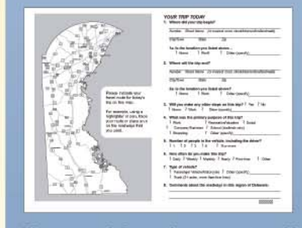
Origin-Destination Study

Last fall, DelDOT conducted an Origin-Destination Survey at seven locations along US 301, SR 896, SR 299, SR 71 and SR 15 in New Castle County.

- Survey conducted on a weekday between 6 AM and 6 PM
- This encompasses the commuter peak periods
- Motorists were handed a mail-back survey
- The survey asked several trip-related questions
- Motorists were asked to trace their routes on a map

Survey Locations

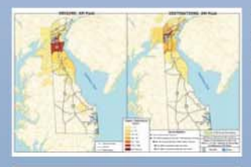


Overall, 20,900 surveys were distributed and 4,613 responses were received - a 22% response rate. This is an excellent response for this type of survey.

The survey information was entered into a computer database which matched drivers' origins and destinations and analyzed common travel patterns (see next panel).

Results of the Origin-Destination Study were documented in a detailed report containing separate summaries for each of the survey sites. Some key findings include:

- The most common comment given by motorists (without being specifically asked): excessive development and traffic congestion - noted by 23% of all respondents
- The most common trip: between Middletown and Newark (10% of all respondents)
- 9% of all respondents started or ended their trip in Middletown
- 58% of the trips are work related; 10% for shopping
- 60% of the trips occur on a daily basis
- 67% of the vehicles have only one occupant
- Based on interviews of over 400 truck drivers at the US 301 travel plaza (south of Middletown):
  - 90% of the trucks have out-of-state destinations
  - 92% of the trucks have out-of-state origins
  - 92% of the trucks crossed the Bay Bridge
  - 25% of the trucks drove this route on a daily basis
  - 43% of the truck drove this route on a weekly basis



Maps were created from the survey data showing how the origins and destinations of each trip were spread throughout the region.

- Origins and Destinations were mapped at the street address level → high accuracy
- This data is used to validate/improve the regional travel forecasting model

More than 75% of the returned surveys also contained a completed map showing the routes that motorists traveled.

Like the Origin-Destination data the route data is used to validate the regional travel forecasting model.

Travel Forecasting

Trying to predict the future is a risky proposition for anyone. However, predicting future traffic is necessary to assess when and what type of improvements will be required to address the US 301 corridor's future transportation needs. Fortunately, with the aid of computer modeling, the job becomes a little easier and more scientific.

- DelDOT recently completed a new traffic forecasting model.
- It predicts daily, peak hour, and summer weekend travel patterns.
- It's called the Peninsula Model because it covers the entire state of Delaware and Maryland's eastern shore.

The model is 'run' for present conditions and then adjusted until it reasonably predicts current traffic patterns, including those from the Origin-Destination survey. An old modeling adage is that "you need to be able to accurately predict the present before you can reasonably predict the future." When current traffic patterns are validated, the model is then further developed to analyze a variety of future conditions, including projected population and employment and the proposed roadway alignments, predicting the amount of traffic that will use the transportation network, including the projects contained in DelDOT's long range program (2005-2030), as far as twenty-five years into the future.

Toll Option

In addition to developing traffic forecasts for each of the proposed alignment alternatives, the feasibility of constructing a new toll plaza on US 301 near the MD/DE state border will also be analyzed.

While a toll plaza could generate much needed revenue to help construct the US 301 improvements, it could also result in traffic being diverted onto other local roads. Once again, the traffic model will help predict these diversions for a variety of toll scenarios at the proposed toll plaza.

For this type of study, one of the hardest questions to answer is: How much traffic will divert from the toll road as the price of the toll increases? DelDOT is taking a number of steps to answer this question, with as much confidence as possible:

- DelDOT has enlisted the services of a firm with international toll study experience.
- DelDOT is gathering and developing detailed travel time information on all of the potential local and regional diversion routes.
- DelDOT is compiling detailed information from the State's two toll facilities (SR 1 and I-95)
- DelDOT is compiling data from other toll facilities throughout the country.

The results of this analysis will be presented at the September workshops.