	5
Eastlake (North)	887	117	13.2%	1	266	30.0%	2	79	29.3%	2	5
Eastlake (South)	985	159	16.1%	1	315	32.0%	2	99	27.9%	2	5
Eastside	1,292	455	35.2%	2	608	47.1%	2	688	77.2%	2	6
Happy Valley	928	224	24.1%	2	179	19.3%	1	192	27.1%	2	5
New Castle	801	198	24.7%	2	186	23.2%	2	33	9.0%	1	5
Prices Run (East)	870	106	12.2%	1	255	32.4%	2	62	21.5%	2	5
Prices Run (West)	1,190	191	16.1%	1	401	33.7%	2	282	52.7%	2	5
Richardson Park	637	118	18.5%	1	152	23.9%	2	46	17.8%	2	5
South Elktion	1,259	380	30.2%	2	272	21.6%	1	89	17.7%	2	5
South Newark	1,143	289	25.3%	2	280	24.5%	2	79	17.2%	2	6
Trolley Square	742	225	30.3%	2	219	29.5%	2	37	9.8%	1	5

Place Name	Med Inc.	% HH Below Poverty	% Unemployed	% White	% Black	% Asian	% Hisp.	Avg TT PT	Avg TT ALL	% Drove Alone or Carpooled	% Public Transit	% Walked
Adams Four	\$21,763	36.7%	9.2%	12.4%	79.9%	1.6%	9.5%	25	17	74.3%	6.7%	19.1%
Bayard Square	\$31,588	11.6%	0.9%	67.9%	23.8%	0.0%	10.2%	38	20	88.6%	6.5%	4.9%
Browtown	\$29,286	18.9%	13.1%	63.1%	29.1%	0.0%	15.8%	67	23	91.6%	4.4%	1.3%
Cool Springs (East)	\$31,250	14.7%	3.3%	44.4%	48.3%	1.0%	10.0%	59	26	79.9%	8.0%	12.2%
Cool Springs (West)	\$37,232	17.4%	5.7%	84.4%	11.7%	0.8%	3.4%	14	22	90.7%	6.3%	3.0%
Cranston Heights	\$38,636	11.9%	8.2%	61.4%	30.8%	1.9%	9.3%	30	19	86.6%	3.0%	7.9%
East Naamans Road	\$30,958	9.6%	1.4%	63.4%	28.9%	4.3%	2.9%	69	23	88.4%	2.3%	6.4%
Eastlake (North)	\$35,962	25.9%	7.6%	2.5%	92.6%	0.0%	2.5%	36	20	69.7%	13.6%	11.8%
Eastlake (South)	\$27,697	24.8%	7.3%	3.1%	93.6%	0.4%	2.5%	27	26	79.0%	16.9%	4.1%
Eastside	\$7,453	57.8%	20.2%	5.1%	90.1%	0.5%	4.6%	27	24	59.7%	26.2%	14.1%
Happy Valley	\$40,664	7.1%	1.8%	90.1%	6.5%	1.8%	1.7%	36	23	83.2%	7.6%	9.3%
New Castle	\$35,469	8.4%	9.1%	86.4%	9.9%	0.1%	2.6%	40	18	94.5%	5.5%	0.0%
Prices Run (East)	\$29,853	19.1%	15.1%	8.4%	84.7%	0.5%	7.0%	51	24	76.4%	16.6%	5.8%
Prices Run (West)	\$14,133	37.2%	12.9%	3.4%	92.8%	0.3%	3.0%	18	28	74.9%	15.7%	7.6%
Richardson Park	\$36,397	2.7%	3.2%	94.3%	1.4%	0.3%	3.8%	22	21	93.6%	6.4%	0.0%
South Elktion	\$29,797	8.4%	5.0%	87.4%	9.0%	1.1%	1.7%	90	24	93.8%	2.0%	0.0%
South Newark	\$38,365	13.9%	2.5%	81.4%	12.0%	1.3%	6.2%	0	28	96.2%	0.0%	3.8%
Trolley Square	\$45,625	4.2%	0.0%	93.8%	3.8%	0.5%	1.3%	36	19	83.8%	6.4%	7.7%

E Score= Elderly Score; D Score= Disabled Score; ZC= Zero Car; HH= Household; Avg. TT PT= Average Travel Time; Public Transportation;

Avg. TT ALL= Average Travel Time, All Transportation

Source: U.S. Census

Identified TJ areas encompass a wide-range of class, racial, and commuting types. The Trolley Square area in western Wilmington boasts the highest median household income, no unemployment, and a poverty rate that is half of its county's average. Eastside, on the other hand, suffers economically. Over half (58%) of its residents live below poverty and one out of five (20%) are unemployed.

Racial and ethnic diversity thrives. Significant TJ areas of Prices Run and Eastlake in Wilmington are predominately black (85-94%), whereas other neighborhoods in Wilmington and places outside of the city like South Elkton (87%) and Richardson Park (94%) are predominately white. Relative to their size, Hispanics are heavily represented in the racially-mixed, working-class neighborhoods of Bayard Square (10%) and Browntown (16%) in Wilmington; Asians top 4% in the East Naamans Road area.

Travel times to work as well as modes of travel show an equally wide range. A few neighborhoods benefit from relatively quick trips to work via public transit. Cool Springs (West) and Prices Run (West) enjoyed average commutes under 20 minutes. In contrast, South Elkton (90 minutes) and East Naamans Road (69 minutes) did not. Intense use of personal automobiles helped balance overall commuting times in poorly served areas. TJ areas poorly served by public transit with high commuting times should become candidates for additional service.

Transit use by commuters varied. Figures ranged from 0% in South Newark to 26% in Eastside. Generally, walking trips to work were more common in significant TJ areas within Wilmington; three neighborhoods outside of the city (New Castle, Richardson Park, and South Elkton) had no walkers. TJ areas where transit use and walking trips are minimal should be examined for potential improvements. Those with high numbers of transit patrons and walkers should be preserved and enhanced where necessary.

Section 3: Analyzing the System

There is no bus stop where I live; I try to do the best I can.

-Senior resident, Elkton

*I am at least a mile from public transportation with no sidewalk accessibility. . .
This frightens me!*

-Senior resident, Talleyville

Combining quantitative and qualitative methodologies, this section provides a multi-tiered analysis of the existing transportation infrastructure with concern to our region's TJ populations. Accessibility to bus stops, the frequency of transit trips, safety concerns, and overall walkability within TJ areas will be discussed. To add a needed regional context, an overview of the results from our senior transportation survey closes this section.

Transit Stop Accessibility

Providing transportation alternatives like public transit to TJ residents is important. In our analysis of bus-stop accessibility, we found encouraging results. There is however, room for improvement.

To complete this analysis, the over 2,000 regional bus stops in New Castle County were first overlaid against households within identified TJ areas. A quarter-mile buffer was then applied to each bus-stop, simulating acceptable walking distance. Finally, the percentage of households within each TJ area that fell within a buffer was calculated. To add further dimension, bus-stop accessibility to age-restricted communities in the county was also measured.

When compared to New Castle County as a whole, TJ areas within that county fared well. Only 51% of households within the county fall within a quarter-mile of a bus stop. Contrast this figure to 87% of households in moderate TJ areas and 95% of those within significantly concentrated TJ areas. The discrepancy stems from geography. TJ areas are found exclusively in the I-95 corridor, the heart of the county's public transit system. Moreover, the vast majority of identified areas are located in the city of Wilmington, where transit accessibility nears 100% for all households.

When the data are broken down to the individual areas, differences emerge. The following tables will illustrate this. Note: areas in which 100% of households fell within a quarter-mile of a transit stop are excluded.

Transit Stop Accessibility for Moderate TJ Areas

Moderate TJ Area	Within 1/4 mile of a stop
Latimer Estates	42.3%
Webster Farms	48.3%
Cedar Heights	53.0%
Canby Park	54.1%
East Main St., Elkton	60.4%
Greenville	64.6%
Five Points	65.2%
Downtown Newark	75.4%
Minquadale	79.2%
Midway	81.8%
Manor Park	86.8%
Browntown	87.2%
Cleland Heights	87.4%
Claymont	89.2%
West Main St., Elkton	95.0%

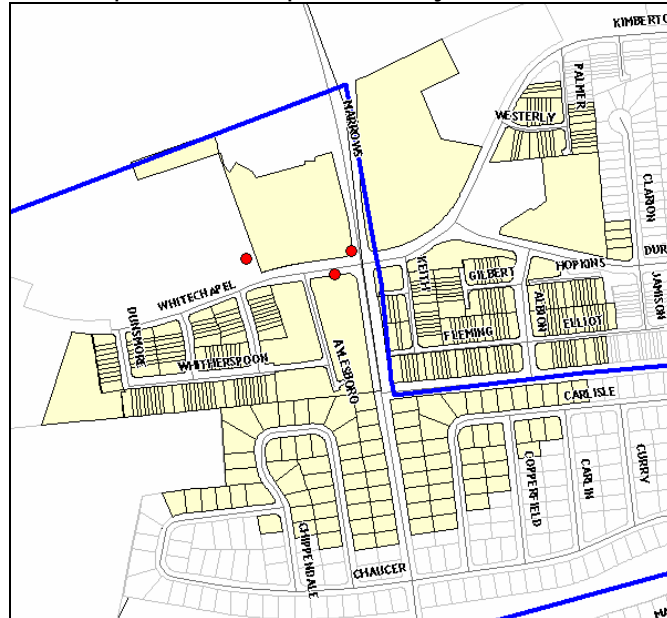
Transit Stop Accessibility for Significant TJ Areas

Significant TJ Area	Within 1/4 mile of a stop
South Newark	65.0%
South Elkton	72.4%
Cranston Heights	76.3%
New Castle	80.8%
Richardson Park	92.2%
East Naamans Road	99.1%

While most TJ households are within walking distance to a bus stop, some are not. Two moderate TJ areas—Latimer Estates, which rests along Wilmington's southeast border, and Webster Farms, southeast of Arden—fell short of the county's average for household bus-stop accessibility. Cedar Heights, just northwest of Newport, and Canby Park in Elsmere were not much better. Areas such as those above need to be examined for service improvements, if practicable.

Significant TJ areas had consistently better accessibility. Map 6 below illustrates bus-stop accessibility in South Newark where 65% of households fell within a quarter-mile of one of the neighborhood's three stops (depicted by red dots). Yellow-colored parcels are those within the buffer, white ones fall outside. The blue border represents a portion of the neighborhood's boundary.

Map 6: Transit Stop Accessibility, South Newark



Beyond just TJ areas, this analysis was expanded to include age-restricted, adult communities in New Castle County. The next table includes a listing of such neighborhoods in the county (presently existing or planned) and if it falls within a quarter-mile of a transit stop.

Age-Restricted Communities: Public Transit Stop Accessibility

Community	Location	Within 1/4 mile	
		Units	of a stop
Churchmans Meadows	Newark	146	Yes
Cloutier Court	Wilmington	16	Yes
Crossings at Christiana	Bear	141	Yes
Fountainview Apartments	Newark	249	Yes
Little Falls Village	Wilmington	107	Yes
Little Falls Village II	Wilmington	36	Yes
Old Milltown Village	Newark	115	Yes
Paper Mill Falls	Newark	32	Yes
Steeple Glen	Newark	110	Yes
Traditions at Christiana	Newark	99	Yes
Village of Brandywine	Wilmington	184	Yes
Village of Fox Meadow	Newark	194	Yes
Village of Hershey Run	Newport	192	Yes
Village of Rocky Run	Wilmington	96	Yes
White Chapel	Newark	n/a	Yes
Wildflower Estates	Newark	184	Yes
(Unnamed) 3712 Newport Gap Pike	Wilmington	30	Yes
Adare Village	Hockessin	50	No
Bayberry South	Middletown	1191	No
Brennan Estates	Newark	n/a	No
Briarcreek	Newark	31	No
Canalview at Crossland	Middletown	257	No
Elkins-Van Allen Farm	Middletown	273	No
Ivin Woods	Newark	62	No
Longmeadow	Middletown	243	No
Meridian Crossing	Bear	738	No
Old Baltimore Pike LLC	Newark	32	No
Shuman Property Housing	Newark	90	No
Sniadowski Farm	Newark	224	No
Spring Arbor	Middletown	n/a	No
Springer Woods	Wilmington	38	No
Springmill	Middletown	362	No
Traditions at Pike Creek	Newark	76	No
Traditions at Southridge	Newark	54	No
Village of Jester Crossing	Bear	54	No
Village of Long Creek	Newark	100	No
Village of Red Lion Creek	Bear	85	No

Sources: NCC Dept. of Land Use; WILMAPCO

In total, 37 existing and planned adult communities were found in New Castle County. Of those, over half (20) were outside walking distance to an existing transit stop. This translates into about 4,000 units outside a quarter-mile of a transit stop versus about 2,000 within.

The analysis exposes the lack of public transit availability in the southern portion of the county. Of the 17 communities within walking distance to a bus stop, only one (Crossings at Christina) was situated south of Newark. In contrast, almost half of the existing or planned communities outside bus stop buffers were in Bear or Middletown. It is important that developers of these communities provide the access necessary for service. This will allow further expansion of bus service in central or southern New Castle County to target these neighborhoods.

TJ Neighborhood Walkability

All neighborhoods should support solid non-motorized access to institutions (such as shops and schools), local parks and transit stops. Unfortunately, too many residential areas in the WILMAPCO region do not. Social isolation, overuse of personal automobiles, and high rates of bicycle and pedestrian collisions are all too common outcomes.

Derived from field notes of WILMAPCO staff and crash data, this section provides a broad overview of each significant TJ area's walkability. Emphasis is placed upon internal and external connections to institutions, parks and transit stops. Areas where the non-motorized infrastructure (most commonly sidewalks) is lacking are noted. Further, DelDOT crash figures from 2000 through much of 2005 will be displayed. In these graphs, the total number of crashes within a given TJ area is provided as well as those intersections with particularly high collision rates. Finally, air photo maps are provided for each identified area. Figures and maps for South Elkton were not available.

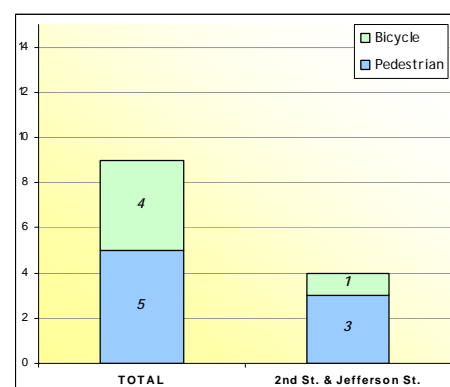
Adams Four

The Adams Four area, located just south of downtown Wilmington, has excellent connections to local establishments. As is the case in most of the city, sidewalks line roadways and crosswalks ease crossings at busy intersections. Parks and institutions such as the Friends Meeting House, the local senior center, Adams Four Shopping Center, and the 4th Street commercial corridor are easily accessed. Connections to the area's eleven transit stops along 2nd and 4th Streets are likewise excellent.



