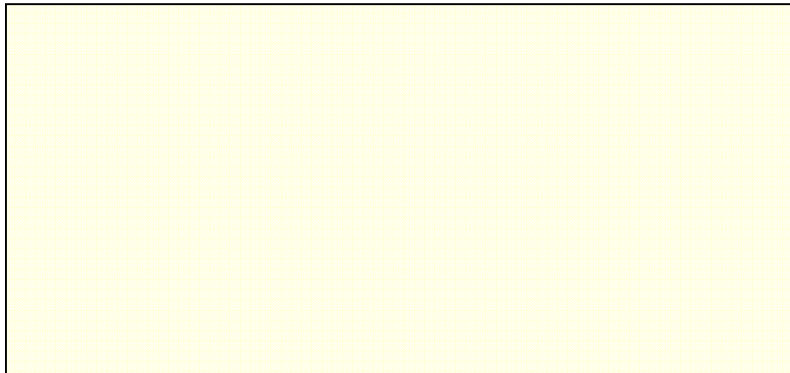


CONGESTED CORRIDOR IDENTIFICATION

Using the four performance measures, the final step in the process is to delineate specific congested corridors. **New text on merging 3 layers, etc.....**

2008 CMS Corridor Locations

- Corridor #1 - City of Newark
- Corridor #2 - MD 213, Elkton
- Corridor #3 - US 301, Middletown



Overall, this year has seen

Source: WILMAPCO

SECTION #2: STRATEGY EVALUATION:

Potential strategies to reduce congestion have been assembled in a “toolbox” designed to provide the appropriate solutions for each corridor. Within each of these strategies, specific mitigation measures are outlined and described in detail. This package of solutions to congestion includes measures involving *all* modes of transportation as well as encouraging more efficient patterns of land use and development.

WILMAPCO CMS “TOOLBOX” STRATEGIES:

Strategy #1: Eliminate person trips or reduce VMT during peak hours
Strategy #2: Shift Trips from Automobile to Other Modes
Strategy #3: Shift Trips from SOV to HOV Auto/Van
Strategy #4: Improve Roadway Operations
Strategy #5: Add Capacity

A key component in WILMAPCO’s “top-down” approach ensures that solutions which would eliminate or shift auto trips or improve roadway operations are evaluated before adding roadway capacity. While our effort is designed to be corridor-specific, there are several strategies that are being employed region-wide that help address congestion. **Table 4** lists these strategies in detail.

The next several pages will describe in detail the strategy evaluation process for each corridor. Page 8 contains the expanded illustration of the identified corridors (Fig. 6) which were described in Section 1. **Table 5** on page 11 shows the corridor solution matrix with all ten corridors and the congestion mitigation strategies deemed applicable to each. An “X” in the corridor column indicates that the strategy is applicable to the corridor. Listed next to each strategy are the agencies responsible for implementing each project.

The CMS Subcommittee developed the matrix by assigning the congestion mitigation strategies from the toolbox that they felt would be effective along each corridor. Additional weight was given to the feedback of the implementing agency of a particular strategy as to whether that strategy was applicable for a given corridor.

To assist in the above work, the subcommittee was supplied with the specific data for each corridor necessary to decide which strategies apply. Pages 12-21 show the corridors as well as the corresponding data associated with each.

Table 4: Area-wide Congestion Mitigation Strategies (Not Corridor Specific)

Strategy #1: Eliminate Person Trips or Reduce VMT	Growth Management/Activity Centers
	Land Use Policies/Regulations - Encourage more efficient patterns of commercial or residential development in defined growth areas. Specific land use policies and/or regulations that could significantly decrease both the total number of trips and overall trip lengths, as well as making transit use, bicycling and walking more viable.
	Congestion Pricing
	Parking Fees - Market-based strategy designed to modify mode choice by imposing higher costs for parking private automobiles. Most appropriately applied to parking facilities in urban settings.
Strategy #3 Shift Trips from SOV to HOV	Transportation Demand Management
	Alternate Work Schedule, Telecommuting and Employee Trip Reduction Programs - Encourage employers to consider allowing employees to maintain a flexible schedule – thus allowing the employee the option of commuting during non-peak hours. Organize Groups/employers that offer tax incentives or transit subsidies on a regular basis
	Transportation System Management
Strategy #4: Improve Roadway Operations	Rideshare Matching Services - Provide carpool/vanpool matching and ridesharing information resources and services
	Vanpool/Employer Shuttle Programs - Organize groups of commuters to travel together in a passenger van or employer-provided shuttle on a regular basis.
	Traffic Operational Improvements
	Incident Management- Detection, Response & Clearance - Utilize traveler radio, travel alert notification (via e-mail, fax, etc.), and general public outreach to enhance incident-related information dissemination.

Figure 6: Identified Congested Corridors

Corridor #3—Middletown Area

Table 4: CMS Strategy Mitigation Matrix

Note: Other Area-wide mitigation measures are listed on Table 3

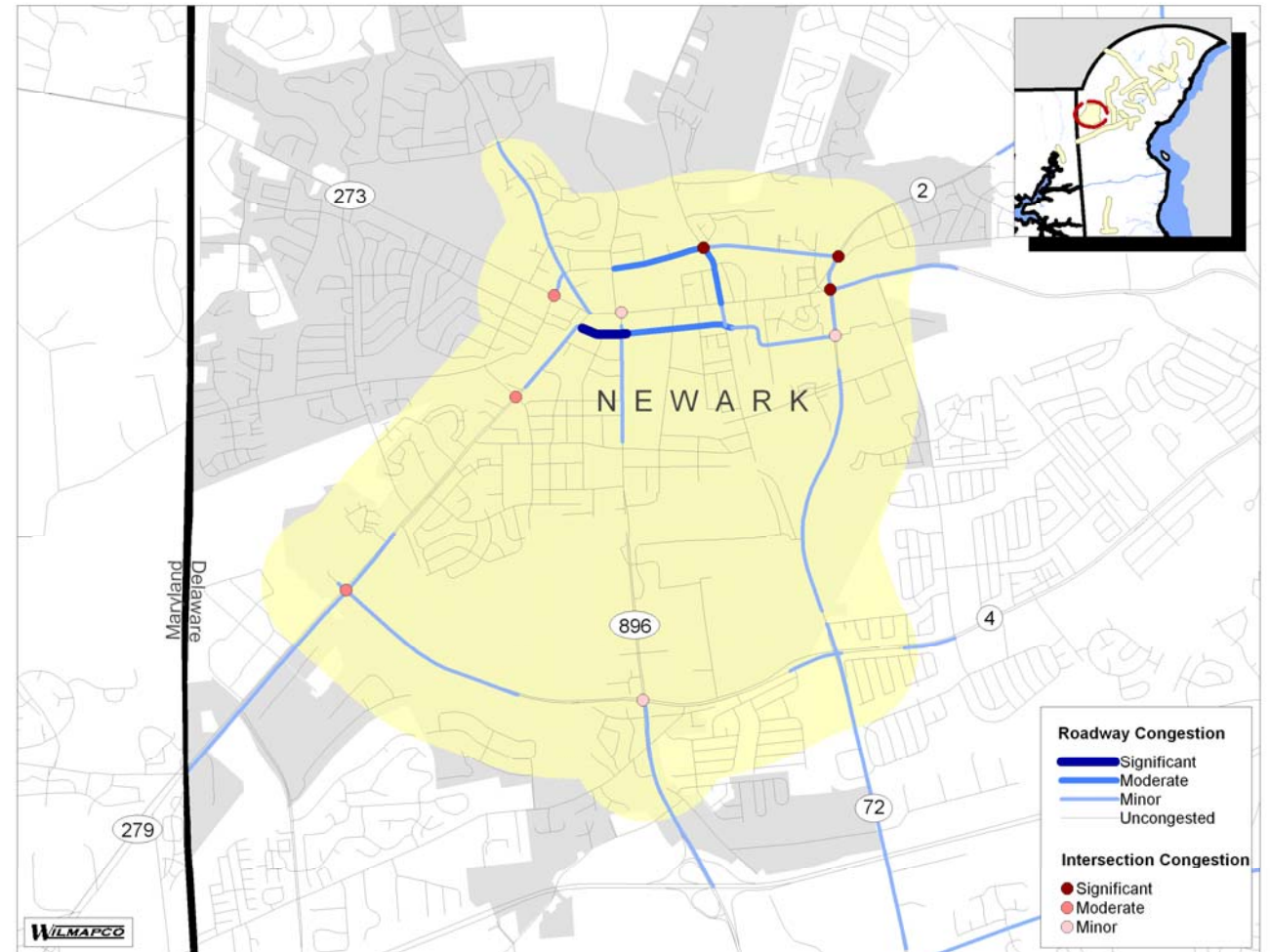
CMS Corridor #1, Newark: Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	9,700 - 40,800	2007
Type of Facility(ies)	Minor Arterial, Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	18.4%	2007
Average Roadway V/C Ratio	85.9%	2007
Average Transit Peak Headway (AM/PM)	39 minutes / 46 minutes	2006
Number of Park and Rides and % Usage	3; 63.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	5.8%	2005

