July 5, 2006

Office of Highway Policy Information
Federal Highway Administration
400 Seventh Street, S.W.
Washington, D.C. 20590
Attention: HPPI-20, Room 3306

RE: Delaware HPMS 2005

Dear Sir/Madam:

We are submitting herewith the 2005 HPMS Data in accordance with the reporting requirements.

Area and Population

The 2005 HPMS information reflects the 2000-Census Urban Boundaries. The Land area and Population are presented below:

Location	Area (Square Miles)	2005 Population
Middletown, DE	3.5	6,605
Dover, DE	58.6	70,042
Georgetown, DE	3.6	8,221
Lewes, DE	17.3	17,695
Long Neck, DE	11.8	9,581
Milford, DE - Kent	5.5	5,564
Milford, DE - Sussex	6.3	8,369
Ocean View, DE	10.4	9,506
Philadelphia, PA--NJ--DE--MD	188.2	478,752
Salisbury, MD--DE	0.6	1,217
Seaford, DE	15.6	22,613
Smyrna, DE - Kent	6.0	15,221
Smyrna, DE - New Castle	1.1	70
Rural	1,625.50	190,067
Total Urban	**328.50**	653,457
Total Rural	**1,625.50**	190,067
Total State	**1954**	**843,524**

The Land Area was calculated in accordance with HPMS guidelines. This year's calculations correctly match the 2000 Census measurements of Delaware's total land area of 1954 square miles.

Based on the 2000 Census data, the Delaware Population Consortium provided the following population data and forecasts by each county of the State.

County	Area (Square Miles)	Population			
		2000 Census	2003	2004	2005
New Castle	427	500,265	515,074	520,239	523,008
Kent	589	126,697	134,390	136,096	143,968
Sussex	938	156,638	168,027	172,085	176,548
Total State	**1954**	**783,600**	**817,491**	**828,420**	**843,524**

Source: DE Population Consortium, 2006

2005 Delaware Certification Public Mileage

On June 15, 2006, Delaware reported 2005 Certified Public Mileage to the FHWA. There were six thousand and ninety four (6094) miles of roadway**s** in Delaware.

The following table shows the comparison of 2005 mileage by the type of roadway with the previous year. There is a total increase of 50.73 miles as shown below.

2004 - 2005 Mileage Table			
Type	**2004**	**2005**	**Change**
Road Inventory	3892.43	3899.84	7.41
Suburban	1317.11	1348.47	31.36
Municipal	720.27	732.23	11.96
DOD	43.00	43.00	0
ACE	69.99	69.99	0
Total	**6042.80**	**6093.53**	**50.73**

Road Inventory Mileage

There was no construction of new roadways by the Delaware Department of Transportation in 2005**.** An increase of 7.41 miles in the road inventory is due to accounting for roadways that have been the responsibility of state maintenance forces for some time. These are small segments of local roads within municipalities that have not been previously included within the road mileage data.

Over 65% of the road inventory data were not updated in the past 3 years.

Suburban Street Mileage

There are three counties in Delaware: New Castle, Kent & Sussex. In New Castle and Kent counties, suburban streets must be built to meet state regulations for acceptance in the state maintenance program. However, suburban streets can be built to county standards in Sussex County, which are also accepted for State maintenance. There was an increase of 31.36 miles in the Suburban Street Mileage. Lower interest rates as well as real-estate speculations account for this increase.

In the HPMS Universe, county, rural and urban areas group the Suburban street mileage by number of lanes as well as by Direction (1-way, 2-way). All of this mileage is local, and traffic counts are made every five years on limited sections for review.

Delaware has Realty Transfer Tax, which is 3% of the sale price. The buyer and the seller pay 1.5% each**.** Depending on the location of property, the Realty Transfer Tax is split between the state and municipality**,** or county.

The following table shows realty tax collected by the state.

Realty Transfer Tax
Gross State Collections

Fiscal Year	Total (000)
*2006	134,669
2005	123,558
2004	98,555
2003	75,980
2002	60,192
2001	49,208
2000	48,507

Source: David Gregor, Office of the Secretary of Finance, Department of Revenue.

NOTES

*The state fiscal year ends on June 30, 2006. The data for the fiscal year 2006 was estimated at $134.669 million, which includes 11 months of available data for the fiscal 2006 and an estimate for the month of June 2006.

Suburban street mileage funds for road improvements are distributed based on electoral districts.

Municipal Street Mileage

There are 57 municipalities in Delaware. The increasing population, and annexations of the adjoining lands by municipalities accounted for the trend in growth. Municipal-Aid Fund is used for cash distribution to municipalities based on street mileage and population. As reported herein, there was an increase of 11.96 miles of municipal street mileage in 2005.

In the HPMS Universe, county, rural and urban areas group the Municipal street mileage by number of lanes as well as by Direction (1-way, 2-way). More than 99% of this mileage is local, and traffic counts are made every five years on limited sections for review.

DelDOT maintains and updates the road inventory mileage of all municipalities. Other relevant information on municipalities is presented below.

The State Legislature appropriates a portion of the Delaware Transportation Trust Fund under the Capitol Improvement Program to municipalities. Currently, a sum of $6 million is to be distributed to 57 municipalities. The money is to be used for the maintenance of city maintained streets as stipulated in Title 30, Chapter 51, Subchapter III of the Delaware Code.

The distribution is based on 2 factors:

Population: As certified by the U.S. Bureau of Census, Delaware Population Consortium**,** or a prescribed enumeration (40% of distribution)

Mileage: As verified by the Data Collection Unit (60% of distribution)

Contact Information:

Steve Smith
Project Planner
DelDOT
Telephone (302) 760-2456
Steven.Smith@state.de.us

Department of Defense Mileage (DOD)

There was no change in the 2005 DOD mileage.

In 2004, Delaware added 43 miles of local roads, now under the jurisdiction of Department of Defense. This mileage exists inside the Dover Air Force Base, and conforms to the guidelines of public road mileage. At the entrance of Dover Air Force Base, civilian employees and non-employees are required to pass through security clearance, show identity cards, and explain the purpose of their visit. Under the new Home Land Security guidelines, these procedures are very common in state and federal office buildings.

Every few years, the US Department of Defense consolidates Air Force Base operations; some bases are closed while others are consolidated. The closest international airports from Dover (Capital of Delaware) are Philadelphia, PA, Baltimore, MD and Dulles, VA. The travel time to each of these airports is approximately two hours from Dover. Thus, Delaware will need a regional airport in the future. The joint use of civilian and Air Force flight operations may be cost-effective. These 43 miles of local roads inside the Dover Air Force Base were not included in previously submitted HPMS data.

The person who provided the Dover Air force mileage, lanes, and AADT is:

Mr. Edward Rotzinger, Chief, Resources Flight,
United States Air Force
Dover AFB, DE 19902
302-677-6822
Edward.Rotzinger@dover.af.mil

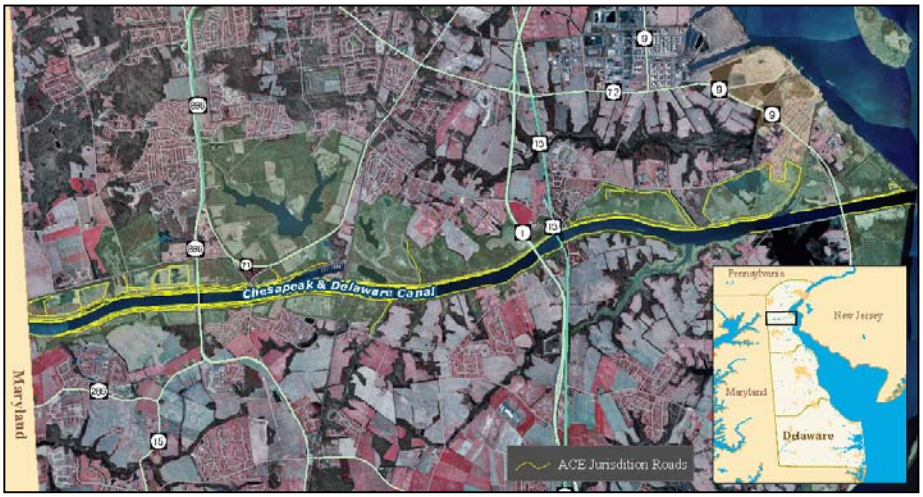
Army Corps Of Engineers Mileage

There was no change in the 2005 ACE mileage.

In 2004, Delaware added 69.99 miles of local dirt roads in the proximity of Chesapeake and Delaware Canal. These roads are presently being used by the public and comply with the guidelines of public road mileage. Delaware Congressman Michael N. Castle, and other state and local officials as well as the public, are interested in converting some of the adjacent lands to a state public park.