Pedestrians along 4th Street in Wilmington

Adam Four's Ped/Bike Crashes: 00-05



Source: DelDOT

Room for improvement does exist. Connections to the Adams Four Shopping Center are in need of slight improvements. Notably, the sidewalk stretch along the southern side of 4th Street from Madison to Monroe Street could be more

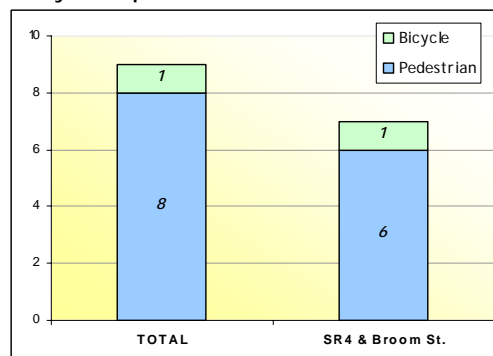
comfortable. Given the heavy turning traffic, the addition of pedestrian signage and better marked crosswalks would enhance area walkability. In addition, the pedestrian crossing at 3rd and Monroe Street should be improved through striping and signage. This will provide an enhanced alternative connection to the shopping center from the east.



Bayard Square

The Bayard Square area in southwest Wilmington boasts good connections to local parks, churches, establishments, and bus stops. Canby Park, Kosciuszko Park, St. Elizabeth's Church, Bayard School and other establishments are served by solid non-motorized infrastructure. The same holds true for Bayard Square's fourteen bus stops, along Lancaster Avenue and Broom Street.

Bayard Square's Ped/Bike Crashes: 00-05



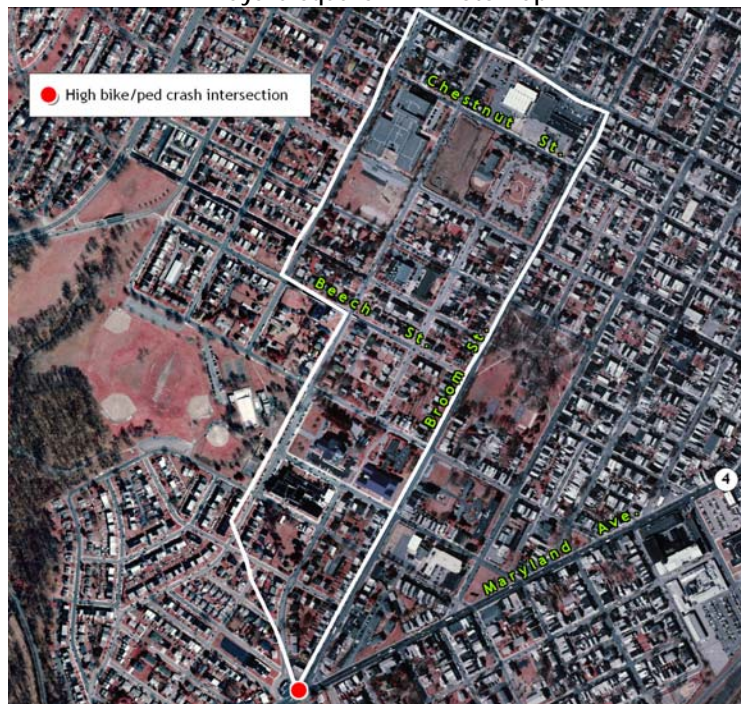
Source: DelDOT



SR 4 at Broom Street in Wilmington

As is the case with every TJ area, improvements are possible. Perhaps the neighborhood's main issue lies at the busy intersection of Broom Street and SR 4. Crossing here on foot to reach three surrounding bus stops is dangerous. A re-examination of the intersection is warranted, along with the possible addition of striped crosswalks, improved signage, and other measures to safely move pedestrians. Further north, Lancaster Avenue would benefit from enhancements at several locations. These include intersections with Delmore Street (improve pedestrian crossing at the Post Office), Rodney Street (more pronounced crosswalks), and Broom Street (improve pedestrian connections to the local strip mall). Other suggestions include the addition of crosswalks at various locations into Kosciuszko Park and crosswalks at St. Elizabeth's and Broom Street for better access to a family doctor office along Broom Street.

Bayard Square: Air Photo Map

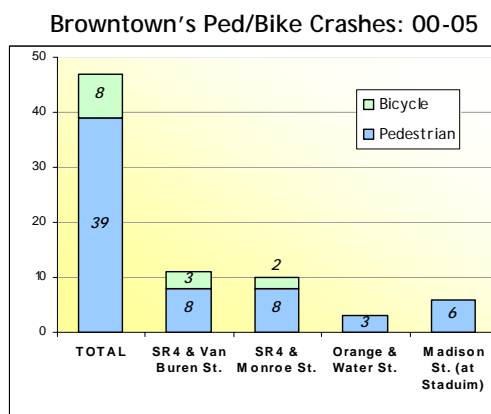


Browntown

Browntown, which lies between Maryland Avenue (SR 4) and the Christina Riverfront in Wilmington, has fair connections to local establishments and bus stops. Shops along the south side of SR 4 are serviced through a solid sidewalk system leading from the neighborhood's residences. Crossing SR 4 is, however, dangerous. This makes access to shops, parks and schools difficult. Browntown has easy access to the Riverfront via Beech Street (from SR 4) and from Duncan Street (which feeds into Beech). Bus stop accessibility mirrors institutional connections. While access to the four stops along the southern side of SR 4 is excellent, access to the three westbound stops along the northern side is more difficult.



Maryland Avenue at Beech Street in Wilmington



Source: DeIDOT

The re-examination of intersection layouts along SR 4 through Browntown tops the list of recommendations. Access to the Pulaski School must be improved via the addition of a signalized crosswalk at Cedar Street and SR 4. Likewise, improved crosswalks at the following intersections with SR 4 will enhance walkability in the region: Harrison, Oak, and Beech Streets. In addition, overgrown vegetation along the western side of Beech Street (between I-95 and SR 4) should be cleared to improve access to the Riverfront.

Many of the concerns raised above should be resolved by the Maryland Avenue (Franklin Street to Beech Street) project found within the Wilmington Initiatives Plan. A five-step process, the plan will tackle area traffic calming and the addition of landscaping amenities.

Browntown: Air Photo Map



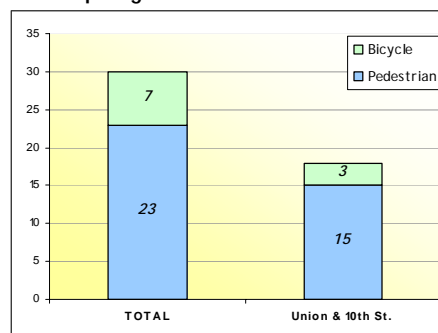
Cool Springs

East

Good non-motorized connections to establishments and excellent connections to transit are in place throughout the Cool Springs (East) region in Wilmington. Tilton Park, the Greek Orthodox Church, and a host of local shops and establishments are interconnected through a network of solid sidewalks and crosswalks. Nine transit stops service the heart of the region, along 8th Street and 9th Street.

Improvements in walkability should center on the eastern side of Tilton Park. Striped crosswalks should be added to improve access to the park; sidewalks along Franklin Street, between 8th Street and 9th Street need replacement. In addition, a crosswalk would improve walkability at the intersection of 9th Street and Jackson Street. This will serve to better connect pedestrian traffic along the neighborhood's two busiest streets.

Cool Spring's Ped/Bike Crashes: 00-05



Source: DelDOT

Cool Springs East: Air Photo Map



West

The Cool Springs (West) region displays excellent connections to parks, local establishments and bus stops. Heavy commercial activity along Union and Lincoln Streets and Pennsylvania Avenue, St. Anthony's Church, and other area establishments are serviced via solid non-motorized infrastructure. Seventeen transit stops dot the region. Eight rest along Pennsylvania Avenue, five along 9th Street, and two each along Union and Lincoln Street.

Union Street at 10th Street in Wilmington

To enhance walkability, improvements should be made at two intersections. Crosswalks should be striped at Lincoln Street and Pennsylvania Avenue to ease access to westbound stops. Further, Union Street at 10th Street shows a particularly high non-motorized crash rate. The addition of a crosswalk, signage, or a traffic signal may curb future collisions. Generally, area crosswalks could use a coat of fresh paint.



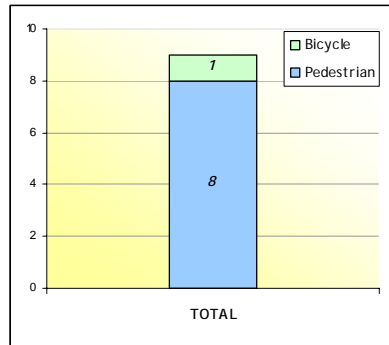
Cranston Heights

The Cranston Heights region, located just west of Elsmere, suffers from poor non-motorized connections to parks, establishments and transit stops. Difficult access to area institutions, such as Greenbank Park, Prices Corner, Stella Plaza and Delcastle High School is the norm. Likewise access to the region's twenty-one transit stops, especially the fourteen along Newport Gap Pike (SR 62), is challenging.

Non-motorized infrastructure throughout the region is often non-existent or lies in poor condition. At grade, deteriorated sidewalks run the length of SR 62, between SR 2 and Belvedere and along Old Capitol Trail, west of SR 62. No sidewalks are in place along Newport Avenue, south of Old Capitol Trail towards the high school. Around the Absalom Jones Center on Kiamensi Road,

no sidewalk exists between Clyde Street and Meadowbrook Avenue. East of the center on Kiamensi Road, sidewalk conditions are poor. These factors make connections between residential areas and commercial establishments difficult.

Cranston Height's Ped/Bike Crashes: 00-05



Source: DeIDOT

Replacing these sidewalks, as well as refreshing and/or adding striping at the following intersections will improve walkability to both establishments and transit:

- National Guard Armory at SR 62
- SR 62 and Cranston Avenue
- SR 62 and Clayton Avenue
- Outlet road onto Old Capitol Trail, behind Acme
- Newport Avenue and Kiamensi Road
- Maple Avenue and Kiamensi Road
- Lloyd Street and Kiamensi Road
- Cedar Avenue and Kiamensi Road
- Livingston Avenue and Kiamensi Road
- Stanley Avenue and Kiamensi Road



SR 62, north of Belvedere

Moreover, two major intersections warrant special attention. While a solid sidewalk system is in place along SR 2, crossing the highway to destinations north is very dangerous. The addition of a striped crosswalk and a signalized

crosswalk at the SR 2/SR 62 intersection would provide a safer connection to Greenbank Park. Likewise, the crossing at SR 62 and Old Capitol Trail is difficult. Improvements here will allow for better walkability in this commercial corridor. Finally, signage should be added to deter cars from parking on sidewalk along the northern side of Old Capitol Trail, east of SR 62.



Eastlake

South

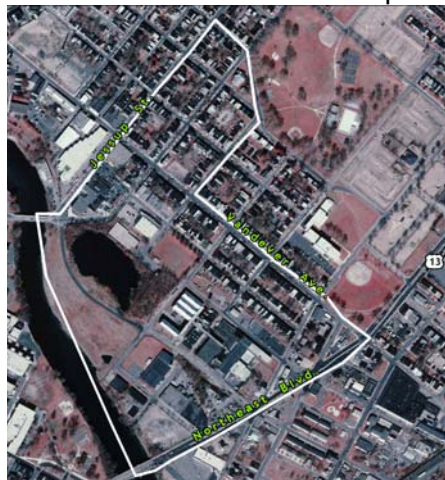
Poor pedestrian connections to area institutions and transit abound in the Eastlake (South) region. Shops and churches along Vandever Avenue, the commercial corridor of Northeast Boulevard, the Boys Club, and the area's thirteen bus stops are serviced via a broken, but solid sidewalk infrastructure. Like other areas of Eastlake and Prices Run in Wilmington, improvements are greatly needed—especially at intersections.

Non-motorized facilities along Jessup Street, Vandever Avenue, 17th Street and Northeast Boulevard should be addressed. Eastlake (South)'s most pressing issue involves the dangerous intersection of Jessup Street at 14th Street. The layout of this area should be re-examined and possibly modified to include: a crosswalk across Jessup Street, a stripe from the bus stop on Pine Street to a nearby sidewalk, additional sidewalk along Pine Street (near the bus stop), and crosswalks at Pine Street and 14th Street. Additionally, crosswalks should be added at Jessup Street and 23rd Street. Signalized crosswalks are necessary at Jessup Street and Vandever Avenue to meet bus stops and establishments.

Along Vandever Avenue, fresh sidewalk and crosswalks should be provided at key locations. At the intersection with Pine Street, deteriorating sidewalk should be replaced on the southwest corner of the intersection, as well as along the south side of Vandever Avenue, east of Pine Street. Signalized crosswalks at the intersection are also recommended. At its meeting with Spruce Street, crosswalks should be added and crumbling sidewalk needs replacement along the southern side of Vandever Avenue, east of the intersection. Striped crosswalks are also necessary at Vandever Avenue's intersection with Thatcher Street.

Improvements along 17th Street and Northeast Boulevard round out recommendations for Eastlake (South). Sidewalk should be added on the northeast corner of 17th Street at Thatcher Street, to ease connections to a pair of bus stops and a local park. Crosswalks are necessary at 17th Street's intersection with Spruce Street and Church Street, to provide a better pedestrian connection to the local Boys Club. Along the northbound side of Northeast Boulevard, crosswalks should be installed at these side-streets: 12th Street, Thatcher Street, 14th Street, Heald Street, 16th Street, and Lodge Street. Similarly, side-street crosswalks should be painted at Northeast Boulevard's meeting with: 13th Street, 14th Street, Thatcher Street, 18th Street, and Heald Street.

Eastlake South: Air Photo Map



North

The Eastlake (North) region displays fair connections to local parks and area bus stops. As the neighborhood occupies the central portion of Wilmington's Eastlake, many of the recommendations that influence this area were covered in the paragraphs above. Still, a number of additional improvements to pedestrian connectivity are possible. These primarily relate to sidewalk and intersection conditions.

