



## North Dakota Department of Transportation 2012 Customer Satisfaction Survey

**Final Report**

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## **Executive Summary**

### **Purpose and Methodology**

In the spring of 2012 the Bureau of Governmental Affairs at the University of North Dakota conducted a survey on behalf of the North Dakota Department of Transportation (NDDOT). The purpose of the survey is to provide NDDOT with information regarding how well the department is meeting the needs of North Dakota's motorists, motor carriers, government officials, and businesses. The survey covered topics including ride quality, snow and ice removal, safety, debris removal, rest areas, load capacity, NDDOT communication with the public, and interaction with the motor vehicle and drivers license divisions. The survey was administered by phone to random samples of 1200 motorists, 220 motor carriers, 115 government officials, and 160 businesses in North Dakota.

### **Overall Satisfaction**

In 2012 North Dakota residents remain satisfied with the performance of NDDOT. For example, 79% of motorists responded that they were either satisfied or very satisfied with the overall services provided by NDDOT. Table 1(p. 9) provides a summary of responses. Similarly, motor carriers, government officials, and businesses responded positively with 79%, 80%, and 76% respectively either satisfied or very satisfied. These results represented a decline for each group since the last survey in 2010.

- Two areas surveyed, overall safety and rest areas, showed a statistically significant decline in satisfaction for each of the four groups over the period 2010-2012. Another three areas showed decline among three of the four customer groups. Motor carriers, government officials, and businesses each noted a decline in both the timeliness and effectiveness of snow/ice removal. In addition motorists, motor carriers, and business noted a decline in their satisfaction with the driver's license division.
- Despite the decline in the areas reported above, satisfaction remains quite high in each. For example, 88% of motorists are still satisfied with the drivers license division. 81% of motor carriers, 93% of government officials and 81% of business remain satisfied with the division. The motor vehicle division also receives strong support, with each group reporting more than 86% satisfaction.
- With respect to debris removal, snow and ice removal, safety, rest areas, and traveler information, respondents were generally satisfied (more than 70% reporting satisfaction).
- Satisfaction was generally lower in the areas of ride quality and load carrying capacity. Each of the four stakeholder groups were least satisfied with the smoothness of the non-interstate.

- Stakeholders reported they were highly satisfied with the communication they receive from the NDDOT. This clarified previous survey results, where more than one quarter of respondents said they did not know whether they were satisfied.

### **Key Factors Influencing Overall Satisfaction**

The three most important factors contributing to the overall satisfaction of respondents for the services provided by the NDDOT were:

- Motorists: Overall safety, timeliness of snow/ice removal, effectiveness of snow/ice removal.
- Motor Carriers: Effectiveness of snow/ice removal, drivers license division, timeliness of snow/ice removal.
- Government Officials: Communication, overall safety, timeliness of snow/ice removal.
- Businesses: Overall safety, motor vehicle division, communication.

### **Driver Behaviors and Safety Concerns**

The vast majority (83% and above) of customers responded that driver behaviors were their biggest safety concern on North Dakota's roads. The two greatest concerns for each of the four groups were texting while driving and drinking and driving.

### **Regional Comparisons**

Regional comparisons show that the overall level of satisfaction varies across the state of North Dakota. Motorists and government officials from the West region tended to be less satisfied. A detailed analysis of motorists by region (East, Central, and West) showed motorists from the East were significantly more satisfied with the overall service of the NDDOT than motorists in the Central region, who were in turn more satisfied overall than those in the West. This was also true for satisfaction with the smoothness of the interstate.

Motorists in the West were more dissatisfied than those in the East and Central regions in several other areas; smoothness of the non-interstate, debris removal, effectiveness of snow/ice removal, overall safety, pavement striping, construction signing, traffic flow through construction, and rest areas.

Dissatisfaction among customers in the West continues to rise since the last survey.

## Overview

The purpose of the North Dakota Department of Transportation (NDDOT) 2012 Customer Satisfaction Survey is to provide NDDOT with information regarding how well the department is meeting the needs of North Dakota's motorists, motor carriers, government officials, and businesses. Identifying and measuring customer satisfaction in key areas will inform NDDOT of areas of excellence and those in need of improvement. The 2012 survey was designed to be nearly identical to a survey administered in 2004, 2006, 2008, and 2010 so as to allow customer satisfaction to also be evaluated over time.

The survey was designed to evaluate the satisfaction of North Dakota stakeholders with the NDDOT. Four distinct customer groups were evaluated; motorists, motor carriers, government officials, and businesses. A different survey was designed for each of the four groups, though the questions were largely the same for each group in order to allow consistency in comparisons between groups. Four general areas were addressed to customers on each survey; satisfaction with NDDOT services, concern over driver behaviors, frequency of NDDOT service use, and demographic characteristics.

This year a few changes were made to the survey. In previous versions (2004-2010), each customer group was asked two questions regarding their satisfaction with communication with the NDDOT. Approximately one quarter of customers responded in 2010 they "didn't know" to these questions. The question was reworked this year to be more general. The result is fewer than 4% of customers responded they "didn't know" this year. We also asked motor carriers this year whether they were satisfied with NDDOT truck facilities. Government officials were asked about their satisfaction with the number of weigh stations/pullouts. In addition, government officials were asked the open ended question:

*"What are the areas/topics that you would want the NDDOT to provide/assist your local government with?"*

A substantial change was made to the sample of businesses interviewed this year. In past surveys (2004-2010) the sample of businesses consisted of 86 respondents that were chosen at random from a list of North Dakota businesses generated by the telephone company Qwest. The previous samples suffered from two issues. The first was a large margin of error, which in 2010 was +/- 9% at the 95% confidence level. This made it difficult to accurately evaluate performance. The second issue was that since businesses were chosen at random, most "business" surveys were taken by employees of retail establishments. The result was their responses were similar to those of motorists and thus did not necessarily reflect business interests. To remedy these two issues the NDDOT along with the North Dakota Department of Commerce, identified a list "transportation intensive" businesses. These

businesses included firms engaged in warehousing (farm, refrigerated, general) and manufacturing. Our population consisted of the largest firms, i.e. those with more than 9 employees. To decrease the margin of error, the sample size was increased to 160 respondents.

The surveys were administered by phone between March 23 and May 3, 2012 by the Bureau of Governmental Affairs at the University of North Dakota. Included in the completed surveys were 1200 statewide motorists, 220 motor carriers, 115 government officials, and 160 businesses.

### **Areas of measurement**

Customer satisfaction with NDDOT services covered several topics on the survey. These included ride quality, debris removal, snow and ice removal, safety, load carrying capacity, rest areas, traveler information, communication with the public, and interaction with the motor vehicle and drivers license divisions. For many of these topics the survey included multiple questions. The questions on each of the four surveys were largely the same with the exception that load carrying capacity and use of truck park facilities was only asked of motor carriers, while government officials were asked about their satisfaction with weigh stations. Appendix 1 contains the questions used in each of the surveys.

The survey also asked customers about other drivers' behaviors and their perception of safety. Customers were asked whether they considered five different driver behaviors a safety concern. The survey asked about: text messaging while driving, not wearing a seatbelt, drinking and driving, talking on a cell phone while driving, and speeding. The survey also asked whether driver behaviors were customers' biggest safety concern on the highway.

With respect to their frequency of use, customers were asked about their use of North Dakota's rest areas, different sources of information including 511, the NDDOT website, and the motor vehicle and drivers license divisions. Frequencies of use as well as purpose/method of use were also covered in the questions. For instance, respondents who had used the NDDOT website were asked for what purpose. Also those who used the services of the motor vehicle division were asked in what manner (phone, in person, mail). These questions will allow the NDDOT to evaluate their effectiveness in reaching their customers via alternative means.

Demographic characteristics including gender, age, zip code, purpose of using the highway system, primary vehicle driven, commute time, and commute distance were also collected from each respondent to allow for analysis of whether services are being equally enjoyed by the residents of North Dakota.

## Survey Implementation

The four surveys (4 groups) were conducted via telephone by the Bureau of Governmental Affairs at the University of North Dakota. Prior to participating in the survey, participants were given a brief introduction of services provided by the department: *“The department provides services to the public including: maintenance, snow and ice control, and travel information on state highways. It also provides drivers license, traffic safety programs, and motor vehicle registration services.”* The complete text of the surveys appears in Appendix 1.

- **Motorists:** The survey of statewide motorists consisted of 1200 respondents that were chosen by random from a list of North Dakota residences generated by the telephone company Qwest/Century Link. The survey took place between March 26, 2012 and May 3, 2012 during the day and early evening. Given an adult population of 525,000 (July 2010 Census) and a sample size of 1200, the statewide survey has a margin of error of +/- 2.83%, with a confidence level of 95%.
- **Motor Carriers:** The survey of motor carriers consisted of 220 respondents selected at random from a list of Motor Carriers registered in the state of North Dakota. The directory provided by NDDOT contained the contact information for 1481 motor carriers in North Dakota. The survey took place between March 27, 2012 and April 12, 2012 during the times of 8AM to 5PM. The survey has a margin of error of +/- 6% and a confidence level of 95%.
- **Government officials:** The survey of government officials consisted of 115 respondents that were chosen at random from a list of 142 individuals provided by the NDDOT. These individuals included 3 metropolitan planning organization executive directors, thirteen city mayors, 11 city engineers, 2 city auditors, 53 chairs of the county commission, and all county engineers, highway supervisors, road foreman, and road superintendents. The survey took place between March 23, 2012 and March 30, 2012 during the times of 8AM to 5PM. The survey has a margin of error of +/- 4% and a confidence level of 95%.
- **Businesses:** The survey of businesses consisted of 160 respondents that were chosen by random from a list of North Dakota “transportation intensive” businesses identified by the NDDOT. The survey took place between March 27, 2012 and April 11, 2012 during the times of 8AM to 5PM. The survey has a margin of error of +/- 5% and a confidence level of 95%.

## Data Processing/Security

Once the surveys were completed on paper they were transferred into electronic form. The paper surveys and electronic format of the data will be retained by the Bureau of Governmental Affairs in a secure location for a period of three years

after which they will be destroyed. Electronic copies of the survey data in SPSS, Excel, and STATA formats were provided to the NDDOT by the Principal Investigator. The data were checked for outliers and consistency. The Principal Investigator will retain the data and will not use the data for any purpose other than specified by the North Dakota Department of Transportation.

## **Customer Satisfaction**

Overall, North Dakota residents remain satisfied with the performance of NDDOT. In response to the question “*In general, how satisfied are you with the services provided by the North Dakota Department of Transportation?*” 79% of motorists responded that they were either satisfied or very satisfied with the services provided by NDDOT. Similarly, motor carriers, government officials, and businesses responded positively with 79%, 80%, and 76% respectively either satisfied or very satisfied. Table 1 summarizes the percentage rates of satisfied and very satisfied respondents across each area surveyed and group. A complete breakdown and summary of responses appears in Appendix 2.

While the 2012 results remain strong, they do indicate a significant decline in overall satisfaction from 2010. This is not entirely surprising, given each of the four groups reported more than 90% overall satisfaction in the 2010 survey. The results in this survey are more consistent with those of earlier surveys as seen in Figures 1 (p. 8) Later we highlight some of the factors that contributed to the decline.

The survey also evaluated customer satisfaction in several key areas which included ride quality, debris removal, snow and ice removal, safety, load carrying capacity, rest areas, traveler information, communication with the public, and interaction with the motor vehicle and drivers license divisions. Review of Table 1 (p. 9) provides insight into which areas customers are more and less satisfied with.