The State GIS Analyst, Sarah Burkett, in coordination with the Army Corps of Engineers' Chesapeake City Project Office, has used GIS technology to calculate the mileage or roads along the C&D Canal. The methodology included heads-up digitizing of roads using a 2002 high-resolution (1:2,400 scale) infrared orthophotography base with reference to 2005 satellite imagery, and hard copy maps from the Atlas of Delaware produced by DelDOT. Total mileage of the roadways was calculated using GIS length calculation tools, resulting in 69.99 miles. The

U.S. Army Corps of Engineers (ACE) was given hardcopy maps of the digitized roadway for review. DelDOT and ACE mutually agreed to use this calculation for state mileage reporting purposes.



Map displaying ACE Jurisdiction Roads identified using GIS technology.

The contact information of the official in the US Army Corps of Engineers, who reviewed the GIS data and mileage calculations, is as follows:

James R. Tomlin, Jr.,
Resident Engineer
Chesapeake City Project Office
U.S. Army Corps **o**f Engineers
P.O. Box 77
Chesapeake City**,** Maryland 21915
TEL: 410-885-5621
E-mail: James.R.Tomlin@nap02.usace.army.mil

Mr. Tomlin has provided his approval of the calculated mileage.

ERROR MESSAGES

Our response to Valid Errors Summary Report is as follows:

- Error Messages 1: % Peak Combo Trucks> % Avg Daily Combination Trucks
  County 1(Kent County) - **Section ID: 000010000480**

Response: Kent County Rd 1, U.S Route 13, a designated truck route, is an Urban Minor Arterial; this section is the main route connecting the newly opened Wal-Mart distribution center.

- Error Messages 2 & 3: Future AADT growth is 4 times or more than AADT
  County 1(Kent County) - **Section ID: 000160002000**
  County 1(Kent County) - **Section ID: 000160002180**

Response: Kent County Rd 16, designated as Delaware Route 8, is an Urban Minor Arterial with an AADT of 1,485 vpd, and the forecast AADT for the year 2025 is 8,573 vpd. The traffic forecast accounts for additional growth, which is expected in the long-range horizon year due to recently completed ramps between Delaware Route 8 and Delaware Route 1, which are in the vicinity of this sample section.

- Error Messages 4: % Peak Combo Trucks> % Avg Daily Combination Trucks
  County 3(New Castle County) - **Section ID: 000010002300**

Response: New Castle Rd 1, U.S Route 13, a designated truck route, is a Rural Minor Arterial; this section also connects to the newly opened Wal-Mart distribution center. There is a heavy volume of trucks in this section.

- Error Messages 5: Unusually high number of intersections (> 25 per mile)
  County 3(New Castle County) - **Section ID: 000390000220**

Response: News Castle County Road 39 is also called North Broad Street in Middletown. This sample section is an Urban Collector, and has a **s**ection **l**ength of only 0.12 miles. The number of intersections is correct.

- Error Messages 6: At peak capacity for more than 13 hours
  VSF must be less than or equal to 1.20
  County 3 (New Castle) - Section ID: **000590001820**

Response: New Castle Rd.59 is Interstate I-95. The observed AADT for the year 2005 on this section of the road was 135,191 vpd. It is a very small sample section with a length of 0.31 miles with a V/SF ratio of 1.55. The NB portion of this section of I-95 splits into I-95 and I–495. The traffic volume is indeed extremely high on this stretch of Interstate 95.

I-95 is currently under a planning study for major improvements. The proposal is widening of I-95 in the marsh area for 5 lanes in each direction. We also plan to redesign both on and off ramps at I-95 and SR-1 interchange. The work on this project should begin in 2006, and be completed in two years. (Source: Darren O'Neill, Project manager.)

- Error Messages 7& 8: VSF must be less than or equal to 1.20
  County 3 (New Castle) - Section ID**: 000670005940**
  County 3 (New Castle) - Section ID: **000670006270**

Response: New Castle Rd.67 is Delaware Rte 1, which is functionally classified as Urban Freeway and Expressway. The AADT for the year 2005 on this section of the road was 64,941 vpd. Such a high volume of traffic results from the SR-1 and I-95 interchange. Detail information is provided in this report under the title, SR-1 Interchange/ I-95 Mainline Area.

- Error Messages 9: VSF must be less than or equal to 1.20
  County 3 (New Castle) - Section ID: **002940002380**

Response: New Castle Rd 294, Valley Road, is an Urban Collector where the 2005 AADT was 10,282 vpd. It is a two-lane road with K-Factor of 9 %. There is traffic congestion, but the AADT is correctly reported.

At present there are no projects that would significantly improve the capacity here in the near future.

- Error Messages 10: Unusually high number of intersections (> 25 per mile)
  County 3(New Castle County) - **Section ID: 003360005730**

Response: News Castle County Road 336, also called Delaware Route 4, **is** Maryland Avenue in the city of Wilmington. This sample sections is an Urban Other Principal Arterial, and has a Section Length of only 0.20 miles. The number of intersections is correct.

- Error Messages 11: VSF must be less than or equal to 1.20
  County 3 (New Castle) - Section ID: **003550000730**

Response: New Castle County Rd. 355, also called Harmony Road**,** is designated as Urban Collector. The AADT for the year 2005 on this section of the road was 21,084 vpd. This sample section has a length of 0.73 miles and V/SF ratio of 1.43. This is a recurring condition of congestion, and is expected to continue until 2007.

According to Mark Tudor, Project Manager for the SR4/HarmonyRoad intersection improvements project, the construction would increase the capacity of this intersection when completed in 2007.

- Error Messages 12: VSF must be less than or equal to 1.20
  County 3 (New Castle) - Section ID: **004960001570**

  Response: New Castle County Rd. 496, also called Brandywine Blvd, is designated as Urban Minor Arterial. The AADT for the year 2005 on this section of the road was 12,205 vpd. This sample section has a length of 0.38 miles and V/SF ratio of 1.49.

  Brandywine Blvd between Duncan Road and Bellevue Road is a 2 lane residential street. The traffic counts taken in the area may be high depending on when the counts were taken. There is a school (Mount Pleasant Elementary) at the intersection of Duncan and Brandywine**,** and also there are two churches close to this location (Saint Marks Lutheran and Church of the Covenant Presbyterian). In addition, this neighborhood is located in between two highways (Philadelphia Pike and Governor Printz Boulevard). This also could have made the counts higher if traffic was cutting through.
  (Source: Kristen Melendez, Trans Solutions, Traffic Studies Engineering)

- Error Messages 13& 14: Unusually high number of intersections (> 25 per mile)
  County 5 (Sussex County) - **Section ID: 000500004000**
  County 5 (Sussex County) - **Section ID: 000500004520**

  Response: Sussex County Road 50 is designated as Delaware Route 1, and these samples are in the town of Bethany Beach; the number of intersections is correct.

- Error Messages 15: Unusually high number of intersections (> 25 per mile) County 5 (Sussex) - Section ID **005360004580**

  Response: This sample sections is an Urban Collector in the city of Seaford; the number of intersections is correct.

- Error Messages 16: VSF must be less than or equal to 1.20
  County 5 (Sussex County) - **Section ID: 005390000480**

  Response: Sussex County Road 539, Sussex Ave, is a roadway is in the municipality of Seaford, and is functionally classified as Urban Collector. The traffic generated in this area is due to the old Dupont plant, a golf course and a middle school. This section has only two lanes posted with **a** speed limit of 25 mph. This is a reoccurring conditions and the AADT is correctly reported

  General comments on the following two types of errors
  % Peak Single Trucks > % Avg Daily Single Trucks
  % Peak Combo Trucks > % Avg Daily Combination Trucks

HPMS items: 81, 82, 83, and 84 are coded as integers. The data collected are presented with two decimal points. Many of the above mentioned validity errors are generated even when the difference is only 1%, which is due to rounding off the data observed.

The truck counts for 48 hours are made annually on more than 200 HPMS sample locations. Also, factors are used to derive the percentage of trucks during peak hour and the number of trucks as a percentage of AADT.

While updating the 2005 HPMS data, we had nearly 10 locations, which generated these errors. For truck routes, these errors were corrected manually. The precision level of 1% in the HPMS software may be a problem in Analysis-Validation.

Response to HPMS Data in 2004

Last year, DelDOT submitted HPMS data conforming to the reporting requirements. We were asked to improve the quality of traffic and site specific data to meet the rigid guidelines of the TMG, so we continue to work toward achieving that goal.

