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Providing Affordable Access to Information

2007 Highway Customer Satisfaction Survey

OVERALL HIGHLIGHTS REPORT

February 19, 2008

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2007 Customer Satisfaction Survey – Provincial Highway System

1 Introduction

TMC The Marketing Clinic was retained by the Nova Scotia Department of Transportation and Infrastructure Renewal to complete the 2007 Highway Satisfaction Study. The study has been conducted since 1997, and is dedicated to identifying areas for improvement of Nova Scotia's highways, measuring client satisfaction with highways and related services, as well as determining citizens' views about the importance and quality of various services.

A random sample of 2,076 respondents was drawn using a stratified design based upon the population of four regions across the province. The sample was designed to allow for proportionate representation within each region for men and women over the age of 16, based upon Canadian Census data. The final sample had a margin of error of plus/minus 2.15%, 19 out of 20 times. The sampling result by region is provided in Table 27. The margin of error at the regional level was plus/minus 4.3%, 19 out of 20 times. The regions were grouped in the following manner:

- Halifax: Halifax and Hants counties
- Eastern: Antigonish, Guysborough, Inverness, Victoria, Cape Breton and Richmond counties
- Northern: Pictou, Cumberland and Colchester counties
- Western: Kings, Annapolis, Digby, Yarmouth, Shelburne, Lunenburg and Queens counties

The regional breakdown allowed for comparisons and analyses at the regional and overall provincial levels. The sample breakdown by region is shown in Table 1. Calls were made using Computer Assisted Telephone Interviewing (CATI).

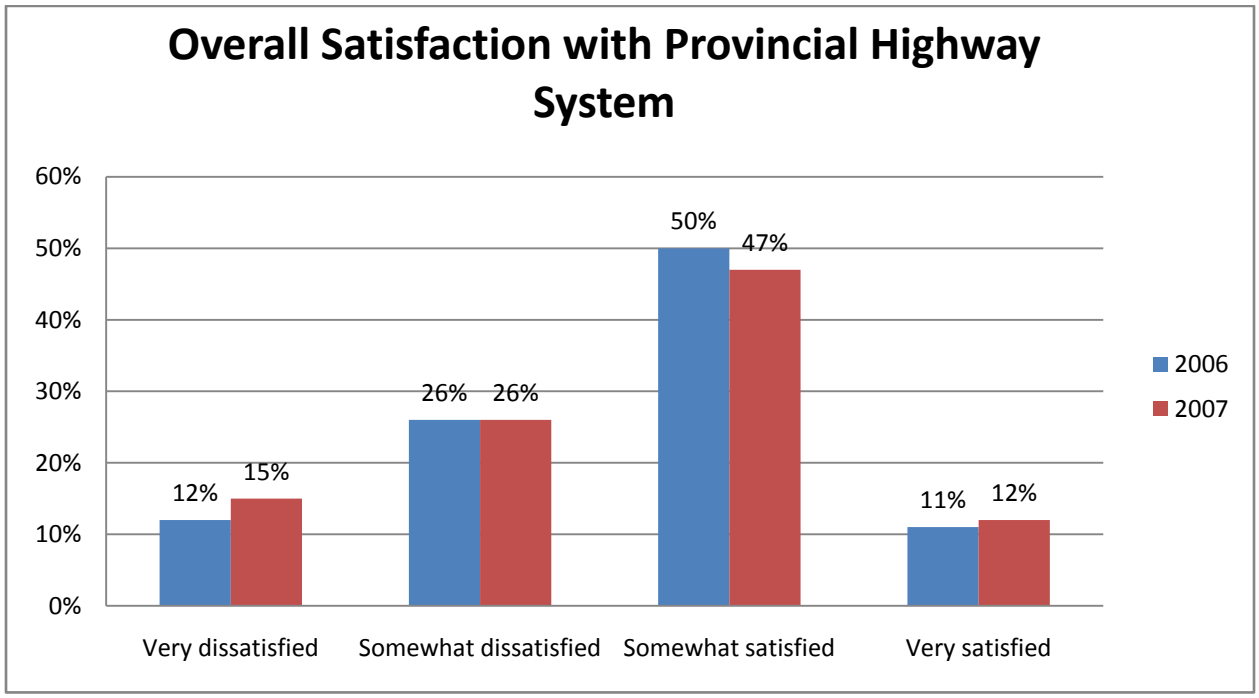
Table 1 Sample Breakdown

	Gender		
Region	**Male**	**Female**	**Total**
Central	247	272	519
Eastern	244	275	519
Northern	247	272	519
Western	249	270	519
Total	987	1089	2076

2 Overall Satisfaction

Figure 1 illustrates overall level of satisfaction with the provincial highway system from 2006 through 2007 studies. The majority of respondents were somewhat or very satisfied. In the 2007 study, 59% of respondents were satisfied with the provincial highway system. The results reveal that 41% of respondents said they were very dissatisfied, or somewhat dissatisfied, with the highway system in 2007 compared to 38% in 2006.

Figure 1 Overall Satisfaction with the Provincial Highway System



The average rating in 2007 was 2.56 out of a possible scale rating of 4, compared to a rating of 2.61 in the 2006 study. The difference between the two averages was statistically significant, meaning that overall satisfaction with the provincial highway system has decreased in the past year.

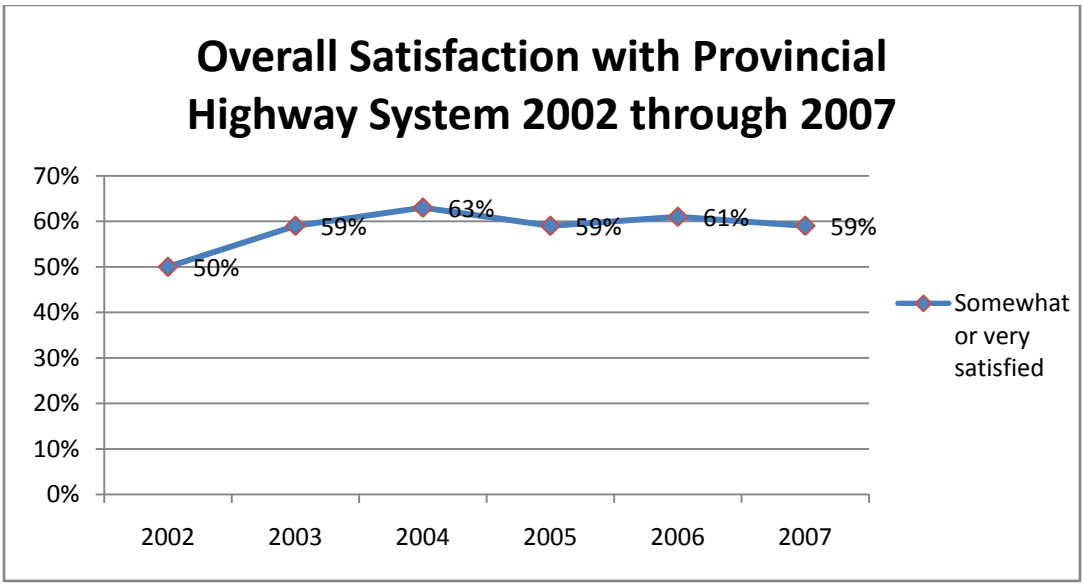
The breakdown for overall satisfaction with the provincial highway system by district appears in Table 2. Results revealed that those in the Central region were the most satisfied, with 65% rating their satisfaction with the provincial highway system as somewhat satisfied or very satisfied. The Northern region was second, with 47% indicating their overall satisfaction with the highways, followed by Western (55%) and the Eastern region (50%). Eastern region respondents were the least satisfied with their provincial highway system.

Table 2 2007 Overall Satisfaction

Response	2007 Overall %	Central %	Eastern %	Northern %	Western %
Very Dissatisfied	15	11	23	17	18
Somewhat Dissatisfied	26	24	28	26	27
Somewhat Satisfied	47	52	42	41	45
Very Satisfied	12	13	8	16	10

Figure 2 shows the overall level of satisfaction (somewhat satisfied and very satisfied) for all respondents over the past six annual studies. Results reveal that satisfaction levels have increased overall from the inception of the study in 2002. The highest level of overall satisfaction 2004. The lowest ratings in recent years were for 2005 and 2007, with 59% each. The overall satisfaction level was significantly lower in 2007 than in 2006, with a decrease of 2%.

Figure 2 Overall Satisfaction with Provincial Highway System 2002 through 2007



A variety of reasons were given for respondents' lack of satisfaction with the provincial highway system. The results are summarized in Table 3. The top three reasons for dissatisfaction in the 2007 sample included:

- Poor repair or condition of roads (25%)
- Roads poorly paved or maintained (32%)
- Potholes in the road (30%)

These results were consistent with those in the 2006 study, and were common across all regions. Compared to the 2006 study, percentages were higher for roads poorly paved or maintained (increased five percentage points), and potholes (increased six percentage points). These differences were statistically significant. The reason, "Hard on car", was not measured in the 2007 study.