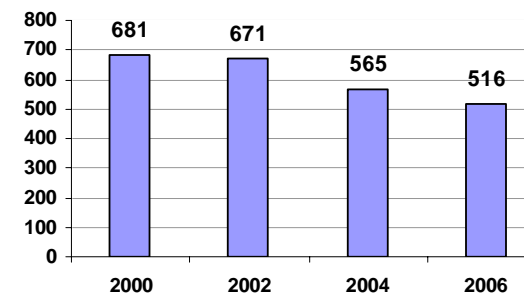
Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.44	2008
Gross Employment Density (per acre)	3.43	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	8.0%	2000
Major Activity Center	City of Newark	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	857 (2% increase)	2008
Gross Employment Change (2000-2008)	2,531 (7.3% increase)	2008
AADT Change (2000-2007)	2000 - 22,073	2007
	2007 - 22,293 (1% increase)	
Avg. Peak Travel Speed Change (2001-2008)	2001- 19.18mph	2008
	2008 - 26.65mph (28% increase)	

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Crash Trends: 2000-2006



Source: DeIDOT, WILMAPCO 2008. Includes all reported crashes along all arterials/freeways located within corridor. Included crashes at all intersections.

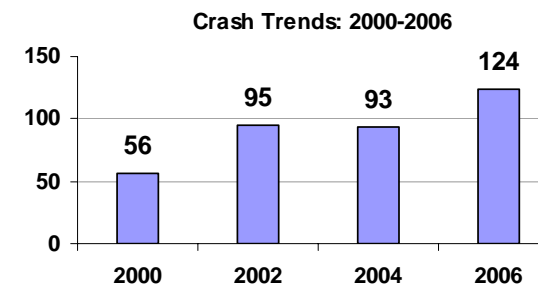
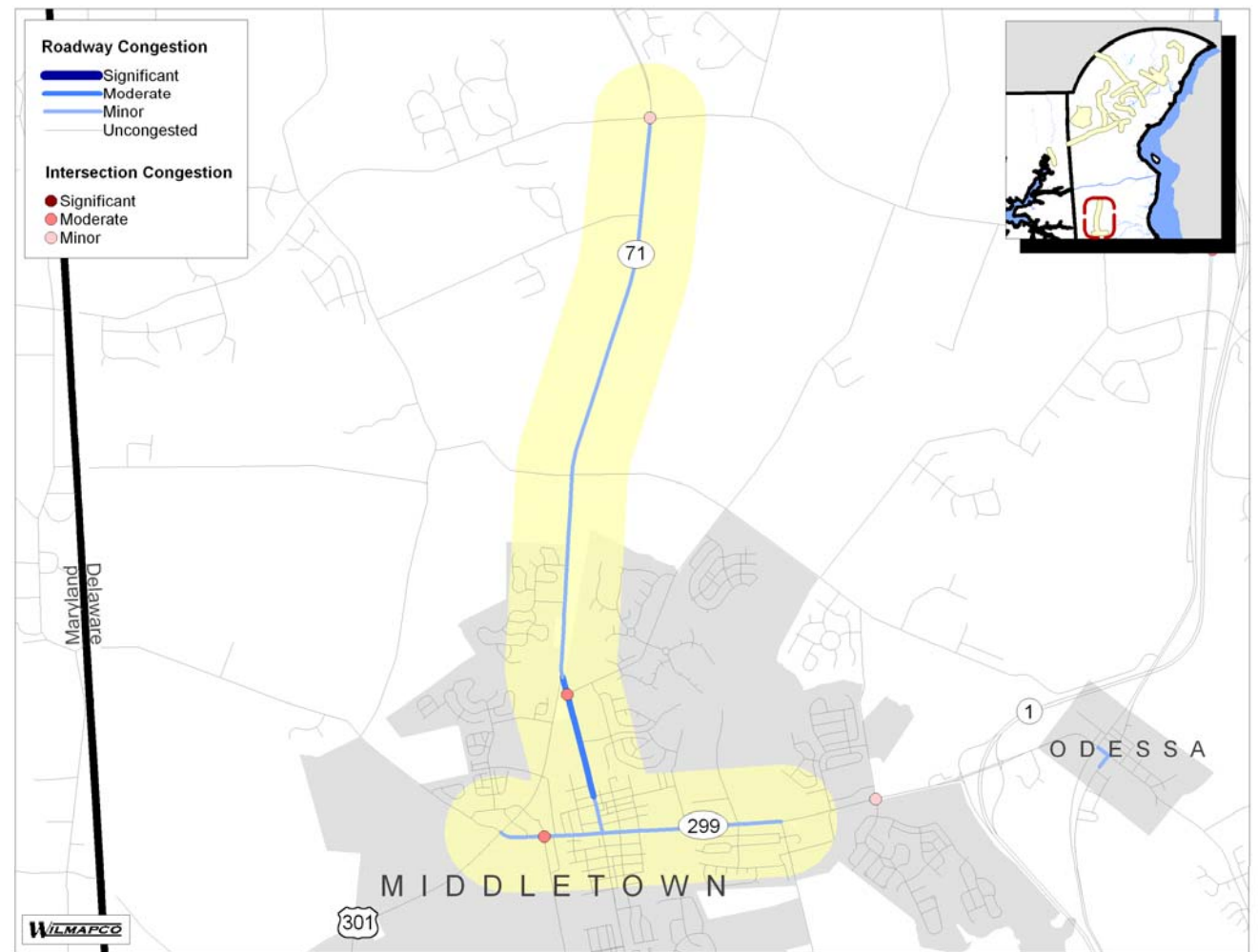
CMS Corridor #3, U.S. 301 (Middletown): Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	7,800 - 24, 200	2007
Type of Facility(ies)	Major, Other Principal and Minor Arterials	2008
Average Transit Routes V/C** Ratio	3.6%	2007
Average Roadway V/C Ratio	25.0%	2007
Average Transit Peak Headway (AM/PM)	N/A	2006
Number of Park and Rides and % Usage	1; 65.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	13.4%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	0.37	2008
Gross Employment Density (per acre)	0.34	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	N/A	2000
Major Activity Center	Town of Middletown	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	4,880 (67% increase)	2008
Gross Employment Change (2000-2008)	1,502 (57% increase)	2008
AADT Change (2000-2007)	2000 - 11,093	2007
	2007 - 15,646 (41% increase)	
Avg. Peak Travel Speed Change (2001-2008)	SR 299 section: 2001- 22.18mph	2008
	2008 - 22.24mph (0.3% increase)	
	US 301 section: 2004- 44.81mph	
	2008 -40.15mph (12% decrease)	

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DelDOT, WILMAPCO 2008. Includes all reported crashes along US 301 from Boyd's Corner Rd. to SR 71/US 301 split, then south on SR 71 to SR 299. Includes crashes at all intersections.

