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The Dover/Kent County Metropolitan Planning Organization (MPO) invites the talents of Kent County's transportation industry to a roundtable to develop a blueprint for providing the safest and most efficient way to get from Point A to Point B whether hauling the kids to soccer practice, riding bikes along the countryside, taking the bus to pick up groceries, or walking down the street for some ice cream.

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## Traffic

Traffic, no matter how hard you try, is inescapable. It can simply be two or more cars that occupy the same stretch of road. For the purpose of understanding traffic volumes in Kent County, traffic is measured by Average Annual Daily Traffic (AADT); the total number of cars that travels on a specific segment of the road, Vehicle Miles Traveled (VMT), and Congestion which is measured by Levels of Service (LOS).

### What is AADT?



Photo courtesy of DelDOT

AADT is a measure of the Annual Average Daily Traffic adjusted for Seasonal Adjustment Factors (SAF) recorded over a year's time. In simple terms, it is how many cars, on average, are on the road daily. Traffic counts are collected by Delaware Department of Transportation's (DelDOT) 74 Automatic Traffic Recorder Stations strategically placed throughout the state of Delaware.

## LOS

Level of Service is a measurement of road usage.

Volume of traffic on the road divided by the capacity of traffic the road can handle

Boss, LOS is F. I'm going to be late again!

LOS	V/C Ratio
A	< 0.35
B	.35 - .55
C	.55 - .76
D	.76 - .90
E	.90 - 1.0
F	1.0 +

The road has more capacity than is needed at the time.

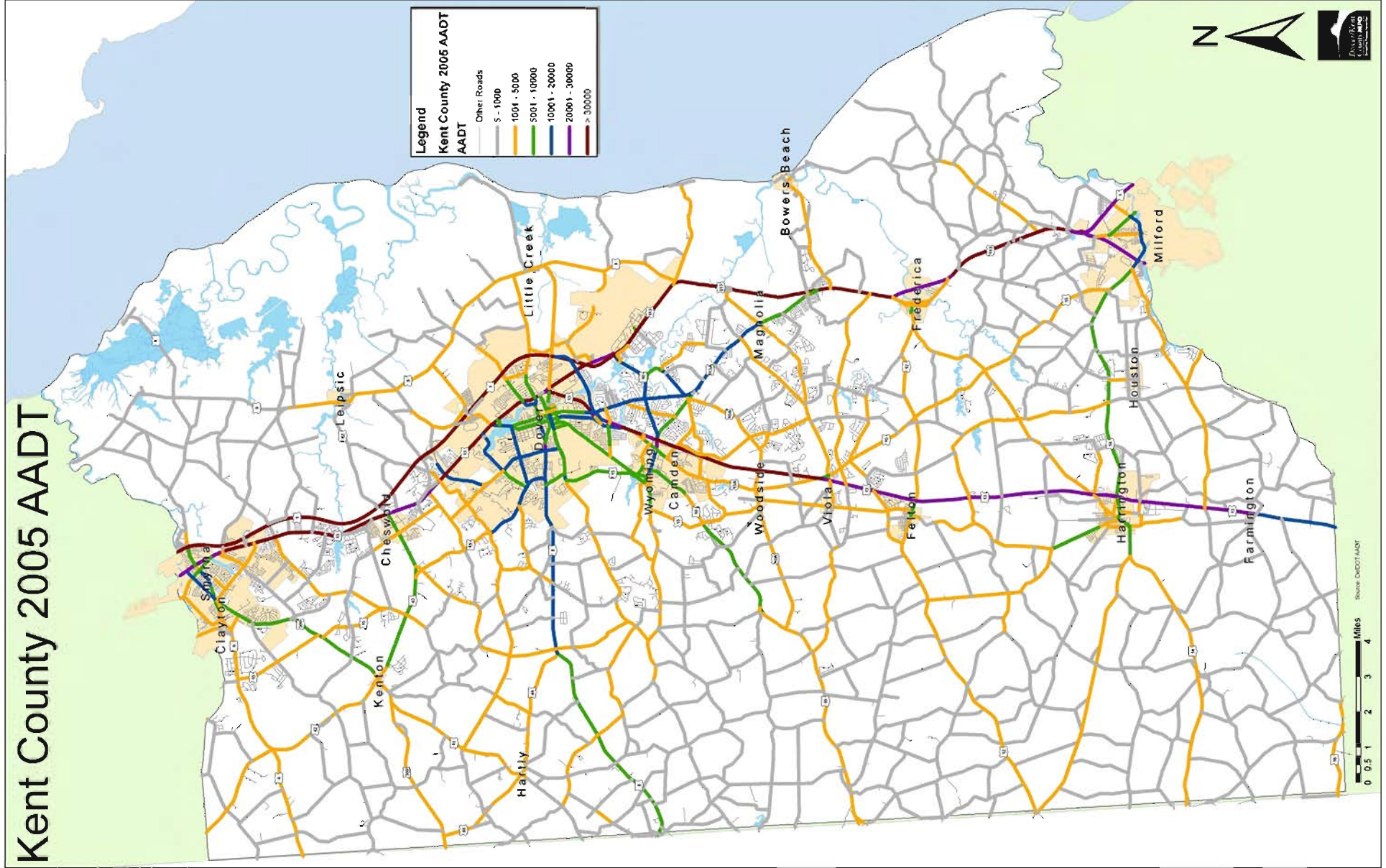
The road is full, but still has room to grow

The road is full, and traffic slows down



Acceptable in Urban Areas, because of the slower speeds

# Kent County 2005 AADT





## Congested Intersections

What is congestion? For the average motorist, congestion is waiting more than one cycle at a traffic signal to cross any signalized intersection. For the traffic analysis savvy, congestion at a signalized intersection means a Level of Service E or worse. Below are the congested signalized intersections in Kent County for 2006.



**US 13 and Walnut Shade Rd.**



The LOS number for each signalized intersection represents the afternoon rush hour LOS.

