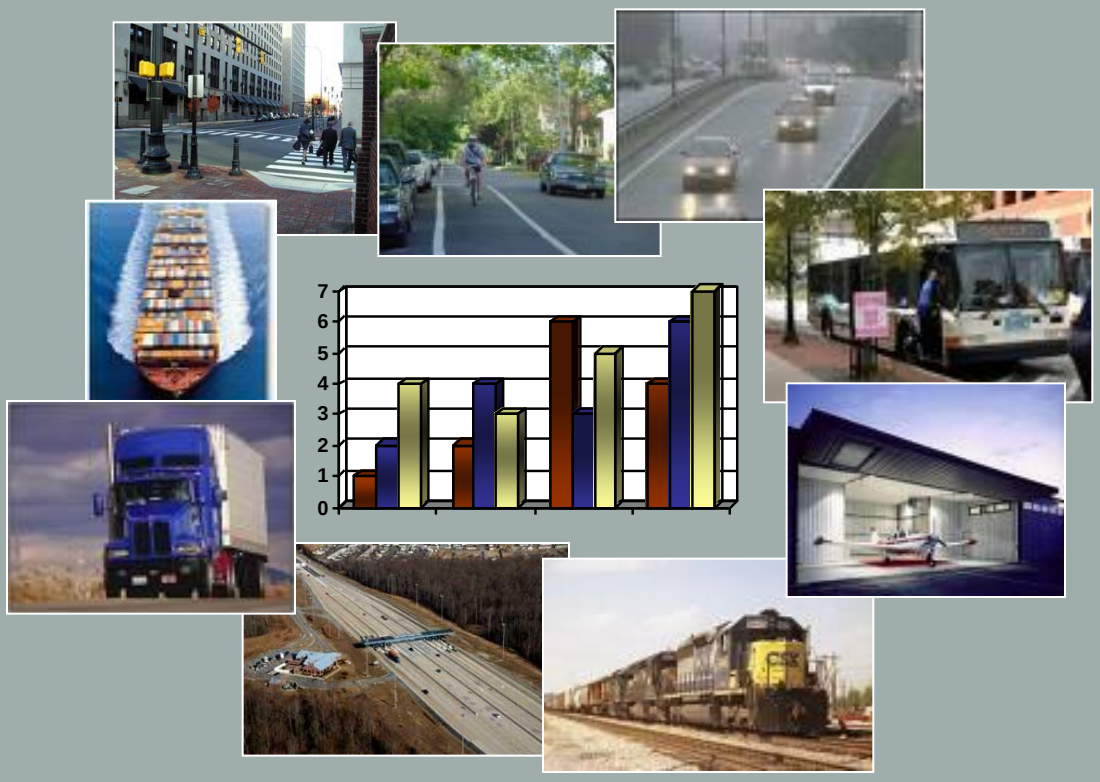
2012 CUSTOMER SATISFACTION SURVEYS
FINAL REPORT



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2012 CUSTOMER SATISFACTION SURVEYS

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Executive Summary

The following summarizes the key findings of the customer satisfaction surveys conducted in 2012 for the Delaware Department of Transportation. Customer Satisfaction Surveys were first conducted in 1997 and are repeated almost annually to obtain trend data. The survey data are used as inputs into the Department's progress monitoring program. Readers are encouraged to read the full report for additional details. AECOM conducted the study with Abt SRBI as subconsultant.

1.1 Introduction

Like the previous survey efforts, the main objective of the 2012 study was to ascertain information about customer satisfaction with the transportation system in Delaware. Information from the 2012 survey can be compared to the previous surveys and when repeated, allows the Department to monitor customer satisfaction over time. Information from the surveys serves as a set of inputs into the Department's progress monitoring program. This program assesses the Department's performance against the goals and objectives of the Statewide Long-Range Transportation Plan.

In 2012, three different user groups were surveyed as part of this study. These user groups represent some of the different customer segments served by the Department. The first and largest survey was a random statewide survey of 1,002 Delaware residents aged 16 years and older, entitled the General Transportation User Survey. This survey was conducted in each of the previous survey years. Unlike previous General Transportation User surveys, the 2012 survey included cell phone interviews and internet-based surveys. Like previous efforts, the specific information objectives for the 2012 survey were

- For users of each transportation mode, to ascertain the level of importance of various attributes.
- For users of each transportation mode, to ascertain the level of performance of various attributes.
- For users of each transportation mode, to ascertain the level of satisfaction attained for each modal attribute and for the mode overall.

The second survey conducted was a random statewide survey of 88 Delaware residents, aged 16 years and older. This survey was directed at residents that reside in the transit-served areas of Delaware, but whom had not taken transit during the previous month. This survey was also conducted in the previous survey years. This survey is entitled the Transit-Served Market Area Survey. Unlike previous Transit-Served surveys, the 2012 survey included cell phone interviews and internet-based surveys. Like the previous efforts, the specific information objectives were:

- For users of each transportation mode, to ascertain the level of importance of various attributes.
- For users of each transportation mode, to ascertain the level of performance of various attributes.
- For users of each transportation mode, to ascertain the level of satisfaction attained for each modal attribute and for the mode overall.
- To identify Delawareans' awareness of and familiarity with transit services.
- To identify Delawareans' use and satisfaction with different transit service communication methods.

In addition to the above objectives, in 2001 questions were added to explore potential barriers to transit use. A series of questions were added to the survey to understand why those residing in transit-served areas do not use transit more frequently. These questions have been used annually since 2001.

The third survey conducted was a telephone survey of 87 businesses that ship, carry or transport goods in Delaware. Entitled the Shippers and Carriers Survey, the sample frame for this survey

was the International Registration Plan (IRP) database, augmented by lists of shortline and Class I railroads and tenants at the Port of Wilmington. This survey was also conducted in the previous survey years. Like the previous survey years, the specific information objectives in 2012 were:

- For businesses using each transportation mode, to ascertain the level of importance of various attributes.
- For businesses using each transportation mode, to ascertain the level of performance of various attributes.
- For businesses using each transportation mode, to ascertain the level of satisfaction attained for each modal attribute and for the mode overall.

Figure 1-1 below provides chart showing the various user groups surveyed in 2012.

Figure 1-1 Chart of User Groups

User Group	Sample Size	Description
General Transportation	1,002	Random statewide survey of adult residents of Delaware
Transit-Served	88	Random statewide survey of adult residents that live in the "transit-served" areas of Delaware (that is, within ¼ mile of a bus route) that currently do not use transit
Shippers and Carriers	87	Random statewide survey of businesses in Delaware that either ship, carry or transport goods in Delaware

1.2 General Transportation User Survey

1.2.1 Profile of Customer Satisfaction Results

In the survey, respondents were asked to rate the importance, and to assess the current transportation system performance on a specific set of service attributes for each mode that was used the previous week. Five modes were asked about and include: driving alone, carpooling (riding or driving with others), using transit, bicycling, and walking.

As was found in the previous survey years, drive-alone was the most prevalent form of transportation used the previous week. For 2012, 83% of respondents made drive-alone trips, 33% made carpool trips, 21% walked for some of their trips, 6% made trips by transit and 4% made trips by bicycle.

The importance-performance ratings given by customers using each mode for the different service attributes asked about in the survey can be summarized into four importance-performance quadrants for policy-makers and decision-makers to use. The attributes that are in the highest priority quadrant for corrective action (these are attributes that were rated above average in importance but below average in performance by customers) for each mode are shown in Figure 1-2 and include the following for 2012, as well as the surveys since 2002:

Figure 1-2 High Priority Attributes - General Transportation User Survey

AUTO 2012	AUTO 2009	AUTO 2006	AUTO 2005	AUTO 2004	AUTO 2003	AUTO 2002
▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals ▪ Pavement condition on roadways	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals ▪ Pavement condition on roadways	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals
CARPOOL 2012	**CARPOOL 2009**	**CARPOOL 2006**	**CARPOOL 2005**	**CARPOOL 2004**	**CARPOOL 2003**	**CARPOOL 2002**
▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses	▪ Having special lanes on highways just for High Occupancy Vehicles (HOVs) like carpools and buses
TRANSIT 2012	**TRANSIT 2009**	**TRANSIT 2006**	**TRANSIT 2005**	**TRANSIT 2004**	**TRANSIT 2003**	**TRANSIT 2002**
▪ Courteous on-board personnel ▪ Safe and secure waiting areas ▪ Having information on when to expect transit delays ▪ Having frequent transit service	▪ Having information on when to expect transit delays ▪ Having covered shelters and stations	▪ Having information on when to expect transit delays	▪ Having information on when to expect transit delays ▪ Having seats available to sit ▪ Having frequent transit service	▪ Having covered shelters and stations ▪ Having information on when to expect transit delays ▪ Having transit stops and stations with good lighting	▪ Having information on when to expect transit delays ▪ Having transit stops and stations with good lighting	▪ Having frequent transit service

BICYCLISTS 2012	BICYCLISTS 2009	BICYCLISTS 2006	BICYCLISTS 2005	BICYCLISTS 2004	BICYCLISTS 2003	BICYCLISTS 2002
▪ Having separate bicycle paths ▪ Having striped bicycle lanes	▪ Having signed bicycle routes ▪ Having striped bicycle lanes	▪ Having wide, paved shoulders ▪ Having low volume motor vehicle traffic	▪ Having bicycle friendly drainage grates ▪ Having separate bicycle paths ▪ Having adequate street lighting ▪ Having bicycle racks and lockers	▪ Having striped bicycle lanes on roads ▪ Having bicycle friendly drainage grates	▪ Having wide, paved shoulders	▪ Having striped bicycle lanes on roads ▪ Having separate bicycle paths
PEDESTRIANS 2012	**PEDESTRIANS 2009**	**PEDESTRIANS 2006**	**PEDESTRIANS 2005**	**PEDESTRIANS 2004**	**PEDESTRIANS 2003**	**PEDESTRIANS 2002**
▪ Having sidewalks to commercial areas ▪ Having sidewalks and other places to walk between your neighborhood and other neighborhoods ▪ Adequate street lighting ▪ Pedestrian overpasses to cross highways	▪ Having sidewalks that connect neighborhoods to commercial areas ▪ Having intersections with pedestrian signals and push buttons	▪ Having sidewalks that connect neighborhoods to commercial areas	▪ Having intersections with pedestrian signals and push buttons	▪ Having sidewalks that connect neighborhoods to commercial areas	▪ No attribute fell into the high-priority corrective action quadrant for pedestrians this year	▪ No attribute fell into the high-priority corrective action quadrant for pedestrians this year

As can be seen above, the data are mostly similar across survey years, lending credence to the survey findings and to increased attention and investment by the Department on improvement actions geared to these service attributes. Like the previous surveys, "highways free from congestion" “well planned sequencing and timing of traffic signals,” and “pavement condition on roadways” rank as a high priority attribute for motorists with the recent addition of “pavement condition on roadways”. A key finding, for all survey years, is that despite the ranking given for congestion relief, "having many travel mode choices" ranks as a low priority attribute. Similar to the results from the previous survey years, the difference in priority between “highways free from congestion” and “having many travel mode choices” demonstrates that Delaware residents that drive alone are not yet seeing a relationship between these two attributes. This finding may mean more education and marketing efforts are needed.

1.2.2 Satisfaction Index

Figure 1-3 displays the satisfaction indices computed for each user group, based on the importance-performance data collected in the General Transportation User Survey. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the overall mean performance rating to the overall mean importance rating for users of each mode. This index demonstrates the balance between importance and performance in the minds of customers

in that user group. The higher the value of the satisfaction index, the higher the level of customer satisfaction. Similar satisfaction indices were computed for all survey years.

Figure 1-3 Satisfaction Indices - 2002 through 2012 - All User Groups, General Transportation User Survey

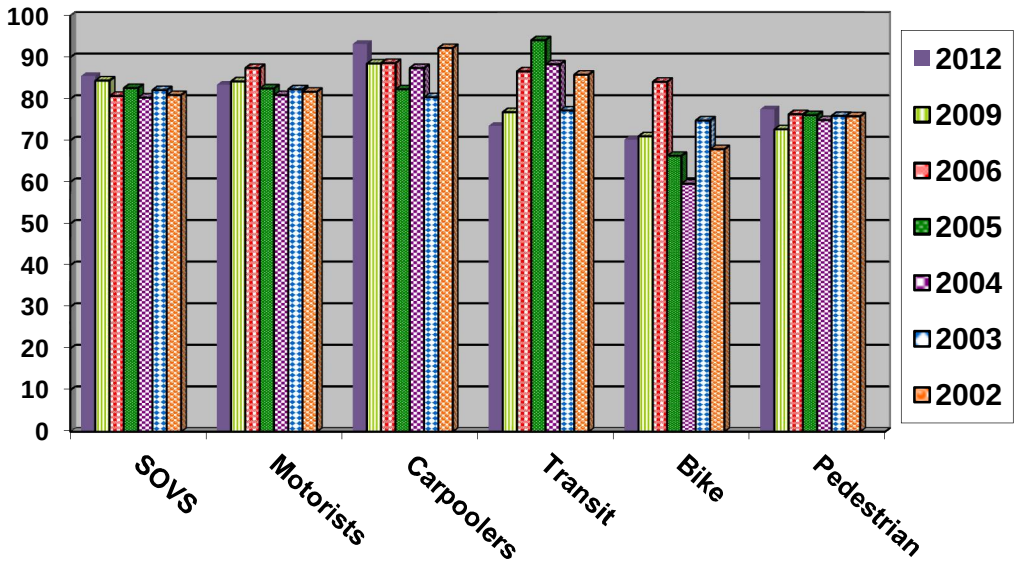


Figure 1-4 Chart of User Groups

User Group	Description
SOVs	Those respondents that reported driving alone for some of their trips during the previous week.
Motorists	Those respondents that reported driving alone only, carpooling only, or driving alone, but also carpooling for some of their trips during the previous week.
Carpoolers	Those respondents that carpooled for some of their trips during the previous week.
Transit	Those respondents that used transit for some of their trips the previous week.
Bike	Those respondents that indicated they had made a trip by bicycle the previous week.
Pedestrian	Those respondents that indicated they walked for some of their trips the previous week.

1.2.3 Mobility Assessment Results

As a follow-up, respondents were asked to assess whether or not they believed they had many different travel modes to choose from or alternatively, if they thought they had few options to choose from. As was done in the previous survey years, in the 2012 survey, the following question was posed to all respondents:

> "And would you say that you have many different travel modes to choose from such as transit, biking and walking to meet your travel needs or would you say you have very few options to choose from?"

If respondents indicated they had few options, they were asked, in an open-ended question, what modes they would like access to.

This year 42% of respondents said they have many options to choose from, while 56% stated that they have few options and 2% could not say. The share of respondents stating that they had many options in 2012 is the same as the 2009 survey results but more respondents in 2009 stated that they had very few options than in 2006 (56% and 51%, respectively). Like the previous surveys, differences were noted by county in 2012, as 81% of Kent County residents and 80% of Sussex County residents stated that they had many options to choose from, compared to 78% of New Castle County residents. Differences were noted by residential area type as well. Forty-eight percent (48%) of suburban and 46% of city/town residents stated that they that they had many options to choose from, compared to 29% of rural residents.

1.2.4 Improvement Action Results

As was done in the previous surveys, fifteen improvement actions, representing a sub-set of priority actions suggested in the long range plans of the Department or the Metropolitan Planning Organizations (MPOs) in the state were evaluated by respondents in terms of their perceived effectiveness to improve the transportation system in the state. This section of the report provides the results of this series of questions posed to all respondents in the General Transportation User survey.

1.2.5 Perceived Effectiveness

For each action, respondents were asked to identify how effective it would be in improving the transportation system with response categories ranging from "very effective", "somewhat effective", "not very effective", or "not at all effective". The top four actions perceived by Delaware residents to be the most effective actions to improve the transportation system are

- Coordinating and better timing traffic signals;
- Creating service patrols to quickly respond to accidents, stalled vehicles, etc.;
- Designing communities that make it easier for people to walk sand bike to stores, schools, and other public facilities and to other neighborhoods; and
- Improving and expanding bus service.

The results from this year's survey are similar to past results as the top three actions above were also found to be the top three actions in all prior surveys.

The most highly rated transit action was "improving and expanding bus service." Fifty-four percent (54%) of respondents to the survey thought this action would be "very" effective.

Actions perceived to be less effective by Delaware residents include:
- Building more highways, and
- Providing new information systems to make it easier to carpool.

1.2.6 Additions to the 2012 Survey

Unlike past surveys for year's effort, cell phone and online (Internet) interviews were conducted in addition to land line telephone interviews to yield more representative results.

Cell phone interviewing was restricted to those households who had cell phones but no land line telephone. Telephone respondents in the land line sample were recruited using random digit dialing (RDD), from bocks of numbers known to consist of land lines. Cell phone only respondents were recruited using cell phone series blocks. These telephone numbers were

dialed by hand and interviewers verified that respondents were in a safe position to talk (e.g., not driving at the time), were 16 years or older, resided in Delaware, and in what county. The geographic assignment for the cell sample is problematic, since addresses are based on the billing center associated with the account instead of the residence of the account holder. Respondent mobility is an additional issue. In order to properly control for this, respondents were asked to confirm that they lived in Delaware as well as which county. Internet respondents were recruited through an online panel. The sample source for the Internet panel was Research Now. Research Now emailed survey invitations to their panelists in each of Delaware's three counties. Respondents confirmed their residence in Delaware and their specific county.

1.3 Transit-Served Market Area Survey

Like the previous efforts, the focus of the 2012 survey was to obtain information from potential transit customers in the transit-served areas of Delaware. Therefore, those respondents that had used transit during the previous month were screened out of this survey. As in the past, for the purposes of this survey, the transit served market area was defined to be the area within ¼ mile of an existing transit route.

Similar to the General Transportation User Survey, in this survey respondents were asked to rate the importance and assess the performance of the transportation system across a set of attributes for each mode that was used the previous week. Four modes were asked about and include driving alone, carpooling (riding or driving with others), bicycling and walking.

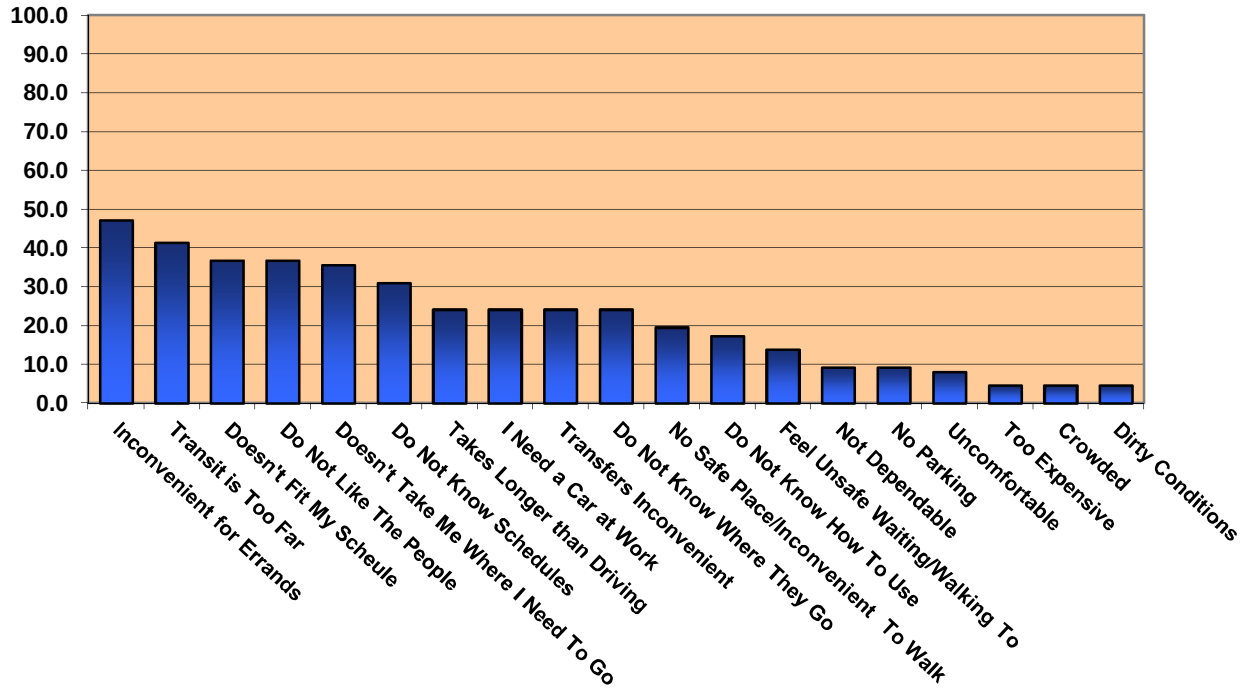
Unlike past surveys, for this 2012 survey, cell phone and online (Internet) interviews were conducted in addition to land line telephone interviews to yield more representative results.

The 2012 survey showed that 86% of the sample made drive-alone trips. Additionally, 67% of the sample carpooled, 33% walked, and 3% bicycled for some trips the previous week. As was found in the previous survey years, drive-alone was the most prevalent form of transportation used the previous week.

1.3.1 Reasons for Not Using Public Transit on a Frequent Basis

In 2001, nineteen questions were added to the Transit-Served Market Area Survey questionnaire. This series of questions pertain to the reasons why public transit (bus or rail) service is not used more frequently. For each question, the respondent was asked to give a response of yes or no, depending on whether the statement was a reason why he/she did not use public transit more frequently. This section details the responses to these questions for 2012.

Figure 1-5 Reasons for Not Using Public Transit on a Frequent Basis - 2012



As can be seen in the chart, the primary reason why respondents in the transit-served areas of Delaware do not use transit is because "transit is inconvenient or hard to use if you need to run errands during your trip." Out of the 88 respondents, almost half (47%) indicated this as a reason why they do not use transit more frequently. The second most frequent reason respondents indicated that they do not use transit is that "the bus or train is too far from my home, too far from my job, or where I shop" (41%).

The less frequent reasons for not taking public transit include:

- Public transit is dirty (5%),
- Public transit is crowded and I can't get a seat (5%), and.
- Public transit is too expensive (5%).

These findings are similar to prior year survey results.

1.3.2 Importance-Performance Quadrant Analysis

The importance-performance ratings given to the different modal attributes asked about in the survey by customers of each mode were summarized into four importance-performance quadrants for the transit-served areas of Delaware for policy-makers and decision-makers to use. The attributes that are in the highest priority quadrant for corrective action (attributes that were rated as above average in importance but below average in performance by customers) for each user group are in Figure 1-9, and includes the results from this survey year and past survey years.

Figure 1-6 High Priority Attributes – Transit Served Survey

AUTO 2012	AUTO 2009	AUTO 2006	AUTO 2005	AUTO 2004	AUTO 2003	AUTO 2002
▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ The condition of pavement on highways	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ The condition of pavement on highways	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights
CARPOOL 2012	**CARPOOL 2009**	**CARPOOL 2006**	**CARPOOL 2005**	**CARPOOL 2004**	**CARPOOL 2003**	**CARPOOL 2002**
▪ Having special lanes on streets and highways for carpools and buses	▪ No attribute fell into the corrective action quadrant for carpoolers.	▪ Having special lanes on streets and highways for carpools and buses	▪ No attribute fell into the corrective action quadrant for carpoolers.	▪ Having special lanes on streets and highways for carpools and buses	▪ Having special lanes on streets and highways for carpools and buses	▪ Having special lanes on streets and highways for carpools and buses
BICYCLISTS 2012	**BICYCLISTS 2009**	**BICYCLISTS 2006**	**BICYCLISTS 2005**	**BICYCLISTS 2004**	**BICYCLISTS 2003**	**BICYCLISTS 2002**
▪ Having signed bicycle routes ▪ Having striped bicycle lanes ▪ Having roadways free of debris ▪ Having adequate street lighting ▪ Having wide, paved shoulders ▪ Having bicycle friendly drainage grates ▪ Having separate bicycle paths	▪ Having low traffic volume ▪ Having low speed traffic ▪ Having striped bicycle lanes ▪ Having signed bicycle routes	▪ Having low traffic volume ▪ Having low speed traffic ▪ Having bicycle racks and lockers	▪ Having striped bicycle lanes ▪ Having shower facilities ▪ Having separate bicycle paths ▪ Having bicycle friendly drainage grates ▪ Having roadways free of debris ▪ Having signed bicycle routes ▪ Having adequate street lighting ▪ Having low traffic volume ▪ Having low speed traffic	▪ Having striped bicycle lanes ▪ Having bicycle racks and lockers ▪ Having shower facilities	▪ Having separate bike paths ▪ Having striped bicycle lanes	▪ Having bicycle friendly drainage grates

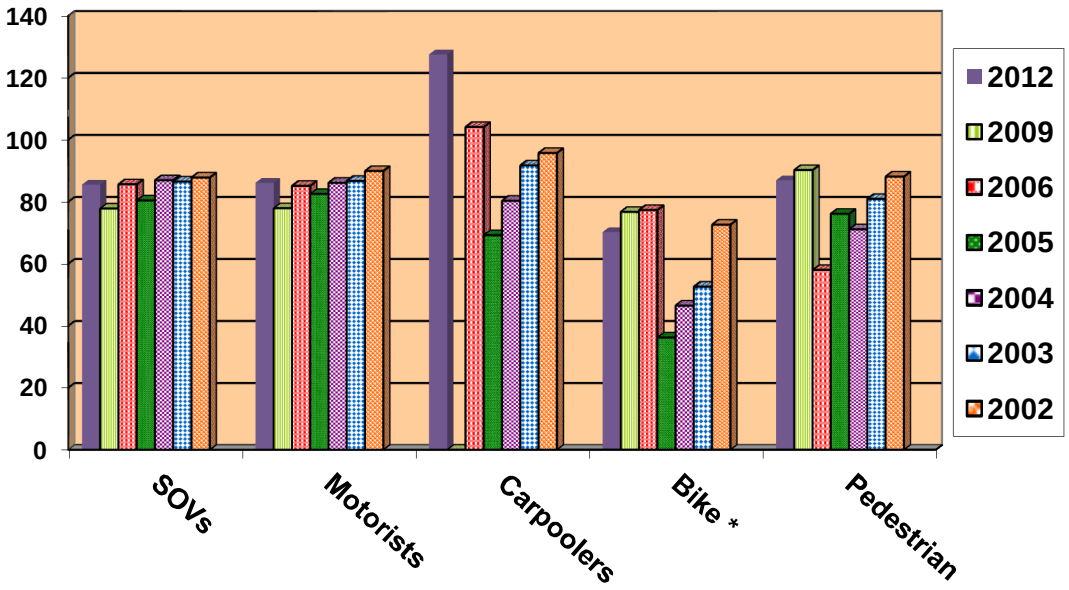
PEDESTRIANS 2012	PEDESTRIANS 2009	PEDESTRIANS 2006	PEDESTRIANS 2005	PEDESTRIANS 2004	PEDESTRIANS 2003	PEDESTRIANS 2002
▪ Having sidewalks connecting neighborhoods to commercial areas ▪ Having sidewalks and other places to walk between your neighborhood and other neighborhoods	▪ Having sidewalks and other placed to walk in your neighborhood ▪ Having low volume traffic	▪ Having sidewalks and other places to walk between your neighborhood and other neighborhoods ▪ Having sidewalks connecting neighborhoods to commercial areas ▪ Having pedestrian signals and push buttons ▪ Having marked crosswalks at intersections ▪ Having sidewalks and other places to walk in your neighborhood	▪ Having sidewalks to and from transit stations and stops	▪ Having pedestrian overpasses to cross highways	▪ Having pedestrian signals and push buttons ▪ Having adequate street lighting ▪ Having marked crosswalks at intersections ▪ Having low volume motor vehicle traffic	▪ Having pedestrian signals and push buttons ▪ Having adequate street lighting ▪ Having trees between the sidewalk and street ▪ Having pedestrian overpasses to cross highways

As can be seen in Figure 1-9 above, there is a consistency in results across survey years. As stated previously, this lends credence to the survey findings and to the use of the results to target investment priorities.

1.3.3 Satisfaction Index

Figure 1-10 provides the satisfaction index computed for each user group, based on the importance-performance data collected in the Transit-Served Market Area Survey. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the overall mean performance rating to the overall mean importance rating for users of each mode. This index demonstrates the balance between importance and performance in the minds of customers in that user group. The higher the value of the satisfaction index, the higher the level of customer satisfaction.

Figure 1-7 Satisfaction Indices – 2002 through 2012 - All User Groups, Transit-Served Market Area Survey



* Extreme fluctuation is due to very small sample sizes.

1.3.4 Mobility Assessment Results

Similar to the General Transportation User Survey, respondents were asked to assess whether or not they thought they had many different travel modes to meet their travel needs or alternatively, if they thought they had "few options to choose from." The question as posed in the survey was:

> "And would you say that you have many different travel modes to choose from such as transit, biking and walking to meet your travel needs or would you say you have very few options to choose from?"

If respondents indicated they had "few options," they were asked, in an open-ended question, what modes they would like access to.

As was found in the previous survey years, even though respondents live within a transit-served market area, the response to the first question was mixed. For 2012, 38% indicated that they had "many different modes to choose from," while 62% indicated that they had "few options." The share indicating that they had many different modes in 2012 to choose from is much lower than the results from the 2009 survey. In 2009, 80% indicated that they had "many different modes to choose from," while 19% indicated that they had "few options," and 2% could not say.

In terms of county of residence, for 2012, residents residing in Sussex County (35%) and Kent County (26%) were less likely to say that they had "many modes to choose from" as compared to residents from New Castle County (57%).

For this survey year, when respondents were asked what modes they would like access to, 40% indicated they would like access to transit or bus. This percentage is lower than the 2009, 2006, 2005, 2004 and 2003 results (58%, 58%, 66%, 53% and 53% respectively). For 2012, 19% indicated access bicycle paths, 7% indicated access to pedestrian facilities, and 4% indicated improvements to "personal auto needs."

1.3.5 Transit Service Awareness & Familiarity

As was done in the previous survey years, respondents were asked about their level of knowledge regarding bus services in their area. Additionally, respondents were asked a series of questions to ascertain their level of awareness of DART First State and their familiarity with DART First State services. Following this series of questions, respondents that had looked for transit information over the past year were asked whether or not they had used a specific information source and how helpful they found the source.

1.3.6 Knowledge of Bus Services in Area

For 2012, 93% of the respondents knew that they had bus service available in their area. This is higher than 2009 (81%) and 2006 (84%) survey results.

When respondents in 2012 were asked if they had bus service within walking distance of home, 79% indicated that the service was within walking distance. This percentage is similar to the results from previous survey years (73% in 2009, 75% in 2006, 67% in 2005, 77% in 2004, 79% in 2003, 84% in 2002, 69% in 2001, 72% in 2000, 86% in 1999, 60% in 1998, and 79% in 1997).

Those respondents that indicated there was bus service within walking distance of home were asked if sidewalks were available to reach the bus stop. In 2012, 63% stated that there were sidewalks available to reach the bus stops. This percentage is lower than the 2009 (72%) and 2006 (70%) surveys.

When asked if they knew the route number(s) of the bus service, 20% of the respondents said they knew the route numbers. This percentage is higher than the 14% found in the 2009 survey, but lower than the 35% found in the 2006 survey. However, in 2006 none of these respondents could specify the route number. The 2012 respondents who said they know the route numbers of the bus service near their home, could specify a route number.

1.3.7 Recognition of & Familiarity with DART First State

All respondents were asked a series of questions to ascertain the level of awareness of DART or DART First State. Figure 1-11 provides the results from these questions.

Figure 1-8 Awareness of DART First State

DART First State Awareness Level	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent
Names DART First State (unaided awareness)	**50%**	73%	93%	71%	86%	93%	94%
Recalls DART First State (aided awareness)	**41%**	17%	7%	18%	10%	7%	2%
Unaware of DART First State	**9%**	10%	0%	11%	4%	0%	4%
Total	**100%**	100%	100%	**100%**	**100%**	**100%**	**100%**

Half (50%) of residents in the transit-served market areas of Delaware could name off the top of their head DART or DART First State as the operator of bus services in Delaware. Forty-one percent (41%) recognized DART First State when provided the name, and the remaining 9% could not recall or did not know the name DART First State. These results show lower

percentages of "top of mind" naming of DART and DART First State but higher levels of name recall of DART and DART First State than previous years.

Respondents were then asked how familiar they were with DART or DART First State. The results are outlined in the figure below for 2012 as well as the other survey years.

Figure 1-9 How familiar would you say you are with DART or DART First State –do you know a great deal about the agency, some, just a little or not much at all?

Response	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent
A great deal	**9%**	4%	6%	6%	14%	12%	2%
Some	**39%**	11%	20%	36%	21%	22%	34%
Just a little	**24%**	13%	23%	31%	21%	14%	21%
Not much at all	**28%**	71%	51%	27%	44%	51%	39%
Dk (vol)	**0%**	1%	0%	0%	0%	1%	4%

The responses to this question indicate that the overall level of knowledge about DART or DART First State has increased this year compared to the last few years (2009-15%, 2006-26%, 2005-42%, 2004–35%, 2003-34%, 2002–36%, 2001–33%) with 48% of the respondents this year indicating they knew either "a great deal," or "some" about the agency.

Respondents were then asked to assess their level of familiarity, on a scale of 1 to 7, about where bus routes go and with how to use the system. The responses are outlined in the following figure for all survey years.

Figure 1-10 Level Familiarity with Bus Routes and How to Use the System, 2012 Data in Red

Question	Not Familiar	2	3	4	5	6	Very Familiar	DK (vol)	Year
Where you can pick up buses & where bus routes go?	**44%**	**17%**	**17%**	**5%**	**8%**	**3%**	**6%**	**0%**	**2012**
	38%	4%	6%	18%	18%	13%	2%	1%	2009
	40%	18%	8%	8%	9%	8%	6%	3%	2006
	32%	17%	20%	4%	11%	3%	8%	5%	2005
	31%	13%	11%	10%	11%	6%	8%	10%	2004
	30%	16%	10%	12%	10%	6%	11%	5%	2003
	25%	12%	18%	13%	15%	5%	8%	4%	2002
	17%	15%	4%	5%	26%	12%	8%	13%	2001
	32%	25%	7%	8%	11%	1%	6%	10%	2000
	37%	11%	11%	2%	13%	5%	4%	27%	1999
	38%	23%	11%	3%	6%	6%	3%	9%	1998
	40%	8%	8%	8%	4%	9%	5%	18%	1997
How to use DART First State buses, pay fares, purchase tickets?	**55%**	**19%**	**6%**	**4%**	**9%**	**0%**	**7%**	**0%**	**2012**
	49%	0%	4%	6%	31%	8%	2%	0%	2009
	39%	12%	10%	9%	5%	9%	12%	4%	2006
	32%	12%	13%	3%	10%	1%	21%	8%	2005
	34%	20%	4%	1%	12%	13%	10%	6%	2004
	40%	15%	3%	6%	11%	9%	12%	4%	2003
	33%	4%	11%	8%	22%	5%	13%	4%	2002
	24%	20%	10%	14%	7%	11%	1%	13%	2001
	37%	13%	6%	11%	14%	0%	7%	12%	2000
	29%	18%	4%	0%	6%	6%	4%	33%	1999
	55%	17%	9%	3%	3%	3%	6%	4%	1998
	47%	9%	8%	8%	5%	3%	3%	18%	1997

As can be seen in Figure 1-13 above, the level of familiarity regarding bus service areas and how to use bus service remains generally low in the transit-served areas of Delaware.

1.3.8 Transit Information Sources

Respondents were asked if over the past year, they had looked for information about transit services. For 2012, 28% of respondents indicated that they looked for information on transit services. This percentage is similar to past surveys with 2009 at 22%, 2006 at 33%, 2005 at 28%, and 2004 at 34% of respondents who looked for information on transit services.

Following this question, respondents were asked specifically about whether they had received information about transit from eleven different information sources. For each source used, respondents were then asked how helpful the information was.

Figure 1-11 Sources Used & Helpfulness, 2012 Data in Red

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
Printed bus schedules	**46%**	**46%**	**46%**	**8%**	0%	**2012**
	20%	36%	58%	6%	0%	2009
	35%	75%	16%	9%	0%	2006
	43%	49%	43%	8%	0%	2005
	22%	73%	24%	2%	1%	2004
	35%	52%	47%	1%	0%	2003
	28%	67%	31%	2%	0%	2002
	44%	54%	27%	12%	7%	2001
	23%	53%	21%	14%	12%	2000
	36%	34%	44%	22%	0%	1999
	21%	45%	14%	28%	14%	1998
	29%	51%	19%	20%	10%	1997
Newspaper/magazine advertisements	**8%**	**0%**	**100%**	**0%**	**0%**	**2012**
	7%	32%	68%	0%	0%	2009
	13%	55%	27%	18%	0%	2006
	13%	23%	39%	36%	12%	2005
	23%	13%	39%	36%	12%	2004
	14%	45%	30%	21%	4%	2003
	13%	10%	30%	60%	0%	2002
	19%	3%	58%	39%	0%	2001
	34%	42%	34%	17%	7%	2000
	29%	14%	25%	61%	0%	1999
	22%	45%	55%	0%	0%	1998
	27%	21%	42%	27%	10%	1997
Billboards	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	2%	0%	58%	42%	0%	2009
	13%	27%	26%	47%	0%	2006
	11%	24%	45%	10%	21%	2005
	20%	28%	52%	17%	3%	2004
	20%	16%	64%	17%	3%	2003
	24%	4%	51%	35%	10%	2002
	13%	0%	49%	51%	0%	2001
	25%	51%	45%	4%	0%	2000
	29%	28%	28%	43%	1%	1999
	15%	21%	20%	58%	0%	1998
	16%	18%	7%	71%	5%	1997
Other people	**36%**	**44%**	**45%**	**11%**	**0%**	**2012**
	8%	4%	68%	0%	0%	2009
	22%	65%	17%	18%	0%	2006
	19%	61%	26%	13%	0%	2005
	31%	58%	32%	10%	0%	2004

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
	24%	55%	44%	1%	0%	2003
	35%	28%	48%	10%	14%	2002
	17%	40%	42%	16%	2%	2001
	21%	48%	26%	13%	13%	2000
	26%	24%	56%	19%	0%	1999
	16%	24%	20%	56%	0%	1998
	25%	30%	54%	5%	11%	1997
Calls to transit agency	**20%**	**60%**	**0%**	**40%**	**0%**	**2012**
	15%	30%	44%	25%	0%	2009
	14%	79%	19%	2%	0%	2006
	12%	65%	26%	9%	0%	2005
	20%	75%	25%	0%	0%	2004
	13%	55%	45%	0%	0%	2003
	17%	37%	34%	29%	0%	2002
	27%	30%	50%	11%	9%	2001
	21%	47%	40%	0%	13%	2000
	19%	59%	2%	39%	0%	1999
	7%	100%	0%	0%	0%	1998
	15%	20%	64%	16%	0%	1997
Radio advertisements	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	1%	0%	100%	0%	0%	2009
	16%	17%	32%	44%	7%	2006
	10%	48%	34%	18%	0%	2005
	18%	26%	45%	28%	1%	2004
	14%	24%	55%	21%	0%	2003
	10%	5%	60%	33%	2%	2002
	9%	2%	59%	6%	33%	2001
	26%	30%	49%	21%	0%	2000
	29%	28%	21%	50%	0%	1999
	12%	26%	50%	24%	0%	1998
	16%	33%	48%	17%	2%	1997
Mailings to my home	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	3%	22%	78%	0%	0%	2009
	7%	31%	0%	61%	8%	2006
	10%	57%	7%	35%	0%	2005
	13%	46%	46%	5%	3%	2004
	2%	30%	40%	10%	20%	2003
	7%	43%	51%	0%	6%	2002
	14%	9%	91%	0%	0%	2001
	21%	25%	61%	13%	1%	2000
	10%	0%	29%	71%	0%	1999
	6%	97%	0%	3%	0%	1998
	3%	73%	16%	11%	0%	1997

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
Transit brochures or publications	**28%**	**58%**	**28%**	**14%**	**0%**	**2012**
	7%	30%	60%	0%	10%	2009
	8%	87%	4%	4%	5%	2006
	17%	33%	51%	16%	0%	2005
	15%	42%	34%	21%	3%	2004
	7%	92%	8%	0%	0%	2003
	15%	68%	25%	5%	2%	2002
	22%	18%	82%	0%	0%	2001
	25%	41%	38%	20%	1%	2000
	10%	9%	59%	29%	4%	1999
	7%	53%	47%	0%	0%	1998
	17%	44%	35%	21%	0%	1997
Telephone directories	**8%**	**0%**	**50%**	**50%**	**0%**	**2012**
	5%	41%	18%	41%	0%	2009
	12%	67%	20%	8%	5%	2006
	11%	69%	31%	0%	0%	2005
	13%	38%	42%	18%	3%	2004
	18%	13%	84%	3%	0%	2003
	19%	43%	29%	26%	2%	2002
	6%	50%	9%	41%	0%	2001
	24%	65%	12%	22%	1%	2000
	17%	35%	51%	0%	15%	1999
	13%	8%	48%	44%	0%	1998
	15%	41%	57%	2%	0%	1997
Newspaper articles	**8%**	**50%**	**50%**	**0%**	**0%**	**2012**
	1%	0%	100%	0%	0%	2009
	9%	36%	40%	0%	24%	2006
	9%	36%	40%	0%	24%	2005
	11%	27%	47%	3%	23%	2004
	18%	33%	59%	4%	4%	2003
	8%	11%	78%	11%	0%	2002
	14%	19%	62%	19%	0%	2001
	24%	76%	24%	0%	0%	2000
	36%	23%	28%	48%	1%	1999
	22%	31%	56%	13%	0%	1998
	20%	26%	56%	18%	0%	1997
DART First State website (Introduced in 2000)	**79%**	**47%**	**37%**	**16%**	**0%**	**2012**
	14%	67%	34%	0%	0%	2009
	16%	92%	6%	2%	0%	2006
	25%	74%	24%	2%	0%	2005
	22%	71%	17%	12%	0%	2004
	13%	60%	39%	0%	1%	2003
	15%	33%	17%	48%	2%	2002
	21%	26%	61%	0%	13%	2001
	13%	60%	38%	2%	0%	2000

The most used source of information about transit services in the 2012 survey was information obtained from the DART First State website (79%), which is much higher than other forms of information and much higher than found in previous survey years. The second most used source of information in 2012 was printed bus schedules (46%), which was the most used source of information in the 2009 survey.

Most helpful sources of information include: calls to transit agency (60%), transit brochures and publications (58%), and newspaper articles (50%).

1.4 Shippers and Carriers Survey

As was done in the previous survey years, businesses were asked to rate the importance and to assess the current transportation system performance on a set of attributes for each mode that is used to ship, carry or transport goods and materials. Four modes were asked about and include: trucking, rail freight, air freight and the Port of Wilmington.

Like the previous surveys, trucking was the most prevalent form of freight transportation used. For 2012, 89% of the businesses sampled indicated that they shipped goods by truck in Delaware, 23% via the Port of Wilmington, 10% shipped via rail freight, and 2% via air freight. In the 2009 survey, 93% of the businesses sampled indicated that their company moved goods by truck in Delaware, 10% of the businesses shipped goods via the Port of Wilmington, 4% shipped via rail freight, and no businesses indicated that they had shipped via air freight. In the 2006 survey, 92% of the businesses sampled indicated that they shipped goods via truck, 1% via rail, 4% via the Port of Wilmington, and 3% via air freight.

