

Travel Time Changes in the WILMAPCO Region 2000-2007

Process

As part of the Congestion Management System (CMS), WILMAPCO has been collecting data on an annual basis on travel times along most of our major corridors in the region. Now that we have multiple years worth of data, we are able to compare the changes in travel times and speeds over a period of time along most of our heavily traveled roadways. For details on the GPS equipment used to collect the data and the collection methodology, please see the final page of this report.

Unlike many nationally known summaries which detail congestion levels on the Interstate system, this summary highlights congestion both on our Interstate and arterial networks.

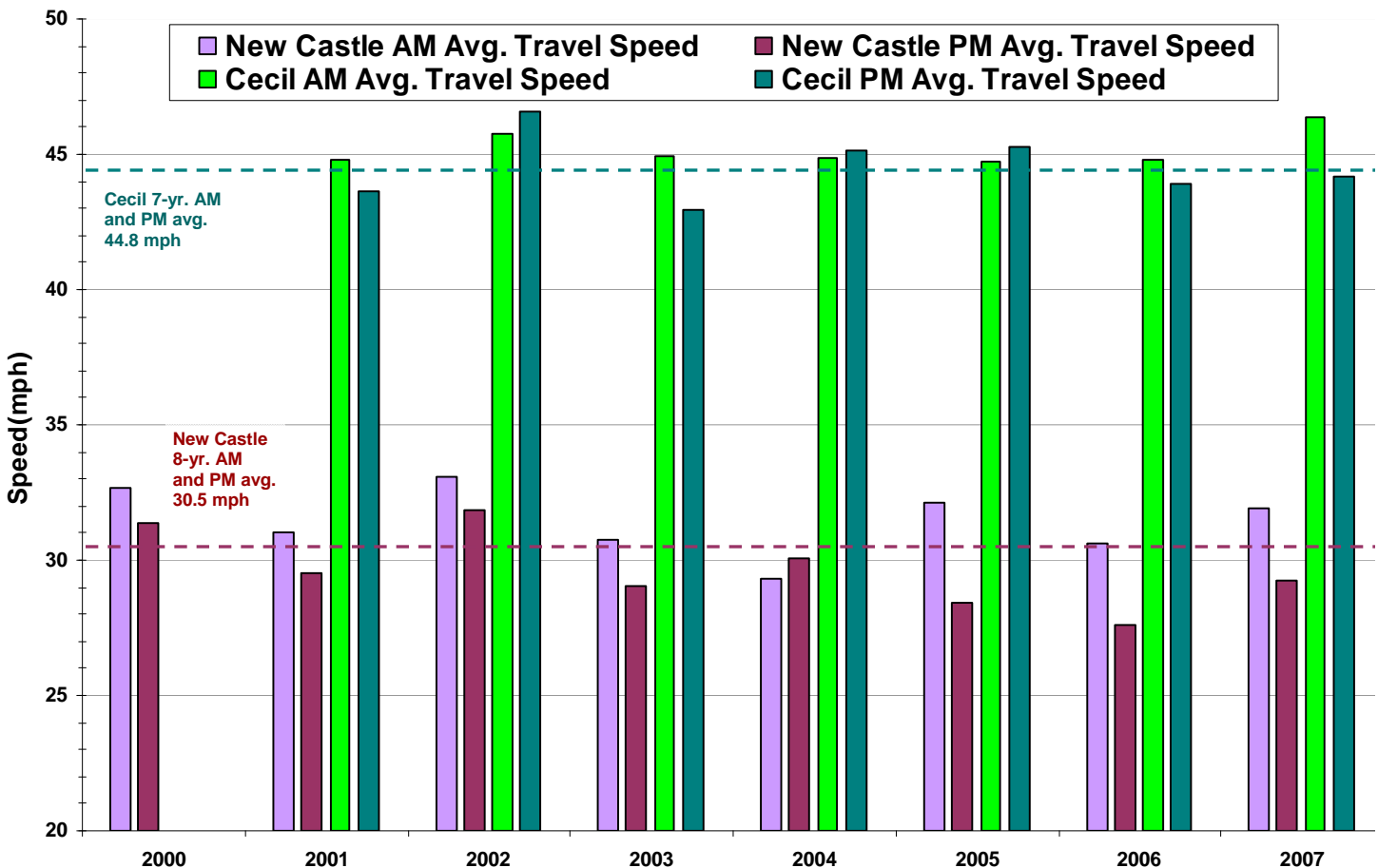
Overall Travel Speed Changes

Over the years overall travel speed has slowed in New Castle County but remained steady in Cecil County. From 2003 to 2007, New Castle County AM travel speeds were mostly at or above average, but PM travel speeds fell below 30 mph. In contrast, the average travel speed in Cecil County remained around 45 mph for both the AM and PM peak.

Commutes Consistently Slower in the Evening in New Castle County:

PM peak hour travel is consistently slower than the AM peak in New Castle County. On average, the PM travel speed in New Castle County is just over 5% slower than the AM peak. Meanwhile, in Cecil County, differences between AM and PM travel speeds are slight and fluctuate, year to year.

Table 1: Average Travel Speeds in the WILMAPCO Region on Major Arterials & Freeways



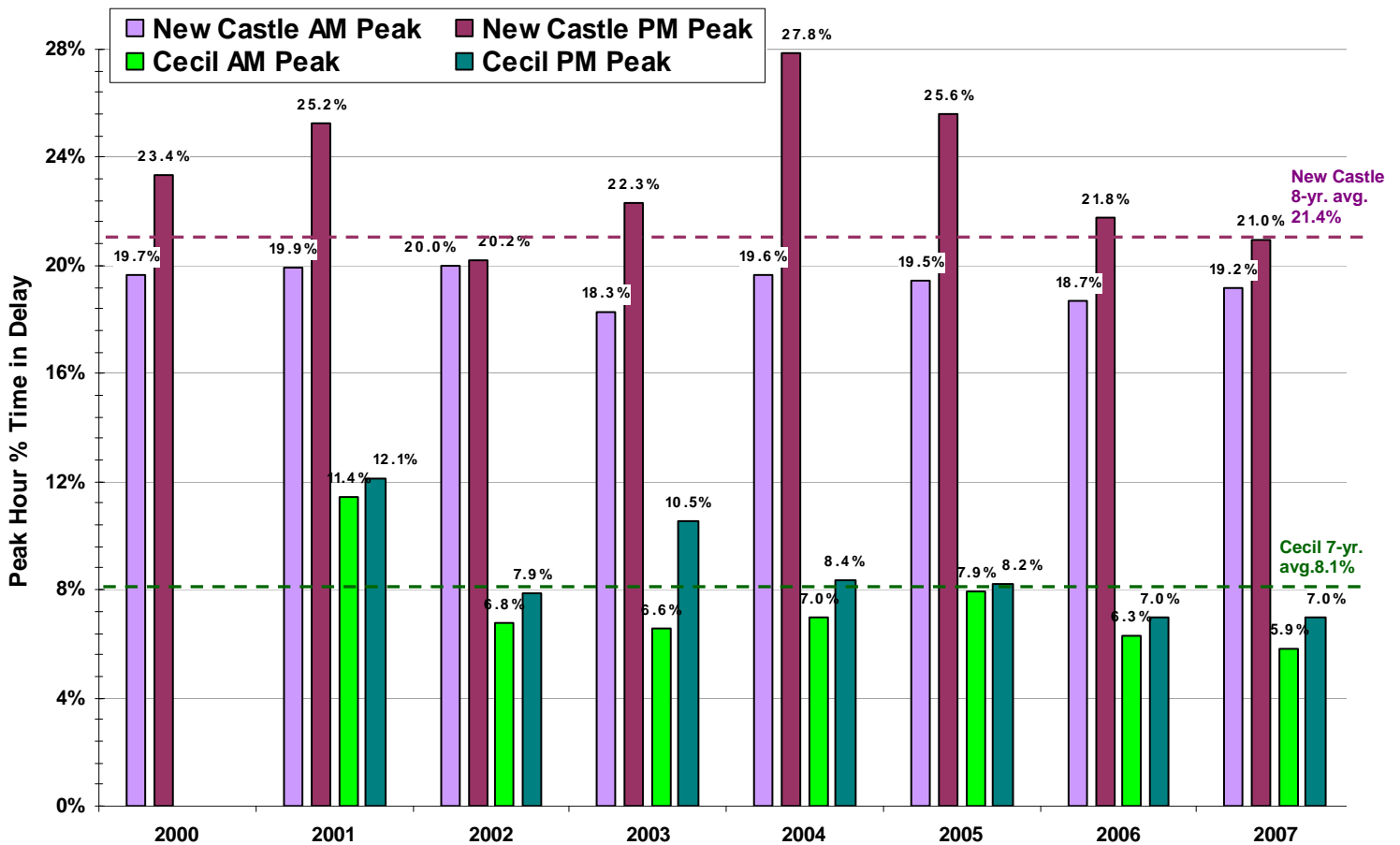
Delay Measurement

Along with our overall slower travel speeds, drivers today experience more time in delay. Delay begins when a vehicle slows to a speed of less than 5 miles per hour. Table 2 illustrates the average amount of time that is spent in delay along major roads during peak times.