On US 13  
from North to South

**Kings Highway  
Delaware Rt. 8  
E. Loockerman St.**

Source: DelDOT



PM LOS: F (1.56)

PM LOS: E (1.39)

PM LOS: F (1.03)



The **Highway Performance Monitoring System (HPMS)** is a national database of information that serves the needs of state and local governments, MPO's, and other customers in assessing highway condition, performance, air quality trends, and future investments for the functional classification of the Nation's roadways.

The data obtained from HPMS serves as a basis for determining the level of Federal-aid funding the States receive by Congress using bi-annual Condition and Performance Reports. This ultimately affects every State that contributes data to the HPMS. Below are some of the data Delaware reports to the HPMS.

### 2005 ROADWAY MILEAGE BY FUNCTIONAL CLASSIFICATION FOR KENT COUNTY

Functional Class	Route Miles	% of Total	Lane Miles	% of Total
Interstate	0.00	0.00%	0.00	0.00%
Freeway/Expressway	10.13	0.71%	44.72	1.48%
Other Principal Arterials	50.06	3.49%	198.82	6.57%
Minor Arterials	111.98	7.81%	274.65	9.08%
Collectors	269.35	18.78%	540.12	17.80%
Local	992.82	69.22%	1966.61	65.01%
<b>Total</b>	<b>1434.34</b>	<b>100.00%</b>	<b>3024.92</b>	<b>100.00%</b>

That is a lot of  
road to choose  
from!



**Route Miles:**

is the actual miles of roadway in Kent County.



**Lane Miles:**

is the number of lanes in each roadway added together.



**Vehicle Miles Traveled (VMT)** is a way of measuring the travel activity of motorists in Kent County. VMT is usually calculated by taking the average trip length and multiplying it by the total number of trips. VMT can be expressed as either Daily VMT or Annual VMT. Think of it as counting up all the trips everyone in Kent County takes in a day and seeing how many miles they go.



That's a lot  
of miles  
traveled



LEFT  
EXIT 13

2000	3,682
2001	3,809
2002	3,859
2003	4,016
2004	4,445
2005	4,545
2006	4,601



DVMT (in thousands) for Kent County

Source: DelDOT

## Introduction

In 2005, Kent County was number one in the state with the fewest total vehicle crashes. The State of Delaware had a total of 196 vehicle crashes. Only 23.5% of them occurred in Kent County.

This section depicts the number of crashes and fatalities involving residents of Kent County.

## Crash Rate

	Total Vehicle Crashes	Rate per 100,000 People
2000	1837	1445
2001	2357	1826
2002	2610	1983
2003	2756	2047
2004	2678	1925
2005	2593	1801

For Kent County between 2000 and 2005

Rate of increase for total number of vehicle crashes: 41.15%

Rate of increase for rate per 100,000 people: 24.62%

Source: DelDOT and Delaware Population Consortium

## Fatalities

In 2005, Delaware was the 6th lowest state, including the District of Columbia, in total number of fatalities in the United States. Of those fatalities, 29% occurred in Kent County. Vehicle-related crashes are the single leading cause of death for people in America aged 1 to 34, according to U.S. Department of Transportation.

Source: www.nhtsa.dot.gov



## Fatality Rate

	Total Fatal Crashes	Rate per 100,000 People
2000 —	24	18.88
2001 —	22	17.31
2002 —	19	14.95
2003 —	17	13.37
2004 —	26	20.46
2005 —	29	22.82

**R**ate of increase in Kent County from 2000 to 2005

Total Fatal Crashes	Rate per 100,000 People
20.83%	20.83%

Source: DelDOT and Delaware Population Consortium



The **H**ighway **S**afety **I**mprovement **P**rogram (HSIP) is a collaboration of state and federal agencies to identify and improve the safety of various locations on Delaware's roadways that have a high risk of accidents. DelDOT, the Federal Highway Administration, Wilmington Area Planning Council (WILMAPCO), the Dover/Kent County MPO, and local government officials work together to identify these sites, rank them by their impact to public safety, and come up with a solution to reduce the risk and increase the safety at these sites. There was a total of 35 HSIP sites identified in Delaware for 2006. Of the 35, six sites were located in Kent County.



is Delaware's premier transit service for fixed-bus routes and paratransit service. Delaware Area Rapid Transit (DART), a division of DelDOT, offers daily service between Smyrna, Dover, and Milford including regular service throughout the greater Dover region. For detailed times, schedules, and route maps, visit DART First State's website at [www.DartFirstState.com](http://www.DartFirstState.com)