Conditions along three neighborhood streets require upgrades. On Thatcher Street, deteriorating sidewalks exist on the northwest corner of Vandever Street and along both sides at 23rd Street. Crosswalks should be added at 22nd Street, 23rd Street, and 24th Street to improve walkability. On Locust Street, sidewalks should be improved towards 22nd Street and along Locust's eastern side, north of 17th Street. Crosswalks are needed at 22nd Street, 23rd Street, and Vandever Avenue. As with the other Eastlake area, Eastlake (Northern)'s stretch of Northeast Boulevard requires side-street crosswalks. Along its northbound side, these include the intersections of: 22nd Street, 23rd Street, 24th Street, and 25th Street. Targeted southbound intersections are: 22nd Street, 24th Street, and 25th Street. These recommendations will ease access to local parks, institutions, and commercial activity.

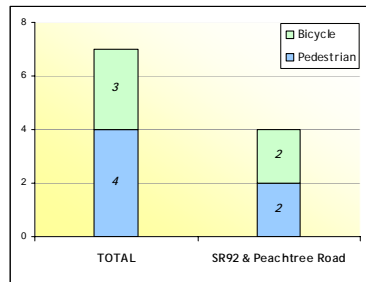
Eastlake North: Air Photo Map



East Naamans Road

Excellent connections to institutions and good connections to local transit stops exist in the East Naamans Road area, just south of the Pennsylvania border. Solid sidewalks and pedestrian crossings along Naamans Road (SR 92) provide an easy connection into the Tri State Mall, the neighborhood's commercial hub. The same can be said of the area's thirteen bus stops.

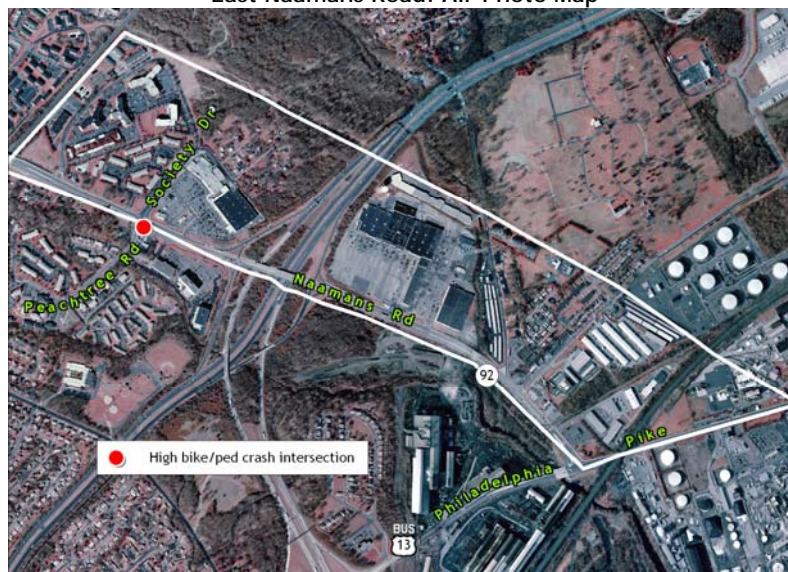
East Naamans Road's Ped/Bike Crashes: 00-05



Source: DelDOT

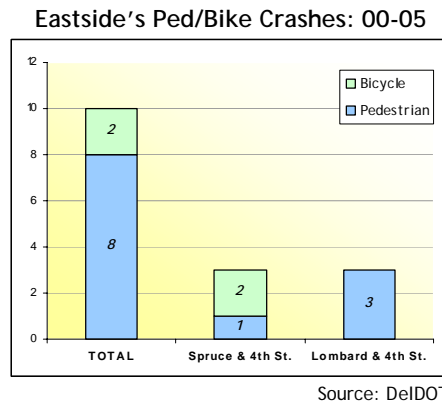
There are, however, opportunities to improve walkability, especially south of the mall. Sidewalk should be added and/or replaced along Ridge Road, between SR 92 and the PA line. This will provide improved access to shops along Ridge Road and the Naamans Road corridor for residents. Further, overgrown vegetation should be cleared on Philadelphia Pike at Bridge 185 and striping repainted on Society Drive at the Tri State Mall to improve walking conditions.

East Naamans Road: Air Photo Map



Eastside

The Eastside area in Wilmington has fair connections to local parks, establishments and transit stops. Shops along 4th Street, Pyle Elementary School, and the Herman Holloway Senior Park are serviced by deteriorating sidewalk infrastructure. The small region's twelve transit stops—situated along Walnut, 4th and Spruce Streets—are likewise in need of enhanced non-motorized access.



Generally, there is a need to replace sidewalks and add crosswalks throughout the region. Specifically, this includes the crumbling sidewalk stretch on 7th Street, from Kirkwood to Pine Street; 7th Street and Lombard Street to the park's edge on the south; 4th Street at Pine Street; and along the northern side of 6th Street, west of Spruce Street.



Bus Patrons on Walnut Street in Wilmington

Striped crosswalks would enhance walkability around the elementary school at the following locations: Pine Street at 7th, 6th, and 5th; Lombard Street at 7th and 6th. Crosswalks and other suggested measures to improve access to bus stops, local establishments and the downtown core are listed below:

4th Street at

- Poplar Street: add side-street crosswalks and bus pad
- Lombard Street: add side-street crosswalks
- Pine Street: add crosswalks and bus pad
- Spruce Street: add signalized crosswalk, crosswalk(across 4th), and buspad

Spruce Street at

- 5th Street: add side-street crosswalks
- 6th Street: add crosswalks
- 7th Street: add side-street crosswalks

Walnut Street at:

- 5th Street: add side-street crosswalks; explore other measure to ease crossing (bump-outs, blinking signal)
- 4th Street: add crosswalks

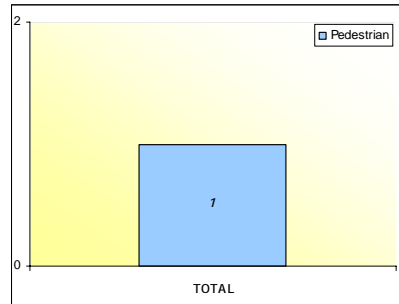
A Wilmington Initiatives Project, Walnut Street (Front Street to 16th Street,) may address the last two concerns. Sidewalks will be refurbished, street trees planted, lighting improved, and bump-outs constructed at key intersections.



Happy Valley

The Happy Valley region in western Wilmington boasts good connections to area establishments and transit. Local parks, senior centers, churches (St. Stephens and Westminster), and other establishments such as Ursuline Academy and Trolley Square are all readily accessible through existing non-motorized infrastructure. The same can be said of the area's multiple bus stops, which line Delaware (10) and Pennsylvania (8) Avenues.

Happy Valley's Ped/Bike Crashes: 00-05



Source: DelDOT

The intersection of Clayton Street and 16th Street at Delaware Avenue should receive special attention. Connecting residences to the busy Trolley Square commercial center, this three-way intersection should be both signalized and striped for pedestrian use. The Trolley Square Streetscape project, found in the Wilmington Initiatives Plan will address pedestrian improvements around this commercial hub. In addition to enhanced landscaping, new sidewalk will be added in the area.

However, further recommendations can be made. Crosswalks should be better marked at a number of busy intersections. These include: Franklin, Clayton, Rodney, Broom, and Harrison Streets and Pennsylvania Avenue; and Franklin, Broom, and Rodney Streets at Delaware Avenue.

Happy Valley: Air Photo Map



Prices Run

West

Fair connections to local establishments and transit stops are in place within the Prices Run (West) region in Wilmington. Sidewalks are generally in good condition, enabling access to shops along Market Street, Brown Burton Winchester Park, and the region's twelve transit stops. Crosswalks throughout the area, however, must be re-examined.

Along Market Street, which acts as the area's western boundary and is home to a number of businesses and eight transit stops, the following intersections should be improved via these proposed enhancements:

- 30th Street: add signalized crosswalk, add striping
- 29th Street: add crosswalks
- 28th Street: add signalized crosswalk
- 27th Street: add a second signalized crosswalk, add striping
- 26th Street: add signalized crosswalk, add striping
- 25th Street: add crosswalks
- 24th Street: add crosswalks



Bicyclist on Market Street in Wilmington

Deteriorating sidewalk conditions on Market Street, between 26th and 27th Streets should be addressed. Moreover, a curb-cut and crosswalks should be considered at the intersection of 25th Street and Pine Street. Likewise, the intersection of 25th and Jessup Street, where a solitary bus stop rests, should be re-examined for potential improvements. These include the introduction of a stop sign for motorists, a curb-cut and more pronounced striping. Generally, there is also a need to clear trash, which has accumulated on Prices Run (West)'s sidewalks. This debris impedes mobility and is a particular danger to the elderly and pedestrians with disabilities.

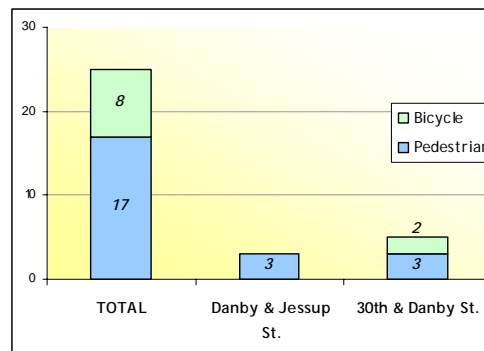
Prices Run West: Air Photo Map



East

Like Prices Run (West), Prices Run (East) boasts both fair connections to local establishments and transit. Like its western neighbor, sidewalks are generally solid. They ease access to area parks (Speakman and Brown Burton Winchester) and heavy commercial activity along Northeast Boulevard. Crosswalks throughout the area are, however, suspect. Improvements are needed to enhance walkability to Prices Run (East)'s institutions and its eleven bus stops.

Prices Run/Eastlake's Ped/Bike Crashes: 00-05



Source: DeIDOT

Striped crosswalks should be added around the area's local parks and along Northeast Boulevard. Specifically, crosswalks at 30th Street and Pine, Spruce, and Church Streets will enhance pedestrian connections to Speakman Park. A crosswalk at 26th Street and East Speakman will do the same for Brown Burton Winchester Park. Along Northeast Boulevard, a series of side-street crosswalks are warranted to improve connections to the corridor's transit stops. Along the northbound side, crosswalks should be added at 27th Street and 29th Street. Southbound, 27th Street and 28th Street would benefit from similar measures.

Further, overgrown vegetation on Northeast Boulevard, north of 27th Street should be cleared to enhance walkability.

Twenty-sixth Street—a primary connector through Prices Run—is due for crosswalks and other non-motorized improvements. Striped crosswalks should be added at both Heald and Locust Streets. Moreover, crumbling sidewalk requires replacement from Heald Street to Thatcher Street. The addition of sidewalk to fill a gap in the system is needed at the intersection of 26th Street and Locust Street, from the southeast corner to a nearby alley. Finally, the new development along 26th Street should eventually connect into the existing sidewalk infrastructure. Crosswalks connecting into the park should also undergo consideration.

Prices Run East: Air Photo Map



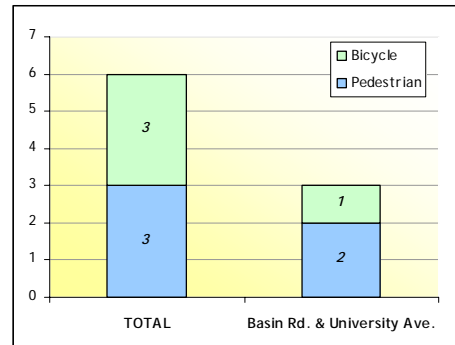
New Castle

The New Castle area, located just west of the City of New Castle along SR 141, has excellent connections to institutions, shops, and bus stops. William Penn High School, Carrie Downie Elementary School, as well as commercial establishments along SR 9 are serviced through solid non-motorized infrastructure. Seven bus stops along SR 141 are likewise well-served.



Bus patron along SR 141, west of New Castle

New Castle's Ped/Bike Crashes: 00-05



Source: DelDOT

Sidewalk conditions and area crosswalks are currently in optimal conditions for this area. Connections to major establishments and across busy intersections are in place. The only suggested improvement is the addition of crosswalks and or signage to ease the crossing at the First Baptist Church on SR 141.

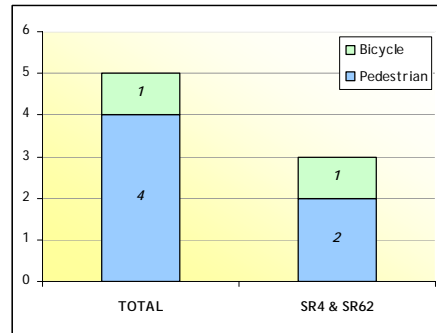
New Castle: Air Photo Map



Richardson Park

Richardson Park, situated just north of Newport off of Maryland Avenue (SR 4), has poor connections to parks and establishments and fair connections to local bus stops. Poor connections across SR 4 make resident access to places like the Boxwood Shopping Center and Banning Park difficult. The same is true for the three westbound transit stops along the eastern side of SR 4. Three additional stops along the opposite side are easily accessed.

Richardson Park's Ped/Bike Crashes: 00-05



Source: DelDOT



SR 4 at SR 62, north of Newport

Good sidewalk infrastructure exists along SR 4. As with the Browntown neighborhood, however, crossing on foot is a challenge. Access to the Boxwood Shopping Center and neighboring Banning Park is hindered by the busy intersection of SR 4 and SR 62. This intersection should be re-examined for improvements. These improvements could include traffic calming this stretch of SR 4 and the introduction of signalized crosswalks. Further north, the intersection of W. Champlain Avenue and SR 4 would benefit from striped crosswalks and a signalized crosswalk. Striped crosswalks should also be added across Hayden, Catalpa, Westmoreland, Champlain, Reamer, and Summit Avenues at SR 4. Moreover, sidewalk should be added along the south side of Reamer Avenue, towards SR 4 to improve regional walkability.

Richardson Park: Air Photo Map



South Elkton

The South Elkton region suffers from poor non-motorized connections to area establishments and institutions. Connections to the U.S. 40 commercial corridor, Holly Hall Elementary School and Southfield Park Shopping Center are often broken or undefined.

The introduction of solid pedestrian infrastructure along U.S. 40, as well as along key feeder streets tops the list of recommendations. Once in place, the intersections of U.S. 40 at White Hall Road and SR 213 will warrant special attention. Signalized crosswalks and signage would allow for safe connections across the busy roadway. While some sidewalk exists along White Hall Road, gaps include: from the KFC restaurant to Walter Boulden Street and from Walter Boulden Street to Norman Allen Street.

Good pedestrian infrastructure is in place around the Holly Hall Elementary School on White Hall Road. However, connections to the school are suspect. Only one pedestrian crossing exists to the school's north; no sidewalk is in place along the other side of the school; and no sidewalk connects the school into communities to the south. Moreover, a defined crosswalk should be considered to connect the school to the First Assembly of God Church, on the other side.