The importance-performance ratings given to specific modal attributes by businesses using each mode can be summarized into four importance-performance quadrants for policy-makers and decision-makers to use. The attributes that are in the highest priority quadrant for corrective action are displayed in Figure 1-15 (attributes that were rated above average in importance but below average in performance by customers) and for each mode in all the survey years include the following:

Figure 1-12 High Priority Attributes – Shippers & Carriers Survey

TRUCKING 2012	TRUCKING 2009	TRUCKING 2006	TRUCKING 2005	TRUCKING 2004	TRUCKING 2003	TRUCKING 2002
▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals ▪ Having wide, paved shoulders on highways and roads ▪ Having information on when to expect delays and closings ▪ Having few weight restricted bridges ▪ Having highways with wide travel lanes	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic signals ▪ Having wide intersections with turning lanes ▪ Having wide, paved shoulders on highways and roads ▪ Highway system with few toll roads ▪ Having information on when to expect delays and closings	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ Having wide intersections with turning lanes ▪ Having wide, paved shoulders on highways and roads ▪ Having few weight restricted roads	▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ Having wide intersections with turning lanes ▪ Having wide, paved shoulders on highways and roads	▪ Having information on when to expect delays and closings ▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ Having wide intersections with turning lanes ▪ Having wide, paved shoulders on highways and roads ▪ Highways with wide travel lanes	▪ Having information on when to expect delays and closings ▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ Having wide intersections with turning lanes ▪ Highways with wide travel lanes ▪ Having wide, paved shoulders on highways and roads	▪ Having highway and interchanges with ramps that trucks can negotiate ▪ Having information on when to expect delays and closings ▪ Having highways free from congestion ▪ Having well-planned sequencing and timing of traffic lights ▪ Having wide intersections with turning lanes
RAIL 2012	**RAIL 2009**	**RAIL 2006**	**RAIL 2005**	**RAIL 2004**	**RAIL 2003**	**RAIL 2002**
▪ Having numerous interchange points on the freight rail system ▪ Having good condition track, roadbed & right-of-way for shortline railroads	▪ Having minimal conflicts with rail passenger service ▪ Having multi-track rail operations available ▪ Having competitive services to businesses off main lines	▪ Having good condition track, roadbed & right-of-way for Class 1 railroads ▪ Having good condition track, roadbed & right-of-way for shortline railroads ▪ Having truck-to-rail commodity transfer points	▪ Eliminating clearance restrictions for high-cube or double-stack operations ▪ Having good condition track, roadbed & right-of-way for Class 1 railroads	▪ Eliminating clearance restrictions for high-cube or double-stack operations	▪ Having competitive rates & services to businesses from shortline railroads ▪ Having good condition track, roadbed & right-of-way for railroads serving Port of Wilmington ▪ Having minimal conflicts with rail passenger services ▪ Having truck-to-rail commodity transfer points ▪ Having multi-track rail operations available	▪ Eliminating clearance restrictions for high-cube or double-stack operations ▪ Having intermodal trailer-on-flat-car facilities and services ▪ Having rail-to-truck commodity transfer points ▪ Having minimal conflicts with rail passenger services

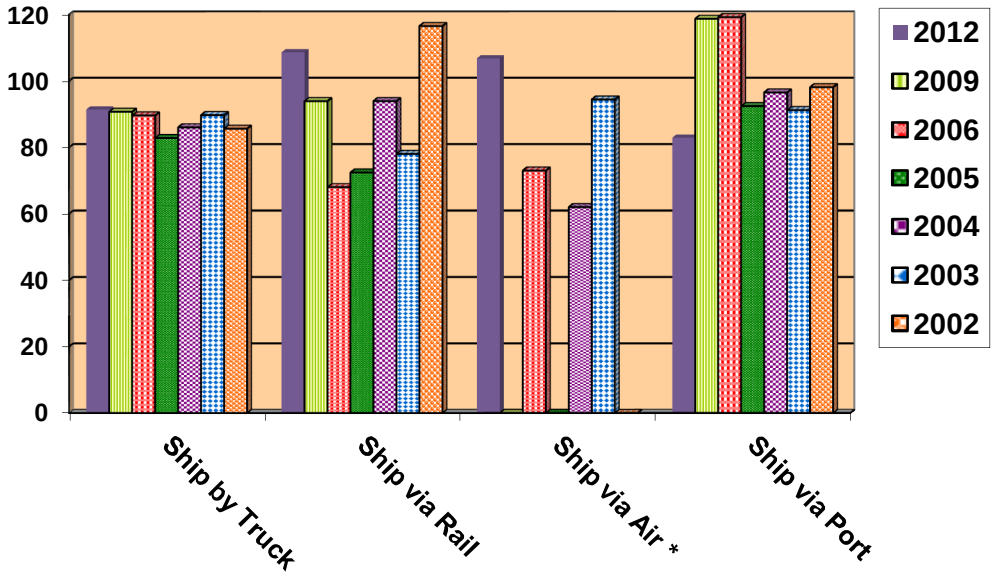
▪ Having competitive service and attention by air cargo carriers ▪ Having highways free from congestion near airports	▪ No businesses surveyed used air freight to ship or receive goods in 2009	▪ Having highways free from congestion near airports	▪ No businesses surveyed used air freight to ship or receive goods in 2005	▪ Having highways free from congestion near airports ▪ Having numerous airports for air cargo service	▪ Having good highway access to airports ▪ Having highways free from congestion near airports ▪ Having fuel available at the airport	▪ No businesses surveyed used air freight to ship or receive goods in 2002
PORT 2012	PORT 2009	PORT 2006	PORT 2005	PORT 2004	PORT 2003	PORT 2002
▪ Having good condition doc facilities ▪ Having reasonable port fees ▪ Having deep and wide berths	▪ Having competitive service and attention by shippers at the port ▪ Having deep channels ▪ Having good condition doc facilities ▪ Having reasonable port fees ▪ Having deep and wide berths ▪ Having good internal traffic flow at the port	▪ No attribute fell into the corrective action quadrant.	▪ Having warehousing space available ▪ Having reasonable port fees ▪ Having ample cranes for trans-loading ▪ Having good highway access to the Port	▪ Having good condition dock facilities ▪ Having competitive service and attention by shippers at the port ▪ Having warehousing space available ▪ Having reasonable port fees	▪ Having deep channels ▪ Having good internal traffic flow at the port ▪ Having deep and wide berths ▪ Having competitive service and attention by shippers at the port ▪ Having warehousing space available	▪ Having deep channels ▪ Having reasonable port fees ▪ Having good highway access to the Port ▪ Having good internal traffic flow at the port

As is seen above in Figure 1-15, the high priority attributes for trucking have remained consistent over the past survey years which provides confidence in the validity of the ratings. The attributes with high priority tend to fluctuate within the other modes (air, rail and port) when compared to past survey years. This fluctuation is due to the small sample sizes obtained for these modes.

1.4.1 Satisfaction Index

Figure 1-16 provides the satisfaction index computed for each user group, based on the importance-performance data collected in the Shippers and Carriers Survey. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the overall mean performance rating to the overall mean importance rating for users of each mode. This index demonstrates the balance between importance and performance in the minds of customers in that user group. The higher the value of the satisfaction index, the higher the level of customer satisfaction.

Figure 1-13 Satisfaction Indices - 2002 through 2012 - All Modes, Shippers and Carriers Survey



* Extreme fluctuation is due to very small sample sizes.

1.4.2 Biggest Freight Problems Facing Businesses

Near the end of the questionnaire, in an open-ended question, businesses were asked about the biggest freight issue or problem that is facing their business. The responses to this question were coded by hand and are displayed in Figure 1-17 below.

Figure 1-14 Biggest Freight Issue/Problem Facing Your Business

Issue or Problem Mentioned	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent
Roadway congestion	**20%**	35%	32%	18%	35%	43%	26%
Taxes, registrations, tolls, fees (and fuel costs for 2003 and prior surveys)	**3%**	12%	20%	2%	10%	6%	14%
Poor condition of roadways	**8%**	17%	13%	5%	7%	5%	2%
Roadway construction	**0%**	4%	7%	8%	4%	4%	1%
Traffic signals	**6%**	2%	4%	8%	0%	20%	21%
Roadway connectivity	**0%**	0%	3%	3%	1%	3%	1%
Weigh scales	**0%**	5%	1%	4%	1%	3%	2%
Weight restrictions	**18%**	0%	1%	4%	2%	2%	3%
Roadway geometrics	**0%**	0%	1%	0%	1%	5%	3%
Fuel Costs	**7%**	1%	0%	11%	13%	N/A	N/A
Other comment (various)	**25%**	24%	0%	14%	9%	0%	0%
Concern with other driver behavior*	**0%**	0%	0%	1%	0%	9%	27%
Nothing mentioned	**13%**	0%	18%	22%	17%	0%	0%

For 2012, “roadway congestion” was the most frequently mentioned response, followed by “weight restrictions.” As can be seen, 20% of respondents indicated “roadway congestion” as the major problem that their business faces in Delaware for 2012. “Roadway congestion” was the most frequently mentioned response in all the prior surveys. Twenty-five percent (25%) responded with “other/various comments” as the biggest issue facing their business. “Weight restrictions” was also a frequently mentioned response at 18%. “Nothing mentioned” was the fourth most frequently mentioned response (13%). The remaining issues and problems by companies surveyed was “poor condition of roadways” (8%), “fuel costs” (7%), “traffic signals” (6%), and “taxes, registrations, tolls, fees” (3%).

Chapter 2
GENERAL TRANSPORTATION USERS SURVEY

2.1 Survey Objectives

The main objective of this survey was to provide DelDOT with data to assess how satisfied different customer segments are with the current transportation system. Information from this survey can be compared to previous surveys and allows the Department to monitor customer satisfaction over time. Information from the survey serves as a set of inputs into the Department's progress monitoring program. This program assesses performance against the goals and objectives of the Statewide Long-Range Transportation Plan.

Mirroring the previous Customer Satisfaction Surveys, the information objectives for the 2012 survey were:

- For users of each transportation mode, to ascertain the level of importance of various attributes.
- For users of each transportation mode, to ascertain the level of performance perceived for each of the attributes.
- For users of each transportation mode, to identify the level of satisfaction attained for each attribute and for the mode overall.

2.2 Summary of Research Methodology

AECOM developed the questionnaire for the baseline customer satisfaction survey conducted in 1997, in consultation with DelDOT's Division of Planning. Customer Satisfaction Surveys have been completed by DelDOT on nearly an annual basis since 1997. As was done for the most recent past General Transportation User survey (2009), the same questionnaire was used for 2012.

Like the previous surveys, a market research firm administered the interviews. For this 2012 survey, Abt SRBI conducted the interviews. An SPSS (a statistical software package) computer file was developed to process the survey information by AECOM. The SPSS system enabled AECOM research staff to integrate the survey data so it could be presented in aggregate form.

Similar to previous surveys, the 2012 survey involved interviews with a random probability sample of Delaware residents aged 16 years or older. Unlike past surveys for this 2012 survey, cell phone and online (Internet) interviews were conducted in addition to land line telephone interviews to yield more representative results.

Cell phone interviewing was restricted to those households who had cell phones but no land line telephone. Telephone respondents in the land line sample were recruited using random digit dialing (RDD), from bocks of numbers known to consist of land lines. Cell phone only respondents were recruited using cell phone series blocks. These telephone numbers were dialed by hand and interviewers verified that respondents were in a safe position to talk (e.g., not driving at the time), were 16 years or older, resided in Delaware, and in what county. The geographic assignment for the cell sample is problematic, since addresses are based on the billing center associated with the account instead of the residence of the account holder. Respondent mobility is an additional issue. In order to properly control for this, respondents were asked to confirm that they lived in Delaware as well as which county. Internet respondents were recruited through an online panel. The sample source for the Internet panel was Research Now. Research Now emailed survey invitations to their panelists in each of Delaware's three counties. Respondents confirmed their residence in Delaware and their specific county.

All telephone interviewing, both cell phone and land line, was conducted using the same Internet screens which the Internet respondents saw. All interviewing was done in English. The sample size for the 2012 survey was similar to previous years, with a total of 1,002 interviews completed.

In total, there were 800 telephone interviews (680 land line, 120 cell phone) and 202 internet interviews. Approximately a little more than three hundred interviews were conducted in each of the three counties in Delaware to ensure statistically reliable results at the county level. In the final sample there were 336 interviews from Kent County, 336 from New Castle County, and 333 from Sussex County. The interviews were conducted evenings and weekends between November 19, 2012 and December 6, 2012, by professional and experienced interviewers who were monitored on-site. The average length of interview (telephone) was just over 14 minutes.

A combination of RDD and cell telephone samples and Internet panel was used to represent all those age 16 or older in Delaware's three counties. The research design and sample used in the 2012 survey produced results that are deemed to be very accurate. There is only a 5% chance that the range of possible error in the results reported statewide is greater than ±3.1%, and ±5.7% for county level data. The percentages obtained in the survey are estimates of what the distribution of responses would be if the entire population had been surveyed. "Sampling error" is a statistical term that describes the probable difference between interviewing everyone in a given population and a sample drawn from that population. For example, the sampling error associated with a sample of 1,002 persons is ± 3.1 % at a 95% confidence interval. Thus, if 50% of those in a sample of 1,002 were found to agree with a particular statement, the percentage of agreement within the population from which the sample was drawn would be between 46.9% and 53.1% (50% ±3.1%), 95 times out of 100. Sample error increases as sample size decreases. For example if statements are made based on a sample of 300 persons, the sampling error is ±5.7%. This must be kept in mind when examining results at the county level and comparing the responses of different subgroups within the total sample (e.g. men compared to women, suburbanites compared to city dwellers, etc.).

Interviews were weighted to properly reflect the state's population by county. A weighting factor is used to adjust the sample when statewide data are reported.

2.3 Relative Importance & Performance of Modal Attributes

This section provides an in-depth examination of the importance and performance of various service attributes by user group for the General Transportation User Survey. Respondents were asked to rate the importance of each attribute on a 7-point scale (a rating of 1 meant "not at all important," while a rating of 7 meant "extremely important") and the current performance of the attribute on a 7-point scale (a rating of 1 meant "poor" while a 7 meant "excellent"). Percentages are presented first and then the average ratings are presented for each attribute, and ordered from most important to least important or highest performance to lowest. Like the previous surveys, respondents were asked only to rate the attributes for each mode they used in the previous week.

2.3.1 Drive-Alone or Single-Occupant-Vehicle (SOV) Users

For the 2012 survey, 83% of the sample indicated that they made drive-alone trips the previous week. This is slightly higher than the share found in the 2009 survey (71%). Similar to prior survey results, those with incomes greater than $35,000 were slightly more likely to have driven alone than those with incomes less than $35,000 (84% versus 80%). Residents under the age of 50 were slightly less as likely to have made drive-alone trips, when compared to residents over the age of 50 years (81% and 85%, respectively). White residents were more likely to have driven alone (88%) in comparison to non-white residents (72%). Not surprisingly rural residents were more likely to have driven alone (85%) than suburban (83%) and city/town (81%) residents. No significant differences by county were noted. Residents of New Castle County (85%) and Kent County (85%) were equally as likely to have made drive-alone trips and these results were similar to residents of Sussex County (81%). The survey results also show that men and women were nearly equally likely to have driven alone last week (81% and 84% respectively).

2.3.1.1 Attribute Importance

Those respondents that reported driving alone for some of their trips during the previous week were asked to rate the importance of twelve service-related attributes on a 1 to 7-point scale. The results are displayed in the table below.

Figure 2-1 Importance of Highway Attributes

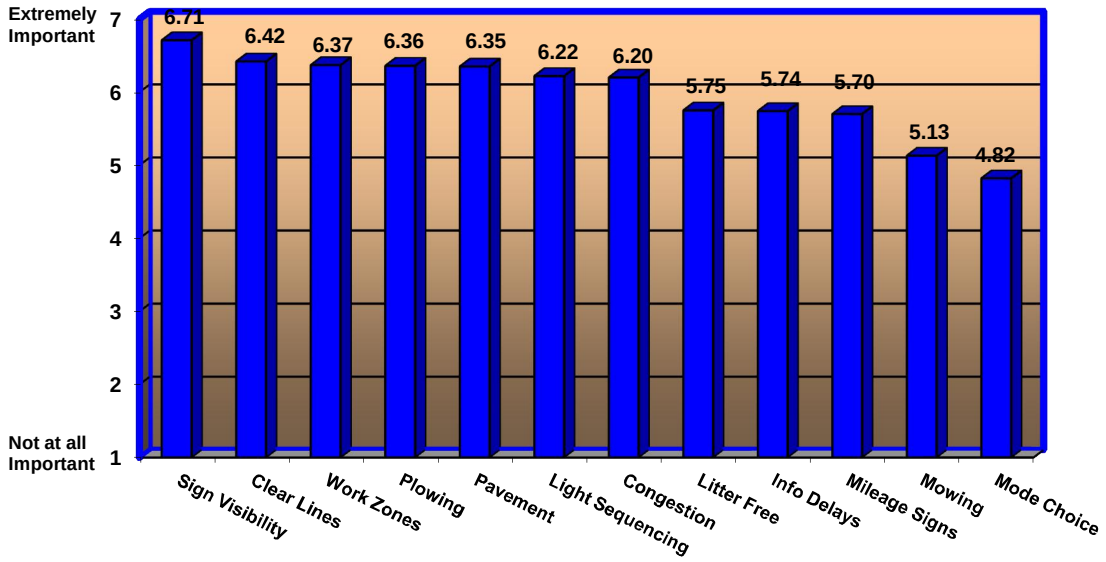
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Hwy signs visible both at day and night	1%	0%	0%	1%	5%	10%	83%	100%	**6.71**
Clear lane lines on highways	2%	1%	1%	4%	7%	13%	72%	100%	**6.42**
Having clearly marked and protected work zones	2%	1%	2%	1%	12%	15%	68%	100%	**6.37**
Timely snow plowing and salting	2%	1%	2%	2%	9%	15%	69%	100%	**6.36**
Condition of pavement on hwys	1%	0%	2%	5%	10%	17%	65%	100%	**6.35**
Well-planned sequencing & timing of traffic lights	3%	1%	1%	4%	10%	19%	62%	100%	**6.22**
Hwys free from congestion	1%	0%	3%	4%	17%	18%	57%	100%	**6.20**
Keeping land adjacent to hwys litter free	3%	1%	5%	7%	23%	16%	45%	100%	**5.75**
Info. on when to expect delays, road closings	3%	1%	5%	7%	19%	21%	44%	100%	**5.74**
Hwy signs that provide direction, mileage	3%	3%	5%	7%	19%	17%	46%	100%	**5.70**
Keeping lands adjacent to hwys landscaped, mowed	7%	3%	8%	11%	28%	14%	29%	100%	**5.13**
Having many travel mode choices	10%	7%	8%	14%	20%	14%	27%	100%	**4.82**

Similar to previous surveys, among SOV users in Delaware the most important attributes include “highway signs visible both day and night” and “clear lane lines on highways.”

Similar to the 2009 survey, the least important attribute is “having many travel mode choices.” Like the previous surveys, “highways free from congestion” ranks in the middle level of importance among the attributes, yet “having many travel mode choices” ranks last. The difference in importance between the two illustrates that Delaware residents that drive alone are not yet seeing a relationship between these two attributes. This finding may indicate a continued need for more educational and marketing efforts on how choice of mode impacts quality of life in Delaware.

The figure below illustrates the mean importance of the twelve attributes for SOV users.

Figure 2-2 Mean Importance Ratings – SOV Users



2.3.1.2 Attribute Performance

In addition to asking respondents how important each attribute was to them, the 2012 survey like the previous surveys, also asked the respondent how well the current transportation system was performing on each attribute. Again, a seven-point scale was used, with 1 meaning "poor" and 7 meaning "excellent". The results are displayed in the table below.

Figure 2-3 Performance of Highway Attributes

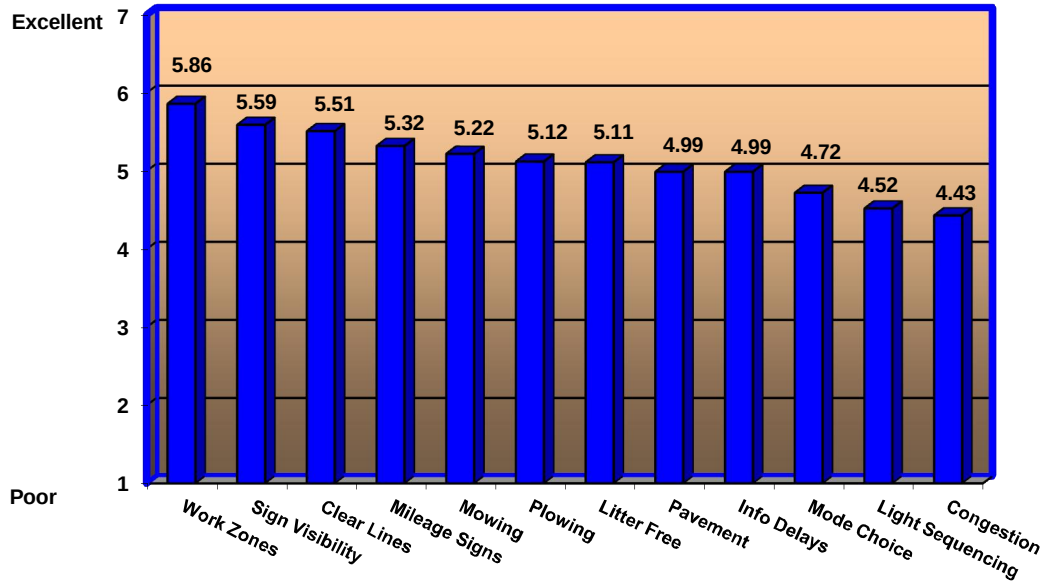
	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Having clearly marked and protected work zones	1%	1%	4%	7%	20%	29%	38%	100%	**5.86**
Hwy signs visible both at day and night	2%	2%	3%	10%	27%	26%	30%	100%	**5.59**
Clear lane lines on highways	3%	3%	4%	9%	27%	27%	27%	100%	**5.51**
Hwy signs that provide direction, mileage	3%	3%	7%	13%	25%	26%	23%	100%	**5.32**
Keeping lands adjacent to hwys landscaped, mowed	2%	4%	5%	12%	34%	25%	18%	100%	**5.22**
Timely snow plowing & salting	7%	5%	7%	11%	27%	24%	19%	100%	**5.12**
Keeping land adjacent to hwys litter free	4%	4%	6%	16%	29%	21%	20%	100%	**5.11**
Condition of pavement on hwys	4%	3%	8%	17%	28%	25%	15%	100%	**4.99**
Info. on when to expect delays, road closings	7%	5%	11%	15%	23%	20%	19%	100%	**4.99**
Having many travel mode choices	7%	9%	13%	18%	22%	15%	16%	100%	**4.72**
Well-planned sequencing & timing of traffic lights	7%	7%	11%	18%	29%	14%	14%	100%	**4.52**
Hwys free from congestion	7%	8%	11%	23%	26%	14%	11%	100%	**4.43**

Generally found in surveys such as this, and similar to what was found in previous years, performance ratings were lower than importance ratings. "Having clearly marked and protected

work zones" and "highway signs visible both at day and night" are top performers in this year's survey and were among the highest performing attributes in prior surveys as well.

Similar to previous surveys, the lowest rated attributes in terms of performance in the 2012 survey were "highways free from congestion," "having well-planned sequencing and timing of traffic lights," and "having many travel mode choices." The following displays the mean performance ratings for drive-alone motorists.

Figure 2-4 Mean Performance Ratings – SOV Users



2.3.1.3 Importance-Performance Analysis

By comparing an attribute across both dimensions (importance and performance), one can separate the attributes customers feel are very important and are currently less satisfied with, from those attributes of less importance. Importance-performance analysis is designed to take into account that not all shortfalls in service quality are of equal concern to customers. When an attribute that is considered to be of primary importance falls short of a desirable level of performance that is of greater concern then when a peripheral attribute is unsatisfactory in terms of performance. Thus, projects to address or improve shortfalls in a critical area (an attribute rated as high in importance, but low in performance) would be given a higher priority by customers than projects proposed to rectify shortfalls in areas of marginal importance (attributes rated low in importance).

To develop the satisfaction index, the mean rating for both importance and performance was computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating for each attribute. This index demonstrates the balance between importance and performance in the minds of customers. The higher the value of the index, the higher the level of customer satisfaction on that attribute.

Figure 2-5 Importance-Performance Ratings and Satisfaction Indices – SOV Users

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Keeping lands adjacent to hwys landscaped, mowed	5.13	5.22	**101.75**
Having many travel mode choices	4.82	4.72	**97.93**
Hwy signs that provide direction, mileage	5.70	5.32	**93.33**
Having clearly marked and protected work zones	6.37	5.86	**91.99**
Keeping land adjacent to hwys litter free	5.75	5.11	**88.87**
Info. on when to expect delays, road closings	5.74	4.99	**86.93**
Clear lane lines on highways	6.42	5.51	**85.83**
Hwy signs visible both at day and night	6.71	5.59	**83.31**
Timely snow plowing and salting	6.36	5.12	**80.50**
Condition of pavement on hwys	6.35	4.99	**78.58**
Well-planned sequencing & timing of traffic lights	6.22	4.52	**72.67**
Hwys free from congestion	6.20	4.43	**71.45**

The highest level of satisfaction was obtained for the attribute of "keeping lands adjacent to highways landscaped and mowed." The second highest level of satisfaction was obtained on the attribute of "having many travel mode choices." The lowest level of satisfaction for those who drive alone was found for "highways free from congestion" and "well-planned sequencing and timing of traffic lights." These results are similar to the 2004, 2005, 2006, and 2009 survey results.

As was performed in the previous Customer Satisfaction Survey reports, another way of viewing the results of the importance-performance series of questions is the use of quadrant analysis. Quadrant analysis is designed to take into account that not all short falls in service quality are of equal concern to customers. Quadrant analysis can assist policy makers in decision-making by placing the attributes along two dimensions -- the importance of the attribute to the customers and the performance on the provision of the attribute. Having these two dimensions of customer evaluation allows for the creation of four performance quadrants as can be seen below. This type of analysis is more beneficial than simply using rank ordering of attributes, because it defines the customer's assessment of the services by assigning them to "action quadrants". Particularly at a time when resources for services may be limited, it is useful for policy makers to have an accurate view of the specific services that need attention from a customer viewpoint. For example, quadrant analysis can separate the attributes customers feel are very important and currently not satisfied with from those that they are satisfied with. This can distinguish attributes that are in need of corrective action (attributes with low satisfaction scores) versus those that may not need any immediate action but merely require continued maintenance (attributes with high satisfaction scores). Attributes targeted for corrective action should be addressed before attributes targeted for maintenance action.

Figure 2-6 Importance – Performance Quadrants

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(Quadrant 2) Maintenance Action: Low Priority	(Quadrant 1) Maintenance Action: High Priority
	Below Average	(Quadrant 3) Corrective Action: Low Priority	(Quadrant 4) Corrective Action: High Priority

Each attribute is assigned to a quadrant based on its relative rating to all other attributes. Therefore, the intersection of the importance and performances axes is the average of the different attributes. For example, say the average of all the importance ratings is 6.0. A line is drawn through the grid at 6.0 on the x-axis indicating the overall average importance rating. Continuing this example, say the average performance rating for all attributes is 4.5, so a line is drawn on the y-axis at 4.5. Thus, the two axes intersect at the overall mean rating of 6.0 for importance and 4.5 for performance, and a grid results with four action quadrants.

The attributes falling in Quadrant 4 have above average importance ratings, but have performance ratings that are below average (thus, these attributes are above average importance and below average performance). The attributes that fall within this quadrant should be the highest priority for corrective action. Attributes that fall within Quadrant 3 are both below average importance and below average performance. These attributes also need corrective action, but immediate attention is not required since the attributes are less important to customers. These items should be monitored and receive attention or investment after the more important attributes in Quadrant 4 are addressed. The attributes in Quadrant 2 are above average in performance and below average in importance. Attributes in this quadrant need only maintenance action and are the lowest priority of all the four quadrants. Items that fall within Quadrant 1 are above average in importance and above average in performance. Although these attributes are doing well currently, they are high priority for maintenance action and should not be neglected. These are salient issues to customers and need to be followed closely.

The table below shows how the twelve attributes asked of SOV users fall into the four quadrants.

Figure 2-7 Importance – Performance Quadrant Analysis - SOV Users

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Landscaping & Mowing** **Directional Highway Signs** **Litter Free Highways**	(1) Maintenance: High Priority **Clearly Marked Work Zones** **Clear Lane Lines** **Signs Visible Day & Night** **Snow Plowing & Salting**
	Below Average	(3) Corrective: Low Priority **Mode Choices** **Info on Delays & Closings**	(4) Corrective: High Priority **Pavement Condition** **Timing of Traffic Lights** **Highways Free of Congestion**

The attributes in Quadrant 1 represent items which SOV users regard as important and on which Delaware receives high marks. Although these attributes are perceived to be faring well now, they are a high priority for maintenance and should not be neglected. These are attributes that are important to SOV users and are salient issues customers are attentive to. "Having clearly marked and protected work zones," "having clear lane lines on the highway," "having highway signs that are visible during both during the day and at night," and "having timely snow plowing and salting" fall into Quadrant 1. These were the same attributes in Quadrant 1 in the 2009 survey, as well.

The attributes in Quadrant 2 are those SOV users rate high in performance but low in importance. Therefore, while these attributes need some maintenance action, they are not as salient to SOV users as the items in Quadrant 1. The attributes, "keeping land adjacent to highways landscaped and mowed," "highway signs that provide direction and mileage," and "keeping land adjacent to highways litter free" fall in Quadrant 2 in 2012. In the 2009 survey, "keeping land adjacent to highways litter free" fell in Quadrant 3, suggesting improved performance.

Delaware is given low performance ratings on attributes falling into Quadrant 3, but these items are also of low importance to SOV users. In terms of action, these attributes should be considered for corrective action, but lower in priority when compared to attributes in Quadrant 4. "Having many travel mode choices" and "having information on when to expect traffic delays and road closings" are the attributes in this quadrant for SOV users in 2012, as was found in the 2009 survey, too.

Quadrant 4 represents those attributes rated high in importance but low in performance, thus representing attributes with low customer satisfaction. These attributes are the ones which should be of highest priority to receive corrective action and for SOV users they are "condition of pavement on highways," "having well-planned sequencing and timing of traffic lights," and "having highways free from congestion." These are the same Quadrant 4 attributes as was found in the 2009 survey.

2.3.2 All Motorists

The previous analysis provided a snapshot of customer satisfaction for those that drove-alone during the week prior to the survey. However, from a policy development perspective, it is more useful to examine the data for all motorists (those that drove-alone only, those that carpooled only and those that drove-alone but also carpooled) to derive guidance on appropriate highway improvement actions from a customer perspective. This section of the report provides an examination of the data across all motorists (those that drove alone only, those that carpooled only and those that drove alone, but also carpooled). Of the 1,002 Delawareans surveyed, 960 respondents traveled either alone or with others in a motor vehicle the previous week (96%). This percentage is higher than prior survey results.

2.3.2.1 Attribute Importance

The table below illustrates the importance assigned to the twelve highway-related attributes for all motorists.

Figure 2-8 Importance of Highway Attributes – All Motorists

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Hwy signs visible both at day and night	1%	1%	1%	1%	5%	10%	82%	100%	**6.64**
Clear lane lines on highways	2%	1%	1%	5%	7%	13%	71%	100%	**6.37**
Having clearly marked and protected work zones	2%	1%	2%	3%	11%	15%	68%	100%	**6.34**
Condition of pavement on hwys	1%	0%	1%	5%	10%	17%	64%	100%	**6.31**
Timely snow plowing & salting	3%	2%	2%	2%	9%	14%	69%	100%	**6.30**
Well-planned sequencing & timing of traffic lights	3%	2%	1%	4%	10%	18%	61%	100%	**6.17**
Hwys free from congestion	1%	0%	4%	4%	17%	17%	57%	100%	**6.13**
Keeping land adjacent to hwys litter free	3%	1%	4%	7%	21%	16%	47%	100%	**5.79**
Info. on when to expect delays, road closings	4%	2%	5%	7%	17%	20%	45%	100%	**5.72**
Hwy signs that provide direction, mileage	3%	3%	5%	6%	18%	18%	47%	100%	**5.72**
Keeping lands adjacent to hwys landscaped, mowed	7%	3%	8%	11%	27%	15%	31%	100%	**5.14**
Having many travel mode choices	11%	7%	8%	13%	20%	14%	28%	100%	**4.76**

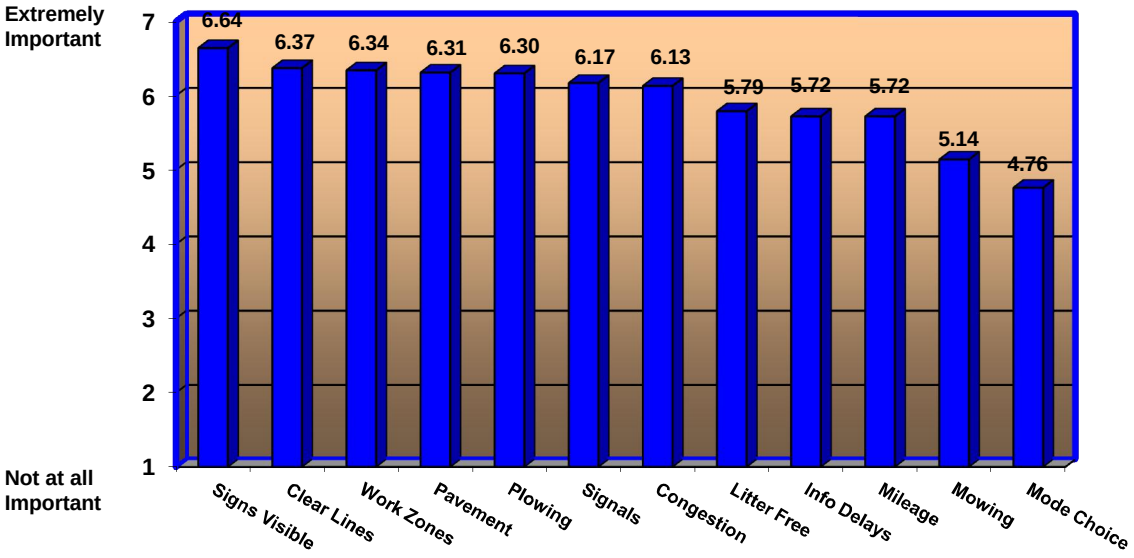
Among the top rated attributes in past surveys as well, the top rated attribute in terms of mean importance in the 2012 survey is “highway signs visible both at day and night.” “Clear lane lines on highways” was rated as having the highest importance in previous surveys.

As was found in the previous surveys, one can again note the lack of a relationship between the importance associated with “having highways free from congestion” and the importance associated with “having many travel mode choices.” “Having highways free from congestion” is rated above average in importance while “having many travel mode choices” is rated the least important attribute. Clearly, motorists currently view other non-auto modes as a different or alternative choice to the automobile, but not as a potential congestion management strategy. Again, this finding supports a previous recommendation that continued educational and marketing efforts might be needed.

In addition to “having many travel mode choices,” other attributes with low importance ratings are “keeping lands adjacent to highway landscaped and mowed” and “highway signs that provide direction and mileage.” These were among the lowest rated attributes in terms of importance in past surveys as well.

Figure 2-9 illustrates the mean importance of the above twelve attributes among all motorists.

Figure 2-9 Mean Importance Ratings – All Motorists



2.3.2.2 Attribute Performance

The table below provides the performance rating data obtained in the survey from all motorists.

Figure 2-10 Performance of Highway Attributes – All Motorists

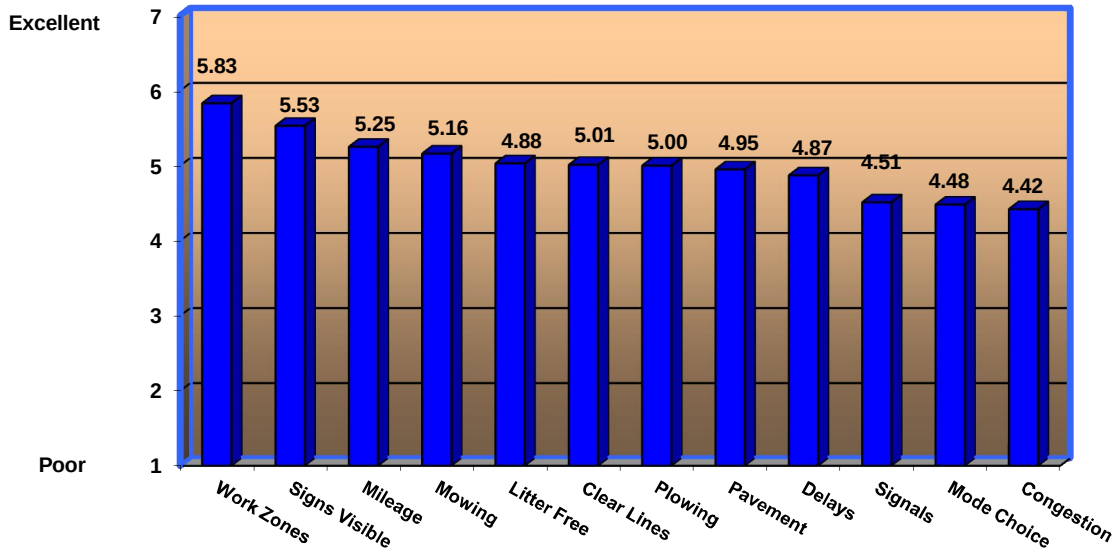
	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Having clearly marked and protected work zones	1%	1%	3%	8%	19%	29%	38%	100%	**5.83**
Hwy signs visible both at day and night	2%	2%	3%	10%	25%	26%	30%	100%	**5.53**
Hwy signs that give direction, mileage	3%	3%	7%	13%	25%	26%	23%	100%	**5.25**
Keeping lands adjacent to hwys landscaped, mowed	2%	4%	5%	13%	34%	24%	18%	100%	**5.16**
Keeping land adjacent to hwys litter free	3%	4%	6%	17%	29%	21%	19%	100%	**5.03**
Clear lane lines on highways	4%	3%	4%	13%	34%	33%	8%	100%	**5.01**
Timely snow plowing & salting	7%	4%	7%	11%	27%	25%	20%	100%	**5.00**
Condition of pavement on hwys	4%	2%	8%	18%	30%	23%	15%	100%	**4.95**
Info on when to expect delays, road closings	6%	5%	9%	14%	25%	21%	19%	100%	**4.87**
Well-planned sequencing & timing of traffic lights	7%	7%	12%	18%	29%	14%	14%	100%	**4.51**
Having many travel mode choices	0%	0%	0%	0%	0%	0%	0%	100%	**4.48**
Hwys free from congestion	7%	7%	11%	23%	26%	14%	12%	100%	**4.42**

As in the 2009 survey, “having clearly marked and protected work zones” and “highway signs visible both at day and night” are the top two attributes in terms of performance.

As was found in previous years, for all motorists, the lowest performing attributes were “highways free from congestion” and “having many mode choices.”

The figure below depicts the mean performance ratings for each attribute.

Figure 2-11 Mean Performance Ratings – All Motorists



2.3.2.3 Importance-Performance Analysis

Again, the most relevant information for policy-makers and decision-makers are the results of the importance-performance analysis for all motorists: those that drive-alone combined with those that carpool. The table below shows the mean importance and performance ratings and the satisfaction index for each attribute. Once again, the satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating. This index demonstrates the balance between importance and performance for that attribute in the minds of customers. The higher the value of the index, the higher the level of customer satisfaction found on that attribute.

Figure 2-12 Importance-Performance Ratings and Satisfaction Indices – All Motorists

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Keeping lands adjacent to hwys landscaped, mowed	5.14	5.16	**100.39**
Having many travel mode choices	4.76	4.48	**94.12**
Having clearly marked and protected work zones	6.34	5.83	**91.96**
Hwy signs that provide direction, mileage	5.72	5.25	**91.78**
Keeping land adjacent to hwys litter free	5.79	5.03	**86.87**
Info. on when to expect delays, road closings	5.72	4.87	**85.14**
Hwy signs visible both at day and night	6.64	5.53	**83.28**
Timely snow plowing & salting	6.30	5.00	**79.37**
Clear lane lines on highways	6.37	5.01	**78.65**
Condition of pavement on hwys	6.31	4.95	**78.45**
Well-planned sequencing & timing of traffic lights	6.17	4.51	**73.10**
Hwys free from congestion	6.13	4.42	**72.10**

As can be seen in the table above, the highest levels of satisfaction were obtained on the attributes "keeping lands adjacent to highways landscaped and mowed" and "having many travel mode choices." These were also among the highest rated levels of satisfaction in the 2009 survey. The lowest levels of satisfaction were found for "highways free from congestion" and "well-planned sequencing and timing of traffic lights." "Highways free from congestion" was the lowest rated attribute in the 2009 survey.

Importance-performance quadrant analysis was also performed on the data and the results are contained in the table below.

Figure 2-13 Importance – Performance Quadrant Analysis – All Motorists

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Landscaping & Mowing** **Directional Hwy Signs** **Litter Free Hwys** **Info on Delays & Closings**	(1) Maintenance: High Priority **Protected Work Zones** **Signs Visible Day & Night** **Clear Lane Lines**
	Below Average	(3) Corrective: Low Priority **Mode Choices**	(4) Corrective: High Priority **Pavement Condition** **Hwys Free of Congestion** **Timing/Sequencing Signals** **Snow Plowing & Salting**

The attributes in Quadrant 1 represent items which all motorists regard as important and on which Delaware receives high ratings for performance. Customer satisfaction is currently being attained

on these three attributes. These attributes are high priority for maintenance, because they are important to motorists and are notable factors that motorists are attentive to. For 2012, Quadrant 1 contains "having clearly marked and protected work zones," "highway signs visible both at day and night," and "clear lane lines on highways." These attributes were in Quadrant 1 in the 2009 survey as well.

Quadrant 2 attributes are those which motorists rate high in performance but low in importance. Thus relative to Quadrant 1 attributes, these items are of lower priority for maintenance action or investments, as these attributes are not as salient to motorists as the items in Quadrant 1. "Land adjacent to highways kept landscaped and mowed," "highway signs giving information on direction and mileage," "keeping lands adjacent to highways litter free," and "information on delays and road closings" are Quadrant 2 attributes. The first two attributes were Quadrant 2 attributes in the 2009, 2006, and 2005 surveys as well, while the last two attributes were Quadrant 3 attributes in the 2009 survey.

Low performance ratings are given to attributes falling into Quadrant 3 but these items are also of less importance to motorists. "Having many travel mode choices" is the one attribute in Quadrant 3 for motorists in this year's survey, as well as the 2009 survey. Because of its lower performance rating, the Quadrant 3 attribute should be targeted for corrective action but with a lower priority than those attributes in Quadrant 4.

Quadrant 4 represents those attributes rated high in importance but low in satisfaction with the delivery of these services. These attributes should be targeted for high priority corrective action and for motorists they are "condition of pavement on highways," "highways free from congestion," "well-planned sequencing and timing of traffic lights," and "timely snow plowing and salting". The first three were Quadrant 4 attributes in 2009 as well. "Snow plowing and salting" was a Quadrant 1 attribute in 2009.

2.3.3 Carpoolers (Ride or Drive with Others)

As was done in the previous survey years, carpoolers were broken into two groups by the survey instrument: those that only carpooled (did not drive alone during the previous week) and those that carpooled but also drove alone. All carpoolers rated the same twelve highway attributes (these results are reported in the above section) but they also rated three additional attributes that relate specifically to carpooling.

In the 2012 survey results, a total of 664 Delawareans of the 1,002 surveyed this year (33% of the sample), indicated that they carpooled (rode or drove with others) the previous week. This share is higher than those obtained from the 2009 (33%), 2006 (32%), and 2005 (32%) survey results.

No significant differences were noted by age, as respondents over 50 years were nearly equally likely to have made carpool trips as respondents under 50 years of age (63% and 68%, respectively). There were also no significant differences noted by gender, as males were nearly equally likely as females to have made carpool trips (62% and 71%, respectively) the previous week. Respondents with household income less than $35,000 were less likely than those with household income greater than $35,000 to have made carpool trips (56% and 69% respectively). White respondents were equally as likely as non-white respondents to have made carpool trips (67% and 66% respectively). By area type, respondents in suburban areas (70%) were more likely than respondents in rural areas (66%) or in cities or towns (60%) to have made carpool trips the previous week.

By county, Sussex County residents were more likely to have made carpool trips compared than New Castle County residents and Kent County Residents (Sussex County 68%, New Castle County 66%, and Kent County 65%).

The results in this section report the rating results for the carpooling attributes among all carpoolers.

2.3.3.1 Attribute Importance

Those respondents who rode or drove with others during the previous week were asked to rate the importance of three carpool-related attributes on the same seven-point scale. The results are displayed in the table below.