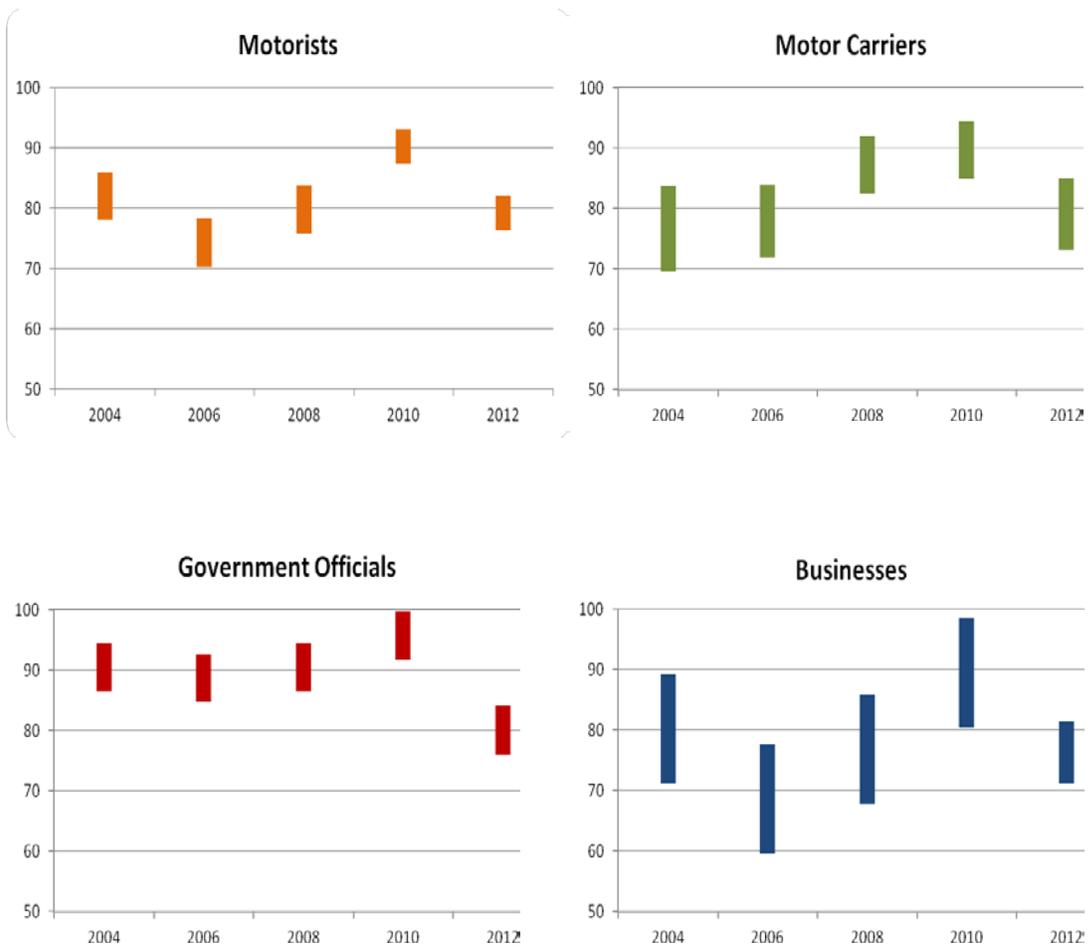
The 2012 survey results indicate that the motor vehicle and drivers license divisions continue to receive excellent marks. Of those respondents who interacted with each division, responses were very positive. Motorists responded with 91% and 88% satisfaction for the motor vehicle and drivers license divisions respectively. The other groups also showed high levels of satisfaction.

Also continuing to receive good marks (above 70% satisfied or very satisfied) were the areas of debris removal, snow and ice removal, safety, rest areas, and traveler information. For many of these categories, satisfaction was in the high 70% to low 90% range. The results though indicated two concerns have grown since 2010. In 2012 we saw for each of the four customer groups a statistically significant decrease in the mean level of satisfaction with overall safety and with rest areas.

The results of previous surveys indicated the need for improvement in the areas of smoothness of ride, load capacity, and communication with the public. The smoothness of the non-interstate showed substantial decline among motor carriers and businesses. Satisfaction with load capacity declined further among motor carriers.

A positive from this year's survey, more than 81% of each of the customer groups reported they were satisfied with the communication they received from the NDDOT. The results from this reworked question reveal that past questions with high non-response rates were unclear and unreliable. These results indicate that communication is not an area of particular concern.

**Figure 1: 2004-2012 NDDOT Customer Satisfaction Surveys; Overall Satisfaction**



\*Note the height of each year's value takes into account the margin of error for each customer group survey.

**Table 1. Percentage of respondents either "very satisfied" or "satisfied".**

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Overall Satisfaction</b>	79.2	79.1	80	76.3
<b>Ride</b>				
Smoothness of Interstate	59.9	50.5	65.22	61.9
Smoothness of Non-Interstate	44.9	36.4	51.75	33.8
<b>Debris removal</b>	74.2	71.8	78.26	73.1
<b>Snow and Ice</b>				
Timeliness of snow/ice removal	83.7	73.2	87.82	78.1
Effectiveness of snow/ice removal	83.3	72.3	86.96	80.6
<b>Safety</b>				
Overall safety	80.5	72.7	74.56	76.9
Pavement striping	76.4	68.2	81.74	72.5
Highway signing	87.0	90.9	93.92	90.0
Construction signing	84.2	82.7	86.08	83.1
Traffic flow through construction	68.0	69.6	81.74	65.6
<b>Facilities</b>				
Rest Areas	69.8	66.7	78.26	70.6
Truck Parking Facilities	NA	37.7	NA	NA
Weigh Stations	NA	NA	38.26	NA
<b>Traveler Information</b>				
Current road condition info.	85.5	NA	84.21	85.0
<b>Communication</b>	81.9	84.5	83.5	84.4
<b>Motor Vehicle Division</b>	91.0	85.8	89.36	92.0
<b>Drivers License Division</b>	88.4	81.0	92.86	81.0
<b>Load Carrying Capacity</b>	NA	43.8	NA	NA

NA = Not asked on survey

## Comparing Customer Satisfaction over Time

The 2012 Customer Satisfaction Survey was designed to be nearly identical to a survey given in 2010 so as to allow for comparisons of satisfaction by group over time. It should be noted that the manner in which businesses were sampled in 2012 changed, thus comparisons from this group need to be made with caution. Satisfaction is measured on a 1-5 scale, where 1 indicates very satisfied and 5 indicates very dissatisfied. Improvement in satisfaction is thus indicated by a decrease in the mean for a particular measure. To evaluate whether the difference is statistically meaningful and not due to chance, one can compare the “effect size” for each of the measures of satisfaction. Effect size measures the standardized difference in mean responses between different time periods. To determine the effect size one calculates Cohen’s (1988) ‘d’:

$$d = (MEAN_{2012} - MEAN_{2010}) / \sigma_{pooled}, \quad \text{where } \sigma_{pooled} = \sqrt{\frac{\sigma_{2012}^2 + \sigma_{2010}^2}{2}}$$

‘d’ measures the difference in mean responses, standardized by the pooled standard deviation. Cohen (1988) categorized effect sizes as small (d = .2), medium (d = .5) and large (d = .8).<sup>1</sup> Using this as a guide, we can evaluate whether satisfaction has significantly changed over time.

The changes in satisfaction that occurred between 2010 and 2012 were small to medium in effect size. Tables 2a-b contains the effect sizes for each of the satisfaction measures and four groups. Most notably, overall satisfaction by motorists, motor carriers, government officials and businesses showed a significant decline. In addition, satisfaction with overall safety and with rest areas showed a decline among all four groups. In addition:

- Motor carriers reported a decline in their satisfaction with the timeliness and effectiveness of snow and ice removal since the last survey. This was also confirmed by government officials and businesses.
- Motor carriers reported a decline in pavement striping as did businesses.
- Government officials reported a decline in debris removal.
- Motorists, motor carriers and businesses both report a decline in their satisfaction with the drivers license division.

The results seem to suggest that responses of businesses in the 2012 survey are more likely to mimic those of motor carriers, which is expected given the “transportation intensive” nature of those chosen. It is also interesting to see the reported decline in satisfaction with the drivers license division. In the past,

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<sup>1</sup> Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.

satisfaction with the drivers license division has been at or above 90% on past surveys. It should be noted that satisfaction among motorists, while lower, remains very high (88%). Motor carriers and businesses appear to have been more affected. It is possible a change in policy by the division or increased use have led to the lower level of satisfaction.

**Table 2a. Comparing Mean Satisfaction Responses Over Time: 2010-2012**

	Motorists			Motor Carriers		
	Mean		Effect	Mean		Effect
	2010	2012	Size	2010	2012	Size
<b>Overall Satisfaction</b>	1.86	2.02	0.21*	1.94	2.13	0.25*
<b>Ride</b>						
Smoothness of Interstate	2.31	2.24	-0.09	2.67	2.59	-0.08
Smoothness of Non-Interstate	2.78	2.80	0.01	2.92	3.02	0.10
<b>Debris removal</b>	2.22	2.18	-0.04	2.19	2.31	0.13
<b>Snow and Ice</b>						
Timeliness of snow/ice removal	1.93	1.91	-0.02	1.91	2.21	0.34*
Effectiveness of snow/ice removal	1.93	1.94	0.01	1.99	2.23	0.27*
<b>Safety</b>						
Overall safety	1.85	2.03	0.21*	1.85	2.26	0.47*
Pavement striping	2.12	2.15	0.04	2.18	2.40	0.23*
Highway signing	1.88	1.89	0.01	1.88	1.92	0.07
Construction signing	1.97	1.93	-0.06	1.94	2.07	0.16
Traffic flow through construction	2.28	2.31	0.04	2.17	2.31	0.17
<b>Facilities</b>						
Rest Areas	1.71	1.89	0.22*	1.72	2.14	0.51**
Truck Parking Facilities	NA	NA	NA	NA	2.70	NA
Weigh Stations	NA	NA	NA	NA	NA	NA
<b>Traveler Information</b>						
Current road condition info.	1.85	1.86	0.02	1.75	NA	NA
<b>Communication</b>	NA	1.95	NA	NA	1.98	NA
<b>Motor Vehicle Division</b>	1.63	1.71	0.10	1.80	1.86	0.07
<b>Drivers License Division</b>	1.60	1.79	0.23*	1.74	2.03	0.35*
<b>Load Carrying Capacity</b>	NA	NA	NA	2.84	2.98	0.12

\* Small effect size; \*\* Medium effect size; \*\*\* Large effect size  
 NA = Not asked on survey

**Table 2b. Comparing Mean Satisfaction Responses Over Time: 2010-2012**

	Government Officials			Businesses		
	Mean		Effect	Mean		Effect
	2010	2012	Size	2010	2012	Size
<b>Overall Satisfaction</b>	1.73	1.97	0.34*	1.90	2.14	0.33*
<b>Ride</b>						
Smoothness of Interstate	2.33	2.27	-0.07	2.29	2.26	-0.04
Smoothness of Non-Interstate	2.80	2.71	-0.09	2.62	2.95	0.35*
<b>Debris removal</b>	2.05	2.23	0.20*	2.10	2.22	0.12
<b>Snow and Ice</b>						
Timeliness of snow/ice removal	1.64	1.84	0.26*	1.77	2.06	0.35*
Effectiveness of snow/ice removal	1.72	1.92	0.28*	1.83	2.02	0.25*
<b>Safety</b>						
Overall safety	1.93	2.25	0.33*	1.84	2.18	0.39*
Pavement striping	2.10	2.03	-0.08	1.93	2.16	0.27*
Highway signing	1.80	1.85	0.08	1.83	1.82	-0.02
Construction signing	1.79	1.86	0.10	1.85	1.89	0.05
Traffic flow through construction	1.96	2.12	0.22	2.12	2.37	0.28*
<b>Facilities</b>						
Rest Areas	1.44	1.78	0.46*	1.65	1.81	0.20*
Truck Parking Facilities	NA	NA	NA	NA	NA	NA
Weigh Stations	NA	2.77	NA	NA	NA	NA
<b>Traveler Information</b>						
Current road condition info.	1.82	1.77	-0.06	1.71	1.81	0.14
<b>Communication</b>	NA	1.88	NA	NA	1.89	NA
<b>Motor Vehicle Division</b>	1.55	1.63	0.09	1.46	1.56	0.15
<b>Drivers License Division</b>	1.62	1.62	0	1.54	1.83	0.33*
<b>Load Carrying Capacity</b>	NA	NA	NA	NA	NA	NA

\* Small effect size; \*\* Medium effect size; \*\*\* Large effect size

NA = Not asked on survey

## Primary Factors Influencing Overall Satisfaction

The various measures of satisfaction not only provide insight into which areas the NDDOT is currently excelling and those which need improvement, but also allow for comparisons over time. The results (Table 2a-b) indicate that overall satisfaction has gone down for each group and the difference is statistically significant for each of the four customer groups. Understanding the underlying factors that contribute to overall satisfaction allow one to target the areas that have the most impact. Towards this end we next identify those areas of service that contribute most to the overall satisfaction of each customer group in 2012.