Pedestrian along White Hall Road in Elkton

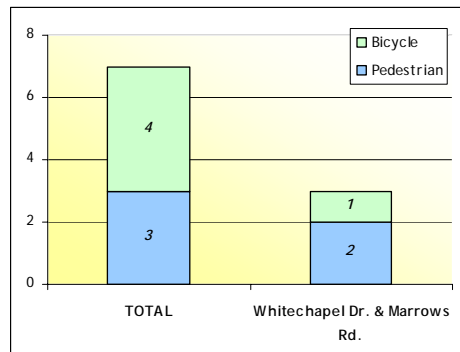
Further south, connections into the Southfield Park Shopping Center must be addressed. While solid sidewalk occupies the length of the shopping center, along SR 213 from Whitehall Road, links into it are non-existent. The intersection of White Hall Road at SR 213 should be enhanced to allow for safe pedestrian crossings. Moreover, sidewalk should be introduced along SR 213, from Whitehall Road to U.S. 40. This improvement, recommended by the Maryland Department of Transportation in a recent "Pedestrian Needs Inventory," will connect two key corridors and allow easy and safe non-motorized access for South Elkton's residents.

South Newark

The South Newark area has excellent connections to both establishments and its three bus stops. Newark's Senior Center, White Chapel Park, as well as Brookside Elementary school and other establishments along Marrows Road are serviced through solid pedestrian infrastructure. Proper crossings ease connections from sidewalks to pathways and non-motorized signage is prevalent throughout the region.

Suggested improvements in South Newark center upon sidewalk maintenance. Deteriorating sidewalk conditions exist along Marrow's Road, from Old Newark Road to Chaucer Drive. This is especially the case along its western stretch. Enhancing this sidewalk, as well as along portions of Chaucer Drive will improve area walkability even further.

South Newark's Ped/Bike Crashes: 00-05



Source: DelDOT

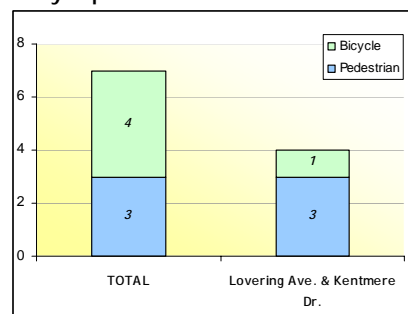
South Newark: Air Photo Map



Trolley Square

The Trolley Square neighborhood displays good connections to institutions and fair connections to area bus stops. Local parks, shops, the Acme super-market, and St. Ann's Church are interconnected via solid non-motorized infrastructure. Accessing some of the area's eight bus stops is more challenging.

Trolley Square's Ped/Bike Crashes: 00-05



Source: DelDOT

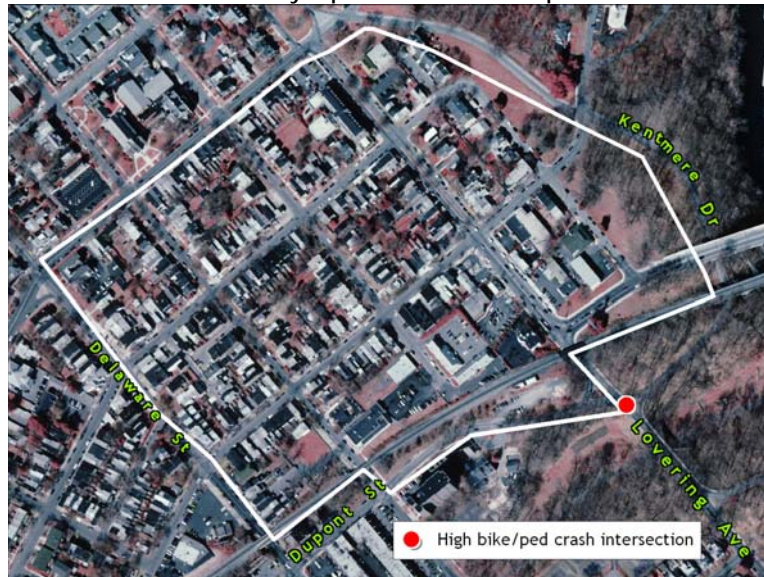
Primary recommendations center on accessing outside establishments and stops, especially at intersections. Connections to the Acme supermarket could be enhanced via the introduction of signalized crosswalks across Delaware Avenue at Dupont Street. Improvements are also warranted at another busy intersection, Lovering Avenue and Augustine Cutoff. Adding signalized crosswalks here will ease walkability, particularly to the largely inaccessible transit stop on the southern side of Augustine Cutoff. The intersection of North Dupont Street and Gilpin Avenue, where a bus stop rests, is dangerous for walkers. The addition of a stop sign on Dupont Street to calm fast-moving traffic, as well as enhanced pedestrian striping at the intersection is recommended. Further, overgrown vegetation at the stop should be cleared.



Sidewalk along Shallcross Avenue in Wilmington

Overall, solid sidewalks are in place throughout the Trolley Square neighborhood. However, some stretches of red-brick sidewalk are crumbling and should be replaced. These include: Along Delaware Avenue, between Scott and Lincoln Streets and along Shallcross Avenue, between Union and Lincoln Streets. In addition, pronounced striping should be added at the following intersections to improve connectivity: Delaware Avenue at both Union and Lincoln Streets, Lovering Avenue at both Union and Lincoln Streets, and Wawaset Street at Augustine Cutoff. Finally, overgrown vegetation should be removed along Lovering Avenue's sidewalk, between Augustine Cutoff and Dupont Street to improve area walkability.

Trolley Square: Air Photo Map



The Trolley Square Streetscape project, referenced in the Cool Springs section, targets pedestrian improvements within merchant district. Additional projects must be developed to address concerns raised above that exist in the area's residential sections.



Transit Stop along Augustine Cutoff in Wilmington

Transit Frequencies and Destinations

Even when a neighborhood is home to plenty of bus stops, infrequent service or lack of destination options diminishes its overall transit value. Analyzing data from DART and the Cecil County Department of Aging, this section will examine the frequency (in minutes) of transit service within significant TJ areas.

Moreover, in an effort to expose service gaps, each route's key destinations (such as downtown Wilmington or the Christiana Mall) will be outlined. Though an identified area may receive comparatively less frequent service, it should be noted that this may not necessarily point to an unmet need. Indeed, such an area may currently lack the patrons necessary to warrant additional trips.

In New Castle County, the median AM headway for all routes is 30 minutes. In other words, a bus could be expected to pass through the average route about twice each morning hour. The county's median PM headway is 32 minutes. Only three routes are in operation in the less dense Cecil County. A route connecting Elkton to Perryville operates about every hour and a half throughout the day. Another route serving Elkton and Glasgow, runs about every 68 minutes, AM and PM. A third route connecting Elkton to Newark operates every 45 minutes, morning and afternoon.

Adams Four

The Adams Four neighborhood in Wilmington is served by eight routes. These routes provide frequent service to points downtown and places like Prices Corner and the Christiana Mall. Route 4 travels along 4th Street, tying into downtown Wilmington from points west along SR 48. One of DART's most frequent routes, it runs every 14 minutes in the morning and 17 minutes in the afternoon. Another route, the 5, runs nearly as frequent from downtown Wilmington to the Christiana Mall. Routes 9, 19, and 36 connect Adams Four into Prices Corner and points beyond along Kirkwood Highway (SR 2) and SR 7. Trip frequencies on these lines vary, but most fall within the county's average range. Two other routes, the 24 and the 32, facilitate frequent service to Wilmington's downtown. Lastly, the Glasgow Express, or Route 42, shuttles between Wilmington and People's Plaza. With an AM frequency of 28 minutes and a PM counterpart of 30 minutes, headway along this route can be considered average.

Adams Four's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
4	4th St.	8	14	17	Downtown Wilmington, West Wilmington
5	Adams St., 4th St., Madison St.	13	18	21	Downtown Wilmington, Newport, Christiana Mall
9	2nd St., Lancaster Ave.	4	32	26	Kirkwood Highway, Wilmington
19	2nd St., Lancaster Ave.	4	30	17	Pike Creek, Stanton, Downtown Wilmington
24	4th St.	8	25	23	Bellefonte, Downtown & Northwest Wilmington
32	2nd St., Madison St.	2	18	15	Downtown & Southwest Wilmington, New Castle
36	2nd St., Lancaster Ave., MLK Blvd.	4	33	46	Downtown Wilmington, West Stanton
42	SR 4, MLK Blvd.	1	28	30	Downtown Wilmington, Glasgow

Transit linkages into the Adams Four neighborhood are good. Generally, service is constant and most key destinations across the region are adequately served. However, a dedicated route providing direct service to Newark, along SR 2, as well as to the Concord Pike commercial corridor should be considered.

Bayard Square

Four routes service the Bayard Square area, providing frequent to average service to much of Greater Wilmington. Route 5 runs frequently (AM 18 minutes; PM 21 minutes) along SR 4, between the Christiana Mall and downtown Wilmington. The 9, 19, and 36 connect riders from Wilmington to Prices Corner and points along and beyond Kirkwood Highway. Frequencies on these routes vary, ranging from 17 minutes to 46 minutes. A fourth line, Route 7, loops around western Wilmington. It is an infrequent service that runs about every hour.

Bayard Square's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
5	SR 4	3	18	21	Downtown Wilmington, Newport, Christiana Mall
7	Clayton St., Cedar St.	3	60	60	Downtown Wilmington, West Wilmington
9	Broom St.	12	32	26	Kirkwood Highway, Wilmington
19	Lancaster Ave.	5	30	17	Pike Creek, Stanton, Downtown Wilmington
36	Lancaster Ave.	5	33	46	Downtown Wilmington, West Stanton

Connections into Bayard Square are quite good. However, room for improvement does exist. Greater frequencies may be warranted for most routes, especially Route 7 and Route 36 (whose afternoon frequency shows at 46 minutes). Additionally, a route providing direct service into Newark and north along the Concord Pike commercial corridor should be pondered.

Browntown

Like Adams Four, Browntown is served by eight separate lines, connecting with nearly the same frequency. Route 5 pushes east along Maryland Avenue (SR 4) into downtown Wilmington and west to the Christiana Mall. With a morning frequency of 18 minutes and an afternoon counterpart of 21 minutes, this route boasts one of the highest rates in the region. Prices Corner and downtown are key destinations for Route 9, which runs at average frequencies of 32 and 26 minutes, respectively. Clipping the northeastern border of Browntown, the 17 serves Southbridge and the Minquadale area, north of New Castle. Route 23 runs between Bear and Wilmington, with a morning frequency of 25 minutes and an afternoon of 43. The 32, or the Wilmington Trolley, loops around

downtown Wilmington very frequently; while the 33 and the 39 jointly provide service into Newark. Glasgow is serviced by routes 40, 41, and 42.

Browntown's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
5	SR 4	8	18	21	Downtown Wilmington, Newport, Christiana Mall
9	MLK Blvd.	1	32	26	Kirkwood Highway, Wilmington
17	MLK Blvd., Market St., Walnut St.	2	33	29	Downtown & South Wilmington, New Castle
23	I-95, SR 4, MLK Blvd., Market St.	2	25	43	Downtown Wilmington, Newark
32	Madison St., Bell Alley, MLK Blvd.	9	18	15	Downtown & Southwest Wilmington, New Castle
33, 39	I-95, SR 4, MLK Blvd., Market St.	3	24	32	Christiana Mall, Wilmington
40 41	I-95, SR 4, MLK Blvd., Market St.	3	39	36	Wilmington, Christiana Mall, Glasgow
42	I-95, SR 4, MLK Blvd., Market St.	2	28	30	Downtown Wilmington, Glasgow

Bus service through Browntown is very good. Room for improvement may exist, however, in the afternoon frequencies of Route 23, which serves Bear. Riders on this route (as well as others) should be surveyed continuously to make certain their needs are being met. The addition of a direct route with access to the Concord Pike commercial corridor should be considered.

Cool Springs / Happy Valley

The Cool Springs and Happy Valley regions in western Wilmington are served by a half dozen bus routes. Running at varying frequencies, these routes provide solid service to the downtown area and points beyond: Newark (Route 6), Centerville, and Greenville. A pair of lines, the 7 and the 8, shuttle riders around Wilmington. The 7, which cuts across Pennsylvania Avenue, runs about every hour. Route 8, which loops around 8th and 9th Streets, shows higher frequencies. Morning and afternoon headways average 22 minutes each. Three additional lines stretch north. Route 10 provides service (AM 18 minutes; PM 17 minutes) into Centerville; Route 20 (AM 20 minutes; PM 21 minutes) into Hockessin; and Route 28 (AM 44 minutes; PM 41 minutes) to A.I. DuPont Children's Hospital off U.S. 202.

Cool Springs (East) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
6	Pennsylvania Ave., Delaware Ave.	7	20	20	Newark, Kirkwood Highway, Downtown Wilmington
7	Pennsylvania Ave., Delaware Ave.	7	60	60	Downtown Wilmington, West Wilmington
8	8th St., 9th St.	9	22	22	Downtown & West Wilmington
10	Pennsylvania Ave.	2	18	17	Centerville, Greenville, Wilmington
20	Pennsylvania Ave., Delaware Ave.	7	20	21	Hockessin, Wilmington
28	Pennsylvania Ave.	2	44	41	Downtown & North Wilmington, Concord Pike

Cool Springs (West) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
6	Pennsylvania Ave., Union & Lincoln Sts	16	20	20	Newark, Kirkwood Highway, Downtown Wilmington
7	Pennsylvania Ave., DuPont & Clayton St	8	60	60	Downtown Wilmington, West Wilmington
8	9th St.	6	22	22	Downtown & West Wilmington
20	Pennsylvania Ave.	11	20	21	Hockessin, Wilmington

Happy Valley Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
6	Pennsylvania Ave.	8	20	20	Newark, Kirkwood Highway, Downtown Wilmington
7	Pennsylvania Ave.	8	60	60	Downtown Wilmington, West Wilmington
10	Delaware Ave.	11	18	17	Centreville, Greenville, Wilmington
20	Pennsylvania Ave.	8	20	21	Hockessin, Wilmington
28	Delaware Ave.	11	44	41	Downtown & North Wilmington, Concord Pike

Although service to Cool Springs and Happy Valley is good, additional routes and greater frequencies may be needed. Specifically, a route connecting Cool Springs to the Christiana Mall may be warranted. Route 28 should be extended further north to include the Concord Pike commercial corridor, with the consideration of greater frequencies.