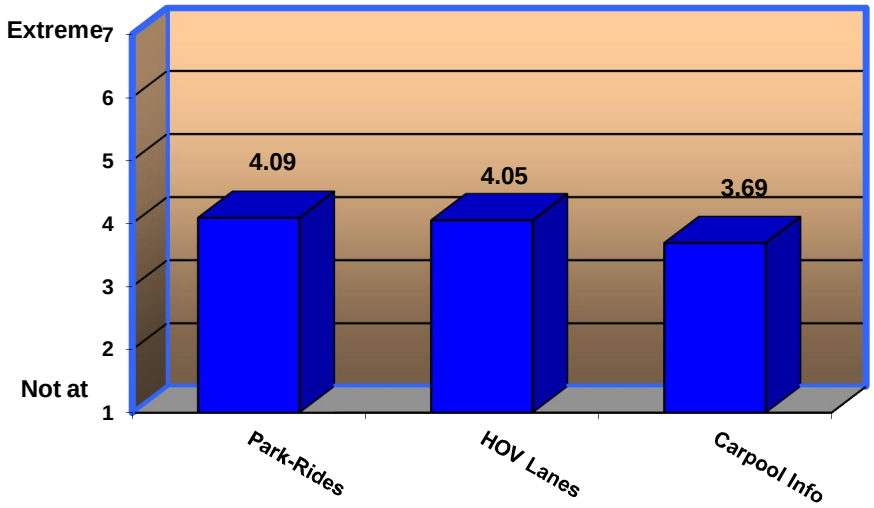
Figure 2-14 Importance of Carpool Attributes - All Carpoolers

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Providing a system of park-and-rides	21%	8%	12%	12%	15%	13%	20%	100%	**4.09**
HOV lanes for carpools and buses	20%	12%	8%	10%	18%	12%	19%	100%	**4.05**
Information to help form carpools	27%	10%	9%	13%	20%	8%	14%	100%	**3.69**

For 2012 as well as previous surveys, the highest rated attribute was “providing a system of park-and-rides.” Like previous surveys, “information to help form carpools” was the lowest rated attribute in terms of importance. These results are identical to the 2009, 2006, and 2005 surveys. These results could denote that the majority of current carpooling is occurring among family, friends and acquaintances/colleagues, and that current carpoolers do not see any need for additional sources of information to form carpools.

Figure 2-15 illustrates the mean importance of each of the three carpool-related attributes.

Figure 2-15 Mean Importance Ratings – All Carpoolers



2.3.3.2 Attribute Performance

Carpoolers were also asked to rate how well the current transportation system was performing on each of these three attributes. The results are displayed in the following table.

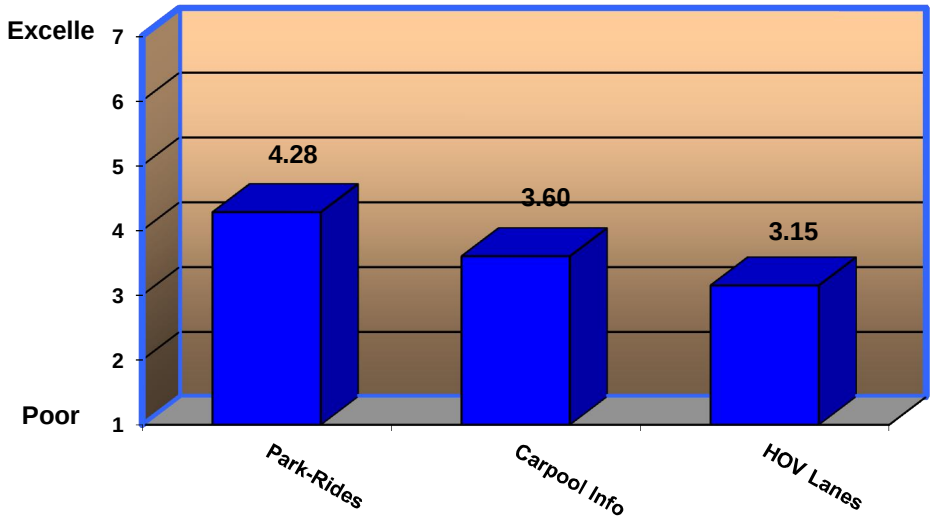
Figure 2-16 Performance of Carpool Attributes – All Carpoolers

	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Providing a system of park-and-rides	11%	8%	15%	14%	22%	16%	13%	**100%**	**4.28**
Information to help form carpools	20%	12%	16%	18%	17%	6%	11%	**100%**	**3.60**
HOV lanes for carpools and buses	37%	11%	11%	11%	13%	6%	11%	**100%**	**3.15**

Like the previous survey results and as can be expected, the performance ratings were found to be lower than the importance ratings. As was found in the previous surveys, "providing a system of park-and-rides" was the highest rated attribute, while "HOV lanes for carpools and buses" was the lowest.

The following figure shows the mean performance for each of the three carpool attributes.

Figure 2-17 Mean Performance Ratings – All Carpoolers



2.3.3.3 Importance-Performance Analysis

The table below shows the mean importance and performance ratings and the satisfaction index for each attribute. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating for each attribute. The value of this index demonstrates the balance between importance and performance in the minds of the users for that attribute. The higher the value of the index, the higher the level of customer satisfaction found on that attribute.

Figure 2-18 Importance – Performance Ratings and Satisfaction Indices - All Carpoolers

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Providing a system of park-and-rides	4.09	4.28	**104.65**
Information to help form carpools	3.69	3.60	**97.56**
HOV lanes for carpools and buses	4.05	3.15	**77.78**

As seen in the above table, the attribute with the highest level of satisfaction for carpoolers is "providing a system of park-and-rides." The lowest level of satisfaction was obtained for the attribute of providing "HOV lanes for carpools and buses." In the 2009 survey, "information to help form carpools" was the attribute with the highest level of satisfaction.

Again, quadrant analysis was conducted on the importance-performance results from the carpool features. The results are contained in the following table.

Figure 2-19 Importance – Performance Quadrant Analysis - All Carpoolers

Performance Rating on Attribute	Importance Rating of Attribute: Below Average	Importance Rating of Attribute: Above Average
Above Average	(2) Maintenance: Low Priority	(1) Maintenance: High Priority **Providing a System of Park & Rides**
Below Average	(3) Corrective: Low Priority **Information to Help Form Carpools**	(4) Corrective: High Priority **HOV Lanes for Carpools & Buses**

The results of the quadrant analysis performed on the 2012 data exactly resemble the 2009 survey results. Like prior surveys, Quadrant 1 shows that carpoolers regard "providing a system of park-and-rides" as important and Delaware receives above average marks for performance. Work on "providing a system of park-and-rides" should be a high priority action.

There are no attributes in Quadrant 2.

The attributes that fall into Quadrant 3 have low performance ratings but are also of less importance. "Information to help form carpools" is a Quadrant 3 attribute in this year's survey. This attribute should be targeted for corrective action but with a lower priority than those attributes in Quadrant 4.

Quadrant 4 shows attributes rated, on average, high in importance but low in performance. As was found in prior surveys, "providing HOV lanes for carpools and buses" is located in Quadrant 4 for 2012.

2.3.4 Transit Users

Similar to the previous surveys along with motorists, bicyclists, and pedestrians, transit riders were also asked to rate the importance of transit service attributes and then the performance of those attributes. This section of the report describes the results of a series of rating questions posed to transit riders in the General Transportation User survey.

Out of the total sample, only 6% of respondents (n=61) indicated that they had made a trip using transit (either a bus or a train) during the previous week. This is slightly higher than the 2009

(4%), 2005 (3%), 2003 (3%), and 2006 (5%) survey results, but slightly lower than the 2004 survey (7%) results.

In the 2012 survey, New Castle County respondents had the highest percentage of transit users (8%), followed by Kent County (5%) and Sussex County (2%). Those respondents with a yearly household income over $35,000 were less likely to use transit than those with a yearly household income under $35,000 (4% and 13%, respectively). Non-white respondents were slightly more likely to use transit that white respondents (9% and 5%, respectively) and 8% of respondents under 50 years old use transit compared to 3% of respondents over 50 years old.

2.3.4.1 Attribute Importance

Like previous surveys, for transit users, the questionnaire contained thirteen attributes of transit service. Each respondent was asked to rate the importance of each attribute on a seven-point scale and following the importance rating questions, respondents were asked to rate the current performance of each attribute.

The results of the attribute importance ratings are displayed in the following table.

Figure 2-20 Importance of Transit Attributes

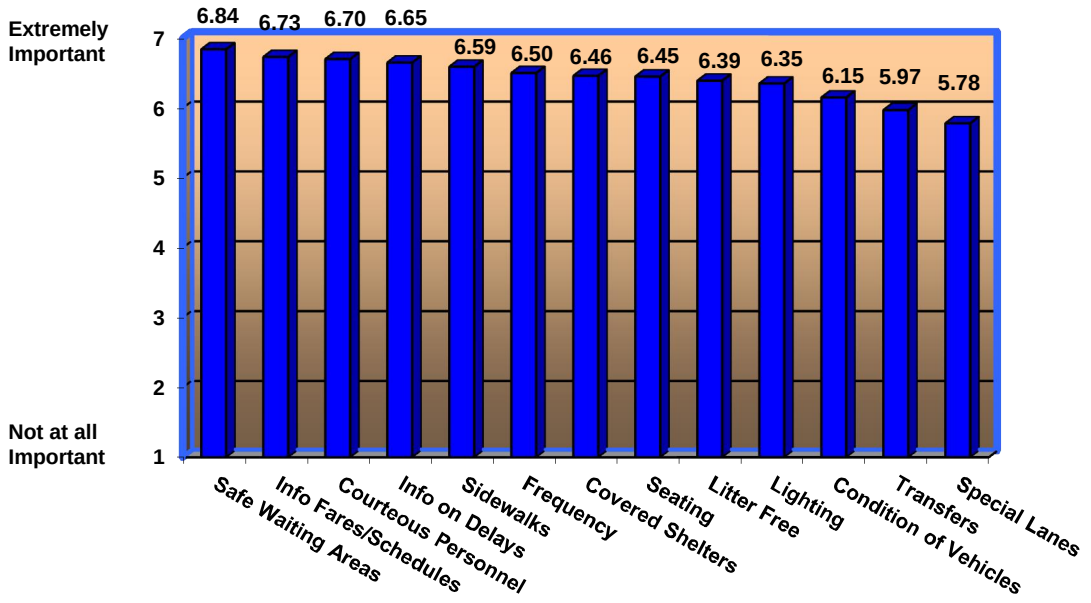
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Safe & secure waiting areas	0%	0%	0%	1%	2%	10%	87%	100%	**6.84**
Info on transit schedules and fares	1%	0%	0%	0%	6%	14%	79%	100%	**6.73**
Courteous on-board personnel	0%	0%	0%	2%	6%	12%	80%	100%	**6.70**
Info on when to expect transit delays	0%	1%	1%	3%	0%	20%	75%	100%	**6.65**
Sidewalks to & from transit stations & stops	1%	0%	1%	2%	5%	19%	72%	100%	**6.59**
Frequent transit service	1%	1%	3%	3%	8%	6%	78%	100%	**6.50**
Covered shelters & stations where I can wait	1%	0%	0%	4%	12%	10%	73%	100%	**6.46**
Seat availability	2%	0%	0%	4%	4%	23%	67%	100%	**6.45**
Litter free stations and stops	0%	3%	2%	1%	2%	33%	59%	100%	**6.39**
Transit stops & stations w/ good lighting	1%	6%	2%	1%	5%	13%	72%	100%	**6.35**
Good condition & clean vehicle interiors	1%	2%	10%	18%	6%	62%	1%	100%	**6.15**
Bus-to-bus transfers	2%	10%	0%	0%	14%	15%	59%	100%	**5.97**
Special lanes on hwys for transit vehicles	4%	0%	3%	6%	25%	19%	43%	100%	**5.78**

As can be seen in the above table, “having safe and secure waiting areas,” “information on transit schedules and fares,” and “courteous on-board personnel” are the most important attributes. “Having safe and secure waiting areas” and “information on transit schedules and fares” were rated as above average for importance in previous surveys as well.

As in previous survey years, the lowest rated attribute in terms of importance is “special lanes on highways for transit vehicles.”

The following figure illustrates the mean importance rating for each transit attribute.

Figure 2-21 Mean Importance Ratings - Transit Users



2.3.4.2 Attribute Performance

Along with importance ratings, respondents that used transit the previous week also provided ratings, on a seven-point scale, regarding how well the current transit system is performing on each attribute.

The table below provides the data for this series of questions.

Figure 2-22 Performance of Transit Attributes

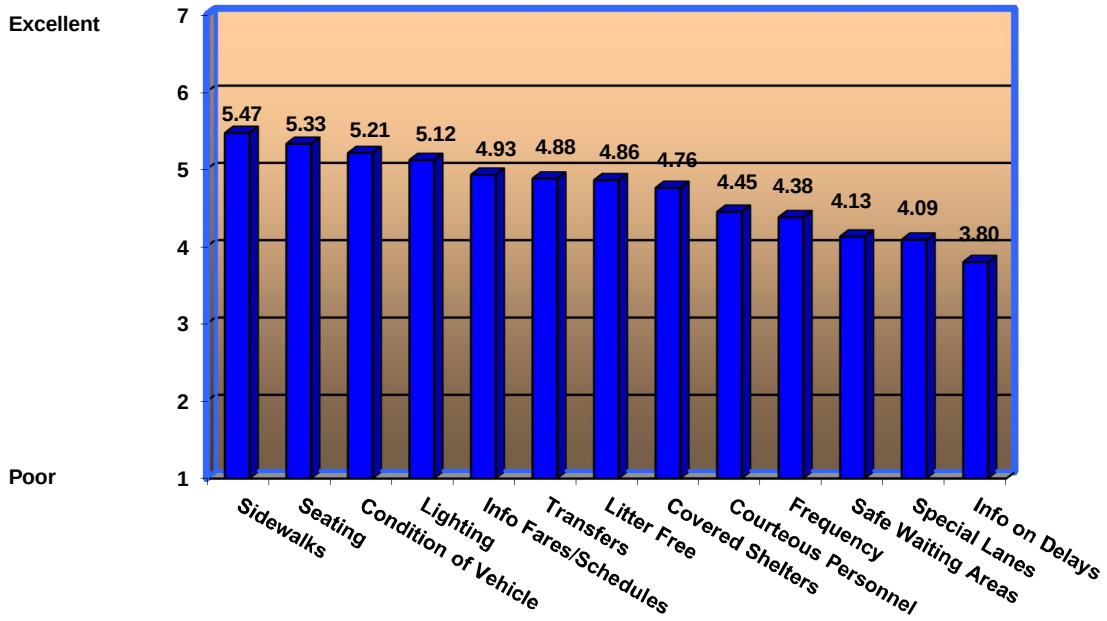
	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Sidewalks to & from transit stations & stops	4%	3%	13%	10%	32%	14%	24%	100%	**5.47**
Seat availability	5%	3%	3%	23%	22%	15%	29%	100%	**5.33**
Good condition & clean vehicle interiors	8%	0%	4%	22%	20%	18%	28%	100%	**5.21**
Transit stops & stations with good lighting	1%	12%	6%	20%	22%	8%	31%	100%	**5.12**
Info on transit schedules and fares	11%	10%	1%	6%	27%	26%	19%	100%	**4.93**
Bus-to-bus transfers	23%	3%	10%	2%	24%	8%	30%	100%	**4.88**
Litter free stations and stops	9%	10%	5%	15%	22%	9%	30%	100%	**4.86**
Covered shelters & stations where I can wait	13%	13%	1%	4%	28%	16%	25%	100%	**4.76**
Courteous on-board personnel	11%	18%	10%	0%	24%	21%	16%	100%	**4.45**
Frequent transit service	21%	7%	1%	15%	22%	12%	22%	100%	**4.38**
Safe & secure waiting areas	19%	11%	8%	18%	15%	8%	21%	100%	**4.13**
Special lanes on hwys for transit vehicles	32%	4%	6%	18%	5%	8%	27%	100%	**4.09**
Info on when to expect transit delays	33%	6%	16%	2%	10%	11%	22%	100%	**3.80**

In terms of performance, transit service in Delaware is rated as performing very well on "sidewalks to and from transit stations and stops" and "seat availability." "Seat availability" was rated with high performance in the 2009 survey. "Sidewalks to and from transit stops and stations" has significantly risen in performance from the 2009 survey.

Poor performing attributes include "information on when to expect transit delays" and "special lanes on highways for transit vehicles." These were the lowest rated attributes in the 2009 survey as well and among the lowest in prior surveys.

The following figure illustrates the mean performance rating for each transit attribute.

Figure 2-23 Mean Performance Ratings – Transit Users



2.3.4.3 Importance-Performance Analysis

Importance-performance analysis was also conducted on the transit user attribute rating data. The importance and performance ratings and satisfaction index for each attribute is displayed below. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating for each attribute. This index demonstrates the balance between importance and performance for that attribute in the minds of customers. The higher the value of the index, the higher the level of customer satisfaction found on that attribute. When the mean performance rating exceeds the mean importance rating, the satisfaction index is over 100. This may mean that resources are being over-expended on that attribute relative to the importance of the attribute to customers and some resources can be reallocated.

Figure 2-24 Importance-Performance Ratings and Satisfaction Indices – Transit Users

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Good condition & clean vehicle interiors	6.15	5.21	**84.72**
Sidewalks to & from transit stations & stops	6.59	5.47	**83.00**
Seat availability	6.45	5.33	**82.64**
Bus-to-bus transfers	5.97	4.88	**81.74**
Transit stops & stations w/ good lighting	6.35	5.12	**80.63**
Litter free stations and stops	6.39	4.86	**76.06**
Covered shelters & stations where I can wait	6.46	4.76	**73.68**
Info on transit schedules and fares	6.73	4.93	**73.25**
Special lanes on hwys for transit vehicles	5.78	4.09	**70.76**
Frequent transit service	6.50	4.38	**67.38**
Courteous on-board personnel	6.70	4.45	**66.42**
Safe & secure waiting areas	6.84	4.13	**60.38**
Info on when to expect transit delays	6.65	3.80	**57.14**

Satisfaction is the highest for “good condition and clean vehicle interiors” and “sidewalks to and from transit stations and stops.” Satisfaction for “sidewalks to and from transit stops and stations” improved from the 2009 survey and “good condition and clean vehicle interiors” stayed relatively the same as 2009, implying that customer satisfaction is nearly attained on this attribute in Delaware.

Expectations for performance are not being met on the attributes of “information on when to expect transit delays” and “safe and secure waiting areas” according to 2012 survey results. “Information on when to expect transit delays” has about the same satisfaction index as the 2009 survey results but “safe and secure waiting areas” has significantly decreased in satisfaction from 2009.

Importance-performance quadrant analysis was conducted to provide further guidance on the interpretation and use of the rating data. The results are contained in the following table.

Figure 2-25 Importance – Performance Quadrant Analysis – Transit Users

Performance Rating on Attribute	Importance Rating of Attribute		
Quadrants	Below Average	Above Average
Above Average	(2) Maintenance: Low Priority **Bus-to-Bus Transfers** **Good Condition, Clean Interiors** **Stops & Stations w/ Good Lighting** **Litter Free Stations & Stops**	(1) Maintenance: High Priority **Sidewalks to/from Stops** **Seat Availability** **Covered Shelters/Stations** **Info on Transit Schedules & Fares**
Below Average	(3) Corrective: Low Priority **Special Lanes on Highways**	(4) Corrective: High Priority **Frequency of Transit Service** **Courteous On-Board Personnel** **Safe & Secure Waiting Areas** **Info on When to Expect Delays**

Items in Quadrant 1 contain attributes that are considered both high in importance and performance. Customer satisfaction is currently being attained on these attributes. Continuing to deliver on these attributes should be a high priority. For 2012, 4 attributes fall in Quadrant 1. These attributes are "sidewalks to and from transit stops and stations," "seat availability," "providing covered shelters and stations where I can wait," and "providing information on transit schedules and fares." Only "information on transit schedules and fares" was a Quadrant 1 attributes in the 2009 survey as well. "Seat availability" and "sidewalks to and from transit stations and stops" were in Quadrant 2 in 2009, suggesting higher importance in 2012, and "covered shelters and stations where I can wait" was a Quadrant 4 attribute, suggesting higher performance.

Items in Quadrant 2 are those that respondents rated as having importance ratings below the overall average but performance ratings are above the overall average. Accordingly, these attributes would be the lowest priority for future investments. "Having bus-to-bus transfers," "Good condition and clean vehicle interiors," "transit stops and stations with good lighting," and "transit stations and stops that are litter free" were placed in Quadrant 2 in this year's survey. In the 2009 survey, "having bus-to-bus transfers" was placed in Quadrant 3, suggesting improved performance in 2012, and the remaining attributes were placed in Quadrant 1, suggesting decreased importance.

The attributes that fall into Quadrant 3 have low performance ratings but are of less importance. One attribute is located in Quadrant 3 in the 2012 survey: "having special lanes on highways for transit vehicles." This attribute was placed in Quadrant 3 in the 2009 survey as well.

Quadrant 4 shows attributes rated, on average, high in importance but low in performance. Items in Quadrant 4 in the 2012 survey are "having frequent transit service," "having courteous on-board personnel," "having safe and secure waiting areas," and "information on when to expect transit delays." "Information on when to expect transit delays" was placed in Quadrant 4 in past surveys as well. The remaining attributes were Quadrant 1 attributes in the 2009 survey, which suggests a decrease in performance from 2009.

2.3.5 Bicyclists

Just like the previous surveys, respondents were also asked if they had used a bicycle for any of the previous week's trips. If a respondent indicated that a bicycle trip was made, the respondent was asked to rate both the importance and performance of twelve different attributes. A low percent of the sample in 2012 made a trip by bicycle during the previous week, 4% (n=35). This percentage is slightly higher than almost all previous surveys and equal to the 2000 survey. Due

to the small sample size, the data from this group cannot be deemed representative of all bicycle users.

2.3.5.1 Attribute Importance

Bicyclists were asked to rate the importance of twelve different attributes on a scale of 1 to 7, with a "1" being "not at all important" and a "7" being "extremely important". The results are outlined in the following table showing the percentage distribution of response for each rating along with the mean importance as computed for each attribute. Attributes are ordered in the table by mean importance value.

Figure 2-26 Importance of Bicycle Attributes

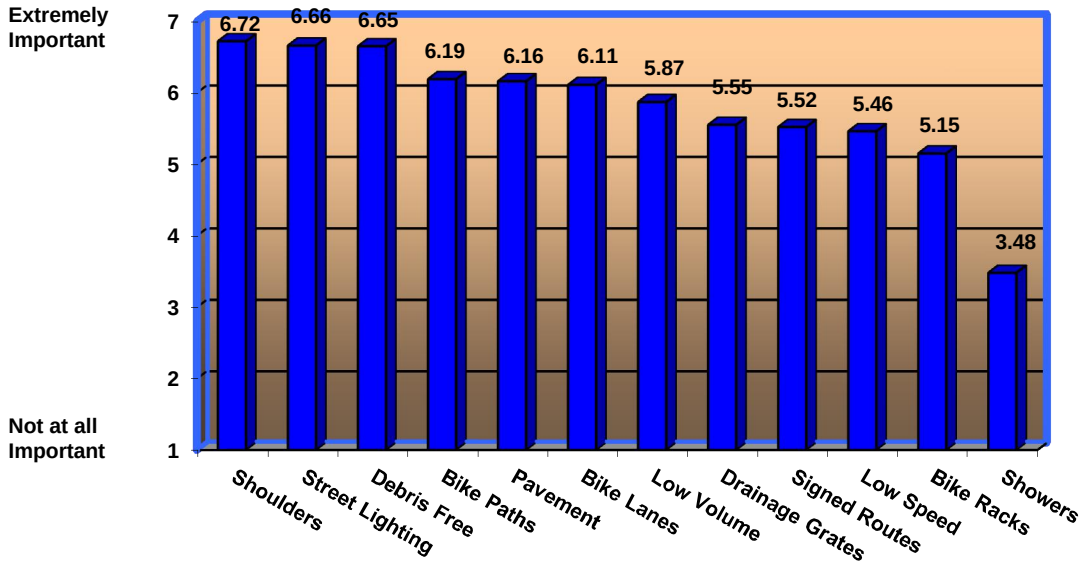
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Wide, paved shoulders	0%	3%	0%	0%	5%	5%	87%	100%	**6.72**
Adequate street lighting	0%	0%	3%	1%	7%	6%	83%	100%	**6.66**
Roadways clear of debris	0%	0%	0%	0%	4%	26%	70%	100%	**6.65**
Separate bicycle paths	0%	0%	0%	23%	0%	12%	65%	100%	**6.19**
Smooth pavement on roadways	0%	0%	4%	0%	30%	8%	58%	100%	**6.16**
Striped bicycle lanes	0%	0%	3%	16%	4%	22%	55%	100%	**6.11**
Low volume motor vehicle traffic	1%	0%	8%	3%	30%	7%	51%	100%	**5.87**
Bicycle friendly drainage grates	0%	16%	0%	4%	24%	13%	43%	100%	**5.55**
Signed bicycle routes	4%	0%	3%	30%	8%	6%	49%	100%	**5.52**
Low speed motor vehicle traffic	1%	3%	1%	10%	39%	21%	25%	100%	**5.46**
Bicycle racks and lockers	16%	1%	5%	11%	5%	23%	39%	100%	**5.15**
Shower facilities	46%	12%	2%	3%	2%	2%	33%	100%	**3.48**

In this year's survey, "wide, paved shoulders" and "adequate street lighting" are the top rated attributes for importance. The highest rated attribute in terms of importance in 2009 was "roadways clear of debris."

Mirroring previous survey results, the least important attribute by far in 2012 was "shower facilities."

The mean importance rating for each attribute is displayed graphically in the figure below.

Figure 2-27 Mean Importance Ratings – Bicycle Users



2.3.5.2 Attribute Performance

Just as other users, bicyclists were asked to rate the performance provided by the current transportation system for each of the twelve attributes. The following table provides the performance ratings associated with each attribute.

Figure 2-28 Performance of Bicycle Attributes

	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Smooth pavement on roadways	2%	0%	10%	6%	24%	34%	24%	100%	**5.47**
Roadways clear of debris	0%	3%	0%	16%	26%	46%	9%	100%	**5.42**
Adequate street lighting	6%	0%	6%	13%	45%	21%	9%	100%	**5.05**
Bicycle friendly drainage grates	22%	0%	11%	12%	20%	24%	11%	100%	**4.92**
Wide, paved shoulders	9%	0%	29%	22%	5%	24%	11%	100%	**4.45**
Low volume motor vehicle traffic	35%	5%	13%	8%	23%	6%	10%	100%	**4.20**
Low speed motor vehicle traffic	5%	30%	8%	6%	38%	4%	9%	100%	**4.08**
Signed bicycle routes	33%	8%	21%	14%	10%	3%	11%	100%	**3.31**
Bicycle racks and lockers	42%	6%	20%	9%	10%	4%	9%	100%	**3.19**
Separate bicycle paths	25%	8%	40%	9%	5%	3%	10%	100%	**3.15**
Striped bicycle lanes	19%	40%	12%	10%	6%	3%	10%	100%	**2.96**
Shower facilities	63%	8%	17%	0%	0%	3%	9%	100%	**2.58**

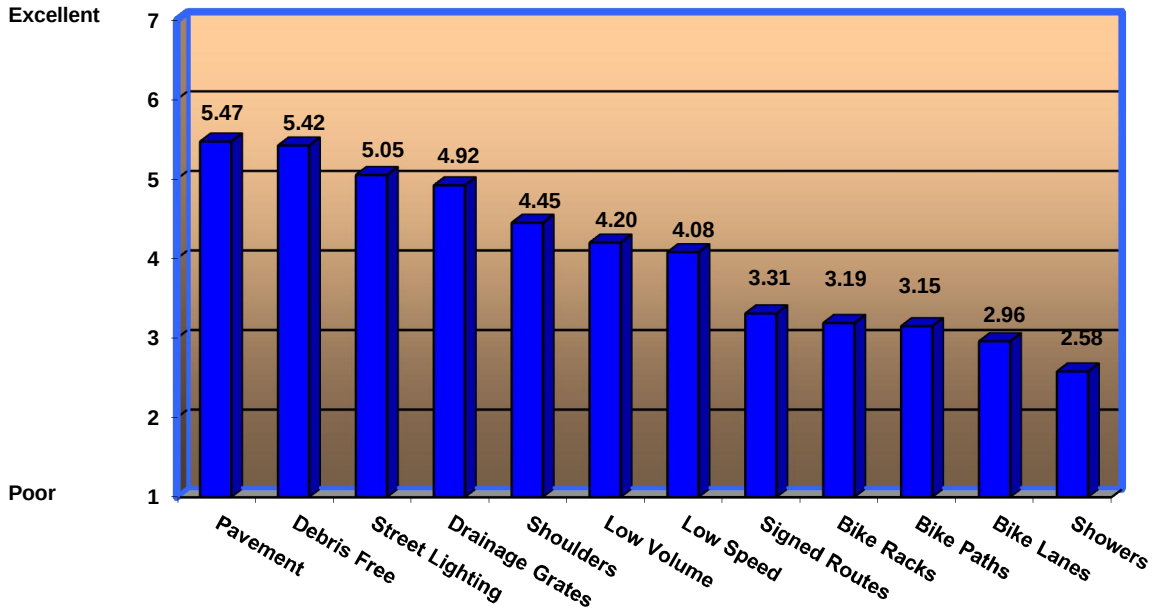
As was found in previous surveys and as can be seen in the above table, the performance ratings for bicycle users are lower than the other modes discussed. This year's survey shows that "smooth pavement on roadways" and "wide, paved shoulders" were the highest rated attributes

for performance, while “shower facilities” and “striped bicycle lanes” were the lowest rated attributes for performance.

“Roadways clear of debris” was the highest performing attribute in the 2009, 2006, 2005, 2004, 2003, 2002 and 2001 surveys and “smooth pavement on roadways” was among the highest as well. “Shower facilities” was found to be a low performance attribute in all prior surveys, too.

The figure below illustrates the mean performance associated with each bicycle attribute.

Figure 2-29 Mean Performance Ratings - Bicycle Users



Clearly, compared to the other modes discussed and as was found in the previous survey years, bicycle users’ expectations for system performance are not being met. As with the other modes, importance-performance analysis was conducted on the data.

The results are discussed in the next section.

2.3.5.3 Importance-Performance Analysis

The table below shows for each of the twelve attributes the mean importance rating, the mean performance rating, and the satisfaction index. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating. This index demonstrates the balance between importance and performance in the minds of the users for that attribute. The higher the value of the index, the higher the level of customer satisfaction found on that attribute.

Figure 2-30 Importance – Performance Ratings and Satisfaction Indices – Bicycle Users

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Smooth pavement on roadways	6.16	5.47	**88.80**
Bicycle friendly drainage grates	5.55	4.92	**88.65**
Roadways clear of debris	6.65	5.42	**81.50**
Adequate street lighting	6.66	5.05	**75.83**
Low speed motor vehicle traffic	5.46	4.08	**74.73**
Shower facilities	3.48	2.58	**74.14**
Low volume motor vehicle traffic	5.87	4.20	**71.55**
Wide, paved shoulders	6.72	4.45	**66.22**
Bicycle racks and lockers	5.15	3.19	**61.94**
Signed bicycle routes	5.52	3.31	**59.96**
Separate bicycle paths	6.19	3.15	**50.89**
Striped bicycle lanes	6.11	2.96	**48.45**

For 2012, the highest satisfaction levels are found for the attributes of “smooth pavement on roadways” and “bicycle friendly drainage gates.” “Low speed motor vehicle traffic” had the highest satisfaction index in the 2009 survey.

To the contrary, “striped bicycle lanes” has the lowest satisfaction index this survey year followed by “separate bicycle paths.” “Bicycle racks and lockers” had the lowest satisfaction index in the 2009 survey. However with such a small sample size these differences cannot be deemed significant and the variability in results year to year is also partially a function of small sample size.

Quadrant analysis was conducted to help prioritize improvements for bicycle users. The results are in the table below.

Figure 2-31 Importance – Performance Quadrant Analysis – Bicycle Users

Performance Rating on Attribute	Importance Rating of Attribute	
Quadrants	Below Average	Above Average
Above Average	(2) Maintenance: Low Priority **Bicycle Friendly Drainage Grates** **Low Speed Traffic**	(1) Maintenance: High Priority **Smooth Pavement** **Roadways Clear of Debris** **Adequate Street Lighting** **Low Volume Traffic** **Wide, Paved Shoulders**
Below Average	(3) Corrective: Low Priority **Shower Facilities** **Racks and Lockers** **Signed Bicycle Routes**	(4) Corrective: High Priority **Separate Bicycle Paths** **Striped Bicycle Lanes**

Five bicycle attributes fall into Quadrant 1 and these attributes should be high in priority for continued expenditures. Quadrant 1 attributes this year include “smooth pavement on roadways,”

"roadways clear of debris," "Adequate street lighting," "low volume motor vehicle traffic," and "wide, paved shoulders." All of these attributes were placed in Quadrant 1 in the 2009 survey as well.

Quadrant 2 attributes have an above average performance rating, but are rated below average in importance. In this year's survey, two attributes are placed in Quadrant 2: "bicycle-friendly drainage grates" and "low speed motor vehicle traffic." "Low speed motor vehicle traffic" was placed in Quadrant 3 in the 2009 survey but "bicycle-friendly drainage grates" was placed in Quadrant 1 in the 2009 survey, suggesting a decrease in importance as perceived by respondents.

Quadrant 3 attributes are targeted for corrective action because of their low performance ratings. However, due to their low importance, these attributes are much lower in priority than those in Quadrant 4. Located in Quadrant 3 are the attributes "shower facilities," "bicycle racks and lockers," and "signed bicycle routes." The first two attributes were Quadrant 3 attributes in the 2009 survey as well, while "signed bicycle routes" was in Quadrant 4 in the 2009 survey.

Quadrant 4 contains two attributes this year and they are "separate bicycle paths" and "striped bicycle lanes." Attributes in Quadrant 4 should be given the highest priority for increased investment in Delaware, as these are attributes with above average importance ratings but below average performance ratings. In the 2009 survey, "striped bicycle lanes" was in this quadrant and "separate bicycle paths" was in Quadrant 3, suggesting an increase in importance.

It should be noted that due to the small sample size, the data from this customer group should be used with caution.

2.3.6 Pedestrians

As in the prior surveys, respondents that indicated that they walked for some of their trips during the previous week were also asked a series of importance and performance questions. This section of the report will discuss the results of the pedestrian rating questions.

Out of the full sample, 21% of the respondents indicated that they walked for some of the trips they made during the previous week (n=205). This percentage is much greater than all previous surveys: 2009 (13%), 2006 (10%), 2005 (10%), 2003 (9%), 2002 (12%), 2001(9%), and 2000 (12%). This trend shows that over time, more Delaware residents walk for their trips.

Similar to previous surveys, differences were noted by residential area type. Twenty-four percent (24%) of city/town residents and 23% of suburban residents stated that they made walking trips compared to 12% of rural residents. Almost the same percentage of white and non-white residents made walking trips (20% and 21%, respectively). Twenty-four (24%) of New Castle County residents made walking trips compared to 17% of Sussex County residents and 13% of Kent County residents. About the same percentage of residents under 50 years old and over 50 years old made walking trips in the previous week (21% and 20%, respectively).

2.3.6.1 Attribute Importance

Walkers were asked to rate the importance of 13 attributes as they relate to walking trips. The results are contained in the table below.

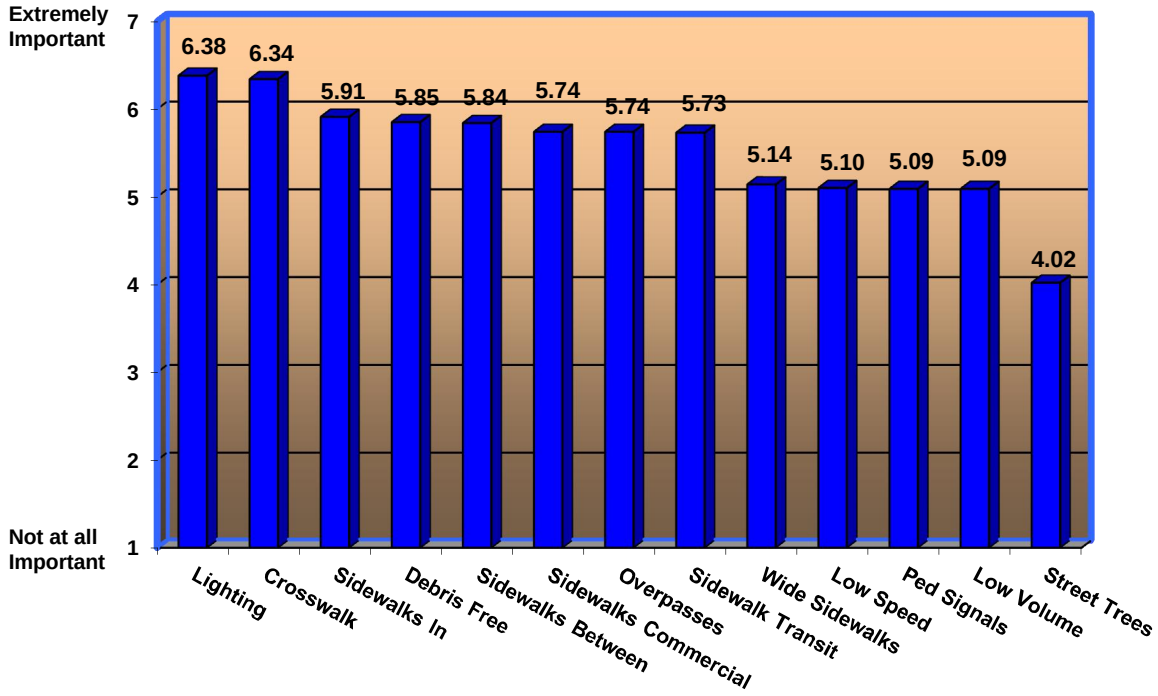
Figure 2-32 Importance of Pedestrian Attributes

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Adequate street lighting	1%	1%	3%	3%	6%	18%	68%	100%	**6.38**
Marked crosswalks at intersections & other locations	2%	2%	1%	1%	7%	23%	64%	100%	**6.34**
Pedestrian signals and push buttons	4%	3%	2%	1%	9%	23%	58%	100%	**6.09**
Sidewalks in my neighborhood	5%	2%	2%	7%	11%	17%	56%	100%	**5.91**
Sidewalks clear of debris	2%	0%	4%	9%	21%	17%	47%	100%	**5.85**
Sidewalks between neighborhoods	5%	3%	1%	5%	16%	21%	49%	100%	**5.84**
Sidewalks to commercial areas	5%	2%	3%	7%	17%	21%	45%	100%	**5.74**
Pedestrian overpasses to cross highways	5%	4%	5%	8%	14%	13%	51%	100%	**5.74**
Sidewalks to & from transit stations & stops	7%	2%	2%	10%	12%	20%	47%	100%	**5.73**
Wide sidewalks	6%	9%	2%	11%	21%	21%	30%	100%	**5.14**
Low speed motor vehicle traffic	6%	4%	8%	13%	24%	17%	28%	100%	**5.10**
Low volume motor vehicle traffic	2%	5%	10%	19%	22%	17%	25%	100%	**5.09**
Street trees	18%	10%	9%	16%	27 %	6%	14%	100%	**4.02**

For 2012, the highest rated attributes in terms of importance were “adequate street lighting” and “marked crosswalks at intersections and other locations.” These attributes were found to be among the top attributes in importance in previous surveys. Again, like all previous survey years, the least important attribute was “street trees.”

Figure 2-33 displays the mean importance rating assigned to each attribute by pedestrians.

Figure 2-33 Mean Importance Ratings - Pedestrians



2.3.6.2 Attribute Performance

The table below presents the results of the performance rating questions.

Figure 2-34 Performance of Pedestrian Attributes

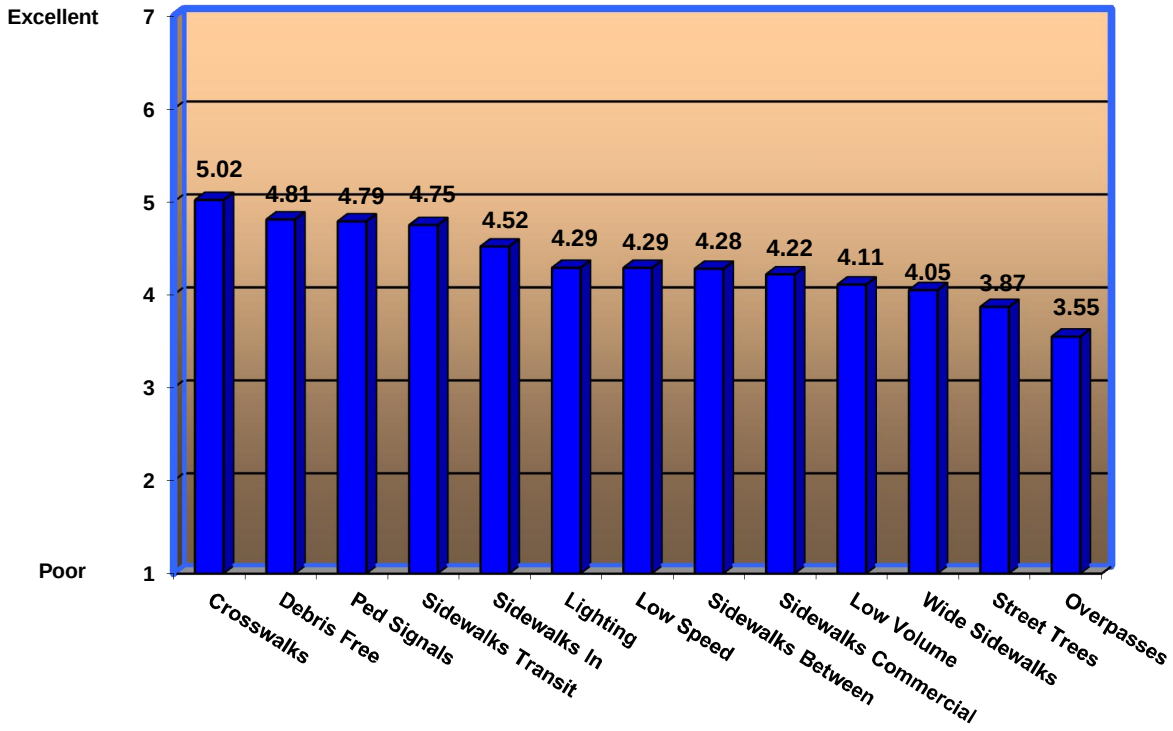
	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Marked crosswalks at intersections & other locations	3%	1%	10%	18%	30%	16%	22%	100%	**5.02**
Sidewalks clear of debris	7%	9%	12%	13%	16%	21%	22%	100%	**4.81**
Pedestrian signals and push buttons	8%	6%	7%	17%	28%	12%	22%	100%	**4.79**
Sidewalks to & from transit stations & stops	10%	5%	13%	11%	33%	9%	19%	100%	**4.75**
Sidewalks in my neighborhood	16%	9%	9%	10%	16%	10%	30%	100%	**4.52**
Low speed motor vehicle traffic	12%	13%	13%	16%	26%	10%	10%	100%	**4.29**
Adequate street lighting	10%	7%	19%	14%	21%	14%	15%	100%	**4.29**
Sidewalks between neighborhoods	16%	14%	8%	17%	13%	9%	23%	100%	**4.28**
Sidewalks to commercial areas	16%	9%	11%	17%	20%	13%	14%	100%	**4.22**
Low volume motor vehicle traffic	13%	13%	16%	21%	21%	6%	10%	100%	**4.11**
Wide sidewalks	12%	15%	19%	11%	24%	6%	13%	100%	**4.05**
Street trees	19%	20%	12%	12%	21%	6%	10%	100%	**3.87**
Pedestrian overpasses to cross highways	29%	11%	14%	19%	15%	1%	11%	100%	**3.55**

Similar to bicyclists, pedestrian performance ratings are low when compared to the motorized travel modes. This was also found in the prior surveys. Marked crosswalks at intersections and other locations," and "sidewalks clear of debris," are top performing attributes in the 2012 survey. These two attributes were among the top attributes for performance in prior surveys as well. It should also be noted that "pedestrian signals and push buttons" rose significantly in performance from the 2009 survey.

On the other end of the scale, "pedestrian overpasses to cross highways" and "street trees" are clearly perceived to be low performing attributes. This was found in previous surveys as well.