The relationship between overall satisfaction and each of the other satisfaction measures is evaluated to determine the most important factors contributing to overall satisfaction for each group. To determine this relationship we calculate the correlation between individual responses of overall satisfaction with responses from each of the other areas covered in the survey. The correlation coefficient ranges from -1 to +1. Values close to -1 or +1 indicate a strong linear relationship. The closer the value is to zero the weaker the relationship. Given our data, one would expect the correlation to be positive, i.e. a positive response to satisfaction with overall safety should contribute to a positive response to overall satisfaction. Table 3 contains the correlations between overall satisfaction and other satisfaction responses. Those values indicated with an asterisk \* are statistically significant (different than zero) at the 5% level.

Below are the five most important factors for each group (in order of importance):

### Motorists:

- Overall safety, timeliness of snow/ice removal, effectiveness of snow/ice removal, smoothness of the interstate, debris removal.

### Motor Carriers:

- Effectiveness of snow/ice removal, drivers license division, timeliness of snow/ice removal, load carrying capacity, and motor vehicle division.

### Government Officials:

- Communication, overall safety, timeliness of snow/ice removal, effectiveness of snow/ice removal, current road information.

### Businesses:

- Overall safety, motor vehicle division, communication, smoothness of non interstate, and highway signing.

Across all four groups, perceptions of overall safety contribute a great deal towards overall satisfaction with the NDDOT. For motorists and businesses it is the most important factor, for government officials it is the second most important factor, and for motor carriers it is the sixth most important factor. The statistically significant decline in overall safety noted in this year's survey played an important role in the decline in overall satisfaction. This decline in overall safety could be due to the increase in North Dakota traffic deaths which rose from 105 in 2010 to 145 in 2011. Improving safety and customers' perceptions of safety will be crucial to increasing overall satisfaction in the future, particularly as traffic continues to rise in the state.

The data also show that perceptions of snow and ice removal again contributed a great deal to perceptions of overall satisfaction. For three of the four groups (motorists, motor carriers, and government officials) both were among the five areas with highest impact. Among motor carriers the effectiveness of snow and ice removal was the most important factor contributing to their satisfaction. The reported decline in this area by motor carriers played a significant part in their lower overall satisfaction. The negative responses in this area were somewhat surprising given the rather mild winter that North Dakota experienced this past year. This result may be driven by the dramatic rise in truck traffic, and non-native North Dakota drivers working as motor carriers in the state who are unfamiliar with winter driving.

**Table 3. Correlation between Overall Satisfaction and other satisfaction responses**

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Ride</b>				
Smoothness of Interstate	0.3309*	0.136	0.1382	0.1149
Smoothness of Non-Interstate	0.3089*	0.2553*	0.2264*	0.3182*
<b>Debris removal</b>	0.3150*	0.2735*	0.2087*	0.1213
<b>Snow and Ice</b>				
Timeliness of snow/ice removal	0.3599*	0.3745*	0.3256*	0.128
Effectiveness of snow/ice removal	0.3460*	0.4219*	0.3094*	0.1738*
<b>Safety</b>				
Overall safety	0.3686*	0.2846*	0.3464*	0.3737*
Pavement striping	0.2463*	0.1754*	0.2205*	0.1898*
Highway signing	0.2590*	0.2111*	0.2768*	0.2157*
Construction signing	0.2363*	0.2403*	0.2138*	0.1878*
Traffic flow through construction	0.2535*	0.2369*	0.2876*	0.1528
<b>Facilities</b>				
Rest Areas	0.2132*	0.2707*	0.1636	0.1649
Truck Parking Facilities	NA	0.0811	NA	NA
Weigh Stations	NA	NA	0.2319*	NA
<b>Traveler Information</b>				
Current road condition info.	0.2060*	-0.0706	0.2929*	0.1223
<b>Communication</b>	0.2969*	0.2292*	0.5096*	0.3200*
<b>Motor Vehicle Division</b>	0.2802*	0.3172*	0.0387	0.3461*
<b>Drivers License Division</b>	0.2802*	0.3777*	0.2259	-0.0785
<b>Load Carrying Capacity</b>	NA	0.3243*	NA	NA

\* Indicates significance at 5% level

NA = Not asked on survey

## Attitudes about Driver Behavior and Safety

Customers were asked whether the driving behaviors of others were their biggest safety concern on the highway. More than 83% of the four customer groups responded “yes”.

Several questions then asked customers whether five different driver behaviors were a safety concern. These behaviors included text messaging while driving, not wearing a seatbelt, drinking and driving, talking on a cell phone while driving, and speeding. Table 4 below summarizes the results.

Each of the four groups identify texting while driving and drinking while driving to be a major concern, more than 90% strongly agree or agree they are a concern. Seatbelt use, cell phone use and speeding while driving were viewed as less important. In each of these latter cases more than 69% of respondents either “strongly agreed” or “agreed” that these behaviors were a concern.

These results are an important finding when coupled with the fact that customer perception of safety is an important factor contributing to overall satisfaction. The behaviors of other drivers along with the conditions of roads and NDDOT services shape customers’ satisfaction with the NDDOT.

**Table 4. Safety Concerns about Driver Behaviors**

### Are driver behaviors your biggest safety concern on the highway?

	Motorists	Motor Carriers	Government Officials	Businesses
Yes	82.9	87.7	89.6	82.5
No	15.0	11.8	7.8	16.3
Don't know	2.1	0.5	2.6	1.3

### Percentage of Respondents who either “strongly agree” or “agree”.

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Texting While Driving</b>	94.7	92.8	95.7	96.3
<b>Seatbelt use</b>	78.3	65.9	84.4	73.2
<b>Drinking and Driving</b>	95.0	93.6	95.7	95.6
<b>Cell phone use while Driving</b>	74.6	58.2	74.0	69.4
<b>Speeding</b>	77.5	72.7	77.4	69.4

## Demographic Characteristics

Including the demographic characteristics of respondents in the survey is important because it allows us to determine whether the services that NDDOT provides are equally enjoyed by the residents of North Dakota. For instance one can tell whether women are more satisfied with the NDDOT than men or vice versa, or whether individuals in a particular zip code are more satisfied. Demographic information was collected on respondents' gender, age, zip code, purpose for using the highway system, and vehicle driven. Table 5 provides a summary of the demographic characteristics of the respondents for the four groups.

Cross tabulations were created for respondents' overall satisfaction with each of the demographic characteristics to determine whether there were any significant differences in the responses based on demographic characteristics. These cross tabulations are reported in Appendix 4. A chi-squared test statistic reveals whether there is any significant difference in the response rates. The test reveals that among motorists, one's zip code and purpose for driving influence overall satisfaction. Ordered logistic regression reveals that motorists in zip codes 586, 587, and 588 (western North Dakota) are less satisfied than motorists in other areas. Motorists whose primary purpose for driving is recreation or shopping tend to more satisfied than commuters. With respect to motor carriers, we find that older motor carriers tend to be more satisfied than younger carriers. The results show that government officials in zip code 588 are much more likely to be dissatisfied than in other areas. Logistic regression results appear in Appendix 4.

One of the concerns with any survey is whether it is representative of the population of interest. Looking at the demographic characteristics allows us to see if there are significant discrepancies between the sample and the population. It is well known in the survey literature that there has been a significant decline in the number of young people who participate in surveys due to their lack of landline telephones. Our telephone based survey is no different. In the 2010 survey 12% of our sample of motorists was in the 18-34 age bracket, whereas the group made up 33% of the state's adult population. This year we made a concerted effort to increase the number of younger motorists by making a substantial increase in the number of calls that were made to motorists. In the end, 27% of our sample of motorists were in the 18-34 age bracket. Our sample slightly over weighted older motorists and underweighted young motorists.

Age	Sample	Population
18-34	27%	33%
35-54	33%	33%
55+	40%	34%

In the future we may wish to consider a more efficient way to obtain contact information data for younger drivers. Cell phone numbers, unlike landline numbers are unavailable from telephone carriers. Those cell numbers that are commercially available are unfortunately very expensive and in the words of the providers “very unreliable.” The NDDOT may wish to consider collecting contact information during licensing or registration to be used in future surveys.

**Table 5. Demographic characteristics (%)**

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Gender</b>				
Male	57.13	67.73	73.91	43.13
Female	42.87	32.27	26.09	56.88
<b>Age</b>				
18-34	26.5	22.37	2.61	18.13
35-54	33.17	49.32	30.43	54.38
55+	40.33	28.31	66.96	27.5
<b>Zip code</b>				
580	10.25	18.8	11.5	10.69
581	8.24	11	3.54	8.18
582	21.09	16.5	15.04	15.72
583	10	4.13	12.39	8.81
584	7.98	6.88	8.85	14.47
585	17.73	11.5	15.04	10.06
586	6.89	8.26	15.04	6.92
587	12.77	12.8	9.73	13.84
588	4.96	9.17	7.96	8.81
Other	0.08	0.92	0.88	2.52
<b>Use of Highway</b>				
Travel to work	27.02	NA	39.47	48.72
Business travel	11.18	NA	28.95	16.03
Travel to school	1.75	NA	0	0
Shopping/Errands	25.52	NA	17.54	10.9
Recreation	19.52	NA	12.28	16.67
Other	15.01	NA	1.75	7.69
<b>Primary Vehicle Driven</b>				
Car	46.69	NA	38.26	36.25
Van	11.63	2.73	4.35	8.13
SUV	23.1	NA	31.3	28.75
Truck	14.64	NA	22.61	24.38
Oversized vehicle	1.42	NA	3.48	1.88
Other	2.51	26.36	0	0.63
3 Axles	NA	8.64	NA	NA
5 Axles	NA	62.27	NA	NA

NA = Not asked on survey

Two questions collect information on the distance and time spent by motorists, government officials, and businesses during one way of their daily commute. Table 6 summarizes these responses. The 50<sup>th</sup> percentile, which is the median, represents the value in which 50% of the observations are less than. For example, among motorists one half have drive times less than 10 minutes and drive less than 7 miles.