2005 Sample Status

We are reporting 658 Standard Samples for 2005. Some samples, which were created while updating the 2004 Census urban boundaries, are removed. We deleted some of the sections while adding others to meet the sample adequacy requirements. There was a net decline of 75 samples.

To observe travel trends for future Delaware needs, some samples may be added to Interstate/Freeways & Expressways exceeding the minimum sample requirement.

Delaware now has more samples than the minimum HPMS sample requirement. Besides the HPMS needs, we also include samples where major growth may occur, and traffic patterns are likely to change.

The Delaware 2000-Census Boundaries updates were officially released on May 23, 2005. There was very little time and resources to conduct field reviews.

Small Universe Section: Delaware HPMS universe has several small sections. HPMS database is used to establish the mileage and vehicle-miles of travel for the municipalities. As of 2005, there were 57 municipalities. For funds allocation to the municipalities, the existing formula prescribed by Delaware Legislature is based on municipal population and street mileage. This is an ongoing process.

Donut Sample Volume Group

The 2005 Universe comprises 6094 miles in Delaware. The donut area contains 3888 miles, which represents 63.80% of the total.

Forty-one new Donut Samples are now added to meet the guideline requirements for all volume groups. The following table shows the annual change in the Donut Samples.

Change in Standard & Donut Samples

Year	Samples	Change	Donut Samples	Change
2000	587		89	
2001	621	34	109	20
2002	628	7	118	9
2003	643	15	175	57
2004	733	90	212	37
2005	658	(75)	253	41

The AADT, as reported, is for the entire universe of the state including roads and streets classified under the local category. Field counts are made for all state- maintained roads. For Suburban Street mileage and municipally maintained roads, which are grouped, we use a sampling procedure as well as engineering judgment to determine the traffic flow. The function of Donut Samples is to estimate DVMT in Rural and Small Urban Areas, Urban and Rural Minor Arterials, Urban Collectors and Rural Major Collectors. The entire universe data are provided on Summary Sheet A, (Daily Travel Information in Thousands).

HPMS Roughness Reporting Requirement

The **Measured Pavement Roughness** is represented by International Roughness Index (IRI).

IRI data was not collected in 2005. Some other information is in the following.

We followed the guidelines on Table IV-3 in the HPMS Manual. Where IRI data is required, the IRI is collected for the entire road, not for sample sections only.

An excerpt from the response of the consultant in charge of collecting the IRI data is presented below.

"The following description of our IRI collection method should meet your needs:

Roadware collects roughness (IRI) on DelDOT's HPMS roads using a state-of-the-art data collection vehicle known as an ARAN. The ARAN, equipped with a dual wheel path inertial profiling subsystem (Laser SDP), consisting of specialized electronics, precision accelerometers and displacement transducers (lasers) mounted in each wheel path, records the longitudinal profile of the roadway to calculate the IRI. The Laser SDP (Laser South Dakota Profiler) subsystem is capable of measuring longitudinal profile and roughness in both wheel paths accurately at constant speeds as low as 16 mph, which reduces dropouts and ensures reliable data collection in traffic. The Laser SDP software collects and stores profile measurement data at selected longitudinal distance intervals. Data samples for roughness are collected at half inch intervals at speeds between 16 and 70 mph. Profile is calculated for wavelengths from 0.5 feet to 1,000 feet.

The ARAN software calculates an IRI (International Roughness Index) in compliance with the World Bank Technical Paper # 46 in real-time. The Laser SDP meets the definition of a Class 1 profiler, provided in the ASTM E 950 Standard Test Method, and that of a Class II profiler provided in the FHWA's HPMS (Highway Performance Monitoring System) Field Manual.

The IRI is reported as a section average of both left and right wheelpaths. The IRI is calculated using the quarter-car approach. The most traveled lane is collected; on most roads this is the right-hand lane. Direction of travel during data collection is chosen to match the direction of increasing chainage in DelDOT's road database system."

The IRI consultant's contact information is as follows.

Michael Nieminen, P.E
Project Manager
Project and Account Management Office
Phone: 1-519-442-2261 x260
Cell: 1-519-757-9961
mnieminen@roadware.com

Present Serviceability Rating (PSR)

The Pavement Management Section collects the PSR data on an annual basis.

1. The Overall Pavement Condition (OPC), as determined by the Pavement Management Section, is the source of the PSR data. A consultant is retained to perform the task.
2. The Pavement Management Section has collected data for all state-maintained roads in 2002, 2003 and 2004.
3. In 2005, the data were collected for all state-maintained roads , except for sub-urban streets.

4. The severity and the extent of distress of each roadway segment are evaluated by visual inspection. An academic expert retains a consultant to provide the QA/QC report reviewed.

The engineer in charge of PSR data is:

Jennifer Pinkerton
Phone: 302 760 2071
FAX: 302 739 5270
E-mail: jennifer.pinkerton@state.de.us

Changes Planned for 2006 HPMS Data

The IRI data were collected in 2004; we plan to collect IRI data again in 2006.

We now have only 2.42 miles of Urban Principal Arterial Highways with AADT above 15,000 vpd.

There are still some locations, which need to be reviewed and evaluated for changes in the functional classification. We will request for approval after the input is available.

We plan to revaluate the seasonal group factors, directional splits and peak hour factors, especially on summer routes.

The entire SR-1, a Toll Freeway in the vicinity and north of Dover, was opened to traffic in late 2003. With more than two-year traffic data, now available, we should be able to evaluate if some more existing standard samples can be deleted.

At present we are working with GeoDecisions on a new GIS based program called HPMS Console. We will be implementing this new program for our 2006 submittal. The contact information is:

GeoDecisions
Plaza 273, Suite 207
Christiana, DE 19702
Phone: 302-731-7531

LRS FOR GIS PRODUCTS

We have coded the LRS data for this 2005 HPMS submission. The road centerline file is in ESRI shapefile format with associated metadata. The attribute data for the centerline includes the LRS identification field and DelDOT's linear referencing fields including roadway ID, beginning mile point, and ending mile point.

The contact information for the consultant in charge of LRS is as follows:

Kumar Sanjay
GIS Consultant
DelDOT
Phone: 302-760-2648
Sanjay.Kumar@state.de.us

SITE-SPECIFIC TRAVEL ACTIVITY/VEHICLE CLASSIFICATION DATA:

The traffic was counted on one-third (1/3) HPMS sample sections in 2005. Next year, traffic count will be conducted on one-third (1/3) additional HPMS sample sections. All HPMS sample sections will be covered for traffic counting in a 3-year cycle.

The monthly ATR counts are forwarded to the Travel Monitoring and Surveys unit of the FHWA via e-mail: atrdata@fhwa.dot.gov**.**

The TRADAS HPMS module is not developed yet. Therefore, trucks were counted by field observation this year. DelDOT staff work with a vendor to compile the data in TMG format for probable counts, while Mr. Paul McKenna provides the data processed from ATR stations. There were 557 short-term counts for one-week duration in 2005. This amounts to approximately 17 % of the 3300 roadway sections in the network. Also, special counts were conducted at 20 locations including approximately 90 interstate ramps. There is a plan to count the entire interstate route along with the ramp sections to provide adequately accurate information and establish a baseline for future trend.

At this time, most of the Automatic Vehicle Classifiers (AVC) and Weigh-in-Motion (WIM) stations are operational. There are 23 sites where classification equipment and weigh - in - motion sensors are installed. The calibration was conducted on these sites in 2004. However, the system malfunctioned at some sites. One such site is on I-95, which would require the entire southbound lanes of I-95 to be shut down for repairs. No other alternative is found yet to rectify the problem.

K & D Factors were obtained by actual counts at 120 locations. The Traffic Group data were used for K & D factors in the remaining sample sections.

There were certain problems in the use of TRADAS in 2005. The previous TRADAS administrator was replaced. It was discovered that old DOS based software was being used in the traffic data collection process. Now the Windows based TOPS software has replaced the obsolete DOS version.

TOPS is used to auto-poll the ATR input and translate the data into a format that suits TRADAS. At this time, there is a clear understanding of TRADAS, and the compilation of

Traffic Summary Book runs smoothly in DelDOT. As a result, it is expected that the accuracy of traffic data would improve in the future.

The contact information of the personnel in charge of traffic monitoring are:

Paul McKenna, TIS, Application Support Project Leader
302-760-2579
Paul.McKenna@state.de.us

Jim Ho, Senior Highway Planner
302-760-2163
James.Ho@state.de.us

Travel and Demographic Data: The 2005 Population data were obtained from the April 2005 Population Consortium. The Delaware Land Area is 1954 square miles that conforms to the 2000 U.S. Census.

