

2015

TranPlan 21

Public Involvement Survey

**VOLUME I
FINAL REPORT**

State of Montana
Department of Transportation

Bureau of Business and Economic Research
University of Montana – Missoula

Volume I

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Vigorous thanks must go to the following Montana Department of Transportation employees for the effort they put forth to make this project a success:

Sandy Waddell, Diane Myers and Christopher Dorrington.

Thanks also go to Janet Stevens of BBER who worked diligently to supervise the data collection of this study. Finally, we are most grateful to the BBER telephone survey supervisors and interviewers. Their dedication to careful research and persistence made this study a success.

This report was authored by Kyle Morrill and John Baldrige of the Bureau of Business and Economic Research at the University of Montana.

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The purpose of the 2015 TranPlan 21 Public Involvement Survey is to examine Montanans’:

- perceptions of the current condition of the transportation system;
- views about possible actions that could improve the transportation system in Montana; and
- opinions about the quality of service Montana Department of Transportation (MDT) provides to its customers.

The Bureau of Business and Economic Research at The University of Montana-Missoula interviewed 1,039 households from May 29, 2015, through July 29, 2015.

2015 Snapshot

In 2015 Montanans are:

- generally satisfied with the state’s transportation system;
- satisfied with the physical condition of system components;
- somewhat satisfied with the availability of most transportation services (except passenger rail service and intercity buses).

Montanans want more facilities, equipment, or services for:

- pedestrian walkways;
- other major highways.

Montanans viewed nearly all problems studied as small problems. Only one problem was viewed as moderately severe: road pavement condition.

Montanans place the highest priority for possible actions to improve the transportation system on:

- maintaining road pavement condition;
- keeping the public informed;
- including wildlife crossings and barriers;
- maintaining roadside vegetation; and
- improving transportation safety.

The most useful communication tools are:

- variable message highway signs;
- radio and television; and
- MDT website.

Montanans view the following as the most helpful communication tools for planning and project information:

- maps;
- pictures or graphics;
- applications for mobile devices; and
- MDT website.

The majority of Montanans feel they receive more than or about \$182 per year in value from the transportation system. In the event of decreased funding the public rates the following as the least impactful areas for possible funding cuts:

- bicycle pathways;
- pedestrian walkways; and
- rest areas.

MDT’s overall customer service and performance grades are in the B to C range.

Indications that warrant attention

- Applications for mobile devices and social media are becoming more useful as communication tools.
- Widening roadways became the highest priority roadway improvement in 2015 with especially high priority in Districts 3-Great Falls and 4-Glendive.
- Road pavement condition remains a moderate problem across all districts but most noticeably in Districts 1-Missoula and 3-Great Falls.

Trends

The TranPlan 21 Public Involvement Survey has been conducted biennially since MDT’s initial long-range transportation plan was developed in the mid-1990s. The survey provides MDT feedback through a process that heavily engages the public in evaluating and establishing MDT’s goals and objectives.

- Long-run public satisfaction with the physical condition of the transportation system has increased over time (Figure 0.1).

- MDT’s performance and service grades have generally increased from 2001 levels although MDT has regressed in several categories in 2015 (Figure 0.2).

Figure 0.1: Long-Run Trend in Physical Condition of Montana’s Transportation System, 2001-2015

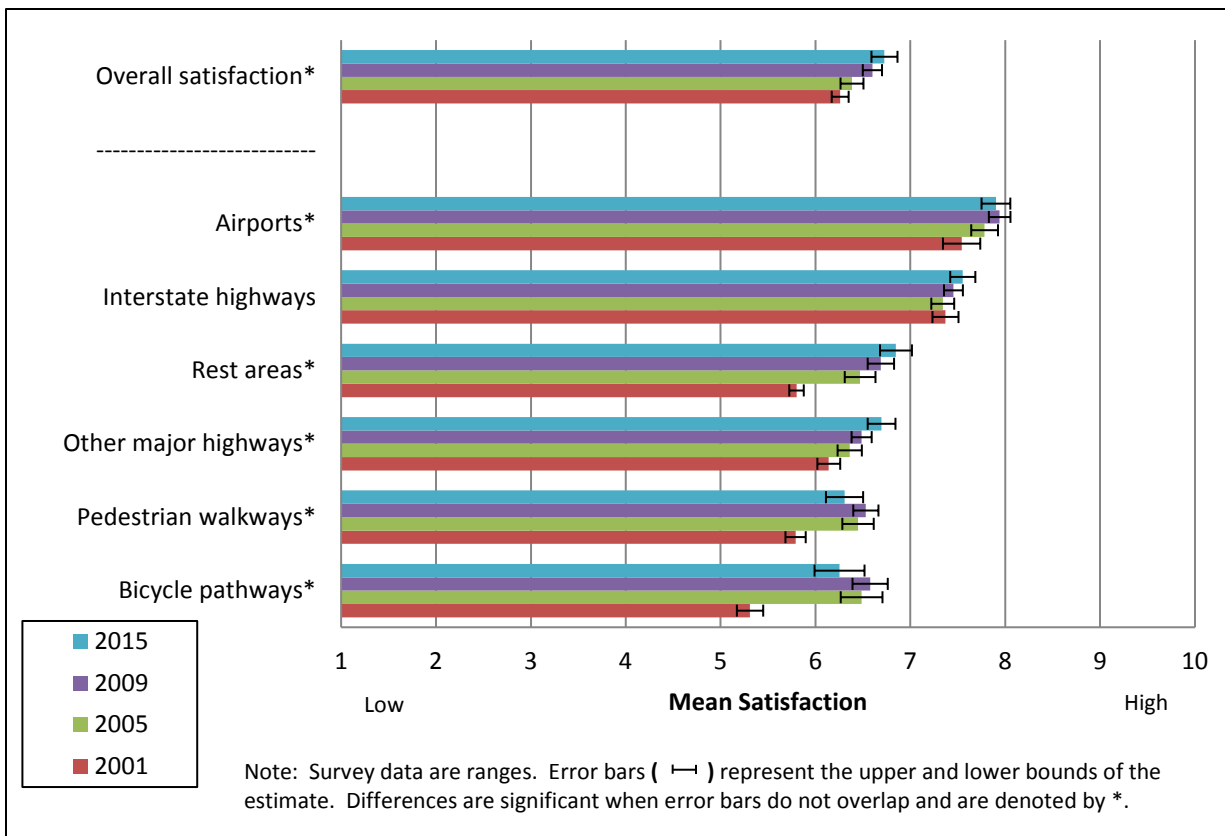
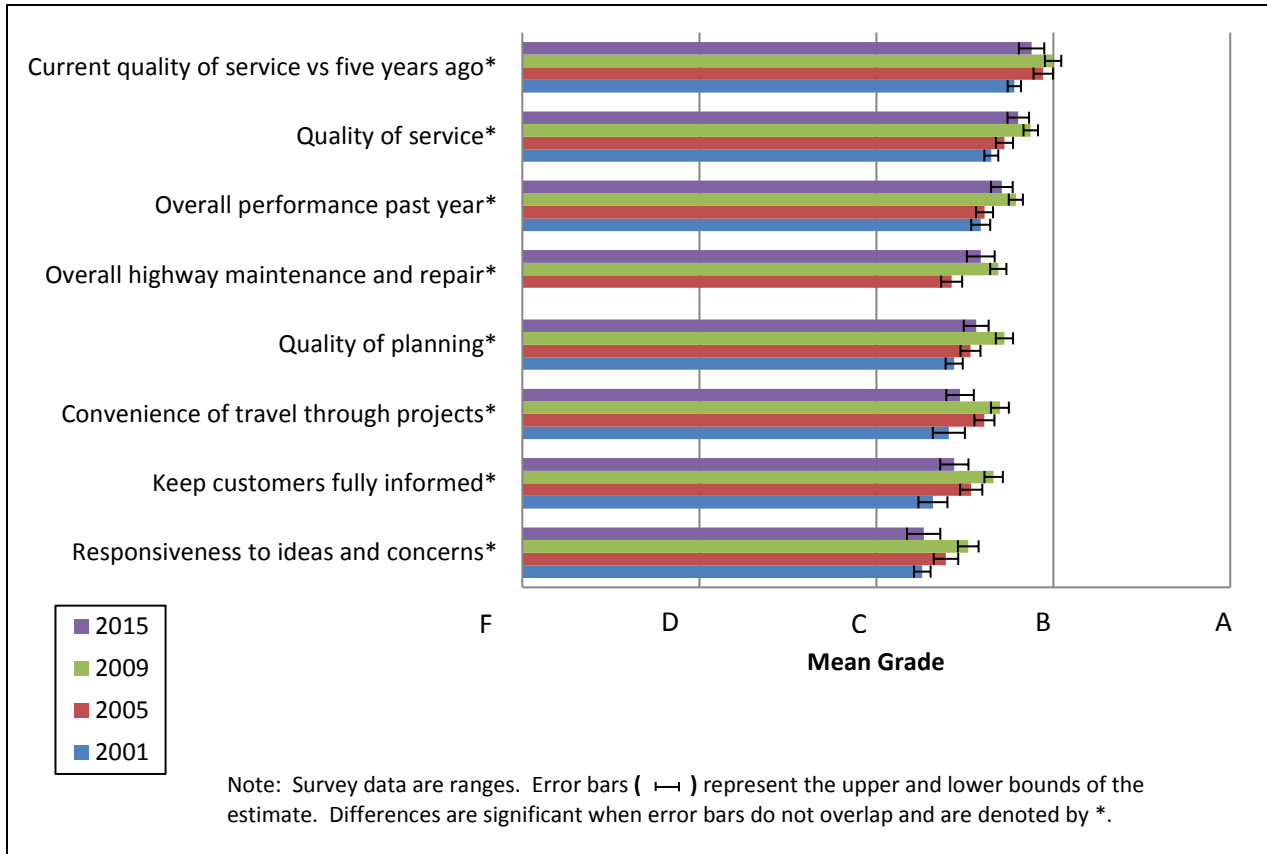


Figure 0.2: Long-Run Trend in MDT Service and Performance Grades, 2001-2015



The purpose of the 2015 TranPlan 21 Public Involvement Survey is to examine Montanans':

- perceptions of the current condition of the transportation system;
- views about possible actions that could improve the transportation system in Montana; and
- opinions about the quality of service MDT provides to its customers.

The survey is designed to help MDT policy-makers and planners examine the efficiency, capacity, and flexibility of Montana's transportation system to meet current needs and future demands.

The telephone survey, one of several MDT public involvement processes, provides MDT policy-makers and planners a representative sample of Montanans by which to gauge current public opinion. The survey has been conducted biennially since 1997 and has maintained consistency over time allowing for exploration of trends in public sentiment regarding the Montana transportation system.