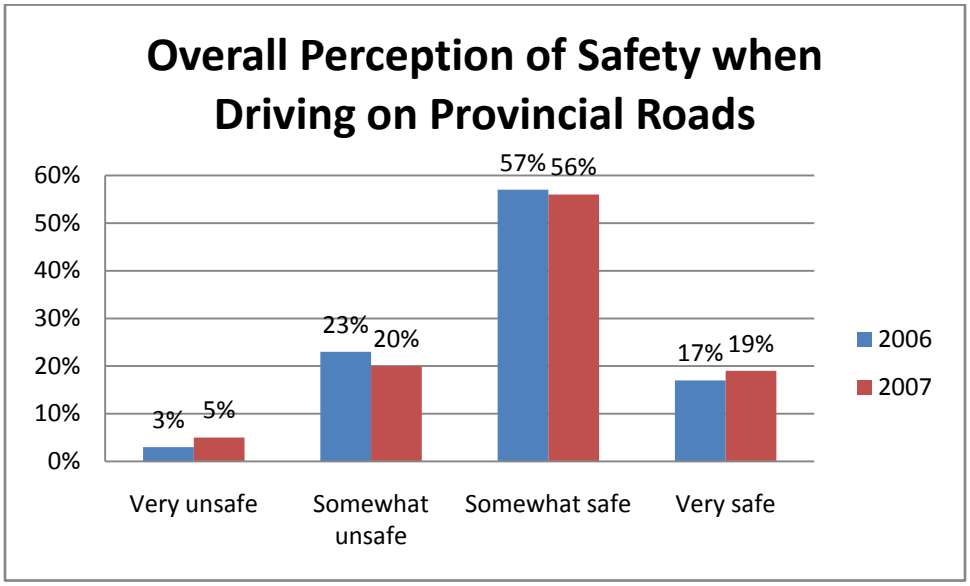
Table 3 Reasons for Dissatisfaction with Provincial Highway System

	2006 Overall	2007 Overall	Central	Eastern	Northern	Western
Poor Repair/condition	25%	25%	16%	35%	32%	32%
Roads poorly paved/maintained	27%	32%	27%	41%	33%	34%
Potholes	24%	30%	29%	39%	33%	35%
Shouldn't allow toll highways	1%	0.2%	0%	0%	1%	0%
Not enough divided highways	3%	3%	3%	1.7%	3%	5%
Snow removal is poor	3%	5%	2%	3.7%	8%	13%
Too few passing lanes	1%	0.7%	1%	0.2%	0%	2%
Debris/garbage on the roads	2%	0%	0%	0%	0%	0%
Tax not properly spent	2%	0.6%	0%	0.2%	1%	1%
Signs are poor	1%	0.3%	0%	0.2%	0%	1%
Poor Lighting	1%	0.2%	0%	0.8%	0%	0%
Hard on car	5%	-	-	-	0%	0%
Other	7%	11%	8%	10%	11%	16%

3 Driving Safety

Figure 3 reflects perceived safety when driving in Nova Scotia.

Figure 3 How safe do you feel when driving in Nova Scotia?



Most respondents felt very safe on Nova Scotia's roads. The safety rating averaged 2.89 out of 4 points, which was nearly identical to the average rating in the 2006 survey of 2.88. Seventy-five percent felt either very safe or somewhat safe, and the remaining 25% felt very unsafe or somewhat unsafe. These results are nearly identical to the 2006 survey results, which measured 74% and 26% respectively. This shows that there was no change in drivers' overall perceptions of driving safety.

Breakouts of safety perception by region are shown in Table 4 for years 2004 through 2007. Results shown are for respondents who rated their safety as somewhat safe or very safe.

Table 4 Percentage who feel safe when driving in Nova Scotia

	2004	2005	2006	2007
Central	81%	78%	74%	76%
Eastern	74%	70%	75%	75%
Northern	81%	75%	77%	79%
Western	79%	71%	72%	70%

The average scale ratings by region for both 2006 and 2007 studies show no statistically significant difference between the two studies. The averages are shown in Table 5.

Table 5 Average Scale Ratings for Perceived Driving Safety for 2006 and 2007

	2006*	2007*
Central	2.89	2.90
Eastern	2.91	2.89
Northern	2.90	2.99
Western	2.82	2.77
Overall	2.88	2.89

*Scale: 1) Very unsafe, 2) Somewhat unsafe, 3) Somewhat safe, 4) Very safe

Respondents provided 45 different reasons for feeling unsafe when driving on provincial highways. The top five reasons are shown in Table 6.

Table 6 Reasons for Not Feeling Safe on Nova Scotia Highways

Reasons Given for Feeling Unsafe Driving on NS Roads	Percent
Poor road conditions/patchwork/maintenance	49%
Potholes/ruts/bumps/cracks	32%
Speeding	17%
Bad driving habits	16%
Need twinned highways	12%

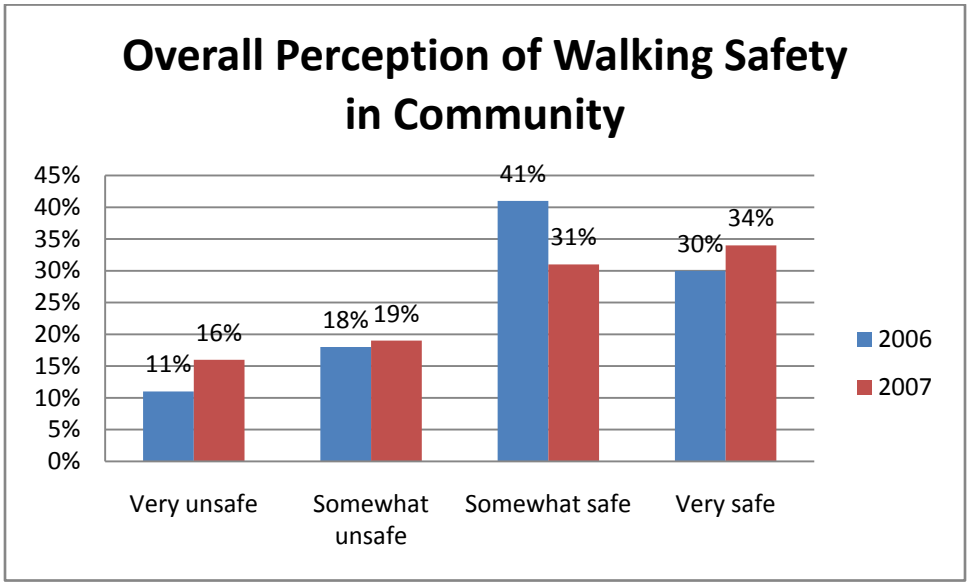
Results reveal that most concerns were linked to perceived poor maintenance of the roads (poor road, potholes and poor snow removal). Bad driving habits and speeding in particular, also made drivers feel unsafe.

Results were consistent across regions with few minor differences. The most critical issue in all regions was poor road conditions. This was followed by potholes as the second most common road complaint in all regions except for the Western region where the second most common complaint was about bad driving habits, with potholes placing third. The third most serious issue for most regions was speeding for the Central and Northern regions. The third most serious issue for the Eastern region was needing twinned highways, and the most serious issue for the Western region was potholes. Fourth rated complaints were bad driving habits (Central region), speeding (Eastern region), poor snow removal (Northern region and Western regions). Rounding out the top five reasons for feeling unsafe while driving were the need for twinned highways (Central , Northern and Western regions) and narrow shoulders (Eastern region). Overall, the results across regions were quite consistent.

4. Walking Safety

Figure 4 reflects perceived safety when walking in Nova Scotia.

Figure 4 How safe do you feel as a pedestrian walking in your community?



Most respondents felt safe as pedestrians on Nova Scotia's roads. The safety rating averaged 2.83 out of 4 points, which was significantly lower than the rating for 2006 of 2.89. The results revealed that 65% of respondents felt that they were somewhat safe, or very safe, while walking in their communities. The remaining 35% felt either very unsafe or somewhat unsafe walking in their communities.

Breakouts of safety by region are shown in Table 7 for years 2006 and 2007. Results shown are for respondents who rated their safety as somewhat safe or very safe.

Table 7 Percentage who feel safe when walking in their community

	2006	2007
Central	71%	61%
Eastern	71%	66%
Northern	72%	70%
Western	68%	67%

Breakouts of safety perception by region are shown in Table 8 for 2006 and 2007. In addition to a significantly lower overall rating for 2007, the rating for the Central region was also significantly lower than in 2006.

Table 8 Average Scale Ratings for Perceived Pedestrian Safety for 2006 and 2007

	2006*	2007*
Central	**2.89**	**2.77**
Eastern	2.92	2.87
Northern	2.94	2.95
Western	2.84	2.83
Overall	**2.89**	**2.83**

*Scale: 1) Very unsafe, 2) Somewhat unsafe, 3) Somewhat safe, 4) Very safe
Bolded averages are significantly different.

Respondents provided 61 reasons for not feeling safe when walking in their communities. The top five reasons are shown in Table 9.

Table 9 Reasons for Not Feeling Safe Walking in Community

Reasons for Not Feeling Safe Walking in Community	Percent
No/not enough sidewalks	42%
Speeding drivers	28%
Narrow/no shoulders	18%
Drivers don't stop/look at crosswalks/ pedestrians	12%
Crosswalks too dangerous	7%
Poor crosswalk lights/signage/markings	7%

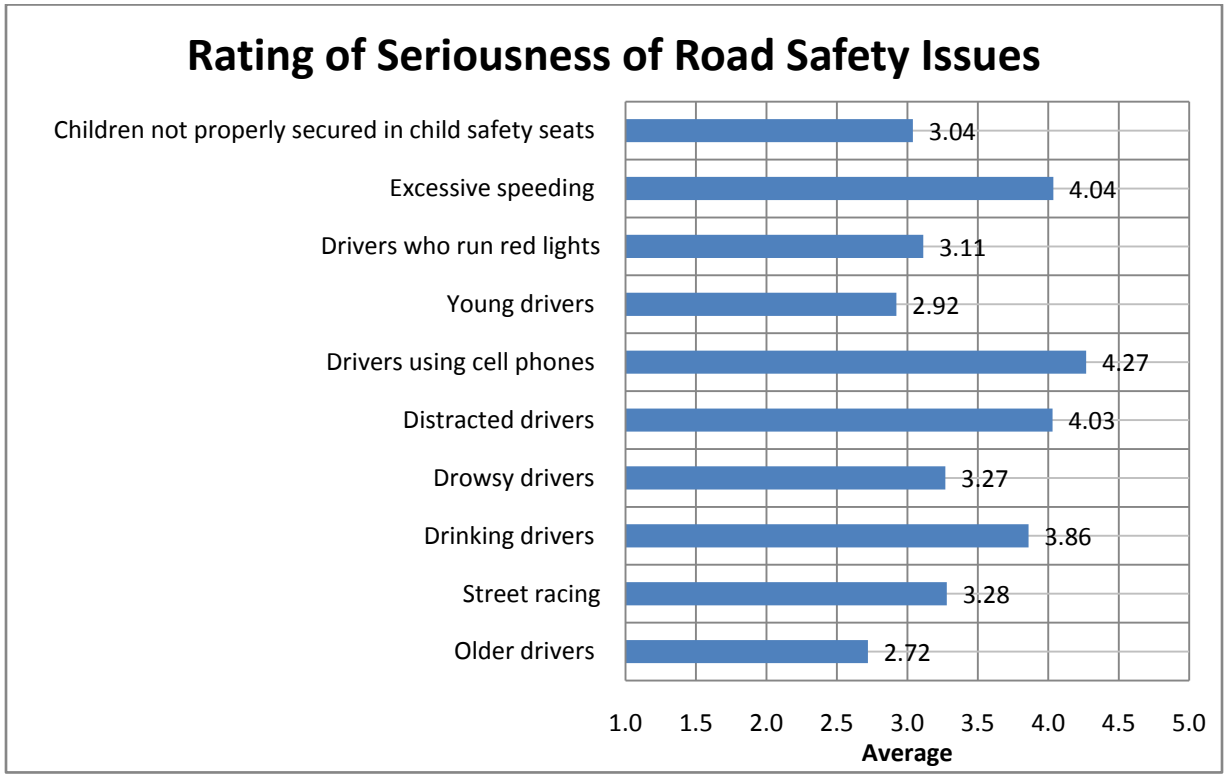
Results revealed that most concerns were linked to a lack of sidewalks, poor road shoulders, dangerous cross walks and poor driving habits. Drivers seem to be oblivious to pedestrians, even when they are on a marked crosswalk. Many of the crosswalks were unmarked, or had insufficient lights or markings.