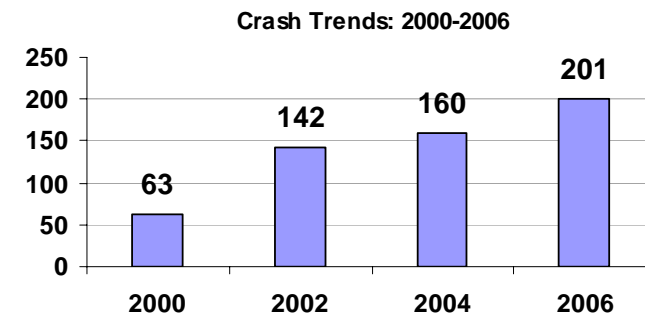
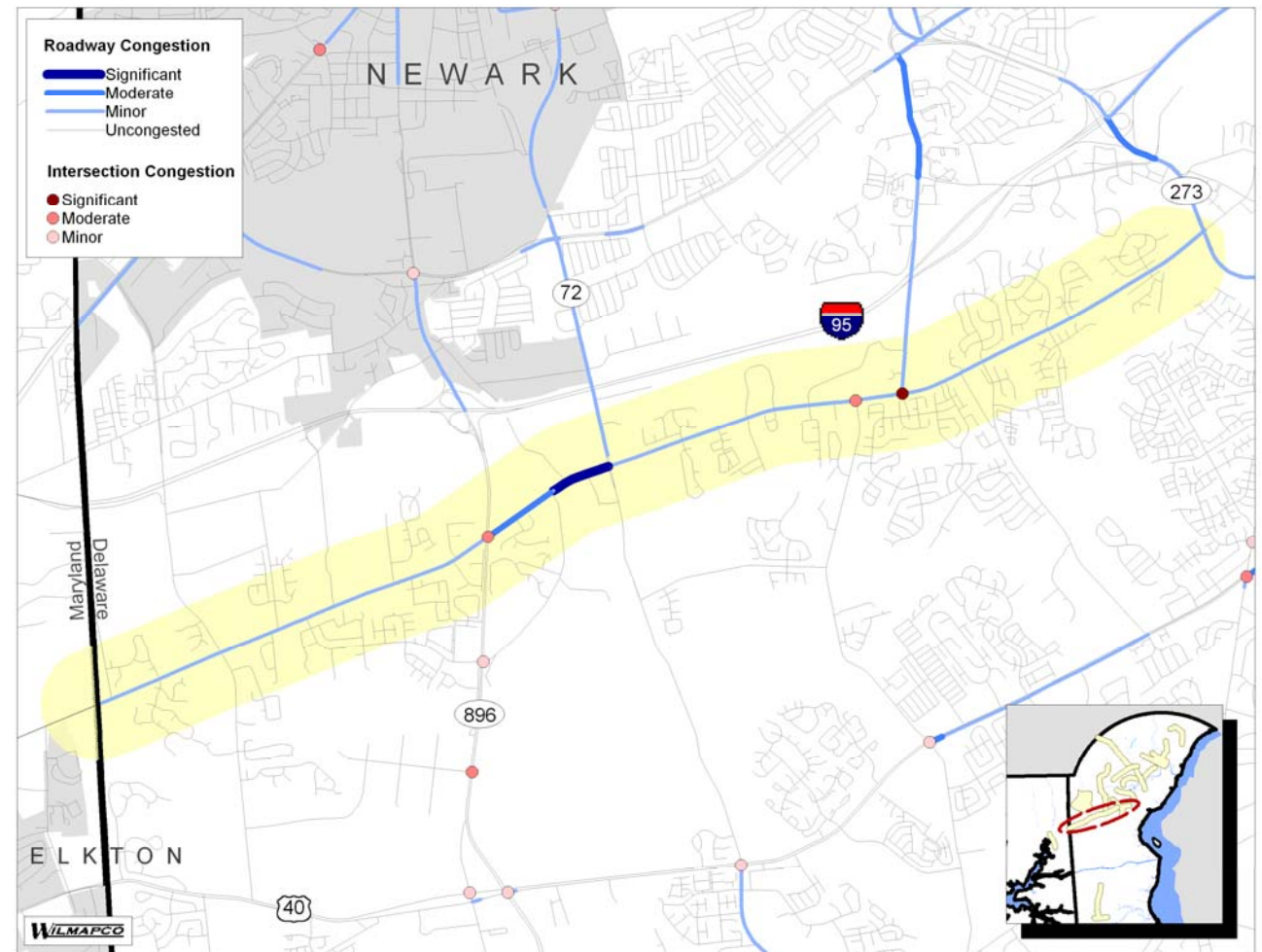
CMS Corridor #4, Old Baltimore Pike Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	12,400 - 20,800	2007
Type of Facility(ies)	Minor Arterial	2008
Average Transit Routes V/C** Ratio	16.5%	2007
Average Roadway V/C Ratio	57.4%	2007
Average Transit Peak Headway (AM/PM)	60 minutes / 60 minutes	2006
Number of Park and Rides and % Usage	1; 69.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	8.0%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.32	2008
Gross Employment Density (per acre)	0.82	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	N/A	2000
Major Activity Center	People's Plaza; City of Newark; Christiana Mall	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	2,626 (9% increase)	2008
Gross Employment Change (2000-2008)	1,728 (30% increase)	2008
AADT Change (2000-2007)	N/A	2007
Avg. Peak Travel Speed Change (2001-2008) * Does not include section from SR 896 to MD line	2001- 25.88mph 2008 - 26.15mph (1% increase)	2008

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DelDOT, WILMAPCO 2008. Includes crashes at intersections.

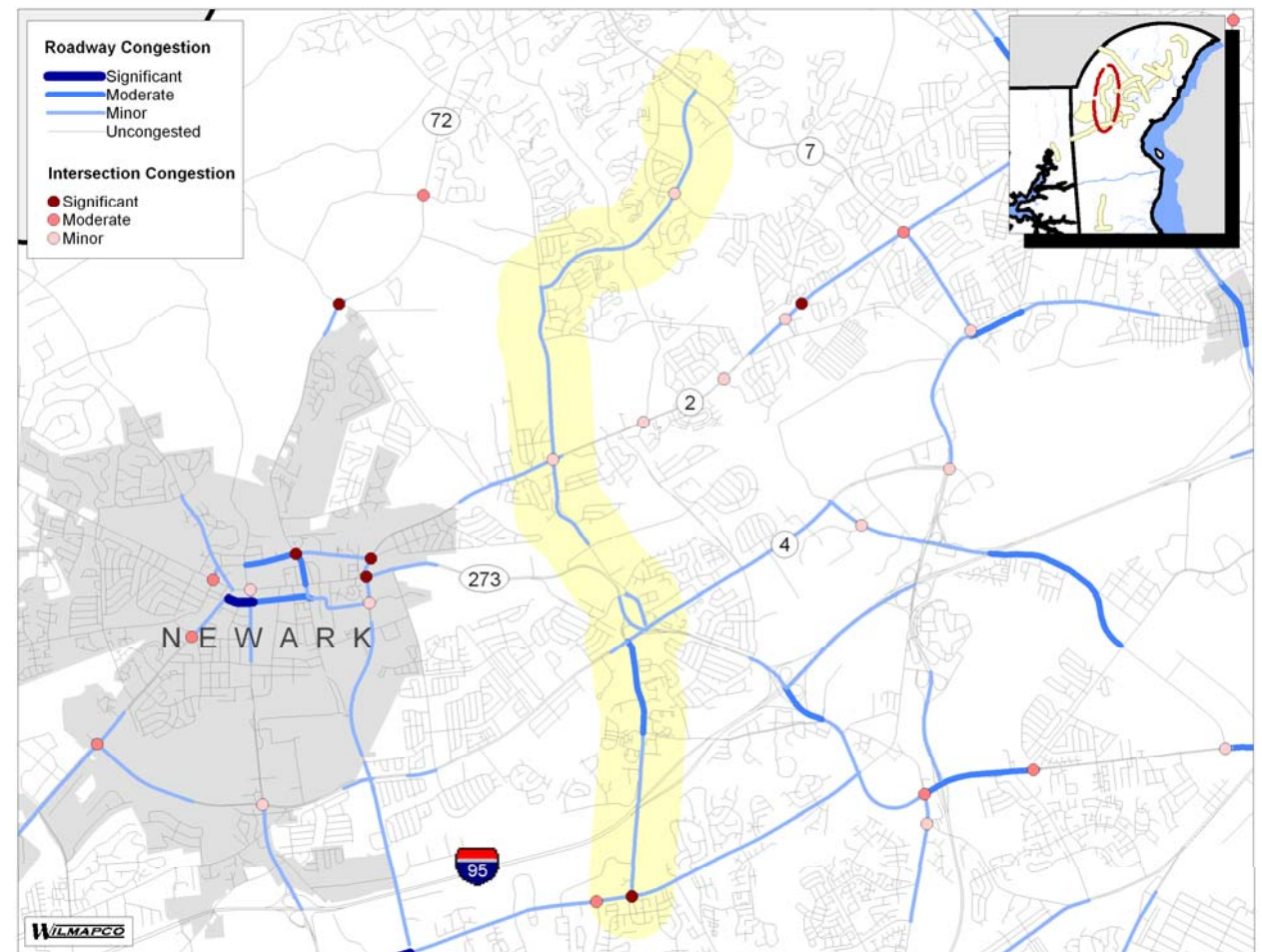
CMS Corridor #5; Red Mill/Polly Drummond Hill Rd. Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	9,500 - 20,200	2007
Type of Facility(ies)	Minor Arterial	2008
Average Transit Routes V/C** Ratio	7.6%	2007
Average Roadway V/C Ratio	68.3%	2007
Average Transit Peak Headway (AM/PM)	29 minutes / 43 minutes	2006
Number of Park and Rides and % Usage	3; 48.7%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	5.3%	2005