Since 2000, overall time spent in delay has varied in the region. In New Castle County, PM peak delay increased between 2000 and 2004, before decreasing by 2007. In general, New Castle County commuters spend 1/5 of their time at speeds less than 5 mph during peak hours. Cecil fares a bit better, with commuters on major roads spending on average 8% of their time in delay during the peak hours. Since 2000, there has been a downward trend in average time spent in delay in both the AM and PM peak hours in Cecil County.

What is noteworthy is the significant difference between the AM and PM peak travel. For all years, both counties experience higher amounts of delay during the evening as opposed to the morning peak hours. In New Castle County, the difference was much greater with drivers spending about 24% of their time in delay during the PM peak and 19% in the AM peak. Cecil County experiences a slower PM commute as well but not as significant.

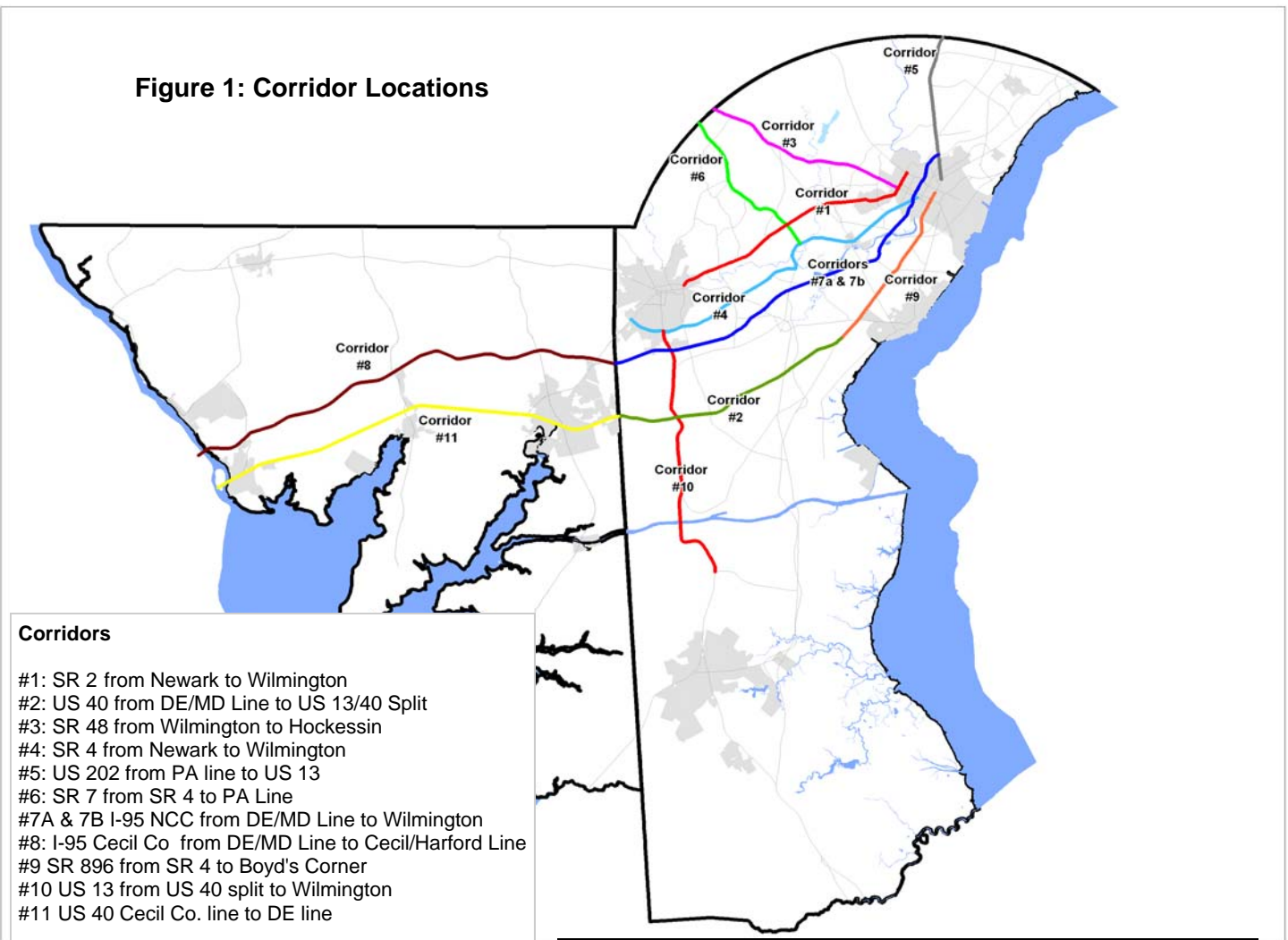
Table 2: Percent of Travel Time Spent in Delay During Peak Hours



Travel Changes Along Key Corridors

The following pages will focus on providing a detailed comparison of travel conditions along eleven of our most traveled corridors. Average travel time data and average travel speed is collected in all directions. Data for years 2000 and 2007 in the AM and PM peak hours will be shown. Average Annual Daily Traffic (AADT), population and employment growth have also been added for each corridor to provide background.

Figure 1: Corridor Locations



Corridors

- #1: SR 2 from Newark to Wilmington
- #2: US 40 from DE/MD Line to US 13/40 Split
- #3: SR 48 from Wilmington to Hockessin
- #4: SR 4 from Newark to Wilmington
- #5: US 202 from PA line to US 13
- #6: SR 7 from SR 4 to PA Line
- #7A & 7B I-95 NCC from DE/MD Line to Wilmington
- #8: I-95 Cecil Co from DE/MD Line to Cecil/Harford Line
- #9 SR 896 from SR 4 to Boyd's Corner
- #10 US 13 from US 40 split to Wilmington
- #11 US 40 Cecil Co. line to DE line

To the right is a sample chart of how the travel time data is displayed for each corridor. Also included on each page is a summary of the significant transportation projects that have been completed along each corridor.

- WB** Westbound Travel
- EB** Eastbound Travel
- NB** Northbound Travel
- SB** Southbound Travel

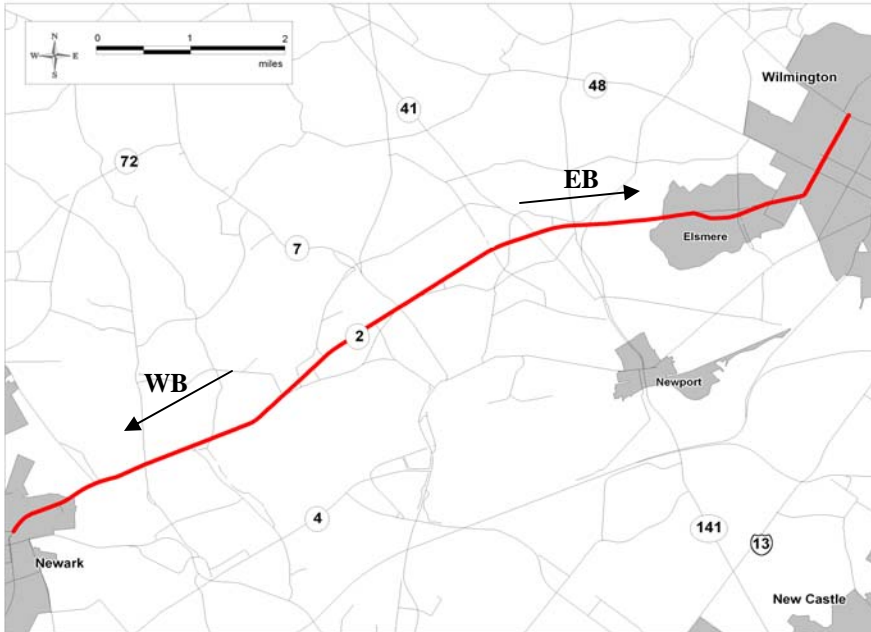
Avg. Travel Time (Min.) - Average Travel Time in minutes.