Survey Administration

The survey was administered from May 29, 2015, through July 29, 2015. Of the 3,891 eligible respondents contacted, 1,039 (26.7 percent) participated in the survey. This response rate is typical for rigorously conducted RDD surveys.¹

BBER implemented additional sampling procedures in 2009 to mitigate any possible under-coverage bias due to the higher proportion of adults who live in cell-only households. The 2015 survey includes 399 cellphone participants of which 271 live in cell-only households.

¹ Groves, Robert, M. et. al. 2004. *Survey Methodology*. New York: John Wiley & Sons. pp. 184-187.

The Respondents

The table below describes the respondents and provides benchmarks against which they may be compared. Slightly more than half (51.2 percent) of respondents are female, and just under half (48.8 percent) are male. The percentage of females and males from 2014 ACS² is within the sampling margin of error of the corresponding percentages from the 2015 Public Involvement Survey.

Distribution of the sample among races also approximates Census Bureau estimates.³ American Indians or Alaskan Natives comprise 4.9 percent of respondents, while 95.1 percent are white and other races.

Table 1.1: Respondents by Gender and Race

	2015 Public Involvement Survey		2014 ACS
	Unweighted	Weighted*	
Males	48.8%	49.9%	50.0%
Females	51.2%	50.1%	50.0%
White and other race adults	95.1%	93.7%	93.3%
American Indian adults	4.9%	6.3%	6.7%
Median age by phone usage			
Cell and landline	59	55	na
Landline mostly	65	60	na
Cell mostly	53	45	na
Cell only	42	35	na
Landline only	70	62	na

* Weighted by age, sex, MDT district, and phone type

² Gender estimates U.S. Census Bureau, 2014 ACS, Montana Table PEPASR5H.

³ Race estimates U.S. Census Bureau, 2014 ACS, Montana Table PEPASR5H. Race alone or in combination with other races.

2. Attitudes About Montana's Transportation System

“How satisfied are you with the overall transportation system in Montana?”

Montana's overall transportation system was ranked on a scale of one to ten, where one is “very unsatisfied” and ten is “very satisfied.” The mean response was 6.73, reflecting moderate satisfaction with the overall transportation system. The psychological midpoint of the one to ten scales is five. The distance above five is a measure of the intensity of satisfaction.

“How satisfied are you with the physical condition of the following items?”

Each component of Montana's transportation system was rated using the same one to ten scale. These ratings are reported in Table 2.1 and Figure 2.1. Figure 2.1 shows the mean for each component with an upper and lower bound. Differences in satisfaction are statistically significant when the confidence intervals do not overlap.

Table 2.1: Satisfaction with Physical Condition of System Components

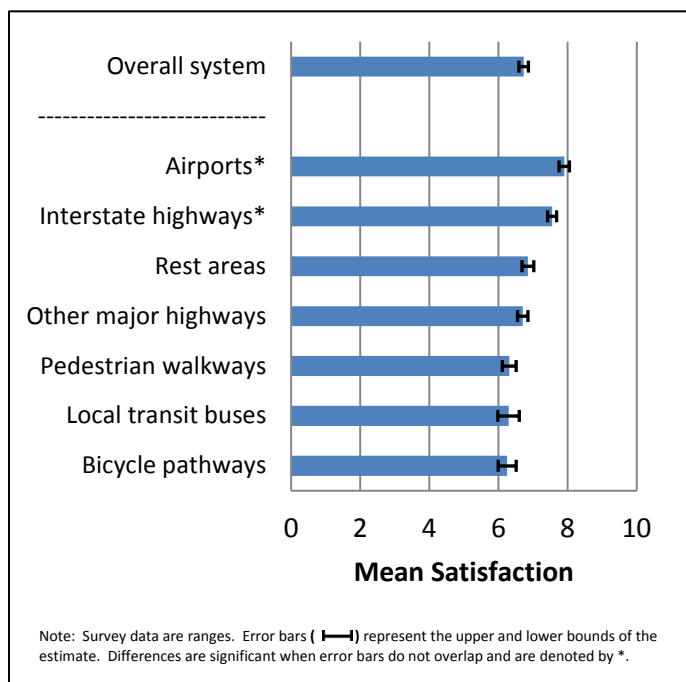
	95% Confidence			Number of respondents
	Mean	Lower limit	Upper limit	
Overall system	6.73	6.59	6.86	1,019
Airports	7.90	7.75	8.06	842
Interstate highways	7.55	7.42	7.69	1,011
Rest areas	6.85	6.68	7.02	946
Other major highways	6.70	6.55	6.84	999
Pedestrian walkways	6.31	6.11	6.51	894
Local transit buses	6.29	5.98	6.61	474
Bicycle pathways	6.25	5.99	6.52	676

- Airports (7.90) ranked highest in terms of satisfaction.
- Respondents also express relatively strong satisfaction with interstate highways (7.55).
- Montanans are moderately satisfied with the physical condition of rest areas (6.85) and other major highways (6.70).

- Pedestrian walkways (6.31), local transit buses (6.29) and bicycle pathways (6.25) rank lowest in terms of respondent satisfaction.

All results rank above the psychological midpoint of five indicating Montanans are satisfied with the physical condition of system components.

Figure 2.1: Satisfaction with Condition of System Components



Trends

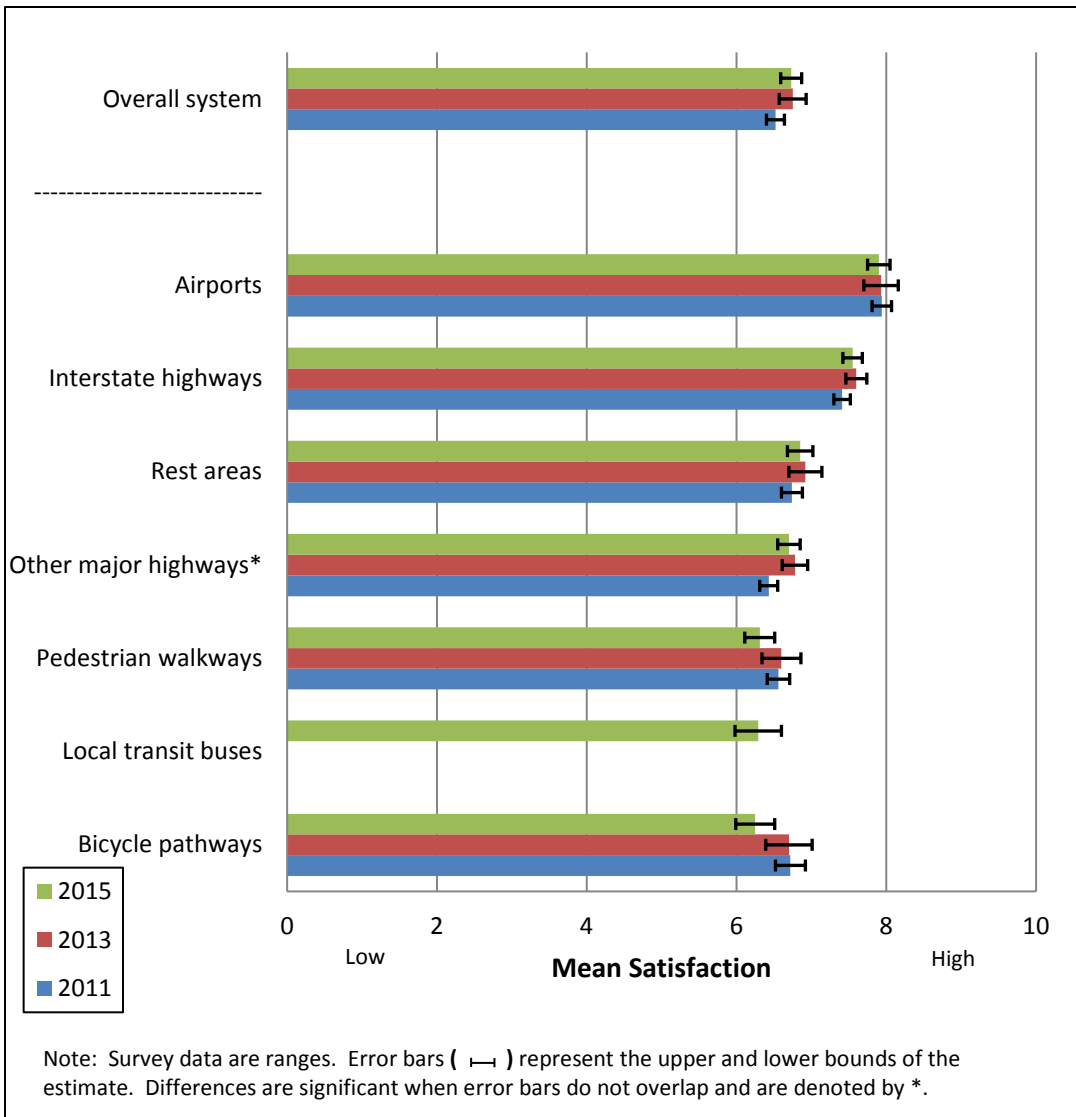
In each of the seven replications of this study respondents were asked identical questions rating their satisfaction with the physical condition of various system components. The 2015 survey is compared to 2011 and 2013 in Figure 2.2.

- Overall satisfaction remained consistent with 2013 results and slightly improved over 2011.
- Satisfaction with airports remains high over

2011-2015.

- The opinion of Montana residents about the physical condition of Montana's interstate highways shows consistently high satisfaction.
- Satisfaction with the physical condition of Montana's rest areas and other major highways remains consistent with 2013 and shows slight improvement over 2011.
- 2015 was the first year the survey asked about local transit buses and results are consistent with pedestrian walkways and bicycle pathways.