Results were consistent across regions with few minor differences. The most critical issues in the Central, Eastern and Northern regions was a lack of sidewalks, narrow or no shoulders on roads, and speeding drivers. The tendency for drivers not to stop at crosswalks for pedestrians was also in the top five safety issues for all regions. Concerns about heavy truck traffic concerned those in the Northern region, while those in the Western region were concerned about bad drivers and poor snow and ice removal.

5. Road Safety Measures

Respondents were asked to rate several traffic safety issues in terms of their perception of how serious the problem was today in Nova Scotia. This information was not obtained in the 2006 survey, so comparison of study results is not possible. Respondents rated several potential problem issues on a 5-point scale, ranging from "not a problem at all", to "extremely serious problem". The average overall rating for each issue is shown in Figure 5.

Figure 5 Overall Rating of Seriousness of Road Safety Issues*



Scale: 1) Not a problem at all, 2) Somewhat of a problem, 3) Not sure – neutral, 4) Serious problem, 5) Extremely serious problem

The most serious problem was believed to be drivers using cell phones. Other serious problems were also considered to be excessive speeding and distracted drivers. All of the issues were considered to be serious by some respondents. There was more uncertainty regarding the running of red lights, and children being secured in child safety seats. The percentage of respondents who felt that the issues were problems, or not, is shown in Table 10.

Table 10 Percent of Respondents Considering Each Issue as Not Posing a Problem vs. Posing a Problem

	Somewhat/serious/ extremely serious problem	Not at all a problem
Drivers using cell phones - either hand held or hands free	92%	3%
Excessive speeding	87%	4%
Distracted drivers	85%	4%
Drinking drivers	81%	7%
Street racing	64%	21%
Young drivers	61%	15%
Drowsy drivers	61%	14%
Drivers who run red lights	61%	22%
Older drivers	60%	17%
Children not properly secured in child safety seats	58%	23%

The ratings reveal that cell phone use was considered to be a problem by the majority of respondents, followed by excessive speeding, distracted drivers, and drinking and driving. There was less consistency in the rating of the remaining safety issues, but most respondents did believe they were problems on Nova Scotia roads.

Table 11 shows the average ratings for each safety issue by region. The results reveal great consistency across ratings for all regions, further confirming that cell phone use is considered the most critical road safety issue in all regions.

Table 11 Rating of Safety Issues across Regions

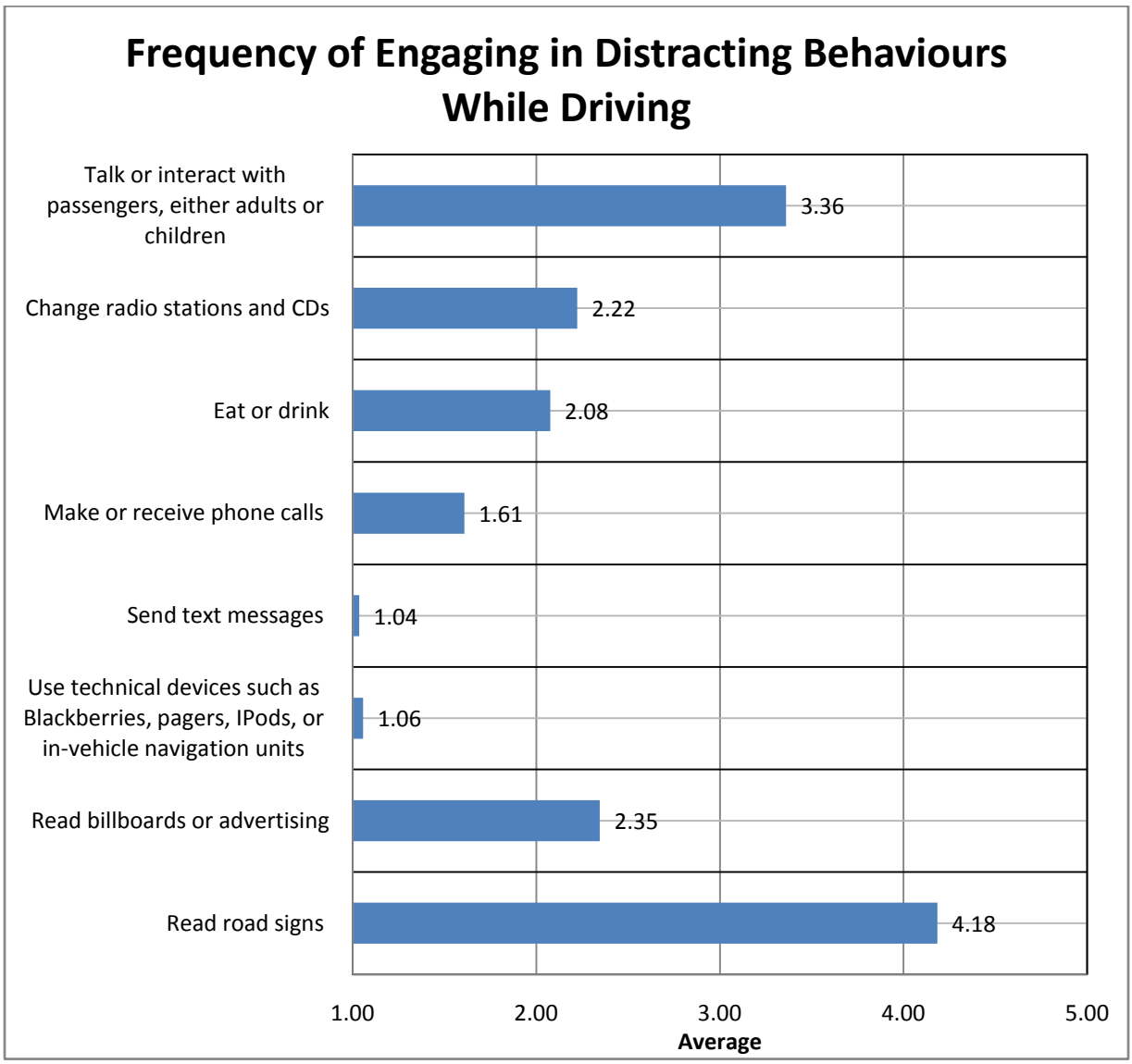
	Central	Eastern	Northern	Western
Drivers using cell phones - either hand held or hands free	4.36	4.28	4.27	4.00
Excessive speeding	4.24	4.00	3.84	3.70
Distracted drivers	4.16	4.01	4.00	3.71
Drinking drivers	4.08	3.66	3.77	3.54
Street racing	3.79	2.91	2.87	2.66
Young drivers	3.22	2.82	2.59	2.51
Drowsy drivers	3.53	3.18	3.01	2.85
Drivers who run red lights	3.44	3.01	2.86	2.55
Older drivers	2.92	2.65	2.53	2.40
Children not properly secured in child safety seats	3.25	3.04	2.92	2.56

Scale: 1) Not a problem at all, 2) Somewhat of a problem, 3) Not sure – neutral, 4) Serious problem, 5) Extremely serious problem

6 Driving Behaviours

Respondents were asked to report their own behaviour when driving by indicating how frequently they engaged in various behaviours that could distract them on the road. Figure 6 shows the average frequency for each of the behaviours among respondents. The results show that the most frequent activity while driving is reading road signs followed by interacting with passengers. Respondents reported that they rarely use technology that can be distracting, including cell phones, Blackberries, pagers, Ipods or in-vehicle navigation units. Table 12 shows the percentage of respondents reporting the frequency of engaging in such behaviours while driving. The results reveal that reading road signs was the activity engaged in most often, followed by interacting with passengers and reading billboards or advertising.

Figure 6 Frequency Rating of Distracting Behaviours for Drivers



Scale: 1) Never, 2) Rarely, 3) Sometimes, 4) Often, 5) Every time I drive

Table 12 Frequency of Respondents' Engaging in Distracting Behaviour while Driving

	Sometimes/ Often/ Everytime (%)	Rarely (%)	Never (%)
Read road signs	90%	5%	5%
Talk or interact with passengers (adults or children)	72%	17%	10%
Read billboards or advertising	43%	29%	28%
Change radio stations or CDs	36%	23%	41%
Eat or drink	34%	22%	44%
Make or receive cell phone calls	17%	17%	66%
Send text messages	1%	1%	98%
Use technical devices such as blackberries, pagers, Ipods or in-vehicle navigation units	2%	2%	97%

7 Highway Services

7.1 Highway Service Importance Measures

Respondents were asked to indicate how important various highway services were to them. The results are summarized in Table 13, which also provides a comparison to the results of the 2006 survey. The results reveal that the most important services included:

- Filling cracks and potholes (3.89)
- Pavement markings (yellow and white lines)(3.85)
- Bridges (3.84)
- Snow and ice removal during a storm (3.84)
- Helpfulness of non-commercial highway signs (3.80)
- Timeliness of clean-up after a storm (3.80)

All of the average importance ratings were significantly higher in 2007 than in 2006, with the exception of timeliness of clean-up after a storm, for which there was no change since the last study.