Cranston Heights

Three bus lines, the Route 6, 19, and 9, provide frequent to average service to the Cranston Heights area. The Route 6, stretching from Newark to Wilmington via Kirkwood Highway (SR 2) and Old Capitol Trail, shows a frequent morning and afternoon headways of 20 minutes. Route 19, which travels from the Pike Creek Valley into Wilmington along an identical route through Cranston Heights, has an average AM headway of 30 minutes and a frequent PM headway of 17 minutes. Route 9, following SR 62 to SR 4 into Wilmington, shows average morning and afternoon frequency.

Cranston Heights' Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
6	SR 2, SR 62, Old Capitol Trail	15	20	20	Newark, Kirkwood Highway, Downtown Wilmington
9	SR 62, Old Capitol Trail	13	32	26	Kirkwood Highway, Wilmington
19	SR 2, SR 62, Old Capitol Trail	15	30	17	Pike Creek, Stanton, Downtown Wilmington

While service within the region is average to frequent, continual monitoring is necessary to meet the needs of all riders. An additional line providing direct service through Cranston Heights to the Christiana Mall should be investigated.

Eastside

Fourteen bus lines pass through Wilmington's Eastside neighborhood, most along Walnut Street. Several of the routes (3, 7, 8, 11, 12, 21, and 32) primarily service other areas within the city. Headway is frequent, hovering around 20 minutes morning and afternoon, for many of these city routes. Route 7, which runs about every hour, is an exception. Outside municipal boundaries, the Concord Pike commercial corridor is accessed through two lines

(Route 2 and Route 35). Running similar routes north on U.S. 202, these two lines show about average frequencies. Newark (Route 6) and Centerville (Route 10) can also be accessed in Eastside. Route 15 travels east from downtown along 4th Street, before reaching New Castle and then the Christiana Mall. With a morning frequency of 28 minutes and an afternoon counterpart of 25, its headway can be considered average.

Eastside's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
2	Walnut St.	2	28	33	Concord Pike, Downtown Wilmington
3	Walnut St.	2	26	24	Downtown & Northeast Wilmington
6	Walnut St.	2	20	20	Newark, Kirkwood Highway, Downtown Wilmington
7	Walnut St.	2	60	60	Downtown Wilmington, West Wilmington
8	4th St., Spruce St.	4	22	22	Downtown & West Wilmington
10	Walnut St.	2	18	17	Centreville, Greenville, Wilmington
11	Walnut St.	2	19	17	Downtown Wilmington, Arden
12	Walnut St.	2	28	25	Downtown & Northeast Wilmington
15	4th St.	9	28	25	Christiana Mall, New Castle, Downtown Wilmington
20	Walnut St.	2	20	21	Hockessin, Wilmington
21	Walnut St.	3	19	18	Downtown Wilmington, Naamans Road
28	Walnut St.	2	44	41	Downtown & North Wilmington, Concord Pike
32	Walnut St.	2	18	15	Downtown & Southwest Wilmington, New Castle
35	Walnut St.	2	42	37	Concord Pike, Wilmington

Eastside is perhaps the best served of significant TJ areas. While key destinations across the region are served, room for improvement may exist. DART should investigate the need to improve headway times for certain routes—especially those serving Concord Pike and the Christiana Mall.

Naamans Road

Three bus routes run along Naamans Road (SR 92) providing service to this significant TJ area. Route 1 operates with great frequency (AM 14 minutes; PM 14 minutes) as it makes its way south into downtown Wilmington. The 21x passes the Tri State Mall before heading south along Foulk Road to reach downtown. With AM headway at 19 minutes and a PM counterpart of 18 minutes, this route also operates with great frequency. A third route, the 61, travels west on SR 92 then south along U.S. 202. Providing service to the Concord Mall, the 61 is very infrequent. Morning headway averages 57 minutes; afternoon averages 83.

Naamans Road's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
1	Naamans Rd., Society Dr.	14	14	14	Claymont, Bellefonte, Downtown Wilmington
21x	Naamans Rd.	5	19	18	Downtown Wilmington, Naamans Road
61	Naamans Rd., Society Dr.	12	57	83	Claymont, Concord Pike

Bus service into the Naamans Road area should be improved. While frequent trips exist into downtown Wilmington, connections to other key destinations are either very infrequent or non-existent. Route 61 should be examined for possible headway improvements. Moreover, key destinations across the region where direct transit links are not present should be considered for expanded service. These include: the Kirkwood Highway commercial corridor, Newark, and the Christiana Mall.

New Castle

Two bus routes, the 15 and the 27, offer service to the New Castle area. Route 15 travels from Christiana Mall to Wilmington, via SR 141 and SR 9, while Route 27 runs from the Christiana Mall into New Castle along SR 273. Morning headway of 28 minutes and an afternoon headway of 25 minutes place Route 15 in the average range for trip frequency. Its Route 27 counterpart is far less frequent: AM 65 minutes; PM 135 minutes.

New Castle's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
15	Basin Rd., Ferry Cut-Off	8	28	25	Christiana Mall, New Castle, Downtown Wilmington
27	Frenchtown Rd., Washington St.	3	65	135	Christiana Mall, New Castle

Service to New Castle's TJ area is fairly limited. A connecting line into Newark or the Kirkwood Highway commercial corridor is non-existent. The consideration of such routes should be pondered, as well as upgrading frequency times for trips along its present routes.

Prices Run / Eastlake

The Prices Run and Eastlake neighborhoods, in Wilmington, are serviced by four separate routes. Running about every 14 minutes throughout the day, Route 1 follows Market Street south into the downtown and north into Claymont. Route 3 provides service downtown and to a local Thriftway. Operating with an AM headway of 24 minutes and a PM of 26, it can be considered of average frequency. Servicing Prices Corner, Route 9 travels west across Vandever Avenue. Running along Northeast Boulevard, Route 24 connects Bellefonte to west Wilmington. Like the Route 3, these lines operate with average frequencies.

Prices Run's (West) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
1	Market St.	8	14	14	Claymont, Bellefonte, Downtown Wilmington
3	Jessup St., 26th St., Pine St.	4	26	24	Downtown & Northeast Wilmington

Prices Run's (East) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
1	Market St.	1	14	14	Claymont, Bellefonte, Downtown Wilmington
3	26th St., Northeast Blvd.	11	26	24	Downtown & Northeast Wilmington
24	Northeast Blvd.	5	25	23	Bellefonte, Downtown & Northwest Wilmington

Eastlake (South) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
3	Jessup St., Pine St.	8	26	24	Downtown & Northeast Wilmington
9	Vandever Ave.	12	32	26	Kirkwood Highway, Wilmington
24	Northeast Blvd.	6	25	23	Bellefonte, Downtown & Northwest Wilmington

Eastlake (North) Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
3	Pine St., 26th St.	8	26	24	Downtown & Northeast Wilmington
9	Vandever Ave.	7	32	26	Kirkwood Highway, Wilmington
24	Northeast Blvd.	6	25	23	Bellefonte, Downtown & Northwest Wilmington

Bus service in Prices Run and Eastlake could be improved. While the downtown and locations northeast of the neighborhood are well-served, direct links to other key destinations within the region do not exist. These include: access to the Concord Pike commercial corridor, the Christiana Mall, Newark, and the Kirkwood Highway commercial corridor (beyond Prices Corner). While Route 1 runs with remarkable frequency, the neighborhoods' three other lines do not. DART should consider the possibility of adding service to these routes to upgrade their headways.

Richardson Park

A pair of lines, the Route 9 and 5, serve the Richardson Park neighborhood. Route 9, with average AM (32 minutes) and PM (26 minutes) frequency runs between Prices Corner and Wilmington via SR 62 and SR 4. Its counterpart, Route 5, travels to Christiana Mall and Wilmington via SR 4. Median headway times for this route are frequent, averaging 18 minutes during the morning and 21 minutes through the afternoon.

Richardson Park's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
5	SR 4	7	18	21	Downtown Wilmington, Newport, Christiana Mall
9	Boxwood Rd., SR 4	7	32	26	Kirkwood Highway, Wilmington

Bus service to Richardson Park is about average. However, additional service may be warranted during peak times. Additionally, direct service is not available to Newark, the Kirkwood Highway commercial corridor (beyond Prices Corner), or the Concord Pike (U.S. 202) commercial corridor. DART should explore the need for a route connecting to these locations.

South Elkton

Only one bus route serves the South Elkton TJ neighborhood. The Glasgow Connection of "The Bus" operates about every 68 minutes throughout the day. It passes along U.S. 40, SR 213, and Whitehall Road en route to the People's Plaza Shopping Center in Glasgow, Delaware.

South Elkton's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
The Bus - Glasgow Connection	US 40, SR 213	5	68	68	Downtown Elkton, Eastern US 40, Peoples Plaza

Aside from improving headway times on the Glasgow line, additional connections should be made into South Elkton. The Perryville Connection of The Bus should have its route extended slightly south, providing service to a pair of existing stops at the Chesapeake and Foxridge apartment complexes. Likewise, the DART Route 65 should be extended south in a similar fashion. These two extensions would provide the TJ area residents with connections to key locations across Cecil County, such as North East and Perryville, as well as a direct connection into Newark.

South Newark

Only one line, the Route 34, offers service to South Newark. With AM headway of 61 minutes and a PM counterpart of 85 minutes, the service via Marrows Road is very infrequent. Key destinations include points north and west: downtown Newark, the Christiana Mall, and Wilmington.

South Newark's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
34	Marrows Rd.	3	61	85	Newark, Christiana Mall, Wilmington

Ridership should be continually examined to determine if resident's transit needs are being met. A survey of riders is also warranted to determine how many would use the service more, if it operated with greater frequency. Finally, expanding service (or the addition of an additional route) to access the Kirkwood Highway (SR 2) commercial corridor should be explored.

Trolley Square

Two bus routes pass along Delaware Avenue, through the Trolley Square neighborhood. Route 10 links Centerville with downtown Wilmington. Running with high frequency, it operates (on average) every 18 minutes in the morning and 17 during afternoons. Heading north/south along Augustine Cutoff, the infrequent Route 28 runs between downtown and the A.I. DuPont Children's Hospital.

Trolley Square's Average Bus Frequency (in minutes)

Bus Route	Major Roadway(s)	Stops	AM Frequency	PM Frequency	Key Destination(s)
10	Delaware Ave.	7	18	17	Centreville, Greenville, Wilmington
28	DuPont St., Lovering Ave., Augustine Cutoff	4	44	41	Downtown & North Wilmington, Concord Pike

The Trolley Square neighborhood is poorly served by transit. While two connections to downtown exist, as well as a frequent connection northwest into Centerville, service to other key regional destinations is non-existent. Namely, service on the Route 28 should be made more frequent and extended along the Concord Pike commercial corridor. Direct access to the Christiana Mall, the Kirkwood Highway commercial corridor, and Newark should also be considered.



Senior transit patrons await the arrival of the Route 10 along Delaware Avenue in Wilmington

Senior Transportation Survey

The distribution of surveys to senior residents across the WILMAPCO region capped our TJ analysis. In partnership with the Cecil County Department of Aging and Jewish Family Services of Delaware, over one-thousand transportation surveys were distributed. Three-hundred and four were returned, properly completed.

The brief, three-page survey (available in the appendix) included questions ranging from rankings (such as the most frequently used mode of transportation) to circling “yes” or “no” responses. Questions dealt with issues like access to medical care, the status of the fixed route public transit system, and bus stop accessibility. An open ended section invited respondents to describe, in their own words, specific difficulties faced during their travels. While hardly a comprehensive, scientific endeavor the survey results help us to better grasp the transportation needs of this constrained community. The results are summarized below.

The targeted age range for survey participants fell within two categories, 65 to 75 or 75 plus. For both New Castle and Cecil Counties, the majority of survey participants were 75 years or older, 58% and 70%, respectively.

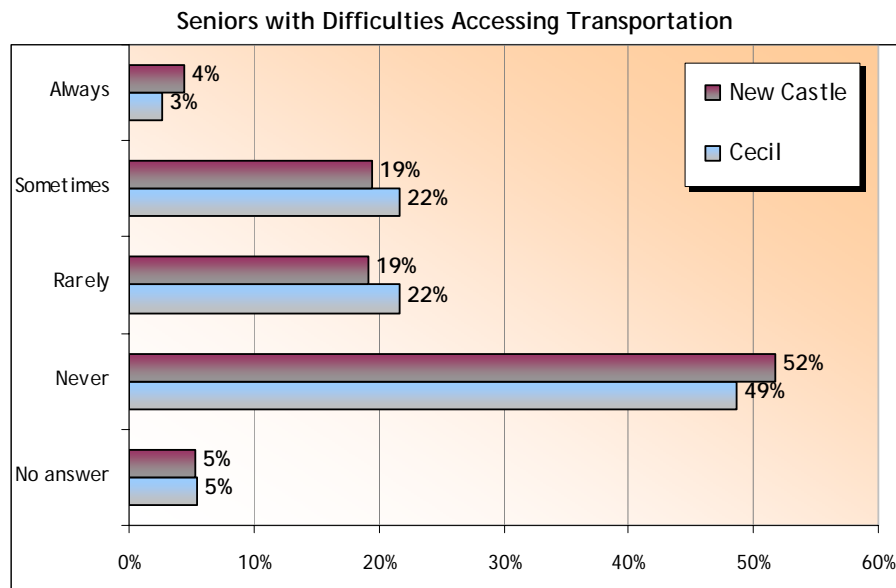
As hoped for, a wide geographic distribution of our surveys was achieved. The highest concentrations of respondents resided in Wilmington, Newark, Delaware City, Middletown, Port Deposit and Elkton zip-codes. Moderately represented zip-codes included Claymont, Hockessin, Glasgow, and Rising Sun. A map showing the distribution of survey responses can be found in the appendix.

Elderly participants were asked to rank their most frequent mode of transportation. They were given six options from which to choose. As shown in the table, more than half of the respondents ranked driving alone as their primary mode of transportation in New Castle County, and approximately one-third in Cecil County. Similarly, the second ranked mode of transportation for both counties was left blank and placed within the no answer category.

The Two Top-Ranked Modes of Transportation

	NCC 1st Rank	NCC 2nd Rank	Cecil 1st Rank	Cecil 2nd Rank
Drove alone	51%	2%	32%	3%
Passenger	22%	12%	32%	11%
Community Transit	15%	8%	19%	14%
Public Transit	5%	5%	5%	5%
Walked	5%	4%	11%	16%
Other	1%	0%	0%	0%
No answer	0%	69%	0%	51%

Senior respondents were asked how often they encounter difficulties accessing adequate transportation. Results can be found in the graph below. The majority of respondents from both New Castle County (52%) and Cecil County (49%) answered “never.” About one-fifth from each county experienced difficulties with transportation “rarely” or “sometimes.” Five percent of respondents from New Castle County “always” struggle with adequate transportation, as compared to 3% from Cecil County. In sum, about a quarter of seniors surveyed faced transportation dilemmas.