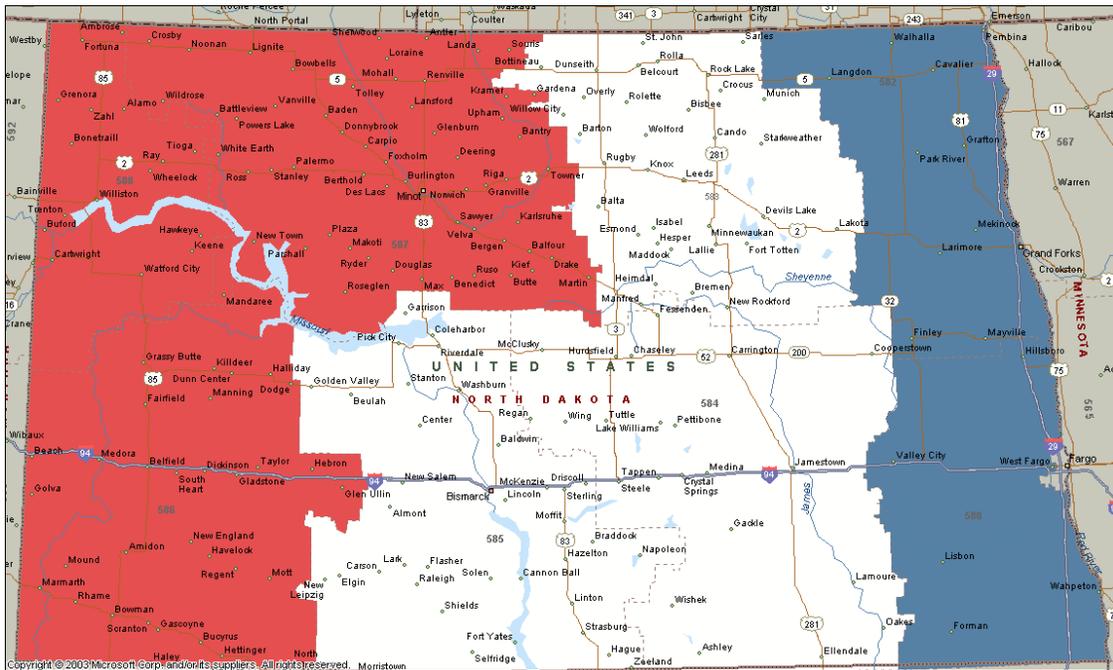
**Table 6. Distribution of Driver Commutes (one way)**

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Drive in Minutes</b>				
10 <sup>th</sup> Percentile	3	NA	2	2.45
25 <sup>th</sup> Percentile	5	NA	5	5
50 <sup>th</sup> percentile	10	NA	10	10
75 <sup>th</sup> percentile	20	NA	20	20
90 <sup>th</sup> percentile	35	NA	30	30
Mean	18.6	NA	13.3	14.5
<b>Drive in Miles</b>				
10 <sup>th</sup> Percentile	1	NA	0.5	0.5
25 <sup>th</sup> Percentile	2	NA	1	2
50 <sup>th</sup> percentile	7	NA	6	6
75 <sup>th</sup> percentile	15	NA	15	15
90 <sup>th</sup> percentile	32.8	NA	25	25.2
Mean	14.8	NA	9.9	11.2
No Commute	34%	NA	27%	1.25%

NA = Not asked on survey

## Analysis of Motorists Across Geographic Regions

The sample of 1200 motorists interviewed was chosen to be representative of North Dakota and three different regions across the state. The three regions, west, central, and east, were broken down by zip code and are shown in the graphic below. The east region consists of the 3 digit zip codes 580, 581, and 582. The central region consists of zip codes 583, 584, and 585 and the west is made up of 586, 587, and 588.



The sample size for each region was 473 (East), 427(Central), and 300 (West), which is consistent with the population found in each and is large enough for accurate comparisons. Using these samples from each of the regions allows us to determine whether the satisfaction of motorists is similar across the state.

In Table 7 we report the mean level of satisfaction in each area for motorists across the three regions. The results show that there are ten areas in 2012 where there are statistically significant differences across regions. Ordered logistic regression was used to determine the direction of these differences.

Motorists from the East were significantly more satisfied with the overall service of the NDDOT than motorists from the Central region, who were in turn more satisfied overall than those in the West. This was also true for satisfaction with the smoothness of the interstate.

Motorists in the West were more dissatisfied than those in the East and Central regions in several other areas; smoothness of the non-interstate, debris removal, effectiveness of snow/ice removal, overall safety, pavement striping, construction signing, traffic flow through construction, and rest areas. In each of these areas

motorists from the East and Central regions were equally satisfied, i.e. there were no significant differences in either's level of satisfaction.

Table Va,b in Appendix 2 gives a complete breakdown of responses for each of the regions. Appendix 4 provides the ordered logistic results.

**Table 7: Motorists' Mean Response by Geographic Region**

	East	Central	West
Overall service of NDDOT*	1.85	1.99	2.33
Smoothness of Interstate*	2.18	2.19	2.45
Smoothness of Non-Interstate*	2.66	2.66	3.20
Debris removal*	2.02	2.11	2.56
Timeliness of snow/ice removal	1.87	1.89	2.02
Effectiveness of snow/ice removal*	1.92	1.87	2.06
Overall safety*	1.83	1.91	2.50
Pavement striping*	2.09	2.10	2.33
Highway signing	1.83	1.87	2.01
Construction signing*	1.91	1.89	2.01
Traffic flow through construction*	2.28	2.22	2.49
Rest Areas*	1.87	1.79	2.06
Current road condition information	1.86	1.79	1.95
Communication efforts	1.95	1.88	2.06
Service during registration	1.60	1.78	1.78
Service at renewal	1.71	1.82	1.90

\*Difference is significant at the 5% level across groups

## **Frequency of NDDOT Services Used**

More than 83% of respondents across the four groups reported using North Dakota's rest areas. Each group's usage along with other summary statistics appears in Table 8. As discussed above, satisfaction with North Dakota's rest areas has dropped substantially since the 2010 survey.

Respondents across the four groups reported that they were generally satisfied with their ability to obtain current information on road conditions. Satisfaction was approximately 85% for each group (Table 1). Unintentionally, the survey did not ask motor carriers whether they were satisfied with traveler information. In this year's survey we asked specifically which means of news media were used (television, internet, and radio). The internet was the major source of information for each of the four groups (Table 8). Use of the NDDOT website by motorists substantially increased in 2012, rising from 36% of respondents to 57%. Clearly over time, the internet and NDDOT website are a crucial source of information for customers.

A slight change was made to the way in which information use and website use was measured. In the past, respondents could respond with several choices, whereas in 2012 they could only choose their primary use. The result is that use may appear lower, but is really due to the change in measurement.

Despite adding a number of options for website use to this year's survey, a number of motor carriers (19%) report other uses of the site. Most respondents use the website to obtain information on road conditions.

The motor vehicle and drivers license divisions both received very high satisfaction marks from the four groups (Table 1). Respondents were much more likely to use the service of the motor vehicle division as they were the drivers license division, which is not surprising given renewal of vehicle registration is more frequent than driver's license.

**Table 8. Frequency (%) of services used**

	Motorists	Motor Carriers	Government Officials	Businesses
<b>Rest Area Users</b>				
Yes	85.90	89.50	92.17	82.50
No	14.10	10.50	7.83	17.50
<b>Information Sources Used</b>				
511	11.67	17.73	18.45	8.75
Television	31	10.91	8.74	19.38
Internet	32	45	55.34	39.38
Radio	17.08	18.18	13.59	23.75
Other	3.67	5.91	3.88	4.38
None	4.58	2.27	18.45	4.38
<b>Website Users</b>				
Yes	57.18	85.84	79.13	75.63
No	42.82	14.16	20.87	24.38
<b>Website Use</b>				
Road conditions	81.1	66.84	88.89	72.95
Motor Vehicle Information	4.94	10.53	4.44	14.75
Drivers License Information	7.7	1.58	1.11	5.74
Traffic Safety Information	1.31	2.11	1.11	1.64
Employment Ads	0.15	0	0	0
Vehicle Auctions	0.58	0	0	0
Other	4.22	18.95	4.44	4.92
<b>Motor Vehicle Division Users</b>				
Yes	65	88.64	77.39	70
No	35	11.36	22.61	30
<b>Method of Interaction</b>				
Internet	18.85	30.45	23.48	25.63
In person	40.75	57.73	53.91	44.38
Mail	16.94	30.91	29.57	11.25
Phone	1.75	10.45	1.74	1.25
<b>Drivers License Division Users</b>				
Yes	37.45	35.45	18.26	35.25
No	62.55	64.55	81.74	63.75

## Conclusion

The North Dakota Department of Transportation 2012 Customer Satisfaction Survey revealed that residents of North Dakota remain satisfied with the services provided by the department. Satisfaction fell among all four customer groups since the last survey, when satisfaction was at all time highs. The survey identified satisfaction dropped among all four groups in overall safety and rest areas. Perceptions of overall safety are strongly correlated with customers overall satisfaction. The survey also revealed that driver behaviors are customers' largest safety concern on the highway. Nearly every customer was concerned with texting and drinking while driving. Influencing driver behaviors, as well as improving safety on the roads, will be crucial to obtaining higher satisfaction levels.

Analysis of data from motorists revealed that regional differences in satisfaction levels are growing. In 9 of 15 areas examined, motorists from the West were significantly less satisfied than those in the East and Central regions. These areas include:

- Smoothness of Interstate
- Smoothness of Non-Interstate
- Debris removal
- Effectiveness of snow/ice removal
- Overall safety
- Pavement striping
- Construction signing
- Traffic flow through construction
- Rest Areas

Not surprisingly we also found that government officials from the West, particularly officials in the 588 zip code, were significantly less satisfied with the overall service of the NDDOT than their counterparts in the East and West. When government officials were asked *"What are the areas/topics that you would want the NDDOT to provide/assist your local government with?"* the vast majority responded with additional funding for road repair. Other responses included more planning/direction, more highway patrol, and increased cooperation between federal/state/local levels. A complete list of responses appears in Appendix 3.

Modifications to the questions evaluating satisfaction with communication from the NDDOT revealed that customers are highly satisfied with the communication they receive. In the past the questions were somewhat unclear, which resulted in a large non-response rate. It appears this modification has resolved a previous concern.