Figure 2.2: Comparison of Physical Condition of Montana's Transportation System, 2011-2015



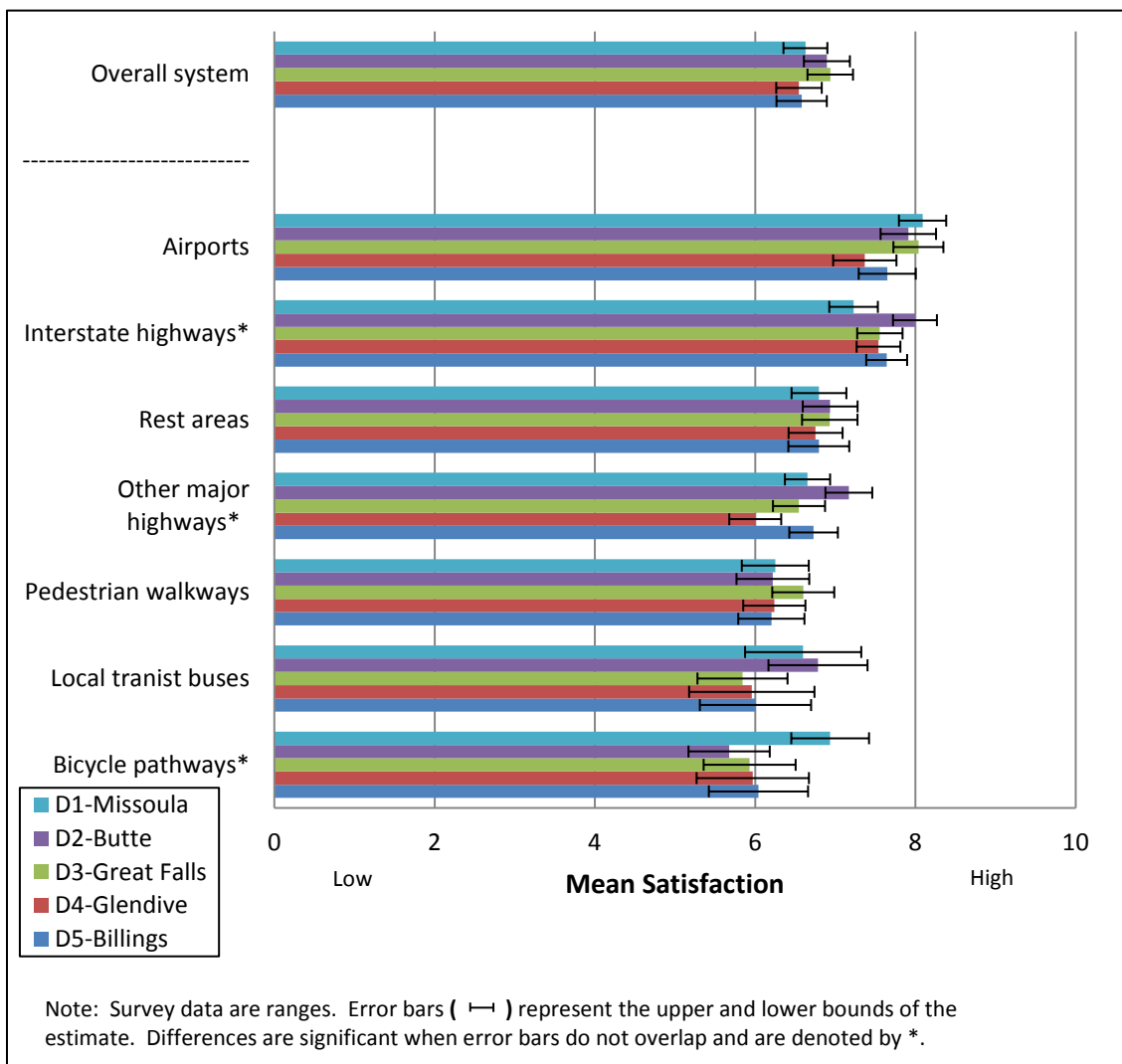
Districts

Figure 2.3 presents mean satisfaction scores for each of the five MDT Districts. Error bars assess the statistical significance of differences between the means presented. Overall, there is general agreement between respondents.

- Montanans in all districts are satisfied with the overall transportation system.
- District 1-Missoula is less satisfied with interstate highways than District 2-Butte.

- District 4-Glendive is less satisfied than Districts 1-Missoula, 2-Butte, and 5-Billings with other major highways.
- District 1-Missoula is the most satisfied with bicycle pathways; this difference is significantly larger than Districts 2-Butte and 3-Great Falls.
- With the exception of District 1-Missoula the physical condition of bicycle pathways ranks lowest in terms of satisfaction with airports ranking highest.

Figure 2.3: Mean Satisfaction with Condition of System Components by MDT District



“Please indicate whether you think there is a need for additional facilities, equipment, or services.”

Montanans were asked whether each of seven transportation system components needed additional facilities, equipment, or services. Respondents' perceptions about the need for more transportation infrastructure are examined below (Table 2.2).

- More than half of Montanans feel pedestrian walkways and other major highways need additional facilities, equipment, or infrastructure while roughly half feel rest areas to be in need.
- Half of Montanans feel rest areas need additional facilities, equipment, or infrastructure.
- Conversely, the majority of Montanans feel airports and interstate highways do not need additional facilities, equipment or services.
- A large proportion of Montanans do not know whether local transit buses need additional facilities, equipment, or services.

Table 2.2: Perceived Need for Additional Facilities, Equipment, or Services

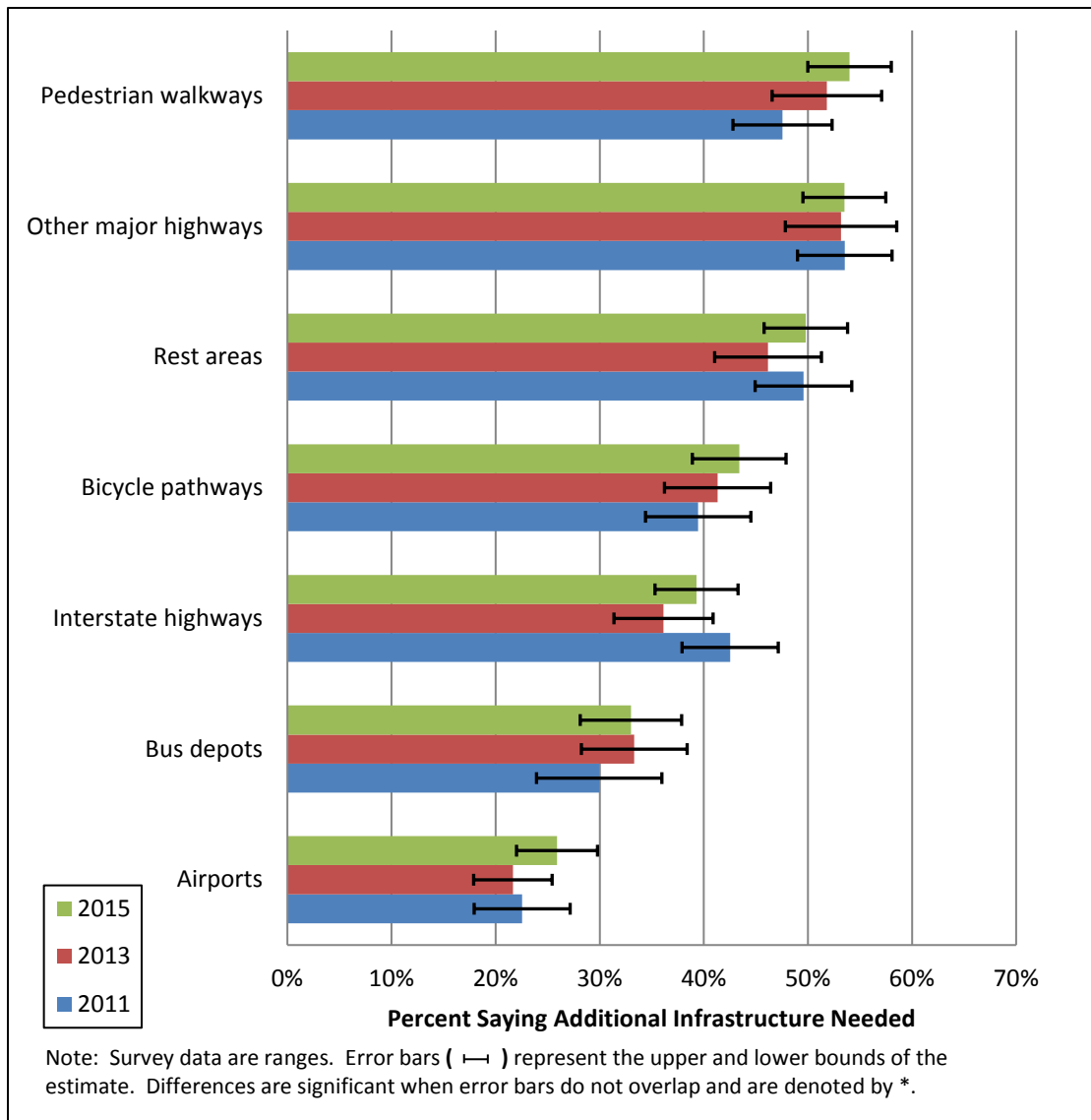
	Yes	No	Do not know	Number of respondents
Pedestrian walkways	54.0%	33.0%	13.0%	1,037
Other major highways	53.5%	38.2%	8.4%	1,036
Rest areas	49.8%	39.7%	10.5%	1,034
Bicycle pathways	43.4%	30.1%	26.5%	1,035
Interstate highways	39.3%	50.5%	10.2%	1,036
Local transit buses	33.0%	25.8%	41.8%	1,038
Airports	25.9%	54.7%	19.4%	1,035

Trends

The percent of respondents saying additional infrastructure is needed compared to the 2013 and 2011 surveys are presented in Figure 2.4.

- Respondents in 2015 perceive a similar need for infrastructure across all categories as in previous years.
- The ranking of perceived needs has remained fairly stable across time.