Avg. Travel Speed (mph) - Average Travel Speed in miles per hour.

AADT - Average Annual Daily Traffic

AM Peak (7:00 - 9:00 am)			
WB Avg. Travel Time (Min.)			
WB Avg. Travel Speed (mph)			
EB Avg. Travel Time (Min.)			
EB Avg. Travel Speed (mph)			
PM Peak (4:30 - 6:30 pm)			
WB Avg. Travel Time (Min.)			
WB Avg. Travel Speed (mph)			
EB Avg. Travel Time (Min.)			
EB Avg. Travel Speed (mph)			
Other Information			
AADT			
Population Change			
Employment Change			

Corridor #1: SR 2 Newark to Wilmington



Total Distance—10.7

Observations

- Traveling in the AM westbound lanes took on average 21.9 minutes in 2000 and increased to 24.1 minutes by 2006. The following year, in 2007 the average dropped to 22.7 minutes.

- The AM eastbound average travel time experienced less than 1% percent change from 2000 to 2007.

- Average travel time improved from 2000 to 2007 for the PM peak hours in both eastbound and westbound directions.

- The PM westbound average travel time decreased about one-quarter (24.1%) from 2000 to 2007.

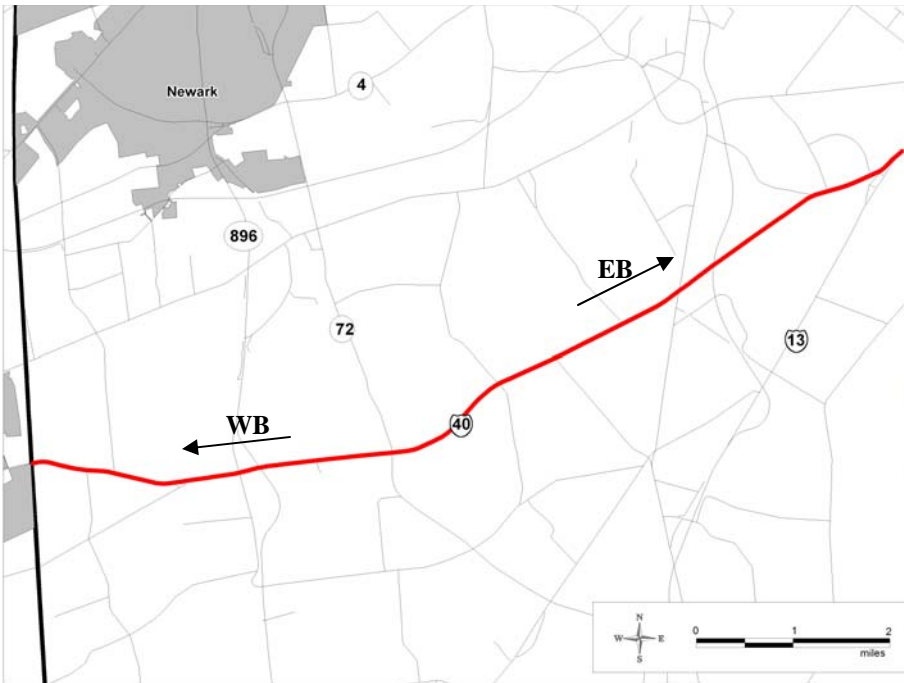
- From 2000 to 2007, average travel speed during AM hours decreased for both westbound and eastbound directions. Westbound speeds increased by one-quarter and eastbound speeds increased by about 2%.

- During AM hours, from 2006 to 2007, average travel speeds increased moderately slightly in both the westbound (6%) and eastbound (6%) directions.

- In terms of AADT, this corridor has seen a moderate decrease of about 2% of vehicles. This, as well as improvements to key intersections along SR 2 may have led to improved traffic flow in the PM hours during the six year period.

SR 2 Kirkwood Hwy	2000	2006	2007	2000-2007 Change
AM				
WB Avg. Travel Time (Min)	21.9	24.1	22.7	3.6%
WB Avg. Travel Speed	30.7	26.6	28.3	-7.8%
EB Avg. Travel Time(Min.)	28.9	30.4	28.7	-0.7%
EB Avg. Travel Speed	23.3	21.1	22.4	-3.9%
PM				
WB Avg. Travel Time (Min)	37.2	28.95	28.3	-24.1%
WB Avg. Travel Speed	18.1	22.2	22.7	25.8%
EB Avg. Travel Time(Min.)	25.5	24.5	23.9	-6.3%
EB Avg. Travel Speed	26.3	26.2	26.8	1.9%
Other				2000-2006 Change
AADT	31,563	30,820	n/a	-2.4%
Population Change	63,283	65,733	n/a	3.9%
Employment Change	44,892	32,295	n/a	-28.1%

Corridor #2: US 40 from DE/MD Line to US 13/40 Split



Distance—10.2 miles

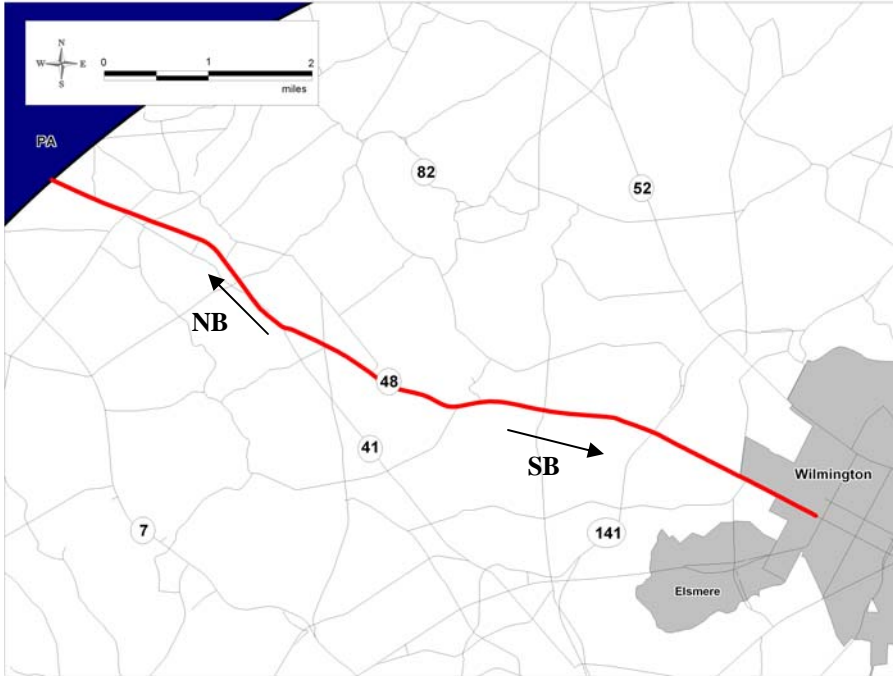
Observations

- In the AM hours from 2000 to 2007, average travel time increased for both the eastbound (15.6%) and westbound (11.3%) directions.
- In the PM hours, from 2000 to 2007, increased for the eastbound direction (13.5%) but declined slightly for the westbound directions (1.6%).
- During the AM hours, 2006 to 2007, average travel speeds decreased slightly (4%) in the eastbound direction, but increased notably (40%). However, during PM hours, average travel speeds witnessed very minimal change.
- From 2000 to 2007, average travel speed during AM hours, declined for both the eastbound (15.6%) and westbound (12.4%) directions.
- From 2000 to 2007, average travel speed during PM hours declined for both the eastbound (14%) and westbound (0.8%) directions.
- The US 40 corridor experienced tremendous growth during the period from 2000 to 2006, which may help explain its increasing congestion. ADDT, for example, has increased by 3.52%, while population and employment have seen growth rates of 9.5% and 46%, respectively.