Table 14 shows the percentage of respondents who considered each service somewhat or very important for both 2006 and 2007 surveys. The results reveal that the most important services included:

- Filling cracks and potholes (99%)

- All pavement makrings including yellow and white lines (98%)
- The helpfulness of non-commercial highway signs (98%)
- Bridges (98%)
- Resurfacing sections of the highway (97%)
- Snow and ice removal during a storm (97%)
- Timeliness of the clean up after a storm - snow and ice removal (97%)
- The surface condition of highway shoulders (95%)

Table 13 A Comparison of Average Ratings for Importance of Highway Services: 2006 – 2007*

	2006	2007	Change
The amount of four-lane divided highways	**3.38**	**3.63**	**0.25**
Filling cracks and potholes	**3.78**	**3.89**	**0.11**
Resurfacing sections of the highway	**3.67**	**3.78**	**0.11**
Snow and ice removal during a storm	**3.74**	**3.84**	**0.10**
Timeliness of the clean up after a storm	3.76	3.80	0.04
Number of passing lanes (importance of services)	**3.24**	**3.37**	**0.13**
The length of passing lanes	**3.28**	**3.48**	**0.20**
All pavement markings including yellow and white lines	**3.70**	**3.85**	**0.15**
Roadside brush and tree clearing	**3.37**	**3.47**	**0.10**
The helpfulness of non-commercial highway signs	**3.49**	**3.80**	**0.31**
The amount of non-commercial highway signs	**3.40**	**3.61**	**0.21**
The maintenance of non-commercial highway signs	**3.46**	**3.67**	**0.21**
The width of highway shoulders	**3.56**	**3.68**	**0.12**
The surface condition of highway shoulders	**3.58**	**3.70**	**0.12**
Grading and dust control of gravel roads	**3.17**	**3.44**	**0.27**
Ditches and culverts	**3.21**	**3.48**	**0.27**
Bridges	**3.42**	**3.84**	**0.42**

*Scale: 1) Very unimportant, 2) Somewhat unimportant, 3) Somewhat important, 4) Very unimportant. Scale value 5 (don't know/not applicable) was not included in the analysis. Bolded averages are significantly different between the two surveys.

All of the services were rated important by respondents, with the percent of rating each service as somewhat or very important ranging from 86% to 99%. Most of the percentage changes from the 2006

to the 2007 survey are statistically significant and show increases in the percent of respondents who considered the safety services important. This demonstrates that most highway services continue to be important to Nova Scotians.

Table 14 Percent of Respondents Rating Various Highway Services as Somewhat or Very Important*

	Somewhat or Very Important 2006 (%)	Somewhat or Very Important 2007 (%)	Change (percentage points)
The amount of four-lane divided highways	**85%**	**91%**	**6.0**
Filling cracks and potholes	**97%**	**99%**	**2.0**
Resurfacing sections of the highway	97%	97%	0.0
Snow and ice removal during a storm	**95%**	**97%**	**2.0**
Timeliness of the clean up after a storm	**96%**	**97%**	**1.0**
Number of passing lanes	**84%**	**86%**	**2.0**
The length of passing lanes	86%	88%	2.0
All pavement markings including yellow and white lines	**97%**	**98%**	**1.0**
Roadside brush and tree clearing	88%	88%	0.0
The helpfulness of non-commercial highway signs	**93%**	**98%**	**5.0**
The amount of non-commercial highway signs	**91%**	**94%**	**3.0**
The maintenance of non-commercial highway signs	93%	94%	1.0
The width of highway shoulders	94%	94%	0.0
The surface condition of highway shoulders	95%	95%	0.0
Grading and dust control of gravel roads	**81%**	**86%**	**5.0**
Ditches and culverts	**85%**	**88%**	**3.0**
Bridges	**90%**	**98%**	**8.0**

*Bolded percentages are statistically significantly different between the two surveys.

A comparison of importance measures by region demonstrates that all services were generally important in all regions. A comparison from 2006 results revealed that in most cases, 2007 ratings were significantly higher than 2006 ratings. This indicates that across the regions most services are considered more important in 2007 than in 2006. The clearest difference was that clean-up after a storm had increased in importance in only the Western region since the last study. The results are summarized in Table 15.

Table 15 Average Ratings of Highway Service Importance Measures by Region*

	Central	Eastern	Northern	Western
The amount of four-lane divided highways	**3.62**	**3.63**	**3.65**	**3.61**
Filling cracks and potholes	**3.84**	**3.96**	**3.95**	**3.91**
Resurfacing sections of the highway	3.71	**3.86**	**3.85**	**3.82**
Snow and ice removal during a storm	3.78	**3.92**	**3.84**	**3.88**
Timeliness of the clean up after a storm	3.76	3.83	3.81	**3.86**
Number of passing lanes	3.25	**3.46**	**3.40**	**3.54**
The length of passing lanes	**3.41**	**3.52**	**3.54**	**3.58**
All pavement markings including yellow and white lines	**3.79**	**3.91**	**3.89**	**3.88**
Roadside brush and tree clearing	**3.33**	**3.59**	**3.61**	**3.59**
The helpfulness of non-commercial highway signs	**3.76**	**3.83**	**3.86**	**3.81**
The amount of non-commercial highway signs	**3.51**	**3.66**	**3.72**	**3.71**
The maintenance of non-commercial highway signs	**3.58**	**3.72**	**3.78**	**3.77**
The width of highway shoulders	3.57	**3.76**	**3.80**	**3.76**
The surface condition of highway shoulders	3.60	**3.81**	**3.84**	**3.76**
Grading and dust control of gravel roads	**3.27**	**3.58**	**3.64**	**3.59**
Ditches and culverts	**3.31**	**3.65**	**3.68**	**3.60**
Bridges	**3.76**	**3.91**	**3.94**	**3.90**

*Scale: 1) Very unimportant, 2) Somewhat unimportant, 3) Somewhat important, 4) Very unimportant. Scale value 5 (don't know/not applicable) was not included in the analysis. Bolded averages are statistically significantly different between the two surveys.

7.2 Quality of Highway Services

Respondents were asked to rate the quality of the road safety services. The results are summarized in Table 16, which also provides a comparison to the results of the 2006 survey. The results reveal that the services with the highest quality ratings included:

- The helpfulness of non-commercial highway signs (83%)[1]
- The maintenance of non-commercial highway signs (81%)
- The amount of non-commercial highway signs (74%)
- All pavement markings including yellow and white lines (71%)
- Timeliness of the clean up after a storm (66%)

[1] Percentages show the percent of respondents that rated the service good or excellent in the 2007 survey.

- Snow and ice removal during a storm (65%)

The service with the lowest quality rating was filling cracks and potholes (25%).

All of the average quality ratings were significantly higher in 2007 than in 2006, with the exception of roadside brush and tree clearing and resurfacing sections of the highway, for which there was no significant change since the last survey.

Table 17 shows the percentage of respondents who rated the quality of each service good or excellent for both 2006 and 2007 studies. Most of the services had been rated harshly by respondents, with the exceptions of the following which were rated as good or excellent by 70% or more respondents:

- The helpfulness of non-commercial highway signs
- The maintenance of non-commercial highway signs
- The amount of non-commercial highway signs
- All pavement markings including yellow and white lines

Services that received good or excellent quality ratings from less than 60% of respondents included:

- The amount of four-lane divided highways
- Number of passing lanes
- The length of passing lanes
- Grading and dust control of gravel roads
- The width of highway shoulders
- The surface condition of highway shoulders
- Resurfacing sections of the highway
- Filling cracks and potholes

Table 16 A Comparison of Average Ratings for the Quality of Highway Safety Services: 2006 – 2007*

	2006	2007	Change
The amount of four-lane divided highways	**2.34**	**2.50**	**0.16**
Filling cracks and potholes	**1.84**	**1.92**	**0.08**
Resurfacing sections of the highway	2.19	2.22	0.03
Snow and ice removal during a storm	**2.57**	**2.65**	**0.08**
Timeliness of the clean up after a storm	**2.57**	**2.68**	**0.11**
Number of passing lanes	**2.33**	**2.43**	**0.10**
The length of passing lanes	**2.33**	**2.40**	**0.07**
All pavement markings including yellow and white lines	**2.59**	**2.73**	**0.14**
Roadside brush and tree clearing	2.56	2.61	0.05
The helpfulness of non-commercial highway signs	**2.82**	**2.95**	**0.13**
The amount of non-commercial highway signs	**2.72**	**2.80**	**0.08**
The maintenance of non-commercial highway signs	**2.84**	**2.90**	**0.06**
The width of highway shoulders	**2.25**	**2.32**	**0.07**
The surface condition of highway shoulders	**2.23**	**2.29**	**0.06**
Grading and dust control of gravel roads	**2.19**	**2.36**	**0.17**
Ditches and culverts	**2.48**	**2.53**	**0.05**
Bridges	**2.57**	**2.63**	**0.06**

*Scale: 1) Poor, 2) Only fair 3) Good, 4) Excellent, 5) Don't know/not applicable. Scale value 5 (don't know/not applicable) was not included in the analysis. Bolded averages are statistically significantly different between the two surveys.