## Routes

### Local Routes .....

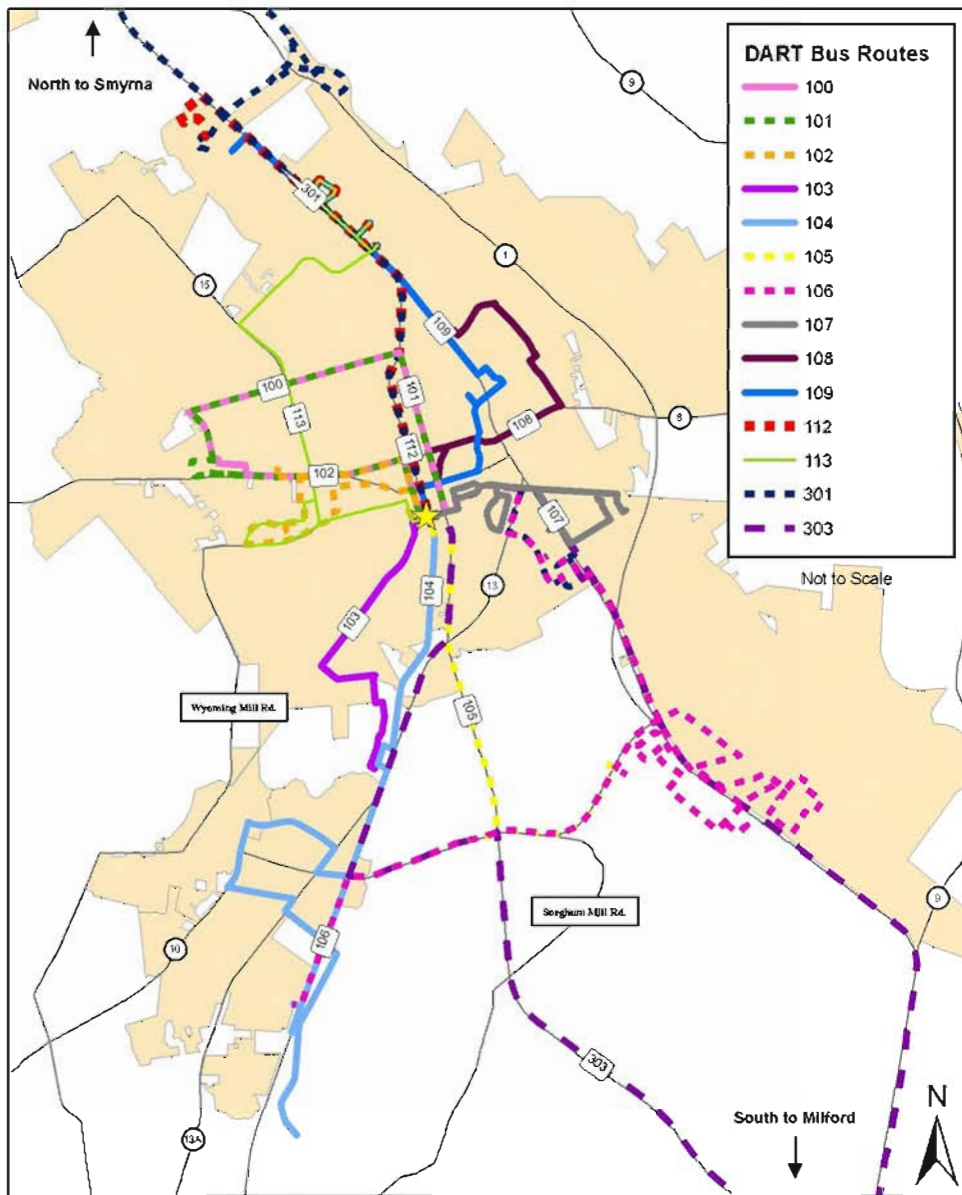
- Route 100 - Forrest Ave. (Water St. to Greentree Village Shopping Center)
- Route 101 - Walker Rd. (Water St. to Greentree Village Shopping Center)
- Route 102 - Forrest Ave. (Water St. to Gateway West Shopping Center)
- Route 103 - Rodney Village (Water St. to Rodney Village)
- Route 104 - Mifflin Meadows (Water St. to Mifflin Meadows)
- Route 105 - Moores Lake Ctr. (Water St. to Gateway South)
- Route 106 - Dover AFB (Water St. to Gateway South)
- Route 107 - Capital Complex (Water St. to Us Route 113)
- Route 108 - Towne Point (Water St. to Townsend Blvd.)
- Route 109 - Dover Mall (Water St. to Wal-Mart)
- Route 112 - Del Tech (Water St. to Us Route 113)
- Route 113 - West Dover (Water St. to Dover Mall)
- Harrington/Dover Shuttle (Clark's Corner to Mifflin Meadows)

### Intercounty Routes .....

- Route 301 - Dover to Wilmington
- Route 303 - Dover to Milford

DART routes as of May 2007

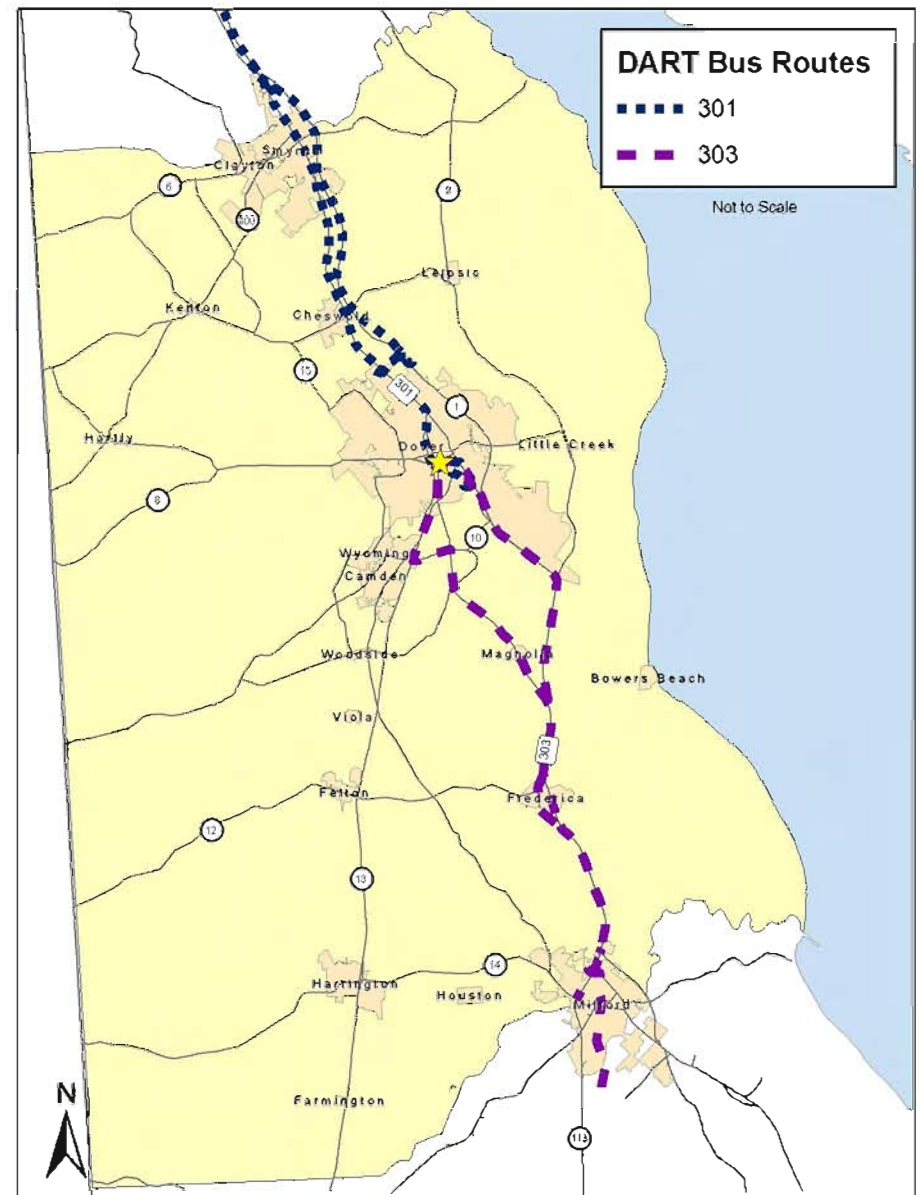
## DART's Fixed-bus Route System - Dover Area