Figure 2.4: Perceived Need for More Facilities, Equipment or Services, 2011-2015

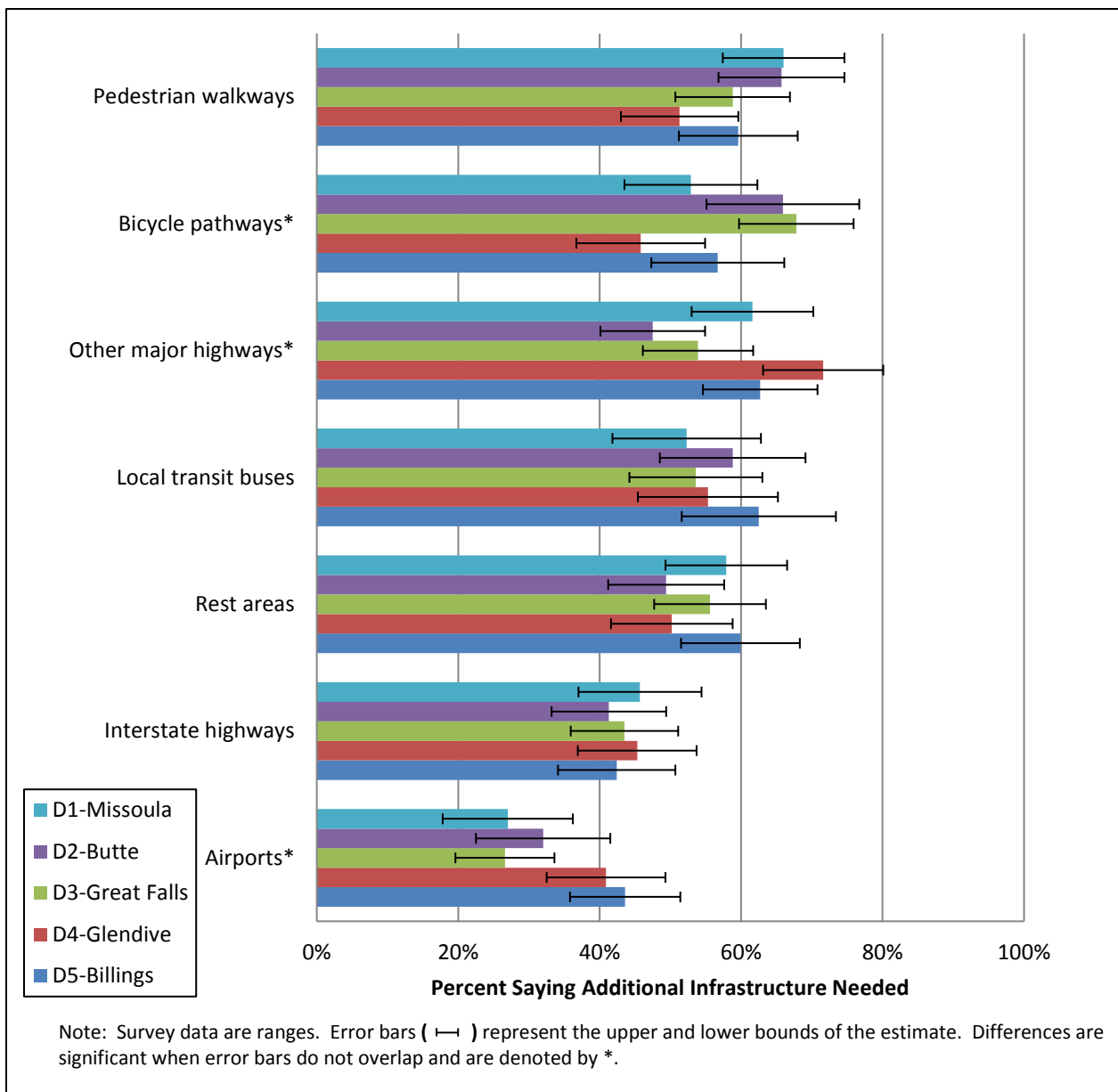


Districts

A few regional differences were found when looking across MDT districts (Figure 2.5).

- District 4-Glendive perceives the greatest need for additional other major highway infrastructure and the least need for bicycle pathways.
- Districts 2-Butte and 3-Great Falls perceive a greater need for bicycle pathway infrastructure.
- Districts 4-Glendive and 5-Billings perceive a greater need for airport infrastructure (although the difference is not significant).

Figure 2.5: Perceived Need for Additional Facilities, Equipment, or Services in Each MDT District



“How satisfied are you with the availability of service?”

Respondents were asked to rank service availability on a scale of one to ten, where one is “very unsatisfied” and ten is “very satisfied.”

- Respondents stated they were moderately satisfied with the availability of air transportation to destinations outside Montana (6.60) and freight rail service (6.45).
- Montanans rank transit for the elderly or disabled (5.78), air transport within Montana (5.71), and local bus or van service (5.55) lower in service availability although respondents remain satisfied.
- Montanans are least satisfied about the availability of intercity bus service (4.74) and passenger rail service (4.67).

Table 2.3: Mean Satisfaction with Service Availability

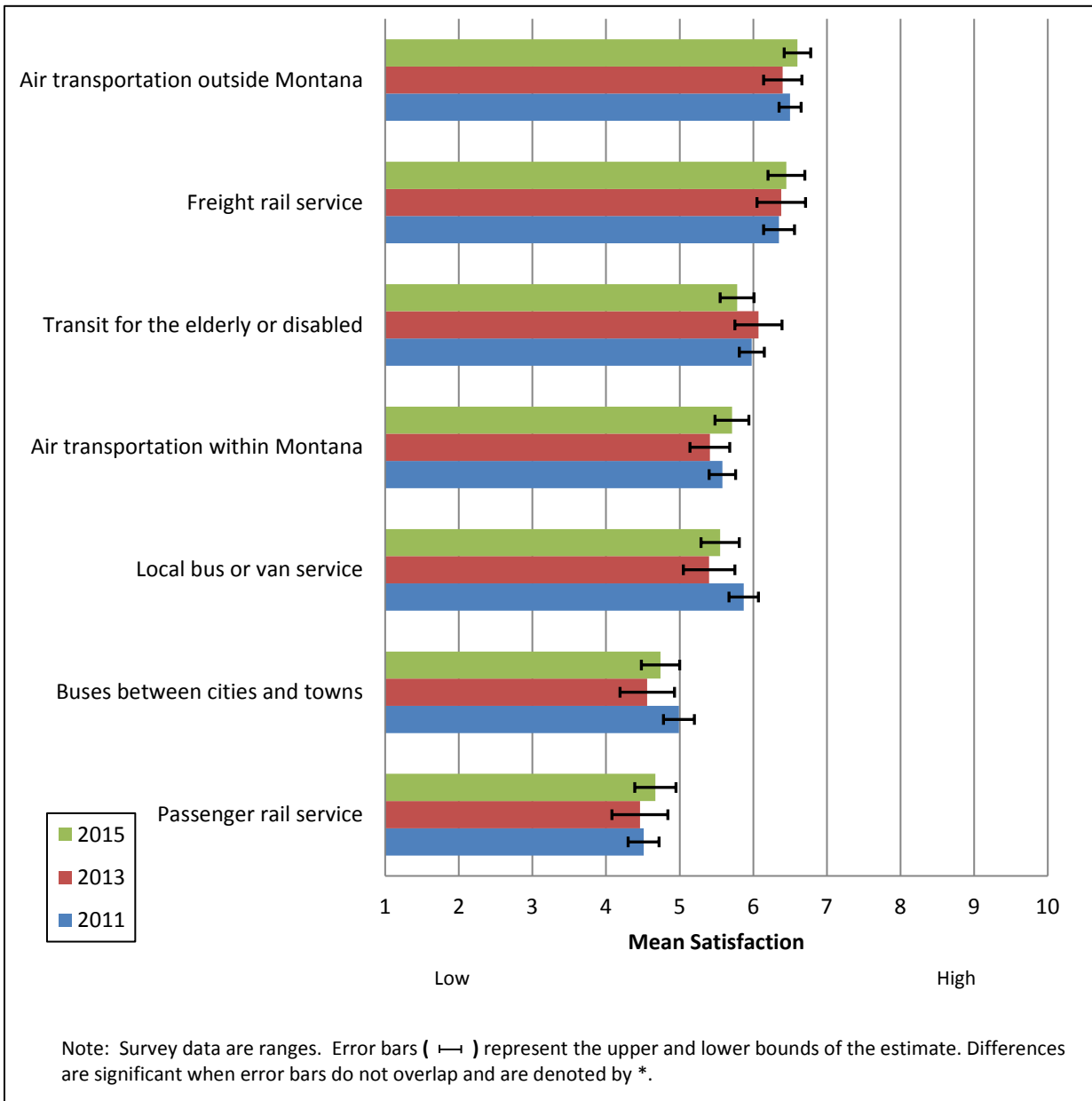
	95% Confidence			Number of respondents
	Mean	Lower limit	Upper limit	
Air transportation outside Montana	6.60	6.42	6.78	896
Freight rail service	6.45	6.20	6.70	535
Transit for the elderly or disabled	5.78	5.55	6.01	713
Air transportation within Montana	5.71	5.48	5.94	734
Local bus or van service	5.55	5.28	5.81	662
Intercity buses	4.74	4.48	5.00	660
Passenger rail service	4.67	4.39	4.94	652

Trends

Figure 2.6 compares survey respondents' levels of satisfaction with the availability of various transportation services in Montana's transportation system across time.

- The relative ranking has remained constant over the last three iterations of the survey.
- Satisfaction with transit for the elderly or disabled has declined slightly since the 2011 and 2013 surveys.
- Passenger rail service and buses between cities and towns remain the lowest ranked transportation service.

Figure 2.6: Comparison of Availability of Service in Montana's Transportation System, 2011-2015



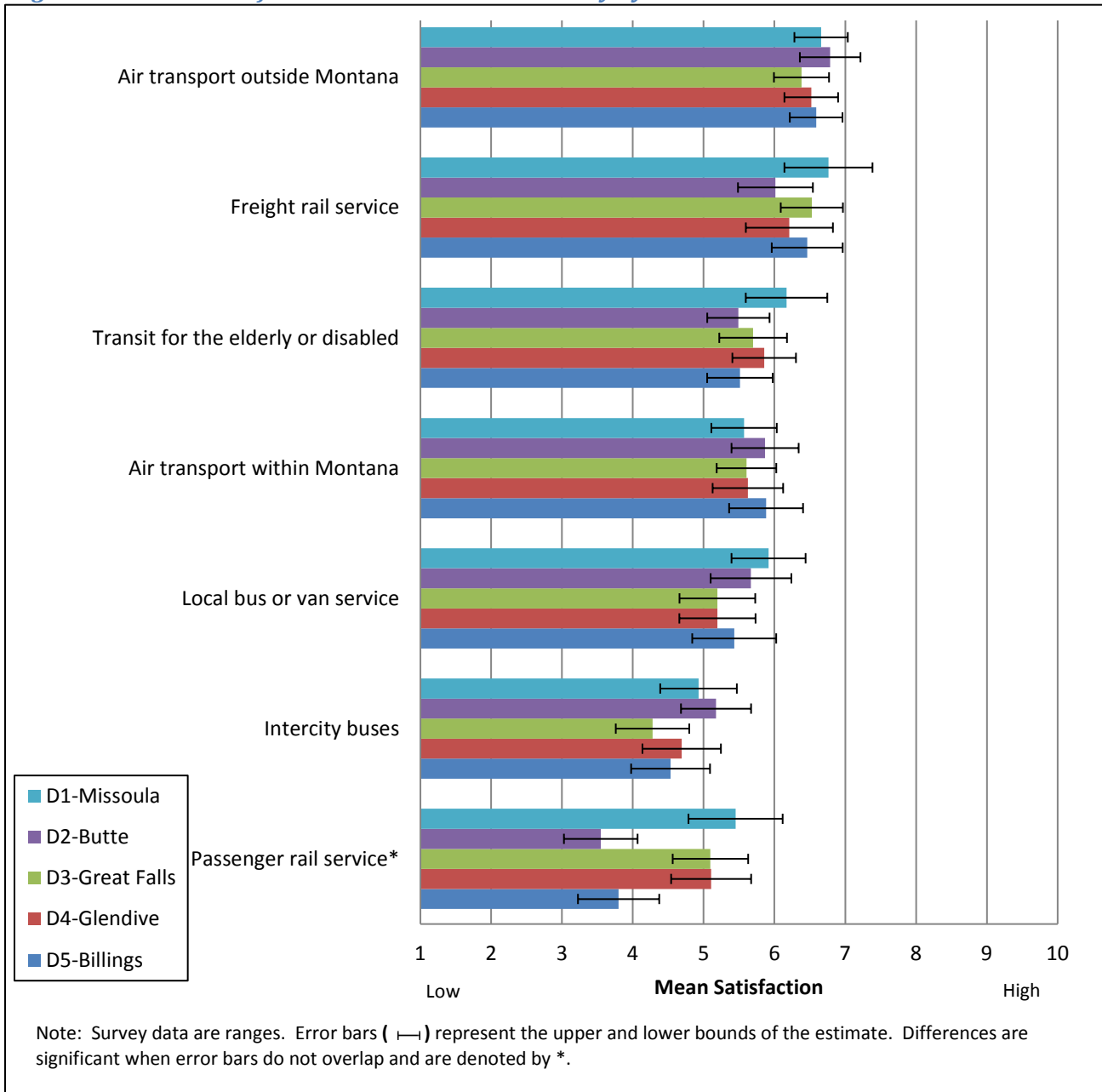
Districts

Figure 2.7 shows the mean levels of satisfaction of the same seven transportation services by MDT District.