As reflected in the chart below, transportation limited access to goods and services for some of our region’s seniors. Overall, this was true for about one out of seven respondents from New Castle County; Cecil County seniors fared a bit better. Fifteen percent of respondents in New Castle County and 3% in Cecil County face dilemmas accessing needed medical care and necessary shopping. Lack of transportation also meant that 16% of respondents in New Castle County had limited access to other services. Eleven percent of Cecil County respondents felt similarly. Finally, social interactions were hampered by a lack of transportation for 14% of Cecil County respondents—compared to 15% from New Castle County.

Does Transportation Limit Your Access to Goods and Services?

	New Castle	Cecil
Medical care		
Yes	15%	3%
No	81%	86%
No Answer	0%	11%
Other services		
Yes	16%	11%
No	72%	78%
No Answer	12%	11%
Necessary shopping		
Yes	15%	3%
No	77%	84%
No Answer	9%	14%
Social interactions		
Yes	15%	14%
No	75%	73%
No Answer	10%	14%

Another survey question asked seniors how often they ride fixed-route buses and Paratransit. According to the results, 15% of senior survey participants from New Castle County and 14% from Cecil employ fixed-route services. Respectively, 9% and 8% utilize Paratransit services.

About half of fixed-route riders agreed that the system is adequate. Of the New Castle County respondents who utilized the fixed-route system, 44% felt improvement was needed. Specifically, 26% faced difficulties accessing their fixed-route stops. Results from Cecil County for these questions were negligible, given the limited nature of its fixed-route infrastructure.

Within the written comments section, respondents described the issues they face daily relating to public transportation and pedestrian accessibility. Overall, the majority of the comments fell within one of five main categories: 1) community center/agency bus service, 2) difficulties with the fixed route infrastructure, 3) difficulties with Paratransit, 4) self transportation, and 5) reliant on other resources for transportation.

Comments revolving around community center bus services were all positive. According to seniors who utilize such services, their transportation needs were met effectively. This included trips to the grocery store, the doctor's office, and to leisure activities such as theatrical performances.

In contrast, numerous respondents cited difficulties with the fixed bus route system. Comments regarding lack of sidewalks or the deteriorating conditions

of existing sidewalks to bus stops were regionally prevalent. Members of the senior community also noted difficulties accessing these bus stops during the winter months when unplowed snow renders pedestrian travel nearly impossible. Others stated that busy intersections impede bus stop access.

Several seniors reported that the existing transit routes limit their mobility. Comments included the need for a better transfer system when traveling on more than one bus, improved bus linkages, the introduction to Sunday service, and improved distribution of bus schedules. Quandaries were also encountered with Paratransit. These include tardiness and instances of failure to arrive without notice.

Additional comments were offered by seniors who provide their own transportation, or rely on alternative sources for transportation. Seniors who drove alone expressed concern if health no longer permitted them to operate an automobile. In fact, many stated they continue to drive simply because bus services do not sufficiently meet their needs. Others related that they solely utilize other resources due to the unreliability of transit services. Thus, many seniors in our region are dependent on family members or friends for transportation.

The results of this survey should not be viewed as a comprehensive picture of the transportation successes and difficulties faced by seniors in the WILMAPCO region. Rather, they are better thought of as a quick snapshot of the situation. We must, however, begin work to address concerns raised by survey respondents. Most troubling are the quarter of seniors faced with some type of transportation dilemma. WILMAPCO must begin a dialogue to ensure public and private transportation services fully meet the needs of our region's elderly in the future. Concerns surrounding access to necessary goods and services and maximizing the full potential of our fixed-route bus infrastructure top the list.

Section 4: Regional Goals and Strategies

There are too few buses, and in the suburbs, too few parking areas where customers could board buses and leave their cars behind.

-Senior resident, Delaware City

In the spirit of Environmental Justice, WILMAPCO strives to achieve equity in transportation planning for all constrained communities. The present section will address a vision for the WILMAPCO region and review key recommendations and funding options to meet our equity goals for our Transportation Justice communities.

A Vision for the Future

In November of 2003, the United States Department of Transportation (USDOT) envisioned a different America. They saw:

. . . a transportation system that offers safe mobility to all people and allows older persons to remain independent and to age in place. Investments in highway and pedestrian infrastructure and public transportation services support independence. The medical and social service communities, transportation managers, motor vehicle administrators, and caregivers work together to extend safe driving and to offer other convenient and affordable transportation options when driving and walking must be curtailed. Public and private organizations form new partnerships to enable all citizens to enjoy safe mobility for life.

WILMAPCO envisions a similar transportation system for the residents of New Castle County and Cecil County. To achieve this vision, progress must be made in seven key areas:

1. Safer, easier to use roadways and walkways
2. Safer, easier to use automobiles
3. Improved systems to assess the competency of older drivers
4. Better, easier to use public transportation services
5. Targeted state/local safe mobility action plans
6. Better public information
7. Basic and social policy research

This document has already addressed several of these points. These include the non-motorized infrastructure, issues with public transit, and (by default) public information and policy research. Others will be addressed in time by WILMAPCO or partner agencies. Future actions and monitoring efforts will ensure their continued relevance.

Recommendations

Beyond the adoption of a regional vision, several pointed recommendations were made throughout this report. They are summarized below.

- Practical, cost-effective measures, such as: improved access to bus stops, greater frequencies of fixed-route buses to and from key locations, and enhanced walkability within and around “targeted” neighborhoods will work best to improve mobility and combat isolation of TJ populations.
- Costs associated with DART’s Paratransit service may render it economically unsustainable. DART should consider restructuring the system. Alternatives to Paratransit should be explored.
- Identified TJ areas with high commuting times should become prime candidates for additional service.
- TJ areas, in which transit use or walking trips to work are low, should be examined for improvements.
- Target specific TJ areas where the percentage of households within walking distance to a bus stop is low for additional bus routes and stops.
- Expansion of fixed-route bus service in the central and southern portions of New Castle County should prioritize service to age-restricted communities and senior centers. As a pre-requisite, however, developers of these communities must include access points for service.
- Re-examine the layout of intersections with high numbers of bicycle and pedestrian crashes. A table of the identified intersections can be found in the appendix.
- Improve walkability and bus frequencies and destinations within significant TJ areas, via targeted recommendations made in Section 3. These recommendations can be found in tabular form within the appendix.
- Begin a dialogue to address the transportation concerns raised by respondents to our senior transportation survey. Specifically, these relate to issues of access to services and the adequacy of New Castle County’s fixed-route transportation infrastructure.

Funding Options

While WILMAPCO does not serve as an implementation or funding agency, we strive to educate member agencies and the public of possible funding sources for transportation projects. As such, projected transportation funding shortfalls in Delaware and Maryland require the exploration of alternative methods to fund most of the recommended improvements above. These alternative funding sources are separated into two categories—transit and non-motorized enhancements.

The identification of dedicated funding pools for transit operations and capital budgets is necessary to buoy and expand existing service. Detailed in WILMAPCO's 2030 Regional Transportation Plan, several possibilities exist.

- Congestion Mitigation and Air Quality (CMAQ) and Surface Transportation Program (STP) funds can be channeled to fleet and pedestrian facilities expansion and operations support.
- Investigate new statewide funding opportunities, such as funding streams from vehicle license taxes, rental vehicle taxes, and lottery revenues.
- Increase advertising revenue. This can be accomplished via the expansion of third party marketing on and within buses, within bus shelters and through the introduction of ads on DART Cards.
- Build funding partnerships with charitable foundations.
- Expand the "in house" driver training program.
- Coordinate with the Department of Education to promote existing fixed-route use amongst older students.
- Create a partnership with institutes of higher education in which students pay a transportation fee in exchange for free service, with student ID.
- Build partnerships with institutions, whereby retailers, hospitals, and colleges provide annual funding subsidies based on the number of riders "delivered."
- Explore the possible utilization of development impact fees.

Beyond private and local government contributions, two key federal programs exist to fund pedestrian and bicycle improvement projects. These are the

Transportation Enhancements (TE) Program and the Safe Routes to School (SRTS) Program.

The TE Program provides funding to support the development and implementation of alternative projects that support the cultural, aesthetic, and environmental aspects of the transportation network. All federal TE projects must relate to surface transportation and be dedicated to public use. In addition, the project must fit into one of the twelve activities listed below:

Activity		Examples
1	Provision of facilities for pedestrians and bicycles.	New or reconstructed sidewalks, walkways, or curb ramps; wide paved shoulders for nonmotorized use, bike lane striping, bike parking, and bus racks; construction or major rehabilitation of off-road shared use paths (nonmotorized transportation trails); trailside and trailhead facilities for shared use paths; bridges and underpasses for pedestrians and bicyclists and for trails.
2	Provision of safety and educational activities for pedestrians and bicyclists.	Educational activities to encourage safe walking and bicycling.
3	Acquisition of scenic easements and scenic or historic sites (including historic battlefields).	Acquisition of scenic land easements, vistas, and landscapes; acquisition of buildings in historic districts or historic properties, including historic battlefields.
4	Scenic or historic highway programs (including the provision of tourist and welcome center facilities).	For projects related to scenic or historic highway programs: Construction of turnouts, overlooks, and viewing areas; construction of visitor and welcome centers; designation signs and markers.
5	Landscaping and other scenic beautification.	Landscaping, street furniture, lighting, public art, and gateways along highways, streets, historic highways, trails, and waterfronts. Landscaping recommendation: see FHWA's Roadside Vegetation Management website.
6	Historic preservation.	Preservation of buildings in historic districts; restoration and reuse of historic buildings for transportation-related purposes.
7	Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals).	Restoration of historic railroad depots, bus stations, ferry terminals and piers, and lighthouses; rehabilitation of rail trestles, tunnels, and bridges; restoration of historic canals, canal towpaths, and historic canal bridges.
8	Preservation of abandoned railway corridors (including the conversion and use of the corridors for pedestrian or bicycle trails).	Acquiring railroad rights-of-way; planning, designing, and constructing multiuse trails; developing rail-with-trail projects.
9	Inventory, control, and removal of outdoor advertising.	Billboard inventories and removal of illegal and nonconforming billboards. Inventory control may include, but not be limited to, data collection, acquisition and maintenance of digital aerial photography, video logging, scanning and imaging of data, developing and maintaining an inventory and control database, and hiring of outside legal counsel.
10	Archaeological planning and research.	Research, preservation planning, and interpretation of archaeological artifacts; curation for artifacts related to surface transportation and artifacts recovered from locations within or along surface transportation corridors.
11	Environmental mitigation-- (i) to address water pollution due to highway runoff; or (ii) reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.	For existing highway runoff: soil erosion controls, detention and sediment basins, and river clean-ups. Wildlife underpasses or other measures to reduce vehicle caused wildlife mortality and/or to maintain wildlife habitat connectivity.
12	Establishment of transportation museums.	Construction of new transportation museums; additions to existing museums for a transportation section; conversion of railroad stations or historic properties to museums with transportation themes.

Source: FHWA

TE project candidates are reviewed for consistency by Delaware and Maryland DOTs. If approved, project development may be administered by the state or the project sponsor.

Another federal initiative, the SRTS Program, makes funds available to projects that encourage and/or enable children to walk or bike to school. At its heart, the program seeks to address the fact that over half of children arrive at school each day in private automobiles. This has led to greater roadway congestion, diminished air quality, less safe pedestrian conditions around schools, and adverse health effects on children.

Through the SRTS Program, a wide variety of projects are eligible for funding. These include the addition of better-marked crosswalks at intersections and the replacement of crumbling sidewalks within two miles of an elementary school. While not comprehensive, the table below from the Federal Highway Administration lists potential infrastructure projects that support the goals and objectives of the SRTS Program.

Activity	Examples
Sidewalk improvements	New sidewalks, sidewalk widening, sidewalk gap closures, sidewalk repairs, curbs, gutters, and curb ramps
Traffic calming and speed reduction improvements	Roundabouts, bulb-outs, speed humps, raised crossings, raised intersections, median refuges, narrowed traffic lanes, lane reductions, full- or half-street closures, automated speed enforcement, and variable speed limits
Pedestrian and bicycle crossing improvements	Crossings, median refuges, raised crossings, raised intersections, traffic control devices (including new or upgraded traffic signals, pavement markings, traffic stripes, in-roadway crossing lights, flashing beacons, bicycle-sensitive signal actuation devices, pedestrian countdown signals, vehicle speed feedback signs, and pedestrian activated signal upgrades), and sight distance improvements
On-street bicycle facilities	New or upgraded bicycle lanes, widened outside lanes or roadway shoulders, geometric improvements, turning lanes, channelization and roadway realignment, traffic signs, and pavement markings
Off-street bicycle and pedestrian facilities	Exclusive multi-use bicycle and pedestrian trails and pathways that are separated from a roadway
Secure bicycle parking facilities	Bicycle parking racks, bicycle lockers, designated areas with safety lighting, and covered bicycle shelters
Traffic diversion improvements	Separation of pedestrians and bicycles from vehicular traffic adjacent to school facilities, and traffic diversion away from school zones or designated routes to a school

Source: FHWA

Planning, design, and engineering expenses associated with projects are also eligible to receive infrastructure funds. Like the TE Program, the SRTS programs are channeled through the Delaware and Maryland DOTs in the WILMAPCO region.

Section 5: Future Actions

Sunday there's no [public] transportation, that's a problem.

- Senior resident, Edgemoor

As part of our Environmental Justice initiative, the contents of this report will influence policy at WILMAPCO. Improved public outreach, better prioritization of projects and plans, and the continual monitoring of these and other constrained populations are just a few examples how.

Public Outreach

WILMAPCO has an extensive public outreach plan. Through our workshops, meetings, reports, plans, website, and newsletters we strive to help members of the public better understand the transportation planning process. Moreover, we encourage and solicit feedback on our plans and programs.

Staff at WILMAPCO will take an active role in participating with existing public organizations who involve themselves directly or indirectly with TJ communities. The results of this study will be of clear use to existing associations and the general public. As we share our findings, WILMAPCO will gain further insight into the needs of these transportation constrained groups in our region.

Additional research on the needs of our rapidly growing aging and disabled populations are a priority. WILMAPCO will explore the possibility of more senior transportation surveys in the years to come; the introduction of a disabled transportation survey will also be considered.