★ DART's Central Hub

DART Routes are effective as of May 2007

## DART's Fixed-bus Route System - 301 & 302

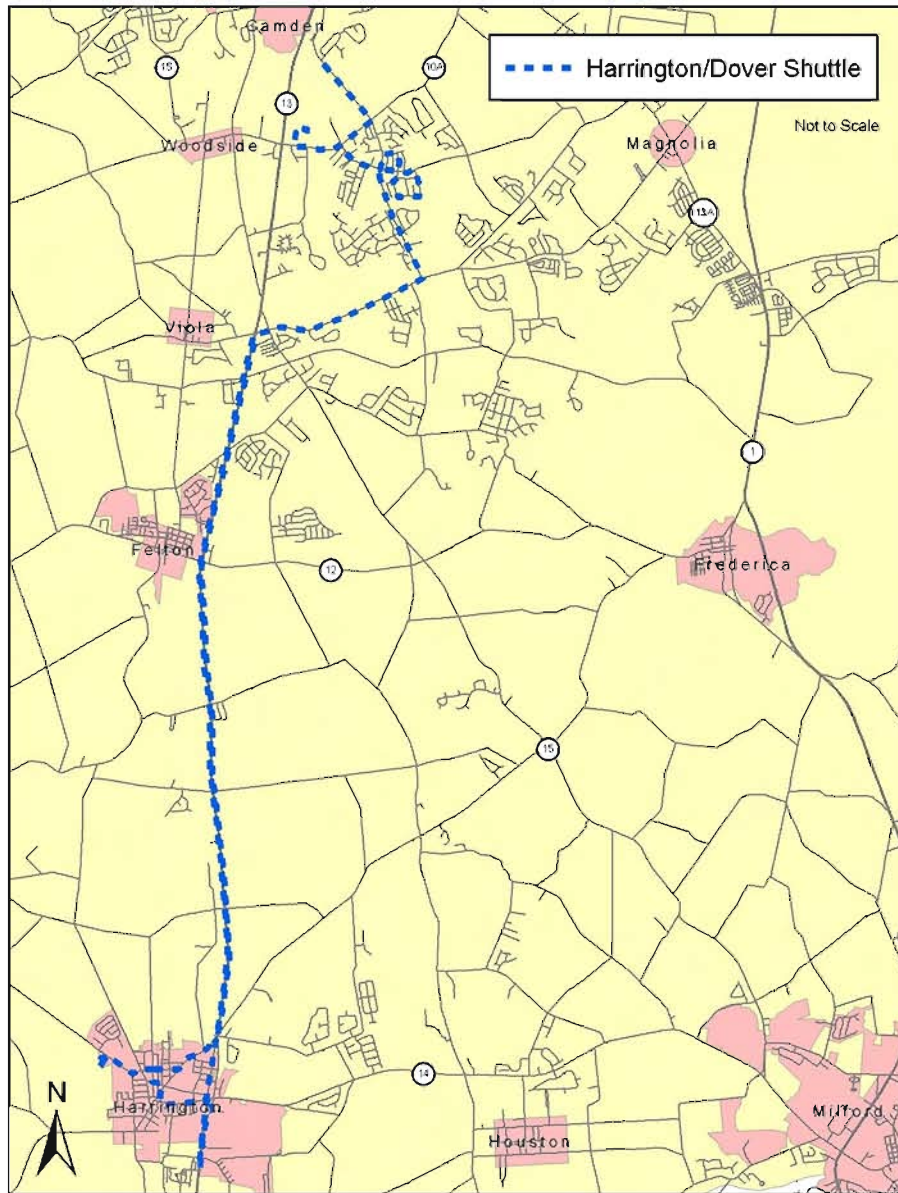


★ DART's Central Hub

DART Routes are effective as of May 2007



## DART's Harrington/Dover Shuttle Route



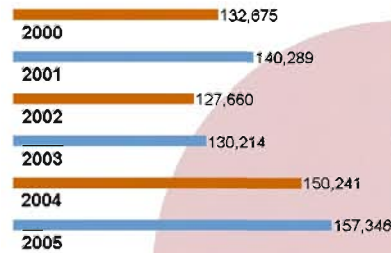
Harrington/Dover Route Effective as of May 2007

## Quick Facts

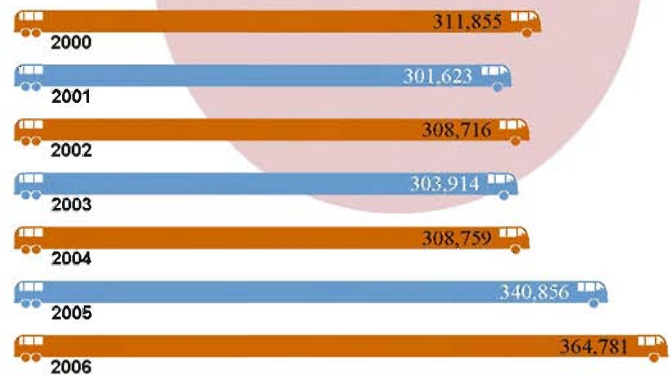
Ever wondered how many people within the Kent County community use DART as a means of transportation, or where the closest bus stop is to your house? Here are some quick facts showing how many people use DART and how close and convenient bus stops are to the public.

### Kent County Ridership

#### Paratransit



#### Fixed Routes





## Passengers per Mile



Passengers per Mile is a way to measure how productive the transit system is by looking at the ratio of the number of passengers on a given route to the miles of service that route provides. So, the higher the ratio, the more productive the route is.