- There are few differences among MDT Transportation Districts for the seven transportation services queried.

- The availability of passenger rail service showed differences with Districts 2-Butte and 5-Billings being significantly less satisfied.
- District 3-Great Falls is slightly less satisfied with intercity bus availability.

Figure 2.7: Mean Satisfaction with Service Availability by MDT District



“Please tell me if you think the following areas are a possible problem with transportation in Montana.”

Montanans rated possible problems (Table 2.4) on a scale from one to four, where one is “not a problem” and four is a “serious problem.”

- Montanans classified only one of the fifteen problems studied, road pavement, as meriting moderate concern, with a mean score of 2.65.
- Nearly 20% of Montanans view road pavement condition as a serious problem. No other potential problem reached this level of awareness, reinforcing the positive overall level of satisfaction with the transportation system expressed by Montanans.
- The majority of Montanans do not view adequate road signs, air quality from highway maintenance, or too many access points as a problem.
- Many respondents did not know if freight and economic vitality posed a problem.

Table 2.4: Possible System Problems with Montana Transportation System

	Serious problem	Moderate problem	Small problem	Not a problem	Don't know	Mean	Number of respondents
Road pavement condition	19.4%	43.5%	18.1%	18.2%	0.9%	2.65	1,036
Traffic congestion	11.4%	30.8%	21.9%	34.2%	1.7%	2.20	1,036
Vehicle damage from highway construction and maintenance	9.0%	28.2%	28.0%	31.3%	3.5%	2.15	1,033
Timely resolution to safety issues	8.5%	27.9%	16.3%	35.1%	12.2%	2.11	1,034
Debris on roadways	8.1%	24.9%	31.5%	34.1%	1.5%	2.07	1,034
Number and condition of rest areas	9.2%	25.1%	20.5%	38.0%	7.3%	2.06	1,036
Impacts on the environment from the transportation system	6.0%	27.6%	22.8%	38.4%	5.4%	2.01	1,036
The ability to manage specific emergency situations	8.3%	20.2%	19.6%	38.7%	13.3%	1.98	1,035
Freight and economic vitality	5.1%	20.4%	15.0%	35.6%	23.9%	1.93	1,033
Lack of alternative routes for major roads	6.9%	23.0%	22.2%	44.7%	3.2%	1.92	1,035
Vehicle carbon monoxide emissions	6.0%	19.8%	20.5%	48.8%	5.0%	1.82	1,035
Too many access points (including driveways) onto major roads	5.1%	18.9%	19.3%	52.7%	4.0%	1.75	1,036
Air quality impacts from highway maintenance	2.9%	16.7%	23.7%	51.9%	4.8%	1.69	1,036
Adequate road signs	2.6%	13.7%	17.8%	65.0%	0.9%	1.54	1,034

Trends

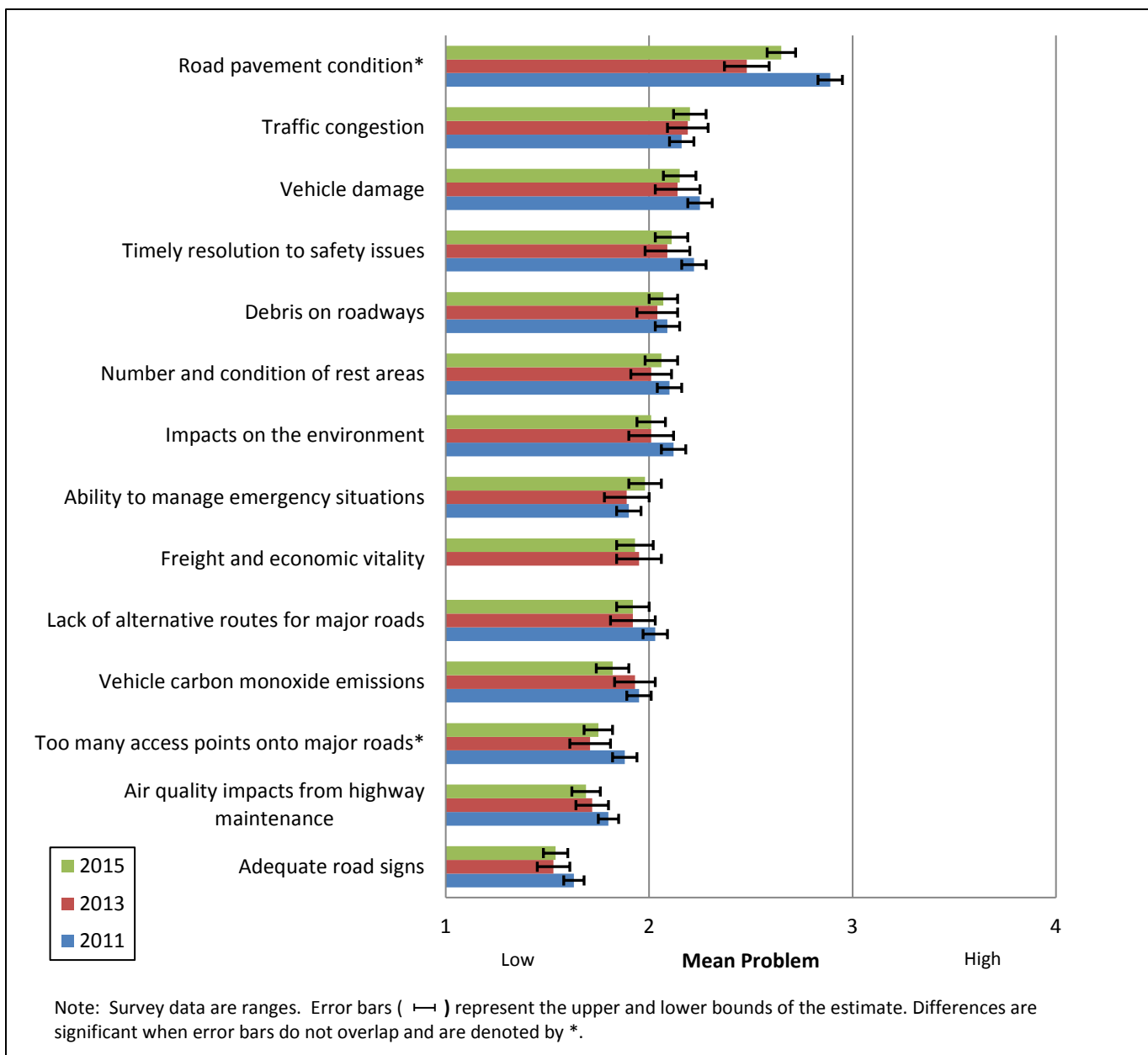
Figure 2.8 shows Montana residents' views over time regarding possible problems with the transportation system.

- Opinions have changed very little over time.
- Road pavement condition is the only statistically significant exception. In 2011

respondents indicated a higher concern for pavement conditions than in 2013 and 2015.

- Road pavement conditions remain the highest ranked problem with the transportation system.

Figure 2.8: Possible Problems with Montana's Transportation System, 2011-2015



District

While only one significant problem emerges when examining statewide data, the conclusions are different at the district level. Figures 2.9a and 2.9b explore the percentage of respondents in each district that say an item is a moderate or serious problem.

- Fewer respondents from Districts 2-Butte and 5-Billings view road pavement as a problem.
- Traffic congestion is less of a problem for Districts 4-Glendive and 5-Billings.
- District 4-Glendive is less concerned with carbon monoxide emissions.

Figure 2.9a: Perceived Moderate or Serious Problems with Montana Transportation System by MDT District