Further, Transportation Justice related activities at WILMAPCO will be noted on our website, discussed at meetings, and found within the text of our public newsletters.

Better Prioritization and Monitoring Efforts

Just as identified EJ areas have influenced the prioritization of projects and plans at WILMAPCO, so too do TJ areas. Likewise, monitoring efforts will be implemented.

WILMAPCO produces four documents that will ensure TJ principals are reflected in our regional transportation plans.

- As part of our newly adopted prioritization process, projects within our Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) that fall within TJ areas will be weighted. If a given project improves mobility within the area, it receives a positive score. If it hampers mobility, a negative score for the TJ category will be given. The highest positive scores are awarded to projects within significant TJ areas.
- TJ areas will also receive special attention within the context of WILMAPCO's Congestion Management Program (CMP). The CMP assesses traffic congestion within the region's heavily traveled corridors. If a corridor falls within a TJ area, planners can apply that information to better determine mitigation strategies.
- The regional "Progress Report" will update the public and our partner agencies with the evolution of TJ. Updated and additional analysis of TJ communities will be provided in this annually-updated document.

Moreover, other plans are and will continue to be influenced by TJ concerns. A prime example of this is New Castle County's Greenway Plan. Following the delineation of a proposed pathway network in the county, TJ areas were overlaid. Staff considered connections into TJ areas, where they did not exist.

Another example of TJ consideration involves New Castle County's evacuation plan. The aftermath of the Gulf Coast hurricanes in 2005 crystallized the need for public officials to be better aware of where transportation constrained populations are located in their region. As a partner agency in the development of the plan, WILMAPCO pushed for the consideration of zero-car household data.

Working through our Public Advisory Committee (PAC), WILMAPCO will develop additional strategies to engage TJ communities in our region. This includes a more concerted effort to have representatives from each of these communities on our PAC and the development of alternative methods to better reach these underserved communities.

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Significant TJ Areas by Block Group ID and Location

Place Name	Block Group ID	County	Municipality
Adams Four	100030021002	New Castle	Wilmington
Bayard Square	100030025001	New Castle	Wilmington
Browntown	100030027001	New Castle	Wilmington
Cool Springs (East)	100030015001	New Castle	Wilmington
Cool Springs (West)	100030014001	New Castle	Wilmington
Cranston Heights	100030120003	New Castle	--
Eastlake (North)	100030006013	New Castle	Wilmington
Eastlake (South)	100030006022	New Castle	Wilmington
Eastside	100030017003	New Castle	Wilmington
Happy Valley	100030011003	New Castle	Wilmington
Naamans Road	100030101011	New Castle	--
New Castle	100030151002	New Castle	New Castle
Prices Run (East)	100030006012	New Castle	Wilmington
Prices Run (West)	100030006021	New Castle	Wilmington
Richardson Park	100030125004	New Castle	--
South Elkton	240150305043	Cecil	Elkton
South Newark	100030147031	New Castle	Newark
Trolley Square	100030012001	New Castle	Wilmington

Source: U.S. Census, 2000

Moderate TJ Areas by Block Group ID and Location

Place Name	Block Group ID	County	Municipality
Browntown	100030027002	New Castle	Wilmington
Canby Park	100030124001	New Castle	Elsmere
Cedar Heights	100030127001	New Castle	--
Claymont	100030103001	New Castle	--
Cleland Heights	100030125001	New Castle	--
Downtown Newark	100030145011	New Castle	Newark
Five Points	100030129002	New Castle	--
Greenville	100030118001	New Castle	--
Latimer Estates	100030129001	New Castle	--
Manor Park	100030152001	New Castle	--
Midway	100030136092	New Castle	--
Minquadale	100030156002	New Castle	--
Webster Farms	100030114002	New Castle	--
--	100030004001	New Castle	Wilmington
--	100030004002	New Castle	Wilmington
--	100030004003	New Castle	Wilmington

Moderate TJ Areas by Block Group ID and Location (continued)

Place Name	Block Group ID	County	Municipality
--	100030005003	New Castle	Wilmington
--	100030005004	New Castle	Wilmington
--	100030007001	New Castle	Wilmington
--	100030007002	New Castle	Wilmington
--	100030009002	New Castle	Wilmington
--	100030014002	New Castle	Wilmington
--	100030016001	New Castle	Wilmington
--	100030017004	New Castle	Wilmington
--	100030019002	New Castle	Wilmington
--	100030020001	New Castle	Wilmington
--	100030021001	New Castle	Wilmington
--	100030022001	New Castle	Wilmington
--	100030022002	New Castle	Wilmington
--	100030022003	New Castle	Wilmington
--	100030022004	New Castle	Wilmington
--	100030023002	New Castle	Wilmington
--	100030023003	New Castle	Wilmington
--	100030023004	New Castle	Wilmington
--	100030024001	New Castle	Wilmington
--	100030024002	New Castle	Wilmington
--	100030026003	New Castle	Wilmington
--	100030121002	New Castle	--
--	100030122002	New Castle	--
--	100030154003	New Castle	--
--	100030155002	New Castle	--
--	100030155003	New Castle	--
--	100030159001	New Castle	--
--	100030003004	New Castle	Wilmington
--	240150304002	Cecil	Elkton
--	240150304004	Cecil	Elkton

Source: U.S. Census, 2000

High Ped/Bike Crash Intersections within Significant TJ Areas: 2000-2005

Intersection	Region	Number of Crashes
Union St. and 10th St.	Cool Springs	18
SR 4 and Van Buren St.	Browntown	11
SR 4 and Monroe St.	Browntown	10
SR 4 & Broom St.	Bayard Square	7
Madison St. (at Stadium)	Browntown	6
30th St. and Danby St.	Prices Run	5
2nd St. and Jefferson St.	Adam's Four	4
SR 92 and Peachtree Rd.	East Naamans Road	4
Lovering Ave. and Kentmere Drive	Trolley Square	4
Orange St. and Water St.	Browntown	3
Spruce St. and 4th St.	Eastside	3
Lombard St. and 4th St.	Eastside	3
Danby St. and Jessup St.	Prices Run	3
Basin Rd. and University Ave.	New Castle	3
SR 4 and SR 62	Richardson Park	3
White Chapel Drive and Marrows Rd.	South Newark	3

Source: DeIDOT

Summary of Walkability Recommendations within Significant TJ Areas

ID	Region	Location	Recommendation
1	Adams Four	Southern side of 4th St., from Madison to Monroe St.	Enhance pedestrian signage; better connections
2	Adams Four	3rd St. and Monroe St.	Improve pedestrian crossing with better striping and signage
78	Bayard Square	Intersection of Broom Street at SR 4(Maryland Avenue)	Add striped crosswalks and improve signage to enhance pedestrian safety
79	Bayard Square	Intersection of Lancaster Avenue and Delamore Street	Improve pedestrian crossing at the Post Office
80	Bayard Square	Lancaster Avenue and Rodney Street	Create more pronounced crosswalks
81	Bayard Square	Lancaster Avenue and Broom Street	Improve pedestrian connections to the local strip mall
82	Bayard Square	Near Kosciuszko Park, St. Elizabeth's, and along Broom Street	Add crosswalks to ease access
3	Browntown	Cedar St. and SR 4	Add signalized crosswalks to improve access to Pulaski School
4	Browntown	SR 4 at the intersections of Harrison, Oak, and Beech Streets	Improve crosswalks to enhance walkability in the region
5	Browntown	Western side of Beech St. (between I-95 and SR 4)	Remove overgrown vegetation to improve access to the Riverfront
9	Cool Springs (East)	Eastern side of Tilton Park	Add striped crosswalks to improve access to the park
10	Cool Springs (East)	Franklin St. between 8th St. and 9th St.	Replace sidewalks to improve access
11	Cool Springs (East)	9th Street and Jackson Street	Add crosswalk to improve walkability and pedestrian connections
12	Cool Springs (West)	Lincoln St. and Pennsylvania Avenue	Add striped crosswalks to ease access to westbound transit stops
13	Cool Springs (West)	Union St. at 10th St.	Add a crosswalk, signage, or a traffic signal
14	Cranston Heights	National Guard Amory at SR 62 (Newport Gap Pike)	Replace sidewalks, refresh and/or add striping
15	Cranston Heights	SR 62 and Cranston Avenue	Replace sidewalks, refresh and/or add striping
16	Cranston Heights	SR 62 and Clayton Avenue	Replace sidewalks, refresh and/or add striping
17	Cranston Heights	Outlet road onto Old Capitol Trail, behind Acme	Replace sidewalks, refresh and/or add striping
18	Cranston Heights	Newport Avenue and Kiamensi Road	Replace sidewalks, refresh and/or add striping
19	Cranston Heights	Maple Avenue and Kiamensi Road	Replace sidewalks, refresh and/or add striping
20	Cranston Heights	Lloyd Street and Kiamensi Road	Replace sidewalks, refresh and/or add striping
21	Cranston Heights	Cedar Avenue and Kiamensi Road	Replace sidewalks, refresh and/or add striping
22	Cranston Heights	Livingston Avenue and Kiamensi Road	Replace sidewalks, refresh and/or add striping
23	Cranston Heights	Stanley Avenue and Kiamensi Road	Replace sidewalks, refresh and/or add striping
24	Cranston Heights	SR 2 and SR 62 Intersection	Add a signalized crosswalk to improve connections to Greenbank Park
25	Cranston Heights	SR 62 and Old Capitol Trail	Add striped crosswalks and a signalized crosswalk
26	Cranston Heights	Northern side of Old Capitol Trail, east of SR 62	Add signage to deter motorists from parking on the sidewalk
40	East Naamans Road	Ridge Road between SR 92 and the PA line	Replace and/ or add sidewalks
41	East Naamans Road	Philadelphia Pike at Bridge 185	Remove overgrown vegetation to improve walkability
42	East Naamans Road	Society Drive at the Tri State Mall	Repaint existing striping to improve walking conditions
72	Eastlake (North)	Thatcher St. on the northwest corner of Vandever Ave. and both sides of 23rd St.	Replace deteriorating sidewalks
73	Eastlake (North)	Thatcher St. at 22nd, 23rd, and 24th Streets	Add crosswalks
74	Eastlake (North)	Eastern side of Locust St. towards 22nd St., and north of 17th St.	Improve deteriorating sidewalks
75	Eastlake (North)	22nd and 23rd Streets and Vandever Avenue	Add crosswalks
76	Eastlake (North)	Northbound side of Northeast Blvd. at 22nd, 23rd, 24th, and 25th Streets	Add side-street crosswalks to ease access
77	Eastlake (North)	Southbound side of Northeast Blvd. at 22nd, 24th, and 25th Streets	Add side-street crosswalks to ease access
61	Eastlake (South)	Jessup Street at 14th Street	Add a crosswalk and a stripe from the bus stop on Pine
62	Eastlake (South)	Pine Street at 14th Street	Add crosswalks and additional sidewalk along Pine St.
63	Eastlake (South)	Jessup Street and 23rd Street	Add crosswalks
64	Eastlake (South)	Jessup Street and Vandever Avenue	Add signalized crosswalks
65	Eastlake (South)	Southwest intersection of Vandever Ave. and Pine St., south side of Vandever Ave., and east of Pine	Replace deteriorating sidewalks and add signalized crosswalks
66	Eastlake (South)	Southern side of Vandever Ave., east of intersection with Spruce St.	Add crosswalks and replace deteriorating sidewalks
67	Eastlake (South)	Intersection of Vandever Ave. and Thatcher St.	Add striped crosswalks
68	Eastlake (South)	Northeast corner of 17th St. and Thatcher St.	Add sidewalk infrastructure
69	Eastlake (South)	Intersection of Spruce and Church Streets at 17th St.	Add crosswalks
70	Eastlake (South)	Northbound side of Northeast Blvd. at 12th, Thatcher, 14th, Heald, 16th, and Lodge Streets	Add crosswalks at these side streets
71	Eastlake (South)	Northeast Blvd. at 13th, 14th, Thatcher, 18th, and Heald	Paint side-street crosswalks

Summary of Walkability Suggestions within Significant TJ Areas (continued)