Route	2000	2006	Change Since 2006
100	N/A	.31	0.00
101	.72	.71	-0.01
102	.88	.78	-0.10
103	.74	.73	-0.01
104	.71	1.23	0.52
105	.40	.53	0.14
106	.41	.39	-0.03
107	1.17	.99	-0.18
108	.64	.68	0.04
109	1.39	1.19	-0.20
112	.84	.87	0.02
113	.65	.58	-0.07

## Transit Revenue Miles



Transit Revenue Miles are the total miles of a particular route along which fares are collected. It is calculated by dividing the Revenue Miles of the route by the Total Miles driven by the route. Transit Revenue Miles indicate how economical a route is.

$$\frac{\text{Revenue Miles of the Route}}{\text{Total Miles of the Route}} = \text{Transit Revenue Miles}$$

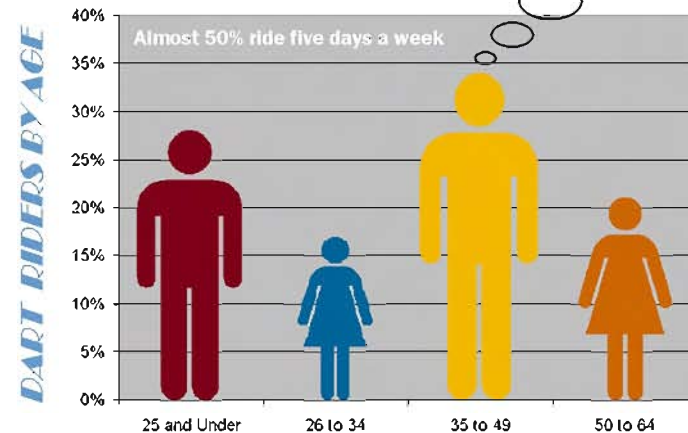
Route	Revenue Miles	Total Miles	Transit Revenue Miles
100	76.35	97.17	0.79
101	156.61	167.02	0.94
102	112.42	122.83	0.92
103	120.34	130.75	0.92
104	144.45	154.86	0.93
105	172.30	182.71	0.94
106	181.02	190.70	0.95
107	124.31	134.72	0.92
108	152.39	162.80	0.94
109	169.82	180.23	0.94
112	124.94	135.35	0.92
113	150.32	160.73	0.94

## People who ride DART



Here are a few tidbits on who rides DART in Kent County, and why they ride DART. All the figures are based on the Kent County Fixed-Route Customer Profile from the DART 2002 Survey.

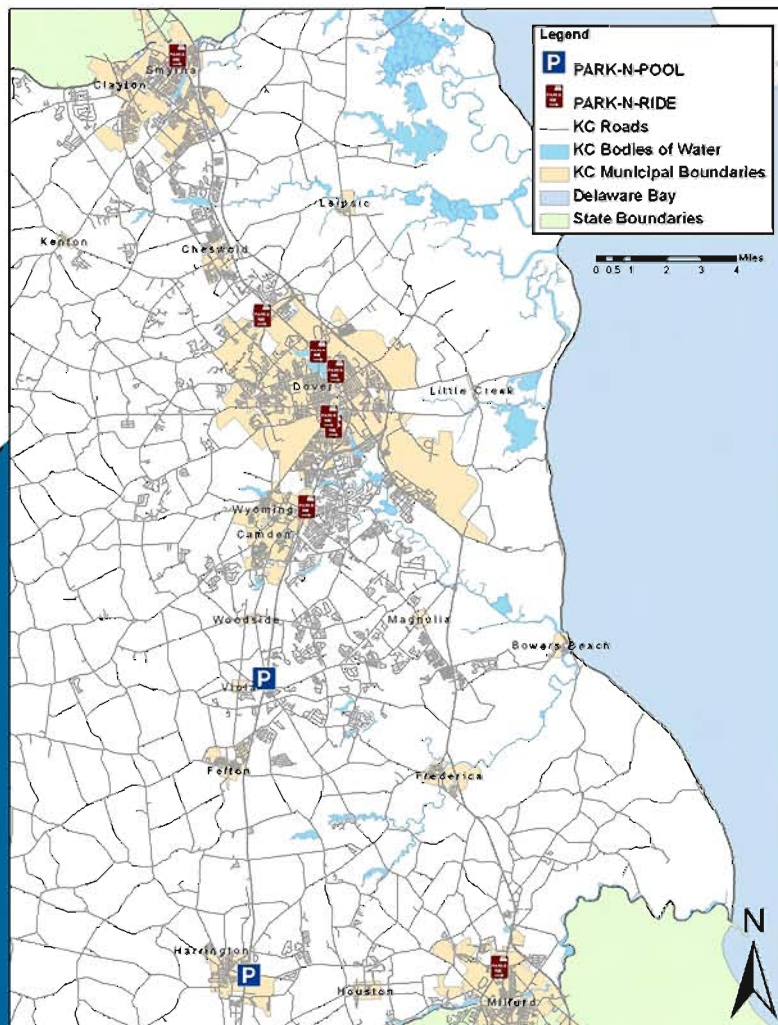
75% of DART Riders do not own a car. (50% have no drivers license).



67% of DART Riders are women.



## Park-n-Rides and Park-n-Pools



### Park-n-Ride Locations:

Smyrna Rest Stop  
Scarborough Road Park & Ride  
Delaware Agriculture Museum  
St. Andrew's Lutheran Church

Water Street Transfer Center  
Holy Cross Church  
Faith Community Church  
Milford Bowling Lanes

### Park-n-Pool Locations:

Shore Stop      Harrington Moose Lodge

DART Park-n-Rides & Park-n-Pools as of May 2007



## Rideshare Delaware



**RideShare** Delaware is a program administered by DART that helps commuters find and use alternative modes of transportation including carpools, vanpools, transit and supportive bicycle or pedestrian facilities. The goal of Rideshare Delaware is to reduce the number of vehicles carrying only one person as a way to improve air quality and manage traffic congestion.