## Appendix 1: Group 1-Motorists survey

**Hello I'm \_\_\_\_\_ and I'm calling from the Bureau of Governmental Affairs at the University of North Dakota. We are conducting a survey about transportation services and state roads maintained by the North Dakota Department of Transportation.**

**The department provides services to the public including: maintenance, snow and ice control, and travel information on state highways. It also provides drivers license, traffic safety programs, and motor vehicle registration services.**

**Your opinion is very important to us, would you be willing to take a few minutes to participate in this survey?**

**Thank you. For most of the following questions please answer on a scale from**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ Don't Know \_\_\_**

**1. In general, how satisfied are you with the services provided by the North Dakota Department of Transportation?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**2. How satisfied are you with the overall smoothness of the pavement on Interstate 29 and 94?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**3. How satisfied are you with the overall smoothness of the pavement on other state maintained highways?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**4. How satisfied are you with the removal of debris from the roadway?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**5. How satisfied are you with the timeliness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**6. How satisfied are you with the effectiveness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**7. Overall, how satisfied are you with the safety of state highways?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**8. How satisfied are you with highway pavement striping?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**9. How satisfied are you with the condition of highway signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**10. How satisfied are you with construction work-zone signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**11. How satisfied are you with traffic flow through construction work zones?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**12. The next few questions ask whether different driver behaviors are a safety concern to you. You may respond with strongly agree, agree, neutral, disagree, or strongly disagree**

a. **Text messaging while driving**

Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree \_\_\_ DK\_\_

b. **Not wearing a seat belt**

Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree \_\_\_ DK\_\_

c. **Drinking and driving**

Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree \_\_\_ DK\_\_

d. **Talking on a cell phone while driving**

Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree \_\_\_ DK\_\_

e. **Speeding**

Strongly Agree \_\_\_ Agree \_\_\_ Neutral \_\_\_ Disagree \_\_\_ Strongly Disagree \_\_\_ DK\_\_

**13. Are driver behaviors your biggest safety concern on the highway?**

**YES** \_\_\_\_\_, **NO** \_\_\_\_\_, **Don't Know** \_\_\_\_\_

**14. If you have used North Dakota's highway rest areas, how satisfied are you?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**15. Of the following information sources, which do you use most frequently to obtain information on roadway conditions?**

511 - Telephone \_\_\_ Television \_\_\_ NDDOT Website \_\_\_ Radio \_\_\_ Other \_\_\_\_\_  
None \_\_\_\_\_

**16. How satisfied are you with your ability to get current information on state road conditions?**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_

**17. How satisfied are you with the communication efforts made by the department.**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_

**18. Yes or no, have you ever visited the North Dakota Department of Transportation web site?**

No \_\_\_\_\_ (move to question 20)

Yes \_\_\_\_\_

**If yes, for what reason:**

Road Conditions	_____
Motor Vehicle Information	_____
Drivers License Information	_____
Employment Ads	_____
Vehicle Auctions	_____
Traffic Safety Information	_____
Other?	_____

**19. Yes or no, within the past 18 months, have you completed a motor vehicle registration or title transfer or received other motor vehicle services?**

No \_\_\_\_\_ (move to question 20)

Yes \_\_\_\_\_

**What method or methods did you use?**

Mail \_\_\_\_\_ Phone \_\_\_\_\_ In person \_\_\_\_\_ Internet \_\_\_\_\_

**20. Overall, how satisfied were you with the registration, title transfer, or other motor vehicle services you received?**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_

**21. Yes or no, within the past 18 months, have you completed a driver's test, license renewal, or driver improvement transaction?**

No \_\_\_\_\_ (move to question 21)

Yes \_\_\_\_\_

**22. Overall, how satisfied were you with the service you received?**

Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK \_\_\_\_\_

**23. Gender? male \_\_\_\_\_ female \_\_\_\_\_**

**24. Is your age? 18-34 \_\_\_\_\_ 35-54 \_\_\_\_\_ 55+ \_\_\_\_\_**

**25. What is your zip code? \_\_\_\_\_**

**26. What is your primary purpose for using the state highway system?**

Travel to place of work \_\_\_\_\_  
Business travel \_\_\_\_\_  
Travel to school \_\_\_\_\_  
Going shopping/running errands \_\_\_\_\_  
Recreation \_\_\_\_\_  
Other \_\_\_\_\_

**27. What type of vehicle do you use primarily when traveling on the state highway system?**

Car \_\_\_\_\_  
Van \_\_\_\_\_  
Sports Utility Vehicle (SUV) \_\_\_\_\_  
Truck \_\_\_\_\_  
Oversized vehicle \_\_\_\_\_  
Other \_\_\_\_\_

**28. How many minutes does it usually take you to get from home to work or school?**

\_\_\_\_\_

**29. How many miles do you drive to get from home to work or school?**

\_\_\_\_\_

## Appendix 1: Group 2-Motor Carriers survey

**Hello I'm \_\_\_\_\_ and I'm calling from the Bureau of Governmental Affairs at the University of North Dakota. We are conducting a survey about transportation services and state roads maintained by the North Dakota Department of Transportation.**

**The department provides services to the public including: maintenance, snow and ice control, and travel information on state highways. It also provides drivers license, traffic safety programs, and motor vehicle registration services.**

**Your opinion is very important to us, would you be willing to take a few minutes to participate in this survey?**

**Thank you. For most of the following questions please answer on a scale from**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ Don't Know \_\_\_**

**1. In general, how satisfied are you with the services provided by the North Dakota Department of Transportation?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**2. How satisfied are you with the overall smoothness of the pavement on Interstate 29 and 94?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**3. How satisfied are you with the overall smoothness of the pavement on other state maintained highways?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**4. How satisfied are you with the removal of debris from the roadway?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**5. How satisfied are you with the timeliness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**6. How satisfied are you with the effectiveness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**7. Overall, how satisfied are you with the safety of state highways?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**8. How satisfied are you with highway pavement striping?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**9. How satisfied are you with the condition of highway signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**10. How satisfied are you with construction work-zone signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**11. How satisfied are you with traffic flow through construction work zones?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**12. The next few questions ask whether different driver behaviors are a safety concern to you. You may respond with strongly agree, agree, neutral, disagree, or strongly disagree**

**a. Text messaging while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**b. Not wearing a seat belt**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**c. Drinking and driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**d. Talking on a cell phone while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**e. Speeding**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**13. Are driver behaviors your biggest safety concern on the highway?**

YES\_\_\_\_\_, NO\_\_\_\_\_, Don't Know\_\_\_\_\_

**14. Do Spring Load Restrictions affect your business?**

Yes \_\_\_\_\_ No \_\_\_\_\_ (move to question 14)

**15. How satisfied are you with the spring load-carrying capacity of the state highway system?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**16. If you have used North Dakota's highway rest areas, how satisfied are you?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**17. If you have used North Dakota's highway truck parking facilities, how satisfied are you?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**18. Of the following information sources, which do you use most frequently to obtain information on roadway conditions?**

511 - Telephone \_\_\_\_ Television \_\_\_\_ NDDOT Website \_\_\_\_ Radio \_\_\_\_ Other \_\_\_\_  
None \_\_\_\_

**19. How satisfied are you with the communication efforts made by the department?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**20. Yes or no, have you ever visited the North Dakota Department of Transportation web site?**

No \_\_\_\_ (move to question 20)

Yes \_\_\_\_

**If yes, for what reason:**

- Road Conditions \_\_\_\_\_
- Motor Vehicle Information \_\_\_\_\_
- Drivers License Information \_\_\_\_\_
- Employment Ads \_\_\_\_\_
- Vehicle Auctions \_\_\_\_\_
- Traffic Safety Information \_\_\_\_\_
- Other? \_\_\_\_\_

**21. Yes or no, within the past 18 months, have you completed a motor vehicle registration or title transfer or received other motor vehicle services?**

No \_\_\_\_ (move to question 22)

Yes \_\_\_\_

**What method or methods did you use?**

Mail \_\_\_\_ Phone \_\_\_\_ In person \_\_\_\_ Internet \_\_\_\_

**22. Overall, how satisfied were you with the registration, title transfer, or other motor vehicle services you received?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**23. Yes or no, within the past 18 months, have you completed a driver's test, license renewal, or driver improvement transaction?**

No \_\_\_\_ (move to question 23)

Yes \_\_\_\_

**Overall, how satisfied were you with the service you received?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**24. Gender? male \_\_\_\_ female \_\_\_\_**

**25. Is your age? 18-34 \_\_\_\_ 35-54 \_\_\_\_ 55+ \_\_\_\_**

**26. What is your zip code? \_\_\_\_\_**

**27. What type of vehicle do you use primarily when traveling on the state highway system in the performance of your job?**

**3 axles (tandem) \_\_\_\_\_ 5 to 7 axles (semi) \_\_\_\_\_ Van \_\_\_\_\_ other \_\_\_\_\_**

## Appendix 1: Group 3-Government Officials survey

**Hello I'm \_\_\_\_\_ and I'm calling from the Bureau of Governmental Affairs at the University of North Dakota. We are conducting a survey about transportation services and state roads maintained by the North Dakota Department of Transportation.**

**The department provides services to the public including: maintenance, snow and ice control, and travel information on state highways. It also provides drivers license, traffic safety programs, and motor vehicle registration services.**

**Your opinion is very important to us, would you be willing to take a few minutes to participate in this survey?**

**Thank you. For most of the following questions please answer on a scale from**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ Don't Know \_\_\_**

**1. In general, how satisfied are you with the services provided by the North Dakota Department of Transportation?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**2. How satisfied are you with the overall smoothness of the pavement on Interstate 29 and 94?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**3. How satisfied are you with the overall smoothness of the pavement on other state maintained highways?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**4. How satisfied are you with the removal of debris from the roadway?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**5. How satisfied are you with the timeliness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**6. How satisfied are you with the effectiveness of highway snow and ice removal?**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_\_**

**7. Overall, how satisfied are you with the safety of state highways?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**8. How satisfied are you with highway pavement striping?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**9. How satisfied are you with the condition of highway signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**10. How satisfied are you with construction work-zone signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**11. How satisfied are you with traffic flow through construction work zones?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**12. The next few questions ask whether different driver behaviors are a safety concern to you. You may respond with strongly agree, agree, neutral, disagree, or strongly disagree**

a. **Text messaging while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

b. **Not wearing a seat belt**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

c. **Drinking and driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

d. **Talking on a cell phone while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

e. **Speeding**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**13. Are driver behaviors your biggest safety concern on the highway?**

YES \_\_\_\_\_, NO \_\_\_\_\_, Don't Know \_\_\_\_\_

**14. If you have used North Dakota's highway rest areas, how satisfied are you?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**15. How satisfied are you with the number and locations of highway weigh stations and pullouts.**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**16. How satisfied are you with your ability to get current information on state road conditions?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**17. Of the following information sources, which do you use most frequently to obtain information on roadway conditions?**

511 - Telephone \_\_\_\_ Television \_\_\_\_ NDDOT Website \_\_\_\_ Radio \_\_\_\_ Other \_\_\_\_  
None \_\_\_\_

**18. How satisfied are you with the communication efforts made by the department?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**19. Yes or no, have you ever visited the North Dakota Department of Transportation web site?**

No \_\_\_\_ (move to question 17)

Yes \_\_\_\_

If yes, for what reason:

Road Conditions	_____
Motor Vehicle Information	_____
Drivers License Information	_____
Employment Ads	_____
Vehicle Auctions	_____
Traffic Safety Information	_____
Other?	_____

**20. Yes or no, within the past 18 months, have you completed a motor vehicle registration or title transfer or received other motor vehicle services?**

No \_\_\_\_ (move to question 18)

Yes \_\_\_\_

What method or methods did you use?