Route 40	2000*	2006	2007	2000-2007 Change
AM				
EB Avg. Travel Time(Min.)	15.58	17.3	18.0	15.6%
EB Avg. Travel Speed	39.27	34.51	33.1	-15.6%
WB Avg. Travel Time	15.77	24.45	17.6	11.3%
WB Avg. Travel Speed	38.83	24.42	34.0	-12.4%
PM				
EB Avg. Travel Time(Min.)	16.02	21.7	18.2	13.5%
EB Avg. Travel Speed	38.21	27.51	32.8	-14.1%
WB Avg. Travel Time	20.85	21.43	20.5	-1.6%
WB Avg. Travel Speed	29.35	27.85	29.1	-0.8%
Other				2000-2006 Change
AADT	31,997	30,455	n/a	-4.82%
Population Change	58,452	63,828	n/a	9.20%
Employment Change	11,604	16,946	n/a	46.04%

* This roadway segment reflects data from 2001; 2000 data was not available.

Corridor #3: SR 48/41, Wilmington to PA line



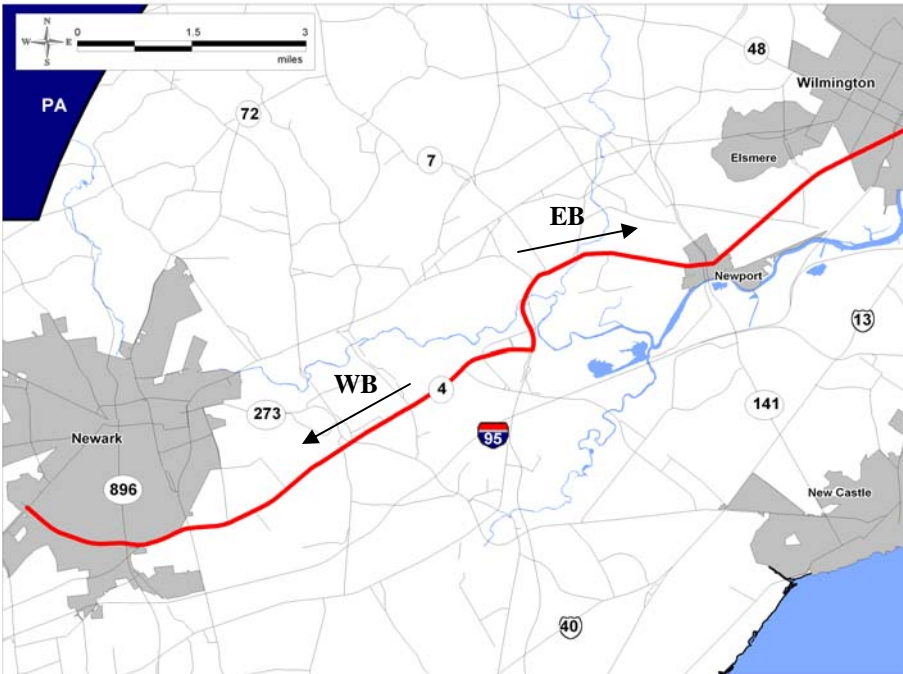
Distance—8.3 miles

Observations

- Northbound travel during the AM hours did not have a significant change in average travel from 2000 to 2006, but from 2006 to 2007 declined by 4.4%.
- Southbound travel during the AM hours, from 2000 to 2007, improved significantly with a 40.5% decrease in time (or 11 minutes).
- From 2000 to 2007, average travel time for southbound directions increased by 5.5 minutes and 2 minutes, respectively.
- For northbound travel during the PM hours, travel time and speeds did not witness any improvements over the years.
- Similar to northbound travel, southbound travel during the PM hours had a decline in speeds. However, travel time improved by two minutes from 2000 to 2007.
- There was an 11% increase in the AADT along with increases in population and employment in the area surrounding the corridor. These factors could account for the increase in travel time during the PM hours.

SR48/41	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time (Min.)	16.6	16.8	15.9	-4.4%
NB Avg. Travel Speed (mph)	29.7	29.4	30.0	1.1%
SB Avg. Travel Time (Min)	27.3	21.7	16.3	-40.5%
SB Avg. Travel Speed	18.0	22.7	30.3	68.0%
PM				
NB Avg. Travel Time (Min.)	17.4	21.4	22.9	31.8%
NB Avg. Travel Speed	28.3	25.0	21.5	-24.1%
SB Avg. Travel Time (Min)	16.3	19.6	18.3	12.0%
SB Avg. Travel Speed (mph)	30.2	25.1	27.0	-10.7%
Other				2000-2006 Change
AADT	17,154	19,041	n/a	11.0%
Population Change	58,452	63,828	n/a	9.2%
Employment Change	13,133	18,895	n/a	43.9%

Corridor #4: SR 4, Newark to Wilmington



Observations

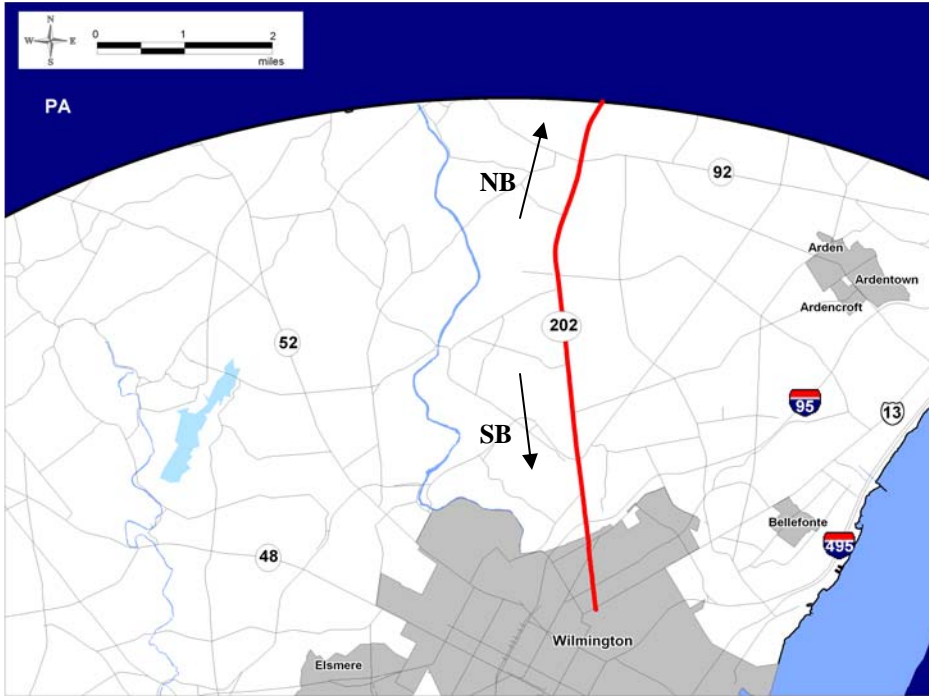
Distance—14.3 miles

- From 2000 to 2007, the SR 4 corridor experienced decreases in average travel time during the AM hours whereas PM hours experienced increases in average travel time.
- During the AM hours, from 2000 to 2007, eastbound travel witnessed a greater decline (5.1 minutes) in average travel time than the westbound direction (3.4 minutes).
- During the PM hours, from 2000 to 2007, average travel time for westbound and eastbound increased, 10% and 2.3%, respectively.
- Improvements in average travel speeds from 2000 to 2007 only took place during the AM hours for both westbound and eastbound directions.