### Mode Split for RideShare Delaware Participants

	Kent County's Participants % of Mode Total	Mode total (all counties)
Drive Alone	13%	1375
Carpool	10%	720
Vanpool	43%	469
Transit	3%	1399
Bicycle	20%	54
Walk	17%	48

10% of the 5900  
RideShare participants  
live in  
Kent County.

82 Kent County  
participants are  
State employees.

**RideShare** Delaware offers free ride matching services for commuters working in Delaware as well as for parents of Delaware school students. Other services include: an emergency ride home benefit for registered commuters actively ridesharing to work, vanpool services, and transportation benefit assistance to employers in Delaware.





## Are You Close to the Bus Stop?

People often say that one of the reasons they do not use DART is that it is too far to walk to the bus stop. There are approximately 465 bus stops throughout Kent County. One thousand, three hundred and twenty feet, or 1/4th of a mile, is considered to be a walkable distance to and from the bus stop. To help visualize how many people live within walking distance to a bus stop, the walkable distance radius is drawn around the bus stops on the maps below.

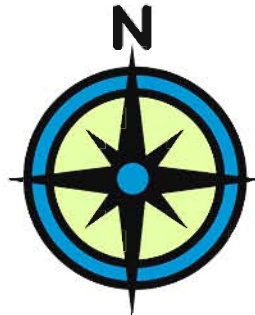
What a good way to get some exercise.



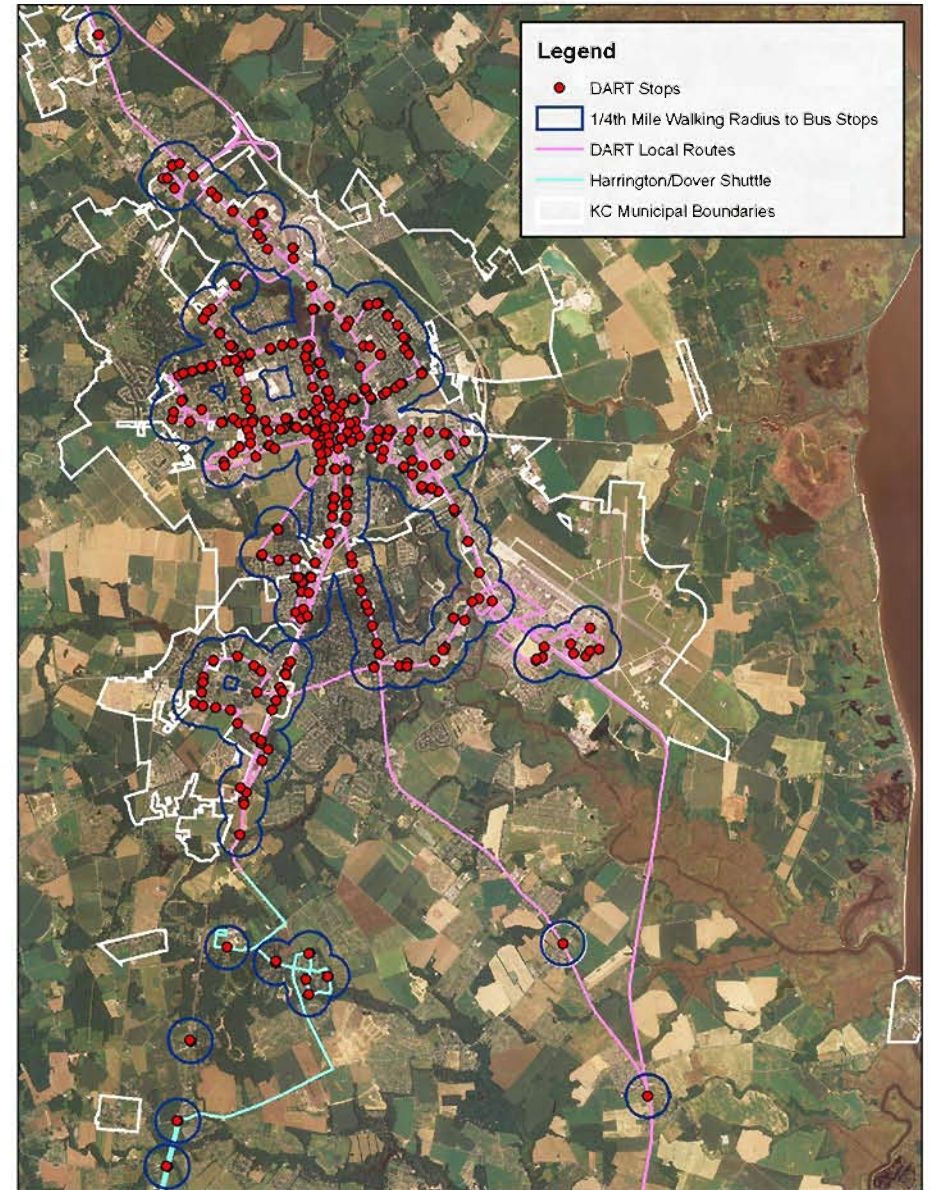
Smyrna/Clayton Area



Harrington and Milford Area



## Dover, Cheswold, Camden, and Wyoming



Source: DART, Kent County Planning





## Kent County Sidewalk Inventory



Looking for a good place to take a walk but uncertain if there is enough sidewalk to traverse? Below is an inventory of how many miles of sidewalks and footpaths of all types there are in Kent County.