Most of the percentage changes from the 2006 to the 2007 survey are statistically significant and show increases in the percent of respondents who considered the quality of the service good or excellent. In some cases the increase in the number of respondents rating the service more highly was considerable. The services with the greatest quality rating in 2007 are listed below, followed by the improvement in their average quality rating compared to the 2006 survey:

- The helpfulness of non-commercial highway signs (increase of 0.13 mean score)
- The maintenance of non-commercial highway signs (increase of 0.06 mean score)
- The amount of non-commercial highway signs (increase of 0.08 mean score)
- All pavement markings including yellow and white lines (increase of 0.14 mean score)
- Timeliness of the clean up after a storm (increase of 0.11 mean score)
- Snow and ice removal during a storm (increase of 0.08 mean score)

- Bridges (increase of 0.06 mean score)

The services with the greatest change in average quality ratings since 2006 were:

- Grading and dust control of gravel roads (increase of 0.17mean score)
- The amount of four-lane divided highways (increase of 0.16 mean score)
- All pavement markings including yellow and white lines (increase of 0.14 mean score)
- The helpfulness of non-commercial highway signs (increase of 0.13 mean score)
- Timeliness of clean up after a storm (increase of 0.11 mean score)

There were also significant differences between the percentage of respondents that rated various highway services good or excellent in the 2007 and 2006 surveys. All but four services were rated significantly higher by more respondents in 2007 than in 2006. The services with the largest increases in the percentage of respondents who rated the service good or excellent included:

- The maintenance of non-commercial highway signs (increase of 1%)
- Snow and ice removal during a storm (increase of 15%)
- The amount of four-lane divided highways (increase of 10%)

The results are summarized in Table 17.

Table 17 Percent of Respondents Rating the Quality of Various Highway Safety Services as Good or Excellent: 2006 and 2007*

	Good or Excellent 2006 (%)	Good or Excellent 2007 (%)	Change (percentage points)
The amount of four-lane divided highways	**45%**	**55%**	**10%**
Filling cracks and potholes	**20%**	**25%**	**5%**
Resurfacing sections of the highway	**37%**	**41%**	**4%**
Snow and ice removal during a storm	**59%**	**65%**	**6%**
Timeliness of the clean up after a storm	**59%**	**66%**	**7%**
Number of passing lanes	**46%**	**51%**	**5%**
The length of passing lanes	**45%**	**50%**	**5%**
All pavement markings including yellow and white lines	63%	71%	8%
Roadside brush and tree clearing	61%	64%	3%
The helpfulness of non-commercial highway signs	**77%**	**83%**	**6%**
The amount of non-commercial highway signs	**70%**	**74%**	**4%**
The maintenance of non-commercial highway signs	**80%**	**81%**	**1%**
The width of highway shoulders	**42%**	**46%**	**4%**
The surface condition of highway shoulders	**41%**	**45%**	**4%**
Grading and dust control of gravel roads	**27%**	**49%**	**22%**
Ditches and culverts	52%	60%	8%
Bridges	58%	64%	6%

*Bolded percentages are statistically significantly different between the two surveys.

While overall quality ratings for highway services were not high in 2007, many of the ratings at the regional level were significantly higher than they were in 2006. For all services except ditches and culverts, average scale ratings for quality had increased in the Central region. However, in the Eastern region there were increased ratings for only three services: the amount of four-lane divided highways, pavement markings, and grading and dust control of gravel roads. In the Northern region, ratings were higher for three services: number of passing lanes, maintenance of non-commercial highway signs, and grading and dust control of gravel roads. Significant increases in ratings were only for two services in the Western region: helpfulness, and amount of, non-commercial highway signs. The results are shown in Table 18.

Table 18 A Comparison of Average Ratings for the Quality of Highway Safety Services by Region: 2006 – 2007*

	Central	Eastern	Northern	Western
The amount of four-lane divided highways	**2.67**	**2.29**	2.60	2.20
Filling cracks and potholes	**2.03**	1.77	1.85	1.85
Resurfacing sections of the highway	**2.31**	2.12	2.14	2.17
Snow and ice removal during a storm	**2.73**	2.62	2.60	2.5
Timeliness of the clean up after a storm - snow and ice removal	**2.76**	2.61	2.62	2.60
Number of passing lanes	**2.50**	2.33	**2.58**	2.21
The length of passing lanes	**2.44**	2.36	2.46	2.30
All pavement markings including yellow and white lines	**2.77**	**2.62**	2.71	2.77
Roadside brush and tree clearing	**2.71**	2.52	2.57	2.47
The helpfulness of non-commercial highway signs - speed limit, road exit signs, etc.	**2.99**	2.90	2.89	**2.92**
The amount of non-commercial highway signs - speed limit, road exit signs, etc.	**2.81**	2.77	2.74	**2.86**
The maintenance of non-commercial highway signs such as speed limit signs, road exit signs, and so forth	**2.97**	2.81	**2.86**	2.88
The width of highway shoulders	**2.39**	2.22	2.32	2.26
The surface condition of highway shoulders	**2.37**	2.19	2.28	2.21
Grading and dust control of gravel roads	**2.44**	**2.35**	**2.33**	2.22
Ditches and culverts	2.59	2.46	2.51	2.48
Bridges	**2.74**	2.52	2.50	2.54

*Scale: 1) Poor, 2) Only fair, 3) Good, 4) Excellent. Scale value 5 (don't know/not applicable) was not included in the analysis. Bolded percentages are statistically significantly different between the two surveys.

The changes in the 2007 survey for quality rating of highway services are all more positive ratings, but many of the ratings themselves are still not strong quality measures. Overall, respondents from the Central region seemed to rate quality higher than those in the previous study, while there were few significant changes from the 2006 survey for ratings from Eastern, Northern or Western regions.

The highest ratings for the Central district for highway service quality, based on a cutoff for average quality rating of 2.7out of 4.0[2], were:

- The helpfulness of non-commercial highway signs (3.0)

[2] A cutoff point of 2.7/4.0 as an average scale rating was the criterion used for comparison in 2005 and 2006 surveys.

- The maintenance of non-commercial highway signs (3.0)
- The amount of non-commercial highway signs (2.8)
- All pavement markings including yellow and white lines (2.8)
- Timeliness of the clean up after a storm (2.8)
- Bridges (2.7)
- Snow and ice removal during a storm (2.7)
- Roadside brush and tree clearing (2.7)
- The amount of four-lane divided highways (2.7)

The highest rating in the Central region was 3.0 out of 4.0 for the helpfulness and maintenance of non-commercial highway signs, which was a good quality rating.

The lowest ratings for the Central region, using the same cutoff average of 2.7, included:

- Ditches and culverts (2.6)
- Number of passing lanes (2.5)
- The length of passing lanes (2.4)
- Grading and dust control of gravel roads (2.4)
- The width of highway shoulders (2.4)
- The surface condition of highway shoulders (2.4)
- Resurfacing sections of the highway (2.3)
- Filling cracks and potholes (2.0)

The lowest quality rating for the Central region was 2.0 out of 4.0, which was a fair quality rating. Therefore, there were no extreme ratings (excellent or poor) in the Central region.

Based on the same criteria, the highest quality ratings for highway services in the Eastern region included:

- The helpfulness of non-commercial highway (2.9)
- The maintenance of non-commercial highway signs (2.8)
- The amount of non-commercial highway signs (2.8)

The highest rating in the Eastern region was 2.9 out of 4.0 for the helpfulness of non-commercial highway signs, which was a quality rating bordering on good.

The lowest ratings for the Eastern region included:

- All pavement markings including yellow and white lines (2.6)
- Snow and ice removal during a storm (2.6)
- Timeliness of the clean up after a storm (2.6)
- Bridges (2.5)
- Roadside brush and tree clearing (2.5)
- Ditches and culverts (2.5)

- The length of passing lanes (2.4)
- Grading and dust control of gravel roads (2.4)
- Number of passing lanes (2.3)
- The amount of four-lane divided highways (2.3)
- The width of highway shoulders (2.2)
- The surface condition of highway shoulders (2.2)
- Resurfacing sections of the highway (2.1)
- Filling cracks and potholes (1.8)

The lowest quality rating for the Eastern region was 1.8, which was a fair quality rating. Therefore, there were no poor, good or excellent ratings in the Eastern region.

The highest road service quality ratings for the Northern region included:

- The helpfulness of non-commercial highway signs (2.9)
- The maintenance of non-commercial highway signs (2.9)
- The amount of non-commercial highway signs (2.7)
- All pavement markings including yellow and white lines (2.7)

The highest rating in the Northern region was 2.9 out of 4.0 for the helpfulness, and maintenance, of non-commercial highway signs, which was a quality rating bordering on good.

Service quality ratings in the Northern region that were lower than 2.7 included:

- Timeliness of the clean up after a storm (2.6)
- Snow and ice removal during a storm (2.6)
- The amount of four-lane divided highways (2.6)
- Number of passing lanes (2.6)
- Roadside brush and tree clearing (2.6)
- Ditches and culverts (2.5)
- Bridges (2.5)
- The length of passing lanes (2.5)
- Grading and dust control of gravel roads (2.3)
- The width of highway shoulders (2.3)
- The surface condition of highway shoulders (2.3)
- Resurfacing sections of the highway (2.1)
- Filling cracks and potholes (1.9)

The lowest quality rating for the Northern region was 1.9, which was a rating bordering fair. Therefore, there were no poor, good or excellent ratings in the Northern region.

The highest road service quality ratings for the Western region included:

- The helpfulness of non-commercial highway signs (2.9)

- The maintenance of non-commercial highway signs (2.9)
- The amount of non-commercial highway signs (2.9)
- All pavement markings including yellow and white lines (2.8)

The highest rating in the Western region was 2.9 out of 4.0 for the helpfulness, and maintenance, of non-commercial highway signs, which was a quality rating bordering on good.

The lowest highway service quality ratings for the Western region were:

- Timeliness of the clean up after a storm (2.6)
- Bridges (2.5)
- Snow and ice removal during a storm (2.5)
- Ditches and culverts (2.5)
- Roadside brush and tree clearing (2.5)
- The length of passing lanes (2.3)
- The width of highway shoulders (2.2)
- Grading and dust control of gravel roads (2.2)
- Number of passing lanes (2.2)
- The surface condition of highway shoulders (2.2)
- The amount of four-lane divided highways (2.2)
- Resurfacing sections of the highway (2.2)
- Filling cracks and potholes (1.9)

The lowest quality rating for the Western region was 1.9, which was a rating bordering “only fair”. Therefore, there were no poor, good or excellent ratings in the Western region.