The figure below illustrates the mean performance rating for each attribute as rated by pedestrians.

Figure 2-35 Mean Performance Ratings - Pedestrians



2.3.6.3 Importance-Performance Analysis

Similar to the other modes, importance-performance analysis was undertaken on the pedestrian rating data. The table below illustrates the satisfaction index and the importance and performance ratings for the thirteen attributes. To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating for each attribute. This index demonstrates the balance between importance and performance in the minds of the users on an attribute. The higher the value of the index, the higher the level of customer satisfaction found on the attribute.

Figure 2-36 Importance-Performance Ratings and Satisfaction Indices - Pedestrians

Attribute	2012Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Street trees	4.02	3.87	**96.27**
Low speed motor vehicle traffic	5.10	4.29	**84.12**
Sidewalks to & from transit stations & stops	5.73	4.75	**82.90**
Sidewalks clear of debris	5.85	4.81	**82.22**
Low volume motor vehicle traffic	5.09	4.11	**80.75**
Marked crosswalks at intersections & other locations	6.34	5.02	**79.18**
Wide sidewalks	5.14	4.05	**78.79**
Pedestrian signals and push buttons	6.09	4.79	**78.65**
Sidewalks in my neighborhood	5.91	4.52	**76.48**
Sidewalks to commercial areas	5.74	4.22	**73.52**
Sidewalks between neighborhoods	5.84	4.28	**73.29**
Adequate street lighting	6.38	4.29	**67.24**
Pedestrian overpasses to cross highways	5.74	3.55	**61.85**

Customer satisfaction is not being attained on the attributes of “pedestrian overpasses to cross highways” and “adequate street lighting.” “Pedestrian overpasses to cross highways” had the lowest rated satisfaction index in past surveys as well.

Customer satisfaction is more closely being met on the attributes of “street trees” and “low speed motor vehicle traffic.” “Street trees” had the highest rated satisfaction index in past surveys as well.

Quadrant analysis was also performed on the importance-performance data to help prioritize actions or investments. The results of the quadrant analysis are displayed in Figure 2-37.

Figure 2-37 Importance-Performance Quadrant Analysis - Pedestrians

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority	(1) Maintenance: High Priority **Sidewalks to/from Transit Stops** **Sidewalks Clear of Debris** **Marked Crosswalks** **Sidewalks in my Neighborhood** **Pedestrian Signals & Push Buttons**
	Below Average	(3) Corrective: Low Priority **Street Trees** **Low Speed Motor Vehicle Traffic** **Low Volume Motor Vehicle Traffic** **Wide Sidewalks**	(4) Corrective: High Priority **Sidewalks to Commercial Areas** **Sidewalks Between Neighborhoods** **Adequate Street Lighting** **Pedestrian Overpasses**

Items in Quadrant 1 contain attributes that are considered both high in importance and performance. Customer satisfaction is currently being attained on these attributes. Continuing to deliver on these attributes should be a high priority. In this year's survey five out of the thirteen attributes fall into Quadrant 1. These attributes are "sidewalks to and from transit stops and stations," "sidewalks clear of debris," "marked crosswalks," "sidewalks in my neighborhood," and "pedestrian signals and push buttons." In the 2009 survey, "sidewalks to and from transit stops and stations" was in Quadrant 2, "pedestrian signals and push buttons" was in Quadrant 4, and the remaining attributes were in Quadrant 1.

Items in Quadrant 2 are those that respondents rated as having importance ratings below the overall average but performance ratings are above the overall average. Accordingly, these attributes would be the lowest priority for future investments. No attributes were placed in Quadrant 2 in the 2012 survey.

Attributes in Quadrant 3 require corrective action because of their relatively low performance ratings. However, since these attributes are not as important to the walking public, these attributes should be the lowest in priority for any type of corrective action. Attributes in Quadrant 3 include "street trees," "low speed motor vehicle traffic," "low volume motor vehicle traffic," and "wide sidewalks." In the 2009 survey, "low speed motor vehicle traffic" was placed in Quadrant 2, while the rest of the attributes were placed in Quadrant 3, as they had been for multiple surveys past.

Attributes in Quadrant 4 should be given the highest priority for increased investment in Delaware, as these are attributes with above average importance ratings but below average performance ratings. Quadrant 4 contains four attributes this survey year: "sidewalks to commercial areas," "sidewalks between neighborhoods," "adequate street lighting, and "pedestrian overpasses." "Sidewalks to commercial areas" was placed in Quadrant 4 in the 2009 survey as well. "Sidewalks between neighborhoods" was a Quadrant 1, "adequate street lighting" was a Quadrant 1 attribute, and "pedestrian overpasses" was a Quadrant 3 attribute in the 2009 survey.

2.4 Overall Satisfaction Ratings

This section of the report discusses the results of the summary modal satisfaction questions posed to each respondent at the end of each of the modal importance and performance rating questions.

2.4.1 Summary of Modal Satisfaction Question Results

As was done in the previous surveys, following the attribute rating questions, each respondent was asked to verbally rate the overall performance of the current system in meeting their transportation needs for each mode that the respondent had indicated that he/she had used. The respondent was asked to choose a response from "very well", "somewhat well", "not too well", or "not at all" for each question. The results for each mode and for the system as a whole are outlined in the following figure.

Figure 2-38 Results of the Summary Modal Satisfaction Questions (2012 data in Red)

Question	Very Well	Somewhat Well	Not Too Well	Not At All	DK (vol)
And overall, how well does the state's system of roads and hwys meet your needs?	**41%**	**49%**	**7%**	**2%**	**1%**
	35% (2009)	56% (2009)	7% (2009)	2% (2009)	0% (2009)
	28% (2006)	56% (2006)	10% (2006)	4% (2006)	2% (2006)
	32% (2005)	53% (2005)	9% (2005)	4% (2005)	2% (2005)
	28% (2004)	57% (2004)	10% (2004)	3% (2004)	2% (2004)
	36% (2003)	55% (2003)	7% (2003)	2% (2003)	0% (2003)
	31% (2002)	59% (2002)	8% (2002)	1% (2002)	1% (2002)
	31% (2001)	56% (2001)	8% (2001)	2% (2001)	3% (2001)
	27% (2000)	54% (2000)	11% (2000)	4% (2000)	4% (2000)
	26% (1999)	57% (1999)	10% (1999)	4% (1999)	3% (1999)
	27% (1998)	62% (1998)	9% (1998)	1% (1998)	1% (1998)
	33% (1997)	56% (1997)	9% (1997)	1% (1997)	1% (1997)
And overall, how well does the state's transit system meet your needs?	**19%**	**44%**	**22%**	**15%**	**0%**
	24% (2009)	54% (2009)	15% (2009)	2% (2009)	5% (2009)
	26% (2006)	31% (2006)	22% (2006)	4% (2006)	17% (2006)
	57% (2005)	21% (2005)	17% (2005)	3% (2005)	2% (2005)
	27% (2004)	45% (2004)	17% (2004)	4% (2004)	7% (2004)
	32% (2003)	38% (2003)	7% (2003)	10% (2003)	13% (2003)
	29% (2002)	48% (2002)	13% (2002)	6% (2002)	4% (2002)
	40% (2001)	36% (2001)	4% (2001)	8% (2001)	12% (2001)
	38% (2000)	38% (2000)	8% (2000)	9% (2000)	7% (2000)
	40% (1999)	24% (1999)	6% (1999)	16% (1999)	15% (1999)
	15% (1998)	54% (1998)	17% (1998)	6% (1998)	8% (1998)
	33% (1997)	49% (1997)	8% (1997)	2% (1997)	8% (1997)
And overall, how well does the state's transportation system meet your needs for bicycle trips?	**25%**	**56%**	**17%**	**2%**	**0%**
	17% (2009)	54% (2009)	16% (2009)	9% (2009)	3% (2009)
	21% (2006)	41% (2006)	12% (2006)	16% (2006)	10% (2006)
	28% (2005)	32% (2005)	23% (2005)	12% (2005)	5% (2005)
	10% (2004)	36% (2004)	28% (2004)	23% (2004)	3% (2004)
	15% (2003)	51% (2003)	19% (2003)	13% (2003)	2% (2003)
	7% (2002)	62% (2002)	19% (2002)	12% (2002)	0% (2002)
	33% (2001)	21% (2001)	25% (2001)	4% (2001)	17% (2001)
	16% (2000)	48% (2000)	10% (2000)	21% (2000)	5% (2000)
	23% (1999)	21% (1999)	23% (1999)	2% (1999)	32% (1999)
	40% (1998)	12% (1998)	21% (1998)	11% (1998)	16% (1998)
	20% (1997)	27% (1997)	22% (1997)	28% (1997)	3% (1997)
And overall, how well does the state's transportation system meet your needs for walking trips?	**24%**	**53%**	**19%**	**4%**	**0%**
	23% (2009)	46% (2009)	25% (2009)	6% (2009)	0% (2009)
	24% (2006)	49% (2006)	15% (2006)	12% (2006)	0% (2006)
	27% (2005)	46% (2005)	14% (2005)	9% (2005)	4% (2005)
	13% (2004)	50% (2004)	22% (2004)	9% (2004)	6% (2004)
	24% (2003)	53% (2003)	10% (2003)	8% (2003)	5% (2003)
	31% (2002)	45% (2002)	16% (2002)	4% (2002)	4% (2002)
	21% (2001)	48% (2001)	15% (2001)	9% (2001)	7% (2001)
	24% (2000)	40% (2000)	15% (2000)	10% (2000)	11% (2000)
	18% (1999)	55% (1999)	16% (1999)	7% (1999)	4% (1999)

Question	Very Well	Somewhat Well	Not Too Well	Not At All	DK (vol)
	16% (1998) 14% (1997)	44% (1998) 61% (1997)	29% (1998) 13% (1997)	6% (1998) 9% (1997)	5% (1998) 3% (1997)
And as a whole, how well does Delaware's transportation system meet your travel needs?	**31%**	**45%**	**13%**	**9%**	**2%**
	29% (2009)	50% (2009)	10% (2009)	7% (2009)	4% (2009)
	27% (2006)	45% (2006)	13% (2006)	10% (2006)	5% (2006)
	25% (2005)	44% (2005)	11% (2005)	12% (2005)	8% (2005)
	22% (2004)	51% (2004)	13% (2004)	7% (2004)	7% (2004)
	25% (2003)	47% (2003)	8% (2003)	9% (2003)	11% (2003)
	22% (2002)	55% (2002)	10% (2002)	5% (2002)	8% (2002)
	26% (2001)	52% (2001)	9% (2001)	7% (2001)	6% (2001)
	22% (2000)	49% (2000)	12% (2000)	10% (2000)	7% (2000)
	28% (1999)	51% (1999)	9% (1999)	6% (1999)	6% (1999)
	20% (1998)	59% (1998)	11% (1998)	4% (1998)	6% (1998)
	30% (1997)	50% (1997)	11% (1997)	5% (1997)	4% (1997)

As was found in the prior surveys, the respondents in the year 2012 survey gave the highest ratings to the road and highway system, with 90% responding with "very well" or "somewhat well" responses. This rating is slightly higher than, or close to, all past surveys. The share of respondents that rated the transit system as meeting their needs "very well" or "somewhat well" in 2012 was lower than the 2009 survey shares (63% and 78%, respectively). The share of respondents that rated their bicycle trips as meeting their needs "very well" or "somewhat well" in 2012 were higher than past survey shares: seventy-one percent (81%) of the respondents in 2012 as opposed to 71% in 2009 survey and 62% in 2006 stated that their bicycle needs were satisfied "very well" or "somewhat well," showing a great improvement over time. Higher than the 2009 survey results, 77% of the respondents in 2012 stated that their walking needs were satisfied "very well" or "somewhat well" compared to the 69% in the 2009 survey results.

As was done in the previous years, all users were asked to rate Delaware's transportation system as a whole, and the results show that more than three-quarters of customers feel that the system is meeting their travel needs well. Seventy-six percent (76%) stated that the system is either meeting their needs "very well" or "somewhat well" in 2012. This is slightly lower than the 79% of 2009 respondents who answered that the system is meeting their needs.

The results of this series of questions are displayed in the next chart for Delaware for each mode and overall.

Figure 2-39 Results of Transportation System Satisfaction Questions

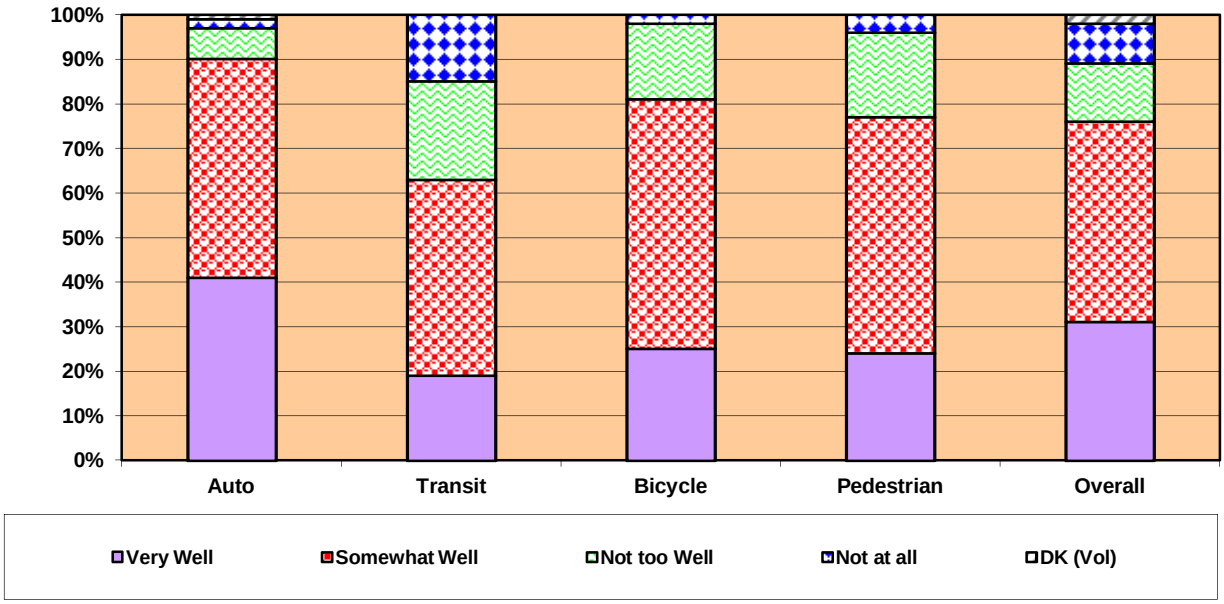


Figure 2-40 displays below, by county, the results for all eleven survey years – 2012, 2009, 2006, 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998 and 1997. The results show higher satisfaction in roads and highways by users of Kent County and Sussex County. Another increase in satisfaction is in transit users in Kent County. Some movement is shown for the other modes; however, this movement cannot be deemed to be reliable due to small sample sizes, especially when the data are broken down on a county basis for these modes.

Figure 2-40 Overall Transportation System Satisfaction by County – (2012 Data in Red)

Mode	New Castle		Kent County		Sussex County	
	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well
Roads & hwys	**89%**	**11%**	**94%**	**6%**	**94%**	**6%**
	91% (2009)	9% (2009)	91% (2009)	10% (2009)	94% (2009)	6% (2009)
	85% (2006)	15% (2006)	91% (2006)	9% (2006)	87% (2006)	13% (2006)
	86% (2005)	14% (2005)	92% (2005)	8% (2005)	87% (2005)	13% (2005)
	95% (2004)	5% (2004)	95% (2004)	5% (2004)	88% (2004)	12% (2004)
	94% (2003)	6% (2003)	90% (2003)	10% (2003)	86% (2003)	14% (2003)
	91% (2002)	9% (2002)	95% (2002)	5% (2002)	89% (2002)	11% (2002)
	89% (2001)	11% (2001)	88% (2001)	12% (2001)	90% (2001)	10% (2001)
	83% (2000)	17% (2000)	89% (2000)	11% (2000)	85% (2000)	15% (2000)
	85% (1999)	15% (1999)	86% (1999)	14% (1999)	89% (1999)	11% (1999)
	89% (1998)	11% (1998)	93% (1998)	7% (1998)	85% (1998)	15% (1998)
	88% (1997)	12% (1997)	95% (1997)	5% (1997)	87% (1997)	13% (1997)
Transit	**70%**	**30%**	**80%**	**20%**	**80%**	**20%**
	77% (2009)	18% (2009)	73% (2009)	20% (2009)	100% (2009)	0% (2009)
	68% (2006)	32% (2006)	75% (2006)	25% (2006)	69% (2006)	31% (2006)
	80% (2005)	20% (2005)	79% (2005)	21% (2005)	80% (2005)	20% (2005)
	80% (2004)	20% (2004)	82% (2004)	18% (2004)	43% (2004)	57% (2004)
	80% (2003)	12% (2003)	77% (2003)	23% (2003)	50% (2003)	50% (2003)
	80% (2002)	20% (2002)	88% (2002)	12% (2002)	67% (2002)	33% (2002)
	89% (2001)	11% (2001)	73% (2001)	27% (2001)	65% (2001)	35% (2001)
	85% (2000)	15% (2000)	77% (2000)	23% (2000)	50% (2000)	50% (2000)
	70% (1999)	30% (1999)	100%(1999)	0% (1999)	71% (1999)	29% (1999)
	78% (1998)	21% (1998)	83% (1998)	16% (1998)	46% (1998)	54% (1998)
	93% (1997)	7% (1997)	75% (1997)	5% (1997)	67% (1997)	33% (1997)
Bicycle	**86%**	**14%**	**50%**	**50%**	**63%**	**37%**
	88% (2009)	13% (2009)	73% (2009)	17% (2009)	47% (2009)	54% (2009)
	100% (2006)	0% (2006)	70% (2006)	30% (2006)	40% (2006)	60% (2006)
	63% (2005)	37% (2005)	40% (2005)	60% (2005)	78% (2005)	22% (2005)
	40% (2004)	60% (2004)	67% (2004)	33% (2004)	52% (2004)	48% (2004)
	67% (2003)	33% (2003)	82% (2003)	18% (2003)	50% (2003)	50% (2003)
	75% (2002)	25% (2002)	50% (2002)	50% (2002)	25% (2002)	75% (2002)
	75% (2001)	25% (2001)	60% (2001)	40% (2001)	50% (2001)	50% (2001)
	69% (2000)	31% (2000)	67% (2000)	33% (2000)	67% (2000)	33% (2000)
	50% (1999)	50% (1999)	80% (1999)	20% (1999)	73% (1999)	27% (1999)
	66% (1998)	33% (1998)	50% (1998)	50% (1998)	58% (1998)	42% (1998)
	43% (1997)	57% (1997)	44% (1997)	56% (1997)	63% (1997)	37% (1997)
Pedestrian	**81%**	**19%**	**62%**	**38%**	**59%**	**41%**
	71% (2009)	29% (2009)	69% (2009)	32% (2009)	60% (2009)	40% (2009)
	78% (2006)	22% (2006)	67% (2006)	33% (2006)	55% (2006)	45% (2006)
	80% (2005)	20% (2005)	61% (2005)	39% (2005)	73% (2005)	27% (2005)
	67% (2004)	33% (2004)	78% (2004)	22% (2004)	59% (2004)	41% (2004)
	80% (2003)	20% (2003)	91% (2003)	9% (2003)	72% (2003)	28% (2003)
	80% (2002)	20% (2002)	80% (2002)	20% (2002)	72% (2002)	28% (2002)
	78% (2001)	22% (2001)	77% (2001)	23% (2001)	45% (2001)	55% (2001)
	78% (2000)	22% (2000)	61% (2000)	39% (2000)	63% (2000)	38% (2000)
	77% (1999)	23% (1999)	76% (1999)	24% (1999)	77% (1999)	23% (1999)
	62% (1998)	38% (1998)	63% (1998)	37% (1998)	66% (1998)	34% (1998)
	82% (1997)	18% (1997)	56% (1997)	44% (1997)	52% (1997)	48% (1997)

Mode	New Castle		Kent County		Sussex County	
	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well
Overall System	**78%**	**22%**	**81%**	**19%**	**80%**	**20%**
	83% (2009)	16% (2009)	85% (2009)	16% (2009)	79% (2009)	21% (2009)
	76% (2006)	24% (2006)	81% (2006)	19% (2006)	76% (2006)	24% (2006)
	76% (2005)	24% (2005)	74% (2005)	26% (2005)	74% (2005)	26% (2005)
	80% (2004)	20% (2004)	79% (2004)	21% (2004)	74% (2004)	26% (2004)
	81% (2003)	19% (2003)	80% (2003)	20% (2003)	75% (2003)	25% (2003)
	84% (2002)	16% (2002)	82% (2002)	18% (2002)	80% (2002)	20% (2002)
	83% (2001)	17% (2001)	81% (2001)	19% (2001)	82% (2001)	18% (2001)
	77% (2000)	23% (2000)	79% (2000)	21% (2000)	73% (2000)	27% (2000)
	86% (1999)	14% (1999)	80% (1999)	20% (1999)	83% (1999)	17% (1999)
	84% (1998)	16% (1998)	83% (1998)	17% (1998)	79% (1998)	21% (1998)
	84% (1997)	16% (1997)	84% (1997)	16% (1997)	80% (1997)	20% (1997)

2.4.2 Perceptions of Mobility

As a follow-up, respondents were asked to assess whether or not they believed they had many different travel modes to choose from or alternatively, if they thought they had few options to choose from. As was done in the previous survey years, in the 2012 survey, the following question was posed to all respondents:

> "And would you say that you have many different travel modes to choose from such as transit, biking and walking to meet your travel needs or would you say you have very few options to choose from?"

If respondents indicated they had few options, they were asked, in an open-ended question, what modes they would like access to.

This year 42% of respondents said they have many options to choose from, while 56% stated that they have few options and 2% could not say. The share of respondents stating that they had many options in 2012 is the same as the 2009 survey results but more respondents in 2009 stated that they had very few options than in 2006 (56% and 51%, respectively). Like the previous surveys, differences were noted by county in 2012, as 81% of Kent County residents and 80% of Sussex County residents stated that they had many options to choose from, compared to 78% of New Castle County residents. Differences were noted by residential area type as well. Forty-eight percent (48%) of suburban and 46% of city/town residents stated that they that they had many options to choose from, compared to 29% of rural residents.

When those that responded they had few options to choose from were asked what modes they would like to have access to, the majority indicated that they would like access to transit, 31% for buses and 20% for trains. Four percent (4%) indicated improved access to public transportation without specifying the type. Ten percent (10%) indicated improved access to bicycle paths or bicycle facilities (higher than the 4% in the 2009 survey), 3% would like access to pedestrian facilities, 6% indicated improved personal auto needs, and 26% could not specify or had other comment.

2.5 Community Concerns

In the 2009 survey, a question was added asking the respondents how well the Delaware Department of Transportation takes community concerns into consideration when planning and constructing transportation projects. The results are provided below in Figure 2-41.

Figure 2- 41 Community Concerns Considered in Transportation Projects - (2012 Data in Red)

Question	Excellent	Good	Only Fair	Poor	DK (vol)
How well does the Delaware Department of Transportation take community concerns into consideration when developing and constructing transportation projects?	**9%** 7% (2009)	**40%** 41% (2009)	**35%** 28% (2009)	**11%** 10% (2009)	**5%** 14% (2009)

Almost half of the respondents (49%) described the Delaware Department of Transportation's consideration of community concerns as either "excellent" or "good", which is close to the 2009 survey response (48%). Almost half, 46%, rated DelDOT as "only fair" or "poor" in considering community concerns and the remaining could not provide a response. In the 2012 survey, 61% of Kent County residents described DelDOT's consideration of community concerns as "excellent" or "good," compared to 53% of Sussex County and 52% of New Castle County residents.

2.6 Ability to Walk in Neighborhoods

In the 2009 survey, a question was added asking how easy it is for the respondent to walk in the community where he or she lives. The results are shown below in Figure 42.

Figure 2- 42 Ease of Walking Around the Community You Live in - (2012 Data in Bold)

Question	Very Easy	Somewhat Easy	Not Very Easy	DK (vol)
And how easy would you say it is to walk around the community that you live in – would you say it is very easy, somewhat easy or not very easy at all?	**55%** 61% (2009)	**28%** 24% (2009)	**16%** 15% (2009)	**1%** 1% (2009)

About half the respondents, 55%, indicated that it is "very easy" to walk in the community they live and nearly one-quarter (28%) stated it was "somewhat easy" with the remainder indicating "not very easy" or could not provide a response. This is a decrease from the 61% of respondents in 2009 that stated it was "very easy" to walk in the community they live.

The results for this question were relatively similar across the three counties. The highest results were found from Sussex County residents where 58% of respondents said "very easy" followed closely by New Castle County at 56% and Kent County at 55%.

2.7 Improvement Action Ratings

As was done in the prior ten surveys, fifteen improvement actions, representing a sub-set of priority actions suggested in the long range plans of the Department or the Metropolitan Planning Organizations (MPOs) in the state, were evaluated by respondents in terms of their perceived effectiveness to improve the transportation system in the state. This section of the report provides the results of this series of questions posed to all respondents in the General Transportation User survey.

2.7.1 Perceived Effectiveness

Fifteen different actions were presented to respondents in the survey. For each action, respondents were asked to identify how effective it would be in improving the transportation

system with response categories ranging from “very effective”, “somewhat effective”, “not very effective”, or “not at all effective”. The table below depicts the response.

Figure 2-43 Action Evaluation – How Effective Would <the Action> Be In Improving the Transportation System?

	How Effective?				
Action	Very	Some	Not too	Not at all	DK
Coordinating and better timing traffic signals	**63%**	30%	4%	2%	1%
Creating service patrols to quickly respond to accidents, stalled vehicles, etc.	**59%**	31%	6%	3%	1%
Designing communities that make it easier for people to walk and bike to stores, schools, and other public facilities and to other neighborhoods	**57%**	29%	8%	5%	1%
Improving and expanding bus services	**54%**	31%	9%	4%	2%
Implementing new technologies to make highways more efficient	**50%**	35%	8%	5%	2%
Constructing more sidewalks	**48%**	32%	12%	7%	1%
Providing new information systems to make it easier to take transit	**46%**	40%	8%	5%	1%
Widening existing highways	**46%**	34%	13%	6%	1%
Expanding passenger railroad services	**46%**	32%	11%	9%	2%
Expanding bicycle networks (bike trails, lanes, routes)	**36%**	40%	17%	7%	0%
Building more connecting roads between neighborhoods and commercial areas	**35%**	35%	19%	10%	1%
Developing more park-and-rides	**34%**	42%	14%	8%	2%
Providing special lanes on highways for carpools and buses	**34%**	37%	19%	9%	1%
Providing new information systems to make it easier to carpool	**31%**	45%	14%	8%	2%
Building more highways	**28%**	34%	25%	12%	1%

The above table orders the fifteen actions asked about from highest percentage to lowest percentage for the response of “very effective”. As can be seen in the table, the top four actions perceived by Delaware residents to be the most effective actions to improve the transportation system are:

- Coordinating and better timing traffic signals;
- Creating service patrols to quickly respond to accidents, stalled vehicles, etc.;
- Designing communities that make it easier for people to walk and bike to stores, schools and other public facilities and to other neighborhoods; and
- Improving and expanding bus services.

The results from this year's survey are consistent with past results as the four actions above were also found to be among the top actions in all prior surveys.

Three among the top four actions relate to better and improved management of the existing highway system to maximize capacity and operations (traffic signal coordination, emergency service patrols and Intelligent Transportation Systems). The public seems to be more supportive

of efforts to better manage existing highway transportation infrastructure in the state as opposed to building new infrastructure.

The application of coordinated signal timing, emergency service patrols, and Intelligent Transportation Systems are all related to strategies outlined in either Delaware's Statewide Long Range Transportation Plan or the transportation plans of the MPOs in the state, including Sussex County's Transportation Plan to support the improved management of the existing transportation system. The results from this year's survey and the prior ten surveys clearly show that state residents feel these actions will be effective enhancements to optimize the performance and efficiency of the existing transportation system.

Also important is the effectiveness rating given to improved community design. The transportation plans for Delaware argue that many of the state's transportation problems can be traced to poor coordination between land use and transportation planning. As such, suggested actions are presented in the transportation plans to better link transportation and land use, such as "community transportation design," which calls for improvements in both community design and transportation facility design to better support travel by alternative modes. The 2012 survey results show that 57% of the public in Delaware stated that designing communities to make it easier to walk and bike would be "very" effective and another 29% stated that it would be "somewhat" effective. The public clearly supports statewide efforts to link transportation and land use, and to improve the design of communities to better support other travel modes.

The most highly rated transit action was "Improving and expanding bus service." Fifty-four percent (54%) of respondents to the survey thought this action would be "very" effective. This action was among the highest rated in past surveys as well.

Actions perceived to be less effective by Delaware residents include:

- Building more highways; and,
- Providing new information systems that make it easier to carpool.

Building more highways was perceived to be less effective by respondents in prior surveys as well.

2.8 Demographics

This section of the report provides the responses to the demographic questions contained in the survey. The demographic questions included: residential tenure, motor vehicle availability per household, respondent age, number of persons in household over age 16, residential area type, ethnicity, household income and respondent gender. All tables show response by county, and for the state as a whole.

2.8.1 Residential Tenure

As an opening question, respondents were asked how long they had lived in Delaware.

Figure 2-44 Residential Tenure

Response	Statewide	Kent County	New Castle County	Sussex County
Less than a year	3%	1%	3%	3%
1 to 2 years	4%	3%	4%	5%
3-5 years	8%	9%	5%	10%
6-10 years	14%	14%	12%	15%
11-20 years	17%	16%	15%	16%
21-30 years	10%	10%	12%	9%
More than 30 years	13%	18%	20%	13%
All my life	31%	29%	29%	29%
Dk (vol)	0%	0%	0%	0%

2.8.2 Motor Vehicle Availability

Respondents were asked to indicate the number of motor vehicles available to the household. The table below outlines the response.

Figure 2-45 Motor Vehicle Availability

Number of Vehicles	Statewide	Kent County	New Castle County	Sussex County
None	2%	4%	3%	2%
One	29%	30%	31%	29%
Two	40%	39%	45%	42%
Three	18%	16%	13%	18%
Four or more	11%	11%	8%	9%
Dk (vol)	0%	0%	0%	0%

2.8.3 Respondent Age

At the end of the survey, the more sensitive demographic questions were asked. Respondents were asked to indicate an age category. The table below shows the results.

Figure 2-46 Respondent Age

Age Category	Statewide	Kent County	New Castle County	Sussex County
16-29 years	24%	10%	14%	7%
30-49 years	34%	27%	31%	20%
50-64 years	24%	32%	28%	28%
65 or over	18%	31%	27%	45%
REF (vol)	0%	0%	0%	0%

2.8.4 Residential Area Type

Respondents were asked if they lived in a city/town, a suburban area or a rural area. The response is in the following table.

Figure 2-47 Residential Area Type

Area Type	Statewide	Kent County	New Castle County	Sussex County
City/town	28%	30%	23%	25%
Suburban	48%	31%	67%	25%
Rural	23%	39%	10%	50%
DK (vol)	1%	0%	0%	0%

2.8.5 Ethnicity

The survey also included a question on ethnicity. The following depicts the response to this question.

Figure 2-48 Ethnicity

Ethnic group	Statewide	Kent County	New Castle County	Sussex County
White, Caucasian	66%	76%	76%	89%
Black, African American	21%	15%	13%	7%
Latino, Hispanic, Mexican American	3%	2%	2%	2%
Asian, Pacific Islander	3%	1%	4%	0%
Native American, American Indian	2%	1%	1%	0%
Other	3%	5%	4%	2%
REF/DK (vol)	2%	0%	0%	0%

2.8.6 Number of Persons in Household 16 years or Older

The survey also asked for the number of persons in the household that were 16 years of age or older. The response is depicted below.

Figure 2-49 Number of Persons Aged 16 or Older

Number of persons	Statewide	Kent County	New Castle County	Sussex County
One	24%	29%	27%	28%
Two	46%	47%	49%	57%
Three	15%	16%	11%	9%
Four	10%	8%	9%	5%
Five	3%	0%	3%	1%
Six or more	2%	0%	1%	0%
DK/not sure (vol)	0%	0%	0%	0%

2.8.7 Household Income

The survey then asked respondents to indicate a category that contained their household income. The following table provides the data.

Figure 2-50 Household Income

Income Category	Statewide	Kent County	New Castle County	Sussex County
Less than $15,000	7%	9%	5%	8%
$15 - $24,999	7%	12%	7%	13%
$25 – $34,999	7%	13%	8%	13%
$35 - $49,999	13%	12%	15%	15%
$50 - $74,999	20%	25%	22%	22%
$75 - $99,999	14%	14%	17%	15%
$100 - $149,999	15%	11%	15%	9%
$150,000 & over	10%	4%	11%	5%
REF/DK (vol)	7%	0%	0%	0%

2.8.8 Respondent Gender

Along with the above demographic data, respondent gender was also obtained. The data are below.

Figure 2-51 Respondent Gender

Gender	Statewide	Kent County	New Castle County	Sussex County
Male	48%	46%	56%	45%
Female	52%	54%	44%	55%

Chapter 3

TRANSIT-SERVED MARKET AREA SURVEY

3.1 Survey Objectives

Similar to the General Transportation User Survey, the main objective of this survey was to provide DelDOT with data to assess the level of customer satisfaction with the current transportation system. However, instead of a random statewide survey of households, the 2012 Transit-Served Market Area Survey, like the previous surveys, collected data on customer satisfaction and transit service awareness from Delawareans residing in geographic markets served by transit. This survey was first conducted in 1997 and has been repeated on a nearly annual basis since then.

Information from this survey can be compared to previous surveys, and allows the Department to monitor customer satisfaction over time. Information from this survey, as well as the previous surveys, serves as a set of inputs into the Department's progress monitoring program to assess performance against the goals and objectives of the Statewide Long-Range Transportation Plan. Importantly, the transit service awareness data can help in the development of transit service marketing programs.

As in the previous survey years, the specific information objectives for this year's survey were:

- For users of each transportation mode, to ascertain the level of importance of various attributes.
- For users of each transportation mode, to ascertain the level of performance perceived for each of the attributes.
- For users of each transportation mode, to identify the level of satisfaction attained for each modal attribute and for the mode overall.
- To identify Delawareans' awareness of and familiarity with transit services.
- To identify Delawareans' use and satisfaction regarding different transit service communication methods.

In addition to the above beginning in 2001 questions were added to the survey to explore potential barriers to transit use: why those residing in transit-served areas of the state do not use transit.

3.2 Summary of Research Methodology

AECOM developed the questionnaire for the Transit Served Market Area survey in consultation with DelDOT's Division of Planning in 1997. Customer Satisfaction Surveys have been completed on nearly an annual basis since 1997. As was done for the previous surveys, the same questionnaire was used with modifications for this year's survey to accommodate interviewing by land line telephone as well as cell phone and Internet interviewing. A separately bound Technical Appendix has been prepared and contains frequency and cross-tabulated tables showing the distribution of response for each question.

Like the previous surveys, a market research firm administered the interviews. For this 2012 survey, Abt SRBI conducted the interviews. An SPSS (a statistical software package) computer file was developed to process the survey information by AECOM. The SPSS system enabled AECOM research staff to integrate the survey data so it could be presented in aggregate form. Unlike past surveys for this 2012 survey online (Internet) interviews were conducted in addition to land line telephone interviews to yield more representative results.

As was done in the previous survey years, the 2012 survey involved interviews with a disproportionate random probability sample of Delaware residents aged 16 years and older, residing within transit-served areas of Delaware. The transit-served interviews were conducted

beginning March 4, 2013 and concluding March 13, 2013. Of the 88 completed interviews, 23 were completed by Kent County residents, 23 were completed by residents of New Castle County and 42 were completed by Sussex County residents.

Cell phone interviewing was restricted to those households who had cell phones but no land line telephone. Telephone respondents in the land line sample were recruited using random digit dialing (RDD), from blocks of numbers known to consist of land lines. Cell phone only respondents were recruited using cell phone series blocks. These telephone numbers were dialed by hand and interviewers verified that respondents were in a safe position to talk (e.g., not driving at the time), were 16 years or older, resided in Delaware, and in what county. The geographic assignment for the cell sample is problematic, since addresses are based on the billing center associated with the account instead of the residence of the account holder. Respondent mobility is an additional issue. In order to properly control for this, respondents were asked to confirm that they lived in Delaware as well as which county. I nternet respondents were recruited through an online panel. The sample source for the Internet panel was Research Now. Research Now emailed survey invitations to their panelists in each of Delaware's three counties. Respondents confirmed their residence in Delaware and their specific county.

All telephone interviewing, both cell phone and land line, was conducted using the same Internet screens which the Internet respondents saw. All interviewing was done in English. The sample size for the 2012 survey was similar to previous years with a total of 88 interviews completed.

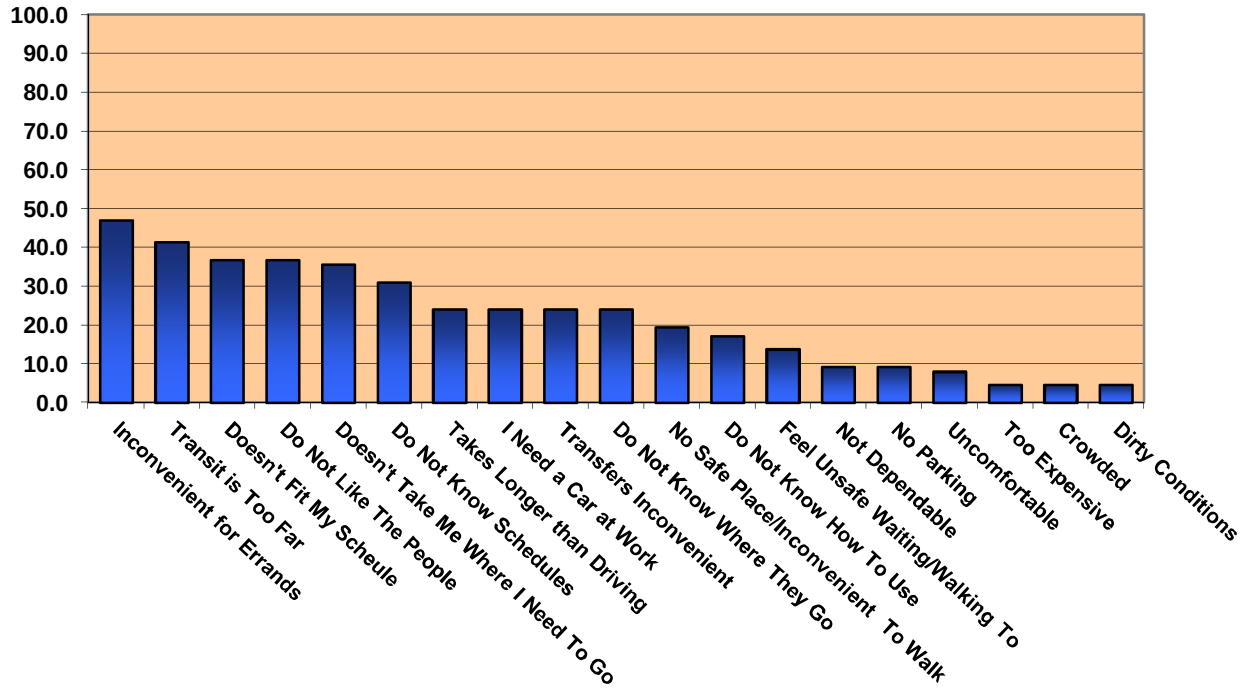
Transit-served areas in Delaware were identified by using geo-location indicating the latitude and longitude of DelDOT bus routes and include households residing within one-quarter mile radius of a transit route. The final sample was then drawn randomly from the transit-served subset of this database, screening out individuals that had used transit (either bus or rail) in the previous month.

When statewide data are reported, the data are weighted to adjust the sample to proportionately reflect the numbers of households by county that are "transit-served". Statewide, the margin of error for a sample of 88 is approximately $\pm$ 10% at the 95% confidence level.

3.3 Reasons for Not Using Public Transit on a Frequent Basis

In 2001, twenty questions were added to the Transit-Served Market Area Survey questionnaire. These questions pertain to the reasons why respondents do not use public transit (bus or rail) services more frequently. For each question, the respondent was asked to give a response of yes or no, depending on whether the statement was a reason why he or she did not take public transit more frequently. This section details the responses to these questions for 2012.

Figure 3-1 Reasons for Not Using Public Transit on a Frequent Basis



As can be seen in Figure 3-1, the primary reason why respondents in the transit-served areas of Delaware do not use transit is because "transit is inconvenient or hard to use if you need to run errands during your trip." Out of the 88 respondents, almost half (47%) indicated this as a reason why they do not use transit more frequently. The second most frequent reason respondents indicated that they do not use transit is that "the bus or train is too far from my home, too far from my job, or where I shop" (41%).

The less frequent reasons for not taking public transit include:
- Public transit is dirty (5%),
- Public transit is crowded and I can't get a seat (5%), and.
- Public transit is too expensive (5%).

These findings are similar to prior survey results.

3.4 Relative Importance & Performance of Modal Attributes

This section provides an in-depth examination of the importance and performance of various attributes by mode. As was done in the previous survey years, respondents were asked to rate the importance of each attribute on a 7-point scale (a rating of "1" meant "not at all important," while a rating of "7" meant "extremely important") and the current performance of the attribute on a 7-point scale (a rating of "1" meant "poor," while a "7" meant "excellent"). Percentage distributions are presented first and then the average scores are presented for each attribute, and are ordered from most important to least important, or highest performance to lowest. Of note, respondents were only asked to rate the attributes for each mode they used in the previous week.

Importantly, transit service ratings are not reported in this chapter, as transit users were screened from this survey effort. As was done in previous survey years, DelDOT was interested in obtaining information from *potential* transit users. Transit rider information can be found in in Chapter 2 from the results of the General Transportation User survey. For readers interested in

detailed information on transit riders in Delaware, the Delaware Transit Corporation (DTC) conducts passenger surveys and DTC should be contacted for survey reports.

3.4.1 Drive-Alone or Single-Occupant-Vehicle (SOV) Users

The 2012 survey showed that 86% of the sample made drive-alone trips, which is higher than prior survey years. Seventy-four percent (74%) of respondents in the 2009 survey and 44% of respondents in the 2006 survey reported to have made drive-alone trips. White respondents were equally as likely to indicate that they drove-alone (86%) as non-white respondents (85%). Male respondents were slightly more likely to indicate that they drove-alone (92%) as compared to female respondents (82%). New Castle County residents (95%) were more likely than other counties to indicate that they drove alone compared to the 86% and 78% of Sussex County and Kent County residents, respectively.

3.4.1.1 Attribute Importance

Those respondents that reported driving alone for some of their trips during the previous week were asked to rate the importance of twelve attributes on a 1 to 7-point scale. The results are displayed in the table below.