Population: The yearly change in population is tabulated below:

County	Population by Year		
	2004	2005	% Change
New Castle	520,239	523,008	0.53%
Kent	136,096	143,968	5.78%
Sussex	172,085	176,548	2.59%
Total State	**828,420**	**843,524**	**1.82%**

New Castle County saw only a 0.53% increase in the population. There are number of reasons which include, major bank mergers and consolidation of credit card divisions to other states as well outsourcing operations to other countries.

The City of Wilmington, which is the financial hub of banking operations in Delaware, has a wage tax. There was a general shift of jobs to lower tax area states, which offer other incentive packages.

The property prices in News Castle County are higher than the other two counties.

Early-retirement opportunity, buyout offers, and elimination of salaried positions in automobile assembly plants created a migration of the labor force from Delaware. Auto General Motors and Daimler-Chrysler assembly plants are located in New Castle County.

Kent County had a 5.78% increase in population. The main reason for the increase can be attributed to residential affordability and the ease of travel after the completion of the SR-1 freeway in 2004.

Sussex County had a 2.59% increase in population. There was a large population migration from other states into Sussex County. The cost of living, affordable housing, open space and environmental benefits are some of the major reasons for this increase in population. As the demographic changes in the Census indicate, many of these new comers are retirees.

A review of the changes in ethnic characteristics shows that Sussex County's Hispanic population grew 369 percent between 1990 and 2000. Most of these new migrants are employed by the construction industry, or in the Chicken processing centers.

Daily Vehicle Miles of Travel: The following table shows DVMT in Delaware by county:

Daily Vehicle Miles Travel (000)			
County	**Year**		**Annual Change**
	2004	2005	
New Castle County	15,092	15,285	1.28%
Kent County	4,445	4,545	2.25%
Sussex County	5,842	6,159	5.43%
State of Delaware	**25,379**	**25,989**	**2.40%**

The entire, SR-1 Toll route was opened in late 2003**.** Dover, the capital of Delaware, now has a freeway connecting Dover with Interstate I-95.

According to the 2000 Census, there are six small urban areas in Sussex County: Georgetown, Lewes, Long Neck, Milford, Ocean View, and Seaford. Sussex County also includes a part of the Salisbury Urbanized Area.

Apparently, there is a significant increase in the permanent population of Rehoboth Beach and vicinity.

The Office of Statewide & Regional Planning within DelDOT provided the following information:

> "The recent increases in traffic in Sussex County have occurred primarily in the SR-1 corridor near Rehoboth and throughout in the eastern part of the county. These trends are attributable to the increased volume of residential building permits. The number of permits issued annually has doubled over the last seven years. Much of the residential growth has occurred just west of SR-1 and off Delaware Route 24 in the Long Neck area, on U.S. 9 West of Lewes, and along Delaware Route 5.

There has also been an increase in commercial space along SR-1 (new shopping areas and motels) and in the redevelopment of existing commercial lots to better usage, e.g. Rehoboth Mall developing to Wal-Mart, both of which are attracting more traffic to the SR-1 corridor and surrounding communities.

There are three studies currently underway by the Division of Transportation Solutions to look at regional traffic issues in eastern Sussex. These studies are: "Rehoboth Entrance Study", "Western Bypass Study", and "US 113 Study." These studies are multi-year efforts evaluating the traffic for each study area**,** and will develop scheduled phased improvements for input into DelDOT's capital program.
(Source: Michael DuRoss, Planning Supervisor, DelDOT)

National Highway System (NHS):
In 2005, a portion of SR-1, from Dewey Beach south to Ocean City in Maryland, was designated as a NHS route. The 2005 NHS mileage including this 16.47-mile stretch has increased to 338.19 miles.

Strategic Highway Network (STRAHNET):
The STRAHNET mileage has not changed for 2005. It remains 146.90 miles, including 40.61 miles in the Interstate Highway System.

Intermodal Connector:
Delaware has 7.00 miles of Intermodal Connector mileage. It was reported as 3.23 miles for 2004. The 3.77-mile increase is due to a 0.51-mile segment that serves the Port of Wilmington and a 3.26-mile segment serving the Cape May - Lewes Ferry terminal. These segments were first recognized as Intermodal connectors in 2005.

The table showing roadway mileage for Delaware, on the web site of FHWA, seems to be incorrect. A review may be necessary. Details of the web site are furnished below.

U.S. Department of Transportation
Federal Highway Administration
Official NHS Intermodal Connector Listing
http://www.fhwa.dot.gov/hep10/nhs/intermodalconnectors/delaware.html

Toll Routes:
There was no change in the toll road mileage of 48.40 miles in Delaware. However, there was a toll increase in October 2005 at the Newark Toll Plaza on the JFK Memorial Highway (I-95).

Traffic Volatility:
Unusual traffic conditions exist in many roadway sections of lower functional classifications. From field observations, we believe this is due to recreational traffic in the summer as well as

peak traffic in urbanized areas (Dover and Wilmington). There is a tendency by local residents, familiar with area roads, to use short cuts to bypass the congested mainline traffic.

Lane Width:
The lane width is based on road markings. Much of Delaware Road Inventory data are over three years old. As we continue to update our Inventory files, the necessary changes will take place.

Road Inventory

We have acquired electronic inventory data collection software. The consultant services were used to collect data on Arterial as well as some other routes to update the Inventory**.** We can now incorporate the time estimates to implement a data collection plan. At present, we are coordinating with the data providers and collectors to resolve the problems. The new actions taken will allow us to update the Arterial and Collector routes on a three-year cycle, and the local routes within a five-year cycle.

The entire DelDOT Road Inventory unit is overseen by:

Kevin Gustafson
Road Inventory Supervisor
302-760-2142
Kevin.Gustafson@state.de.us

Unpaved Roads: DelDOT is now reporting 69.99 miles of unpaved roads. This mileage is under the Jurisdiction of U.S. Army Corps Of Engineers.

Highway Surveillance Systems (Items 38 – 46):
All of the information provided to us for the 2005 HPMS submittal came from the GIS data collected by the Transportation Management Center (TMC) and maintained by DelDOT O.I.T. in an Oracle Spatial Database.

Item 38 – All coordinated signal systems - No Changes from 2004.
Item 39 – Metered entrance ramps in the state - None for the state.
Item 40 – Variable message signs, none added in 2005.
Item 41 – Highway Advisory Radio**:** No changes in 2005.
Radio is daytime operation only from NC County to Dover and from 5 Points Lewis to north of Bethany.
Item 42 – Surveillance Cameras**:** There were 4 new Surveillance Cameras added in 2005. All Surveillance Cameras include road sections within a half-mile.
Item 43 – Incident Detection Tech. Algorithms: None for the state.
Item 44 – Covered by free Cell Phone (#77): Coverage by 911 statewide.
Item 45 – Public Service Patrol or Towing - None for the state.
Item 46 – In-vehicle signing: None for the state.

Future improvements for 2006:

- Additional Monitoring Cameras
- Add Variable Speed Limit System on I-95
- Additional Variable Message Signs
- Additional Traffic Speed/Volume Detectors (Radar)
- Wireless and Fiber Optics Communications Enhancements

The Highway Surveillance unit is overseen by:

Darin Dell, CADD/GIS Technologist
Delaware Dept. of Transportation – T615
Tel. (302) 760-2632
Fax (302) 760-2632
Email: Darin.Dell@state.de.us

Pavement Geometric

Items were updated for new sample sections, existing sections with erroneous data, and all samples with surface improvements in calendar year 2005

Item 50 Surface/Pavement Type: DelDOT Digital Video Log**,** Pavement Photographs & Falcon/DMS**,** Actual Construction Plan Typical Sections

Item 51 – SN or D – Falcon/DMS: Actual Construction Plan**,** Typical Sections

Item 53 – Year of Surface Improvement: Primavera P3e: Calendar Filter

Items 63-68 – Falcon/DMS: Actual Construction Plan (Horizontal Geometry Section)

Item 70 – Terrain Type: Falcon/DMS: Actual Construction Plan Profiles

Items 72-77 – Grades by Class**:** Falcon/DMS: Actual Construction Plan Profiles

The above information was obtained from:

Leo E. Gracie
Delaware Department of Transportation
Quality Section
Dover DE 19901
Tel. (302) 760-2347
Fax (302) 739-6360
Email: Leo.Gracie@state.de.us

Traffic/Capacity

The Traffic Studies Section was responsible for updating the following items for the 2005 HPMS submission:

61 Peak Parking
78 Percent Passing Sight Distance
80 Speed Limit
87 Number of Peak Lanes
88 Left Turning Lanes
89 Right Turning Lanes
90 Prevailing Type of Signalization
91 Typical Peak Percent Green Time
92 Number of At-Grade Intersections (Signals)
93 Number of At-Grade Intersections (Stop Signs)
94 Number of At-Grade Intersections (Other or No Controls)

The databases and resources used to update these items included DelDOT's Digital Videolog, Geomedia, Timing Sheets from the Transportation Management Center (TMC), and DocStar. We also relied on the experience from our Traffic Studies staff. In Traffic Studies, field visits are frequently performed throughout the State of Delaware giving us firsthand knowledge of recent changes to some of the items such as Speed Limit and Parking Restrictions. Typically, the procedure for each segment was to use our resources to update the data items. For example, the aerial photography and videolog were used to check for the number of intersections and left/right turning lanes. Also DocStar (a database of our resolutions, including parking and speed limit) was used to verify various items. We also used the timing sheets from the TMC to verify the green times and type of signalization. We did not run into many problems this year. Mainly, the process of identifying and locating each segment is time consuming. Typically, once the segment is found, it does not take too long to update the items. It would be quicker to have the HPMS Console in place to have an interactive map of Delaware where the segments can be selected from the map and you can update the items through the console.