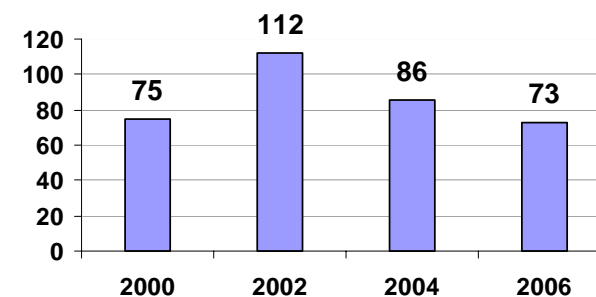
Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.67	2008
Gross Employment Density (per acre)	1.42	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	N/A	2000
Major Activity Center	City of Newark; Kirkwood Highway; Christiana Mall	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	886 (1% increase)	2008
Gross Employment Change (2000-2008)	-12,584 (36% decrease)	2008
AADT Change (2000-2007)	2000 - 17,169 2007 - 16,132 (6% decrease)	2007
Avg. Peak Travel Speed Change (2001-2008)	N/A	N/A

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Crash Trends: 2000-2006



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

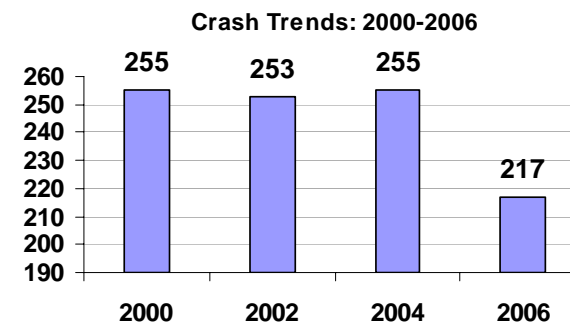
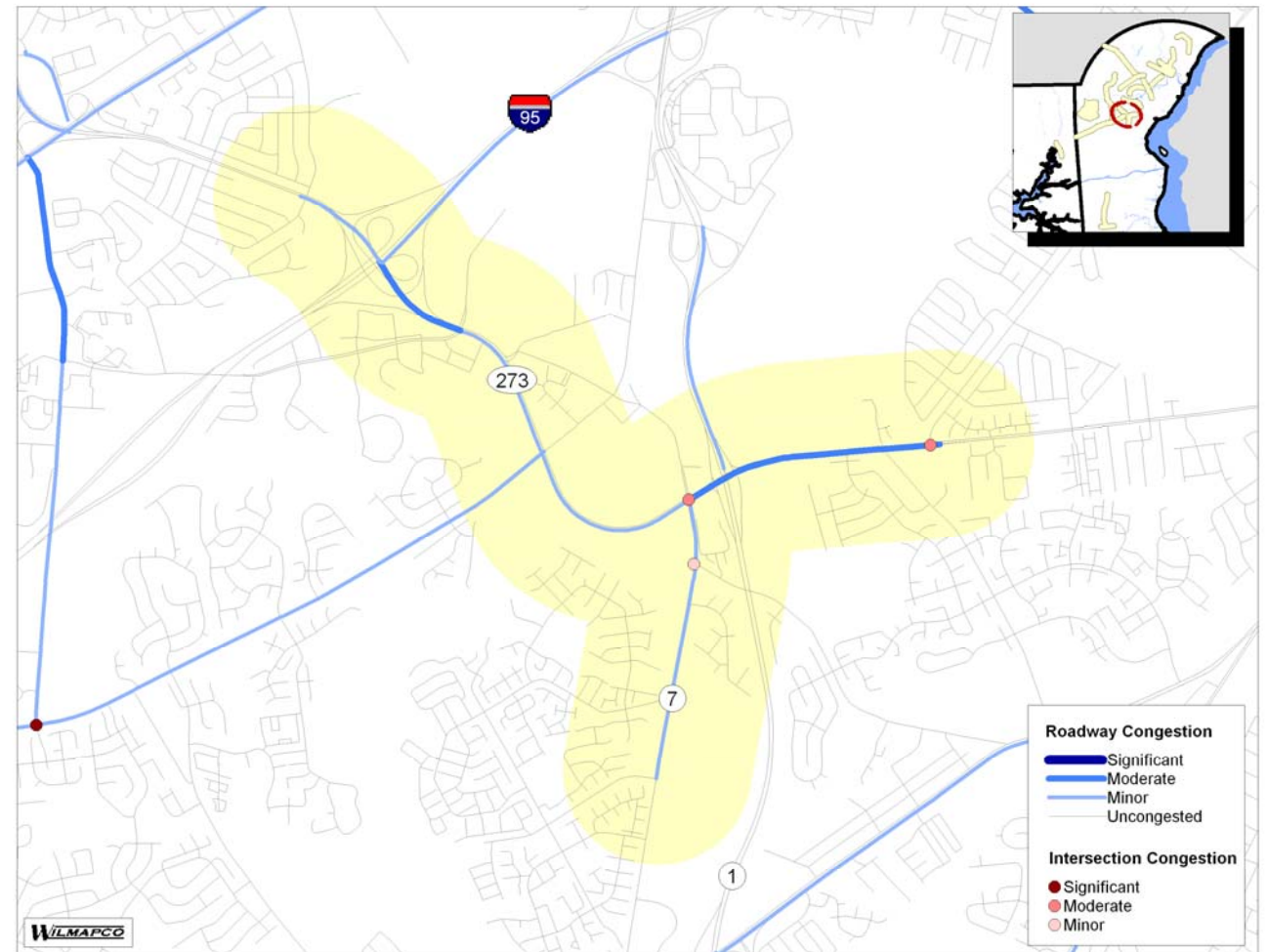
CMS Corridor #6, SR 273 / SR 7: Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	31,100 - 58,000	2007
Type of Facility(ies)	Minor Arterial, Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	25.0%	2007
Average Roadway V/C Ratio	20.7%	2007
Average Transit Peak Headway (AM/PM)	40 minutes / 56 minutes	2006
Number of Park and Rides and % Usage	1; 28.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	4.6%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	2.02	2008
Gross Employment Density (per acre)	2.92	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	N/A	2000
Major Activity Center	Christiana Mall	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	1,674 (5% increase)	2008
Gross Employment Change (2000-2008)	4,988 (32% increase)	2008
AADT Change (2000-2007)	2000 - 27,475 2007 - 41,929 (53% increase)	2007
Avg. Peak Travel Speed Change (2001-2008)	2001 - 28.07 2008 - 25.86 (8% decrease)	2008