ID	Region	Location	Recommendation
27	Eastside	7th St. from Kirkwood to Pine St.	Replace sidewalks and add crosswalks
28	Eastside	7th St. and Lombard St. to the park's edge on the south	Replace sidewalks and add crosswalks
29	Eastside	4th St. at Pine, and along the northern side of 6th St., west of Spruce St.	Replace sidewalks and add crosswalks
30	Eastside	Pine St. at 7th, 6th, and 5th Streets, and Lombard St. at 7th and 6th	Add striped crosswalks to enhance walkability
31	Eastside	4th Street at Poplar Street	Add side-street crosswalks and bus pad
32	Eastside	4th Street and Lombard Street	Add side-street crosswalks
33	Eastside	4th Street and Pine Street	Add crosswalks and bus pad
34	Eastside	4th Street and Spruce Street	Add signalized crosswalk, crosswalk (across 4th), and bus pad
35	Eastside	Spruce Street at 5th Street	Add side-street crosswalks
36	Eastside	Spruce Street at 6th Street	Add crosswalks
37	Eastside	Spruce Street at 7th Street	Add side-street crosswalks
38	Eastside	Walnut Street at 5th Street	Add side-street crosswalks; explore other measures to ease crossing (bump-outs, blinking signal)
39	Eastside	Walnut Street at 4th Street	Add crosswalks
6	Happy Valley	Clayton St. and 16th St. at Delaware Avenue	Add signalized crosswalks and better striping for pedestrian use
7	Happy Valley	Franklin, Clayton, Rodney, and Broom Streets and Pennsylvania Avenue	Improve crosswalks to enhance walkability and safety
8	Happy Valley	Franklin, Broom, and Rodney Streets at Delaware Avenue	Improve crosswalks to enhance walkability and safety
83	New Castle	SR 141 at the First Baptist Church	Add a crosswalk or signage to ease access and enhance safety
53	Prices Run (East)	30th Street and Pine, Spruce, and Church Streets	Add crosswalks
54	Prices Run (East)	26th Street and East Speakman Street	Add crosswalks
55	Prices Run (East)	Northbound side of Northeast Blvd. at 27th and 29th Streets	Add crosswalks
56	Prices Run (East)	Southbound side of Northeast Blvd. at 27th and 28th Streets	Add crosswalks
57	Prices Run (East)	Northeast Blvd., north of 27th Street	Remove overgrown vegetation
58	Prices Run (East)	26th Street at Heald and Locust Streets	Add striped crosswalks
59	Prices Run (East)	26th Street from Heald to Thatcher Streets	Replace deteriorating sidewalks
60	Prices Run (East)	Intersection of 26th Street and Locust Street	Add missing sidewalk segment
43	Prices Run (West)	Market Street at 30th Street	Add signalized crosswalk and striping
44	Prices Run (West)	Market Street at 29th Street	Add crosswalks
45	Prices Run (West)	Market Street at 28th Street	Add signalized crosswalk
46	Prices Run (West)	Market Street at 27th Street	Add a second signalized crosswalk and striping
47	Prices Run (West)	Market Street at 26th Street	Add signalized crosswalk and striping
48	Prices Run (West)	Market Street at 25th Street	Add crosswalks
49	Prices Run (West)	Market Street at 24th Street	Add crosswalks
50	Prices Run (West)	Market Street between 26th and 27th Streets	Replace deteriorating sidewalks
51	Prices Run (West)	Intersection of 25th Street and Pine Street	Add a curb-cut and crosswalks
52	Prices Run (West)	Intersection of 25th Street and Jessup Street	Add a stop sign, curb-cut, and enhance striping
84	Richardson Park	Intersection of SR 4 and SR 62	Incorporate traffic calming techniques and add signalized crosswalks
85	Richardson Park	West Champlain Avenue and SR 4	Add striped crosswalks and a signalized crosswalk
86	Richardson Park	Hayden, Catalpa, Westmoreland, Champlain, Reamer, and Summit Avenues at SR 4	Add striped crosswalks
87	Richardson Park	South side of Reamer Avenue, towards SR 4	Add sidewalk to improve walkability
88	South Elkton	U.S. 40 at White Hall Road and SR 213	Add signalized crosswalks and signage for safe connections
89	South Elkton	White Hall Rd. from KFC restaurant to Walter Boulden St., and from Walter Boulden to Norman Allen Streets	Add missing sidewalk segment
90	South Elkton	Holly Hall Elementary School on White Hall Rd.	Add crosswalks connecting to the First Assembly of God Church on the other side
91	South Elkton	White Hall Road at SR 213	Improve pedestrian crossing to enhance safety
92	South Elkton	SR 213 from White Hall Rd to U.S. 40	Add sidewalks to enhance walkability
93	South Newark	Marrows Road from Old Newark Rd. to Chaucer Drive	Replace deteriorating sidewalks
94	Trolley Square	Delaware Avenue at Dupont Street	Add signalized crosswalks and better connections to Acme Supermarket
95	Trolley Square	Intersection of Lovering Avenue and Augustine Cut-off	Add signalized crosswalks for transit stop on southern side of Augustine Cutoff
96	Trolley Square	North Dupont Street and Gilpin Avenue	Add a stop sign on Dupont Street, enhance pedestrian striping, and remove overgrown vegetation
97	Trolley Square	Delaware Ave. between Scott and Lincoln Streets, and Shallcross Ave. between Union and Lincoln Streets	Replace deteriorating red-brick sidewalks
98	Trolley Square	Delaware and Lovering Avenues at Union and Lincoln Sts., and Wawaset St. at Augustine Cut-off	Add more pronounced striping at intersections
99	Trolley Square	Lovering Avenue between Augustine Cut-off and Dupont Street	Remove overgrown vegetation

Summary of Transit Service Recommendations within Significant TJ Areas

Region	Route(s)	Recommendation(s)
Adams Four	n/a	Add service to: Newark and Concord Pike Commercial Corridor
Bayard Square	7, 36	Improve headway frequencies
Bayard Square	n/a	Add service to: Newark and Concord Pike Commercial Corridor
Browntown	23	Consider higher afternoon frequencies
Browntown	n/a	Add service to: Concord Pike Commercial Corridor
Cool Springs/ Happy Valley	n/a	Add service to Christiana Mall
Cool Springs/ Happy Valley	28	Add service to Concord Pike Commercial Corridor with greater frequencies
Cranston Heights	n/a	Add service to the Christiana Mall
Eastlake/ Prices Run	n/a	Add service to: Concord Pike Commercial Corridor, the Christiana Mall, Newark, & the Kirkwood Hwy. Commercial Corridor
Eastlake/ Prices Run	3, 9, 24	Improve headway frequencies
Eastside	2, 7, 15, 28, 35	Consider higher frequencies throughout the day
Naamans Road	61	Improve headway frequencies
Naamans Road	n/a	Add service to: Kirkwood Hwy. Commercial Corridor, Newark, & the Christiana Mall
New Castle	n/a	Add service to: Newark and Kirkwood Hwy. Corridor
New Castle	15, 27	Improve headway frequencies
Richardson Park	5, 9	Add additional peak time service
Richardson Park	n/a	Add service to: Newark, Kirkwood Hwy. & Concord Pike Commercial Corridors
South Elkton	The Bus (Glasgow Connection)	Improve headway frequencies
South Elkton	65, The Bus (Perryville to Elkton)	Add service to the Cheasapeake & Foxridge Apartments
South Newark	n/a	Add service to Kirkwood Hwy. Commercial Corridor
Trolley Square	28	Improve headway frequencies and add service to the Concord Pike Commercial Corridor
Trolley Square	n/a	Add service to: Newark, Christiana Mall, and the Kirkwood Hwy. Commercial Corridor

2006 Senior Transportation Survey

2006 Senior Transportation Survey

Wilmington Area Planning Council
(WILMAPCO)

Please return your completed survey to your community organization, or mail it to:

Wilmington Area Planning Council
850 Library Avenue, Suite 100
Newark, Delaware 19711

Visit us online at: www.wilmapco.org

Who is WILMAPCO?

The Wilmington Area Planning Council (WILMAPCO) is the regional transportation planning agency for Cecil County, Maryland and New Castle County, Delaware. Our role is to educate and involve the public in the transportation decision-making and funding process.

Because the transportation system is designed to serve you, we encourage you to get involved in the planning process. We work on creating transportation plans that will help you get around. By looking for ways to improve roads, bus service, sidewalks and bike paths, we can help you get to work, to school, to the store, anywhere you want to go.

Please Help Us With Our Survey

WILMAPCO is conducting a survey to better understand the transportation needs of the aging population in our region. The survey is only 11 questions long and we hope you will complete and return it before June 1, 2006.

We are creating a report that will address the needs of the elderly, disabled and zero-car household populations. This report will advocate regional strategies and practical solutions to help these identified groups. Results from this survey will help us develop the report.

Your input is extremely valuable to us and WILMAPCO appreciates your cooperation.

Please call us if you have any questions.

Phone: (302) 737-6025
Toll free from Cecil County: 888-808-7088

Fax: (302) 737-9584

Please circle your response, unless otherwise noted

1. What is your age?

Under 65

65-75

75 and over

2. Rank from 1 (most frequent) to 6 (least frequent) the mode of transportation you use.

___ Drive Alone

___ Passenger in an Automobile

___ Community Center/Agency Vehicle

___ Public Transportation (bus, train, etc.)

___ Walk

___ Other: _____ (write in)

3. Do you encounter difficulties accessing adequate transportation?

Always

Sometimes

Rarely

Never

4. Does lack of transportation sometimes limit you from:

Getting medical care?	Yes	No
-----------------------	-----	----

Accessing other services?	Yes	No
---------------------------	-----	----

Social interactions?	Yes	No
----------------------	-----	----

Necessary shopping (i.e. grocery)?	Yes	No
------------------------------------	-----	----

5. Do you use Paratransit services?

Yes

No

6. Do you use fixed route bus services (DART, The Bus)?

Yes

No

7. If you answered "no" to questions five and six, why do you not use these services?

No Need

No Access

Too Infrequent

Other (write in) _____

If you answered "yes" to question six, please complete this section. If you answered "no," please skip to question eleven.

8. Would you describe the fixed route bus service you use as adequate?

Yes

No

9. Do you face difficulties accessing to your bus stop(s)?

Yes

No

10. If you answered "yes" to question nine, please rank from 1 (most severe) to 6 (least severe) issues you may have reaching a bus stop.

___ Too far away

___ Lack of pedestrian infrastructure (sidewalks, cross walks, shelters)

___ Traffic congestion

___ Fear for personal safety (crime, inadequate lighting)

___ Weather (mud, snow, ice)

___ Other (write in)

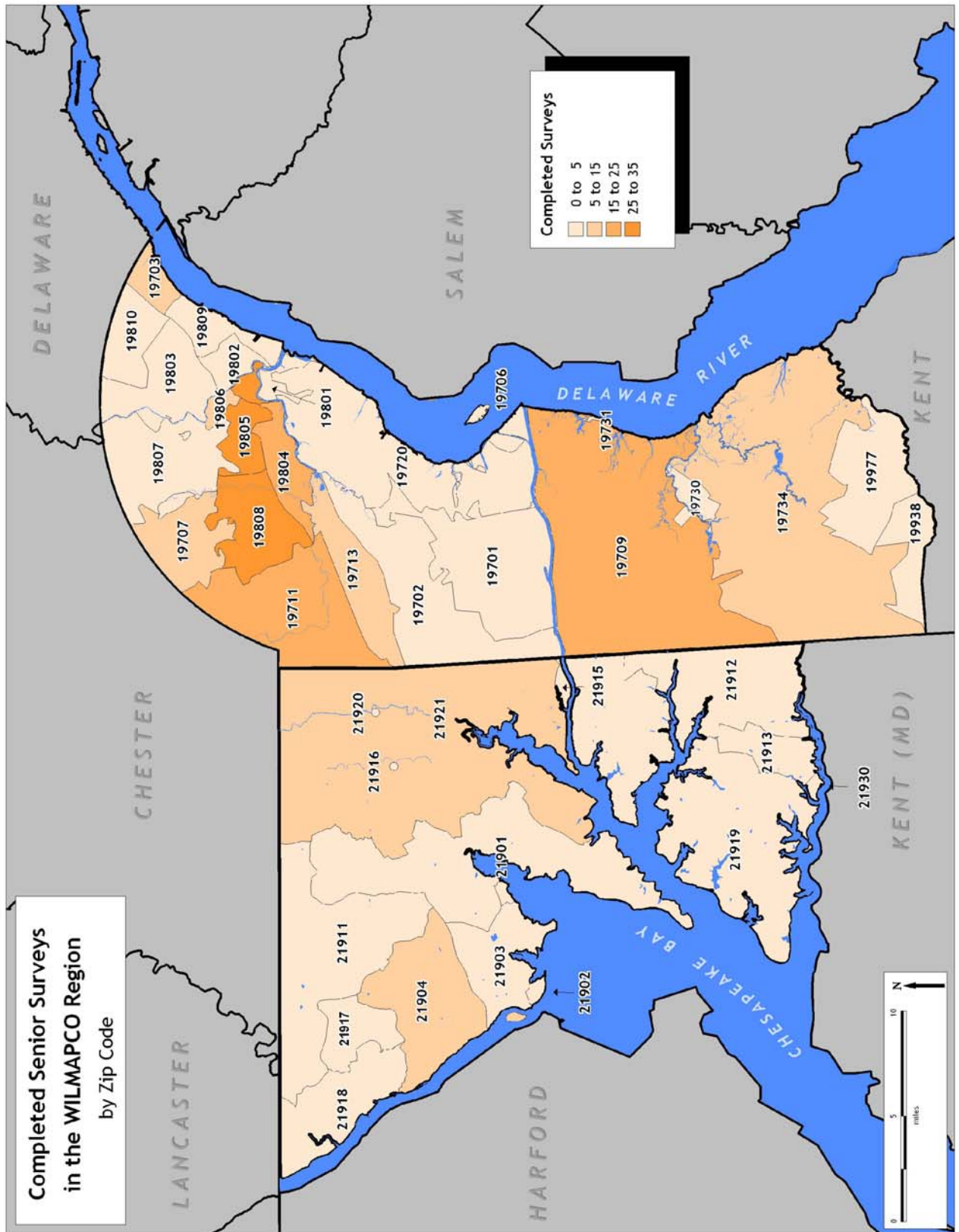
11. Where do you live (city/zip)? _____

Please use the space below (and on the back, if necessary) to describe the transportation issues you may face. This survey is not focused on roadway congestion or improvement. Instead, we'd like your comments relating to public transportation and pedestrian accessibility.

Please provide specific detail to where problems may exist during your travels. For example, is a transit stop too far from your neighborhood? Is a particular segment of sidewalk in need of replacement? Is a trip to a local store too difficult or dangerous to complete?

Thank You!

Distribution of Senior Survey Responses, by ZIP Code



Council Resolution

Wilmington Area Planning Council

850 Library Avenue, Suite 100
Newark, Delaware 19711
302-737-6205; Fax 302-737-9584
From Cecil County: 888-808-7088
e-mail: wilmapco@wilmapco.org
web site: www.wilmapco.org

WILMAPCO Council:
James M. Baker
Mayor of Wilmington

Christopher A. Coons
New Castle County
County Executive

Joseph L. Fisona
Mayor of Elkton

Stephen Kingsberry
Delaware Transit Corporation
Director

John F. Klingmeyer
Mayor of New Castle

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Maryland Dept. of Transportation
Director, Office of Planning

Lee Ann Walling
Delaware Office of the Governor
Policy Advisor for Environment
and Quality of Life Policy

Carolann Wicks
Delaware Dept. of Transportation
Secretary

WILMAPCO Executive Director
Tigist Zegeye

RESOLUTION

**BY THE WILMINGTON AREA PLANNING COUNCIL (WILMAPCO)
TO ENDORSE THE 2007 ACCESSIBILITY AND MOBILITY REPORT: A
TRANSPORTATION JUSTICE STUDY OF THE WILMAPCO REGION**

WHEREAS, the Wilmington Area Planning Council (WILMAPCO) has been designated the Metropolitan Planning Organization (MPO) for Cecil County, Maryland and New Castle County, Delaware by the Governors of Maryland and Delaware, respectively; and

WHEREAS, Environmental Justice is an integral to the transportation planning process at WILMAPCO; and

WHEREAS, the elderly, the disabled, and households without an automobile have been identified as transportation constrained populations; and

WHEREAS, the *2007 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region* has begun a process to analyze the present and future transportation needs of these constrained populations; and

WHEREAS, the *2007 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region* helps to implement the goals and objectives of the WILMAPCO Regional Transportation Plan (RTP); and

WHEREAS, "Transportation Justice" areas identified by the *2007 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region* are already part of the adopted prioritization process for projects in WILMAPCO's RTP and Transportation Improvement Program (TIP); and

WHEREAS, the *2007 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region* provides recommendations to enhance the mobility of these constrained populations;

NOW, THEREFORE, BE IT RESOLVED that the Wilmington Area Planning Council does hereby endorse the *2007 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region*.

January 11, 2007
Date


Ralph Reeb
Acting Chairperson



Partners with you in transportation planning