Mail \_\_\_\_ Phone \_\_\_\_ In person \_\_\_\_ Internet \_\_\_\_

**Overall, how satisfied were you with the registration, title transfer, or other motor vehicle services you received?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**21. Yes or no, within the past 18 months, have you completed a driver's test, license renewal, or driver improvement transaction?**

No \_\_\_\_ (move to question 19)

Yes \_\_\_\_

**22. Overall, how satisfied were you with the service you received?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**23. Gender? male \_\_\_\_ female \_\_\_\_**

**24. Is your age? 18-34 \_\_\_\_ 35-54 \_\_\_\_ 55+ \_\_\_\_**

**25. What is your zip code? \_\_\_\_\_**

**26. What is your primary purpose for using the state highway system?**

Travel to place of work \_\_\_\_\_

Business travel \_\_\_\_\_

Travel to school \_\_\_\_\_

Going shopping/running errands \_\_\_\_\_

Recreation \_\_\_\_\_

Other \_\_\_\_\_

**27. What type of vehicle do you use primarily when traveling on the state highway system?**

Car \_\_\_\_\_

Van \_\_\_\_\_

Sports Utility Vehicle (SUV) \_\_\_\_\_

Truck \_\_\_\_\_

Oversized vehicle \_\_\_\_\_

Other \_\_\_\_\_

**28. How many minutes does it usually take you to get from home to work?**

\_\_\_\_\_

**29. How many miles do you drive to get from home to work?**

\_\_\_\_\_

**30. What are the areas/topics that you would want the NDDOT to provide/assist your local government with?**

## Appendix 1: Group 4-Businesses survey

**Hello I'm \_\_\_\_\_ and I'm calling from the Bureau of Governmental Affairs at the University of North Dakota. We are conducting a survey about transportation services and state roads maintained by the North Dakota Department of Transportation.**

**The department provides services to the public including: maintenance, snow and ice control, and travel information on state highways. It also provides drivers license, traffic safety programs, and motor vehicle registration services.**

**Your opinion is very important to us, would you be willing to take a few minutes to participate in this survey?**

**Thank you. For most of the following questions please answer on a scale from**

**Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ Don't Know \_\_\_**

**1. In general, how satisfied are you with the services provided by the North Dakota Department of Transportation?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**2. How satisfied are you with the overall smoothness of the pavement on Interstate 29 and 94?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**3. How satisfied are you with the overall smoothness of the pavement on other state maintained highways?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**4. How satisfied are you with the removal of debris from the roadway?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**5. How satisfied are you with the timeliness of highway snow and ice removal?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**6. How satisfied are you with the effectiveness of highway snow and ice removal?**

**Very Satisfied \_\_\_\_\_ Satisfied \_\_\_\_\_ Neutral \_\_\_\_\_ Dissatisfied \_\_\_\_\_ Very Dissatisfied \_\_\_\_\_ DK\_\_\_\_\_**

**7. Overall, how satisfied are you with the safety of state highways?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**8. How satisfied are you with highway pavement striping?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**9. How satisfied are you with the condition of highway signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**10. How satisfied are you with construction work-zone signing?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**11. How satisfied are you with traffic flow through construction work zones?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**12. The next few questions ask whether different driver behaviors are a safety concern to you. You may respond with strongly agree, agree, neutral, disagree, or strongly disagree**

**a. Text messaging while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**b. Not wearing a seat belt**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**c. Drinking and driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**d. Talking on a cell phone while driving**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**e. Speeding**

Strongly Agree \_\_\_\_ Agree \_\_\_\_ Neutral \_\_\_\_ Disagree \_\_\_\_ Strongly Disagree \_\_\_\_ DK\_\_

**13. Are driver behaviors your biggest safety concern on the highway?**

**YES**\_\_\_\_\_, **NO**\_\_\_\_\_, **Don't Know**\_\_\_\_\_

**14. If you have used North Dakota's highway rest areas, how satisfied are you?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**15. Of the following information sources, which do you use most frequently to obtain information on roadway conditions?**

511 - Telephone \_\_\_ Television \_\_\_ NDDOT Website \_\_\_ Radio \_\_\_ Other \_\_\_\_\_  
None \_\_\_\_\_

**16. How satisfied are you with your ability to get current information on state road conditions?**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_

**17. How satisfied are you with the communication efforts made by the department?**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_ DK\_\_

**18. Yes or no, have you ever visited the North Dakota Department of Transportation web site?**

No \_\_\_\_\_ (move to question 20)

Yes \_\_\_\_\_

**If yes, for what reason:**

**Road Conditions** \_\_\_\_\_  
**Motor Vehicle Information** \_\_\_\_\_  
**Drivers License Information** \_\_\_\_\_  
**Employment Ads** \_\_\_\_\_  
**Vehicle Auctions** \_\_\_\_\_  
**Traffic Safety Information** \_\_\_\_\_  
**Other?** \_\_\_\_\_

**19. Yes or no, within the past 18 months, have you completed a motor vehicle registration or title transfer or received other motor vehicle services?**

No \_\_\_\_\_ (move to question 20)

Yes \_\_\_\_\_

**What method or methods did you use?**

**Mail** \_\_\_\_\_ **Phone** \_\_\_\_\_ **In person** \_\_\_\_\_ **Internet** \_\_\_\_\_

**Overall, how satisfied were you with the registration, title transfer, or other motor vehicle services you received?**

Very Satisfied \_\_\_ Satisfied \_\_\_ Neutral \_\_\_ Dissatisfied \_\_\_ Very Dissatisfied \_\_\_  
DK\_\_

**20. Yes or no, within the past 18 months, have you completed a driver's test, license renewal, or driver improvement transaction?**

No \_\_\_\_ (move to question 21)

Yes \_\_\_\_

**21. Overall, how satisfied were you with the service you received?**

Very Satisfied \_\_\_\_ Satisfied \_\_\_\_ Neutral \_\_\_\_ Dissatisfied \_\_\_\_ Very Dissatisfied \_\_\_\_ DK\_\_

**22. Gender? male \_\_\_\_ female \_\_\_\_**

**23. Is your age? 18-34 \_\_\_\_ 35-54 \_\_\_\_ 55+ \_\_\_\_**

**24. What is your zip code? \_\_\_\_\_**

**25. What is your primary purpose for using the state highway system?**

Travel to place of work \_\_\_\_\_

Business travel \_\_\_\_\_

Travel to school \_\_\_\_\_

Going shopping/running errands \_\_\_\_\_

Recreation \_\_\_\_\_

Other \_\_\_\_\_

**26. What type of vehicle do you use primarily when traveling on the state highway system?**

Car \_\_\_\_\_

Van \_\_\_\_\_

Sports Utility Vehicle (SUV) \_\_\_\_\_

Truck \_\_\_\_\_

Oversized vehicle \_\_\_\_\_

Other \_\_\_\_\_

**27. How many minutes does it usually take you to get from home to work or school?**

\_\_\_\_\_

**28. How many miles do you drive to get from home to work or school?**

\_\_\_\_\_

## Appendix 2: Data Summary

**Table I. Summary of Motorist Satisfaction**

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know	Mean	Std. Dev.	N
Overall service of NDDOT	25.67	53.5	13.08	4.58	1.83	1.33	2.02	0.863691	1184
Smoothness of Interstate	14.17	45.75	16.17	7.25	1.17	15.5	2.24	0.878163	1014
Smoothness of Non-Interstate	5.75	39.17	24.67	16.42	7.67	6.33	2.80	1.061407	1124
Debris removal	21.18	53.04	12.76	8.67	3.09	1.25	2.18	0.971209	1184
Timeliness of snow/ice removal	29.67	54	9.08	4.08	1.33	1.83	1.91	0.822548	1178
Effectiveness of snow/ice removal	27	56.25	10.08	3.75	1.08	1.83	1.94	0.791497	1178
Overall safety	25.92	54.58	10.67	6.75	1.42	0.67	2.03	0.876623	1192
Pavement striping.	21.08	55.33	11.08	8.83	2.42	1.25	2.15	0.939002	1185
Highway signing	27.83	59.17	8	3.75	0.42	0.83	1.89	0.733745	1190
Construction signing	27.25	56.92	9.08	4.67	0.67	1.42	1.93	0.783888	1183
Traffic flow through construction	12.92	55.08	18.92	8.58	2.33	2.17	2.31	0.892509	1174
Rest Area Safety	32.19	37.61	11.01	3.84	1.25	14.1	1.89	0.894704	1030
Current road condition info.	28.95	56.57	8.2	2.76	0.5	3.01	1.86	0.72388	1159
Department Communication	21.99	59.87	11.2	2.59	0.33	4.01	1.95	0.69521	1148
Service during registration	44.72	46.26	3.87	2.96	2.06	0.13	1.71	0.842073	775
Service at renewal	42.76	45.61	3.73	5.26	2.63	0	1.80	0.933648	456
Texting While Driving	83.7	11	2.3	1.3	1.6	0.3	1.26	0.708443	1197
Seatbelt Use	55.2	23.1	12.3	4.9	4.4	0.17	1.8	1.10996	1198
Drinking and Driving	85.6	9.4	2.2	1.3	1.2	0.1	1.23	0.676053	1199
Cell Phone use while Driving	45.8	28.8	16.8	5.8	2.4	0.3	1.9	1.034938	1196
Speeding	45.1	32.4	14.6	6.1	1.5	0.3	1.86	0.980095	1195

**Table II. Summary of Motor Carrier Satisfaction**

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know	Mean	Std. Dev.	N
Overall service of NDDOT	17.27	61.82	13.64	4.09	2.73	0.45	2.13	0.841635	219
Smoothness of Interstate	5.91	44.55	24.55	12.73	3.18	9.09	2.59	0.930715	200
Smoothness of Non-Interstate	3.64	32.73	27.73	27.27	7.27	1.36	3.02	1.027236	217
Debris removal	16.36	55.45	12.73	9.09	5.45	0.91	2.31	1.031283	218
Timeliness of snow/ice removal	19.55	53.64	15.45	5.45	4.55	1.36	2.21	0.975791	217
Effectiveness of snow/ice removal	16.36	55.91	18.64	4.09	4.09	0.91	2.23	0.917149	218
Overall safety	19.09	53.64	13.64	9.55	4.09	0	2.26	1.007352	220
Pavement striping.	11.36	56.82	17.27	10	4.55	0	2.40	0.971266	220
Highway signing	20.91	70	5.45	1.82	1.36	0.45	1.92	0.676202	219
Construction signing	19.09	63.64	10.91	4.09	2.27	0	2.07	0.816433	220
Traffic flow through construction	11.82	57.73	20.91	5.91	3.18	0.45	2.31	0.873941	219
Rest Area Safety	21.46	45.21	14.61	5.48	2.74	10.5	2.14	0.953484	196
Truck Parking Facilities	5.91	31.82	24.09	10.45	5	22.7	2.70	1.01381	170
Current road condition info.	17.73	10.91	45	18.18	5.91	2.27	2.83	1.114836	215
Department Communication	21.36	63.18	10.45	3.18	0.91	0.91	1.98	0.73	218
Service during registration	36.55	49.24	7.11	4.06	2.54	0.51	1.86	0.903783	196
Service at renewal	25.32	55.7	10.13	5.06	2.53	1.27	2.03	0.896955	78
Load carrying capacity	6.82	36.93	22.16	15.34	16.48	2.27	2.98	1.223328	172
Texting While Driving	66.4	26.4	3.2	1.8	2.3	0	1.47	0.835394	220
Seatbelt Use	33.6	32.3	20	9.1	5	0	2.2	1.147949	220
Drinking and Driving	73.6	20	2.7	0.9	2.7	0	1.39	0.82313	220
Cell Phone use while Driving	26.8	31.4	27.3	12.3	2.3	0	2.32	1.067852	220
Speeding	35	37.7	17.7	6.8	2.7	0	2.05	1.023793	220