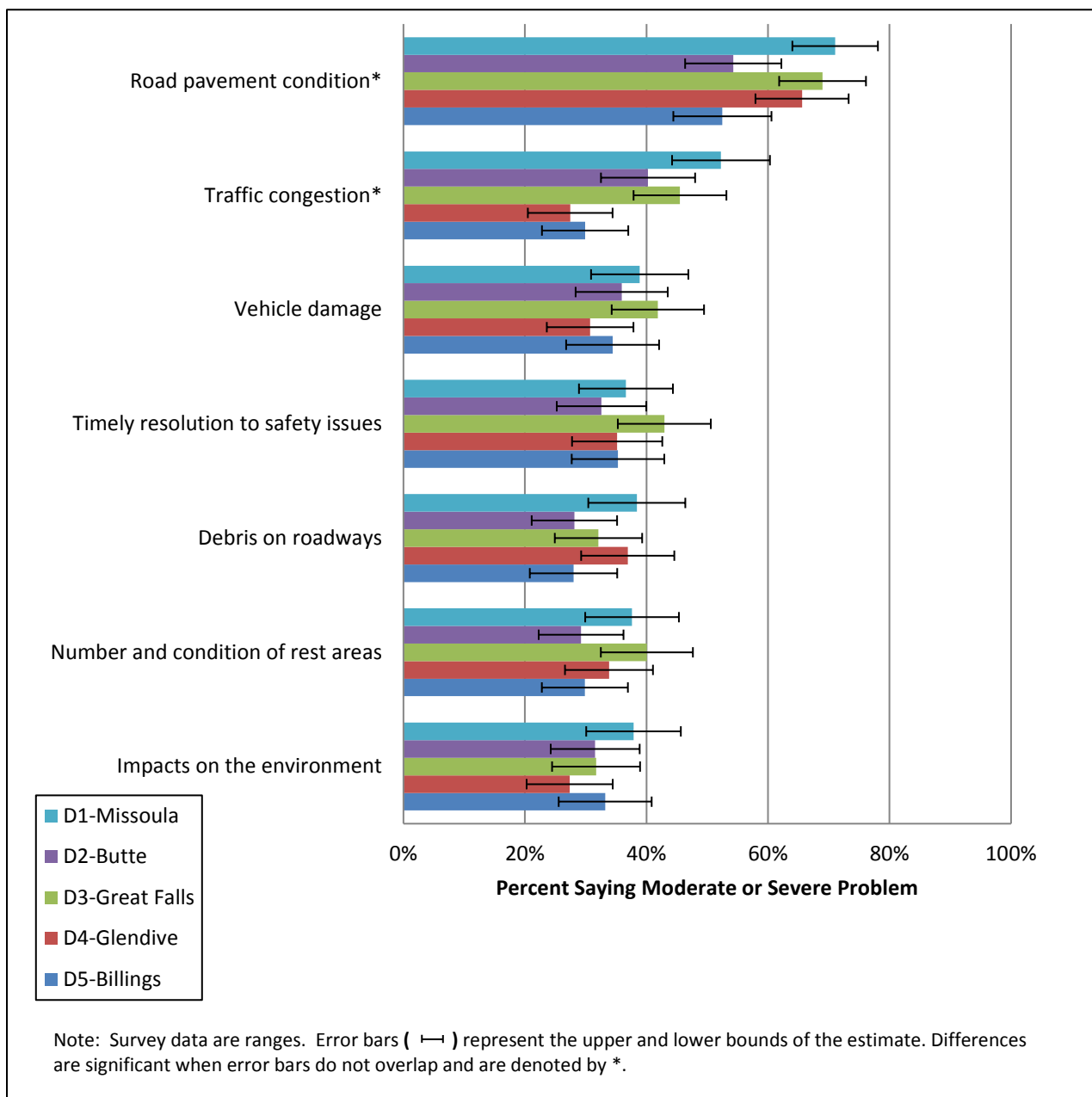
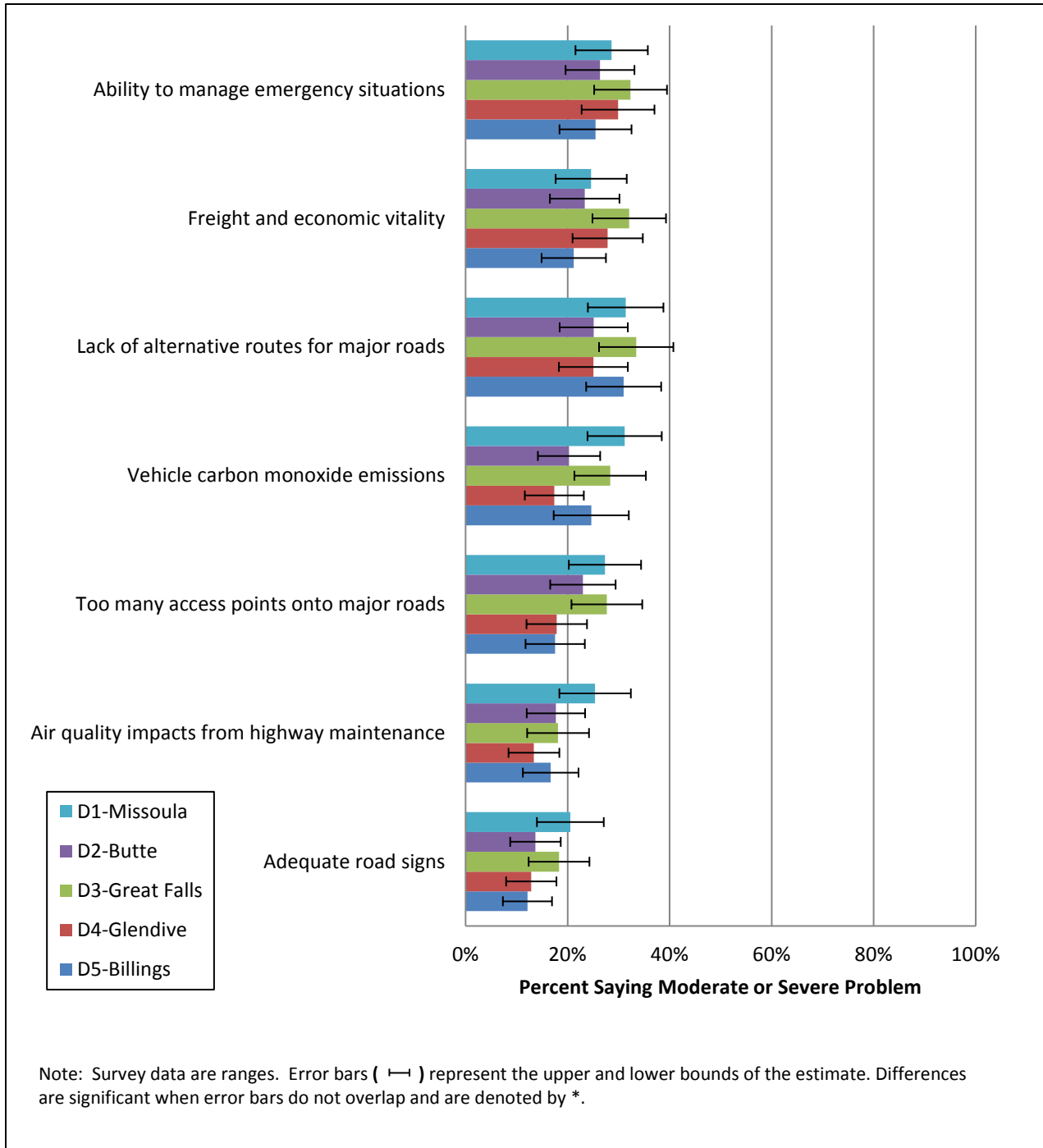


Figure 2.9b: Perceived Moderate or Serious Problems with Montana Transportation System by MDT District



“Please tell me what priority MDT should assign actions that could be taken to improve the transportation system.”

Respondents were asked to prioritize 17 possible actions to improve Montana's transportation system on a scale of one to five (Table 2.5). A value of one was assigned to the very low category, two to somewhat low priority, and so forth. Most felt qualified to prioritize the options presented. While Montanans view most transportation system problems as small, they believe solving those problems should take on a medium or somewhat high priority. Montanans classified, on average, 15 of the 17 possible action items as medium or somewhat high priorities.

- Four actions received somewhat high priority scores with mean scores of 3.5 or higher: maintain road pavement condition, keep the public informed, include wildlife crossings and barriers, and maintain roadside vegetation.

- Eleven actions ranked as medium priority, ranging from improving transportation safety to reducing traffic congestion.
- Only two actions ranked below the midpoint – ensuring adequate bicycle facilities and regulating highway approaches. Montanans prioritize these actions the lowest in terms of improving the transportation system.

Table 2.5: Priority of Possible Actions to Improve Transportation System

	Very high priority	Somewhat high priority	Medium priority	Somewhat low priority	Very low priority	Don't know	Mean	Number of respondents
Maintain road pavement condition	28.8%	30.2%	28.5%	7.9%	4.0%	0.7%	3.72	1,036
Keep the public informed	26.2%	28.8%	30.7%	8.6%	4.1%	1.7%	3.65	1,035
Include wildlife crossings and barriers	26.0%	30.0%	24.7%	11.9%	5.0%	2.4%	3.62	1,032
Maintain roadside vegetation	25.9%	29.8%	25.1%	11.4%	5.4%	2.4%	3.61	1,034
Improve transportation safety	26.0%	23.4%	27.1%	13.1%	7.7%	2.7%	3.48	1,036
Social media, mobile apps, etc.	20.3%	30.6%	26.8%	10.4%	9.1%	2.7%	3.44	1,035
Preserve existing passenger rail service	22.7%	22.7%	24.4%	13.0%	7.9%	9.3%	3.43	1,034
Improve semi-truck parking and facilities	15.3%	22.5%	30.4%	16.5%	6.4%	8.9%	3.26	1,030
Promote the use of local transit systems	16.5%	25.0%	27.1%	15.8%	9.9%	5.8%	3.24	1,036
Maintain physical condition of buses	15.8%	21.0%	28.1%	12.9%	9.7%	12.5%	3.23	1,033
Ensure adequate pedestrian facilities	18.7%	20.9%	28.3%	19.5%	10.0%	2.6%	3.19	1,035
Increase scheduled airline service	14.3%	21.0%	26.7%	16.5%	10.0%	11.5%	3.15	1,035
Improve rest areas	15.7%	19.7%	29.9%	20.6%	9.2%	4.9%	3.13	1,034
Improve the interstates and major highways	13.4%	21.2%	35.0%	20.6%	8.6%	1.3%	3.10	1,036
Reduce traffic congestion	14.4%	22.0%	27.6%	19.4%	13.2%	3.5%	3.05	1,035
Ensure adequate bicycle facilities	14.4%	17.8%	26.4%	19.8%	15.6%	5.9%	2.95	1,036
Regulate highway approaches	8.3%	18.2%	29.2%	22.5%	14.9%	7.0%	2.81	1,034