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

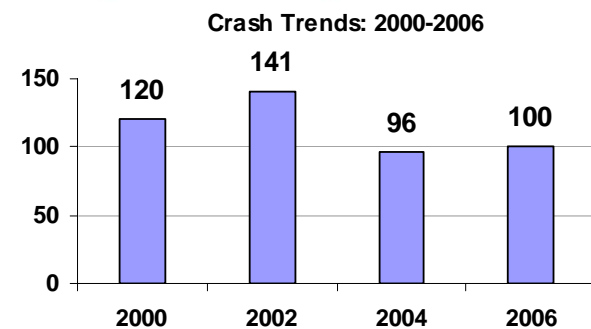
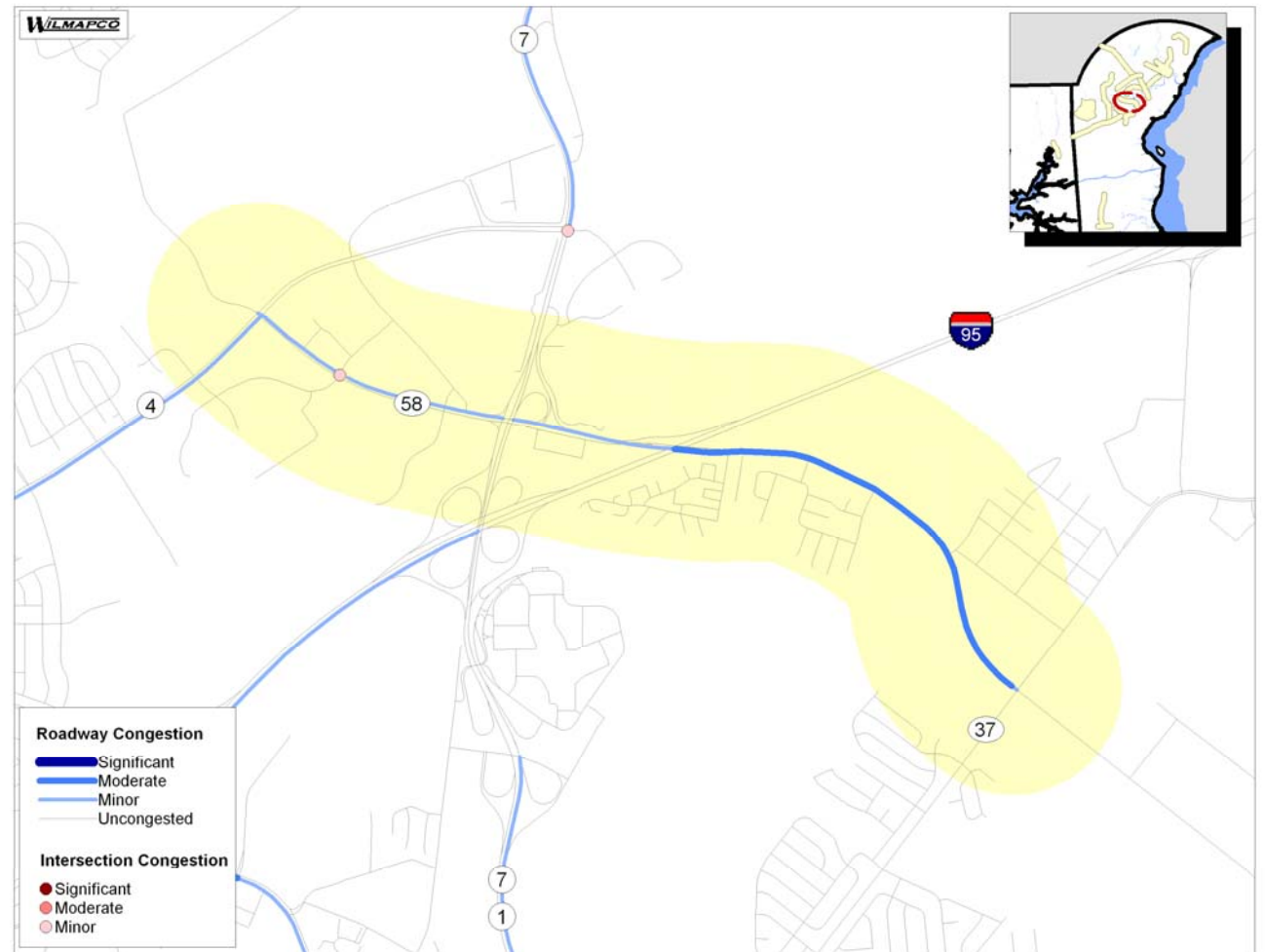
CMS Corridor #7, SR 58, Churchman's Road Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	14,100 - 26,400	2007
Type of Facility(ies)	Minor Arterial	2008
Average Transit Routes V/C** Ratio	32.5%	2007
Average Roadway V/C Ratio	16.9%	2007
Average Transit Peak Headway (AM/PM)	38 minutes / 41 minutes	2006
Number of Park and Rides and % Usage	2; 100.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	9.0%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	0.78	2008
Gross Employment Density (per acre)	3.64	2008
Percent within an EJ*** Area	N/A	2000
Percent within a TJ**** Area	N/A	2000
Major Activity Center	Christiana Mall; Kirkwood Highway	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	356 (2% increase)	2008
Gross Employment Change (2000-2008)	-6,699 (20% decrease)	2008
Avg. AADT Change (2000-2007)	2000 - 18,369 2007 - 20,240 (10% increase)	2007
Avg. Peak Travel Speed Change (2001-2008)	N/A	N/A

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DelDOT, WILMAPCO 2008. Includes crashes at intersections.

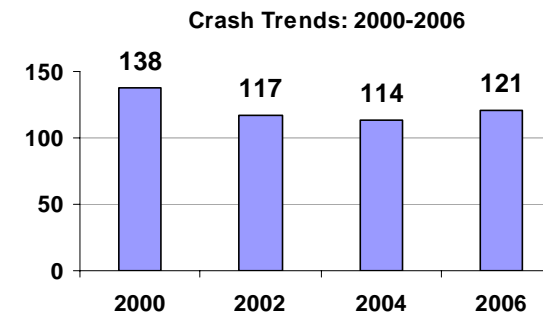
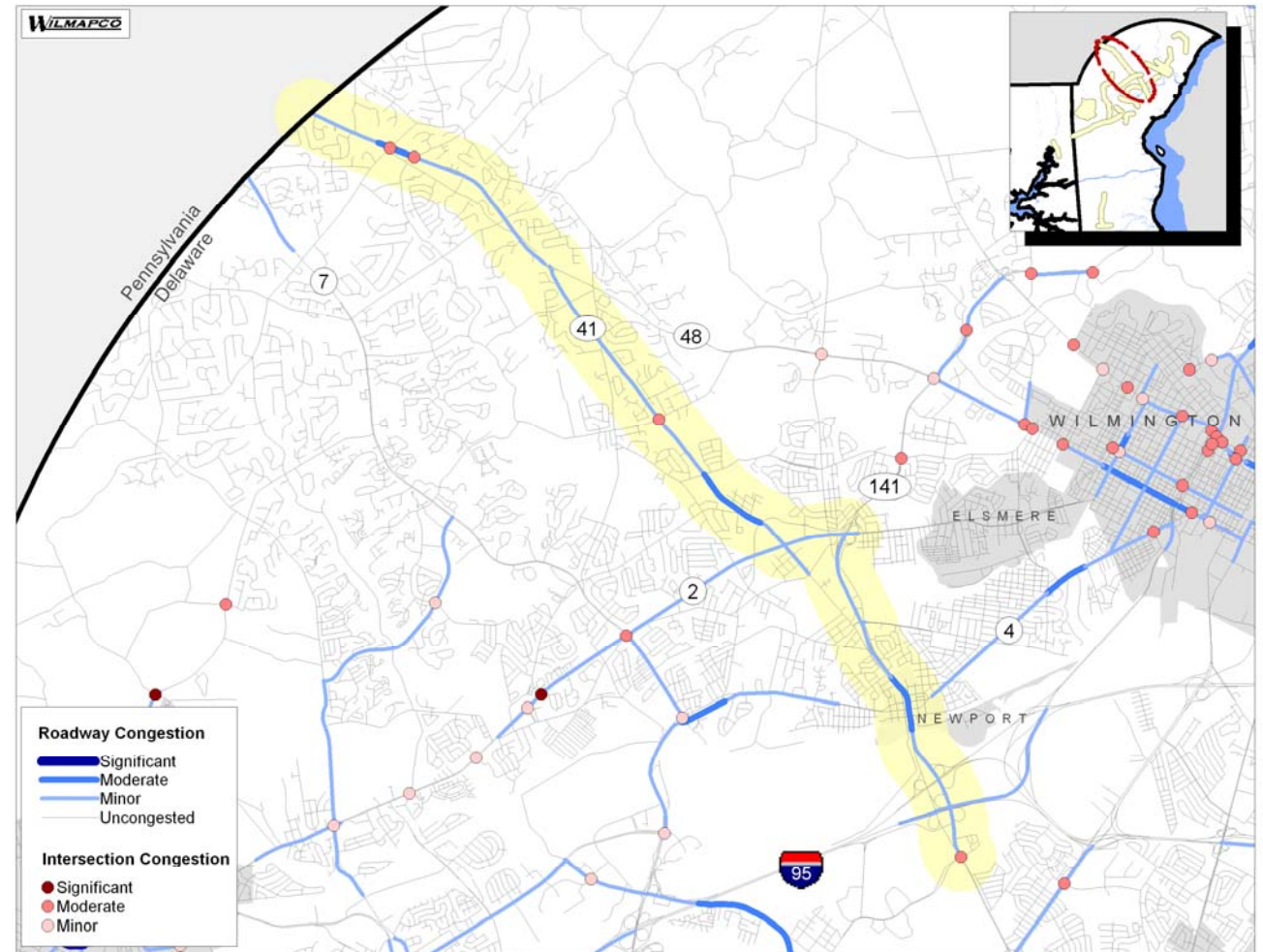
CMS Corridor #8, SR 41/SR 141 Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	12,500 - 80,000	2007
Type of Facility(ies)	Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	15.0%	2007
Average Roadway V/C Ratio	9.6%	2007
Average Transit Peak Headway (AM/PM)	16 minutes / 21 minutes	2006
Number of Park and Rides and % Usage	5; 38.8%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	6.4%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.10	2008
Gross Employment Density (per acre)	1.62	2008
Percent within an EJ*** Area	4.5%	2000
Percent within a TJ**** Area	9.4%	2000
Major Activity Center	Kirkwood Highway; Christiana Mall	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	472 (1% increase)	2008
Gross Employment Change (2000-2008)	-4,784 (14% decrease)	2008
AADT Change (2000-2007)	2000 - 27,231	2007
	2007 - 30,605 (12% increase)	
Avg. Peak Travel Speed Change (2001-2008) * Does not include SR 41 from SR 48 split to SR 2.	2001 - 34.61	2008
	2008 - 34.69 (4% increase)	