The above information was furnished by:

Melendez Kristen (DelDOT)
Traffic Studies Engineer
Tel. (302) 659-2046
Fax (302) 653-2860
Email: Kristen.Melendez@state.de.us

Year of Future AADT (Forecast Traffic 2025)

Mike DuRoss, a supervisor in DelDOT's Division of Planning, provided forecast traffic. The forecast traffic year for this HPMS submission is 2025. The Division of Planning's "Peninsula Travel Demand Model" produced the 2025 forecast traffic, Version "Clean Model 7.0" prepared by WRA in November 2005. This is a standard four-step travel demand model in CUBE Voyager software (Version 4.0.1, April 2006) that covers Delaware's three counties but also includes the nine counties of Maryland's Eastern Shore.

The model described above was used to develop projections for the year 2025 in this year's new HPMS sample sections. It was also used to review projections for all Interstate, freeway and expressway samples as the projections on those sections tend to be very sensitive to the annual updating of traffic counting data. It is suggested that the next HPMS submission for Year 2006 (work commencing Spring of 2007) include a review of traffic data for all HPMS samples. This comprehensive review will use the latest version of DelDOT's travel model. That model will include updated population and employment data for all Traffic Analysis Zones in New Castle County as well as the nine Maryland counties, and will include an updated traffic assignment calibration using DelDOT's "2005 Traffic Summary". This comprehensive review will also extend the forecast horizon year from the current projection of 2025 used in HPMS to the 2030 planning horizon year of the WILMAPCO Long-Range plan for New Castle County and the Dover/Kent MPO Long Range plan for Kent County.

It should also be noted that during the fall of 2006, the WILMAPCO Long -Range plan will be updated and that the comprehensive review of HPMS samples recommended above will be able to incorporate any changes, amendments, and upgrades in project "in service" years.

The contact person in charge of forecasting traffic in DelDOT is:

Michael DuRoss
Transportation Planning Supervisor
302-760-2110
Michael.Duross@state.de.us

Delaware Interstate Travel

The following Interstate routes exist in Delaware.

Interstate Route	Total Miles	Urban Areas Served
95	23.43	Philadelphia
295	5.71	Philadelphia
495	11.47	Philadelphia
Total	40.61	Philadelphia

Since 1995, the traffic on the Interstate has continued to change, while the number of through lanes and miles remains the same. The Table in the following shows the Daily Vehicle Miles of travel on the Interstate routes since 1995.

DVMT on Interstate Routes

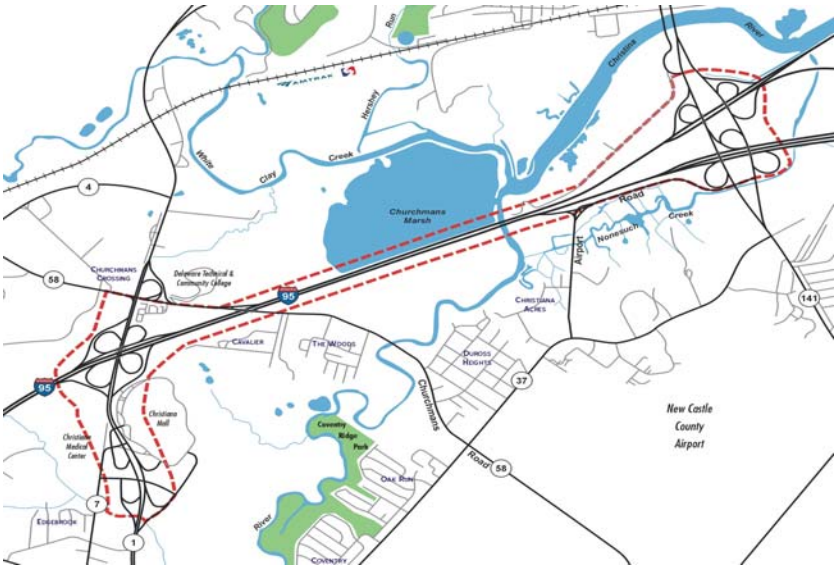
Year	DVMT (000)	Change
1995	3,384	N/A
1996	3,478	2.78%
1997	3,805	9.40%
1998	3,698	-2.82%
1999	3,842	3.90%
2000	3,807	-0.92%
2001	3,789	-0.46%
2002	3,766	-0.61%
2003	3,808	1.12%
2004	3,852	1.15%
2005	3793	-1.56%

The Daily Vehicle Miles of Travel from 2000 to 2005 shows stagnation on the interstate system. The HPMS 2005 sample records show that the Interstate 95 section, from Del Route 273 to Del Route 141 interchange, amounting to 5 miles of the interstate is operating at undesirable level of service. Volume/Service Flow (V/SF) ratio exceeds 0.80.

SR - 1 Interchange/ I-95 Mainline Area

DelDOT is working on options to improve this interchange area via the I-95/SR-1 Interchange project. A major contributor of the congestion is the mixing of local and thru traffic as well as continuing housing developments in the state, south of the interchange. DelDOT had attempted a P3 (Public Private Partnership) venture in this area, but the effort was stopped in the fall of 2005. With insufficient funds to proceed with the P3, this project is delayed until a suitable implementation plan can be developed. Environmental permitting is continuing for this project. The total cost of the Interchange project will be in excess of 100 million dollars. At this point, work will not begin any sooner than 2008. Under current funding constraint, the project would most likely be broken up into multiple $30-40 million dollars project at 2-3 year each. This is a recurring roadway condition and we will continue to report these locations operating at undesirable level of service until these projects are completed. (Source: Darren O'Neill, Project Manager)

A short map of the interchange and the area is presented on the next page.



SR – 1 / I – 95 Interchange and Vicinity

Traffic Congestion

When the V/SF ratio exceeds 1.20 at a sample section, the HPMS data process sends an error message in the output. The default in HPMS software is that the V/SF ratio must not exceed 1.20, because the capacity would not allow such a high level of traffic flow. However, the V/SF ratio in excess of 1.20 is for real at several highway segments in Delaware.

The best example of this condition is I-95 between SR-273 and SR-141 interchanges. Based on traffic monitoring, not estimation, the AADT on this section of highway ranged from 135,191 vpd to 189,503 vpd. The observed V/SF ratio of 1.55 is correctly calculated, but it appears to overstate the situation because traffic does continue to flow through the section where this ratio is observed. There are two possible explanations. The more likely explanation is that some of the counted traffic is not through traffic but is actually entering or exiting traffic. The other explanation, which could account for some of the difference, is that because the area is congested drivers are willing to accept lower headways at higher speeds and therefore the assumed saturation flow rate is too low.

There are other highway segments in Delaware, which are operating at a V/SF ratio exceeding 1.20.

· SR-1 (New Castle Road 67) near I-95 interchange: the AADT here is 64,941 vpd.

· Valley Road (New Castle Road 294) is operating at 10,282 vpd. There is no project planned here to relieve congestion in the foreseeable future.

· A 0.73 mile stretch of Harmony Road (New Castle Road No. 355) is congested with an AADT of 21,084 vpd, V/SF = 1.43.

· The sample section 0.38 mile on Brandywine Boulevard (New Castle Road No. 496) is operating at 12,205 vpd with V/SF = 1.49.

· Sussex Avenue in the city of Seaford (Sussex Road 539) is operating at an AADT of 7004 vpd at 25 mph, which is correctly reported.

However, a roadway section is congested with traffic when the V/SF ratio exceeds 0.80.