Figure 3-2 Importance of Highway Attributes

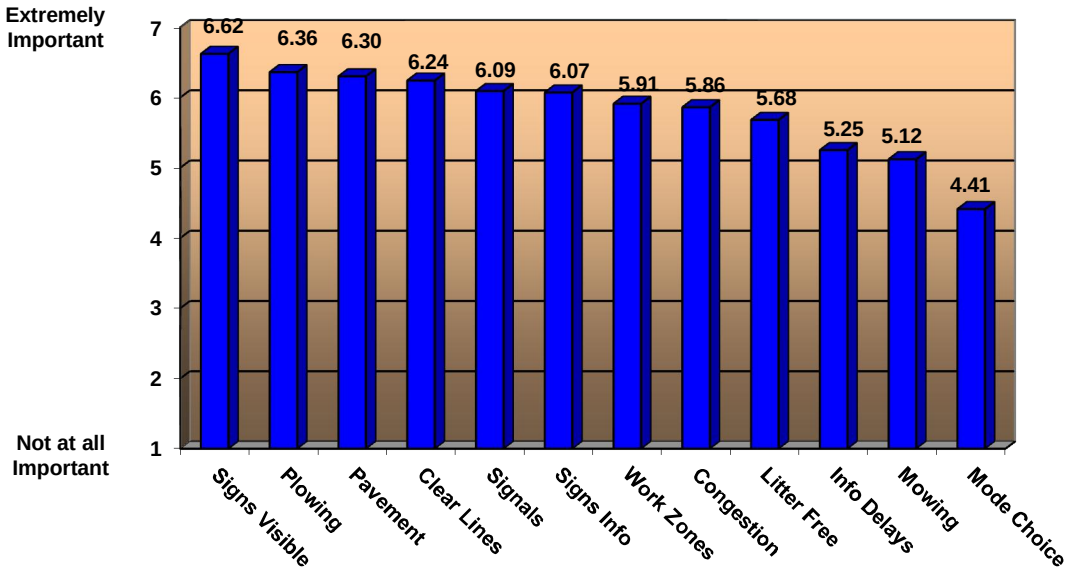
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Hwy signs visible day and night	0%	0%	1%	3%	8%	13%	75%	100%	**6.62**
Timely snow plowing and salting	3%	1%	1%	4%	5%	15%	71%	100%	**6.36**
Condition of pavement on hwys	0%	3%	5%	0%	3%	32%	57%	100%	**6.30**
Clear lane lines on the hwy	0%	1%	5%	5%	9%	15%	65%	100%	**6.24**
Well-planned sequencing & timing of traffic lights	1%	4%	3%	6%	13%	18%	55%	100%	**6.09**
Hwy signs that provide direction, mileage	1%	3%	0%	7%	15%	27%	47%	100%	**6.07**
Clearly marked and protected work zones	1%	1%	7%	9%	12%	19%	51%	100%	**5.91**
Hwys free of congestion	1%	1%	3%	12%	10%	33%	40%	100%	**5.86**
Keeping land adjacent to hwys litter free	1%	1%	8%	11%	17%	21%	41%	100%	**5.68**
Info on when to expect delays, road closings	11%	5%	2%	8%	12%	28%	34%	100%	**5.25**
Keeping land adjacent to hwys landscaped, mowed	1%	9%	5%	16%	26%	17%	26%	100%	**5.12**
Having many travel mode choices	18%	6%	12%	18%	18%	10%	18%	100%	**4.41**

The survey findings indicate the most important attributes for SOV users are “highway signs visible both day and night,” “timely snow plowing and salting,” and “condition of pavement on highways.” ““Condition of pavement on highways” was given high importance in the 2009 survey as well.

The least important attributes are “having many travel mode choices” and “keeping land adjacent to highways landscaped and mowed.” “Having many travel mode choices” was among the lowest-rated attributes in past surveys as well.

The figure below illustrates the mean importance rating of each of the above twelve attributes.

Figure 3-3 Mean Importance Ratings – SOV Users



3.4.1.2 Attribute Performance

In addition to asking respondents how important each attribute was to them, this year's survey, like the previous efforts, also asked respondents how well the current transportation system was performing on each attribute. Again, a seven-point scale was used, with a "1" meaning "poor" and a "7" meaning "excellent". The results are displayed in the following table.

Figure 3-4 Performance of Highway Attributes

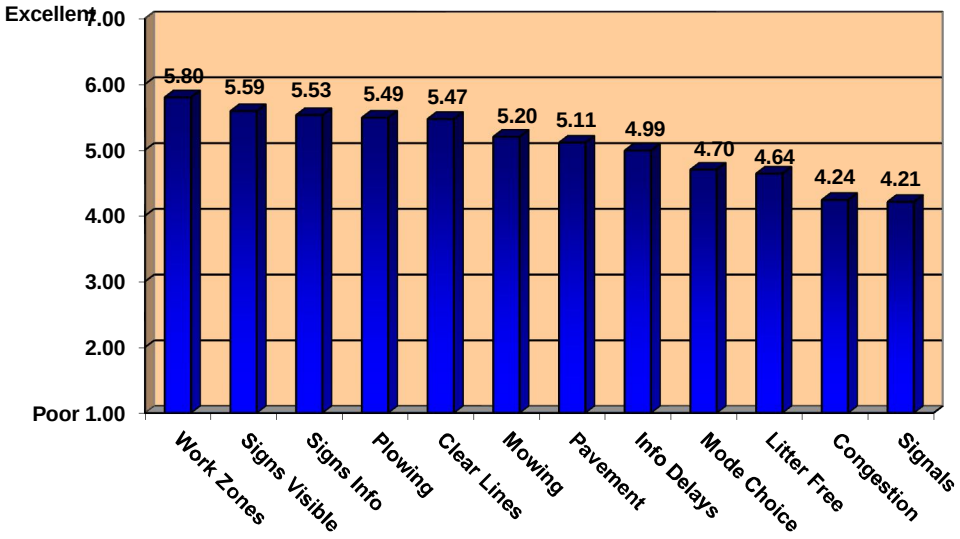
	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Clearly marked and protected work zones	0%	0%	0%	15%	20%	39%	26%	100%	**5.80**
Hwy signs visible day and night	1%	1%	1%	9%	33%	33%	22%	100%	**5.59**
Hwy signs that provide direction, mileage	0%	7%	4%	17%	17%	35%	20%	100%	**5.53**
Timely snow plowing & salting	1%	3%	4%	11%	25%	39%	17%	100%	**5.49**
Clear lane lines on hwys	0%	3%	3%	17%	21%	38%	18%	100%	**5.47**
Keeping land adjacent to hwys landscaped, mowed	1%	3%	5%	19%	29%	31%	12%	100%	**5.20**
Condition of pavement on hwys	3%	5%	8%	12%	24%	35%	13%	100%	**5.11**
Info on when to expect delays, road closings	1%	7%	7%	26%	21%	25%	13%	100%	**4.99**
Having many travel mode choices	13%	13%	7%	17%	20%	28%	2%	100%	**4.70**
Keeping land adjacent to hwys litter free	5%	9%	12%	12%	26%	27%	9%	100%	**4.64**
Hwys free of congestion	5%	12%	12%	26%	22%	20%	3%	100%	**4.24**
Well-planned sequencing and timing of traffic lights	7%	12%	16%	21%	17%	22%	5%	100%	**4.21**

Similar to the previous surveys, performance ratings are lower than importance ratings. The attributes with the highest average performance ratings are "clearly marked and protected work zones," "highway signs visible both day and night," and "highway signs that provide direction and mileage." "Highway signs that provide direction and mileage" was a top performer in the 2009, 2006, and 2005 surveys as well.

The lowest performing attribute for 2012 is "well-planned sequencing and timing of traffic lights." Other low performers include "highways free from congestion" and "keeping land adjacent to highways litter free." In 2004, 2005, 2006, and 2009 surveys as well, these attributes were among the lowest rated in terms of performance.

The following figure displays the mean performance ratings.

Figure 3-5 Mean Performance Ratings – SOV Users



3.4.1.3 Importance-Performance Analysis

By comparing an attribute across both dimensions (importance and performance), one can separate the attributes customers feel are very important and are currently less satisfied with, from those attributes of less importance. Importance-performance analysis is designed to take into account that not all shortfalls in quality are of equal concern to customers. When an attribute that is considered to be of primary importance falls short of a desirable level of performance that is of greater concern then when a peripheral attribute is unsatisfactory in terms of performance. Thus, actions to address or improve shortfalls in a critical area (an attribute rated as high in importance) would be given a higher priority by customers than actions proposed to rectify shortfalls in areas of marginal importance (attributes rated low in importance).

To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is calculated by computing the ratio between the mean performance rating to the mean importance rating for each attribute. This index demonstrates the balance between importance and performance in the minds of customers on an attribute. The higher the value of the satisfaction index, the higher the level of customer satisfaction on that attribute.

Figure 3-6 Importance-Performance Ratings and Satisfaction Indices – SOV Users

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Having many travel mode choices	4.41	4.70	**106.58**
Keeping land adjacent to hwys landscaped, mowed	5.12	5.20	**101.56**
Info on when to expect delays, road closings	5.25	4.99	**95.05**
Hwy signs that provide direction, mileage	6.07	5.33	**87.81**
Clear lane lines on the hwy	6.24	5.47	**87.66**
Timely snow plowing and salting	6.36	5.49	**86.32**
Hwy signs visible day and night	6.62	5.59	**84.44**
Keeping land adjacent to hwys litter free	5.68	4.64	**81.69**
Clearly marked and protected work zones	5.91	4.80	**81.22**
Condition of pavement on hwys	6.30	5.11	**81.11**
Hwys free of congestion	5.86	4.24	**72.35**
Well-planned sequencing & timing of traffic lights	6.09	4.21	**69.13**

The attributes with the highest customer satisfaction index are “having many travel mode choices,” “keeping lands adjacent to highways landscaped and mowed,” and “providing information on when to expect delays and road closings.” “Having many travel mode choices” and “keeping land adjacent to highways landscaped and mowed” had high customer satisfaction ratings in the 2009 and 2006 surveys as well.

Customer satisfaction is not being obtained on the attributes of “having highways free from congestion” and “having well-planned sequencing and timing of traffic lights.” This was found in all eleven previous surveys as well.

Similar to the analysis provided on the results of the General Transportation User survey and as was done in previous survey years, quadrant analysis was conducted on the results of this survey as well. Quadrant analysis can assist policy makers in service program decisions by placing the attributes along two dimensions -- the importance of the attribute to customers and the satisfaction with the performance on the provision of these services. Having these two dimensions of public evaluation allows for the creation of four performance quadrants as can be seen below.

Figure 3-7 Importance – Performance Quadrants

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority	(1) Maintenance: High Priority
	Below Average	(3) Corrective: Low Priority	(4) Corrective: High Priority

The attributes falling in Quadrant 4 are higher than the overall mean of all importance ratings and are below the overall mean of all performance ratings (thus, above average importance and below average performance). The attributes that fall within this quadrant should be of the highest

priority for corrective action. Attributes that fall within Quadrant 3 are both below average importance and below average performance. These attributes also need corrective action, but immediate attention is not required since the attributes are less important to customers. These items should be monitored and receive attention or investment after the more important attributes in Quadrant 4 are addressed. The attributes in Quadrant 2 are above average in performance and below average in importance. Attributes in this quadrant need only maintenance action and are of the lowest priority. Items that fall within Quadrant 1 are above average in importance and above average in performance. Although these attributes are doing well currently, they are high priority for maintenance action and should not be neglected. These are salient issues to customers and need to be followed closely.

The table below shows how the twelve attributes, asked of SOV users in the transit-served areas of Delaware, fall into the four quadrants.

Figure 3-8 Importance – Performance Quadrant Analysis - SOV Users

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Landscaping & Mowing** **Info on Delays & Closings**	(1) Maintenance: High Priority **Clear Lane Lines** **Snow Plowing & Salting** **Pavement Condition** **Directional Hwy Signs** **Signs Visible Day and Night**
	Below Average	(3) Corrective: Low Priority **Mode Choice** **Litter Free Hwys**	(4) Corrective: High Priority **Highways Free of Congestion** **Timing/Sequencing Signals** **Work Zones**

The attributes in Quadrant 1 represent items which customers in transit-served areas regard as important and on which Delaware received a high mark. Although the attributes are perceived to be faring well now, they are a high priority for maintenance and should not be neglected. These attributes are important to customers and are salient issues that customers are attentive to. “Clear lane lines on highways,” “timely snow plowing and salting,” “condition of pavement on highways,” “highway signs that provide direction and mileage,” and “highway signs visible day and night” fall into Quadrant 1 in this year’s survey. The first four attributes were in Quadrant 1 in the 2009 as well.

The attributes in Quadrant 2 are those that customers rate high in performance but low in importance. Therefore, while these attributes need some maintenance action, they are not as salient to customers as the items in Quadrant 1. As in the 2009 survey, “keeping lands adjacent to highways landscaped and mowed” and “having information on delays and closings” are in Quadrant 2 in 2012. “Keeping lands adjacent to highways litter free” was placed in Quadrant 2 in the 2004, 2005, and 2006 surveys as well.

Delaware is given low performance ratings on attributes falling into Quadrant 3, but these items are also of low importance to customers in the transit-served market area. “Having many mode choices” and “keeping land adjacent to highways litter free” are in this Quadrant in 2012. “Having many travel mode choices” was a Quadrant 3 attribute in prior surveys as well. In terms of action, this attribute should be slated for corrective action but is lower in priority compared to attributes in Quadrant 4.

Quadrant 4 represents those attributes rated high in importance but low in performance, thus representing attributes with low customer satisfaction. These attributes are the highest priority for receiving corrective action and for customers they are "having highways free of congestion," "having well-planned sequencing and timing of traffic lights," and "clearly marked and protected work zones." The first two attributes were Quadrant 4 attributes in prior surveys as well.

3.4.2 All Motorists

The previous analyses provided a snapshot of customer satisfaction for those that drove-alone and reside within a transit-served area of Delaware. However, from a policy development perspective, it is more useful to examine the data for all motorists (those that drove-alone only, those that carpooled only, and those that drove-alone but also carpooled) to derive guidance on appropriate highway improvement strategies. This section of the report provides an examination of the data across all motorists in the transit-served areas of Delaware.

For the 2012 survey, 95% (n=84) of the sample reported traveling either alone in a motor vehicle or with others.

3.4.2.1 Attribute Importance

The table below illustrates the importance assigned to the twelve highway-related attributes in the transit-served market areas of Delaware for all motorists (those who drove alone the previous week as well as those who carpooled).

Figure 3-9 Importance of Highway Attributes

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Hwy signs visible day and night	0%	0%	1%	2%	7%	12%	77%	100%	**6.61**
Timely snow plowing and salting	2%	1%	1%	5%	5%	17%	69%	100%	**6.35**
Condition of pavement on hwys	0%	2%	5%	0%	4%	30%	59%	100%	**6.31**
Clear lane lines on highways	0%	1%	5%	6%	8%	16%	64%	100%	**6.24**
Well-planned sequencing & timing of traffic lights	1%	4%	3%	5%	12%	18%	56%	100%	**6.01**
Clearly marked and protected work zones	1%	1%	6%	8%	11%	18%	54%	100%	**5.98**
Hwys free from congestion	1%	1%	2%	11%	10%	33%	42%	100%	**5.93**
Hwy signs that provide direction, mileage	1%	4%	0%	7%	17%	26%	44%	100%	**5.91**
Keeping land adjacent to hwys litter free	1%	2%	7%	11%	17%	20%	41%	100%	**5.65**
Info on when to expect delays, road closings	10%	5%	2%	8%	11%	30%	35%	100%	**5.33**
Keeping land adjacent to hwys landscaped, mowed	1%	10%	6%	16%	26%	17%	24%	100%	**5.04**
Having many travel mode choices	18%	5%	10%	19%	18%	13%	17%	100%	**4.19**

The top rated attributes in terms of mean importance are:

- Highway signs visible day and night, Timely snow plowing and salting, and,
- Condition of pavement on highways.

"Well-planned sequencing and timing of traffic lights" and "condition of pavement on highways" were among the top-rated attributes in terms of importance in the 2009 survey.

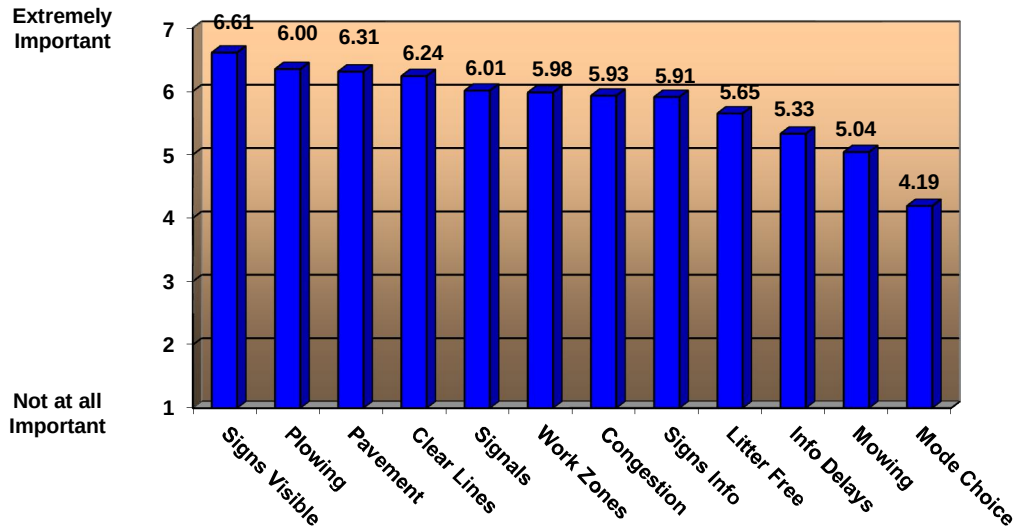
This year the lowest rated attributes in terms of importance are:
- Having many travel mode choices,
- Keeping land adjacent to highways landscaped and mowed, and,
- Information on when to expect delays and road closings.

These three attributes were the lowest rated attributes in the 2009 survey, as well.

One can again note the lack of a relationship between the importance associated with "having highways free from congestion" and the importance associated with "having many travel mode choices." "Highways free from congestion" has a much higher importance rating than "having many travel mode choices." Clearly motorists continue to view other non-auto modes as a different or alternative choice to the automobile but not as a potential congestion management strategy.

The figure below illustrates the mean importance of each of the above twelve attributes among all motorists.

Figure 3-10 Mean Importance Ratings – All Motorists



3.4.2.2 Attribute Performance

The table below provides the performance rating data obtained in the survey from all motorists.

Figure 3-11 Performance of Highway Attributes

	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Clearly marked and protected work zones	0%	0%	0%	16%	18%	40%	27%	100%	**5.77**
Hwy signs visible day and night	1%	2%	1%	8%	30%	34%	23%	100%	**5.57**
Clear lane lines on highways	0%	2%	2%	17%	19%	39%	20%	100%	**5.51**
Timely snow plowing and salting	1%	4%	4%	12%	23%	37%	20%	100%	**5.40**
Hwy signs that provide direction, mileage	0%	6%	4%	17%	20%	34%	20%	100%	**5.30**
Keeping land adjacent to hwys landscaped, mowed	1%	2%	5%	20%	27%	33%	12%	100%	**5.16**
Condition of pavement on hwys	2%	5%	7%	15%	23%	34%	13%	100%	**5.07**
Info on when to expect delays, road closings	1%	6%	8%	24%	20%	25%	16%	100%	**4.95**
Keeping land adjacent to hwys litter free	5%	9%	12%	13%	24%	27%	10%	100%	**4.63**
Having many travel mode choices	11%	11%	6%	19%	22%	29%	1%	100%	**4.24**
Hwys free from congestion	6%	12%	13%	23%	23%	19%	4%	100%	**4.17**
Well-planned sequencing & timing of traffic lights	7%	13%	14%	20%	17%	23%	5%	100%	**4.14**

Top performing attributes in 2012 are:

- Clearly marked and protected work zones,
- Highway signs visible day and night, and
- Clear lane lines on highway.

The attribute “clear lane lines on highways” was one of the three top rated attributes for performance in the 2005, 2006, and 2009 surveys as well.

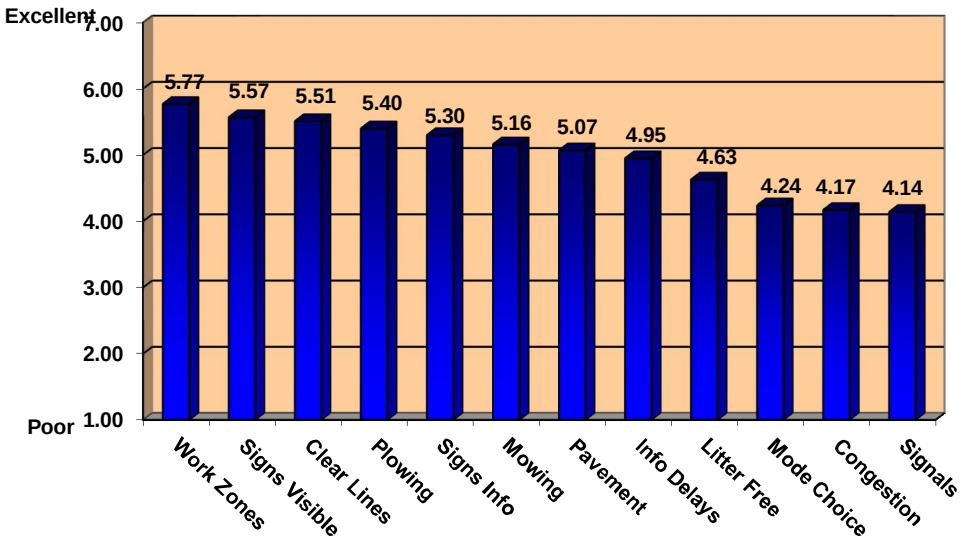
Low performing attributes in 2012 are:

- Well-planned sequencing and timing of traffic lights,
- Highways free from congestion, and
- Having many travel mode choices.

These attributes were among the attributes with the lowest performance ratings in prior surveys as well.

The figure below depicts the mean performance ratings for each attribute.

Figure 3-12 Mean Performance Ratings – All Motorists



3.4.2.3 Importance-Performance Analysis

Again, some of the most relevant information for policy-makers and decision-makers are the results of the importance-performance analysis for all motorists. The table below shows the mean importance and performance ratings for each attribute and that attribute's relative level of satisfaction.

Figure 3-13 Importance-Performance Ratings and Satisfaction Indices – All Motorists

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Keeping land adjacent to hwys landscaped, mowed	5.04	5.16	**102.38**
Having many travel mode choices	4.19	4.24	**101.19**
Clearly marked and protected work zones	5.98	5.77	**96.49**
Info on when to expect delays, road closings	5.33	4.95	**92.87**
Hwy signs that provide direction, mileage	5.91	5.30	**89.68**
Clear lane lines on highways	6.24	5.51	**88.30**
Timely snow plowing and salting	6.35	5.40	**85.04**
Hwy signs visible day and night	6.61	5.57	**84.27**
Keeping land adjacent to hwys litter free	5.65	4.63	**81.95**
Condition of pavement on hwys	6.31	5.07	**80.35**
Hwys free from congestion	5.93	4.17	**70.32**
Well-planned sequencing & timing of traffic lights	6.01	4.14	**68.89**

Satisfaction was highest for the attributes of “keeping land adjacent to highways landscaped and mowed,” “having many travel mode choices,” and “clearly marked and protected work zones.”

"Having many travel mode choices" and "keeping lands adjacent to highways landscaped and mowed" showed high levels of satisfaction in the 2006 and 2009 surveys as well

The lowest level of satisfaction occurs with "well-planned sequencing and timing of traffic lights" followed by "highways free from congestion" and "condition of pavement on highways." These were the lowest rated attributes in terms of satisfaction in the prior survey as well.

Importance-performance quadrant analysis was also performed on the data and the results are contained in the following table.

Figure 3-14 Importance – Performance Quadrant Analysis – All Motorists

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Landscaping & Mowing**	(1) Maintenance: High Priority **Clear Lane Lines** **Snow Plowing & Salting** **Direction Hwy Signs** **Pavement Condition** **Work Zones** **Signs Visible**
	Below Average	(3) Corrective: Low Priority **Mode Choice** **Info on Delays & Closings** **Litter Free Hwys**	(4) Corrective: High Priority **Hwys Free of Congestion** **Timing/Sequencing Signals**

For 2012, the quadrant analysis results for the "all motorists" user group is nearly identical to the quadrant analysis results for the "SOV" user group. The small differences are that in the "SOV" user group, the two attributes: "information on delays and road closings" and "keeping land adjacent to highways litter free", are placed in Quadrant 2 instead of Quadrant 3.

The attributes in Quadrant 1 represent items which all motorists in transit-served areas regard as important and on which Delaware receives high ratings for performance. For 2012, Quadrant 1 contains six attributes and they are "clear lane lines on highways," "timely snow plowing and salting," "highway signs that provide direction and mileage," "pavement condition on highways," "clearly marked and protected work zones," and "highway signs visible day and night." The first four attributes were Quadrant 1 attributes in the 2009 survey as well.

Quadrant 2 attributes are those that all motorists rate high in performance but low in importance. Thus relative to Quadrant 1 attributes, these items are of lower priority for maintenance action or investments, as these attributes are not as salient to motorists as the items in Quadrant 1. As in the 2009 survey, for 2012, "keeping lands adjacent to highways landscaped and mowed" is the only attribute in Quadrant 2.

Low performance ratings are given to attributes falling into Quadrant 3, but these items are also of less importance to motorists. In this year's survey, three attributes, "having many travel mode choices," "information on when to expect delays and road closings," and "keeping land adjacent to highways litter free" are placed in Quadrant 3. "Having many travel mode choices" was placed in Quadrant 3 in the 2005, 2006, and 2009 surveys as well. "Information on when to expect delays and road closings" and "keeping land adjacent to highways litter free" were Quadrant 2 attributes in the 2009 survey, suggesting that respondents perceive these attributes as declining in performance.

Quadrant 4 represents those attributes rated high in importance, but low in satisfaction with the delivery of these services. These attributes should be targeted for high priority corrective action and for motorists within transit-served areas they are "highways free from congestion" and "well-planned sequencing and timing of traffic signals." These two attributes remain in Quadrant 4 as they did in prior surveys.

3.4.3 Carpoolers (Ride or Drive with Others)

Like the previous survey years, carpoolers were broken into two groups by the survey instrument: those that only carpooled (respondents that did not drive alone during the previous week) and those that carpooled but also drove alone. All carpoolers rated the same twelve highway attributes, but also three additional attributes relating specifically to carpooling.

A total of 59 Delawareans indicated that they carpooled (rode or drove with others) the previous week (or 67% of the sample). This is higher than some prior survey results: 2009 (2%), 2006 (22%), 2005 (29%), and 2004 (41%). Of those that carpooled, nine respondents only carpooled (that is, they did not also drive-alone during the previous week) and 50 respondents both carpooled and drove-alone.

This section reports the rating results for the ridesharing attributes among all carpoolers.

3.4.3.1 Attribute Importance

The respondents who rode or drove with others during the previous week were asked to rate the importance of three carpool-related attributes on the same seven-point scale. The results are displayed in the table below.

Figure 3-15 Importance of Carpool Attributes

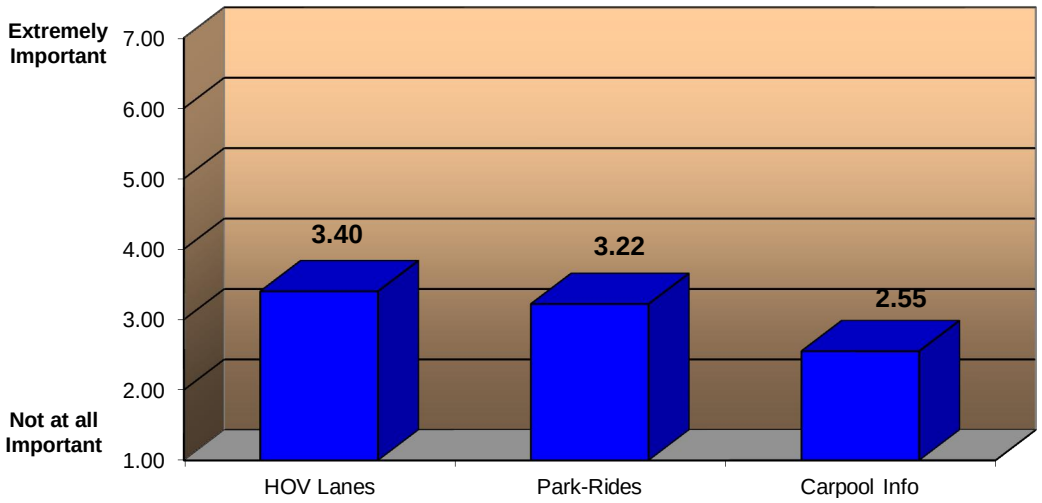
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
HOV lanes for carpools and buses	33%	11%	6%	15%	15%	9%	12%	100%	**3.40**
Providing a system of park-and-rides	43%	7%	5%	8%	19%	8%	11%	100%	**3.22**
Information to help form carpools	54%	8%	4%	10%	13%	6%	4%	100%	**2.55**

Among the carpoolers surveyed in 2012, these three attributes are not that important. This could be due to the fact that the carpoolers surveyed actually carpool with friends, relatives, acquaintances, or coworkers and do not have a need for park-and-rides or information to help for carpools.

In the 2012 survey, the attribute with the highest importance was "HOV lanes for carpools and buses". As in the 2004 to 2009 surveys, the attribute with the lowest importance was "information to help for carpools."

The figure below illustrates the mean importance of each of the three carpool-related attributes.

Figure 3-16 Mean Importance Ratings – All Carpoolers



3.4.3.2 Attribute Performance

Carpoolers were also asked to rate how well the current transportation system was performing on each of these three attributes. The results are displayed in the table below.

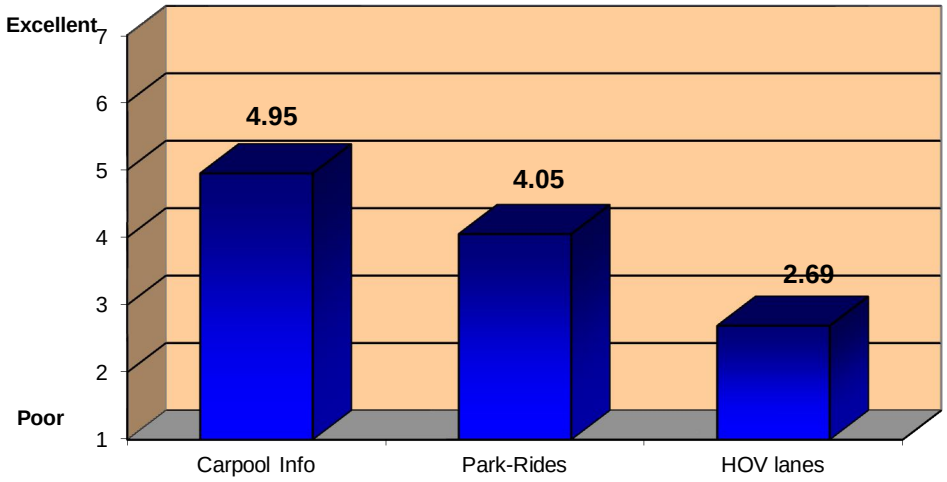
Figure 3-17 Performance of Carpool Attributes

	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Information to help form carpools	16%	8%	7%	9%	6%	0%	54%	0%	4.95
Providing a system of park-and-rides	14%	3%	22%	17%	25%	7%	12%	0%	4.05
HOV lanes for carpools and buses	45%	10%	14%	7%	14%	7%	3%	0%	2.69

In the 2012 survey, the highest performing attribute was “information to help form carpools” and the attribute with the lowest performance rating was “HOV lanes for carpools and buses,” which was the lowest performing attribute in the 2002, 2003, 2004, 2006, and 2009 surveys as well.

The figure below shows the mean performance for each of the three carpool attributes.

Figure 3-18 Mean Performance Ratings – All Carpoolers



3.4.3.3 Importance-Performance Analysis

The satisfaction index for each carpool attribute is contained in the table below, accompanied by the mean ratings for importance and performance.

Figure 3-19 Importance – Performance Ratings and Satisfaction Indices – All Carpoolers

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Information to help form carpools	2.55	4.95	**194.12**
Providing a system of park-and-rides	3.22	4.05	**125.78**
HOV lanes for carpools and buses	3.40	2.69	**79.12**

The 2012 survey results showed the highest rating of satisfaction for "information to help form carpools" and the lowest satisfaction for "HOV lanes for carpools and buses," which was the lowest attribute in terms of satisfaction in the 2009, 2006, and 2005 survey as well.

Again, quadrant analysis was conducted on the importance-performance results from the carpool features. The results are contained in the table below.

Figure 3-20 Importance – Performance Quadrant Analysis - All Carpoolers

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Info to Form Carpools**	(1) Maintenance: High Priority **System of Park and Rides**
	Below Average	(3) Corrective: Low Priority	(4) Corrective: High Priority **HOV Lanes**

In the 2012 survey, "providing a system of park-and-rides" was placed in Quadrant 1, "information to help for carpools" was placed in Quadrant 2, and "HOV lanes for carpools and buses" was placed in Quadrant 4. These results are identical to the result from the 2009 survey.

3.4.4 Bicyclists

Just as in the General Transportation User survey and as was done in the previous survey years, respondents were asked if they had used a bicycle for any of the previous week's trips. If a respondent indicated that a bicycle trip was made, the respondent was asked to rate both the importance and performance of twelve different attributes.

For 2012, 3% (n=3) of the transit-served sample made a trip by bicycle the previous week. This is lower than the 2009 (10%) and 2006 (5%) surveys, however, relatively low percentages were also found in all prior years. Since the sample of bicycle riders is very small, variations across different categories such as area type, gender, and age cannot be examined.

Due to the small sample size, the data from this group should not be deemed representative of bicycle users that reside in the transit-served areas of Delaware.

3.4.4.1 Attribute Importance

The ten bicycle users were asked to rate the importance of twelve different attributes on a seven-point scale, with a "1" being "not at all important," and a "7" being "extremely important". The results are outlined in the following table showing the percentage distribution of response for each rating along with the mean importance as computed for each attribute. Attributes are ordered in the table by mean importance.

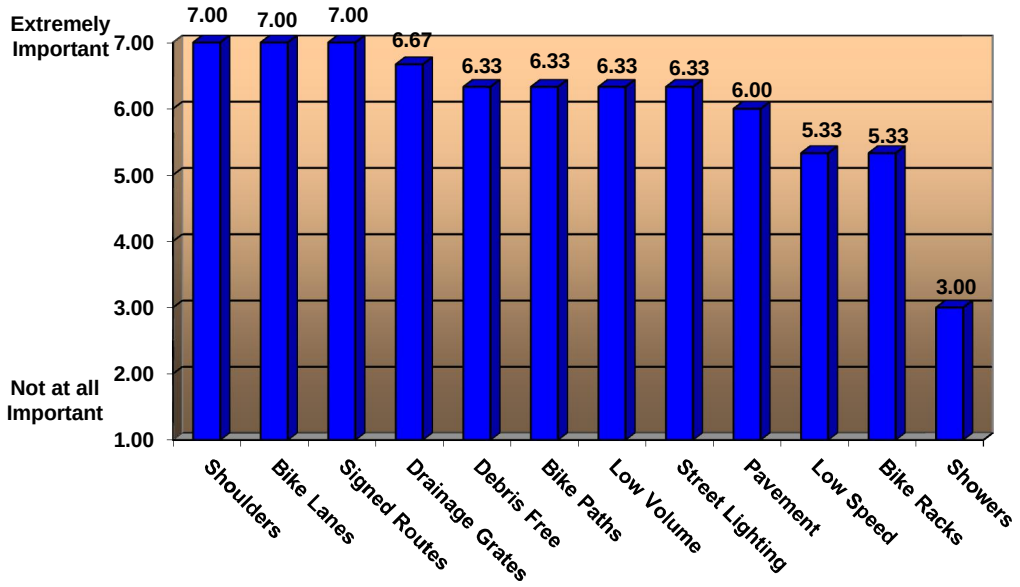
Figure 3-21 Importance of Bicycle Attributes

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	**Mean**
Wide, paved shoulders	0%	0%	0%	0%	0%	0%	100%	100%	**7.00**
Striped bicycle lanes	0%	0%	0%	0%	0%	0%	100%	100%	**7.00**
Signed bicycle routes	0%	0%	0%	0%	0%	0%	100%	100%	**7.00**
Bicycle friendly drainage grates	0%	0%	0%	0%	0%	33%	67%	100%	**6.67**
Roadways clear of debris	0%	0%	0%	0%	33%	0%	67%	100%	**6.33**
Separate bicycle paths	0%	0%	0%	0%	33%	0%	67%	100%	**6.33**
Low volume motor vehicle traffic	0%	0%	0%	0%	0%	67%	33%	100%	**6.33**
Adequate street lighting	0%	0%	0%	0%	33%	0%	67%	100%	**6.33**
Smooth pavement on roadways	0%	0%	0%	0%	33%	34%	33%	100%	**6.00**
Low speed motor vehicle traffic	0%	0%	33%	0%	0%	34%	33%	100%	**5.33**
Bicycle racks and lockers	0%	33%	0%	0%	0%	0%	67%	100%	**5.33**
Shower facilities	67%	0%	0%	0%	0%	0%	33%	100%	**3.00**

The three respondents who made a trip by bicycle the previous week rated twelve attributes of importance. These respondents gave "wide, paved shoulders," "striped bicycle lanes," and "signed bicycle routes" the highest ratings.

The lowest rated attributes of importance in 2012 are "shower facilities" and "bicycle racks and lockers." "Shower faculties" was also the lowest rated attribute for importance in the 2009 and 2006 surveys.

Figure 3-22 Mean Importance Ratings – Bicyclists



3.4.4.2 Attribute Performance

Just as other users, the bicycle users were asked to rate the performance provided by the current transportation system for each of the twelve attributes.

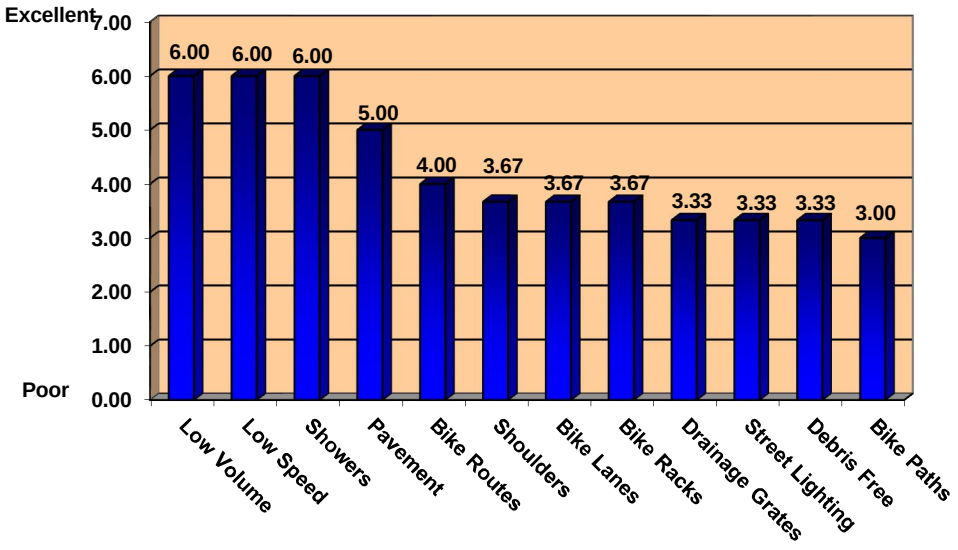
Figure 3-23 Performance of Bicycle Attributes

	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Low volume motor vehicle traffic	0%	0%	0%	0%	100%	0%	0%	100%	**6.00**
Low speed motor vehicle traffic	0%	0%	0%	50%	0%	50%	0%	100%	**6.00**
Shower facilities	0%	100%	0%	0%	0%	0%	0%	100%	**6.00**
Smooth pavement on roadways	0%	0%	0%	33%	34%	33%	0%	100%	**5.00**
Signed bicycle routes	0%	0%	67%	0%	0%	33%	0%	100%	**4.00**
Wide, paved shoulders	0%	33%	0%	34%	33%	0%	0%	100%	**3.67**
Striped bicycle lanes	33%	0%	0%	34%	0%	33%	0%	100%	**3.67**
Bicycle racks and lockers	50%	50%	0%	0%	0%	0%	0%	100%	**3.67**
Bicycle friendly drainage grates	33%	0%	0%	34%	33%	0%	0%	100%	**3.33**
Adequate street lighting	0%	33%	34%	0%	33%	0%	0%	100%	**3.33**
Roadways clear of debris	0%	33%	34%	0%	33%	0%	0%	100%	**3.33**
Separate bicycle paths	0%	67%	0%	0%	33%	0%	0%	100%	**3.00**

Top-rated bicycle attributes for performance include “low volume motor vehicle traffic,” “low speed motor vehicle traffic,” and “shower facilities.” All of these attributes were low performers in the 2009 survey, with “shower facilities” performing the lowest.

“Separate bicycle paths” was the attribute with the lowest performance rating in this year’s survey but rated very high in the 2009 survey. “Shower facilities” had a low performance rating in the 2005, 2006, and 2009 surveys.

Figure 3-24 Mean Performance Ratings – Bicyclists



3.4.4.3 Importance-Performance Analysis

As with the other modes, importance-performance analysis was performed.

Figure 3-25 Importance-Performance Ratings and Satisfaction Indices – Bicyclists

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Shower facilities	3.00	6.00	**200.00**
Low speed motor vehicle traffic	5.33	6.00	**112.57**
Low volume motor vehicle traffic	6.33	6.00	**94.79**
Smooth pavement on roadways	6.00	5.00	**83.33**
Bicycle racks and lockers	5.33	3.67	**68.86**
Signed bicycle routes	7.00	4.00	**57.14**
Roadways clear of debris	6.33	3.33	**52.61**
Adequate street lighting	6.33	3.33	**52.61**
Wide, paved shoulders	7.00	3.67	**52.43**
Striped bicycle lanes	7.00	3.67	**52.43**
Bicycle friendly drainage grates	6.67	3.33	**49.93**
Separate bicycle paths	6.33	3.00	**47.39**

Two attributes, “shower facilities” and “low speed motor vehicle traffic” had an index over 100, meaning that satisfaction is clearly being achieved. Other attributes with high levels of satisfaction in 2012 are “low volume motor vehicle traffic” and “smooth pavement on roadways.” “Shower facilities” had the highest satisfaction index in the 2009 survey as well.

The lowest levels of satisfaction were found for “separate bicycle paths,” “bicycle friendly drainage grates,” and “striped bicycle lanes.” In the 2009 survey, “striped bicycle lanes” had a

low satisfaction index, while "bicycle friendly drainage grates" had one of the highest satisfaction indexes. Again, these results and any comparison to prior year results needs be done with caution due to the very small sample size of respondents obtained in this survey year as well as other years.

The results of the quadrant analysis are contained in the figure below.

Figure 3-26 Importance-Performance Quadrant Analysis – Bicyclists

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Shower Facilities** **Low Speed Traffic** **Smooth Pavement**	(1) Maintenance: High Priority **Low Volume Traffic**
	Below Average	(3) Corrective: Low Priority **Racks and Lockers**	(4) Corrective: High Priority **Signed Bicycle Routes** **Striped Bicycle Lanes** **Roadways Free of Debris** **Adequate Street Lighting** **Wide, Paved Shoulders** **Bicycle Friendly Drainage Grates** **Separate Bicycle Paths**

Quadrant 1 attributes are perceived to be both above average in performance, as well as importance and as such are high priority attributes for investment. In 2012 "low volume motor vehicle traffic is the only attribute in Quadrant 1. This attribute was in Quadrant 4 in the 2009 survey.

Quadrant 2 attributes are those that bicyclists rate high in performance but low in importance. Thus relative to Quadrant 1 attributes, these items are of lower priority for maintenance action or investments, as these attributes are not as salient to bicyclists as the items in Quadrant 1. "Shower facilities," "low speed motor vehicle traffic," and "smooth pavement on roadways" are the attributes in Quadrant 2 in this year's survey. In the 2009 survey, "shower facilities" was in Quadrant 3, "low speed motor vehicle traffic" was in Quadrant 4, and "smooth pavement on roadways" was in Quadrant 1.

One attribute falls into Quadrant 3 for 2012, "bicycle racks and lockers," which was in Quadrant 3 in the 2009 survey as well. Due to its lower than average importance, this attribute is not a priority for investment

"Signed bicycle routes," "striped bicycle lanes," "roadways free of debris," "adequate street lighting," "wide, paved shoulders," "bicycle friendly drainage grates," and "separate bicycle paths" fall into Quadrant 4 in 2012. The first two attributes were placed in Quadrant 4 in the 2009 survey as well. In 2009, "roadways free of debris," "wide, paved shoulders," "separate bicycle paths," and "bicycle friendly drainage grates" were in Quadrant 1 and "adequate street lighting" was in Quadrant 2. Attributes in Quadrant 4 should be targeted for investment due to their higher than average importance rating and their lower than average performance rating.

These results should be used with caution due to the small sample size.

3.4.5 Pedestrians

Like the other modes, respondents that indicated they had walked for some of their trips during the previous week were also asked a series of importance and performance questions. This section of the report will discuss the results of the pedestrian rating questions from the Transit-Served Market Area survey.

Twenty-nine respondents (33%) reported that they walked for some of the trips they made the previous week. This share is much higher than found in prior surveys. Sussex County residents were more likely to make walking trips in the previous week at 43%, compared to 26% of Kent County residents and 22% of New Castle County residents.