8 Gap Analysis

A gap analysis was performed to determine where there were the greatest differences between respondents' service expectations, and their service quality evaluations. To conduct the analysis, the numbers of respondents who rated a service as "Very important", and those who did not, were tabulated with those who rated the quality of the service as "Excellent, and those who did not. The goal of the gap analysis is to determine how many rated the service as Very important, but did not rate the quality as Excellent. The larger the gap score, the greater the deficit between the public's expectations for performance, and actual service performance. This percentage shows which of the services the Nova Scotia Department of Transportation and Infrastructure Renewal can focus on to improve the highway system in Nova Scotia. It also assists in the prioritization of services for attention.

The gap analysis revealed that all gaps had increased since the 2006 study. All of the increases were statistically significant. The results are summarized in Table 19. The gaps are shown for years 2002 through 2007. The 2007 gaps are compared to 2006 gaps for purposes of significance testing.[3]

Overall, the 2007 gap scores ranged from 54% to 91%. The increases in overall gap scores ranged from 4 to 30 percentage points. The services with the top five gap scores for 2007 included:

- Filling cracks and potholes (70%)
- Bridges (91%)
- Resurfacing sections of the highway (81%)
- All pavement markings including yellow and white lines (80%)
- Snow and ice removal during a storm (75%)

The measures with the lowest gap scores were:

- Ditches and culverts (65%)
- The amount of non-commercial highway signs (64%)
- The length of passing lanes (62%)
- Roadside brush and tree clearing (61%)
- Number of passing lanes (54%)

There may be external factors that impacted gap scores in the 2007 study. The study was conducted during one of the most severe winters on record in recent years. Nova Scotia's drivers were facing difficult driving conditions due to snow and ice.

[3] Sample sizes were not available for years 2002 through 2005 to facilitate significance testing to 2007 gap percentages for the 2007 report. The final report for the 2006 study shows significant differences between 2006 gaps and those in previous years.

Table 19 Gap Analysis: 2002 through 2007*

	2002	2003	2004	2005	2006	2007
The amount of four-lane divided highways	64%	61%	56%	59%	54%	**70%**
Filling cracks and potholes	88%	85%	86%	86%	82%	**91%**
Resurfacing sections of the highway	78%	68%	71%	69%	70%	**81%**
Snow and ice removal during a storm	82%	75%	78%	73%	70%	**80%**
Timeliness of the clean up after a storm	-	-	75%	71%	71%	**75%**
Number of passing lanes	63%	55%	57%	47%	42%	**54%**
The length of passing lanes	67%	58%	57%	51%	45%	**62%**
All pavement markings including yellow and white lines	79%	74%	68%	73%	69%	**81%**
Roadside brush and tree clearing	55%	51%	48%	51%	52%	**61%**
The helpfulness of non-commercial highway signs	71%	66%	60%	42%	50%	**73%**
The amount of non-commercial highway signs	66%	56%	57%	52%	47%	**64%**
The maintenance of non-commercial highway signs	70%	59%	60%	54%	50%	**69%**
The width of highway shoulders	71%	65%	67%	59%	62%	**75%**
The surface condition of highway shoulders	72%	67%	68%	63%	64%	**77%**
Grading and dust control of gravel roads	53%	45%	45%	41%	38%	**66%**
Ditches and culverts	62%	51%	50%	48%	43%	**65%**
Bridges	74%	72%	59%	64%	54%	**84%**

*Bolded percentages show statistically significant increases in gap scores since 2006.

An analysis of gaps by region indicated that all of the lowest gap scores originated in the Central region, while most of the highest gap scores occurred in the Northern region. This analysis further demonstrates that respondents' in the Central region were happier overall, than those in the other districts. The results of the regional gap analysis are shown in Table 20.[4]

The Central region's scores were lowest for all measures, while the Eastern region had the highest scores for the following measures:

- Filling cracks and potholes
- Resurfacing sections of the highway
- All pavement markings including yellow and white lines

[4] To be consistent with the 2006 survey, the regional gap analysis was conducted using data unweighted by regional population.

- Snow and ice removal during a storm
- The surface condition of highway shoulders
- The amount of four-lane divided highways
- Number of passing lanes

The Northern region had the largest gap scores for the following measures:

- Filling cracks and potholes
- All pavement markings including yellow and white lines
- The surface condition of highway shoulders
- The width of highway shoulders
- The helpfulness of non-commercial highway signs
- The maintenance of non-commercial highway signs
- The amount of non-commercial highway signs
- Roadside brush and tree clearing

The Western region had the largest gap scores for the following services:

- Snow and ice removal during a storm
- Timeliness of the clean up after a storm
- The amount of four-lane divided highways
- Grading and dust control of gravel roads
- The length of passing lanes

Table 20 Regional Gap Analysis*

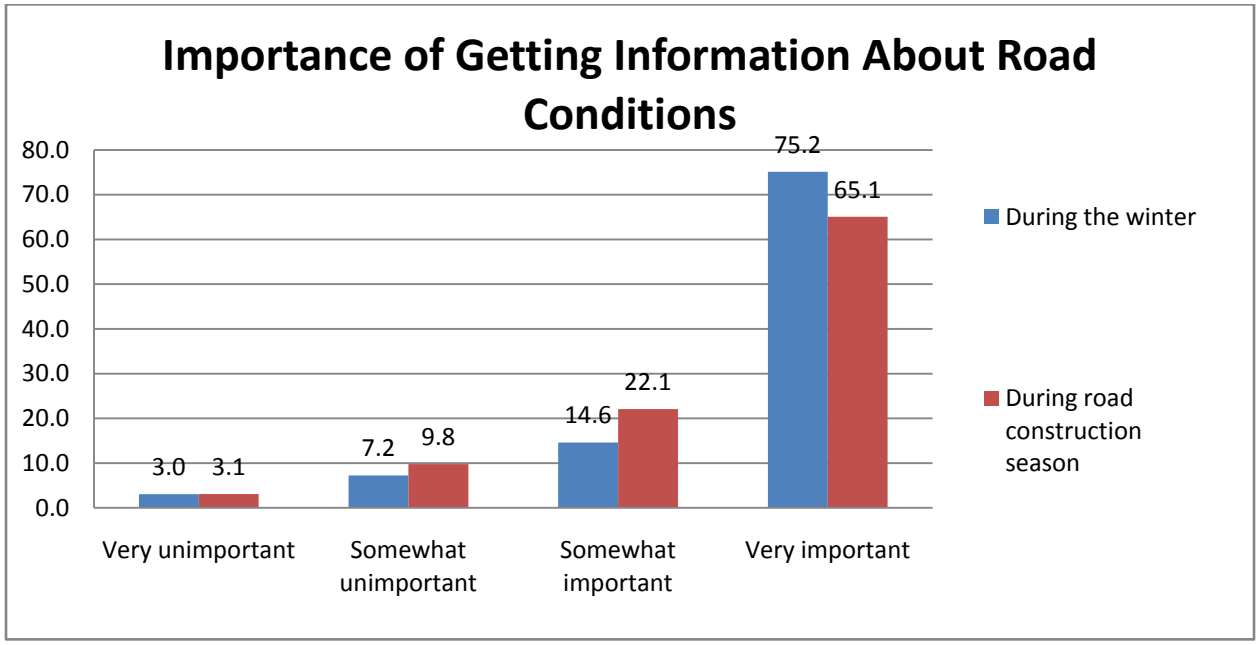
	Central	Eastern	Northern	Western
The amount of four-lane divided highways	65%	72%	71%	72%
Filling cracks and potholes	82%	95%	95%	91%
Resurfacing sections of the highway	72%	86%	85%	82%
Snow and ice removal during a storm	73%	83%	79%	83%
Timeliness of the clean up after a storm	67%	77%	75%	79%
Number of passing lanes	43%	57%	54%	64%
The length of passing lanes	54%	61%	64%	68%
All pavement markings including yellow and white lines	72%	84%	84%	82%
Roadside brush and tree clearing	48%	65%	67%	65%
The helpfulness of non-commercial highway signs	63%	76%	79%	75%
The amount of non-commercial highway signs	49%	67%	73%	68%
The maintenance of non-commercial highway signs	55%	72%	75%	73%
The width of highway shoulders	62%	79%	80%	79%
The surface condition of highway shoulders	66%	82%	82%	78%
Grading and dust control of gravel roads	55%	60%	70%	71%
Ditches and culverts	51%	70%	71%	68%
Bridges	71%	86%	90%	88%

*Bolded items indicate lowest gap score by service. Italicized bolded items indicate highest gap score by service.

9 Highway Conditions Information

Respondents were asked how important it was for them to receive highway information during the winter, and during construction season. The percentage results are shown in Figure 8.

Figure 8 Importance of Getting Information about Road Conditions During the Winter, and During Road Construction Season



The responses averaged 3.62 out of 4.0 for winter, and 3.49 out of 4.0 during construction season. The results reveal that obtaining road information is more important in the winter than during construction season.

Respondents were asked if they had ever obtained information about road conditions from the Nova Scotia Department of Transportation and Infrastructure Renewal. Forty-six percent had received information, and nearly 54% had not. The sources of information they used are summarized in Figure 9.

The telephone road report was the most commonly used information source, followed by the department website and web cameras. Radio was the least used information source.

Preferred information sources from the department were the website, followed by the telephone, radio and then web cameras. There seemed to be a contradiction between the information sources used, and reported client preferences.