The following table shows the mileage by county, where the V/SF ratio continues to exceed 0.80 since 2000.

Miles by County With Volume/Service Flow Ratio (V/SF) exceeding 0.80
(V/SF multiplied by Sample Expansion factor)

Year	County			
	New Castle	Kent	Sussex	Total
2000	35.62	12.20	9.37	56.23
2001	41.89	17.46	36.94	96.29
2002	71.68	16.38	22.70	110.77
2003	80.93	15.26	19.12	113.80
2004	66.38	12.95	30.99	110.32
2005	60.45	13.37	21.79	95.61

The above table shows that in 2005, there was an improvement of V/SF above 0.80 on 14.71 miles of road in the network. According to district and project engineers, there were no highway projects completed in 2005 that could have increased capacity. These V/SF changes were primarily due to problems with traffic counts, equipment, and sampling technique used in some cases.

More than 1/3 of the interstate routes in New Castle County, amounting to 13.87 miles, operated at LOS “D” or worse in 2005.

SR-1 Route

SR-1 is partly a toll route for about 45 miles**;** more than 20 miles of SR-1 can be traveled without paying toll. There is a public Rest Area alongside a Minor Arterial on close proximity of this toll route outside its access control line. Motorists can freely exit and enter the toll route at this location. Several ramps with sign, “Last Exit Before Toll” continue to feed traffic to Local and Collector roadways in the vicinity. It will take a few more years to achieve stability of traffic flow along this route.

There is a proposal to increase toll throughout the toll road portion of SR-1, and collect toll on the bridge across the C & D Canal, which is toll free at this time.

The HPMS sample sections on SR-1 exceed the sample adequacy requirement. We will continue to report the information from those sample sections**.**

Transit Ridership Trends

Fiscal Year	Transit Ridership	Yearly Change
2000	8,944,828	
2001	9,260,336	3.53%
2002	9,045,281	-2.32%
2003	8,785,314	-2.87%
2004	9,224,929	5.00%
2005	9,602,722	4.10%

Source: Delaware Transit Corporation

The above table shows that there was an increase in transit ridership during 2004 and 2005. From year 2000 to 2005, the net increase of 7.36% closely matches the total population increase of 7.26%.

Delaware Gasoline Consumption

With the steep increase in gasoline price, it was debated in the news media if the impact would decrease the highway traffic. However, the following tables present a different picture.

Gasoline Tables

Gallons sold		Revenue collected	
Fiscal Year	Total	Fiscal Year	Total
* 2006	$450,282,843	* 2006	$103,148,131
2005	$434,107,363	2005	$99,162,587
2004	$425,075,277	2004	$99,145,271
2003	$415,364,330	2003	$94,365,047
2002	$410,727,263	2002	$95,064,201
2001	$382,107,442	2001	$86,497,377
2000	$396,439,626	2000	$91,426,164

Source: Michael J. Harrell, DelDOT DMV Motor Fuel Tax Administration

*The current state fiscal year ends on June 30, 2006. The data were available through May 2006; June 2006 data is estimated

Retail Average Gasoline Price

State	Regular	Mid	Premium	Diesel
Pennsylvania	$2.84	$3.00	$3.13	$3.03
New Jersey	$2.91	$3.12	$3.24	$2.88
Delaware	$2.96	$3.14	$3.28	$2.98
Maryland	$2.99	$3.18	$3.26	$2.97

Source: fuelgaugereport.com
Service provided by AAA's Daily Fuel Gauge Report

When elected officials address state budget problems, one option to increase gasoline tax for transportation needs is discussed. However, in order to remain competitive with the neighboring states, increasing the gasoline tax is not an option at this time.

On the Federal-Aid Apportionment

HPMS data constitute the tool for Federal-Aid apportionments among all 50 states and D.C. The apportionment is formula-based with defaults. Delaware does not rank at the lowest among the states in the parameters involved in the formula. Delaware is not at the bottom of the remaining states in population, land area, NHS mileage, vehicle-miles of travel, contribution to Transportation Trust Fund, and the economy, but the Federal-AID Apportionment to Delaware is at the lowest.

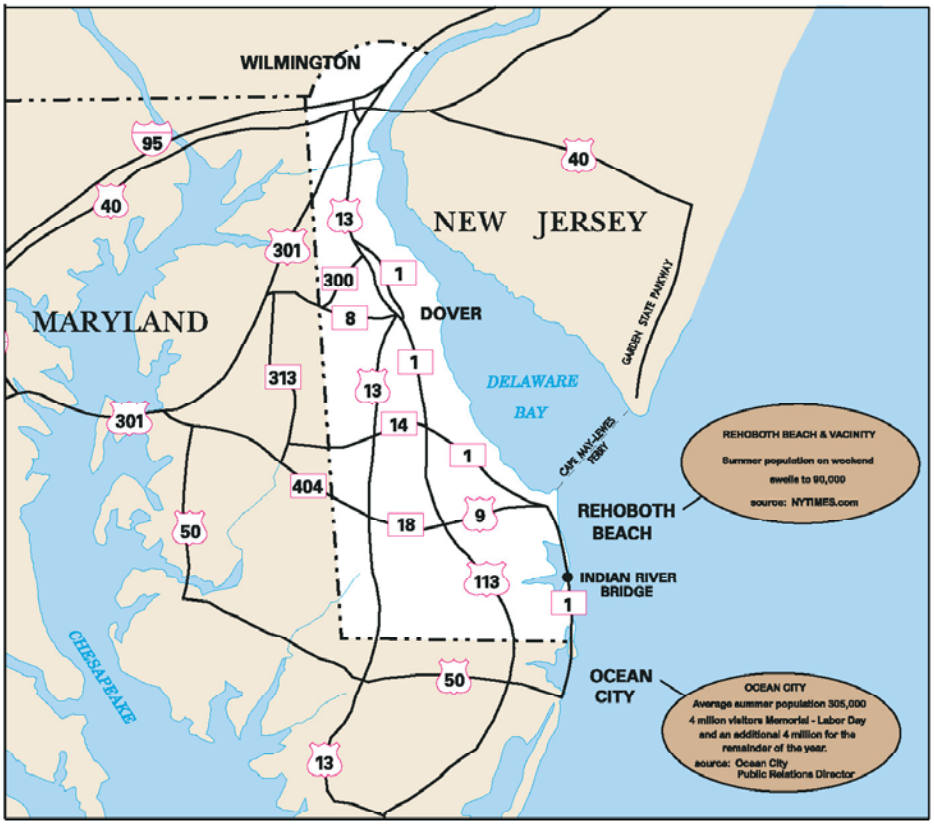
Data provided under the Delaware Interstate Travel report, shows that the State's Interstate lane mileage has remained the same for the past 10 years. Since the year 2000, Delaware's Vehicle Miles Traveled has changed very little. The primary reason for this is that Delaware's roads have been operating at an undesirable level of service. There is no element of congestion in the apportionment formula.

A review of the rationality of the formula seems to be necessary. Besides, the NHS mileage of Delaware has increased by 16.47 miles to 338.19 miles.

The current interstate and intersection projects, mentioned earlier in this report, have an estimated cost of more than $100 million dollars. In the past, the delay and shifting of projects to later years often resulted in cost overruns because each year the cost of construction continues to escalate. For a small state with limited resources, these overruns can result in a major financial burden, which limits the State's ability to undertake essential projects.

Indian River Inlet Bridge

The Indian River Inlet Bridge, now on NHS, will serve the summer traffic between Rehoboth Beach and Ocean City, Maryland. The traffic demand is extremely high as the accompanying figures indicate. Further delay in the construction of the project would be undesirable.



REHOBOTH BEACH & VICINITY
Summer Population on Weekend
Swells to 90,000
Source nytimes.com

Distance: 27.2 miles Approximate Travel Time: 50 minutes

OCEAN CITY Average Summer Population 305,000
4 million visitors Memorial-Labor Day and additional 4 million for the remainder of the year Source: Ocean City Public Relations Director.

During the 2005 year, Delaware increased tolls. As a result, some independent truckers used the alternate routes to avoid toll charges. The option of increasing fuel taxes is not feasible.

In 2005, DelDOT projected that its projected six-year capital budget would include a shortfall of 2.7 billions if the legislature would not authorize the privatization of I-95 and other freeways as a funding source. At present, Delaware residents are convinced that the privatization of their Interstate highways and other expressways would not be beneficial.

HPMS and traffic related studies by consultants' provide very useful data, but a big hurdle remains in finding the financial resources to implement the plans already in the Capital Program.