SR 4	2000	2006	2007	2000-2007 Change
AM				
WB Avg. Travel Time	28.1	31.2	24.7	-12.0%
WB Avg. Travel Speed	27.1	25.0	31.6	16.3%
EB Avg. Travel Time(Min.)	32.3	32.9	27.2	-15.8%
EB Avg. Travel Speed	23.6	23.7	28.7	21.5%
PM				
WB Avg. Travel Time	32.1	44.0	35.3	10.0%
WB Avg. Travel Speed	23.7	17.8	22.1	-6.9%
EB Avg. Travel Time(Min.)	30.4	33.7	31.1	2.3%
EB Avg. Travel Speed	25.0	23.2	25.1	0.0%
Other				2000-2006 Change
AADT	23,138	21,745	n/a	-6.0%
Population Change	59,685	62,179	n/a	4.2%
Employment Change	63,490	61,868	n/a	-2.6%

- From 2000 to 2006, AADT declined by 6% and employment dropped by close to 3%, which may have contributed to improvements in travel delays during the AM hours.

Corridor #5: US 202, PA line to Wilmington



Distance—6.3 miles

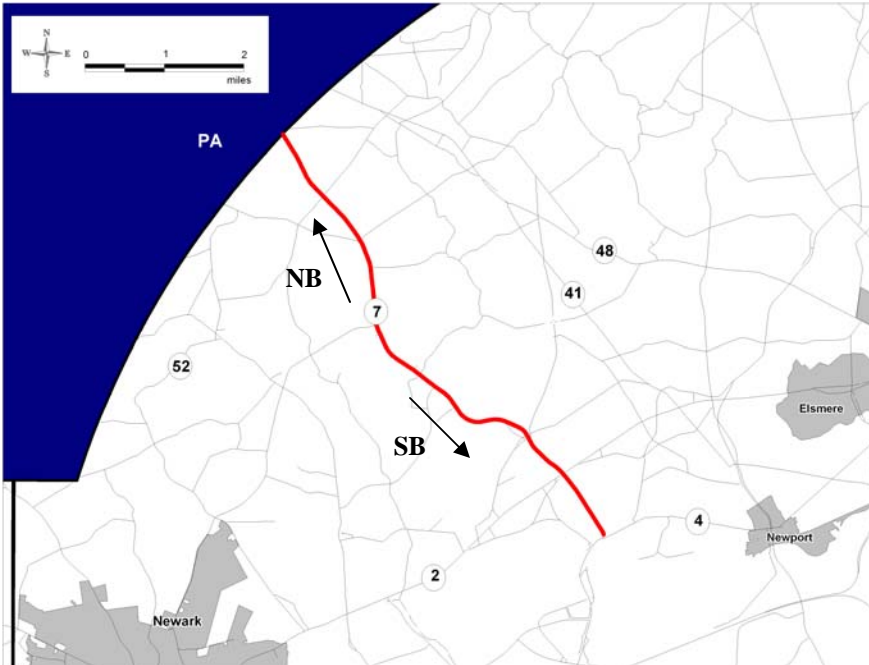
Observations

- From 2000 to 2007, average travel time has only increased in the northbound direction during the mornings by 7%.
- The greatest decline in average travel time from 2000 to 2006 occurred during the AM hours in the southbound direction by one-fifth.
- From 2000 to 2007, average travel speed decreased for both direction and peak hours, except for a 10% improvement in speed during the AM hours in the southbound direction.

US 202	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time(Min.)	12.7	15.2	13.6	7.1%
NB Avg. Travel Speed	33.2	24.5	27.5	-17.3%
SB Avg. Travel Time	13.3	16.4	10.7	-19.5%
SB Avg. Travel Speed	31.5	23.0	35.0	10.9%
PM				
NB Avg. Travel Time(Min.)	15.1	15.8	14.0	-7.0%
NB Avg. Travel Speed	27.9	23.6	26.5	-4.8%
SB Avg. Travel Time	15.7	15.3	14.2	-9.2%
SB Avg. Travel Speed	26.8	24.6	26.4	-1.7%
Other				2000-2006 Change
AADT	33,808	35,914	n/a	6.2%
Population Change	32,588	31,653	n/a	-2.9%
Employment Change	23,097	23,917	n/a	3.6%

- From 2006 to 2007, the greatest improvement in average travel speed was during the AM hours in the southbound direction by 52%, or by 2 minutes.
- There was a 6% increase in AADT since 2000 and increased employment around the corridor which may help explain the slight increase in travel times from 2000 to 2007, as additional commuters put more demand on the roadway.

Corridor #6: SR 7 from SR 4 to PA Line



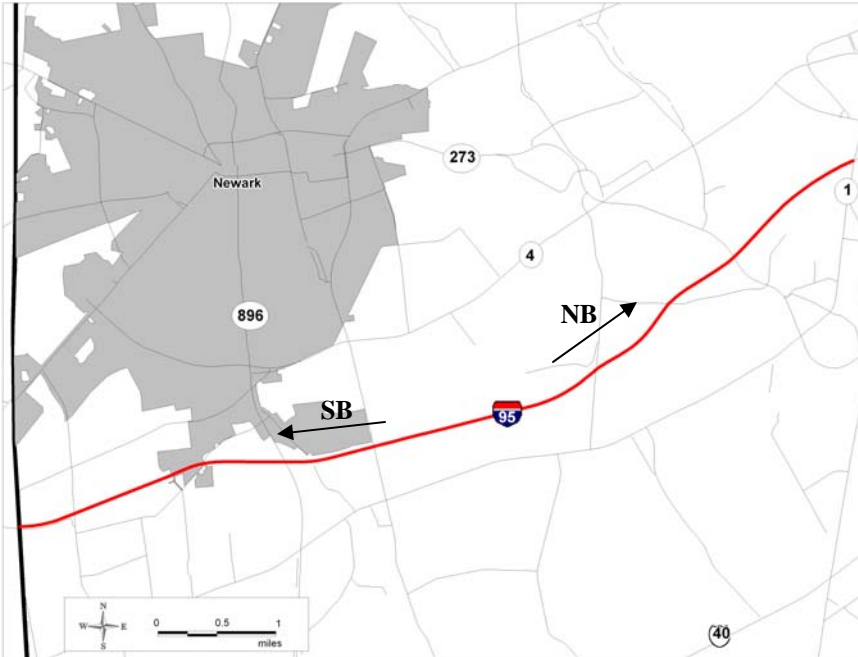
Distance—10.7 miles

Observations

- In 2000, the AM northbound average travel time was 17.8 minutes and in 2007 it dropped to 13.8 minutes, a 22.3% decrease.
- From 2000 to 2007, the AM southbound average travel time decreased by 11.1%, or 2 minutes.
- From 2000 to 2007, average travel time during the PM hours experienced a decline by 3.2 minutes northbound and 1.5 minutes southbound.
- From 2000 to 2007, both directions experienced an increase in travel speed.
- The most notable improvement in average travel speed from 2000 to 2007 was witnessed during the AM hours for the northbound direction by a one-third increase in speed.
- There was an increase in AADT on the corridor by 6% from 2000 to 2006. However improvements, such as an increasing overall capacity, may explain why the road has experienced a decrease in travel times.