<i>Sidewalks</i>		<i>Footpaths</i>	
Type	Miles	Type	Miles
Asphalt	3.62	Asphalt	7.03
Concrete	407.55	Concrete	5.29
Dirt	1.05	Dirt	9.74

Based on DelDOT's Sidewalk Database

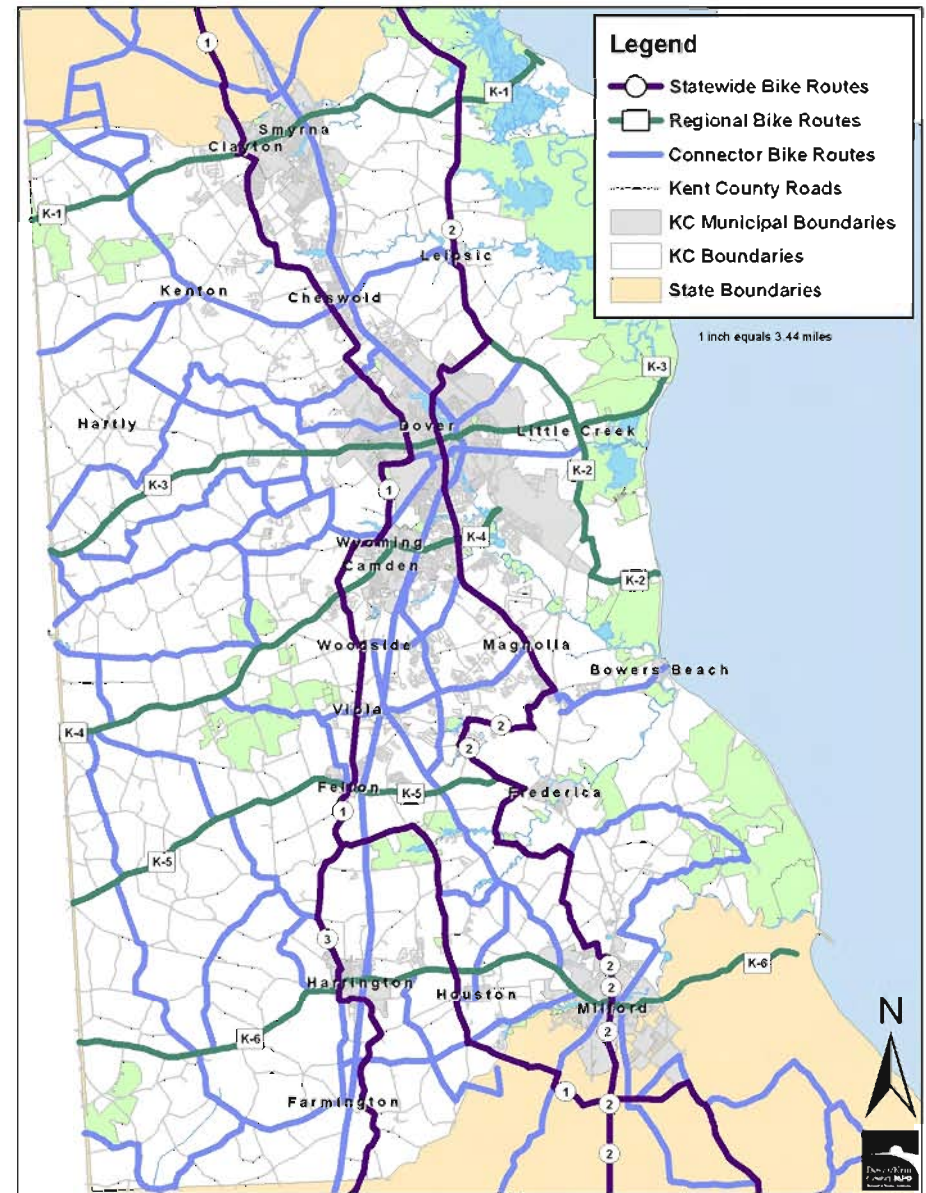


## 1 Bicycle Facilities

Looking for an alternative to driving, and need a map to tell you where bike routes are in Kent County? The On-Road Bicycle Facilities Map can help. The Delaware on-road bicycle facilities routes are broken down by three major categories; Statewide Bike Routes, Regional Bike Routes, and Connector Bike routes.



## Kent County On-Road Bike Facilities



Source DelDOT 2005

Note: these represent recommendations to design and construct a continuous statewide network of bicycle facilities; they do NOT necessarily represent roadways that are especially suitable for bicycle travel today





ail

Norfolk Southern provides the only rail service to Kent County and lower Delaware. Food processors in Dover and the chemical industry in Cheswold are the two major customers. The majority of the rail traffic within the county is through traffic heading to the lower Delmarva area. The major rail yard, in Harrington, sends rail cars on through to Milford, western Sussex County and the Eastern Shore of Maryland via the Indian River Secondary Track.



Norfolk Southern Rail System in Delaware Courtesy of DelDOT

## Commodities

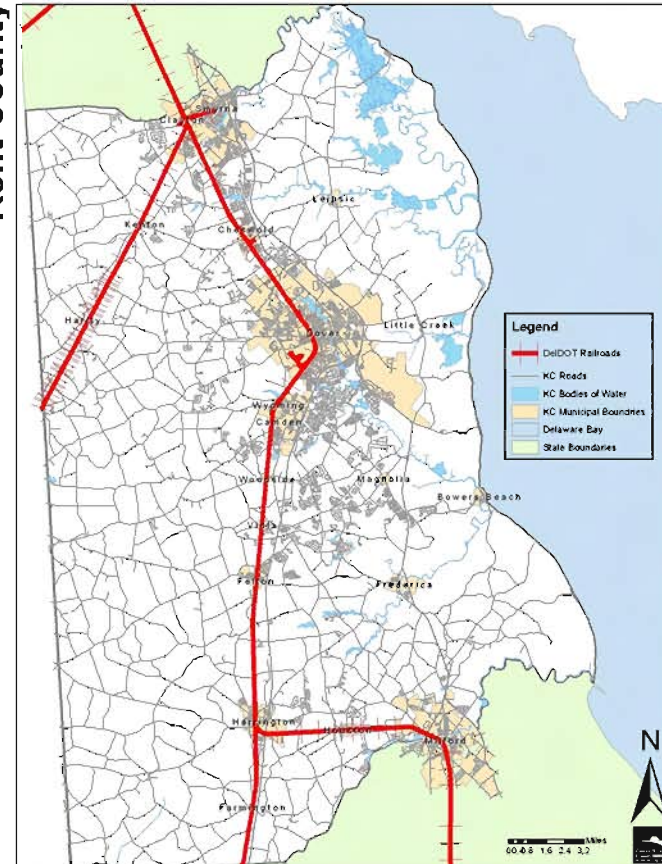
There are a variety of commodities delivered to Kent County. Stone and grain are the two major commodities, with the majority of the grain being for chicken feed. There is also a large amount of raw materials transported via rail, including coal for electricity. Products like processed broilers and other finished products are transported by truck.