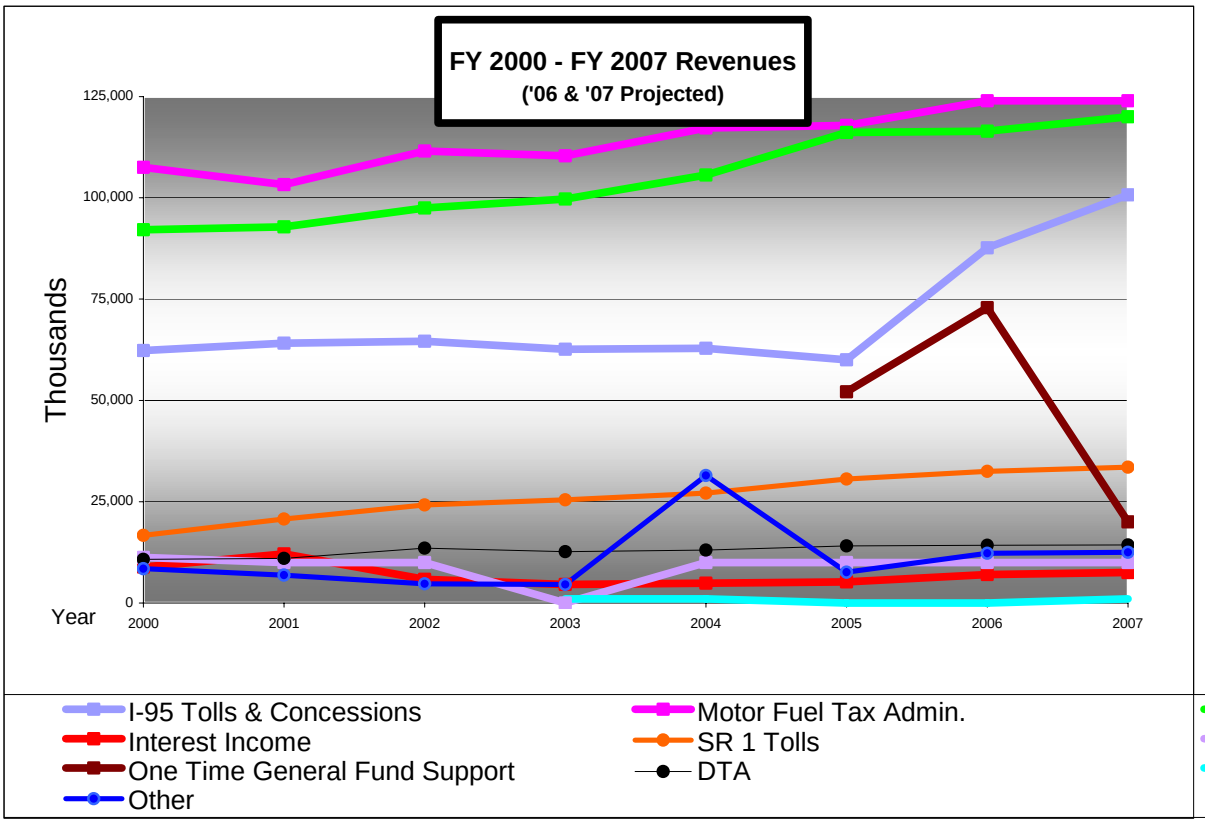
Looking at the billions in federal funding for NASA, which provided beautiful pictures of other planets, begs the question of why can't we convince our elected officials that there is a need for additional resources to better meet the travel demand for billions of annual vehicle miles traveled on our nation's highways.

Delaware Revenue and other tables' shown are pointing to the difficult choices that will be confronted for years to come.

Transportation Trust Fund (TTF) Revenues

Base Financial Plan - Revenues
($ in 000s)

State Fiscal Year	2000	2001	2002	2003	2004	2005	Projected 2006	Projected 2007
Existing Pledged Revenue								
I-95 Tolls & Concessions	62,307	64,133	64,584	62,637	62,861	60,021	87,700	100,700
Motor Fuel Tax Admin.	107,532	103,239	111,586	110,403	117,225	117,917	124,000	124,000
DMV Fees	92,134	92,822	97,501	99,678	105,663	116,180	116,500	120,000
Interest Income	8,823	12,123	5,879	4,592	4,923	5,207	7,000	7,500
Total Pledged Revenue	270,796	272,317	279,550	277,310	290,672	299,325	335,200	352,200
Non-Pledged Revenues								
SR 1 Tolls	16,650	20,709	24,223	25,443	27,101	30,563	32,500	33,500
Escheat	11,245	10,000	10,000	0	10,000	10,000	10,000	10,000
One Time General Fund Support/Pass-through						52,100	72,869	20,000
DE Transit (Farebox, FTA, & Other)	10,732	10,961	13,511	12,640	13,064	14,100	14,253	14,332
Port of Wilmington - Refinancing				1,065	1,059	0	0	1,000
Other	8,478	6,883	4,712	4,612	31,491	7,597	12,265	12,505
Total Non-Pledged Revenue	47,105	48,553	52,446	43,759	82,715	114,360	141,887	91,337
Total Revenues (lines 13+22)	317,901	320,870	331,996	321,069	373,387	413,685	477,087	443,537



Source: Brian G. Motyl
Delaware Department of Transportation
Assistant Director, Finance
Trust Fund Administrator
Phone: (302) 760-2692
Email: Brian.Motyl@state.de.us

It appears there is a certain degree of inequity in the apportionment formula, which is used to determine apportionments on a state-by-state basis. Thus there is a need to review the apportionment formula, and reconcile the discrepancy.

Congestion Management in Delaware

In Delaware, congestion is managed principally through the Delaware Department of Transportation (DelDOT), which is responsible for 89 percent of the lane-miles in the state. Additionally, Delaware's two metropolitan planning organizations (MPOs) maintain federally mandated congestion management systems (CMS) with assistance from DelDOT.

DelDOT's direct role in congestion management can be divided into three parts: DelDOT capital projects, DelDOT operational programs, and developer-funded capital projects identified through the traffic impact study (TIS) process.

Current DelDOT capital projects are funded primarily through the Division of Transportation Solutions (DOTS) and the Delaware Transit Corporation (DTC). Included in these projects are the following items which received federal funding in Fiscal Year 2006 as discussed below:

Indian River Inlet Bridge (DOTS): $51.2 million would be designated to replace the bridge, which carries 16,000 to 18,000 vehicles daily.

Turnpike improvements along I-95 and SR-1 (DOTS): $24.4 million would be set aside for operation and capacity improvements along the I-95-SR-1 interchange, adding a fifth lane to I-95 and enhancements to the Newark Toll Plaza.

Replacement of Buses in New Castle County (DTC): $11 million would be designated to replace 68 transit coaches purchased in 1996 and used in Fixed Route Transit service in New Castle County with new state-of-the-art and environmentally friendly buses.

Highway monitoring (DOTS): $3 million would go toward implementing a statewide Integrated Transportation Management System, known as DelTrac, along 250 miles of Delaware roadways. This will allow DelDOT to identify incidents and congestion in real time, react by making appropriate changes to the system (such as traffic signals or transit schedules) and disseminate real-time information to travelers.

Northeast Corridor Commuter Rail Project from Wilmington to Newark (DTC): $5 million would be allocated to add a third track west of Wilmington; relocate the existing Newark station; construct a new pedestrian overpass across the Northeast Corridor track, and acquire four commuter rail cars. Remaining project authorization would be $14 million in federal funds, with the rest of the money provided in future spending legislation.

Middletown-Newark Commuter Rail Connection (DTC): $4 million would be allocated to provide a commuter rail connection from Middletown to Newark and a connection at the Newark station to Amtrak and SEPTA regional rail service. Total project authorization would be $24.9 million in federal funds, with the rest of that money provided in future spending legislation.

University of Delaware's fuel-cell hybrid bus program (DTC): $6.76 million would go toward building a fuel-cell system chassis to fuel a 22-foot Sprinter vehicle built by DaimlerChrysler and then scale up the system to a 30-foot bus.

DelDOT operational programs are managed by the Traffic Section in DOTS and consist of the DelTrac system, partial implementation of which is discussed above. While the project discussed above is focused on 250 critical miles of roadway, DelDOT's Traffic Section,

operating out of its Transportation Management Center in Smyrna, provides 24-hour management of traffic congestion on all of Delaware's 11,000 lane-miles.

Developer-funded capital projects tend to be small improvements such as turning lanes at intersections but can be larger, especially where the efforts of two or more developers can be coordinated. The need for these projects are typically identified through TIS and they are typically required as conditions for plan approval. DelDOT's Development Coordination Section, in the Division of Planning, works with local governments to require TIS and the improvements. In calendar year 2005, DelDOT reviewed 42 TIS, 7 in New Castle County, 17 in Kent County and 20 in Sussex County. Most of these resulted in at least some off-site improvements being required of the developers whose projects were addressed in those studies.