SR 7	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time(Min.)	17.8	14.4	13.8	-22.3%
NB Avg. Travel Speed	23.3	29.0	30.2	29.6%
SB Avg. Travel Time	18.3	15.9	16.3	-11.1%
SB Avg. Travel Speed	22.6	26.2	25.6	13.1%
PM				
NB Avg. Travel Time(Min.)	15.8	14.0	12.6	-20.3%
NB Avg. Travel Speed	26.3	29.8	33.1	26.2%
SB Avg. Travel Time	14.7	14.7	13.2	-10.0%
SB Avg. Travel Speed	28.2	28.4	31.5	11.8%
Other				2000-2006 Change
AADT	33,808	35,914	n/a	6.2%
Population Change	62,428	61,900	n/a	-0.8%
Employment Change	15,834	16,305	n/a	3.0%

Corridor #7A: I-95 DE/MD Line to SR 1



Distance—7.9 miles

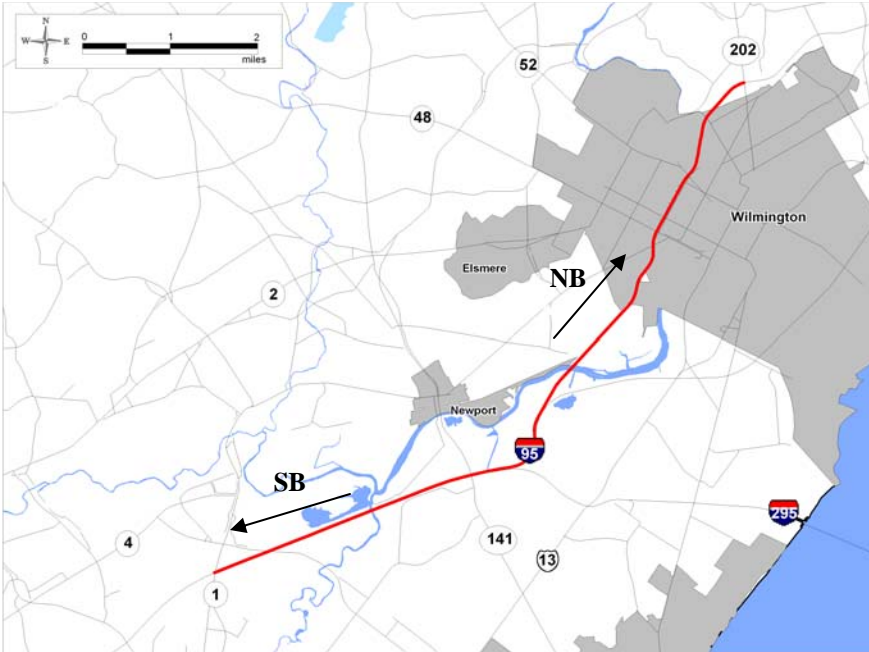
Observations

- From 2000 to 2007, average travel time increased during AM hours in the north and southbound directions; 26% and 11%, respectively.
- During PM hours, average travel time remained stable, except for a slight decrease in the southbound direction.
- Both AM and PM peak delays improved over a seven year period, for north and south directions.
- For the AM hours, average travel speeds decline from 2000 to 2007 in both directions. The PM hours witnessed increases for north and southbound; 7% and 10%, respectively.
- Generally, this corridor experienced significant improvements in both directions for peak hour travel speeds, when compared to other corridors listed.
- Increases in travel time and decreases in delay may be result of a 10% growth in population and close to one-third increase in employment near the corridor.

I-95: DE/MD Line to SR 1	2000	2005*	2007	2000-2007 Change
AM				
NB Avg. Travel Time (Min.)	7.6	8.8	9.6	26.3%
NB Avg. Travel Speed (mph)	56.1	53.9	51.5	-8.1%
SB Avg. Travel Time (Min)	8.3	7.6	9.2	11.3%
SB Avg. Travel Speed	51.4	62.2	48.5	-5.6%
PM				
NB Avg. Travel Time (Min.)	7.7	7.2	7.7	0.0%
NB Avg. Travel Speed	55.4	66.3	59.2	6.9%
SB Avg. Travel Time (Min)	7.4	7.8	7.3	-1.4%
SB Avg. Travel Speed (mph)	57.8	61.0	63.6	10.0%
Other				2000-2005 Change
AADT	127,452	124,431	n/a	-2.4%
Population Change	21,449	23,539	n/a	9.7%
Employment Change	18,141	23,234	n/a	28.1%

* Data from 2005 was used due to on-going construction along the corridor in 2006.

Corridor #7B: I-95 SR 1 to US 202



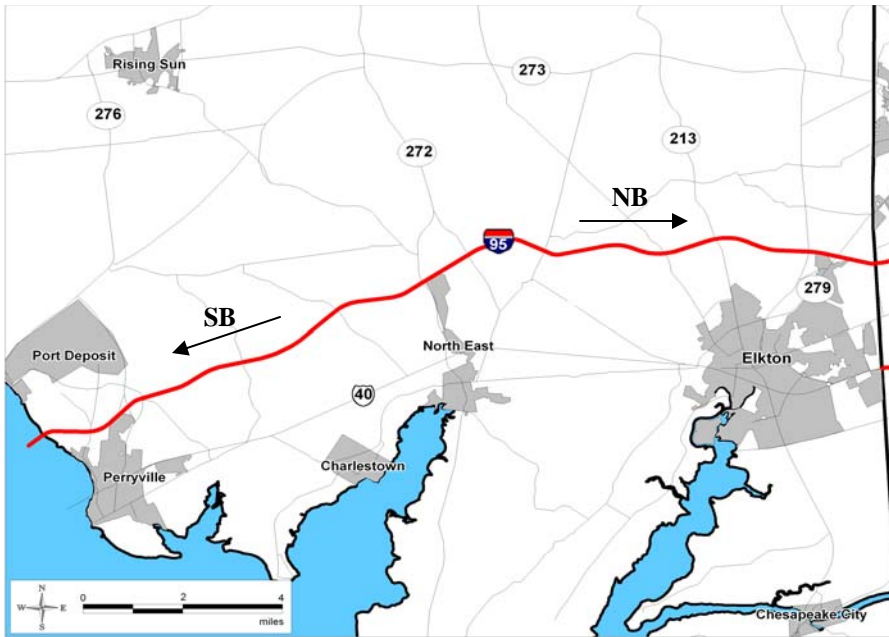
Distance— 9 miles

Observations

- For 2000 to 2007, average travel time in the southbound direction increased by roughly one-quarter for both the AM and PM hours.
- The most significant increase (57%) in average travel time, from 2000 to 2007, took place during the PM hours in the northbound direction.
- Average travel speed in the AM southbound direction notably decline by 26%, or 16.6 miles per hour.
- The only improvements in travel speed occurred in the AM northbound and PM southbound directions; 12% and about 2%, respectively.
- Overall, this heavily traveled corridor did not experience consistent improvements in from one year to the next for travel time or speeds.
- Along this stretch of I-95, from 2000 to 2006, AADT and employment notably decreased by about 10% and 12%, respectively.

I-95: SR 1 to US 202	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time (Min.)	13.5	10.8	12.4	-8.0%
NB Avg. Travel Speed (mph)	40.2	50.5	45.0	12.0%
SB Avg. Travel Time (Min)	8.4	8.8	10.6	26.5%
SB Avg. Travel Speed	64.7	59.7	48.1	-25.7%
PM				
NB Avg. Travel Time (Min.)	7.9	11.8	12.4	56.6%
NB Avg. Travel Speed	68.1	46.4	56.6	-16.9%
SB Avg. Travel Time (Min)	13.3	10.8	16.3	23.0%
SB Avg. Travel Speed (mph)	40.8	48.6	41.5	1.9%
Other				2000-2006 Change
AADT	109,644	98,307	n/a	-10.3%
Population Change	37,943	39,314	n/a	3.6%
Employment Change	35,019	30,787	n/a	-12.1%