3.4.5.1 Attribute Importance

Pedestrians were asked to rate the importance of thirteen attributes as they relate to walking trips. The results are contained in the table below.

Figure 3-27 Importance of Pedestrian Attributes

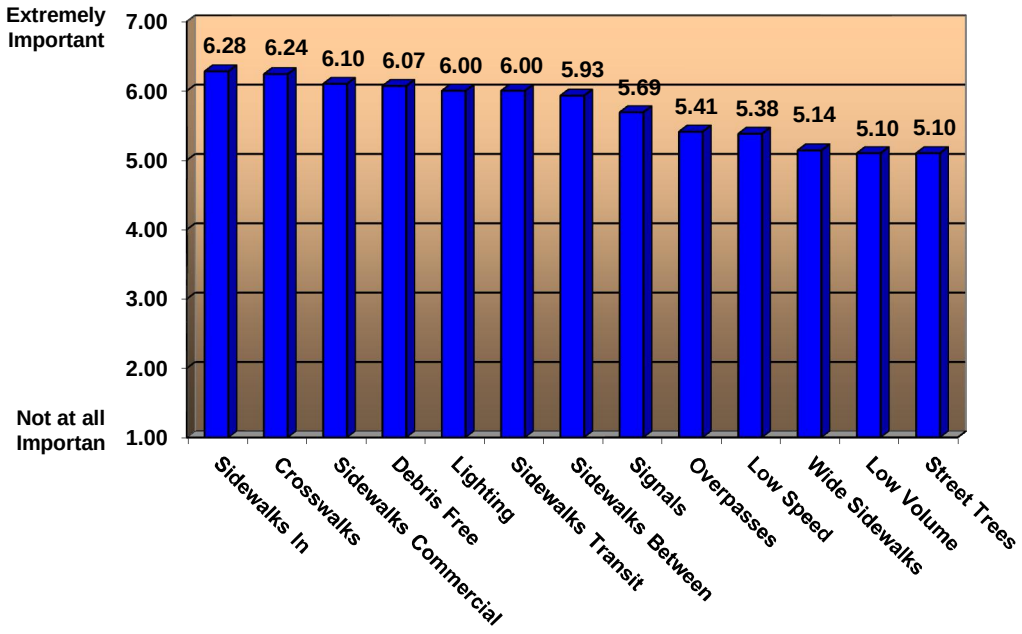
	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	**Mean**
Sidewalks in my neighborhood	0%	0%	10%	0%	7%	17%	66%	100%	**6.28**
Marked crosswalks at intersections & other locations	0%	3%	0%	3%	10%	28%	56%	100%	**6.24**
Sidewalks to commercial areas	0%	8%	3%	3%	8%	22%	56%	100%	**6.10**
Sidewalks clear of debris	0%	7%	0%	3%	10%	28%	52%	100%	**6.07**
Sidewalks to & from transit stations & stops	10%	6%	6%	6%	10%	27%	35%	100%	**6.00**
Adequate street lighting	3%	3%	3%	0%	10%	28%	53%	100%	**6.00**
Sidewalks between neighborhoods	8%	0%	3%	3%	8%	32%	46%	100%	**5.93**
Pedestrian signals and push buttons	3%	7%	0%	7%	17%	21%	45%	100%	**5.69**
Pedestrian overpasses to cross highways	4%	4%	15%	8%	18%	18%	33%	100%	**5.41**
Low speed motor vehicle traffic	0%	7%	10%	14%	18%	15%	36%	100%	**5.38**
Wide sidewalks	3%	7%	0%	24%	17%	25%	24%	100%	**5.14**
Street trees	5%	19%	12%	5%	16%	19%	24%	100%	**5.10**
Low volume motor vehicle traffic	0%	3%	7%	32%	18%	22%	18%	100%	**5.10**

According to the pedestrian respondents in the 2012 survey, the most important attributes include “sidewalks in my neighborhood,” “marked crosswalks at intersections and other locations,” and “sidewalks to commercial areas.” “Sidewalks in my neighborhood” had a relatively high importance rating in the 2009 survey.

Attributes with low importance ratings include “low volume motor vehicle traffic,” “street trees,” and “wide sidewalks.” “Low volume motor vehicle traffic” had a high importance rating in the 2009 survey.

The following figure displays the mean importance rating assigned to each attribute by pedestrians.

Figure 3-28 Mean Importance Ratings – Pedestrians



3.4.5.2 Attribute Performance

The table below presents the results of the performance rating questions.

Figure 3-29 Performance of Pedestrian Attributes

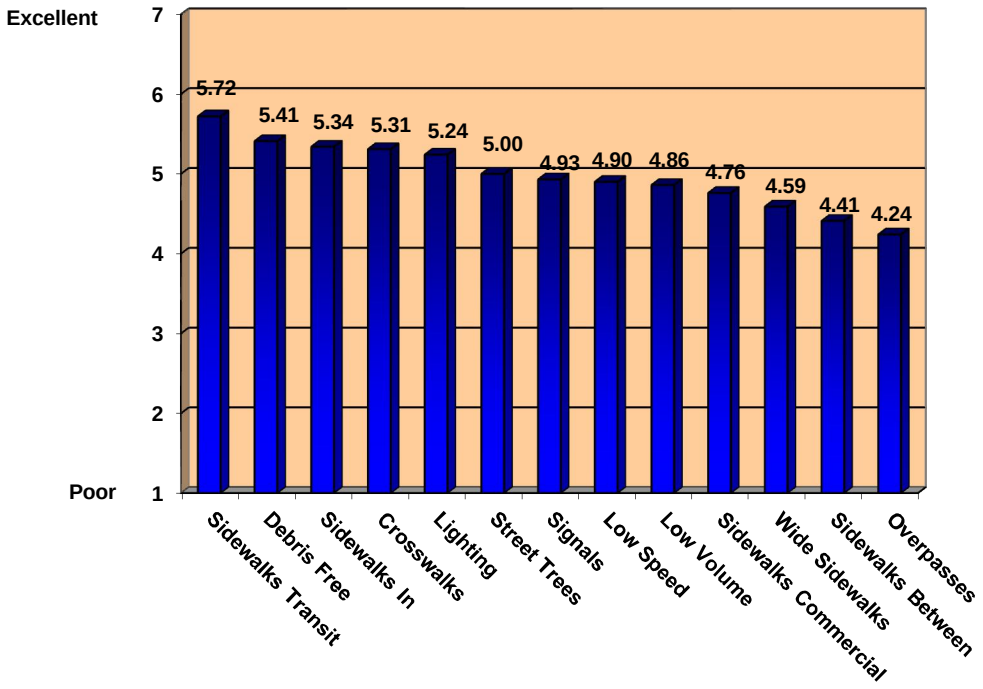
	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Sidewalks to & from transit stations & stops	11%	0%	11%	15%	22%	26%	15%	100%	**5.72**
Sidewalks clear of debris	4%	0%	0%	26%	26%	26%	18%	100%	**5.41**
Sidewalks in my neighborhood	0%	10%	7%	14%	15%	22%	32%	100%	**5.34**
Marked crosswalks at intersections & other locations	5%	0%	5%	26%	33%	12%	19%	100%	**5.31**
Adequate street lighting	8%	4%	4%	11%	33%	18%	22%	100%	**5.24**
Street trees	10%	10%	10%	24%	24%	17%	5%	100%	**5.00**
Pedestrian signals and push buttons	4%	12%	8%	26%	19%	12%	19%	100%	**4.93**
Low speed motor vehicle traffic	5%	5%	16%	23%	30%	16%	5%	100%	**4.90**
Low volume motor vehicle traffic	5%	10%	17%	20%	31%	17%	0%	100%	**4.86**
Sidewalks to commercial areas	8%	8%	23%	8%	23%	15%	15%	100%	**4.76**
Wide sidewalks	11%	4%	15%	26%	11%	22%	11%	1005	**4.59**
Sidewalks between neighborhoods	11%	12%	23%	4%	26%	16%	8%	100%	**4.41**
Pedestrian overpasses to cross highways	36%	12%	19%	0%	15%	11%	7%	100%	**4.24**

For 2012, the top-performing attributes are “sidewalks to and from transit stops and stations,” “sidewalks clear of debris,” and “sidewalks in my neighborhood.” “Sidewalks to and from transit stops and stations” and “sidewalks clear of debris” were the top attributes for performance in 2009.

The lowest performers for 2012 include “pedestrian overpasses to cross highways” and “sidewalks between neighborhoods.” These attributes were below average performers in the 2009 survey as well.

The following figure illustrates the mean performance rating for each attribute as rated by pedestrians.

Figure 3-30 Mean Performance Ratings – Pedestrians



3.4.5.3 Importance-Performance Analysis

Similar to the other modes, importance-performance analysis was conducted on the pedestrian rating results – both calculating the satisfaction index, as well as conducting quadrant analysis. The mean importance and performance ratings and satisfaction indices for the thirteen pedestrian attributes are in the table below.

Figure 3-31 Importance-Performance Ratings and Satisfaction Indices – Pedestrians

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Street trees	5.10	5.00	**98.04**
Sidewalks to & from transit stations & stops	6.00	5.72	**95.33**
Low volume motor vehicle traffic	5.10	4.86	**95.29**
Low speed motor vehicle traffic	5.38	4.90	**91.08**
Wide sidewalks	5.14	4.59	**89.30**
Sidewalks clear of debris	6.07	5.41	**89.13**
Adequate street lighting	6.00	5.24	**87.33**
Pedestrian signals and push buttons	5.69	4.93	**86.64**
Marked crosswalks at intersections & other locations	6.24	5.31	**85.10**
Sidewalks in my neighborhood	6.28	5.34	**85.03**
Pedestrian overpasses to cross highways	5.41	4.24	**78.37**
Sidewalks to commercial areas	6.10	4.76	**78.03**
Sidewalks between neighborhoods	5.93	4.41	**74.37**

The attributes with the highest satisfaction rating are “street trees,” “sidewalks to and from transit stops and stations,” “low volume motor vehicle traffic,” and “low speed motor vehicle traffic.” “Sidewalks to and from transit stops and stations” received a high satisfaction index in the 2009 survey.

The lowest level of satisfaction was attained on “sidewalks between neighborhoods” followed by “sidewalks to commercial areas” and “pedestrian overpasses to cross highways.” “Pedestrian overpasses to cross highways” had the lowest satisfaction index in the 2009. The results of the quadrant analysis are contained in the following figure.

Figure 3-32 Importance-Performance Quadrant Analysis – Pedestrians

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Street Trees**	(1) Maintenance: High Priority **Sidewalks Clear of Debris** **Adequate Street Lighting** **Sidewalks to/from Transit Stops** **Marked Crosswalks** **Sidewalks In My Neighborhood**
	Below Average	(3) Corrective: Low Priority **Pedestrian Overpasses** **Wide Sidewalks** **Low Volume Motor Vehicle Traffic** **Low Speed Motor Vehicle Traffic**	(4) Corrective: High Priority **Sidewalks to Commercial Areas** **Sidewalks Between Neighborhoods**

Attributes in Quadrant 1 are perceived to be both high in importance and high in performance. As such, customer satisfaction is being attained on these attributes. However, due to their high importance, efforts on these attributes should be maintained. For 2012, Quadrant 1 attributes include "sidewalks clear of debris," "adequate street lighting," "sidewalks to and from transit stops and stations," "marked crosswalks," and "sidewalks in my neighborhood." The first two attributes were in Quadrant 1 in the 2009, 2006, and 2005 surveys. "Sidewalks to and from transit stops and stations" and "marked crosswalks" were placed in Quadrant 2 and "sidewalks in my neighborhood" was placed in Quadrant 4 in the 2009 survey.

Attributes in Quadrant 2 are low in importance but are viewed as above average performers and for 2012, this quadrant only includes the attribute of "street trees." Due to its lower than average importance, it is not a priority for investment. The attribute of "street trees" was placed in Quadrant 3 in the 2009 and 2006 surveys, suggesting an overall improved performance.

Attributes in Quadrant 3 are below average performers and below average in importance. Due to the lower than average performance ratings, they should be targeted for corrective action, but lower in priority than attributes in Quadrant 4 and attributes in Quadrant 1. Quadrant 3 attributes include "pedestrian overpasses," "wide sidewalks," "low volume motor vehicle traffic," and "low speed motor vehicle traffic." The first two attributes were Quadrant 3 attributes, while "low volume motor vehicle traffic" was a Quadrant 4 attribute, and "low speed motor vehicle traffic" was a Quadrant 1 attribute in the 2009 survey.

Attributes in Quadrant 4 merit increased investment and this investment should be a high priority. For 2012, two attributes fall into Quadrant 4 and they are "sidewalks to commercial areas" and "sidewalks between neighborhoods." Once again, Quadrant 4 attributes are viewed as above average in importance but are seen as below average in terms of performance. "Sidewalks to commercial areas" was a Quadrant 2 attribute and "sidewalks between neighborhoods" was a Quadrant 4 attribute in the 2009 survey.

3.5 Overall Satisfaction Ratings

This section of the report discusses the results of the summary modal satisfaction questions posed to each respondent in the Transit-Served Market Area interview at the end of each of the modal importance and performance rating questions.

3.5.1 Summary of Modal Satisfaction Question Results

Following the attribute rating questions, each respondent was asked to verbally rate the performance of the current system in meeting their transportation needs for each mode that the respondent had indicated that he/she had used. The respondent was asked to choose a response from "very well", "somewhat well", "not too well", or "not at all" for each question. The results for each mode and for the system as a whole are outlined in the figure below and include comparable data from the previous survey years.

Figure 3-33 Results of the Summary Modal Satisfaction Questions – 2012 Data in Red

Question	Very Well	Somewhat Well	Not Too Well	Not At All	DK (vol)	Year
And overall, how well does the state's system **of roads and hwys** meet your needs?	**46%**	**52%**	**2%**	**0%**	**0%**	**2012**
	27%	71%	1%	0%	0%	2009
	36%	58%	2%	4%	0%	2006
	39%	42%	14%	5%	0%	2005
	35%	46%	12%	4%	3%	2004
	38%	53%	9%	0%	0%	2003
	32%	57%	11%	0%	0%	2002
	38%	54%	8%	0%	0%	2001
	41%	45%	9%	4%	1%	2000
	30%	65%	5%	0%	0%	1999
	49%	38%	3%	3%	6%	1998
	26%	65%	3%	5%	0%	1997
And overall, how well does the state's transportation system meet your needs for **bicycle trips**?	**0%**	**0%**	**100%**	**0%**	**0%**	**2012**
	30%	40%	30%	0%	0%	2009
	44%	44%	12%	0%	0%	2006
	0%	100%	0%	0%	0%	2005
	13%	0%	87%	0%	0%	2004
	0%	7%	64%	29%	0%	2003
	20%	20%	40%	0%	20%	2002
	0%	100%	0%	0%	0%	2001
	19%	5%	55%	3%	18%	2000
	12%	0%	6%	0%	82%	1999
	90%	0%	5%	0%	5%	1998
	0%	0%	28%	72%	0%	1997
And overall, how well does the state's transportation system meet your needs for **walking trips**?	**24%**	**52%**	**21%**	**3%**	**0%**	**2012**
	14%	86%	0%	0%	0%	2009
	26%	49%	25%	0%	0%	2006
	19%	60%	21%	0%	0%	2005
	26%	17%	55%	2%	0%	2004
	40%	60%	0%	0%	0%	2003
	18%	74%	8%	0%	0%	2002
	4%	57%	2%	8%	29%	2001
	22%	52%	13%	2%	11%	2000
	43%	43%	3%	10%	1%	1999
	6%	49%	2%	0%	43%	1998
	39%	26%	23%	12%	0%	1997

Question	Very Well	Somewhat Well	Not Too Well	Not At All	DK (vol)	Year
And as a whole, how well does Delaware's transportation system meet your travel needs?	**33%**	**51%**	**7%**	**9%**	**0%**	**2012**
	19%	78%	2%	0%	2%	2009
	19%	42%	15%	22%	2%	2006
	15%	47%	17%	21%	0%	2005
	33%	47%	10%	10%	0%	2004
	22%	62%	9%	7%	0%	2003
	18%	53%	15%	14%	0%	2002
	30%	57%	7%	5%	1%	2001
	19%	43%	14%	6%	18%	2000
	26%	62%	9%	2%	1%	1999
	42%	26%	6%	17%	9%	1998
	21%	49%	18%	9%	3%	1997

Respondents rated the road and highway system rather well in terms of meeting their travel needs as 98% rated the system as meeting their needs either "very well" or "somewhat well." These results are slightly higher than, or similar to, those found in prior surveys.

This year 100% of the bicyclists surveyed rated the system as meeting their needs "not too well" This should be assessed cautiously as only 3 respondents reported to have ridden their bicycles for one or more trips in the past week and therefore provide a very small sample size. This year's result is much lower than the 2009 survey, where 70% or respondents rated the bicycle system as meeting their needs either "very well" or "somewhat well", and lower than the 2006 and 2005 results where 88% and 100% rated the system as "somewhat well", respectively. Again, this fluctuation is most likely a result of small sample sizes and thus, conclusions cannot be made.

This year approximately three quarters of pedestrians surveyed, 76%, rated the system "very well" or "somewhat well." This is similar to the results of the 2006 (75%) and 2005 (79%) surveys, but higher than the 2004 results (43%) and lower than the 2009 (100%), 2003 (100%), and 2002 (92%) results. However, like with bicyclists, only a few pedestrians were in the sample in most survey years, and the fluctuation is most likely the result of small sample sizes.

All respondents were asked to rate Delaware's transportation system as a whole, and this year's results indicate that 84% of respondents think that the transportation system as a whole is meeting their needs "very well" or "somewhat well." This is slightly lower than the 97% in the 2009 survey. The table below shows the data by county of residence.

The results of this series of questions are displayed in the chart below for each mode and overall.

Figure 3-34 Overall Transportation System Satisfaction by County – (2012 Data in Red)

Mode	New Castle		Kent County		Sussex County		Year
	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well	Very or Somewhat Well	Not Too or Not at All Well	
Roads & hwys	**100%**	**0%**	**96%**	**4%**	**98%**	**2%**	**2012**
	100%	0%	35%	65%	100%	0%	2009
	95%	5%	94%	6%	90%	10%	2006
	80%	20%	93%	7%	26%	74%	2005
	79%	17%	85%	15%	14%	86%	2004
	91%	9%	100%	0%	0%	100%	2003
	87%	13%	92%	8%	18%	82%	2002
	91%	9%	100%	0%	11%	90%	2001
	85%	15%	92%	8%	11%	89%	2000
	98%	2%	90%	10%	15%	85%	1999
	93%	8%	93%	8%	3%	97%	1998
	91%	9%	96%	4%	9%	91%	1997
Bicycle	**0%**	**100%**	**N/A**	**N/A**	**0%**	**100%**	**2012**
	0%	0%	43%	57%	72%	28%	2009
	100%	0%	0%	0%	0%	100%	2006
	100%	0%	0%	0%	0%	0%	2005
	0%	100%	0%	0%	0%	100%	2004
	0%	100%	0%	100%	0%	100%	2003
	0%	100%	50%	50%	0%	100%	2002
	0%	0%	0%	0%	0%	100%	2001
	30%	70%	100%	0%	50%	50%	2000
	N/A	N/A	100%	0%	0%	100%	1999
	100%	0%	100%	0%	50%	50%	1998
	0%	100%	0%	100%	N/A	N/A	1997
Pedestrian	**60%**	**40%**	**67%**	**33%**	**83%**	**17%**	**2012**
	100%	0%	100%	0%	100%	0%	2009
	75%	25%	100%	0%	67%	33%	2006
	80%	20%	75%	25%	25%	75%	2005
	33%	67%	100%	0%	50%	50%	2004
	100%	0%	100%	0%	0%	100%	2003
	100%	0%	57%	43%	28%	72%	2002
	100%	0%	0%	100%	20%	80%	2001
	79%	22%	50%	50%	62%	38%	2000
	89%	11%	66%	33%	0%	100%	1999
	100%	0%	100%	0%	0%	100%,	1998
	63%	37%	100%	0%	0%	100%	1997
Overall System	**78%**	**22%**	**78%**	**22%**	**91%**	**9%**	**2012**
	100%	0%	51%	49%	59%	41%	2009
	67%	33%	65%	35%	45%	55%	2006
	62%	38%	58%	42%	41%	59%	2005
	82%	18%	77%	23%	39%	61%	2004
	85%	15%	82%	18%	27%	73%	2003
	69%	31%	78%	22%	14%	86%	2002
	91%	9%	71%	29%	17%	83%	2001
	60%	40%	80%	20%	25%	75%	2000
	94%	6%	80%	20%	18%	81%	1999
	73%	27%	73%	27%	10%	90%	1998
	70%	30%	82%	18%	9%	91%	1997

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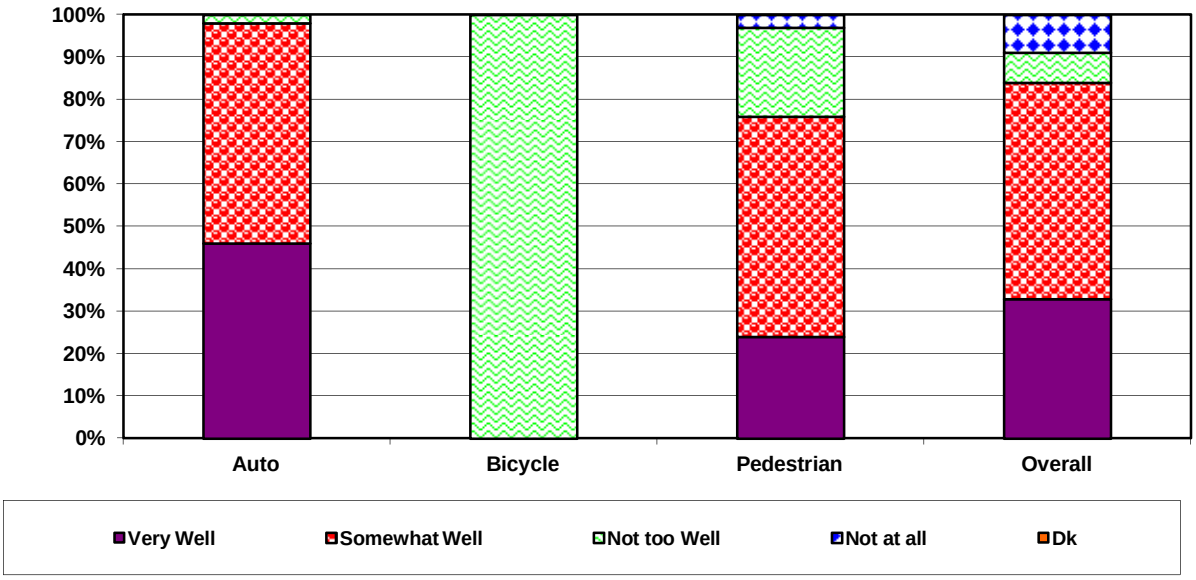
Figure 3-35 Results of Overall Transportation System Satisfaction Questions



3.5.2 Perceptions of Mobility

As was done in the previous surveys, in this year's survey respondents were asked to assess whether or not they believed they had many different travel modes to choose from or alternatively, if they thought they had few options to choose from. In the survey, the following question was posed to all respondents:

> "And would you say you have many different travel modes to choose from such as transit, biking and walking to meet your travel needs or would you say you have very few options to choose from?"

If respondents indicated they had "few options," they were asked, in an open-ended question, what modes they would like access to.

As was found in previous years, even though respondents live within a transit-served market area, the response to the first question was mixed. For 2012, 38% indicated that they had "many different modes to choose from," while 62% indicated that they had "few options." The share indicating that they had many different modes in 2012 is much lower than the results from the 2009 survey. In 2009, 80% indicated that they had "many different modes to choose from," while 19% indicated that they had "few options," and 2% could not say.

In terms of county of residence, for 2012, residents residing in Sussex County (35%) and Kent County (26%) were less likely to say that they had "many modes to choose from" as compared to residents from New Castle County (57%).

For this survey year, when respondents were asked what modes they would like access to, 40% indicated they would like access to transit or bus. This percentage is slightly lower than the 2009, 2006, 2005, 2004 and 2003 results (58%, 58%, 66%, 53% and 53% respectively). For 2012, 19% indicated they would like access to bicycle paths, 7% indicated wanting access to pedestrian facilities, and 4% indicated wanting improvements relating to "personal auto access needs."

3.6 Transit Awareness

As was done in the previous survey years, this section of the report discusses the results of a series of questions regarding transit services. First, respondents were asked about their level of knowledge regarding bus services in their area. Following these questions, respondents were asked a series of questions to ascertain their level of awareness of DART First State and their

familiarity with DART First State services. Following this series of questions, respondents that had looked for transit information over the past year were asked whether or not they had used a specific information source and how helpful they found the source.

3.6.1 Knowledge of Bus Services In Area

For 2012, 93% of the respondents knew that they had bus service available in their area. This is higher than 2009 (81%) and 2006 (84%) survey results.

When respondents in 2012 were asked if they had bus service within walking distance of home, 79% indicated that bus service was within walking distance. This percentage is similar to the results from previous survey years (73% in 2009, 75% in 2006, 67% in 2005, 77% in 2004, 79% in 2003, 84% in 2002, 69% in 2001, 72% in 2000, 86% in 1999, 60% in 1998, and 79% in 1997).

Those respondents that indicated there was bus service within walking distance of home were asked if sidewalks were available to reach the bus stop. In 2012, 63% stated that there were sidewalks available to reach the bus stops. This percentage is slightly lower than the 2009 (72%) and 2006 (70%) surveys.

When asked if they knew the route number(s) of the bus service, 20% of the respondents said they knew the route numbers. This percentage is higher than the 14% found in the 2009 survey, but lower than the 35% found in the 2006 survey; however, in 2006 none of these respondents could specify the route number.

3.6.2 Recognition of and Familiarity with DART First State

All respondents were asked a series of questions to ascertain the level of awareness of DART or DART First State. The figure below provides the results from these questions.

Figure 3-36 Awareness of DART First State

DART First State Awareness Level	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent	2001 Percent	2000 Percent
Names DART First State (unaided awareness)	**50%**	73%	93%	71%	86%	93%	94%	87%	75%
Recalls DART First State (aided awareness)	**41%**	17%	7%	18%	10%	7%	2%	10%	10%
Unaware of DART First State	**9%**	10%	0%	11%	4%	0%	4%	3%	15%
Total	**100%**	100%	100%	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Half (50%) of residents in the transit-served market areas of Delaware could name DART or DART First State as the operator of bus services in Delaware. Forty-one percent (41%) could recognize DART First State when provided the name, and the remaining 9% could not recall or did not know the name DART First State. These results show lower unaided awareness of the name of DART First State than previous years, but much higher recall recognition of the name of DART First State than previous years.

Respondents were then asked how familiar they were with DART or DART First State. The results are outlined in the figure below for 2012 as well as the other survey years.

Figure 3-37 How familiar would you say you are with DART or DART First State –do you know a great deal about the agency, some, just a little or not much at all?

Response	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent	2001 Percent	2000 Percent
A great deal	**9%**	4%	6%	6%	14%	12%	2%	8%	4%
Some	**39%**	11%	20%	36%	21%	22%	34%	25%	23%
Just a little	**24%**	13%	23%	31%	21%	14%	21%	21%	27%
Not much at all	**28%**	71%	51%	27%	44%	51%	39%	45%	36%
Dk (vol)	**0%**	1%	0%	0%	0%	1%	4%	1%	10%

The responses to this question indicate that the overall level of knowledge about DART or DART First State has increased this year compared to the last few years (2009-15%, 2006-26%, 2005-42%, 2004–35%, 2003-34%, 2002–36%, 2001–33%) with 48% of the respondents indicating they knew either “a great deal,” or “some” about the agency.

Respondents were then asked to assess their level of familiarity, on a scale of 1 to 7, about where bus routes go and with how to use the system. The responses are outlined in the following figure for all survey years.

Figure 3-38 Level Familiarity with Bus Routes and How to Use the System, (2012 Data in Red)

Question	Not Familiar	2	3	4	5	6	Very Familiar	DK (vol)	Year
Where you can pick up buses & where bus routes go?	**44%**	**17%**	**17%**	**5%**	**8%**	**3%**	**6%**	**0%**	**2012**
	38%	4%	6%	18%	18%	13%	2%	1%	2009
	40%	18%	8%	8%	9%	8%	6%	3%	2006
	32%	17%	20%	4%	11%	3%	8%	5%	2005
	31%	13%	11%	10%	11%	6%	8%	10%	2004
	30%	16%	10%	12%	10%	6%	11%	5%	2003
	25%	12%	18%	13%	15%	5%	8%	4%	2002
	17%	15%	4%	5%	26%	12%	8%	13%	2001
	32%	25%	7%	8%	11%	1%	6%	10%	2000
	37%	11%	11%	2%	13%	5%	4%	27%	1999
	38%	23%	11%	3%	6%	6%	3%	9%	1998
	40%	8%	8%	8%	4%	9%	5%	18%	1997
How to use DART First State buses, pay fares, purchase tickets?	**55%**	**19%**	**6%**	**4%**	**9%**	**0%**	**7%**	**0%**	**2012**
	49%	0%	4%	6%	31%	8%	2%	0%	2009
	39%	12%	10%	9%	5%	9%	12%	4%	2006
	32%	12%	13%	3%	10%	1%	21%	8%	2005
	34%	20%	4%	1%	12%	13%	10%	6%	2004
	40%	15%	3%	6%	11%	9%	12%	4%	2003
	33%	4%	11%	8%	22%	5%	13%	4%	2002
	24%	20%	10%	14%	7%	11%	1%	13%	2001
	37%	13%	6%	11%	14%	0%	7%	12%	2000
	29%	18%	4%	0%	6%	6%	4%	33%	1999
	55%	17%	9%	3%	3%	3%	6%	4%	1998
	47%	9%	8%	8%	5%	3%	3%	18%	1997

As can be seen in the table above, the level of familiarity regarding bus routes and how to use bus service remains generally low for the transit-served areas of Delaware.

3.6.3 Transit Information Sources

Respondents were asked if over the past year, they had looked for information about transit services. For 2012, 28% of respondents indicated that they looked for information on transit

services. This is similar to past 2009 (22%), 2006 (33%), 2005 (28%), and 2004 (34%) percentage of respondents who looked for information on transit services.

Following this question, respondents were asked specifically about whether they had received information about transit from eleven different information sources. For each source used, respondents were then asked how helpful the information was.

Figure 3-39 Sources Used & Helpfulness – (2012 Data in Red)

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
Printed bus schedules	**46%**	**46%**	**46%**	**8%**	**0%**	**2012**
	20%	36%	58%	6%	0%	2009
	35%	75%	16%	9%	0%	2006
	43%	49%	43%	8%	0%	2005
	22%	73%	24%	2%	1%	2004
	35%	52%	47%	1%	0%	2003
	28%	67%	31%	2%	0%	2002
	44%	54%	27%	12%	7%	2001
	23%	53%	21%	14%	12%	2000
	36%	34%	44%	22%	0%	1999
	21%	45%	14%	28%	14%	1998
	29%	51%	19%	20%	10%	1997
Newspaper/magazine advertisements	**8%**	**0%**	**100%**	**0%**	**0%**	**2012**
	7%	32%	68%	0%	0%	2009
	13%	55%	27%	18%	0%	2006
	13%	23%	39%	36%	12%	2005
	23%	13%	39%	36%	12%	2004
	14%	45%	30%	21%	4%	2003
	13%	10%	30%	60%	0%	2002
	19%	3%	58%	39%	0%	2001
	34%	42%	34%	17%	7%	2000
	29%	14%	25%	61%	0%	1999
	22%	45%	55%	0%	0%	1998
	27%	21%	42%	27%	10%	1997
Billboards	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	2%	0%	58%	42%	0%	2009
	13%	27%	26%	47%	0%	2006
	11%	24%	45%	10%	21%	2005
	20%	28%	52%	17%	3%	2004
	20%	16%	64%	17%	3%	2003
	24%	4%	51%	35%	10%	2002
	13%	0%	49%	51%	0%	2001
	25%	51%	45%	4%	0%	2000
	29%	28%	28%	43%	1%	1999
	15%	21%	20%	58%	0%	1998
	16%	18%	7%	71%	5%	1997

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
Other people	**36%**	**44%**	**45%**	**11%**	**0%**	**2012**
	8%	4%	68%	27%	0%	2009
	22%	65%	17%	18%	0%	2006
	19%	61%	26%	13%	0%	2005
	31%	58%	32%	10%	0%	2004
	24%	55%	44%	1%	0%	2003
	35%	28%	48%	10%	14%	2002
	17%	40%	42%	16%	2%	2001
	21%	48%	26%	13%	13%	2000
	26%	24%	56%	19%	0%	1999
	16%	24%	20%	56%	0%	1998
	25%	30%	54%	5%	11%	1997
Calls to transit agency	**20%**	**60%**	**0%**	**40%**	**0%**	**2012**
	15%	30%	44%	25%	0%	2009
	14%	79%	19%	2%	0%	2006
	12%	65%	26%	9%	0%	2005
	20%	75%	25%	0%	0%	2004
	13%	55%	45%	0%	0%	2003
	17%	37%	34%	29%	0%	2002
	27%	30%	50%	11%	9%	2001
	21%	47%	40%	0%	13%	2000
	19%	59%	2%	39%	0%	1999
	7%	100%	0%	0%	0%	1998
	15%	20%	64%	16%	0%	1997
Radio advertisements	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	1%	0%	100%	0%	0%	2009
	16%	17%	32%	44%	7%	2006
	10%	48%	34%	18%	0%	2005
	18%	26%	45%	28%	1%	2004
	14%	24%	55%	21%	0%	2003
	10%	5%	60%	33%	2%	2002
	9%	2%	59%	6%	33%	2001
	26%	30%	49%	21%	0%	2000
	29%	28%	21%	50%	0%	1999
	12%	26%	50%	24%	0%	1998
	16%	33%	48%	17%	2%	1997
Mailings to my home	**4%**	**0%**	**100%**	**0%**	**0%**	**2012**
	3%	22%	78%	0%	0%	2009
	7%	31%	0%	61%	8%	2006
	10%	57%	7%	35%	0%	2005
	13%	46%	46%	5%	3%	2004
	2%	30%	40%	10%	20%	2003
	7%	43%	51%	0%	6%	2002
	14%	9%	91%	0%	0%	2001
	21%	25%	61%	13%	1%	2000
	10%	0%	29%	71%	0%	1999
	6%	97%	0%	3%	0%	1998
	3%	73%	16%	11%	0%	1997
Transit brochures or publications	**28%**	**58%**	**28%**	**14%**	**0%**	**2012**
	7%	30%	60%	0%	10%	2009
	8%	87%	4%	4%	5%	2006
	17%	33%	51%	16%	0%	2005
	15%	42%	34%	21%	3%	2004
	7%	92%	8%	0%	0%	2003
	15%	68%	25%	5%	2%	2002
	22%	18%	82%	0%	0%	2001
	25%	41%	38%	20%	1%	2000
	10%	9%	59%	29%	4%	1999
	7%	53%	47%	0%	0%	1998
	17%	44%	35%	21%	0%	1997

Information Source	Percent Used	Very Helpful	Somewhat Helpful	Not Too Helpful	DK (vol)	Year
Telephone directories	**8%**	**0%**	**50%**	**50%**	**0%**	**2012**
	5%	41%	18%	41%	0%	2009
	12%	67%	20%	8%	5%	2006
	11%	69%	31%	0%	0%	2005
	13%	38%	42%	18%	3%	2004
	18%	13%	84%	3%	0%	2003
	19%	43%	29%	26%	2%	2002
	6%	50%	9%	41%	0%	2001
	24%	65%	12%	22%	1%	2000
	17%	35%	51%	0%	15%	1999
	13%	8%	48%	44%	0%	1998
	15%	41%	57%	2%	0%	1997
Newspaper articles	**8%**	**50%**	**50%**	**0%**	**0%**	**2012**
	1%	0%	100%	0%	0%	2009
	9%	36%	40%	0%	24%	2006
	9%	36%	40%	0%	24%	2005
	11%	27%	47%	3%	23%	2004
	18%	33%	59%	4%	4%	2003
	8%	11%	78%	11%	0%	2002
	14%	19%	62%	19%	0%	2001
	24%	76%	24%	0%	0%	2000
	36%	23%	28%	48%	1%	1999
	22%	31%	56%	13%	0%	1998
	20%	26%	56%	18%	0%	1997
DART First State website (added to survey in 2000)	**79%**	**47%**	**37%**	**16%**	**0%**	**2012**
	14%	67%	34%	0%	0%	2009
	16%	92%	6%	2%	0%	2006
	25%	74%	24%	2%	0%	2005
	22%	71%	17%	12%	0%	2004
	13%	60%	39%	0%	1%	2003
	15%	33%	17%	48%	2%	2002
	21%	26%	61%	0%	13%	2001
	13%	60%	38%	2%	0%	2000

The most used source of information about transit services in the 2012 survey was information obtained from the DART First State website (79%), which is much higher than other forms of information and is much higher response than previous survey years. The second most used source of information in 2012 was printed bus schedules (46%), which was the most used source of information in the 2009 survey.

Most helpful sources of information include: calls to transit agency (60%), transit brochures and publications (58%), and newspaper articles (50%).

3.7 Demographics

This section of the report provides the responses to the demographic questions contained in the survey. The demographic questions included: residential tenure, motor vehicle availability per household, respondent age, number of persons in household over age 16, residential area type, ethnicity, household income and respondent gender. All tables show response by county, as well as for the state as a whole.

3.7.1 Residential Tenure

As an opening question, respondents were asked how long they had lived in Delaware.

Figure 3-40 Residential Tenure

Response	Statewide	Kent County	New Castle County	Sussex County
Less than a year	5%	13%	4%	2%
1 or 2 years	6%	0%	0%	12%
3-5 years	9%	8%	9%	10%
6-10 years	13%	13%	13%	12%
11-20 years	14%	4%	22%	14%
21-30 years	10%	9%	9%	12%
More than 30 years	26%	31%	26%	24%
All my life	17%	22%	17%	14%

3.7.2 Motor Vehicle Availability

Respondents were asked to indicate the number of motor vehicles available to the household. The table below outlines the response.

Figure 3-41 Motor Vehicle Availability

Number of Vehicles	Statewide	Kent County	New Castle County	Sussex County
None	1%	4%	0%	2%
One	39%	39%	57%	28%
Two	46%	48%	35%	51%
Three	14%	9%	8%	19%
Four or more	0%	0%	0%	0%

3.7.3 Respondent Age

At the end of the questionnaire, the more sensitive demographic questions were asked. Respondents were asked to indicate an age category. The table below shows the results.

Figure 3-42 Respondent Age

Age Category	Statewide	Kent County	New Castle County	Sussex County
16-29 years	2%	0%	4%	2%
30-49 years	22%	21%	35%	14%
50-64 years	41%	44%	26%	48%
65 or over	35%	35%	35%	36%
REF (vol)	0%	0%	0%	0%

3.7.4 Residential Area Type

Respondents were asked if they lived in a city/town, a suburban area or a rural area. The response is in the following table.

Figure 3-43 Residential Area Type

Area Type	Statewide	Kent County	New Castle County	Sussex County
City/town	53%	44%	48%	62%
Suburban	31%	35%	52%	17%
Rural	16%	21%	0%	21%
DK (vol)	0%	0%	0%	0%

3.7.5 Ethnicity

The survey also included a question on ethnicity. The following depicts the response to this question.

Figure 3-44 Ethnicity

Ethnic group	Statewide	Kent County	New Castle County	Sussex County
White, Caucasian	86%	82%	74%	94%
Black, African American	9%	9%	22%	2%
Latino, Hispanic, Mexican American	1%	0%	4%	0%
Asian, Pacific Islander	1%	0%	0%	2%
Native American, American Indian	1%	4%	0%	0%
Other	2%	5%	0%	2%
REF/DK (vol)	0%	0%	0%	0%

3.7.6 Number of Persons in Household 16 years or Older

The survey also asked for the number of persons in the household that were 16 years of age or older. The response is depicted below.

Figure 3-45 Number of Persons Aged 16 or Older

Number of persons	Statewide	Kent County	New Castle	Sussex County
One	30%	26%	52%	19%
Two	60%	66%	44%	67%
Three	9%	4%	4%	14%
Four	0%	0%	0%	0%
Five or more	1%	4%	0%	0%
DK/not sure (vol)	0%	0%	0%	0%

3.7.7 Household Income

The survey also asked respondents to indicate a category that contained their household income. The following table provides the data.

Figure 3-46 Household Income

Income Category	Statewide	Kent County	New Castle	Sussex County
Less than $15,000	3%	9%	0%	2%
$15 - $24,999	4%	4%	4%	3%
$25 – $34,999	9%	9%	10%	8%
$35 - $49,999	17%	23%	10%	18%
$50 - $74,999	28%	32%	14%	34%
$75 - $99,999	20%	5%	29%	24%
$100 - $149,999	14%	18%	19%	8%
$150,000 and over	5%	0%	14%	3%
REF/DK (vol)	0%	0%	0%	0%

3.7.8 Respondent Gender

Along with the above demographic data, respondent gender was also obtained. The data are below.

Figure 3-47 Respondent Gender

Gender	Statewide	Kent County	New Castle	Sussex County
Male	43%	44%	39%	45%
Female	57%	56%	61%	55%

Chapter 4
SHIPPERS AND CARRIERS SURVEY

4.1 Survey Objectives

Similar to the General Transportation User Survey and the Transit-Served Market Area Survey, the main objective of this survey, like the previous Shippers and Carriers Surveys, was to provide DelDOT with data to assess the level of customer satisfaction with the current transportation system. However, instead of a random statewide survey of households, this survey collected data on customer satisfaction from businesses that ship, carry, or transport goods in Delaware.

Information from this survey can serve as a measure of customer satisfaction that can be monitored over time. Information from the survey can be used as inputs into the Department's progress monitoring program to assess performance against the goals and objectives of the Statewide Long-Range Transportation Plan. Importantly, the data can help in the development of improvement strategies aimed at the goods movement industry.

Customer Satisfaction Surveys have been completed on nearly an annual basis since 1997. Like the previous eleven surveys, the specific information objectives for this survey were:

- For businesses using each transportation mode, to ascertain the level of importance of various service attributes.
- For businesses using each transportation mode, to ascertain the level of performance perceived for each of the service attributes.
- For businesses using each transportation mode, to identify the level of satisfaction attained for each modal service attribute and for the mode overall.
- To identify, from each firm's perspective, the most critical freight issue facing the business.

4.2 Summary of Research Methodology

AECOM developed the questionnaire for the baseline customer satisfaction survey conducted in 1997, in consultation with DelDOT's Division of Planning. Customer Satisfaction Surveys have been completed on nearly an annual basis since 1997. As was done for the previous surveys, the same questionnaire was used with only slight modifications for this year's survey to accommodate both telephone as well as Internet interviewing. A separately bound Technical Appendix has been prepared and contains frequency and cross-tabulated tables showing the distribution of response for each question.

Like the previous surveys, a market research firm administered the interviews. For this 2012 survey, Abt SRBI conducted the interviews. An SPSS (a statistical software package) computer file was developed to process the survey information by AECOM. The SPSS system enabled AECOM research staff to integrate the survey data so it could be presented in aggregate form. Unlike past surveys for this 2012 survey online (Internet) interviews were conducted in addition to land line telephone interviews to yield more representative results.

A total of 87 interviews were completed among companies that ship, transport or carry goods through Delaware. The sample frame for this survey was Delaware's International Registration Plan (IRP) database augmented with railroads and Port of Wilmington tenants and steamship lines listings provided by DelDOT.

Interviews were conducted in the period of March 19 to March 27, 2013. There were 87 completed interviews conducted statewide primarily between the hours of 9:00AM and 5:00PM by professional and experienced interviewers who were monitored on-site or the respondents opted to complete the survey via the Internet.

Completed interviews were approximately 10 minutes in duration on average. Similar to the previous surveys, response this year to the survey was very favorable.