**Table III. Summary of Government Officials Satisfaction**

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know	Mean	Std. Dev.	N
Overall service of NDDOT	26.96	53.04	12.17	6.09	0	1.74	1.97	0.806892	113
Smoothness of Interstate	7.83	57.39	13.04	7.83	0.87	13.04	2.27	0.789515	100
Smoothness of Non-Interstate	2.63	49.12	25.44	20.18	2.63	0	2.71	0.909378	114
Debris removal	13.04	65.22	10.43	8.7	2.61	0	2.23	0.879203	115
Timeliness of snow/ice removal	34.78	53.04	6.09	5.22	0.87	0	1.84	0.822825	115
Effectiveness of snow/ice removal	26.96	60	5.22	6.96	0	0.87	1.92	0.777388	114
Overall safety	21.05	53.51	7.02	16.67	1.75	0	1.92	0.777388	114
Pavement striping.	22.61	59.13	9.57	7.83	0	0.87	2.25	1.026735	114
Highway signing	24.35	69.57	2.61	3.48	0	0	2.03	0.803318	115
Construction signing	31.3	54.78	8.7	4.35	0	0.87	1.85	0.624689	114
Traffic flow through construction	13.04	68.7	7.83	8.7	0	1.74	2.12	0.745615	113
Rest Area Safety	40.87	37.39	8.7	3.48	1.74	7.83	1.78	0.905062	106
Weigh Station locations/number	7.83	30.43	30.43	16.52	4.35	10.4	2.77	1.011734	103
Current road condition info.	39.47	44.74	8.77	4.39	0	2.63	1.77	0.794123	111
Department Communication	26.09	57.39	11.3	1.74	0	3.48	1.88	0.670668	111
Service during registration	55.32	34.04	4.26	5.32	1.06	0	1.63	0.879688	94
Service at renewal	50	42.86	2.38	4.76	0	0	1.62	0.763573	42
Texting While Driving	83.5	12.2	0.9	0	3.5	0	1.28	0.800743	115
Seatbelt Use	40.9	43.5	13.9	0.9	0	0	1.77	0.784285	115
Drinking and Driving	75.7	20	0.9	1.7	1.7	0	1.34	0.747944	115
Cell Phone use while Driving	35.7	38.3	20.9	5.2	0	0	1.96	0.882494	115
Speeding	36.5	40.9	16.5	3.5	2.6	0	1.95	0.953695	115

**Table IV. Summary of Business Satisfaction**

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know	Mean	Std. Dev.	N
Overall service of NDDOT	17.5	58.75	13.13	6.25	1.88	2.5	2.14	0.853446	156
Smoothness of Interstate	9.38	52.5	17.5	6.25	0.63	13.8	2.26	0.77652	138
Smoothness of Non-Interstate	5	28.75	36.88	17.5	8.13	3.75	2.95	1.014871	154
Debris removal	21.25	51.88	12.5	7.5	5	1.88	2.22	1.033531	157
Timeliness of snow/ice removal	28.13	50	13.75	4.38	3.75	0	2.06	0.966397	160
Effectiveness of snow/ice removal	24.38	56.25	13.13	3.75	1.88	0.63	2.02	0.837958	159
Overall safety	18.75	58.13	13.75	5	4.38	0	2.18	0.944177	160
Pavement striping.	22.5	50	18.75	6.88	1.88	0	2.16	0.914914	160
Highway signing	28.13	61.88	10	0	0	0	1.82	0.592106	160
Construction signing	30	53.13	13.75	1.88	0.63	0.63	1.89	0.751296	159
Traffic flow through construction	10.63	55	22.5	7.5	3.13	1.25	2.37	0.891249	158
Rest Area Use	31.25	39.38	9.38	1.25	1.25	17.5	1.81	0.811488	132
Current road condition info.	33.13	51.88	10	1.25	0.63	3.13	1.81	0.721621	155
Service during registration	57.14	34.82	5.36	0	2.68	0	1.56	0.825072	112
Department Communication	26.25	58.13	12.5	0.63	0.63	1.88	1.89	0.684813	157
Service at renewal	48.28	32.76	10.34	5.17	3.45	0	1.83	1.045255	58
Texting While Driving	87.5	8.8	2.5	0	1.3	0	1.19	0.595449	160
Seatbelt Use	48.8	24.4	16.3	8.1	2.5	0	1.91	1.095373	160
Drinking and Driving	85	10.6	2.5	0.6	1.3	0	1.23	0.64379	160
Cell Phone use while Driving	33.8	35.6	21.9	5.6	3.1	0	2.09	1.030281	160
Speeding	35	34.4	23.1	5	2.5	0	2.06	1.004686	160

**Table Va. Summary of Motorist Satisfaction by Region**

	Region	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know
Overall service of NDDOT	East	29.51	57.54	9.13	2.12	0.64	1.06
	Central	26.82	51.29	14.12	4.71	0.94	2.12
	West	17.41	50.51	18.09	8.53	4.78	0.68
Smoothness of Interstate	East	16.56	52.87	16.99	7.22	0.85	5.52
	Central	15.76	47.29	17.41	6.12	0.94	12.47
	West	7.85	32.42	12.97	9.22	2.05	35.49
Smoothness of Non-Interstate	East	5.52	39.7	30.36	13.59	3.18	7.64
	Central	7.53	42.35	22.59	16.47	4.24	6.82
	West	3.75	32.42	19.45	21.16	19.8	3.41
Debris removal	East	26.54	52.02	11.25	7.43	0.85	1.91
	Central	20.99	56.84	12.5	7.31	1.18	1.18
	West	12.63	48.81	16.04	12.97	9.22	0.34
Timeliness of snow/ice removal	East	32.27	52.44	7.86	3.82	1.49	2.12
	Central	31.06	54.12	8	4.47	0.71	1.65
	West	23.55	56.31	12.63	4.1	1.71	1.71
Effectiveness of snow/ice removal	East	27.18	58.6	7.64	3.82	1.49	1.27
	Central	31.29	52.94	10.12	3.53	0.24	1.88
	West	20.14	57.68	13.99	4.1	1.71	2.39
Overall safety	East	31.42	57.54	7.22	3.18	0.21	0.42
	Central	29.65	54.82	9.41	4.24	0.71	1.18
	West	11.95	49.15	17.75	16.38	4.44	0.34
Pavement striping.	East	23.78	52.65	12.31	8.49	1.49	1.27
	Central	23.76	56	9.65	8	1.88	0.71
	West	13.31	58.7	11.26	10.24	4.78	1.71

**Table Vb. Summary of Motorist Satisfaction by Region**

	Region	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't know
Highway signing	East	31	57.11	7.43	3.4	0.21	0.85
	Central	29.41	58.35	7.53	3.76	0.24	0.71
	West	20.48	63.48	9.9	4.44	1.02	0.68
Construction signing	East	29.51	53.93	9.77	5.73	0	1.06
	Central	28.47	59.53	6.35	3.29	1.18	1.18
	West	22.18	58.02	11.6	5.12	1.02	2.05
Traffic flow through construction	East	13.8	55.41	18.47	8.7	1.91	1.7
	Central	15.29	57.41	17.65	6.59	1.65	1.41
	West	8.53	50.51	21.5	11.6	4.1	3.75
Rest Areas	East	32.13	40.21	10.21	3.62	0.85	12.98
	Central	37.18	38.35	10.12	3.53	0.47	10.35
	West	25.6	32.08	13.65	4.44	2.39	21.84
Current road condition info.	East	28.85	57.05	9.19	2.35	0.43	2.14
	Central	32.39	56.26	6.86	2.6	0	1.89
	West	25.26	55.29	8.53	3.75	1.37	5.8
Communication Efforts	East	20.9	62.26	11.09	2.13	0.21	3.41
	Central	26.65	57.31	10.38	2.36	0.24	3.07
	West	17.81	58.9	12.67	3.77	0.68	6.16
Service during registration	East	49.83	44.41	2.71	2.37	0.68	0
	Central	42.55	46.45	4.61	3.19	3.19	0
	West	40.72	47.94	4.64	3.61	2.58	0.52
Service at renewal	East	47.83	42.93	3.26	4.35	1.63	0
	Central	39.26	48.47	4.29	6.13	1.84	0
	West	39.81	46.3	3.7	4.63	5.56	0

### **Appendix 3: Open Ended Responses by Government Officials**

1. more money for road repair
2. more money for road repair
3. more discussion about state highway 5
4. access to approach
5. greater funding
6. local financial aid
7. better cooperation on paying for federal project
8. traffic flow
9. more funding for county roads
10. more funding and help
11. none
12. more funding
13. none
14. money for county roads, they do a good job but need more help
15. none
16. good job
17. safety, upgrade highway 30
18. more police
19. none
20. none
21. more income to county to support interstates
22. road repairs
23. none
24. none
25. more money for county
26. take responsibility for advance road
27. better control, red lights on ramp
28. add rest area in county
29. better long range planning
30. none
31. send orders, send money to pay for mandate
32. better funding
33. more money for roads
34. more money
35. more money for local road repair
36. more funding for road work
37. none
38. none
39. more funds for road repair

40. more help to repair approach to highway, maintain lights on highway
41. more money for more road repair
42. more money for road repair, keep up
43. more money to do repair on highway
44. repairs on roads
45. more help with roads
46. take better care of state road that goes through town
47. send reimbursement more quickly
48. need more funding for road repairs
49. none
50. more money for roads
51. more money for road repairs
52. none
53. planning of highway
54. help with county road repair
55. more funding for transportation
56. funding for roads
57. more funding road repair
58. highway 85 needs more repair and patrol
59. move truck traffic away from town
60. traffic main concern on highway 85 with trucks
61. safety concern of drivers
62. road construction and repair help county with funding and repair
63. funding bridge and roads
64. more funding
65. none
66. none
67. more help and more money for roads
68. none
69. more money for road repair
70. none
71. more help with state and county roads
72. rebuild highway 58 need repair
73. none
74. more state money for road repair
75. more money for road repair
76. more funding for road repair
77. none
78. more funds for roads
79. more turn offs in oil patch country
80. none

81. fix all roads in western north dakota
82. more for roads and repairs
83. more funding county and state repair
84. more help with roads
85. more cops on two way highway
86. weight enforcement
87. more funds for road repair
88. none
89. more funding for state and county road repair
90. more funding for county roads that carry truck traffic
91. none
92. none
93. nothing
94. more funding for road repair
95. more technical help
96. more funding for county roads
97. better service of railroad crossings
98. nothing
99. maintain help with state and county roads
100. more funding for county roads
101. road repair
102. more highway patrol on the highway
103. more money for road repair
104. need money for town and county bridge repair
105. how to maintain county roads; paved roads need assistance
106. road funding
107. more funds for county roads
108. more funding for road repair
109. none
110. more funding for county roads
111. funding for road repair
112. more funding for city roads
113. more money for state and county roads
114. none
115. more money for state, county, city road repairs, and law enforcement

## Appendix 4: Cross Tabulations

Cross Tabulations of motorists' (Group 1) overall satisfaction with NDDOT service and demographic characteristics.