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

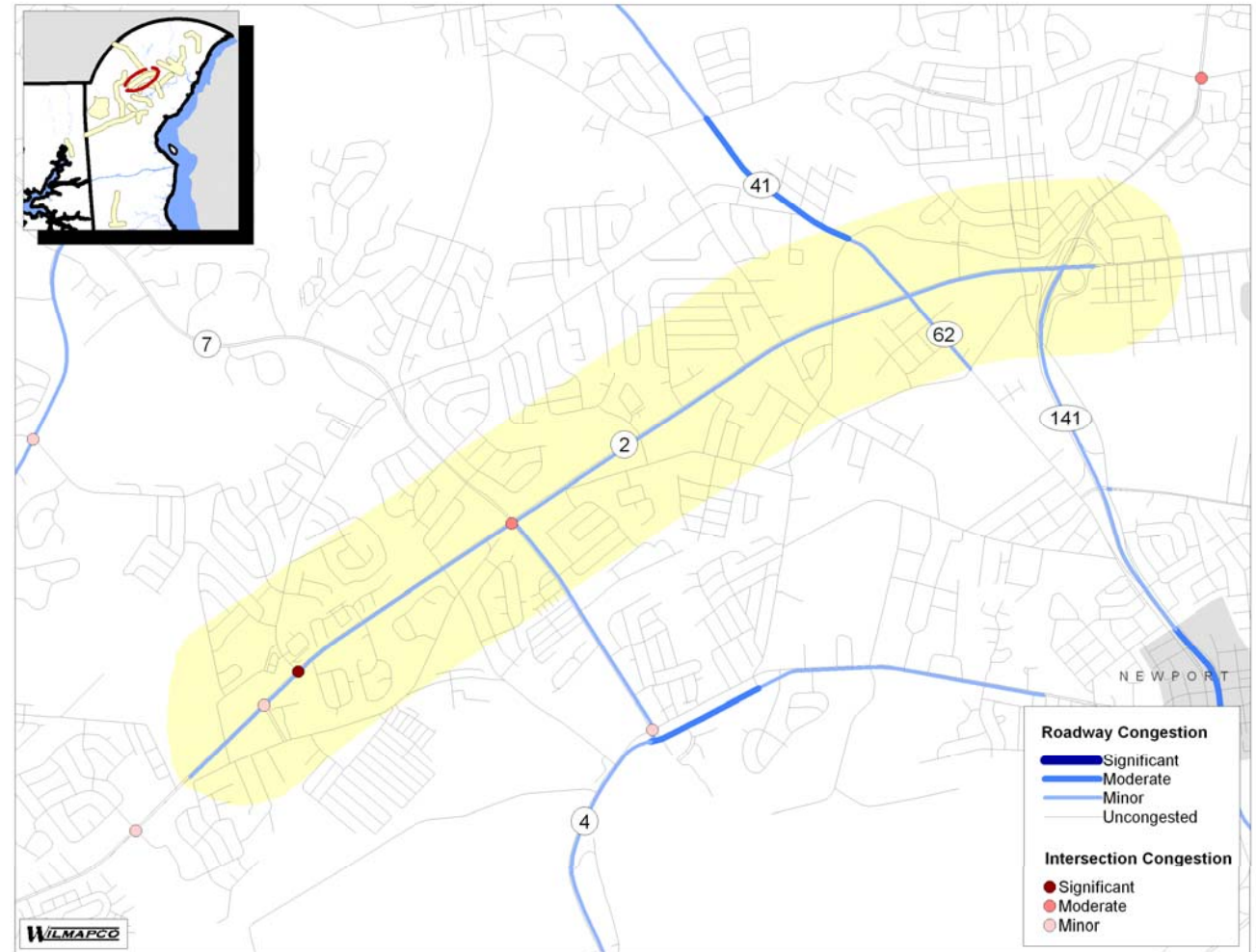
CMS Corridor #9, SR 2 Kirkwood Highway Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	40,000 - 53,300	2007
Type of Facility(ies)	Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	39.8%	2007
Average Roadway V/C Ratio	92.4%	2007
Average Transit Peak Headway (AM/PM)	25 minutes / 19 minutes	2006
Number of Park and Rides and % Usage	1; 38.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	3.0%	2005

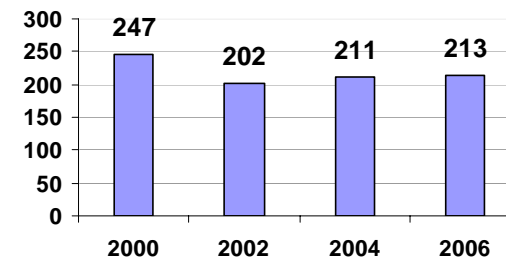
Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	2.34	2008
Gross Employment Density (per acre)	2.28	2008
Percent within an EJ*** Area	6.5%	2000
Percent within a TJ**** Area	15.1%	2000
Major Activity Center	Kirkwood Highway	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	126 (<1% increase)	2008
Gross Employment Change (2000-2008)	-4,460 (27% decrease)	2008
AADT Change (2000-2007)	2000 - 47,792	2007
	2007 - 47,190	
	(1% decrease)	
Avg. Peak Travel Speed Change (2001-2008)	2001 - 28.11	2008
	2008 - 28.54	
	(2% increase)	