4.3 Relative Importance & Performance of Modal Attributes

The next section of this chapter provides an in-depth examination of the importance and performance of various service attributes by mode. Like previous surveys, businesses were asked to rate the importance of each attribute on a 7-point scale (a rating of 1 meant "not at all important" while a rating of 7 meant "extremely important"), and then rate the current performance of the attribute on a 7-point scale (a rating of 1 meant "poor" while a 7 meant "excellent"). Percentage distributions are presented first and then the average scores are presented for each attribute and are ordered from most important to least important or highest performance to lowest. Of note, businesses were only asked to rate the attributes for each mode the business uses to ship, carry, or transport goods.

4.3.1 Those Who Ship, Carry or Transport by Truck

When asked, "Does your firm ship, carry or transport goods or materials by truck using Delaware's highway system?" eighty-nine percent (89%) of the sample indicated that their company moved goods by truck in Delaware. This percentage is slightly lower than the previous survey's results (93% in 2009).

These businesses were then asked how many tons of freight were shipped or received via truck in Delaware. Sixty-two percent (62%) of the respondents could not specify the tonnage. This is lower than previous survey results where only a few or none of the respondents specified tonnage. Of the 33 respondents who could specify the amount of tonnage they shipped by truck on Delaware's highway system, 9 (27%) shipped 100 or less tons; 7 (21%) shipped between 101 and 1,000 tons; 10 (30%) shipped between 1,001 and 50,000 tons; 6 (18%) shipped between 50,001 and 500,000 tons; and 1 (3%) shipped over 500,000 tons.

4.3.1.1 Attribute Importance

Those businesses that reported using Delaware's highways for the shipment of goods were asked to rate the importance of 18 service-related attributes on a 1 to 7 scale. The results are displayed in the table below.

Figure 4-1 Importance of Highway Attributes

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Hwys free from congestion	4%	0%	0%	4%	10%	17%	65%	100%	**6.27**
Wide intersections with turning lanes	1%	0%	3%	4%	16%	14%	62%	100%	**6.25**
Hwys w/ wide travel lanes	2%	0%	5%	3%	16%	22%	52%	100%	**6.03**
Hwy & freeway interchanges with ramps that trucks can negotiate	3%	1%	0%	10%	14%	12%	60%	100%	**6.01**
Hwys w/ few weight restrictions	3%	3%	5%	5%	12%	10%	62%	100%	**6.01**
Timely snow plowing and salting	4%	3%	4%	7%	10%	10%	62%	100%	**5.97**
Hwys w/ wide, paved shoulders	3%	1%	0%	7%	21%	17%	51%	100%	**5.92**
A transportation system with interconnected hwys	4%	3%	0%	5%	20%	17%	51%	100%	**5.89**
Info on when to expect delays & road closings	2%	2%	7%	5%	21%	12%	51%	100%	**5.77**
Hwys w/ few weight restricted bridges	4%	5%	3%	5%	18%	12%	53%	100%	**5.75**
Hwy system with few toll roads	7%	2%	3%	9%	14%	9%	56%	100%	**5.73**
Well-planned sequencing & timing of traffic lights	5%	1%	4%	9%	21%	7%	53%	100%	**5.71**
Hwys with few height restricted overpasses	12%	2%	5%	7%	15%	5%	54%	100%	**5.41**
Rest areas that can accommodate trucks	17%	10%	9%	5%	14%	4%	41%	100%	**4.62**
Well-staffed and efficient weigh stations	21%	2%	7%	15%	15%	7%	33%	100%	**4.52**
Hwy system w/good access to the Port of Wilmington	26%	8%	8%	5%	16%	7%	30%	100%	**4.18**
Hwy system w/good access to freight railroads	23%	6%	11%	10%	15%	11%	24%	100%	**4.16**
Hwy system w/good airport access	32%	12%	15%	4%	11%	1%	25%	100%	**3.55**

Among businesses using Delaware's highways to move goods, the most important attributes are:

- Highways free from congestion;
- Wide intersections with turning lanes;
- Highways with wide travel lanes;
- Highways and freeway interchanges with ramps that trucks can negotiate; and,
- Highways with few weight restrictions.

These results are similar to the results of previous surveys with the attributes of "highways free from congestion," "wide intersections with turning lanes," and "highways and freeway interchanges with ramps that trucks can negotiate" being of top importance in the 2009 survey.

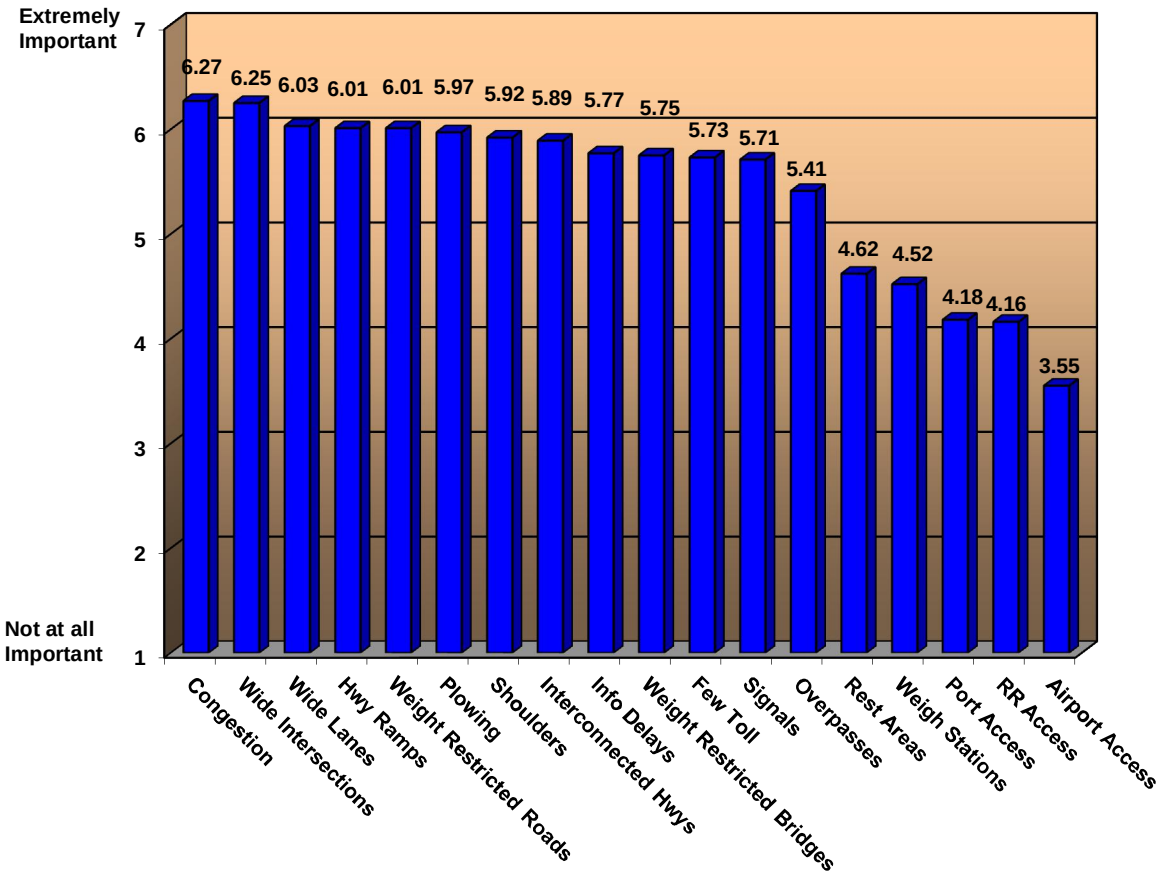
The least important attributes are:

- Highway system with good airport access;
- Highway system with good access to freight railroads; and
- Highway system with good access to the Port of Wilmington.

These attributes were rated least important attributes in the 2009 survey as well as prior surveys.

The figure below illustrates the mean importance of each of the above 18 attributes for businesses using trucks to move goods on Delaware's highways.

Figure 4-2 Mean Importance Ratings – Businesses Using Trucks to Move Goods



4.3.1.2 Attribute Performance

In addition to asking companies how important each attribute was, this survey, like the other surveys, also asked companies how well the current transportation system was performing on each attribute. Again, a seven-point scale was used, with a "1" meaning "poor" and a "7" meaning "excellent". The results are displayed in the table below.

Figure 4-3 Performance of Highway Attributes

	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Hwy system w/ good access to the Port of Wilmington	0%	2%	4%	15%	27%	23%	29%	100%	**5.52**
Hwys with few height restricted overpasses	0%	2%	8%	10%	30%	27%	23%	100%	**5.39**
Hwy & freeway interchanges with ramps that trucks can negotiate	0%	1%	8%	13%	33%	32%	13%	100%	**5.25**
A transportation system with interconnected hwys	0%	4%	5%	12%	36%	31%	12%	100%	**5.20**
Timely snow plowing and salting	4%	2%	4%	23%	23%	21%	23%	100%	**5.17**
Hwy system w/ good airport access	4%	8%	6%	9%	26%	21%	26%	100%	**5.15**
Hwys with wide travel lanes	1%	1%	5%	22%	33%	20%	18%	100%	**5.14**
Hwy system with few toll roads	1%	5%	5%	17%	29%	29%	14%	100%	**5.09**
Hwys w/ few weight restrictions	0%	6%	8%	21%	22%	24%	19%	100%	**5.08**
Hwys with few weight restricted bridges	0%	2%	15%	22%	22%	21%	18%	100%	**4.96**
Hwy system w/ good access to freight railroads	1%	6%	12%	10%	35%	18%	18%	100%	**4.94**
Hwys with wide, paved shoulders	2%	1%	7%	29%	32%	17%	12%	100%	**4.84**
Info on when to expect delays & road closings	1%	6%	6%	23%	35%	16%	13%	100%	**4.80**
Wide intersections with turning lanes	4%	2%	11%	21%	33%	16%	13%	100%	**4.76**
Well-staffed and efficient weigh stations	9%	3%	6%	15%	43%	15%	9%	100%	**4.57**
Rest areas that can accommodate trucks	5%	11%	12%	14%	29%	12%	17%	100%	**4.57**
Hwys free from congestion	7%	3%	15%	22%	28%	12%	13%	100%	**4.49**
Well-planned sequencing & timing of traffic lights	3%	9%	13%	22%	30%	12%	11%	100%	**4.46**

Similar to the other surveys, the performance ratings are lower than the importance ratings. In this survey, the attributes with the highest average performance are:

- Highway system with good access to the Port of Wilmington;
- Highways with few height restricted overpasses;
- Highway and freeway interchanges with ramps that trucks can negotiate; and,
- A transportation system with interconnected highways.

Like previous Shippers and Carriers surveys, the attributes of “highways with few height restricted overpasses” and “a transportation system with interconnected highways” were among the top attributes in terms of performance.

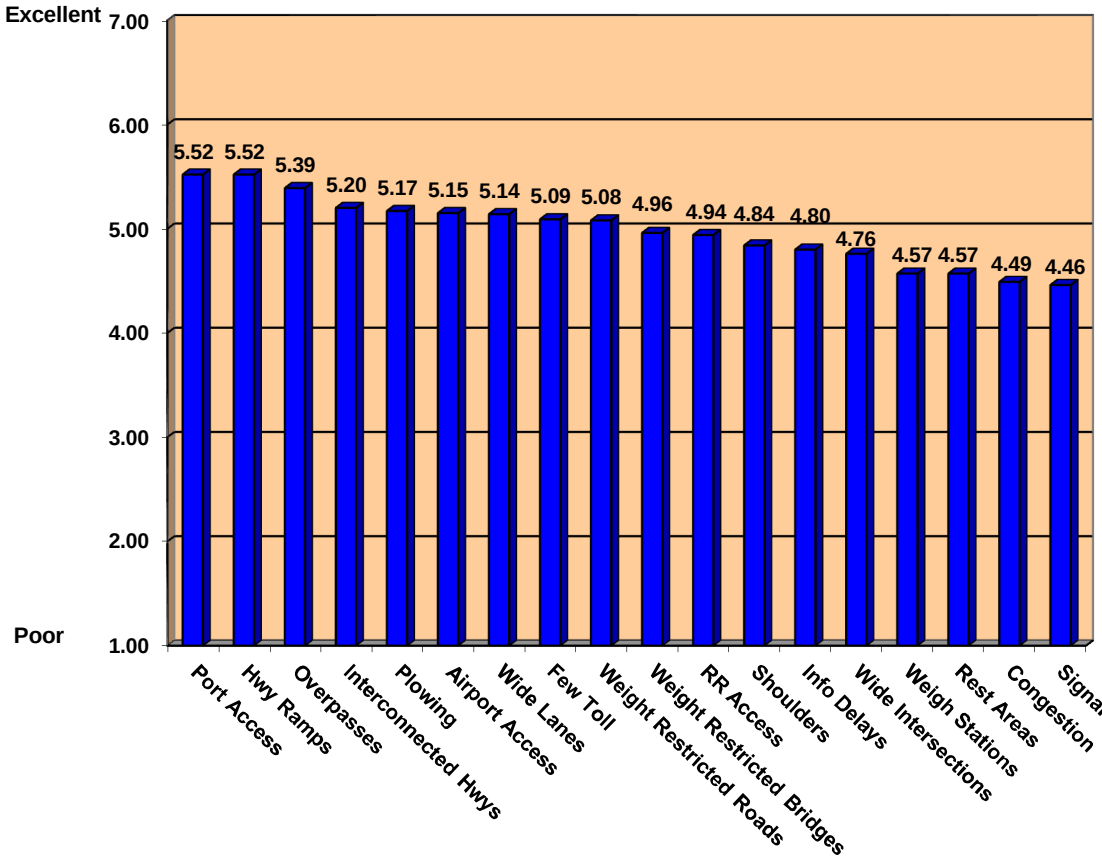
The lowest rated attributes in terms of performance are:

- Well-planned sequencing and timing of traffic lights;
- Highways free from congestion;
- Rest areas that can accommodate trucks; and,
- Well-staffed and efficient weigh stations.

"Well-planned sequencing and timing of traffic lights," "highways free from congestion," and "rest areas that can accommodate trucks" were the three lowest rated attributes for performance in the 2009 survey as well, and were among the lowest rated attributes in other past surveys.

The following displays the mean performance ratings.

Figure 4-4 Mean Performance Ratings - Businesses Using Trucks to Move Goods



4.3.1.3 Importance-Performance Analysis

By comparing attributes across both dimensions (importance and performance), one can separate the attributes customers feel are very important and are currently less satisfied with their performance from those attributes of less importance. Importance-performance analysis is designed to take into account that not all shortfalls in service quality are of equal concern to customers. When an attribute that is considered to be of primary importance falls short of a desirable level of performance, it is of greater concern than when a peripheral attribute is unsatisfactory in terms of performance. Thus, projects to address or improve shortfalls in a critical area (an attribute rated as high in importance) would be given a higher priority by the public than projects proposed to rectify shortfalls in areas of marginal importance (attributes rated low in importance).

To develop the satisfaction index, the mean rating for both importance and performance were computed for each attribute. The satisfaction index is then calculated by computing the ratio between the mean performance rating and the mean importance rating for each attribute. This index demonstrates the balance between importance and performance on an attribute in the minds

of customers. The higher the value of the satisfaction index, the higher the level of customer satisfaction on that attribute.

Figure 4-5 Importance-Performance Ratings and Satisfaction Indices - Businesses Using Trucks to Move Goods

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Hwy system w/good airport access	3.55	5.15	**145.07**
Hwy system w/good access to the Port of Wilmington	4.18	5.52	**132.06**
Hwy system w/good access to freight railroads	4.16	4.94	**118.75**
Well-staffed and efficient weigh stations	4.52	4.57	**101.11**
Hwys with few height restricted overpasses	5.41	5.39	**99.63**
Rest areas that can accommodate trucks	4.62	4.57	**98.92**
Hwy system with few toll roads	5.73	5.09	**88.83**
A transportation system with interconnected hwys	5.89	5.20	**88.29**
Hwy & freeway interchanges with ramps that trucks can negotiate	6.01	5.25	**87.35**
Timely snow plowing and salting	5.97	5.17	**86.60**
Hwys w/ few weight restricted bridges	5.75	4.96	**86.26**
Hwys w/ wide travel lanes	6.03	5.14	**85.24**
Hwys w/ few weight restrictions	6.01	5.08	**84.53**
Info on when to expect delays & road closings	5.77	4.80	**83.19**
Hwys w/ wide, paved shoulders	5.92	4.84	**81.76**
Well-planned sequencing & timing of traffic lights	5.71	4.46	**78.11**
Wide intersections with turning lanes	6.25	4.76	**76.16**
Hwys free from congestion	6.27	4.49	**71.61**

As reflected in the figure above, very high levels of satisfaction of over 100 were obtained on four attributes. These four attributes are “a highway system with good airport access,” “a highway system with good access to the Port of Wilmington,” “a highway system with good access to freight railroads,” and “well-staffed and efficient weight stations.” These attributes were among the top attributes in the 2006 and 2009 surveys as well.

The lowest levels of satisfaction are found on the three attributes “highways free from congestion,” “wide intersections with turning lanes,” and “well-planned sequencing and timing of traffic lights.” These findings are similar to the findings in prior Shippers and Carriers surveys and similar to the other Customer Satisfaction surveys conducted.

Similar to the analysis provided on the results of the other surveys, quadrant analysis was conducted on the results of this survey as well. Quadrant analysis can assist policy makers in service program decisions by placing attributes along two dimensions -- the importance of attributes

to customers and their performance. Having these two dimensions of customer evaluation allows for the creation of four performance quadrants as can be seen below.

Figure 4-6 Importance – Performance Quadrants

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority	(1) Maintenance: High Priority
	Below Average	(3) Corrective: Low Priority	(4) Corrective: High Priority

The attributes falling in Quadrant 4 are above the mean of all importance ratings and are below the mean of all performance ratings (thus, above average importance and below average performance). The services or attributes that fall within this quadrant should be the highest priority for corrective action. Services or attributes that fall within Quadrant 3 are both below average importance and below average performance. These services or attributes also need corrective action, but immediate attention is not required since these attributes are less important to the customers. These items should be monitored and receive attention or investment after the more important attributes in Quadrant 4 are addressed. The attributes in Quadrant 2 are above average in performance and below average in importance. Attributes in this quadrant need only maintenance action and are of the lowest priority. Items that fall within Quadrant 1 are above average in importance and above average in performance. Although these services or attributes are doing well currently, they are high priority for maintenance action and should not be neglected. These are salient issues to customers and need to be followed closely.

The table below shows the eighteen attributes asked of firms that use trucks for shipping goods.

Figure 4-7 Importance – Performance Quadrant Analysis - Businesses Using Trucks to Move Goods

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Good Airport Access** **Port of Wilmington Access** **Height-Restricted Overpasses**	(1) Maintenance: High Priority **Few Toll Roads** **Interconnected Highways** **Highway Interchange Ramps** **Snow Plowing & Salting** **Few Weight Restricted Roads**
	Below Average	(3) Corrective: Low Priority **Access to Freight Railroads** **Efficient Weigh Stations** **Rest Areas for Trucks**	(4) Corrective: High Priority **Few Weight Restricted Bridges** **Information on Delays** **Wide, Paved Shoulders** **Sequencing & Timing of Signals** **Hwys with Wide Travel Lanes** **Highways Free from Congestion**

The attributes in Quadrant 1 represent areas which firms using trucks to move goods regard as important, and on which Delaware received high marks. Although the attributes are perceived to be fairing well now, they are a high priority for maintenance and should not be neglected. These are attributes that are important to companies that ship or move goods by truck and are salient issues that these companies are attentive to. The attributes of "having few toll roads," "interconnected highways," "having highways with ramps that trucks can negotiate," "timely snow plowing and salting," and "having few weight-restricted roads" are located in Quadrant 1. All the attributes except "few toll roads" were placed in Quadrant 1 in the 2009 survey as well. "Few toll roads" was a Quadrant 4 attribute in the 2009 survey.

The attributes in Quadrant 2 are those that companies that ship by truck rate high in performance but low in importance. Therefore, while these attributes need some maintenance action, they are not as salient to companies that ship by truck as the items in Quadrant 1. The attributes "good airport access," "good access to the Port of Wilmington", and "highways with few height-restricted overpasses" fall into Quadrant 2. In terms of improvement strategies or investments, these are attributes of lowest priority. All three attributes were Quadrant 2 attributes in the 2009 survey as well.

Three attributes fall into Quadrant 3 for 2012: "access to freight railroads," "well-staffed and efficient weigh stations," and "rest areas that accommodate trucks." These attributes have lower than average performance ratings and lower than average importance ratings. "Rest areas that accommodate trucks" was placed in Quadrant 3 in the 2006 and 2009 surveys as well. The attributes of "access to freight railroads" and "well-staffed and efficient weigh stations" were placed in Quadrant 2 in the 2009 survey.

Quadrant 4 represents attributes rated high in importance but low in performance, thus representing attributes with lowest customer satisfaction. These attributes are the ones that should be the highest priority to receive corrective action or additional investment and for firms that ship by truck, there are six such attributes: "highways with few weight-restricted bridges," "having information on when to expect delays and road closings," "wide, paved shoulders," "well-planned sequencing and timing of traffic signals," "highways with wide travel lanes," and "highways free from congestion." All the attributes except "highways with few weight-restricted bridges" were Quadrant 4 attributes in the 2009 survey as well. "Highways with few weight-restricted bridges" was placed in Quadrant 1 in the 2009 survey.

4.3.2 Rail Freight

This section of the report provides an examination of the importance and performance data obtained from businesses that ship, carry, or transport goods or materials by rail or rail intermodal.

Of those businesses surveyed, nine companies out of the total 87 surveyed (10%) indicated that they shipped, carried or transported goods by rail. This response is higher than prior surveys (4% in 2009). Due to the very small sample size, the data from this group should be used with caution.

Similar to the companies that shipped via truck, companies shipping by rail were asked to specify the tonnage shipped by rail freight over the past year. Two of the companies were not able to specify tonnage. Of the 7 respondents that could specify tonnage, 1 (14%) transported 100 tons or less; 3 (43%) transported between 101 and 1,000 tons; 1 (14%) transported between 1,001 and 50,000 tons; 1 (14%) transported between 50,001 and 500,000 tons; and 1 (14%) transported over 500,000 tons.

4.3.2.1 Attribute Importance

The table below illustrates the importance assigned to the fourteen service attributes asked of the nine companies that shipped or carried goods or materials by rail freight.

Figure 4-8 Importance of Rail Freight Attributes

	Not at all important						Extremely Important		
Attribute	1	2	3	4	5	6	7	Total	Mean
Good condition track, roadbed & ROW for Class 1 railroads	0%	0%	11%	11%	11%	11%	56%	100%	**5.89**
Competitive service & attention from Class 1 railroads	0%	12%	0%	0%	13%	25%	50%	100%	**5.88**
Good condition track, roadbed & ROW for shortline railroads	0%	11%	0%	11%	11%	11%	56%	100%	**5.78**
Having competitive services to businesses off main lines	11%	11%	0%	22%	11%	11%	34%	100%	**4.78**
Having numerous interchange points on the rail freight system	11%	11%	0%	11%	45%	11%	11%	100%	**4.44**
Competitive service & attention from shortline railroads	22%	11%	0%	11%	11%	11%	34%	100%	**4.44**
Having bulk intermodal distribution facilities & services available	33%	0%	0%	0%	34%	11%	22%	100%	**4.22**
Having rail-to-truck commodity transfer points	22%	11%	11%	11%	0%	11%	34%	100%	**4.22**
Having multi-track rail operations available	22%	11%	0%	22%	34%	0%	11%	100%	**3.78**
Minimal conflicts with rail services	34%	11%	0%	11%	22%	0%	22%	100%	**3.67**
Eliminating clearance restrictions for high-cube or double-stack operations	33%	11%	0%	0%	45%	0%	11%	100%	**3.56**
Good condition track, roadbed & ROW for the railroad serving the Port of Wilmington	45%	0%	22%	0%	11%	0%	22%	100%	**3.22**
Having intermodal trailer-on-flat-car facilities & services	45%	11%	0%	0%	22%	11%	11%	100%	**3.22**
Having intermodal container-on-flat-car facilities & services	56%	0%	0%	0%	22%	11%	11%	100%	**3.11**

Among the companies that transport via rail, the most important attributes are:

- Good condition track, roadbed & ROW for Class 1 railroads;
- Competitive service & attention from Class 1 railroads; and,
- Good condition track, roadbed & ROW for shortline railroads.

”Good condition track, roadbed & ROW for Class 1 railroads” and “good condition track, roadbed & ROW for shortline railroads” received high importance ratings in the 2006 and 2009 surveys as well.

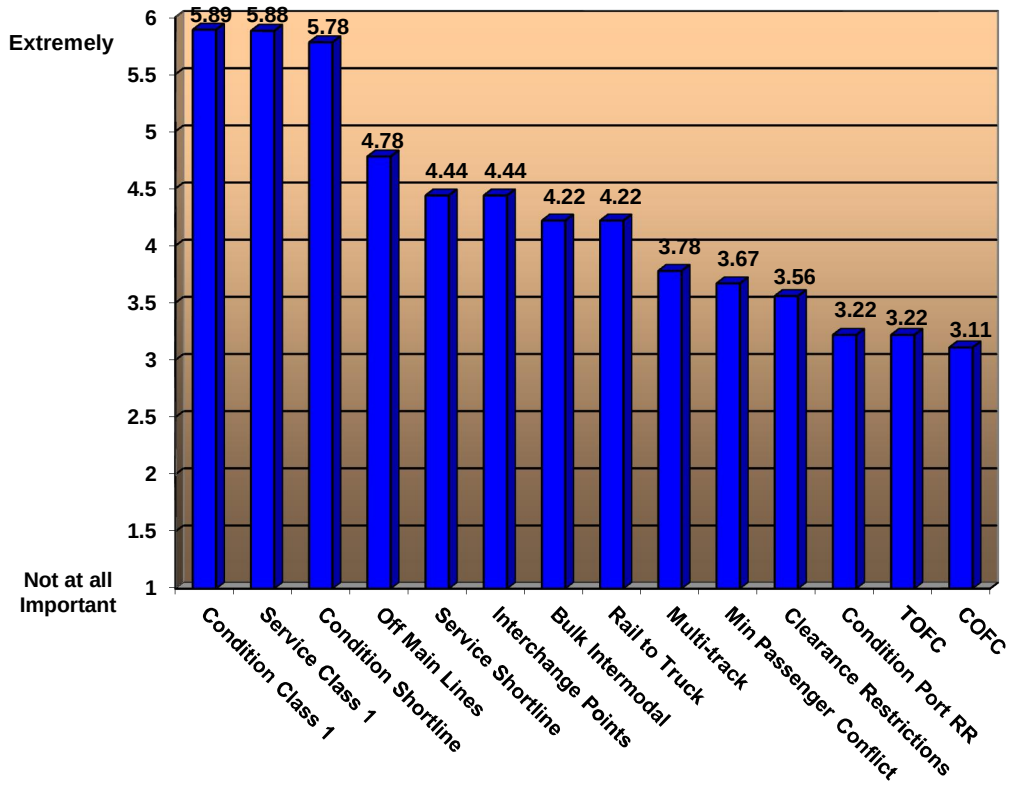
The least important attributes are:

- Having intermodal container-on-flat-car facilities & services;
- Having intermodal trailer-on-flat-car facilities and services; and,
- Good condition track, roadbed & ROW for the railroad serving the Port of Wilmington.

“Having intermodal trailer-on-flat-car facilities & services” and “having intermodal container-on-flat-car facilities & services” were rated least important attributes in the 2006 and 2009 surveys as well.

The figure below illustrates the mean importance of each of the above fourteen attributes among the rail freight users.

Figure 4-9 Mean Importance Ratings - Businesses Using Rail Freight to Move Goods



4.3.2.2 Attribute Performance

The table below provides the performance rating data obtained in the survey from the rail freight users.

Figure 4-10 Performance of Rail Freight Attributes

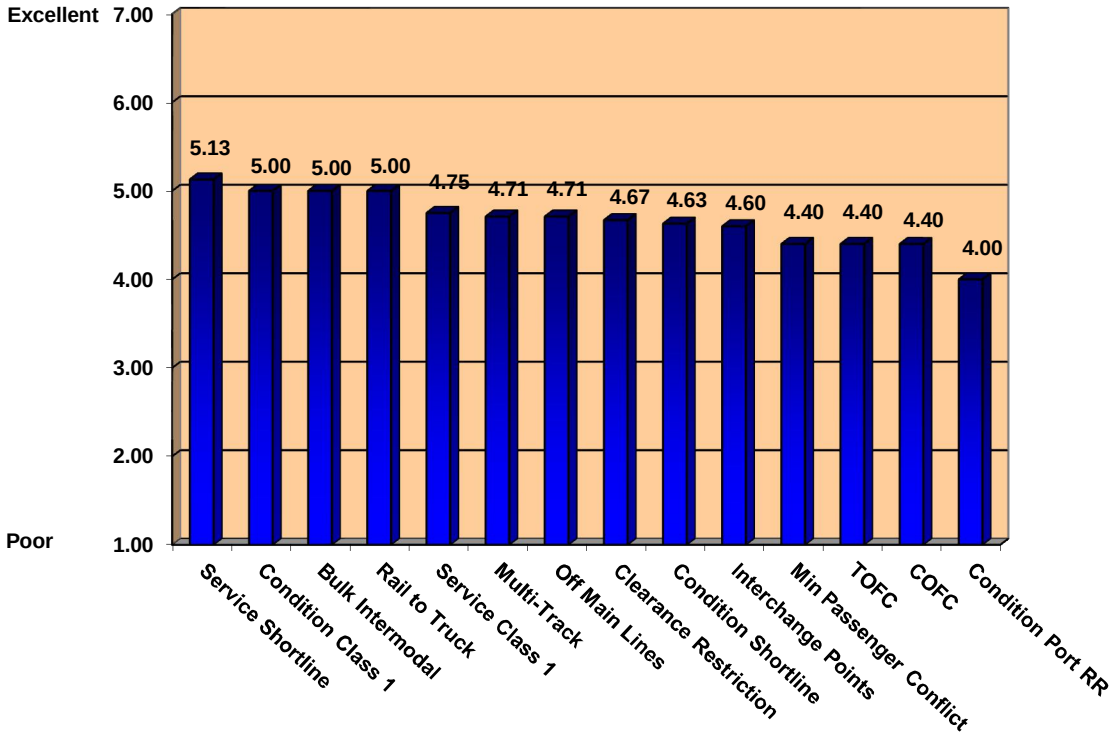
	Poor						Excellent		
Attribute	1	2	3	4	5	6	7	Total	Mean
Competitive service & attention from shortline railroads	0%	0%	0%	25%	50%	12%	13%	100%	**5.13**
Good condition track, roadbed & ROW for Class 1 railroads	0%	0%	0%	33%	45%	11%	11%	100%	**5.00**
Having bulk intermodal distribution facilities & services available	0%	0%	0%	40%	40%	20%	0%	100%	**5.00**
Having rail-to-truck commodity transfer points	0%	0%	0%	40%	40%	0%	20%	100%	**5.00**
Competitive service & attention from Class 1 railroads	0%	0%	0%	50%	38%	12%	0%	100%	**4.75**
Having competitive services to businesses off main lines	0%	0%	0%	43%	43%	14%	0%	100%	**4.71**
Having multi-track rail operations available	0%	0%	0%	43%	44%	14%	0%	100%	**4.71**
Eliminating clearance restrictions for high-cube or double-stack operations	0%	0%	0%	33%	67%	0%	0%	100%	**4.67**
Good condition track, roadbed & ROW for shortline railroads	0%	0%	0%	50%	38%	12%	0%	100%	**4.63**
Having numerous interchange points on the rail freight system	0%	0%	0%	60%	20%	20%	0%	100%	**4.60**
Minimal conflicts with rail services	0%	0%	20%	20%	60%	0%	0%	100%	**4.40**
Having intermodal trailer-on-flat-car facilities & services	0%	0%	20%	40%	20%	20%	0%	100%	**4.40**
Having intermodal container-on-flat-car facilities & services	0%	0%	20%	20%	60%	0%	0%	100%	**4.40**
Good condition track, roadbed & ROW for the railroad serving the Port of Wilmington	0%	25%	0%	25%	50%	0%	0%	100%	**4.00**

The top-performing attributes for 2012 are “competitive service and attention from shortline railroads”, “good condition track, roadbed and Row for Class 1 railroads,” “having bulk intermodal distribution facilities and services available,” and “having rail-to-truck commodity transfer points.” “Competitive service and attention from shortline railroads” and “good condition track, roadbed & ROW for Class 1 railroads” were among the highest rated performance attributes in the 2009 survey.

The lowest rated attributes for performance are “good condition track, roadbed & ROW for the railroad serving the Port of Wilmington,” “having intermodal container-on-flat-car facilities & services,” “having intermodal trailer-on-flat car facilities & services,” and “minimal conflicts with passenger rail services.” “Having intermodal container-on-flat-car facilities & services” and “having intermodal trailer-on-flat car facilities & services” were among the lowest rated performance attributes in the 2006 and 2009 surveys as well.

The figure below depicts the mean performance ratings for each attribute.

Figure 4-11 Mean Performance Ratings - Businesses Using Rail Freight to Move Goods



4.3.2.3 Importance-Performance Analysis

Again, some of the most relevant information for policy-makers and decision-makers are the results of the importance-performance analysis. The table below shows mean importance and performance ratings and the satisfaction index for each attribute.

Figure 4-12 Importance-Performance Ratings and Satisfaction Indices – Rail Freight

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Having intermodal container-on-flat-car facilities & services	3.11	4.40	**141.48**
Having intermodal trailer-on-flat-car facilities & services	3.22	4.40	**136.65**
Eliminating clearance restrictions for high-cube or double-stack operations	3.56	4.67	**131.18**
Having multi-track rail operations available	3.78	4.71	**124.60**
Good condition track, roadbed & ROW for the railroad serving the Port of Wilmington	3.22	4.00	**124.22**
Minimal conflicts with rail services	3.67	4.40	**119.89**
Having bulk intermodal distribution facilities & services available	4.22	5.00	**118.48**
Having rail-to-truck commodity transfer points	4.22	5.00	**118.48**
Competitive service & attention from shortline railroads	4.44	5.13	**115.54**
Having numerous interchange points on the rail freight system	4.44	4.60	**103.60**
Having competitive services to businesses off main lines	4.78	4.71	**98.54**
Good condition track, roadbed & ROW for Class 1 railroads	5.89	5.00	**84.89**
Competitive service & attention from Class 1 railroads	5.88	4.75	**80.78**
Good condition track, roadbed & ROW for shortline railroads	5.78	4.63	**80.10**

A high level of satisfaction with an index of 100 or over occurs with ten attributes. The 2009 survey had 6 attributes that had satisfaction indices over 100. The attributes with the highest satisfaction indices are “having intermodal container-on-flat-car facilities & services,” “having intermodal trailer-on-flat-car facilities & services,” and “eliminating clearance restrictions for high-cute or double-stack operations.” “Having intermodal container-on-flat-car facilities & services” and “eliminating clearance restrictions for high-cube or double-stack operations” were among the highest levels of satisfaction in the 2009 survey as well.

The lowest level of satisfaction occurs with “good condition track, roadbed & ROW for shortline railroads,” “competitive service & attention from Class 1 railroads,” and “good condition track, roadbed & ROW for Class 1 railroads.” These three attributes had higher satisfaction indices in the 2009 survey.

Any comparison made to past surveys should be made with caution given very small sample sizes.

Importance-performance quadrant analysis was also performed on the data and the results are contained in the table below.

Figure 4-13 Importance – Performance Quadrant Analysis – Rail Freight

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Bulk Intermodal Distribution Points** **Multi-Track Rail Operations** **Rail-to-Truck Commodity Transfer**	(1) Maintenance: High Priority **Good Service - Class 1** **Good Service - Shortline** **Good Conditions - Class 1** **Good Service off Main Lines**
	Below Average	(3) Corrective: Low Priority **Intermodal Container-on-Flat-Car** **Intermodal Trailer-on-Flat-Car** **Eliminating Clearance Restrictions** **Good Conditions - Port of Wilmington** **Minimal Passenger Rail Conflicts**	(4) Corrective: High Priority **Numerous Interchange Points** **Good Condition - Shortline**

For 2012, four attributes fall into Quadrant 1: “competitive service and attention from Class 1 railroads,” “competitive service and attention from shortline railroads,” “good condition track, roadbed and ROW for Class 1 railroads,” and “having competitive services to businesses off main lines.” “Having competitive services to businesses off main lines” was in Quadrant 4 in the 2009 survey while all other attributes shown in Quadrant 1 were Quadrant 1 attributes in 2009 and prior surveys as well.

Quadrant 2 attributes are those that users of rail freight rate high in performance but low in importance. Thus relative to other quadrants, attributes in this quadrant are of lower priority for maintenance action or investment, as these attributes are not as salient to rail freight users as the items in Quadrants 1 or 4. In 2012, there are three attributes in Quadrant 2: “having bulk intermodal distribution facilities and services available,” “having multi-track rail operations available,” and “having rail-to-truck commodity transfer points.” In the 2009 survey, “having bulk intermodal distribution facilities and services” was in Quadrant 2, “having multi-track rail operations available” was in Quadrant 4, and “having rail-to-truck commodity transfer points” was in Quadrant 3.

As can be seen, Quadrant 3 contains five attributes for 2012, and they all have lower than average performance and importance ratings. “Having intermodal container-on-flat-car facilities and services,” “having intermodal trailer-on-flat car facilities and services,” and “eliminating clearance restrictions for high-cube or double-stack operations” were in this quadrant in the 2009 survey as well. “Good condition track, roadbed and ROW for the railroad serving the Port of Wilmington” was in Quadrant 2 in the 2009 survey and “minimal conflicts with passenger rail services” was placed in Quadrant 4 in the 2009 survey.

Quadrant 4 represents attributes rated high in importance, but low in performance and as a result are considered attributes with the lowest levels of customer satisfaction. These attributes should be of the highest priority to receive corrective action or investment. This year two attributes are located in Quadrant 4: “having numerous interchange points on the rail freight system” and “good condition track, roadbed and ROW for shortline railroads”. These attributes were in Quadrant 1 in the 2009 survey.

Given the small sample size, the data should be used with caution and any change from 2009 or prior surveys cannot be deemed significant.

4.3.3 Air Freight

In 2012, two (2) of the businesses surveyed indicated that they shipped, carried or transported goods or materials by air freight. This is similar to the results of previous Shippers and Carriers surveys where a very low number of businesses indicated that they shipped goods by air (the range has been from 0 to 6 businesses any given survey year).

The results in this section of the report provide information on the importance and performance ratings on nine attributes asked of companies shipping by air freight.

4.3.3.1 Attribute Importance

The table below illustrates the importance assigned to the nine service attributes asked of the companies that shipped or carried goods or materials by rail freight.

Figure 4-14 Importance of Air Freight Attributes

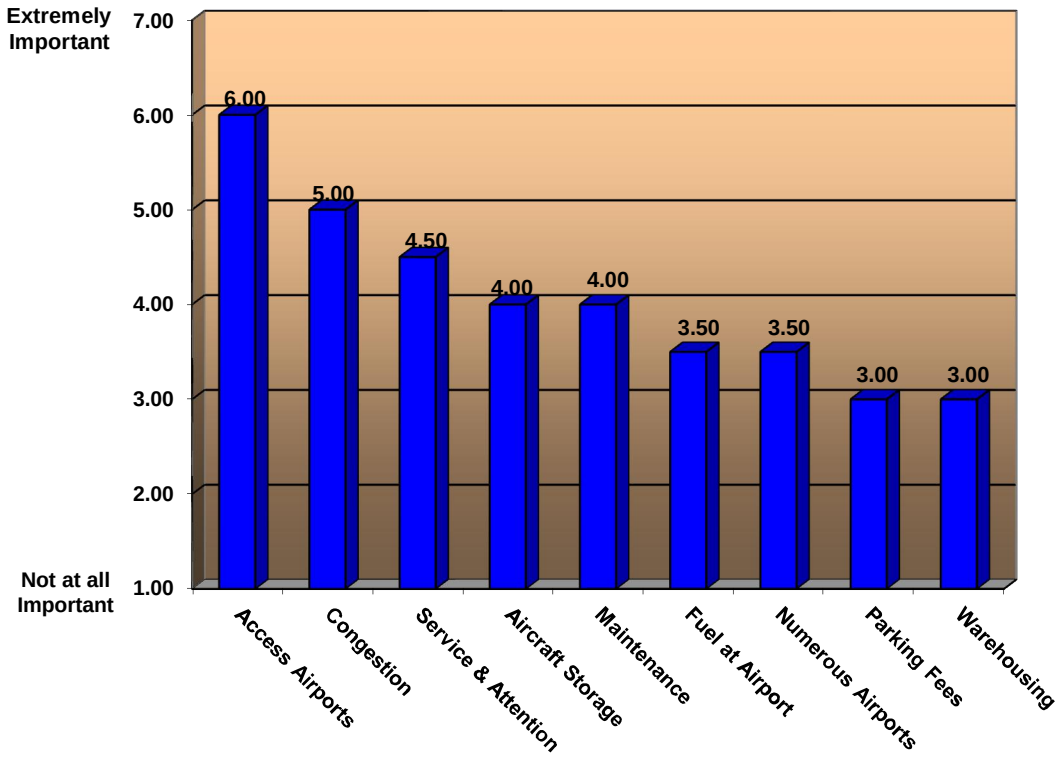
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Highway access to airports	0%	0%	0%	0%	50%	0%	50%	100%	**6.00**
Highways free from congestion near airports	0%	0%	0%	0%	100%	0%	0%	100%	**5.00**
Having competitive service and attention by air cargo carriers	0%	50%	0%	0%	0%	0%	50%	100%	**4.50**
Having space available for aircraft storage	50%	0%	0%	0%	0%	0%	50%	100%	**4.00**
Having facilities available for aircraft maintenance	50%	0%	0%	0%	0%	0%	50%	100%	**4.00**
Having fuel available at the airport	50%	0%	0%	0%	0%	50%	0%	100%	**3.50**
Having numerous airports available for air cargo service	50%	0%	0%	0%	0%	50%	0%	100%	**3.50**
Reasonable parking and/or landing fees for aircraft	50%	0%	0%	0%	50%	0%	0%	100%	**3.00**
Having warehousing/storage terminals available near airports	50%	0%	0%	0%	50%	0%	0%	100%	**3.00**

The attributes with the highest importance rating for the 2012 survey are “highway access to airports” and “highways free from congestion near airports.” There were no respondents from the 2009 survey that indicated that they used air for commodity transport, so no comparison can be made.

The attributes with the lowest importance rating for the 2012 survey are “having warehousing/storage terminals available near airports” and “reasonable parking and/or landing fees for aircrafts.” Again, no comparison can be performed to the 2009 survey results.

Results from this section should be reviewed with caution due to the extremely small sample size.

Figure 4-15 Mean Importance Ratings - Businesses Using Air Freight to Move Goods



4.3.3.2 Attribute Performance

The table below provides the performance rating data obtained in the survey from the rail freight users.