6-8 trains pass through Kent County every day.



## Rail Lines

Kent County



## Rail Safety

Rail has the highest track record for safety in carrying hazardous materials (HAZMAT). However, Norfolk Southern is looking for safer places to store HAZMAT carrying rail cars, due to the rising threat of terrorism and recent chemical spills in Delaware.

Another concern in rail safety is the increase in both rail and vehicular traffic. One good example is at the Harrington Yard. Several of the tracks cross major roadways in the area, including DE 14 and US 13.

## FREIGHT



No matter where one drives there they are - huge tractor trailers transporting tons of products to the masses. How many are actually there? There are 27 Traffic Management Operations Study TOMS traffic recorders throughout Kent County that can differentiate between heavy trucks and other types of vehicles. Those recorders collect truck counts that are reported as AADT.

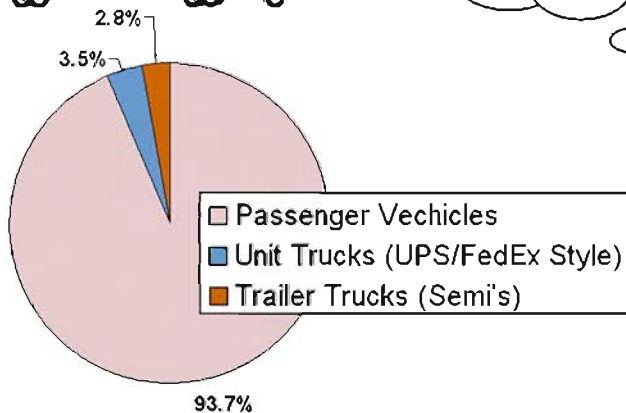


Photo courtesy of DelDOT

# AADT 2001

	Total AADT	Percentage
Passenger Vehicles	271,338	93.7%
Unit Trucks (UPS/FedEx Style)	10,053	3.5%
Trailer Trucks (Semi's)	8,221	2.8%

The Percentage of Trucks on the Road



1 in 16 vehicles on Kent County roads carries Freight



## FREIGHT



## Commodity Flow

As you pass a tractor trailer on the highway have you ever wondered what was inside, or where it was going? The mystery has now been solved thanks to Global Insight's Commodity Flow, which is the only company that provides county-level data. Commodity flow for Kent County is broken down into 50 categories. Each commodity category is tracked from its origin county to its destination county by annual tonnage and number of units.

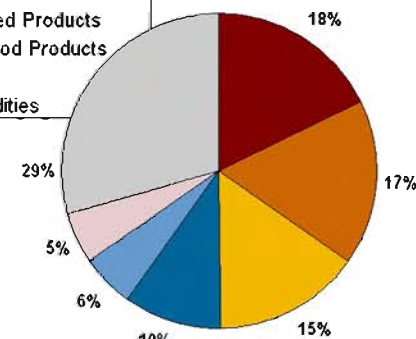


Commodity	Total Annual Tonnage	Total Units (Trucks)
Nonmetallic Minerals	273,428	13,736
Chemicals Or Allied Products	263,391	12,882
Clay, Concrete, Glass Or Stone	229,799	14,917
Food Or Kindred Products	152,216	6,733
Lumber Or Wood Products	86,256	3,489
Farm Products	82,211	4,153
Other Commodities	454,682	22,869

(THE TOP 6)

Export Totals 1,541,983 78,779

- Nonmetallic Minerals
- Chemicals Or Allied Products
- Clay, Concrete, Glass Or Stone
- Food Or Kindred Products
- Lumber Or Wood Products
- Farm Products
- Other Commodities



Top 6 Destination Regions	Total Annual Tonnage	Total Units (Trucks)
New Castle County	272,369	15,832
West - Pacific	229,304	11,685
Midwest - East North Central	227,710	12,130
Pennsylvania	154,411	6,360
New Jersey	117,289	6,756
Northeast - New England	111,609	5,951
Other Regions in US	429,291	20,164

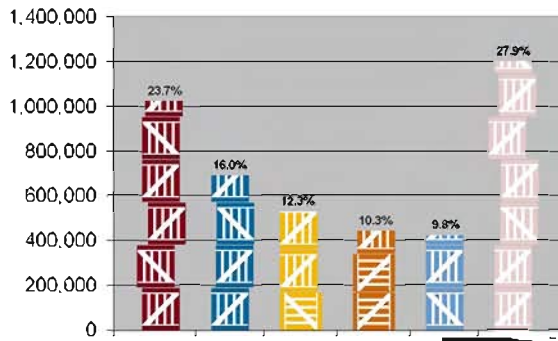
Export Totals 1,541,983 78,779







In 2005, Kent County imported 4,305,215 tons of consumer goods, raw materials, and other precious commodities, with a total of 223,302 trucks hauling those goods into the county. Below are the Top 5 imports for Kent County compared to the other goods shipped by truck.

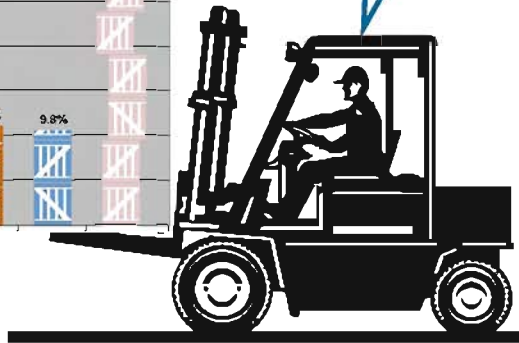


- Petroleum Or Coal Products
- Food Or Kindred Products
- Clay, Concrete, Glass Or Stone
- Chemicals Or Allied Products
- Lumber Or Wood Products
- Other Commodities

**WHERE IN THE USA DOES KENT COUNTY GET ITS IMPORTS ????**



Wow.... This stuff weighs a TON!



## Kent County Airports

Below is a map of Kent County's Civil and Military Airports including...

...Dover's Civil Air Terminal and DelDOT's Helipad