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Crash Trends: 2000-2006



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

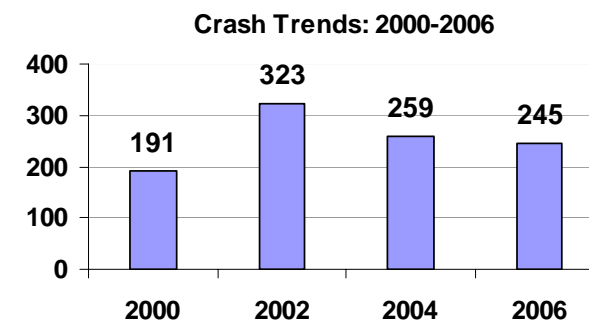
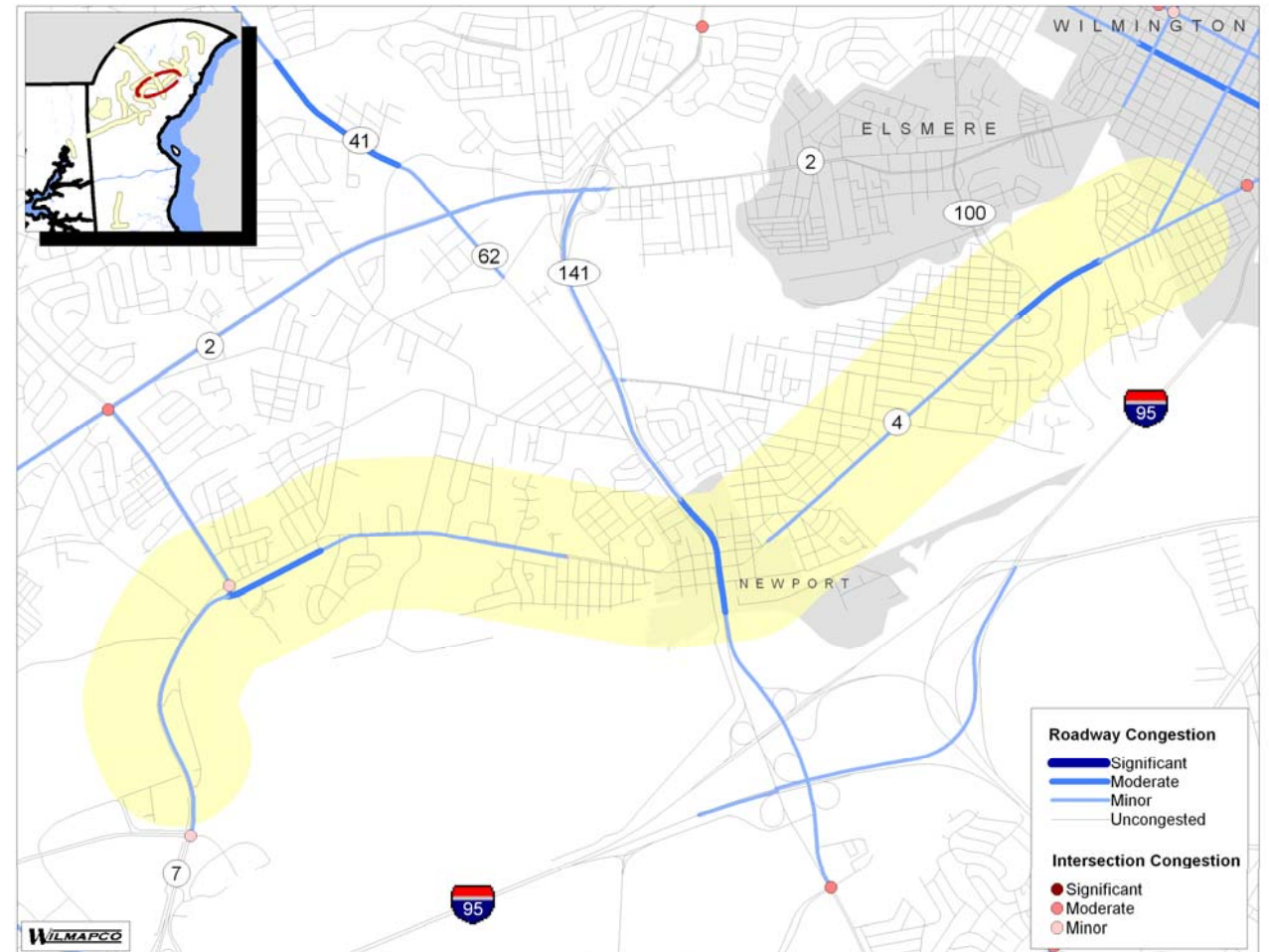
CMS Corridor #10, SR 4(Newport): Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	2600 - 57,500	2007
Type of Facility(ies)	Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	32.8%	2007
Average Roadway V/C Ratio	62.6%	2007
Average Transit Peak Headway (AM/PM)	9 minutes / 10.5 minutes	2006
Number of Park and Rides and % Usage	1; 9.0%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	18.3%	2005

Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.54	2008
Gross Employment Density (per acre)	2.64	2008
Percent within an EJ*** Area	16.7%	2000
Percent within a TJ**** Area	34.3%	2000
Major Activity Center	Kirkwood Highway; City of Wilmington; Christiana Mall	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	-83 (<1% decrease)	2008
Gross Employment Change (2000-2008)	-14,062 (31% decrease)	2008
AADT Change (2000-2007)	2000 - 22,485 2007 - 18,072 (20% decrease)	2007
Avg. Peak Travel Speed Change (2001-2008)	2001 - 22.42mph 2008 - 24.36mph (8% increase)	2008

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

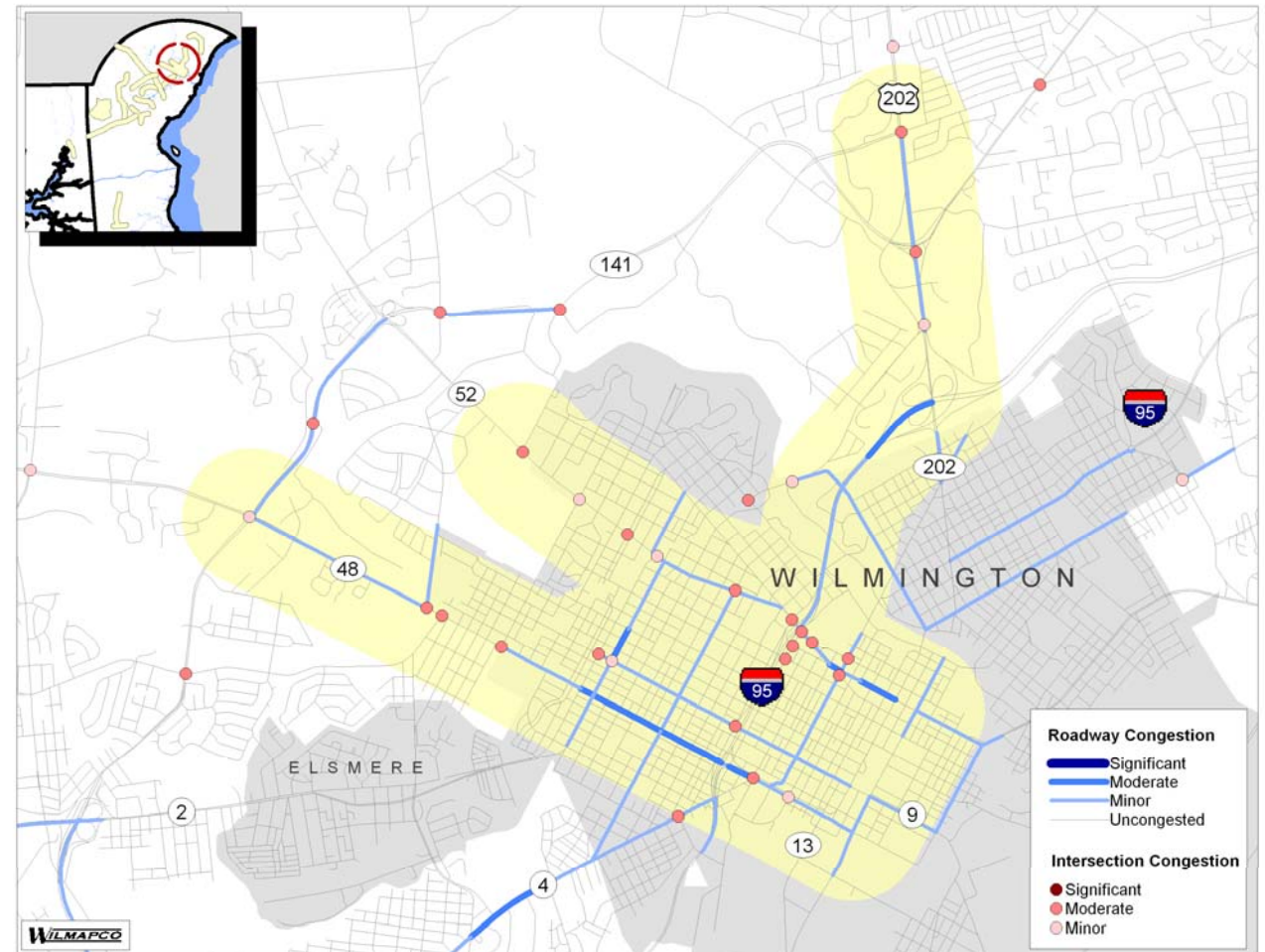
CMS Corridor #11, City of Wilmington: Profile