### Gender

Overall   Satisfaction	Gender		Total
	male	female	
very satisfied	26.67	25.56	26.04
satisfied	54.12	54.23	54.18
neutral	12.75	13.67	13.27
dissatisfied	4.12	5.05	4.65
very dissatisfied	2.35	1.49	1.86
Total	100.00	100.00	100.00

Pearson  $\chi^2(4) = 2.0427$  Pr = 0.728

### Age

Overall   Satisfaction	Age			Total
	18-34	35-54	55+	
very satisfied	25.48	26.01	26.37	26.01
satisfied	54.46	52.53	55.49	54.22
neutral	14.01	15.91	10.55	13.26
dissatisfied	4.78	4.29	4.85	4.65
very dissatisfied	1.27	1.26	2.74	1.86
Total	100.00	100.00	100.00	100.00

Pearson  $\chi^2(8) = 8.7586$  Pr = 0.363

## Zip code

Overall Satisfaction	Zipcode				Total
	580	581	582	583	
very satisfied	29.17	35.71	27.82	24.35	25.92
satisfied	58.33	57.14	58.47	54.78	54.31
neutral	10.83	4.08	10.48	13.91	13.30
dissatisfied	1.67	2.04	2.42	5.22	4.69
very dissatisfied	0.00	1.02	0.81	1.74	1.79
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode				Total
	584	585	586	587	
very satisfied	24.73	30.29	18.29	19.21	25.92
satisfied	54.84	50.00	46.34	53.64	54.31
neutral	11.83	15.87	13.41	17.22	13.30
dissatisfied	7.53	3.37	13.41	8.61	4.69
very dissatisfied	1.08	0.48	8.54	1.32	1.79
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode	
	588	Total
very satisfied	12.07	25.92
satisfied	50.00	54.31
neutral	27.59	13.30
dissatisfied	1.72	4.69
very dissatisfied	8.62	1.79
Total	100.00	100.00

Pearson chi2(32) = 108.7858 Pr = 0.000

## Purpose for Driving

Overall Satisfaction	Purpose for driving				Total
	Work	business	school	Shopping	
very satisfied	20.19	29.32	25.00	28.15	26.04
satisfied	55.90	48.12	50.00	53.97	54.27
neutral	16.46	9.77	20.00	11.92	13.19
dissatisfied	4.66	9.02	5.00	4.30	4.65
very dissatisfied	2.80	3.76	0.00	1.66	1.86
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Purpose for driving		Total
	recreation	other	
very satisfied	27.63	28.65	26.04
satisfied	59.65	50.00	54.27
neutral	8.77	16.85	13.19
dissatisfied	3.51	3.37	4.65
very dissatisfied	0.44	1.12	1.86
Total	100.00	100.00	100.00

Pearson chi2(20) = 33.3636 Pr = 0.031

## Vehicle Primarily Driven

Overall Satisfaction	Primary vehicle				Total
	car	van	SUV	truck	
very satisfied	27.22	31.16	22.79	22.54	26.04
satisfied	53.18	56.52	58.09	51.45	54.37
neutral	14.16	8.70	12.87	14.45	13.15
dissatisfied	3.99	3.62	4.78	6.94	4.58
very dissatisfied	1.45	0.00	1.47	4.62	1.87
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Primary vehicle		Total
	oversized	other	
very satisfied	23.53	32.14	26.04
satisfied	52.94	50.00	54.37
neutral	5.88	14.29	13.15
dissatisfied	11.76	0.00	4.58
very dissatisfied	5.88	3.57	1.87
Total	100.00	100.00	100.00

Pearson chi2(20) = 27.1060 Pr = 0.132

Cross Tabulations of motor carriers' (Group 2) overall satisfaction with NDDOT service and demographic characteristics.

**Gender**

Overall Satisfaction	Gender		Total
	male	female	
very satisfied	19.59	12.68	17.35
satisfied	59.46	67.61	62.10
neutral	12.84	15.49	13.70
dissatisfied	4.73	2.82	4.11
very dissatisfied	3.38	1.41	2.74
Total	100.00	100.00	100.00

Pearson chi2(4) = 3.1901 Pr = 0.527

**Age**

Overall Satisfaction	Age			Total
	18-34	35-54	55+	
very satisfied	8.16	14.81	29.51	17.43
satisfied	63.27	64.81	55.74	61.93
neutral	20.41	14.81	6.56	13.76
dissatisfied	8.16	2.78	3.28	4.13
very dissatisfied	0.00	2.78	4.92	2.75
Total	100.00	100.00	100.00	100.00

Pearson chi2(8) = 17.3450 Pr = 0.027

**Zip code**

Overall Satisfaction	Zipcode				Total
	580	581	582	583	
very satisfied	24.39	26.09	11.11	11.11	17.21
satisfied	73.17	52.17	72.22	77.78	62.33
neutral	2.44	17.39	11.11	11.11	13.95
dissatisfied	0.00	0.00	2.78	0.00	3.72
very dissatisfied	0.00	4.35	2.78	0.00	2.79
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode				Total
	584	585	586	587	
very satisfied	13.33	20.00	5.56	25.00	17.21
satisfied	60.00	56.00	66.67	42.86	62.33
neutral	20.00	16.00	22.22	17.86	13.95
dissatisfied	6.67	4.00	0.00	10.71	3.72
very dissatisfied	0.00	4.00	5.56	3.57	2.79
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode	
	588	Total
very satisfied	5.00	17.21
satisfied	60.00	62.33
neutral	20.00	13.95
dissatisfied	10.00	3.72
very dissatisfied	5.00	2.79
Total	100.00	100.00

Pearson chi2(32) = 30.8578 Pr = 0.524

### Vehicle Primarily Driven

Overall Satisfaction	Primary vehicle				Total
	3 axles	5 to 7 ax	van	other	
very satisfied	21.05	19.85	16.67	10.34	17.35
satisfied	68.42	58.09	50.00	70.69	62.10
neutral	5.26	13.97	16.67	15.52	13.70
dissatisfied	5.26	3.68	16.67	3.45	4.11
very dissatisfied	0.00	4.41	0.00	0.00	2.74
Total	100.00	100.00	100.00	100.00	100.00

Pearson chi2(12) = 10.9105 Pr = 0.537

Cross Tabulations of government officials' (Group 3) overall satisfaction with NDDOT service and demographic characteristics.

**Gender**

Overall Satisfaction	Gender male	female	Total
very satisfied	28.24	25.00	27.43
satisfied	49.41	67.86	53.98
neutral	14.12	7.14	12.39
dissatisfied	8.24	0.00	6.19
Total	100.00	100.00	100.00

Pearson chi2(3) = 4.5407 Pr = 0.209

**Age**

Overall Satisfaction	Age 18-34	35-54	55+	Total
very satisfied	0.00	32.35	26.32	27.43
satisfied	33.33	55.88	53.95	53.98
neutral	33.33	8.82	13.16	12.39
dissatisfied	33.33	2.94	6.58	6.19
Total	100.00	100.00	100.00	100.00

Pearson chi2(6) = 7.0305 Pr = 0.318

**Zip code**

Overall Satisfaction	Zipcode 580	581	582	583	Total
very satisfied	30.77	75.00	47.06	30.77	28.18
satisfied	61.54	25.00	41.18	61.54	53.64
neutral	0.00	0.00	11.76	7.69	12.73
dissatisfied	7.69	0.00	0.00	0.00	5.45
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode 584	585	586	587	Total
very satisfied	10.00	37.50	11.76	27.27	28.18
satisfied	70.00	31.25	64.71	63.64	53.64
neutral	20.00	25.00	23.53	9.09	12.73
dissatisfied	0.00	6.25	0.00	0.00	5.45
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode 588	Total
very satisfied	0.00	28.18
satisfied	55.56	53.64
neutral	0.00	12.73
dissatisfied	44.44	5.45
Total	100.00	100.00

Pearson chi2(24) = 51.8650 Pr = 0.001

### Purpose for Driving

Overall Satisfaction	Work	business	Shopping	recreation	Total
very satisfied	32.56	21.21	20.00	42.86	27.68
satisfied	48.84	54.55	65.00	42.86	53.57
neutral	13.95	12.12	15.00	7.14	12.50
dissatisfied	4.65	12.12	0.00	7.14	6.25
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Purpose for driving other	Total
very satisfied	0.00	27.68
satisfied	100.00	53.57
neutral	0.00	12.50
dissatisfied	0.00	6.25
Total	100.00	100.00

Pearson chi2(12) = 8.9282 Pr = 0.709

### Vehicle Primarily Driven

Overall Satisfaction	car	van	SUV	truck	Total
very satisfied	22.73	40.00	32.35	26.92	27.43
satisfied	56.82	20.00	47.06	61.54	53.98
neutral	11.36	40.00	17.65	3.85	12.39
dissatisfied	9.09	0.00	2.94	7.69	6.19
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Primary vehicle oversized	Total
very satisfied	25.00	27.43
satisfied	75.00	53.98
neutral	0.00	12.39
dissatisfied	0.00	6.19
Total	100.00	100.00

Pearson chi2(12) = 10.7218 Pr = 0.553

Cross Tabulations of businesses' (Group 4) overall satisfaction with NDDOT service and demographic characteristics.

**Gender**

Overall Satisfaction	Gender		Total
	male	female	
very satisfied	17.65	18.18	17.95
satisfied	64.71	56.82	60.26
neutral	8.82	17.05	13.46
dissatisfied	5.88	6.82	6.41
very dissatisfied	2.94	1.14	1.92
Total	100.00	100.00	100.00

Pearson chi2(4) = 3.0306 Pr = 0.553

**Age**

Overall Satisfaction	Age			Total
	18-34	35-54	55+	
very satisfied	11.11	20.00	18.18	17.95
satisfied	66.67	58.82	59.09	60.26
neutral	11.11	14.12	13.64	13.46
dissatisfied	11.11	5.88	4.55	6.41
very dissatisfied	0.00	1.18	4.55	1.92
Total	100.00	100.00	100.00	100.00

Pearson chi2(8) = 4.8113 Pr = 0.778

**Zip code**

Overall Satisfaction	Zipcode				Total
	580	581	582	583	
very satisfied	6.25	23.08	33.33	28.57	17.76
satisfied	87.50	69.23	54.17	57.14	60.53
neutral	6.25	7.69	8.33	7.14	13.16
dissatisfied	0.00	0.00	4.17	7.14	6.58
very dissatisfied	0.00	0.00	0.00	0.00	1.97
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode				Total
	584	585	586	587	
very satisfied	21.74	6.25	18.18	9.52	17.76
satisfied	60.87	75.00	36.36	61.90	60.53
neutral	8.70	12.50	18.18	14.29	13.16
dissatisfied	8.70	6.25	18.18	4.76	6.58
very dissatisfied	0.00	0.00	9.09	9.52	1.97
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Zipcode 588	Total
very satisfied	7.14	17.76
satisfied	35.71	60.53
neutral	42.86	13.16
dissatisfied	14.29	6.58
very dissatisfied	0.00	1.97
Total	100.00	100.00

Pearson chi2(32) = 42.8247 Pr = 0.096

## Purpose for Driving

Overall Satisfaction	Purpose for driving				Total
	Work	business	Shopping	recreation	
very satisfied	17.57	25.00	17.65	8.00	16.45
satisfied	59.46	62.50	58.82	60.00	61.18
neutral	13.51	4.17	5.88	28.00	13.82
dissatisfied	6.76	8.33	11.76	4.00	6.58
very dissatisfied	2.70	0.00	5.88	0.00	1.97
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Purpose for driving other	Total
very satisfied	8.33	16.45
satisfied	75.00	61.18
neutral	16.67	13.82
dissatisfied	0.00	6.58
very dissatisfied	0.00	1.97
Total	100.00	100.00

Pearson chi2(16) = 13.8220 Pr = 0.612

## Vehicle Primarily Driven

Overall Satisfaction	Primary vehicle				Total
	car	van	SUV	truck	
very satisfied	17.86	27.27	15.22	17.95	17.95
satisfied	58.93	54.55	63.04	61.54	60.26
neutral	16.07	9.09	17.39	7.69	13.46
dissatisfied	5.36	9.09	2.17	10.26	6.41
very dissatisfied	1.79	0.00	2.17	2.56	1.92
Total	100.00	100.00	100.00	100.00	100.00

Overall Satisfaction	Primary vehicle		Total
	oversized	other	
very satisfied	33.33	0.00	17.95
satisfied	33.33	100.00	60.26
neutral	0.00	0.00	13.46
dissatisfied	33.33	0.00	6.41
very dissatisfied	0.00	0.00	1.92
Total	100.00	100.00	100.00

Pearson chi2(20) = 10.7949 Pr = 0.951