Corridor #8: I-95 DE/MD Line to Cecil/Harford Line



Distance— 18.5 miles

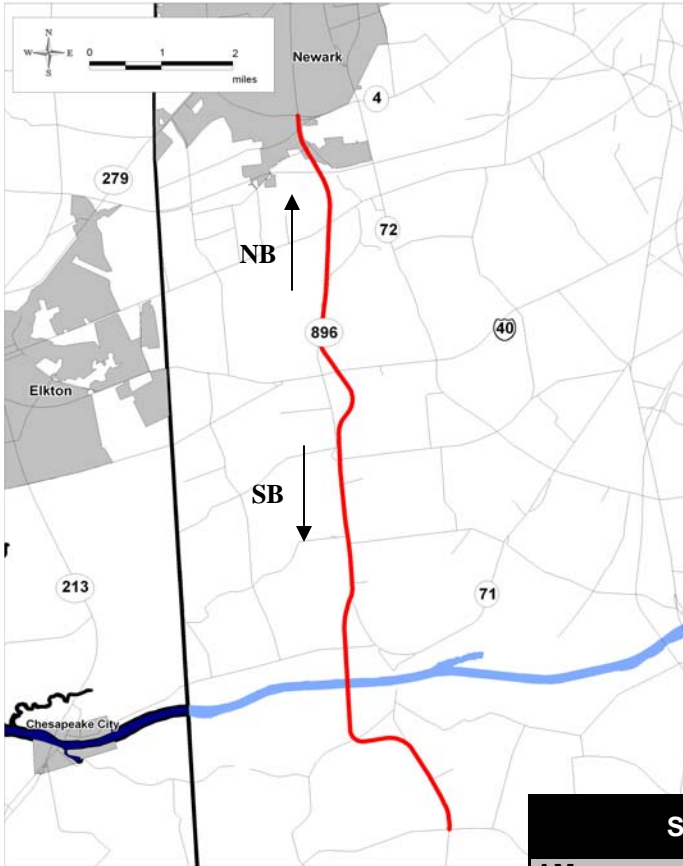
Observations

- From 2002 to 2006, average travel times did not change much, except for a 15.7% increase for PM southbound travel.
- A minor improvement of 3.3% in average travel time took place in the AM northbound direction.
- During the AM hours from 2002 to 2007, average travel speeds improved slightly for both north and southbound directions.
- During the PM hours from 2002 to 2007, average travel speeds declined for both north and southbound directions.
- The most notable decline in average travel speed is 11.7 miles per hour for PM southbound travel. In 2002 the speed averaged 70.6 mph and in 2007 it was 58.9mph.
- From 2002 to 2006, the largest increase in travel speeds was only by 2.8 miles per hour in the AM northbound direction.
- Cecil County's I-95 corridor has experienced increasing population and employment which may have contributed to increases in travel time during the PM hours and minor decreases in average travel speed.

I-95 Cecil County	2002	2006	2007	2002-2007 Change
AM				
NB Avg. Travel Time (Min.)	15.6	15.1	15.1	-3.3%
NB Avg. Travel Speed (mph)	70.8	73.4	73.6	4.0%
SB Avg. Travel Time (Min)	16	16.0	16.0	0.1%
SB Avg. Travel Speed	68.2	68.9	68.8	0.9%
PM				
NB Avg. Travel Time (Min.)	15.4	15.8	15.7	1.9%
NB Avg. Travel Speed	71.6	70.1	69.8	-2.5%
SB Avg. Travel Time (Min)	15.5	17.9	17.9	15.7%
SB Avg. Travel Speed (mph)	70.6	61.6	58.9	-16.6%
Other				2002-2006 Change
AADT	72,227	68,380	n/a	-5.3%
Population Change*	19,516	22,403	n/a	14.8%
Employment Change*	8,359	9,937	n/a	18.9%

* For years 2000 and 2005

Corridor #9: SR 896



Distance—11.3 miles

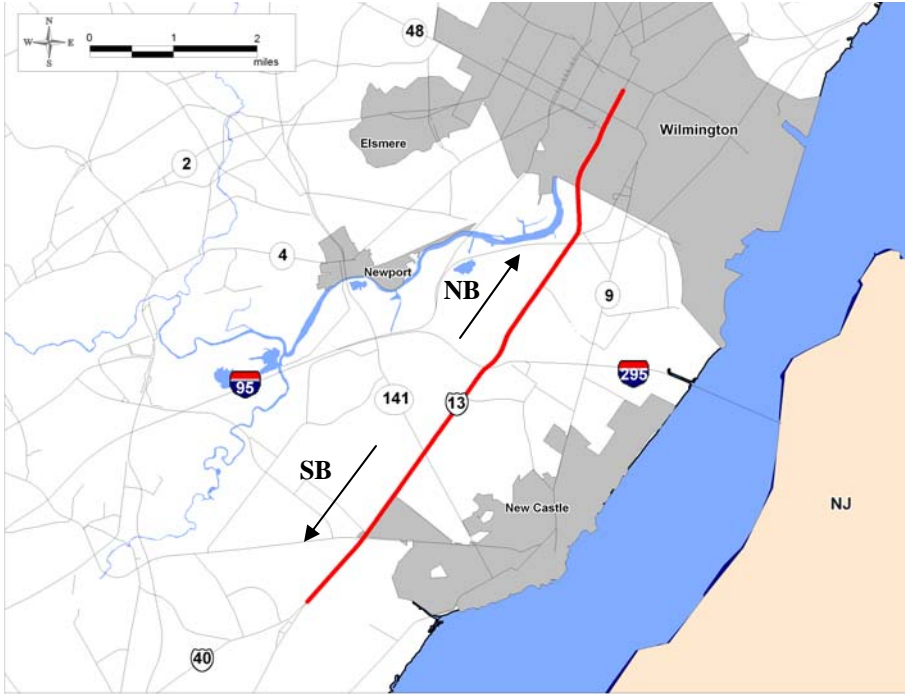
Observations

- Overall, from 2000 to 2007, the SR 896 corridor experienced an increase in average travel time.
- The most significant change in average travel time from 2000 to 2007 occurred during the AM hours in the southbound direction (13.2%) and PM hours in the northbound direction (13.8%).
- From 2000 to 2007, the PM hours traveling southbound witnessed the least travel time increases with only .4 minutes or 2.3%.

SR 896	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time (Min.)	16.4	18.6	17.5	7.0%
NB Avg. Travel Speed	41.4	36.7	39.0	-5.7%
SB Avg. Travel Time	16.8	19.6	19.0	13.2%
SB Avg. Travel Speed	40.5	34.8	36.1	-10.9%
PM				
NB Avg. Travel Time (Min.)	17.4	29.2	19.8	13.8%
NB Avg. Travel Speed	38.9	23.4	34.5	-11.3%
SB Avg. Travel Time	19.8	25.8	20.2	2.3%
SB Avg. Travel Speed	34.3	26.5	33.9	-1.4%
Other				2000-2006 Change
AADT	27,807	31,513	n/a	13.3%
Population Change	29,465	33,151	n/a	12.5%
Employment Change	14,138	16,651	n/a	17.8%

- From 2000 to 2007, the corridor experienced a decrease in travel speeds in the northbound and southbound directions for AM and PM hours.
- The most notable increase in travel speed, from 2006 to 2007, happened during the PM hours for the northbound direction by 47%.
- The increasing average travel time and decreasing speeds on the SR 896 corridor may be due to its' increase in AADT, along with population and employment growth since 2000.

Corridor #10: US 13 from US 40 to Wilmington



Distance—7.3 miles

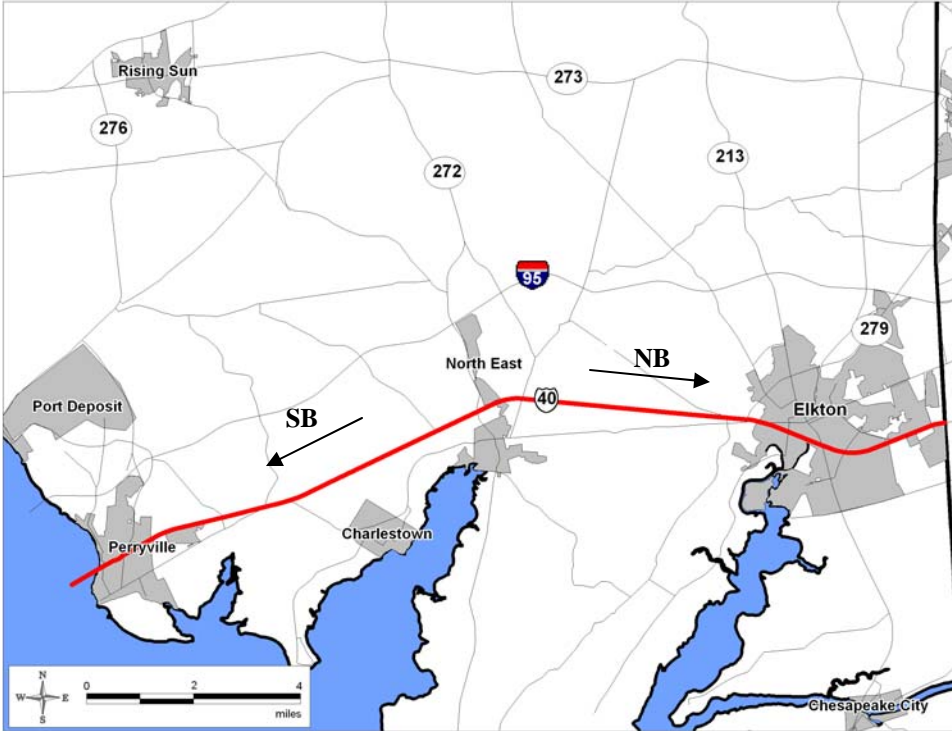
Observations

- From 2000 to 2007, the corridor has only witnessed a decline in average travel time in the northbound direction during the AM hours.
- The greatest increase in travel time took place in the northbound direction during PM hours by 11%.
- Overall, travel speed from 2000 to 2007 increased for AM and PM hours in both directions. The most notable change occurred in the northbound direction in the AM hours by 14.3 minutes.