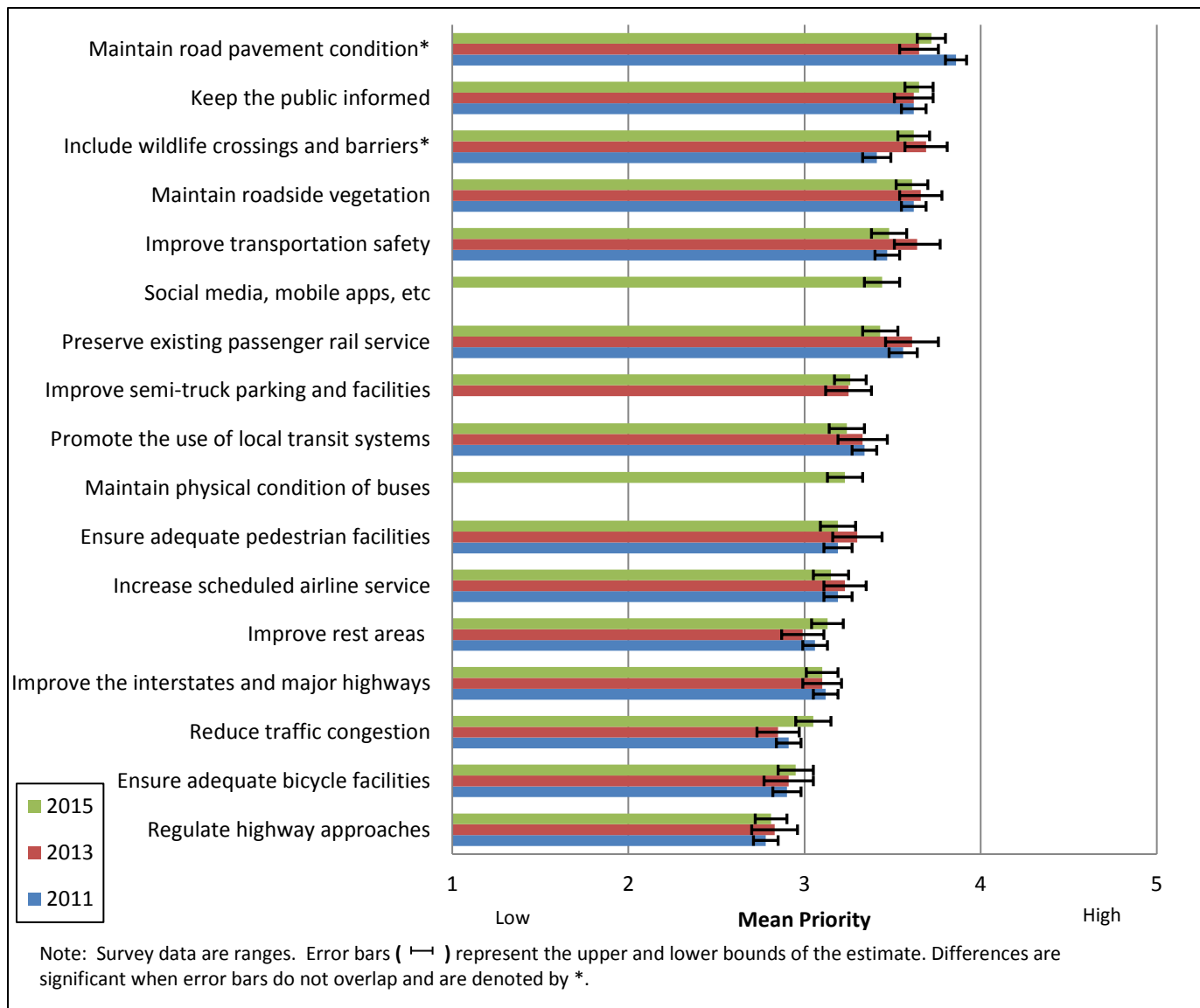
Trends

Figure 2.10 shows the priority for various actions to improve Montana's transportation system over time.

- Keeping the public informed, maintaining road pavement conditions, including wildlife crossings and barriers, and maintaining roadside vegetation are priorities over the long term.
- Preserving existing rail service and improving

- transportation safety decreased slightly in 2015.
- Adequate bicycle facilities and the number of highway approaches are not priority problems.
- While improving rest areas and reducing congestion rank low these categories saw the greatest increase in priority in 2015.
- Two new categories, social media and the physical condition of buses, rank as medium priority.

Figure 2.10: Possible Improvements in the Transportation System and Roadways, 2011-2015



District

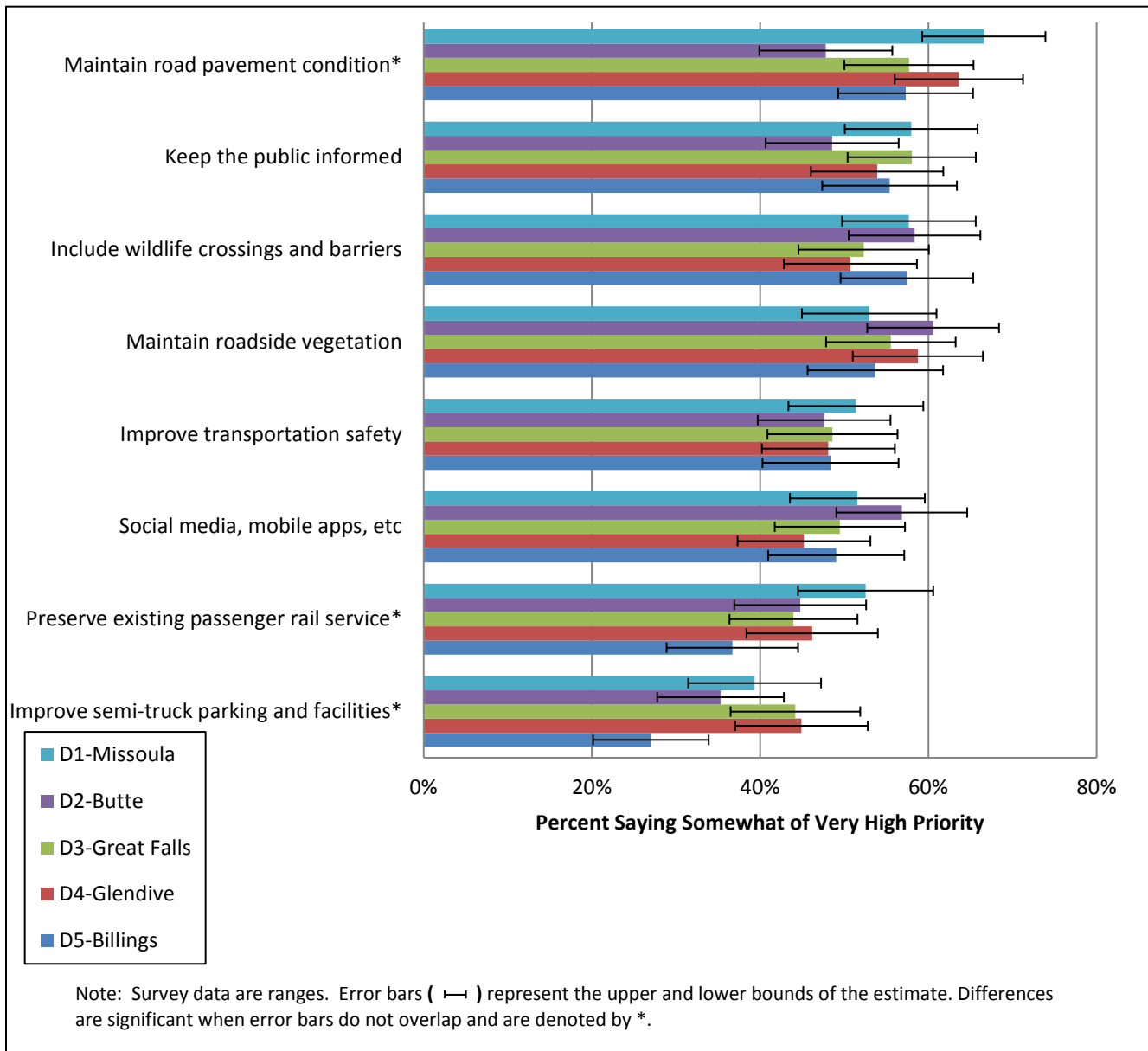
Priorities for possible actions to improve the transportation system were also examined across each of the five MDT districts. The percentage of respondents in each district who said an action was a somewhat or very high priority is presented in figures 2.11a and 2.11b.

- On average, respondents classified almost all of

the studied actions as medium priorities.

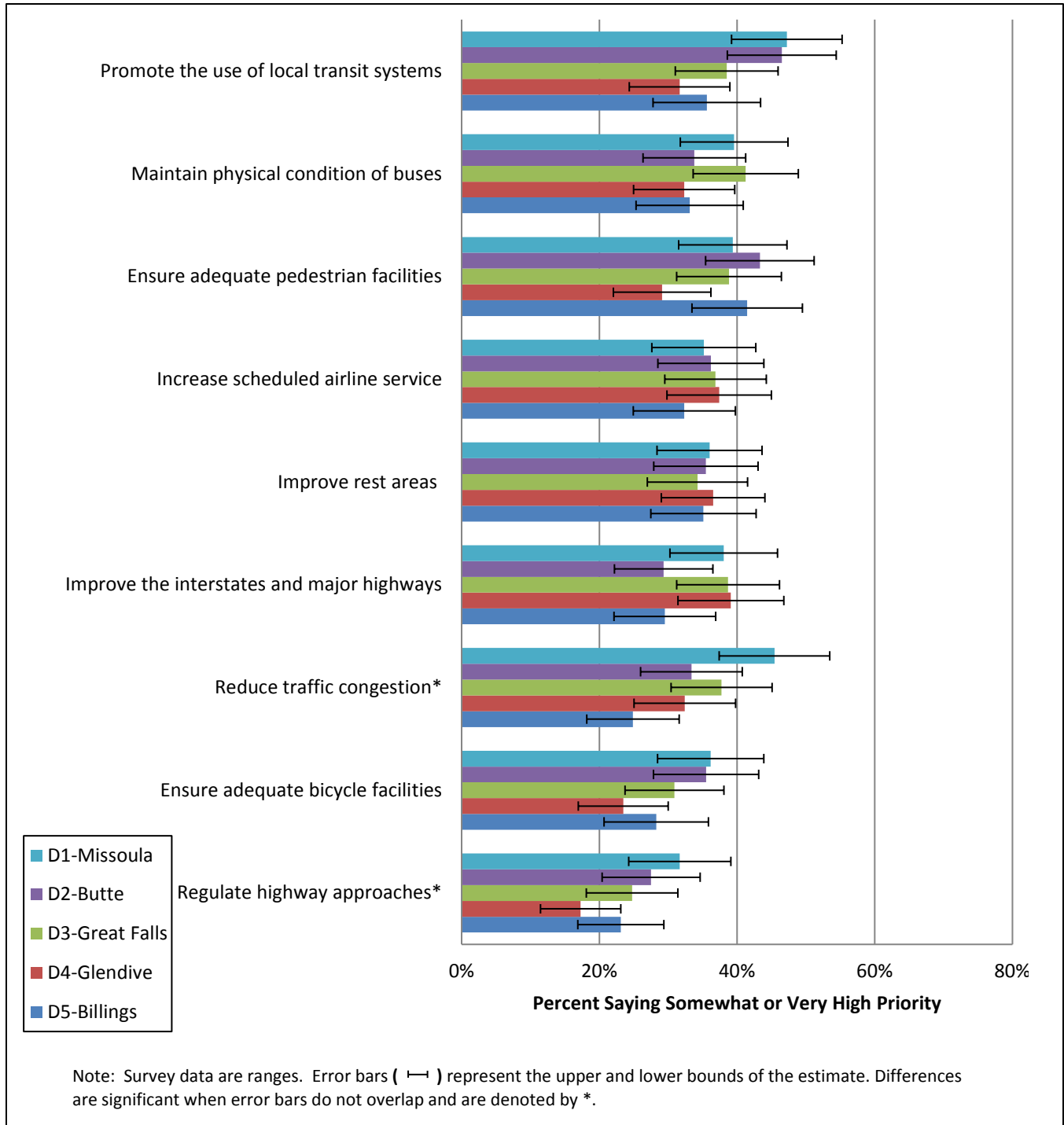
- Maintaining road pavement is a higher priority in District 1-Missoula than in District 2-Butte.
- Improving semi-truck parking and facilities ranks as a relatively lower priority in District 5-Billings.
- District 4-Glendive prioritizes public transport lower than average.