TIS are also used as the primary source of information for the CMS maintained by Delaware's two MPOs, the Wilmington Metropolitan Planning Council (WILMAPCO) and the Dover Kent MPO. These systems are used by the MPOs to identify and address congestion more comprehensively. The WILMAPCO CMS is managed by WILMAPCO staff with DelDOT and local government participation. Because the Dover Kent MPO has a smaller staff, their CMS is managed primarily by DelDOT staff.

For more information on DelDOT's TIS reviews, contact:

T. William Brockenbrough, Jr., P.E., AICP
County Coordinator
DelDOT Development Coordination
(302) 760-2109
Thomas. Brockenbrough@state.de.us

Delaware MPOs

Delaware is a small state with only 3 MPOs. DelDOT coordinates with these agencies on congestion management, related funding needs, and other transportation issues.

The contact person in charge of coordinating with MPO's and congestion mitigation in DelDOT is:

Mark Eastburn
GIS Planner, DelDOT
DelDOT Statewide & Regional Planning
(302) 760-2138
Mark.Eastburn@state.de.us

HPMS Recommendations For Congestion Management

As with any other traffic system, congestion is a fact that is a concern on Delaware highways. Even for a well-planned system congestion can exist as the systems are planned on annual average values. Peaking is considered, but only those peaks associated with the normal weekday. DELDOT spends its resources in managing traffic to avoid congestion. This is a very basic strategy and assists to a limited extent. It is becoming extremely important for us to address this issue with long-term permanent solutions. The fact is that we have various sections of highways, where seasonal socioeconomic consumer behavior conditions create congestion.

The first area of concern for congestion is around the factory outlets in Sussex County. Over the past 15 years there has been a tremendous growth in strip business and commercial development in the vicinity of the beach on both sides of Delaware Route 1. During the summer and periods around major holidays this road operates at an undesirable level of service. Also, at the beaches, feeding parking meters every two hours and driving back and forth in search of empty parking spaces creates extra traffic and congestion.

The other key section for congestion consideration in Delaware is the I-95 section between the Delaware Route 273 and Delaware Route 141 exits. The congestion that used to happen only in the period between Thanksgiving and Christmas due to increased shopping traffic at Christiana Mall (Regional Shopping Center) has become an everyday phenomenon, especially during the peak hours for office traffic. Further, it is not uncommon on peak shopping days for customers to make multiple trips around the parking lot to find a parking spot because there are not enough of them to support the increased demand.

The state needs to review the feasibility of mass transit, off–road connections and satellite parking. All these can be a developed in a partnership with private participants where commuters can be provided fast, convenient, frequent and safe modes of alternate transportation. As an example, the section of Route1 around the factory outlets may benefit by an underground corridor to connect the shops on either side of Route 1. There could be grade-separated walkway crossings, over or below ground, for customers or small buses to take them through. In addition, attractions like a food court and arcade for children in this corridor or at its entrance could attract and redirect traffic through it. It would help reduce congestion by redirecting some of the travelers that are making U-turns on Route1, to go from a strip mall on one side to one on the other side. Also, efficient transit needs to be provided between Newark, Christiana and Wilmington with satellite parking locations. We need to review the demand based on time of the day and demand change due to seasonality like holidays.

Other Information:

· This information is a part of the 2005 HPMS submission.

· The entire data, as being submitted, was collected, compiled, and presented in the U.S. Customary Units. DelDOT has no plan to convert to metric system in the foreseeable future.

There is no HPMS field crew in Delaware, and therefore, some data are made available just before the due date of reporting the HPMS data.

Delaware also encounters problems in "Sample Management". We feel small sections within the Volume Group Universe, which have section length under 0.20 mile the software should ignore them. We have put efforts to collect data for a lot of small sections just to avoid the errors. It is doubtful if such extra efforts are worthwhile.

Small sections in the Central Business District, and around the Beach Area also generate unusually high number of intersections (> 25 per mile).

We have not provided our own analysis to override the HPMS software capacity. The HPMS universe requirements are only for through lanes. In reality, some HPMS sections function as both thoroughfare and local access roads as well.

NAAQS Non-attainment Areas

The following is a list of NAAQS non-attainment areas in the State. The list also shows urbanized areas within each NAAQS non-attainment area.

All three counties are declared as NAAQS non-attainment areas.

County	Urbanized Area
1. Kent County (Nonattainment)	Dover
2. New Castle County (Nonattainment)	Philadelphia
3. Sussex County (Nonattainment)	Salisbury

List of Standard Sample Panel Groupings:

- Not applicable in Delaware

The statistical information was derived from various computer files, such as the 2005 HPMS Universe/Sample database, the Delaware Road Inventory, and the traffic data files.

TRUTH- IN- DATA

Although Delaware is now updating the K & D factors by using seasonal counts as well as from permanent counters, we will follow the Traffic Monitoring Guide, and get the entire universe and sample data updated on a 3-year cycle. However, some of the data may not yet meet the HPMS requirements at this time.

During 2005, there were 74 ATR stations, 5 toll sites for collecting traffic data, and 557 sites using portable recorders in the highway network**.** However, there were serious problems with more than 15% of the ATR stations statewide.

Some of the sensor failures are indicated below:

Site	Date Broken	Date Repaired	2005 Days Lost	Problem	Cause of Problem
8004	1/1/05	04/13/05	103	Sensor Failure	Environment
8015	10/8/05	10/28/05	20	Sensor Failure	Construction
8015	11/22/05	12/12/05	20	Sensor Failure	Environment
8022	06/03/05	06/30/05	27	Sensor Failure	Environment
8028	1/14/05	02/1/05	18	Sensor Failure	Environment
8028	07/12/05	08/10/05	29	Sensor Failure	Environment
8032	08/05/05	11/02/05	89	Sensor Failure	Construction
8039	07/27/05	11/03/05	99	Sensor Failure	Environment
8040	01/01/05	06/01/05	151	Sensor Failure	Construction
8046	06/28/05	10/20/05	114	Sensor Failure	Environment
8069	08/01/05	10/16/05	80	Sensor Failure	Environment
8078	02/08/05	03/01/05	21	Sensor Failure	Construction
8078	05/11/05	06/07/05	27	Sensor Failure	Environment
8091	01/01/05	04/08/05	97	Sensor Failure	Construction
8092	01/11/05	01/26/05	15	Sensor Failure	Environment
8092	10/10/05	10/28/05	18	Sensor Failure	Environment
8095	07/27/05	10/05/05	70	Sensor Failure	Construction

The remedy, we intend for the future, is to install sensors not to be affected by reconstruction work and with longer life.

Finally, we realize that certain improvements are essential for future reports:

Projects For Calendar Year 2006

The HPMS provides statistical tables, which can provide a wide range of useful information for agency staff conducting transportation-related analyses.

The HPMS data supports many types of analyses that are used by a wide range of administrative staff and are reviewed by elected officials. HPMS is used in communications with the general public, is used in background materials regarding input data for funds approval and allocation, and is used for quick reference mapping.

A state map showing "Projects For Calendar Year 2006" was prepared for the Bond Bill. It is attached herewith, and available on the DelDOT web site.

Technology & Support Services unit of DelDOT prepared the map. The contact person is:

Matthew Laick
GIS/CADD Manager
Delaware Department of Transportation
Technology & Support Services
Voice/Fax 302-760-2661

Personal Remarks

Unlike other states, DelDOT lacks an office of Bureau of Statistics and field crew to conduct HPMS sample inspections survey. The data are collected from various sections of DelDOT. Suggestions provided by these individuals are included in this report. It is truly a team effort by the HPMS hard hats. The success of this HPMS report is a direct result of the efforts by these individuals. I wish to express my sincere appreciation for their cooperation and contribution to HPMS.

Reportedly, Mr. Paul Lang, FHWA Field Engineer in Dover, is planning to retire, and may not review the next annual report on HPMS. We will miss him for all of the supports he has provided for so many years in the past. I wish him happiness and success in his new endeavor.

My special thanks are due to Mr. Thomas Roff, Mr. Robert Rozycki, and Mr. Paul Svercl, at FHWA, Washington Headquarters for their patience and constant guidance to complete this onerous task.

Sincerely,

S. Bhai
Senior Transportation Planner

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Enclosure(s)
cc: John Dewar, Acting Division Administrator, FHWA
Ralph Reeb, Director of Planning, DelDOT
Tyrone Crittenden, Program Manager, DelDOT