U.S. 13	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time (Min.)	12.9	16.7	12.2	-5.0%
NB Avg. Travel Speed	22.8	27.2	37.1	62.4%
SB Avg. Travel Time	14.5	13.4	16.9	16.8%
SB Avg. Travel Speed	20.3	34.3	27.2	33.7%
PM				
NB Avg. Travel Time (Min.)	13.7	16.9	15.2	11.1%
NB Avg. Travel Speed	21.5	27.0	29.8	38.7%
SB Avg. Travel Time	21.7	20.4	19.7	-9.1%
SB Avg. Travel Speed	13.6	22.7	23.3	71.8%
Other				2000-2006 Change
AADT	38,318	47,771	n/a	24.7%
Population Change	38,573	38,689	n/a	0.3%
Employment Change	52,582	42,452	n/a	-19.3%

- There has been a significant increase in AADT along the US 13 corridor and no significant projects have been completed within the last six years. This may explain the increase in travel times for the northbound travel.
- However, there has been a fairly steady decline in employment along the corridor which may account for the improvement in the southbound travel times.

Corridor #11: US 40, Cecil County to DE line



Distance—17.3miles

Observations

- The US 40 corridor has not seen great improvements in average travel time from 2000 to 2007, except for minimal decreases in the AM southbound direction and the PM northbound direction.
- Over a seven year stretch, AM northbound travel experienced the greatest increase in average travel time by close to one-fifth.
- The most notable decline in travel speeds from 2000 to 2007 was by 15% or 7.3 minutes in the AM northbound direction.
- However, delays have decreased significantly for both north and southbound direction during the PM

US 40, Cecil County	2000	2006	2007	2000-2007 Change
AM				
NB Avg. Travel Time(Min.)	21.8	25.8	25.8	18.6%
NB Avg. Travel Speed	47.6	40.3	40.3	-15.4%
SB Avg. Travel Time	24.0	23.5	23.5	-2.3%
SB Avg. Travel Speed	43.6	44.3	44.2	1.4%
PM				
NB Avg. Travel Time(Min.)	26.4	28.9	25.8	-2.3%
NB Avg. Travel Speed	39.2	35.8	40.1	2.4%
SB Avg. Travel Time	24.8	23.8	25.0	0.8%
SB Avg. Travel Speed	41.8	43.6	41.6	-0.4%
Other				2000-2006 Change
AADT	24,955	27,086	n/a	8.5%
Population Change*	26,835	30,973	n/a	15.4%
Employment Change*	12,362	14,405	n/a	16.5%

* For years 2000 and 2005

- From 2000 to 2006, the US 40 corridor has experienced increases in daily traffic, population, and employment which may account for declines in travel speed.

Travel Time Collection Methodology and Notes

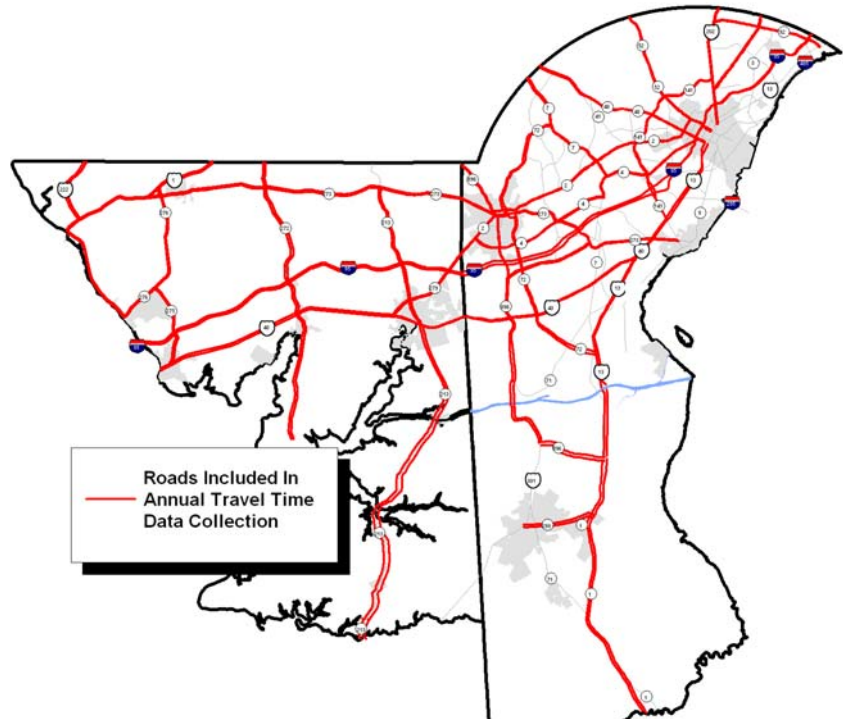
Global Positioning Systems (GPS) provides real-time spatial and time measurements and is increasingly used in transportation studies. The data collected utilized the current GPS methodology developed for the Delaware Transportation Institute and applied for travel time runs in Delaware. Drivers were instructed to conduct their travel time runs during "typical" weekdays, which are Tuesday, Wednesday or Thursday. The runs were completed during the AM peak (7-9AM) and the PM peak (4:30-6:30pm). Drivers traveled at speeds that matched the flow of traffic to simulate a typical trip along the route. Each road segment was traveled two times with the average of the two runs being averaged. The data collected for each segment is as follows:

1. Route name, with identified start and end segments
2. Time of data collection
3. Direction of data collection
4. Segment distance (miles)
5. Mean peak travel time (seconds)
6. Mean peak travel speed (mph)
7. Total peak delay (seconds)
8. Peak delay source (i.e. Signal, Construction, Accident, etc.)
9. Mean peak running speed (mph)
10. Percent time in delay (%)

A comparative statistical analysis was performed on data collected by GPS method, with data collected simultaneously by the conventional method. The GPS data proved to be at least as accurate as the data collected by conventional methods and was 50% more efficient in terms of manpower. Moreover, the sample-size requirement was determined to maintain 95% confidence level throughout the controlled test.

Other Notes:

Travel data is available for: SR 1, I-495, I-295 and US 301 (from Mt. Pleasant to SR 71) but was not collected until 2003. These corridors were not included in calculating the average travel conditions for the region to allow for a more consistent measurement of changes in travel speeds.



December 2008 – WILMAPCO Data Report #7

The Wilmington Area Planning Council (WILMAPCO) is a Metropolitan Planning Organization serving New Castle County, DE and Cecil County, MD. Our mission is to serve the residents and stakeholders of the region by carrying out a comprehensive, continuing and cooperative regional transportation planning process consistent with federal transportation legislation. This series of data reports is designed to summarize various data and information about our region to allow decision makers and members of the public to better understand the changes within our region. This document was created by the WILMAPCO Demographics and Data Subcommittee. For more information on this and other data reports, please visit our website at <http://www.wilmapco.org/data/index.htm>



Other WILMAPCO Data Reports

Report #1: Regional Population Changes 1980-2000, September 2004

Report #2: Changes in Regional Population & Household Characteristics 1980-2000, December 2004

Report #3: Analysis of Commuter Flows to and from the WILMAPCO Region 1990-2000, July 2005

Report #4: Regional Population Changes 2000-2030, January 2006 (updated May 2007)

Report #5: Regional Employment Changes: 1990-2004, July 2006

Report #6: Crash Data 2000-2006, September 2008

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