Figure 9 **Sources of Information Obtained from the Nova Scotia Department of Transportation and Infrastructure Renewal**

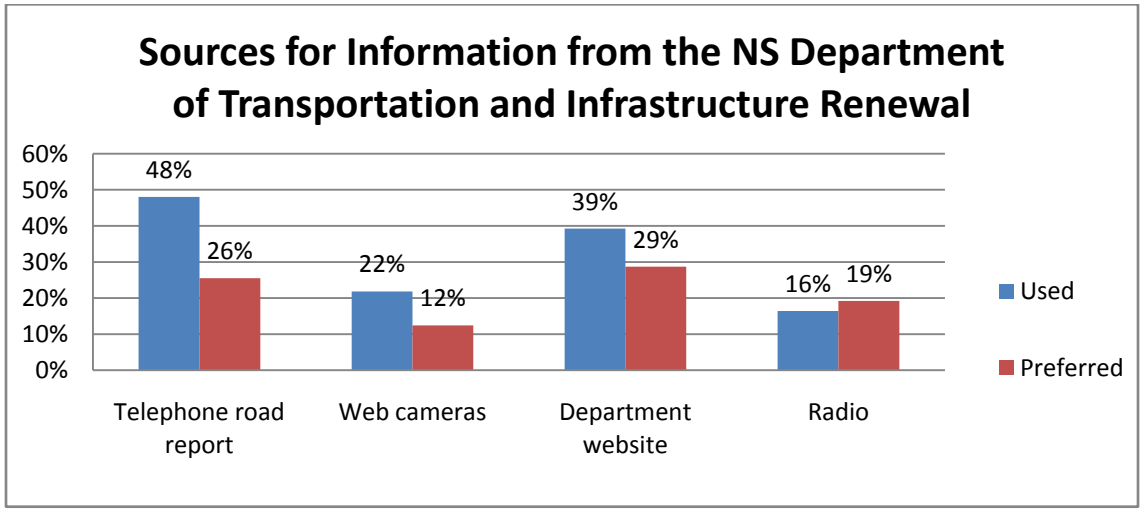


Table 21 **Other Sources of Road Conditions Information Used**

Information Source	%
Television	53%
Weather channel/Weather Network/Channel 30	26%
Family member	4%
Friend	4%
Spouse	4%
Television news	3%
Email	2%
Employees of DOT	2%
Google	2%
Plow Shed	2%
Weight Scale House	2%
Channel 57	1%
Former employer	1%
Highway garage	1%
In person	1%
Newspaper	1%
RCMP	1%
Scanner	1%

Fourteen percent preferred other information sources. A variety of other information sources were also used.

A total of 129 individuals provided information sources. A list of the sources appears in Table 21. The results showed that the most frequent information source used to obtain information on road conditions is the television, which was listed by 53% of respondents. The most single used television source was the Weather Network which was used by an additional 26% of respondents. A number of respondents received information from friends or relatives who "worked for the department".

Most were satisfied with the information that they received from the department. The satisfaction rating averaged 3.44 out of 4.0, based on a 4-point scale ranging from 1) Very dissatisfied, to 4) Very satisfied. The results are shown in Figure 10. Overall, more than 94% of respondents were very either satisfied, or very

satisfied, with the road information that they received.

Of respondents who were not satisfied with the information they received, 56 provided 21 different reasons why they weren't satisfied. The key reasons for dissatisfaction included insufficient, inaccurate or poor information provided regarding road conditions (38%) and complaints that the information was out of date (29%). Outdated information was attributed to the telephone recording, as well as the website. There were also concerns about the webcams and their usefulness in poor weather conditions, or at night. A complete listing of reasons for their dissatisfaction are included in Table 22.

Figure 10 Satisfaction with Road Conditions Information Obtained from the Nova Scotia Department of Transportation and Infrastructure Renewal

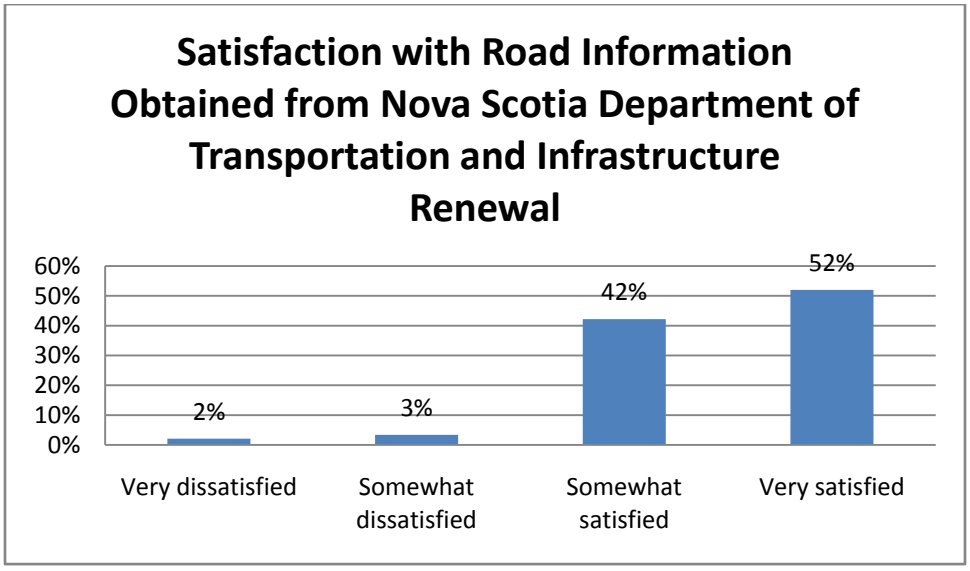


Table 22 Reasons for Being Dissatisfied with the Road Conditions Information Received from the Department of Transportation and Infrastructure Renewal

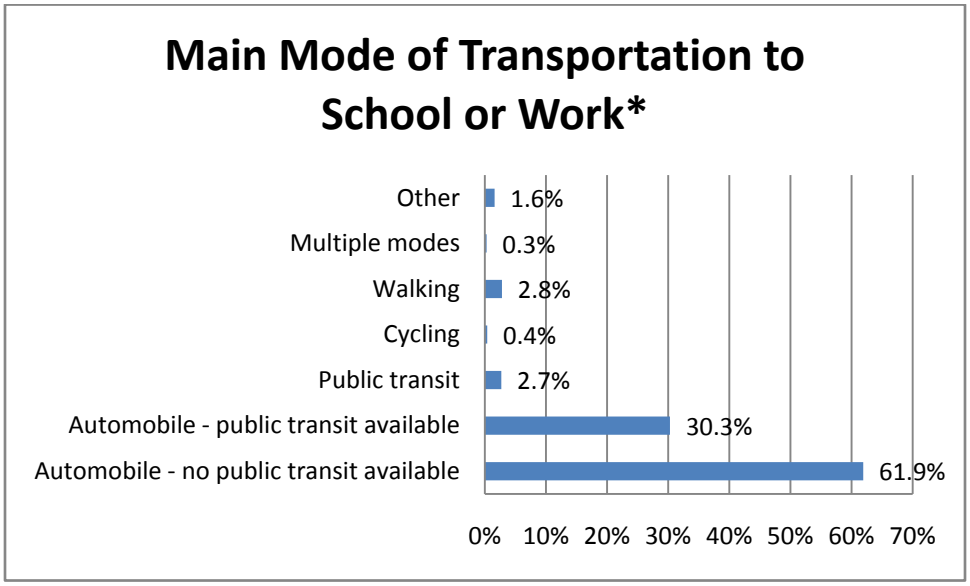
Reasons for Dissatisfaction	%
Insufficient/inaccurate/poor information re: road conditions	38%
Recording/website outdated/need to update more often	29%
Hard to get through on the phone	9%
Get a recording/do not like automated phone	7%
Do not usually receive an answer back	5%
1-800 number/info more for Halifax than other areas of NS	4%
1-800 number/info sources not user-friendly	4%
Did not fix the problem	4%
Information too general	4%
No information on secondary roads	4%
Road conditions could be better explained	4%
Too dark for webcams	4%
Webcams unreliable	4%
Could not tell me where the construction zone was	2%
Don't get a straight answer	2%
Had to talk to many people to get help	2%
Person on phone was rude	2%
Reports do not include pothole information	2%
Too hard to find information	2%
Webcams do not work well in poor conditions	2%
Were not aware of the construction going on	2%

10 Sustainable Transportation

Respondents were asked what method of transportation was their main mode of getting to school or work outside the home. They were also asked how far they travelled one way, between their work or their school, as applicable. Twenty-eight percent reported not traveling to school or working outside of the home. Of those who did so, the majority drove an automobile. In most cases, the automobile was driven when there were no public transportation options (62%). However, over 30% drove an automobile when there were other public transportation options available (30.3%). Approximately 3% of respondents walked to their destinations, or took public transit. The results are shown in Figure 11.

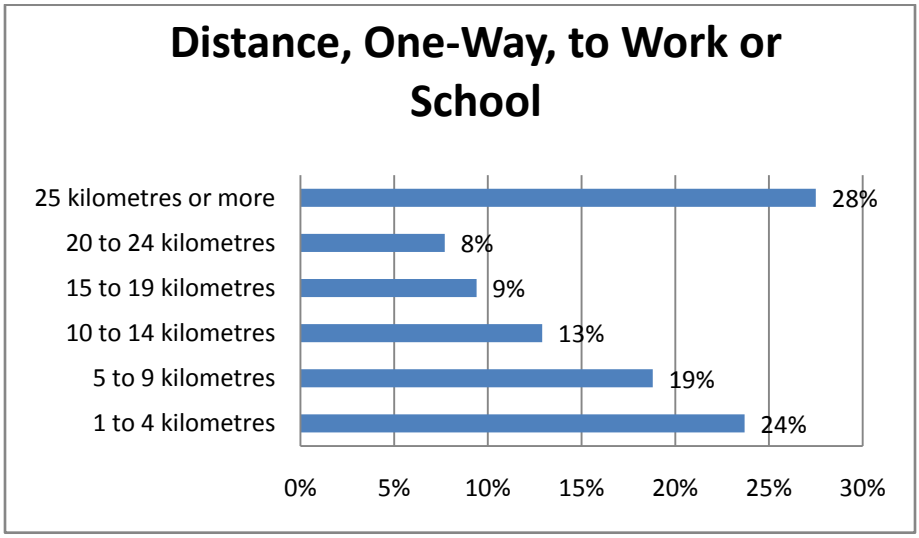
The distance to work or school ranged from less than four kilometers one way, to 25 kilometers or more. The average was approximately 17.3 kilometers one way. Most respondents travelled 25 kilometers or more, one way, to their destination. The complete distribution of travel distances is shown in Figure 12.