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	5,600 - 81,200	2007
Type of Facility(ies)	Interstate, Minor, and Other Principal Arterial	2008
Average Transit Routes V/C** Ratio	38.5%	2007
Average Roadway V/C Ratio	62.3%	2007
Average Transit Peak Headway (AM/PM)	24 minutes / 25 minutes	2006
Number of Park and Rides and % Usage	1; 141.5%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	7.2%	2005

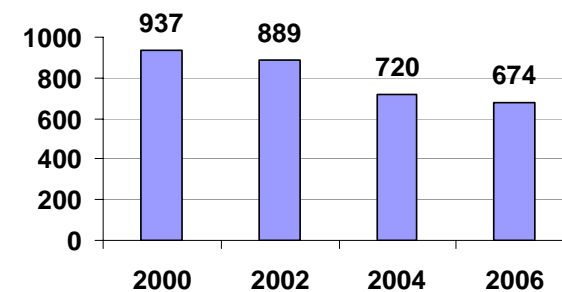
Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	3.43	2008
Gross Employment Density (per acre)	8.16	2008
Percent within an EJ*** Area	55.5%	2000
Percent within a TJ**** Area	44.7%	2000
Major Activity Center	City of Wilmington; Concord Pike	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	-22 (<1% decrease)	2008
Gross Employment Change (2000-2008)	-9,348 (11% decrease)	2008
AADT Change (2000-2007)	2000 - 29,092	2007
	2007 - 27,891 (4% decrease)	
Avg. Peak Travel Speed Change (2001-2008)	2001 - 19.51	2008
	2008 - 18.52 (4% decrease)	

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Crash Trends: 2000-2006



Source: DeIDOT, WILMAPCO 2008. Includes crashes at intersections.

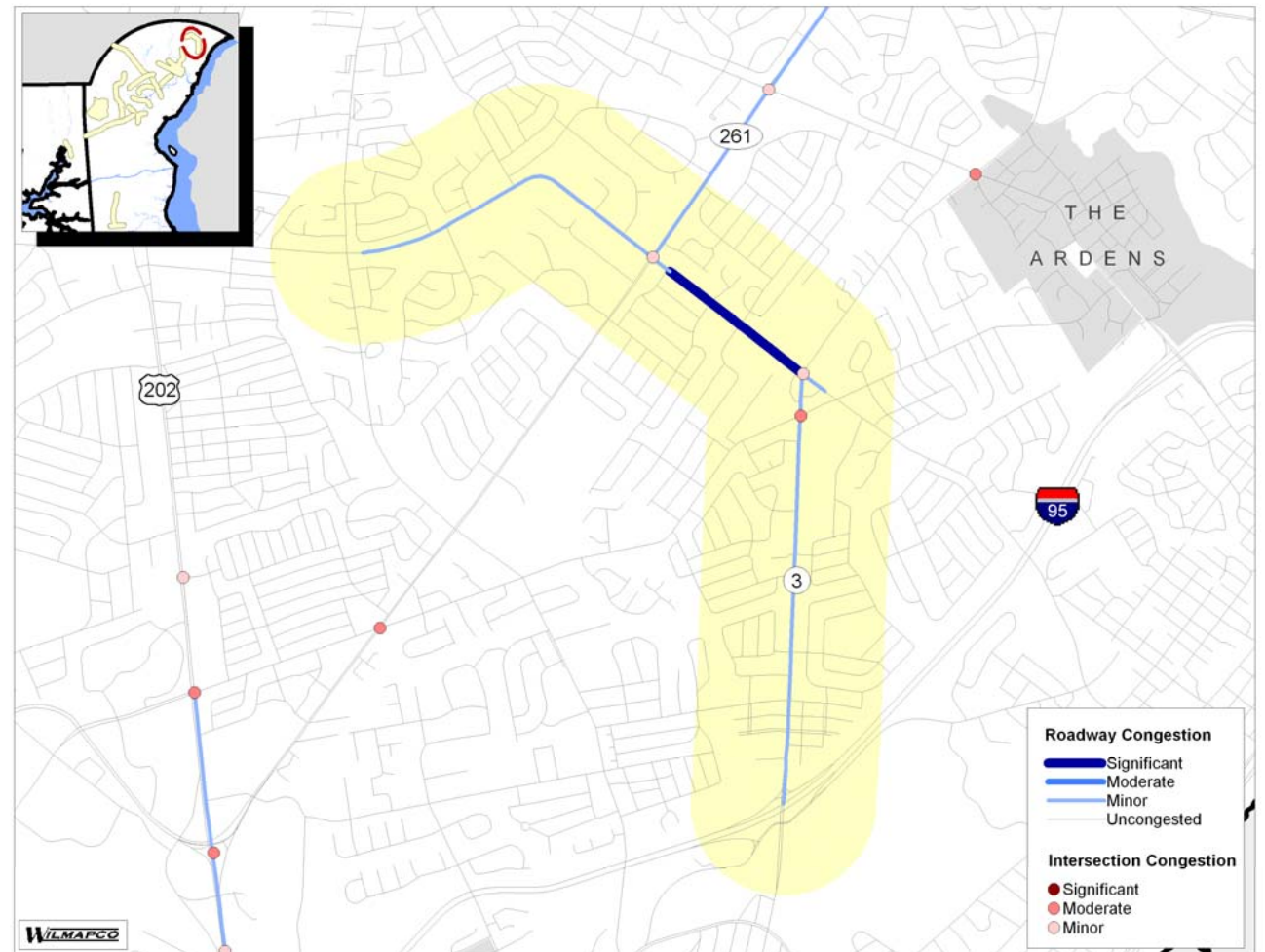
CMS Corridor #12 Silverside Rd. Profile,

Transportation Inventory		
Measure	Statistic(s)	Data Year
AADT* Range	14,000 - 16,000	2007
Type of Facility(ies)	Minor Arterial	2008
Average Transit Routes V/C** Ratio	13.9%	2007
Average Roadway V/C Ratio	31.9%	2007
Average Transit Peak Headway (AM/PM)	19 minutes / 18 minutes	2006
Number of Park and Rides and % Usage	3; 64.7%	2008
Daily Truck % at Select Locations # (Shown on map in yellow)	23.1%	2005

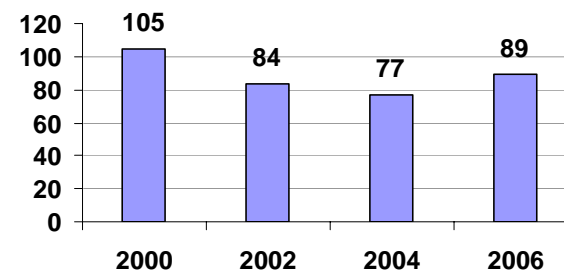
Demographics		
Measure	Statistic(s)	Data Year
Gross Household Density (per acre)	1.71	2008
Gross Employment Density (per acre)	1.83	2008
Percent within an EJ*** Area	na	2000
Percent within a TJ**** Area	5.6%	2000
Major Activity Center	Concord Pike	

Trends		
Measure	Statistic(s)	Data Year
Gross Population Change (2000-2008)	-77 (<1% decrease)	2008
Gross Employment Change (2000-2008)	-3,936 (25% decrease)	2008
AADT Change (2000-2007)	2000 - 14,883 2007 - 15,509 (4% increase)	2007
Avg. Peak Travel Speed Change (2001-2008)	N/A	N/A

* AADT = Average Annual Daily Traffic ** V/C = Volume to Capacity
 *** EJ = Environmental Justice (low income and minority neighborhoods)
 **** TJ = Transportation Justice (elderly, disabled and zero car household neighborhoods)
 # FHWA classifications 5 and higher



Crash Trends: 2000-2006



Source: DelDOT, WILMAPCO 2008. Includes crashes at intersections.

Programmed Projects Along Identified CMS Corridors

Figure 7 shows the location of projects that aim to address congestion that are currently programmed in the Transportation Improvement Plan (TIP) from fiscal year 2009 to 2012. Only management and expansion projects are shown, all preservation projects are excluded from this list. **Table 6** gives a corridor-by-corridor summary of the programmed projects, with overall costs and projected in-service year.. For future updates on the TIP and the projects along CMS corridors, please check the WILMAPCO website at: www.wilmapco.org.

Figure 7: Funded TIP Projects Along CMS Corridors

Table 6: FY 2009-2012 Funded TIP Projects Along CMS Corridors

* Refer back to page 11 for a detailed list of mitigation strategies.