Figure 4-16 Performance of Air Freight Attributes

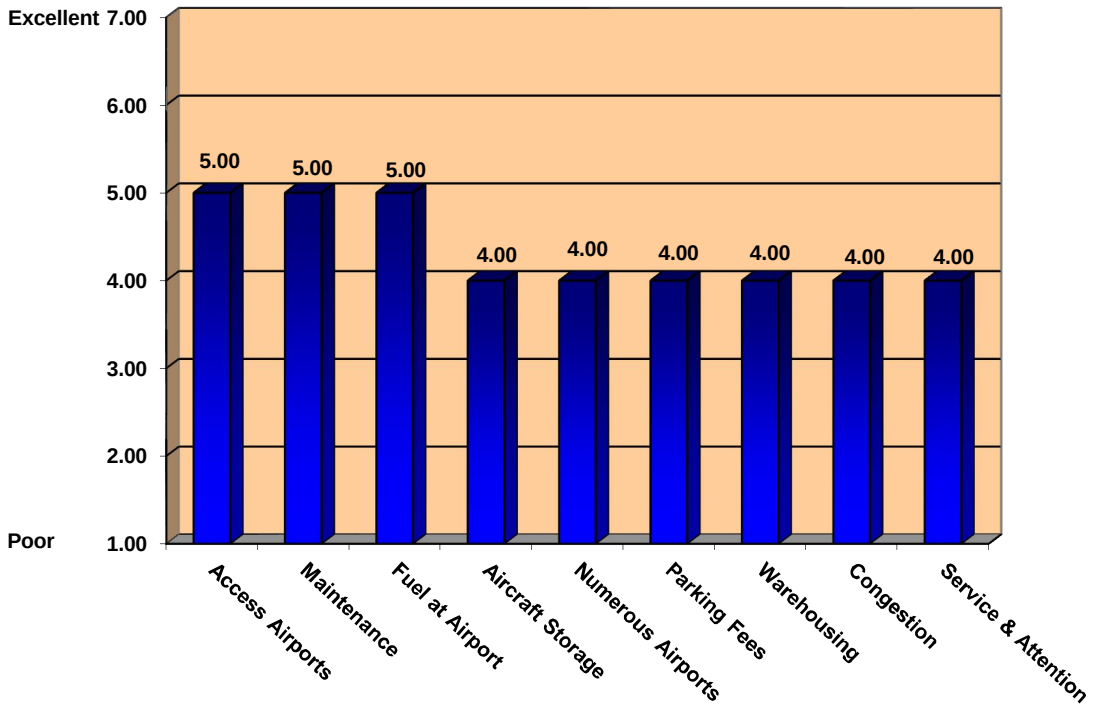
	Poor						Excellent		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Highway access to airports	0%	0%	0%	50%	0%	50%	0%	100%	**5.00**
Having facilities available for aircraft maintenance	0%	0%	0%	50%	0%	50%	0%	100%	**5.00**
Having fuel available at the airport	0%	0%	0%	50%	0%	50%	0%	100%	**5.00**
Having space available for aircraft storage	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**
Having numerous airports available for air cargo service	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**
Reasonable parking and/or landing fees for aircraft	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**
Having warehousing/storage terminals available near airports	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**
Highways free from congestion near airports	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**
Having competitive service and attention by air cargo carriers	0%	0%	0%	100%	0%	0%	0%	100%	**4.00**

The attributes with the highest performance are “highway access to airports,” “having facilities available for aircraft maintenance,” and “having fuel available at the airport. The 2009 survey showed no respondents for air commodity transport so no comparison can be performed.

The remaining attributes all received a performance rating of 4.0. No comparison can be performed for the 2009 survey because no companies surveyed indicated that they transported goods via air freight.

Results from this section should be reviewed with caution due to the extremely small sample size.

Figure 4-17 Mean Performance Ratings - Businesses Using Air Freight to Move Goods



4.3.3.3 Importance-Performance Analysis

Again, some of the most relevant information for policy-makers and decision-makers are the results of the importance-performance analysis. The table below shows mean importance and performance ratings and the satisfaction index for each attribute.

Figure 4-18 Importance-Performance Ratings and Satisfaction Indices – Air Freight

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Having fuel available at the airport	3.50	5.00	**142.86**
Having warehousing/storage terminals available near airports	3.00	4.00	**133.33**
Reasonable parking and/or landing fees for aircraft	3.00	4.00	**133.33**
Having facilities available for aircraft maintenance	4.00	5.00	**125.00**
Having numerous airports available for air cargo service	3.50	4.00	**114.29**
Having space available for aircraft storage	4.00	4.00	**100.00**
Having competitive service and attention by air cargo carriers	4.50	4.00	**88.89**
Highway access to airports	6.00	5.00	**83.33**
Highways free from congestion near airports	5.00	4.00	**80.00**

A high level of satisfaction with an index of 100 and over occurs with six of the nine attributes. The attributes with the highest satisfaction indices are “having fuel available at the airport,” “having warehousing/storage terminals available near airport”, and “reasonable parking and/or landing fees for aircraft.” Comparisons cannot be performed with the 2009 survey results as there were no air freight respondents in 2009.

The lowest level of satisfaction occurs with “highways free from congestion near airport,” highway access to airports,” and “having competitive service and attention by air cargo carriers.”

Any analysis should be made with caution given very small sample size.

Importance-performance quadrant analysis was also performed on the data and the results are contained in the table below. Given the small sample size, the data should be used with caution.

Figure 4-19 Importance – Performance Quadrant Analysis – Air Freight

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Fuel Available** **Aircraft Maintenance**	(1) Maintenance: High Priority **Highway Access to Airports**
	Below Average	(3) Corrective: Low Priority **Warehousing Available near Airports** **Reasonable Parking/Landing Fees** **Numerous Airports Available** **Aircraft Storage**	(4) Corrective: High Priority **Competitive Service and Attention** **Congestion**

As no companies in the 2009 survey indicated that they used air freight to transport goods, a comparison cannot be made. The results from this section should be reviewed cautiously due to the small sample size.

Attributes in Quadrant 1 received a high importance rating and high performance rating, illustrating that attributes in this Quadrant are faring well now but should not be neglected due to their high importance rating. "Highway access to airports" was placed in Quadrant 1 in this year's survey.

Unlike Quadrant 1, Quadrant 2 attributes received a lower than average importance rating. Due to their high performance and low importance, these attributes are of low priority but require maintenance to ensure their continued high performance. For the 2012 survey, the attributes "having fuel available at the airport" and "having facilities available for aircraft maintenance" were placed in this quadrant.

Attributes in Quadrant 3 require continued attention and maintenance due to their lower than average performance ratings. Four attributes were placed in Quadrant 3: "having warehousing/storage terminals available near airports," "having reasonable parking and/or landing fees for aircraft," "providing numerous airports for air cargo service," and "having space available for aircraft storage."

Quadrant 4 represents attributes that received a high rating in importance and low rating in performance. These attributes should be of the highest priority for additional investment and attention. There are two attributes in this quadrant in the 2012 survey: "competitive service and attention by air cargo carriers" and "having highways free from congestion near airports."

4.3.4 Port of Wilmington

In this year's survey 20 businesses out of the total 87 surveyed (23%) stated that they shipped or received goods through the Port of Wilmington. This result is higher than results found in the previous surveys, where the number of businesses surveyed using the Port of Wilmington had ranged from 2 businesses to 11 businesses.

Eight of the twenty businesses interviewed were not able to specify the tonnage shipped through the Port of Wilmington. Of the twelve business that could specify how much tonnage they shipped

via the Port of Wilmington, 4 (33%) shipped 100 tons or less; 1 (8%) shipped between 101 and 1,000 tons; 3 (25%) shipped between 1,001 and 50,000 tons; 2 (17%) shipped between 50,001 and 500,000 tons; and 2 (17%) shipped over 500,000 tons.

4.3.4.1 Attribute Importance

The twenty businesses were asked to rate the importance of fifteen different attributes on a scale of 1 to 7, with a "1" being "not at all important" and a "7" being "extremely important". The results are outlined in the following table showing the percentage distribution of response for each rating along with the mean importance as computed for each attribute. Attributes are ordered in the table by mean importance value.

Figure 4-20 Importance of Port of Wilmington Attributes

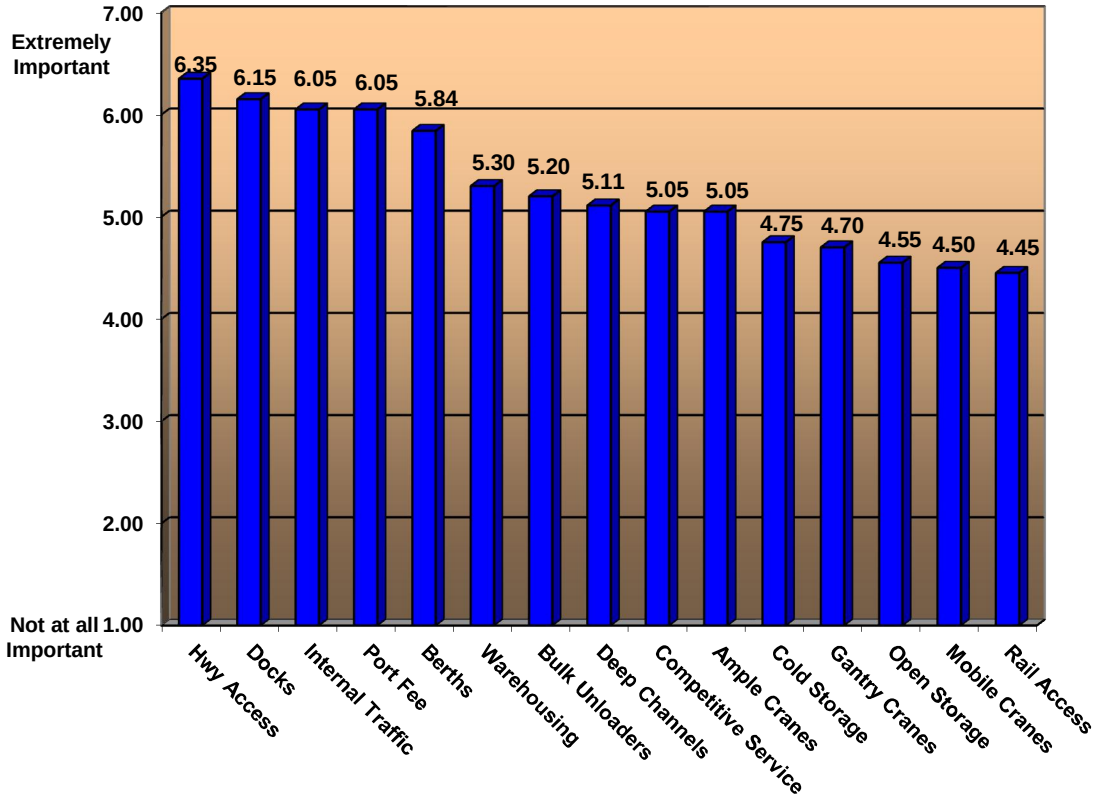
	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Good hwy access to the Port of Wilmington	0%	0%	0%	0%	25%	15%	60%	100%	**6.35**
Good condition dock facilities	0%	0%	10%	0%	15%	15%	60%	100%	**6.15**
Good internal traffic flow at the Port	0%	0%	5%	15%	15%	0%	65%	100%	**6.05**
Reasonable port fees	10%	0%	5%	15%	30%	10%	30%	100%	**6.05**
Having deep and wide berths	5%	0%	5%	5%	16%	16%	53%	100%	**5.84**
Having warehousing space available	5%	10%	10%	10%	10%	0%	55%	100%	**5.30**
Having bulk cargo unloaders available	15%	0%	5%	15%	10%	5%	50%	100%	**5.20**
Having deep channels	20%	0%	0%	11%	11%	11%	47%	100%	**5.11**
Competitive service & attention by shippers	10%	0%	5%	15%	30%	10%	30%	100%	**5.05**
Ample cranes of various types for trans-loading containers	10%	10%	5%	15%	5%	10%	45%	100%	**5.05**
Having cold storage facilities available	20%	5%	10%	5%	10%	5%	45%	100%	**4.75**
Having gantry cranes w/100 ton capacity	20%	15%	0%	10%	0%	5%	50%	100%	**4.70**
Open storage facilities available	15%	5%	5%	25%	15%	5%	30%	100%	**4.55**
Having 40-ton mobile cranes available	10%	20%	5%	10%	15%	10%	30%	100%	**4.50**
Good rail access to the Port of Wilmington	25%	0%	10%	5%	20%	10%	30%	100%	**4.45**

The most important attributes in this year's survey are "good highway access to the Port of Wilmington" followed by "good condition dock facilities." Both the attributes had above average importance ratings in the 2009 survey as well as other past surveys.

The least important attributes were "good rail access to the Port of Wilmington and" "having 40-ton mobile cranes available." These attributes were among the lowest rated attributes of importance in the 2009 and 2006 surveys as well.

The mean importance rating for each attribute is displayed graphically in the figure below.

Figure 4-21 Mean Importance Ratings – Port of Wilmington



4.3.4.2 Attribute Performance

Just as other users were asked to rate the performance provided by the mode used, Port of Wilmington users were also asked to rate the performance of each of the fifteen attributes. The following table provides the performance ratings associated with each attribute.

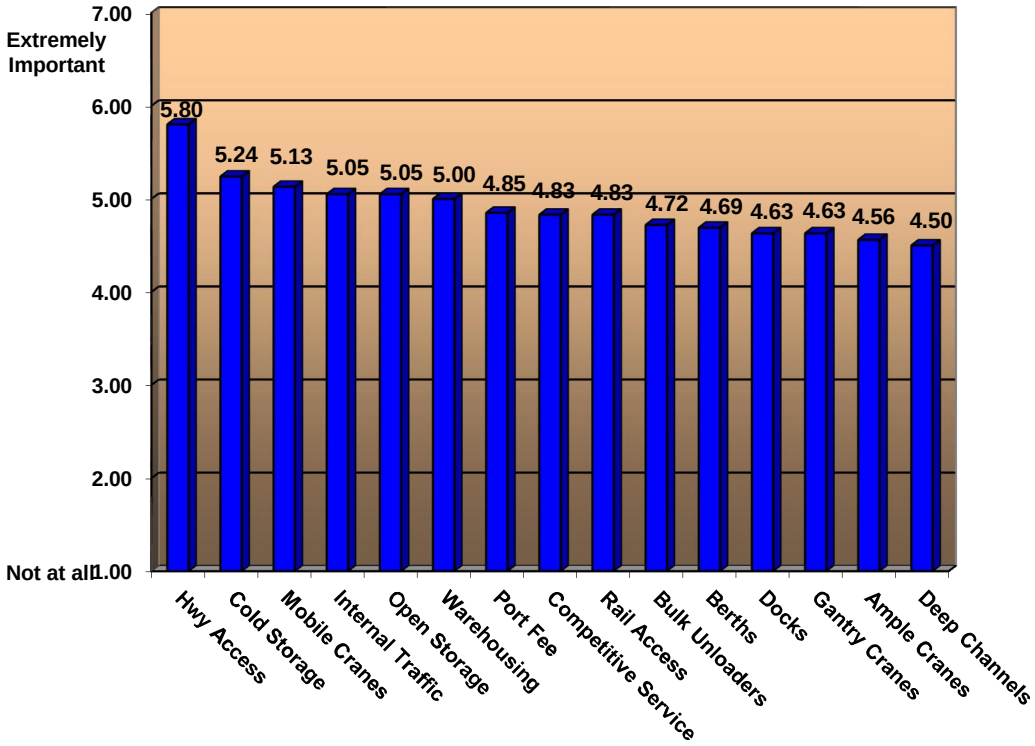
Figure 4-22 Performance of Port of Wilmington Attributes

	Not at all important						Extremely Important		
Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Total**	**Mean**
Good hwy access to the Port of Wilmington	0%	0%	5%	0%	35%	30%	30%	100%	**5.80**
Having cold storage facilities available	0%	0%	6%	29%	24%	17%	24%	100%	**5.24**
Having 40-ton mobile cranes available	6%	0%	0%	27%	20%	27%	20%	100%	**5.13**
Open storage facilities available	0%	0%	10%	21%	32%	26%	11%	100%	**5.05**
Good internal traffic flow at the Port	0%	5%	5%	20%	35%	20%	15%	100%	**5.05**
Having warehousing space available	0%	10%	5%	30%	10%	20%	25%	100%	**5.00**
Reasonable port fees	10%	0%	5%	25%	25%	10%	25%	100%	**4.85**
Competitive service & attention by shippers	5%	0%	11%	11%	39%	28%	6%	100%	**4.83**
Good rail access to the Port of Wilmington	11%	0%	0%	33%	11%	28%	17%	100%	**4.83**
Having bulk cargo unloaders available	6%	6%	11%	11%	44%	0%	22%	100%	**4.72**
Having deep and wide berths	0%	5%	6%	38%	25%	13%	13%	100%	**4.69**
Good condition dock facilities	0%	0%	26%	27%	26%	0%	21%	100%	**4.63**
Having gantry cranes w/100 ton capacity	6%	6%	13%	25%	19%	6%	25%	100%	**4.63**
Ample cranes of various types for trans-loading containers	0%	19%	0%	25%	31%	13%	12%	100%	**4.56**
Having deep channels	0%	5%	13%	38%	25%	6%	13%	100%	**4.50**

"Good highway access to the Port of Wilmington," "having cold storage facilities available," and "having 40-ton mobile cranes available" were the highest rated attributes in terms of performance in this year's survey. "Good highway access to the Port of Wilmington" and "having cold storage facilities available" were the highest rated attributes in terms of performance in the 2009 survey as well. "Having 40-ton mobile cranes available" was the lowest rated attribute in the 2009 survey.

"Having deep channels," "ample cranes of various types for trans-loading containers," and "having gantry cranes with 100 ton capacity" were the lowest rated attributes for performance in this year's survey. "Ample cranes of various types for trans-loading containers" was a low rated attribute for performance in the 2006 and 2009 surveys as well.

Figure 4-23 Mean Performance Ratings – Port of Wilmington



As with the other modes, importance-performance analysis was conducted on the data. The results are discussed in the next section.

4.3.4.3 Importance-Performance Analysis

The table below shows for each of the fifteen attributes the mean importance rating, the mean performance rating, and the satisfaction index.

Figure 4-24 Importance – Performance Ratings and Satisfaction Indices –Port of Wilmington

Attribute	2012 Mean Importance Rating	2012 Mean Performance Rating	Satisfaction Index
Having 40-ton mobile cranes available	4.50	5.13	**114.00**
Open storage facilities available	4.55	5.05	**110.99**
Having cold storage facilities available	4.75	5.24	**110.32**
Good rail access to the Port of Wilmington	4.45	4.83	**108.54**
Having gantry cranes w/100 ton capacity	4.70	4.63	**98.51**
Competitive service & attention by shippers	5.05	4.83	**95.65**
Having warehousing space available	5.30	5.00	**94.34**
Good hwy access to the Port of Wilmington	6.35	5.80	**91.34**
Having bulk cargo unloaders available	5.20	4.72	**90.77**
Ample cranes of various types for trans-loading containers	5.05	4.56	**90.30**
Having deep channels	5.11	4.50	**88.06**
Good internal traffic flow at the Port	6.05	5.05	**83.47**
Having deep and wide berths	5.84	4.69	**80.31**
Reasonable port fees	6.05	4.85	**80.17**
Good condition dock facilities	6.15	4.63	**75.28**

As reflected in the figure above, very high levels of satisfaction with indices of over 100 were obtained on four of the fifteen attributes. For these attributes the average performance exceeds the average importance ratings. The highest levels of satisfaction were seen for the attributes of "having 40-ton mobile cranes available," "open storage facilities available," "having cold storage facilities available," and "good rail access to the Port of Wilmington." "Good rail access to the Port of Wilmington" had the highest satisfaction index in the 2009 survey.

A low level of satisfaction occurs on the attributes "good condition dock facilities" and "reasonable port fees." These attributes had lowest satisfaction indices in the 2009 survey as well.

Quadrant analysis was conducted to help prioritize improvements for users of the Port of Wilmington. The results are in the table below.

Figure 4-25 Importance – Performance Quadrant Analysis – Port of Wilmington

Performance Rating on Attribute	Importance Rating of Attribute		
	Quadrants	Below Average	Above Average
	Above Average	(2) Maintenance: Low Priority **Open Storage Facilities** **Cold Storage Facilities** **40-Ton Mobile Cranes**	(1) Maintenance: High Priority **Good Hwy Access to the Port** **Warehousing Space** **Good Internal Traffic Flow**
	Below Average	(3) Corrective: Low Priority **Gantry Cranes with 100-Ton Capacity** **Ample Cranes for Trans-Loading** **Good Rail Access to the Port** **Competitive Service & Attention** **Bulk Cargo Unloaders** **Deep Channels**	(4) Corrective: High Priority **Good Condition Dock Facilities** **Reasonable Port Fees** **Deep & Wide Berths**

Three attributes fall into Quadrant 1 and should be high in priority for continued expenditures since they are important attributes. These attributes are "good highway access to the Port of Wilmington," "ample warehousing space," and "good internal traffic flow." "Good highway access to the Port of Wilmington" was in Quadrant 1 in the 2006 and 2009 surveys as well. "Ample warehousing space" was placed in Quadrant 2 and "good internal traffic flow" was placed in Quadrant 4 in the 2009 survey.

Attributes in Quadrant 2 are the lowest in priority, due to their lower than average importance ratings and above average performance ratings. The three attributes that fell into Quadrant 2 this survey year are "ample open storage facilities," "ample cold storage facilities," and "40-ton mobile container cranes." The first two attributes fell into Quadrant 2 in the 2009 survey while "40-ton mobile container cranes" was a Quadrant 3 attribute in the 2006 and 2009 surveys, suggesting an improved performance.

Quadrant 3 attributes should be targeted for corrective action because of their low performance ratings. However, due to their low importance, these attributes are much lower in priority than those in Quadrant 4 or those in Quadrant 1. The first two attributes listed in this quadrant were in Quadrant 3 in the 2006 and 2009 surveys as well. "Good rail service at the Port of Wilmington" and "bulk cargo unloaders" were Quadrant 2 attributes, while "competitive service and attention" and "deep channels" were Quadrant 4 attributes in the 2009 survey.

The attributes in Quadrant 4 should be given the highest priority for corrective action at the Port as these attributes have above average importance ratings but below average performance ratings. The three attributes in Quadrant 4 are "good condition dock facilities," "reasonable port fees," and "deep and wide berths." These attributes were in Quadrant 4 in the 2009 survey as well.

4.4 Overall Satisfaction Ratings

This section of the report discusses the results of the summary modal satisfaction question and other general questions posed to each business.

4.4.1 Summary Modal Satisfaction Question Results

Prior to the attribute rating questions, each business was asked to rate the overall performance of the current system in meeting their transportation needs for each mode that the company had

indicated that they used. Businesses were asked to choose a response from "excellent", "good", "fair", or "poor" for each question. The results for each mode and for the system as a whole are outlined in the figure below. Bolded red percentages are the results from the 2012 survey and the other percentages listed are for prior survey years.

Figure 4-26 Summary Modal Satisfaction Questions – (2012 Data in Red)

Question	Excellent	Good	Fair	Poor	DK (vol)	Year
And overall, how would you rate Delaware's **system of roads and highways** for moving goods?	**23%**	**52%**	**22%**	**3%**	**0%**	**2012**
	8%	56%	30%	7%	0%	2009
	15%	49%	30%	6%	0%	2006
	8%	57%	25%	10%	0%	2005
	9%	51%	31%	9%	0%	2004
	6%	55%	28%	11%	0%	2003
	8%	61%	22%	7%	2%	2002
	4%	67%	22%	7%	0%	2001
	7%	64%	21%	7%	1%	2000
	10%	63%	20%	7%	0%	1999
	14%	42%	27%	14%	2%	1998
	12%	59%	22%	7%	0%	1997
And overall, how would you rate the **rail freight system** in Delaware for moving goods?	**25%**	**50%**	**24%**	**0%**	**1%**	**2012**
	25%	75%	0%	0%	0%	2009
	0%	100%	0%	0%	0%	2006
	0%	25%	0%	25%	50%	2005
	13%	50%	25%	0%	12%	2004
	50%	17%	33%	0%	0%	2003
	40%	20%	0%	20%	20%	2002
	43%	29%	28%	0%	0%	2001
	25%	25%	25%	13%	12%	2000
	13%	0%	38%	13%	38%	1999
	0%	50%	50%	0%	0%	1998
	0%	60%	30%	10%	0%	1997
And overall, how would you rate the **air freight system** in Delaware for moving goods?	**0%**	**100%**	**0%**	**0%**	**0%**	**2012**
	0%	0%	0%	0%	0%	2009
	67%	0%	0%	33%	0%	2006
	0%	0%	0%	0%	0%	2005
	0%	17%	0%	17%	66%	2004
	50%	0%	50%	0%	0%	2003
	0%	0%	0%	0%	0%	2002
	0%	100%	0%	0%	0%	2001
	0%	50%	0%	0%	50%	2000
	0%	50%	0%	0%	50%	1999
	25%	50%	25%	0%	0%	1998
	0%	60%	20%	0%	20%	1997
And overall, how would you rate the **Port of Wilmington** for moving goods?	**10%**	**50%**	**35%**	**5%**	**0%**	**2012**
	30%	40%	10%	20%	0%	2009
	0%	100%	0%	0%	0%	2006
	0%	60%	40%	0%	0%	2005
	37%	38%	0%	0%	25%	2004
	0%	80%	20%	0%	0%	2003
	34%	22%	33%	11%	0%	2002
	33%	22%	45%	0%	0%	2001
	5%	74%	10%	0%	11%	2000
	25%	46%	21%	4%	4%	1999
	18%	46%	27%	9%	0%	1998
	46%	55%	0%	0%	0%	1997

Question	Very well	Somewhat well	Not too well	Not at all	DK (vol)	Year
Overall, how well do you think **Delaware's transportation system** is meeting your company's goods movement needs?	**33%**	**64%**	**3%**	**0%**	**0%**	**2012**
	24%	64%	11%	1%	0%	2009
	32%	55%	10%	0%	3%	2006
	30%	58%	8%	4%	0%	2005
	24%	58%	10%	4%	4%	2004
	25%	66%	9%	0%	0%	2003
	28%	63%	3%	2%	4%	2002
	34%	56%	7%	1%	2%	2001
	19%	66%	8%	2%	5%	2000
	35%	55%	5%	2%	3%	1999
	26%	55%	14%	5%	1%	1998
	33%	56%	6%	4%	1%	1997

All businesses were asked to rate Delaware's transportation system as a whole, and the results showed that most businesses feel the system meets their transportation needs. In 2012, 97% of businesses stated that the system is meeting their needs "very well" or "somewhat well," and this is higher than prior survey years (88% in 2009, 87% in 2006, 88% in 2005, 82% in 2004, 91% in 2003, 91% in 2002, 90% in 2001, 85% in 2000, 90% in 1999, 81% in 1998 and 89% in 1997).

At the end of the attribute rating questions, businesses were asked if the state should do "more," "less" or "about the same" to improve the movement of goods for each mode used. The results are in the following table with data from the 2012 survey shown in bold, and with comparable data from the prior surveys also listed.

Figure 4-27 Should the state do more, less or about the same to improve the movement of goods …? (2012 Data in Red)

Mode	More	Less	About the Same	DK (vol)	Year
Roads and Highways	**52%**	**2%**	**46%**	**0%**	**2012**
	70%	1%	28%	1%	2009
	59%	2%	34%	5%	2006
	64%	1%	33%	2%	2005
	74%	0%	26%	0%	2004
	68%	0%	30%	2%	2003
	58%	1%	34%	7%	2002
	59%	0%	41%	0%	2001
	67%	1%	30%	2%	2000
	63%	0%	34%	3%	1999
	63%	3%	33%	1%	1998
	60%	0%	37%	3%	1997
Rail Freight	**56%**	**0%**	**44%**	**0%**	**2012**
	75%	0%	25%	0%	2009
	100%	0%	0%	0%	2006
	75%	0%	25%	0%	2005
	63%	0%	25%	12%	2004
	100%	0%	0%	0%	2003
	60%	20%	0%	20%	2002
	71%	0%	29%	0%	2001
	37%	0%	38%	25%	2000
	25%	0%	25%	50%	1999
	50%	0%	50%	0%	1998
	70%	0%	10%	10%	1997

Mode	More	Less	About the Same	DK (vol)	Year
Air Freight	**0%**	**0%**	**99%**	**1%**	**2012**
	0%	0%	0%	0%	2009
	67%	0%	0%	33%	2006
	0%	0%	0%	0%	2005
	33%	0%	0%	67%	2004
	100%	0%	0%	0%	2003
	0%	0%	0%	0%	2002
	100%	0%	0%	0%	2001
	0%	0%	25%	75%	2000
	50%	0%	25%	25%	1999
	25%	0%	50%	25%	1998
	40%	0%	60%	0%	1997

4.5 Biggest Freight Problems Facing Businesses

Near the end of the questionnaire, in an open-ended question, businesses were asked about the biggest freight issue or problem that is facing their business. The responses to this question were coded by hand and are displayed in the table below.

Figure 4-28 Biggest Freight Issue/Problem Facing Your Business

Issue or Problem Mentioned	2012 Percent	2009 Percent	2006 Percent	2005 Percent	2004 Percent	2003 Percent	2002 Percent	2001 Percent
Roadway congestion	**20%**	35%	32%	18%	35%	43%	26%	15%
Taxes, registrations, tolls, fees (and fuel costs for 2003 and prior surveys)	**3%**	12%	20%	2%	10%	6%	14%	24%
Poor condition of roadways	**8%**	17%	13%	5%	7%	5%	2%	3%
Roadway construction	**0%**	4%	7%	8%	4%	4%	1%	6%
Traffic signals	**6%**	2%	4%	8%	0%	20%	21%	2%
Roadway connectivity	**0%**	0%	3%	3%	1%	3%	1%	2%
Weigh scales	**0%**	5%	1%	4%	1%	3%	2%	2%
Weight restrictions	**18%**	0%	1%	4%	2%	2%	3%	8%
Roadway geometrics	**0%**	0%	1%	0%	1%	5%	3%	6%
Fuel Costs	**7%**	1%	0%	11%	13%	N/A	N/A	N/A
Other comment (various)	**25%**	24%	0%	14%	9%	0%	0%	12%
Concern with other driver behavior*	**0%**	0%	0%	1%	0%	9%	27%	4%
Nothing mentioned	**13%**	0%	18%	22%	17%	0%	0%	16%

For 2012, the most frequently mentioned responses were “roadway congestion” and “weight restrictions”, as well as offering some other varied comment. “Roadway congestion” was the most frequently mentioned response in all prior surveys.

4.6 About the Businesses

Similar to the other surveys, classification questions were posed to the businesses to provide descriptive information about the companies participating in the survey. The results are discussed in this section.

4.6.1 Length of Time Doing Business in Delaware

All firms, at the beginning of the interview, were asked how long they had been doing business in the state. The response is depicted below.

Figure 4-29 Length of Time Doing Business in Delaware

Time Period	Percent
Less than 1 year	5%
1-2 years	6%
3-5 years	9%
6-10 years	10%
More than 10 years	70%
DK (Vol)	0%

As was found in the previous surveys, for the 2012 survey the majority of firms surveyed have been doing business in Delaware for over ten years.

4.6.2 Goods Shipped or Carried

All firms were asked, in an open-ended question, what goods or materials the company primarily shipped or carried. The open-ended responses were then coded by hand. The table below depicts the response to this question.

Figure 4-30 Goods or Materials Shipped or Carried

Primary Goods or Materials Shipped or Carried	Percent
Building and/or construction materials	17%
Machinery & heavy equipment	8%
Combination of goods/materials	0%
Food	20%
Agricultural products	5%
Automobiles & Automobile parts	0%
Waste/Trash/Recyclables	0%
Other	15%
Petroleum products	5%
Metals	7%
Household goods	1%
Retail goods	0%
Forest products	16%
Paper products	0%
Chemical and pharmaceuticals	6%
Mail	0%

As can be seen in the above table, the range of goods is diverse. The predominant goods shipped or carried were food and building/construction materials, similar to previous survey years.

4.6.3 Number of Business Locations

Companies were also asked how many business locations they have in Delaware. The response is in the table below. These results are similar to the previous survey years, with one location being the predominant response.

Figure 4-31 Number of Business Locations

Number of Locations	Percent
One	94%
Two	2%
Three	2%
Four or more	2%
Varied work locations	0%
DK (Vol)	0%

Chapter 5
COMPARISON OF RESULTS

5.1 Introduction

An important objective of this study was to ascertain customer satisfaction with the transportation system across various user groups and to compare these results with data collected in previous survey years. This section of the report compares and contrasts the customer satisfaction data that were collected in each of the surveys conducted in 2012 and compares the results to prior survey data.

5.2 Satisfaction Index

As was done in the previous survey years, it is possible to develop an index or overall measure from the importance-performance data that were collected in the 2012 survey effort. To develop the satisfaction index, the overall mean ratings for both importance and performance were computed for each user group. An index of customer satisfaction can then be calculated by computing the ratio between the overall mean performance rating to the overall mean importance rating for each user group. The higher the value of the satisfaction index is, the greater the level of customer satisfaction with that mode. The value of the satisfaction index exceeds 100 when the overall mean performance rating is greater than the overall mean importance rating (as will be seen, this occurred in all survey years in different user groups).

The results are displayed in the tables below for each survey completed in 2012 and are compared to the results from prior years.

As can be seen in Figure 5-1, the 2012 indices generated from the General Transportation User Survey are relatively similar for most modes when compared to other survey years. When looking closely, the satisfaction indices for SOV users and carpoolers are higher than previous surveys. The satisfaction index for all motorists in 2012 is higher than all previous survey years except for 2009 survey results. The satisfaction index for transit riders in 2012 is lower than past surveys. The satisfaction index for bicyclist in 2012 is higher than the 2005, 2004, and 2002 survey results, but lower than the 2009, 2006, 2003, and 2001 survey results. The 2012 satisfaction index for pedestrians is higher than the 2009, 2006, 2005, 2004, 2003, 2002 survey results but lower than the 2001 past survey results. These fluctuations for transit users, bicyclists and pedestrians can be attributed to the relatively small sample size of respondents that used these modes in the General Transportation User Survey.

Figure 5-2 displays the customer satisfaction indices from the General Transportation User Survey.

Figure 5-1 Customer Satisfaction Index – General Transportation User Survey – 2012 Data in Bold

Transportation User Group	2012 Overall Mean Importance Rating	2012 Overall Mean Performance Rating	2012 Satisfaction Index	2009 Satisfaction Index	2006 Satisfaction Index	2005 Satisfaction Index	2004 Satisfaction Index	2003 Satisfaction Index	2002 Satisfaction Index	2001 Satisfaction Index
SOV (single-occupant vehicle) users	**6.0**	**5.1**	**86.1**	84.4	80.7	82.6	80.3	82.1	80.9	79.8
All motorists (carpool and SOV – hwy only attributes)	**5.9**	**5.0**	**83.9**	84.1	80.5	82.5	80.9	82.3	81.7	79.9
All carpoolers (carpool attributes)	**3.9**	**3.7**	**93.3**	88.5	83.6	82.3	87.4	80.4	91.4	92.2
Transit riders	**6.4**	**4.7**	**73.7**	76.8	86.6	94.1	88.3	77.2	85.8	86.9
Bicyclists	**5.8**	**4.1**	**70.2**	71.0	84.1	66.3	59.6	74.8	67.9	83.8
Pedestrians	**5.6**	**4.4**	**78.1**	72.7	76.3	76.1	74.9	75.9	75.8	82.3

Figure 5-2 Customer Satisfaction Index – General Transportation User Survey

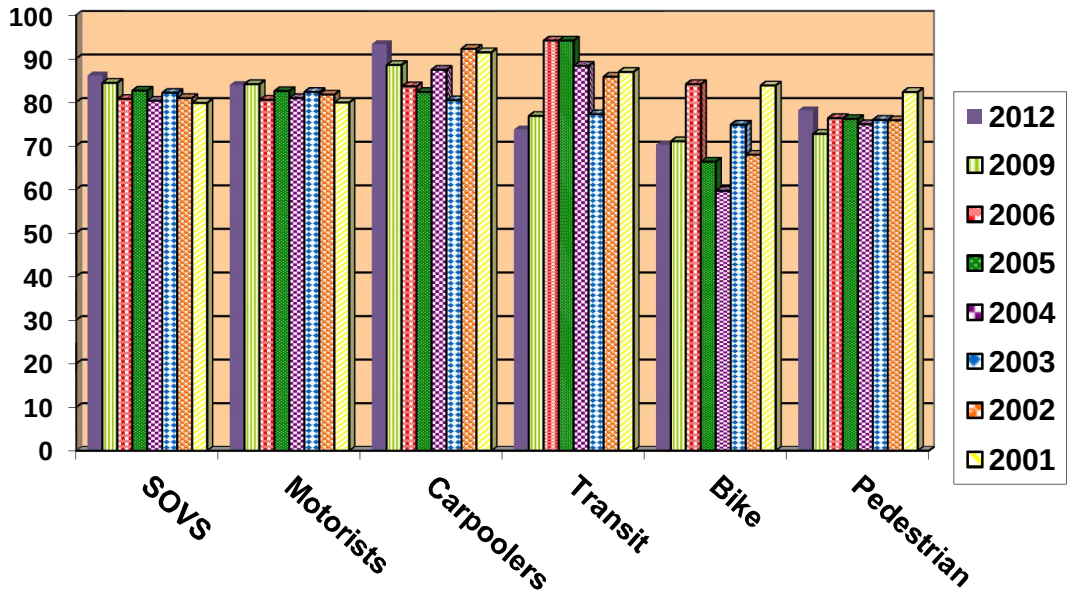


Figure 5-3 Customer Satisfaction Index – Transit-Served Market Area Survey - 2012 Data in Bold

Transportation User Group	2012 Overall Mean Importance Rating	2012 Overall Mean Performance Rating	2012 Satisfaction Index	2009 Satisfaction Index	2006 Satisfaction Index	2005 Satisfaction Index	2004 Satisfaction Index	2003 Satisfaction Index	2002 Satisfaction Index	2001 Satisfaction Index
SOV (single-occupant vehicle) users	**5.8**	**5.1**	**86.2**	77.8	85.6	80.4	86.9	86.5	87.8	89.0
All motorists (carpool and SOV – hwy only attributes)	**5.8**	**5.0**	**86.8**	77.9	85.1	82.5	86.1	86.7	89.9	89.0
All carpoolers (carpool attributes)	**3.1**	**3.9**	**133.0**	0*	104.1	69.2	80.3	91.7	95.7	109.8
Bicyclists	**6.1**	**4.3**	**77.0**	76.7	77.3	36.2	46.5	52.6	72.6	67.9
Pedestrians	**5.7**	**5.0**	**87.2**	90.3	58.0	76.1	71.1	80.9	88.1	91.9

*The two carpoolers surveyed in 2009 could not provide performance ratings; therefore, there is no representative satisfaction index.

Figure 5-3 above shows that the 20012 Transit-Served Market Area Survey indices are relatively similar to past survey results. When looking closely, the satisfaction index for SOV users in 2012 is higher than the 2009, 2006, and 2005 survey results, but lower than the 2004, 2003, 2002, and 2001 survey results. The all motorists 2012 satisfaction index is higher than the 2009, 2006, 2005, 2004, and 2003 survey results, but lower than the 2002 and 2001 survey results. Carpoolers in 2012 had a satisfaction index higher than all past survey results. The 2012 satisfaction indices for bicyclists is higher than 2009, 2005, 2004, 2003, 2002, and 2001 survey results but lower than 2006 survey results. Pedestrians in the 2012 survey generated a satisfaction index that is higher than 2006, 2005, 2004, 2003, and 2002 results, but lower than 2009 and 2001 results. Figure 5-4 displays the customer satisfaction indices for the Transit-Served Market Area Survey.

Figure 5-4 Customer Satisfaction Index – Transit Served Market Area Survey

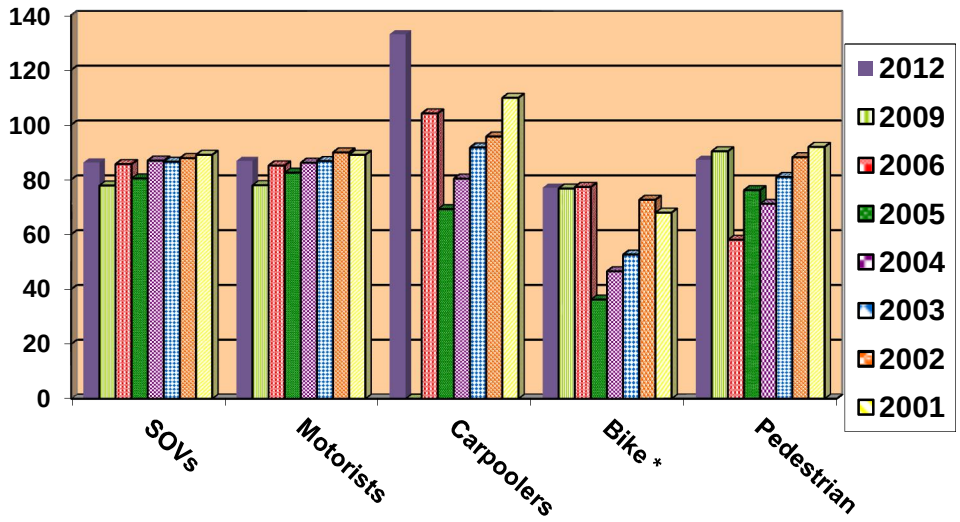


Figure 5-5 Customer Satisfaction Index – Shippers and Carriers Survey - 2012 Data in Bold

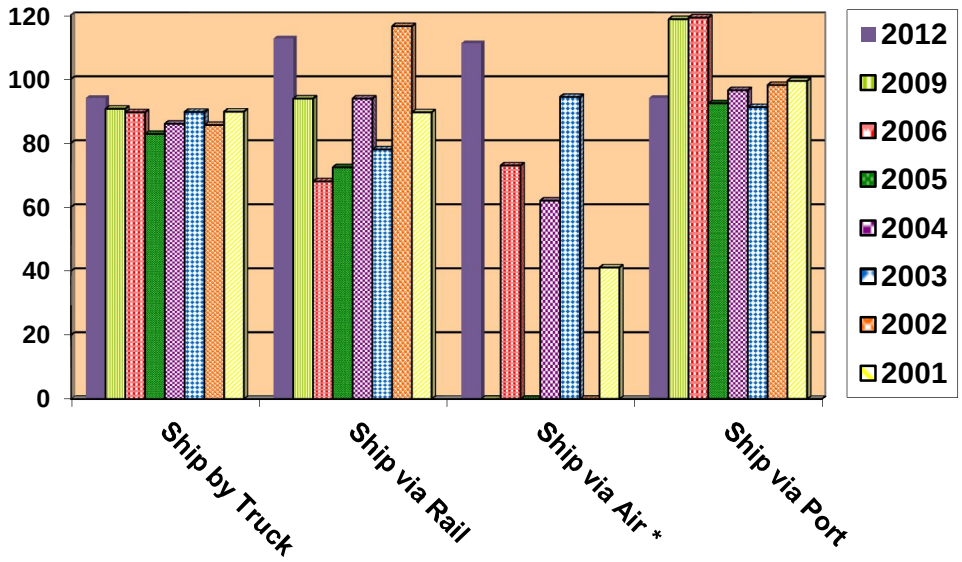
Transportation User Group	2012 Overall Mean Importance Score	2012 Overall Mean Performance Score	2012 Satisfaction Index	2009 Satisfaction Index	2006 Satisfaction Index	2005 Satisfaction Index	2004 Satisfaction Index	2003 Satisfaction Index	2002 Satisfaction Index	2001 Satisfaction Index
Ship by truck	**5.4**	**5.0**	**94.1**	90.7	89.6	82.8	86.0	89.7	85.6	89.8
Ship by rail freight	**4.3**	**4.7**	**112.7**	93.9	68.0	72.4	93.9	78.0	116.5	89.6
Ship by air freight	**4.1**	**4.3**	**111.2**	No data*	73.0	No data*	62.0	94.4	No data*	41.1
Ship via the Port of Wilmington	**5.3**	**4.9**	**94.1**	118.7	119.2	92.4	96.5	91.2	98.1	99.4

No data*– Indices are not available. There were no businesses that shipped via air freight in the 2009, 2005 and 2002 surveys.

As shown in Figure 5-5, in the 2012 Shippers and Carriers Survey, the highest satisfaction indexes, both over 100, were obtained for businesses that ship via rail freight and air freight. The 2012 satisfaction index for rail freight is higher than the 2009, 2006, 2005, 2004, 2003, and 2001 surveys, but lower than the 2002 survey. The 2012 satisfaction index for air freight is higher than all past survey years; however no comparison can be made to 2009, 2005, or 2002 survey results as no respondents indicated using this transport mode in those surveys. The 2012 satisfaction index for businesses that ship via truck is higher than all past survey years. Although the Port of Wilmington had consistently high satisfaction indices compared to other modes over the past survey years, the 2012 satisfaction index is lower than previous survey years except for the 2003 survey. Fluctuations in air freight can be attributed to the small sample size of companies that ship via air freight that participate in the survey.

Figure 5-6 displays the satisfaction indices for the Shippers and Carriers Survey.

Figure 5-6 Customer Satisfaction Index – Shippers and Carriers Survey



* Extreme fluctuation is due to very small sample sizes.

5.3 Conclusions

As was found in the previous survey years, high satisfaction indices (index values over 80) are computed for many user groups in Delaware.

Accordingly, if transportation system improvements are undertaken on the high priority attributes identified in the Importance-Performance Quadrant Analyses for the these users, high customer satisfaction indices for these user groups should be found in future surveys.

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