Figure 11 Main Mode of Transportation to Work or School



*Note: 28% did not work outside the home or attend school.

Figure 12 Distance, One Way, to Work or School



11 Priorities for Various Highways and Features

Respondents were asked to indicate what they thought should be the number one priority for the Department of Transportation and Infrastructure Renewal. All respondents answered the question, and only 3% did not know what the priorities should be. One percent of respondents felt that everything was fine with the highway system and did not list any priorities.

Most respondents listed either highway-related issues and/or specific problem areas around the province, resulting in 193 unique listings. The top five listings for each are shown in Table 23.

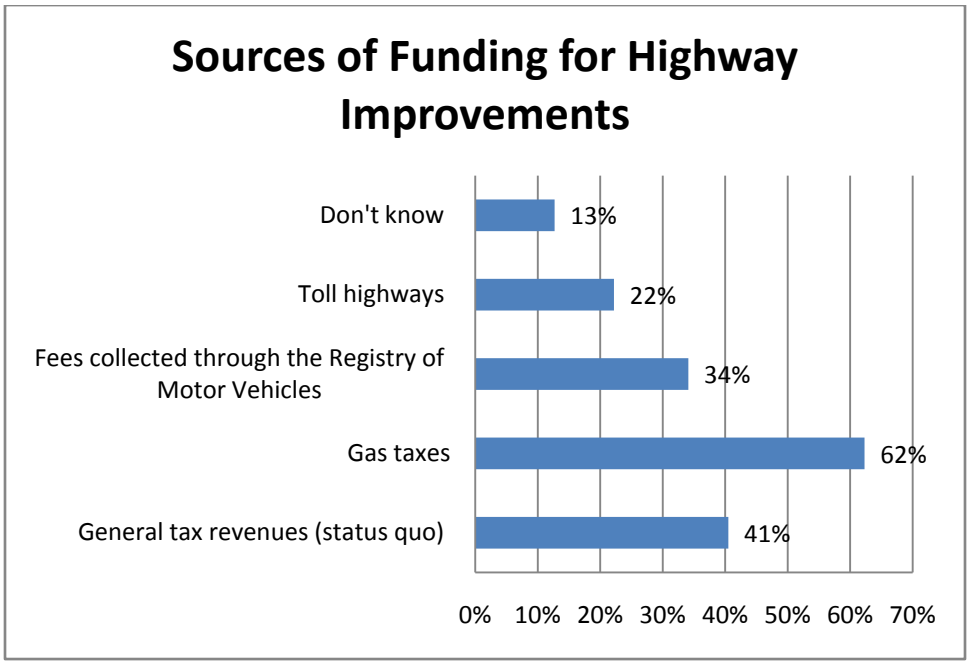
Table 23 Priorities Listed by Respondents

Priorities	Number	Percentage (n=2076)
Better road maintenance (potholes)	760	37%
4 lane divided highways	525	25%
Pave/do not patch road	434	21%
Back/gravel/secondary roads	135	7%
Wider roads	86	4%
Better snow clearing	74	4%
Bridges	42	2%
101 highway	19	1%
Cape Breton Island	10	0.5%
215 Highway	8	0.4%

Given that the results differed semantically from those in the previous year's survey, direct comparison is difficult. However, in 2006, 23% of respondents felt that twinning the highways was a priority, while 17% sought general repairs, and 22% felt that road should be upgraded or replaced. The 2007 respondents indicated a preference for both better road maintenance, and twinned highways. Better road maintenance included comments such as upgrading and general repairs. Based on this comparison it appears that the key themes are consistent for priorities across the two surveys.

Respondents were also asked which sources of funding should be used for highway and road improvements. Most felt that gas taxes should fund road improvements, followed by general tax revenues and fees collected through the Registry of Motor Vehicles. The breakout of responses is shown in Figure 13.

Figure 13 Sources of Funding Used for Highway Improvements



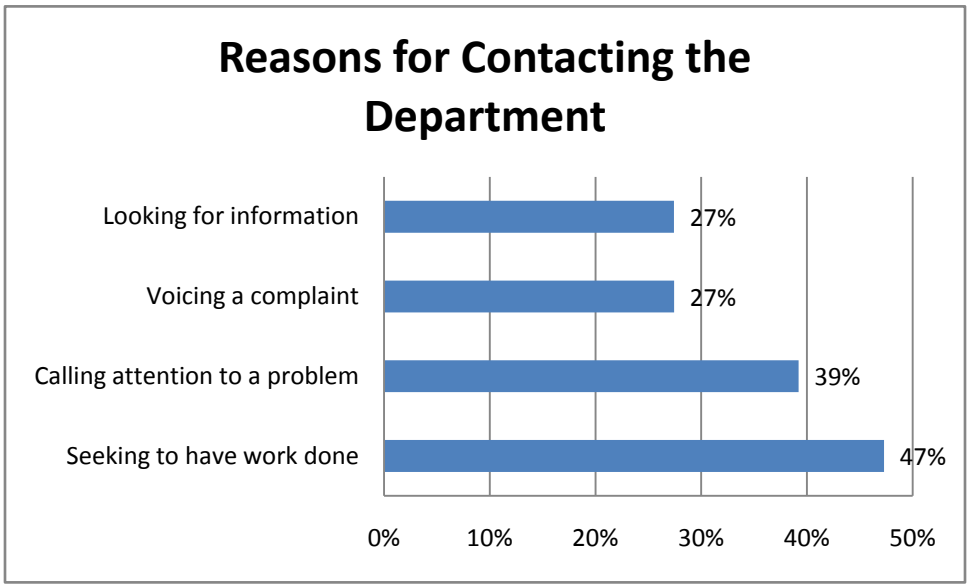
12 Communication with Department Staff

Eighteen percent of respondents had contacted the department in the past year. The reasons for making contact are shown in Figure 14. The results reveal that most were seeking to have work done in their area. A small number of respondents, 3.4%, also indicated that if they knew it was available, they would request information in French. This was an interesting observation given that approximately 28 surveys were administered in French.

The respondents were asked if they were satisfied with the responses that they received from the Department of Transportation and Infrastructure Renewal. The average rating was 2.7 on a 4-point scale, ranging from 1) Very dissatisfied to 4) Very satisfied. There was no significant difference between the 2006 average rating of 2.6, and the 2007 rating. Sixty-four percent of respondents were either very satisfied, or somewhat satisfied, with the response they received. The results are shown in Figure 15.

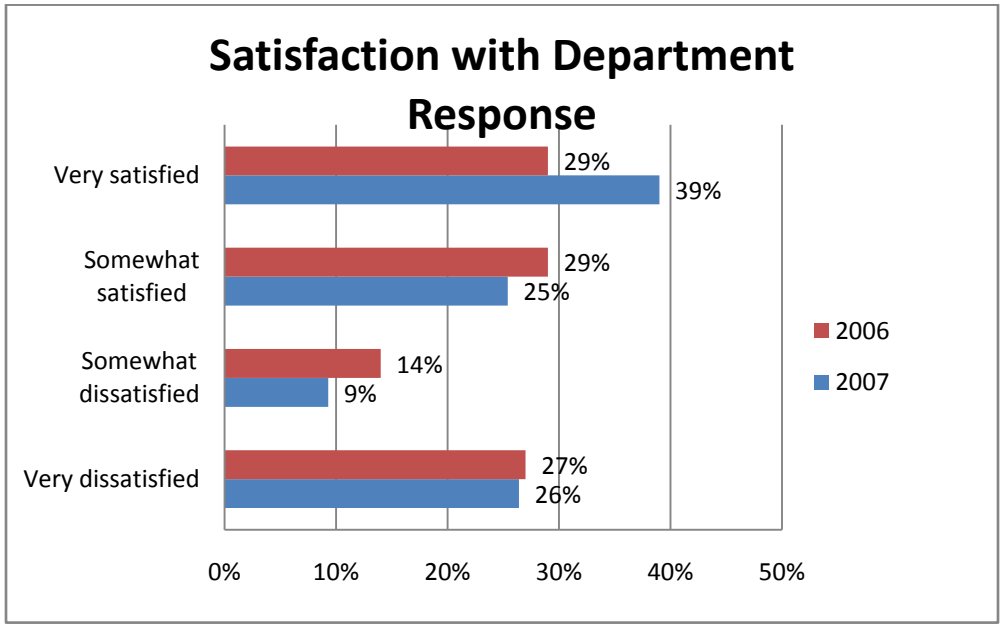
Comparison of average ratings for regional satisfaction levels showed that there were no significant differences between regions in the 2007 survey. However, more in the Central region were either somewhat satisfied or very satisfied (71%), than were respondents from the Eastern (64%), Northern (59%), or Western regions (57%).

Figure 14 Reasons for Contacting the Department in the Last Year*



*The sample size is equal to those who contacted the department in the last year, totaling 380 individuals, or 18.3%.

Figure 15 Satisfaction with Department's Response



Over 100 individuals gave reasons for their dissatisfaction with the response they received. The most frequently reason given for being dissatisfied was that the work was not done, or that the work that was done did not solve the problem. The reasons given are shown in Table 24.

Table 24 Reasons for Being Dissatisfied with Department Contact

Reasons	Number	Percent (n=135)
Work not done	54	40%
Department did not solve problem/work poor	43	32%
Bad snow removal	19	14%
Poor cleanup after construction	16	12%
Not enough staff to do work	15	11%
Response/work too slow	10	7%
Department not responsible for damage	6	4%
No answer at Department	5	4%
Department did not have information needed.	4	3%
Lack of communication	4	3%
Did not get what they wanted from Department	3	2%
Received no response to request	3	2%
Calls not returned	1	1%
Rude response	1	1%