Figure 2.11a: Possible Actions to Improve Transportation System a Somewhat or Very High Priority by MDT District



2. Attitudes About Montana's Transportation System

Figure 2.11b: Possible Actions to Improve Transportation System a Somewhat or Very High Priority by MDT District



“Do you think you are getting more or less value than \$182 per year?”

The average Montanan pays \$182 per year in state and federal fuel taxes to support transportation infrastructure. Respondents were asked if they felt that they received more or less than \$182 per year in value from the transportation system.

- The majority of respondents felt they received either about \$182 per year or more (Table 3.1).
- District 4-Glendive perceives the least value from the transportation system.

Table 3.1: Montanans Perceived Value from the Transportation System

	More value	About \$182	Less value	Don't know	Number of respondents
Whole sample	31.9%	38.8%	19.9%	9.4%	1,029
By district					
District 1	32.5%	40.3%	20.4%	6.8%	206
District 2	36.8%	34.1%	16.0%	13.1%	199
District 3	31.4%	40.2%	23.5%	5.0%	211
District 4	26.3%	38.1%	30.2%	5.3%	214
District 5	29.0%	39.8%	15.2%	16.1%	199

“Which of the following should be funded at a lower level?”

Respondents were also asked to evaluate potential aspects of the transportation system to decrease funding to if MDT’s overall funding decreased.

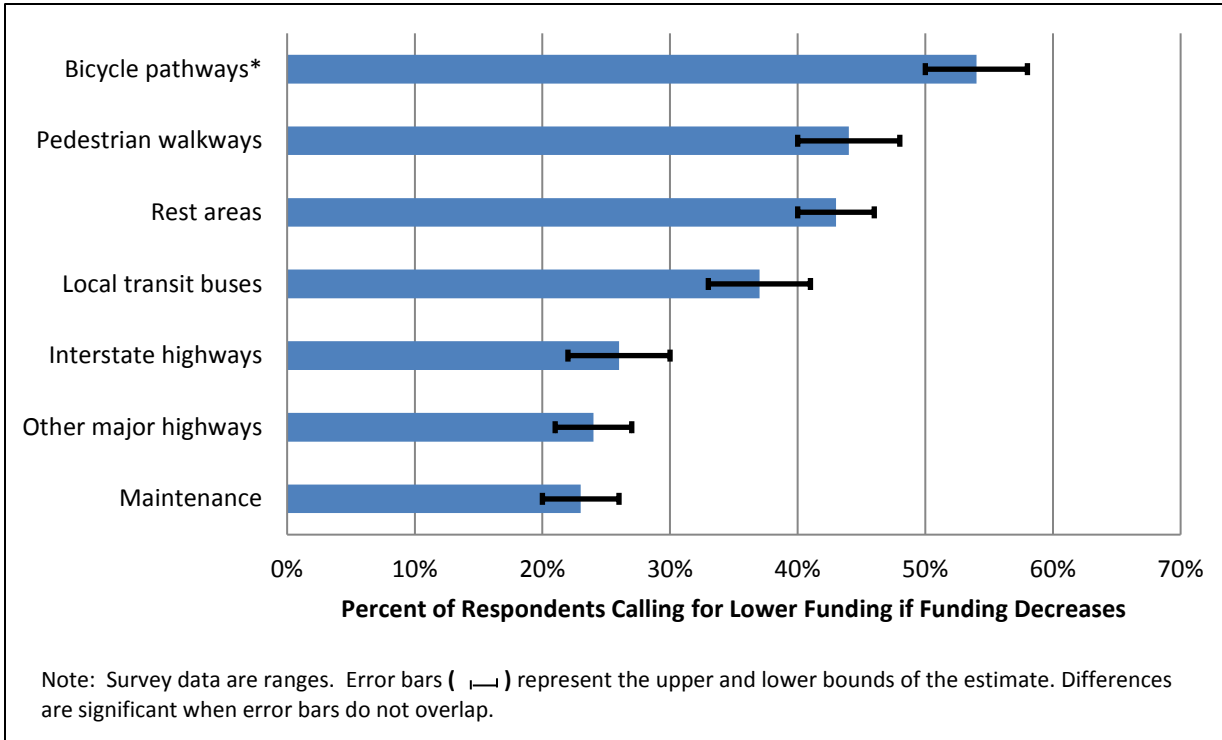
Table 3.2 and Figure 3.1 present results.

- Pedestrian walkways and bicycle pathways rank as the most preferable areas to decrease funding.
- Maintenance, other major highways, and interstate highways rank as the least preferable for decreased funding.

Table 3.2: Possible Areas to Decrease Funding

	Yes	No	Do not know	Number of respondents
Pedestrian walkways	52.2%	40.5%	7.3%	1,020
Bicycle pathways	48.9%	41.0%	10.1%	1,026
Rest areas	40.2%	52.3%	7.5%	1,026
Local transit buses	31.4%	54.2%	14.4%	1,024
Interstate highways	23.3%	66.6%	10.2%	1,021
Other major highways	22.3%	69.6%	8.1%	1,024
Maintenance	21.6%	72.9%	5.6%	1,021

Figure 3.1: Possible Areas to Decrease Funding



“Other areas (be specific)”

Respondents could specify an alternative source for lower funding. Table 3.3 documents the general category of responses.

- The majority of respondents signaled either the government in general or specifically transportation administration to receive funding cuts.
- Other common responses were to cut funding evenly and vegetation.

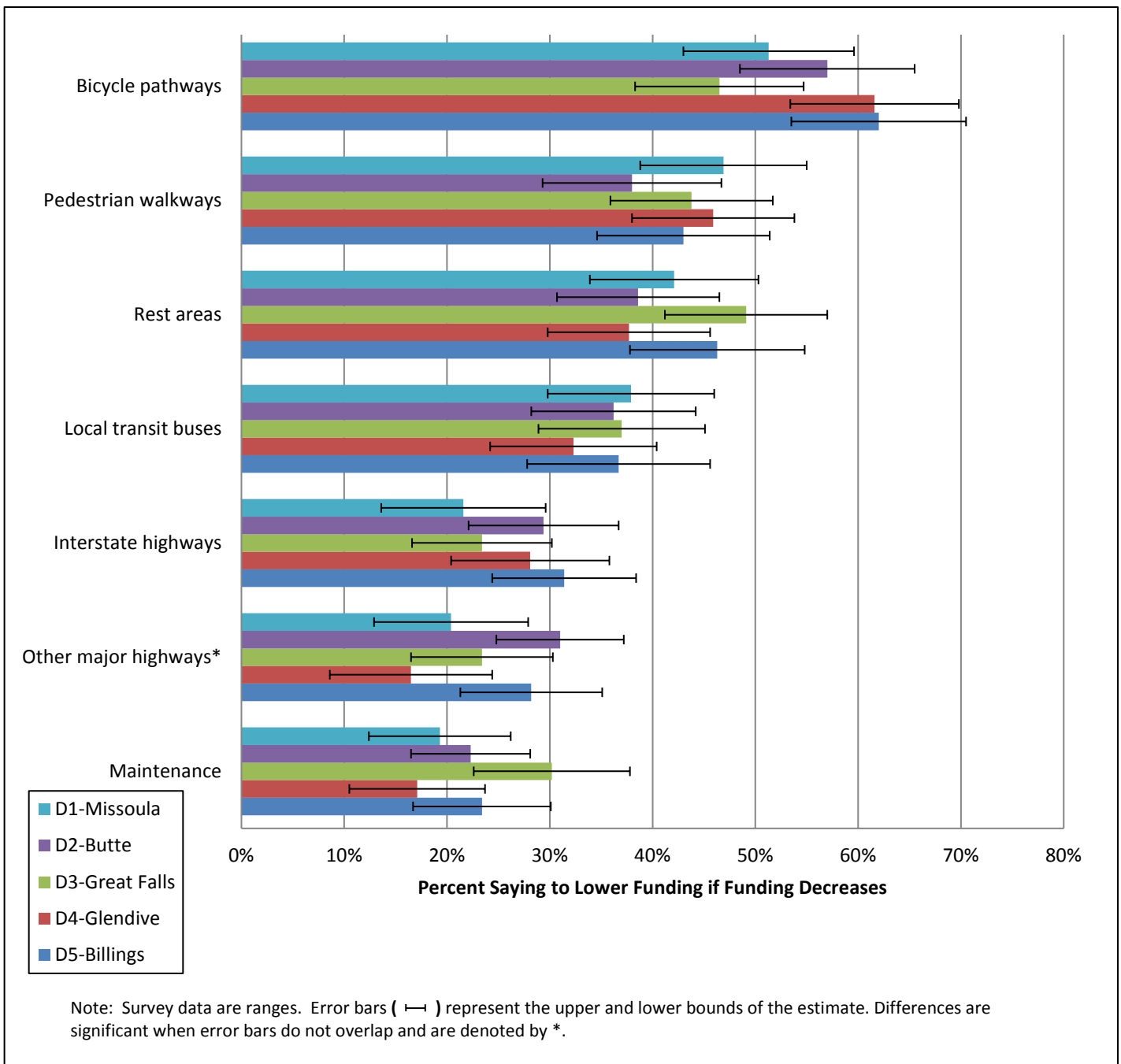
Table 3.3: Other Possible Areas to Decrease Funding

	Responses
Transportation administration and general government	32
Cut funding evenly	5
Vegetation	5
Be more efficient	3
Freight trains and semis	3
Salting or sanding	3
Secondary roads	3
Public transportation	2
Find other revenue	2
Rest areas	2
Wildlife	2
Interstates	1

District

Figure 3.2 displays results by MDT transportation district. The relative ranking of system areas remains more or less consistent by district and responses do not differ at the 95% confidence level.

Figure 3.2: Possible Areas to Decrease Funding by MDT District



“How useful are the methods and tools MDT uses to communicate with its customers?”

Montana residents were asked to rate the usefulness of selected public communication tools used by MDT.

Residents rated each tool on a scale from one to five where one equaled not at all useful and five equaled extremely useful.

- Of the ten tools examined, respondents rated four – variable message highway signs, radio/television, the website, and apps for mobile devices – as somewhat to very useful.
- Social media, surveys, newspapers and the toll-free call in number ranked as somewhat useful.
- Respondents found public meetings in their community and special mailings including brochures, newsletters, and postcards least useful.

Table 4.1: Usefulness of General MDT Communication Tools

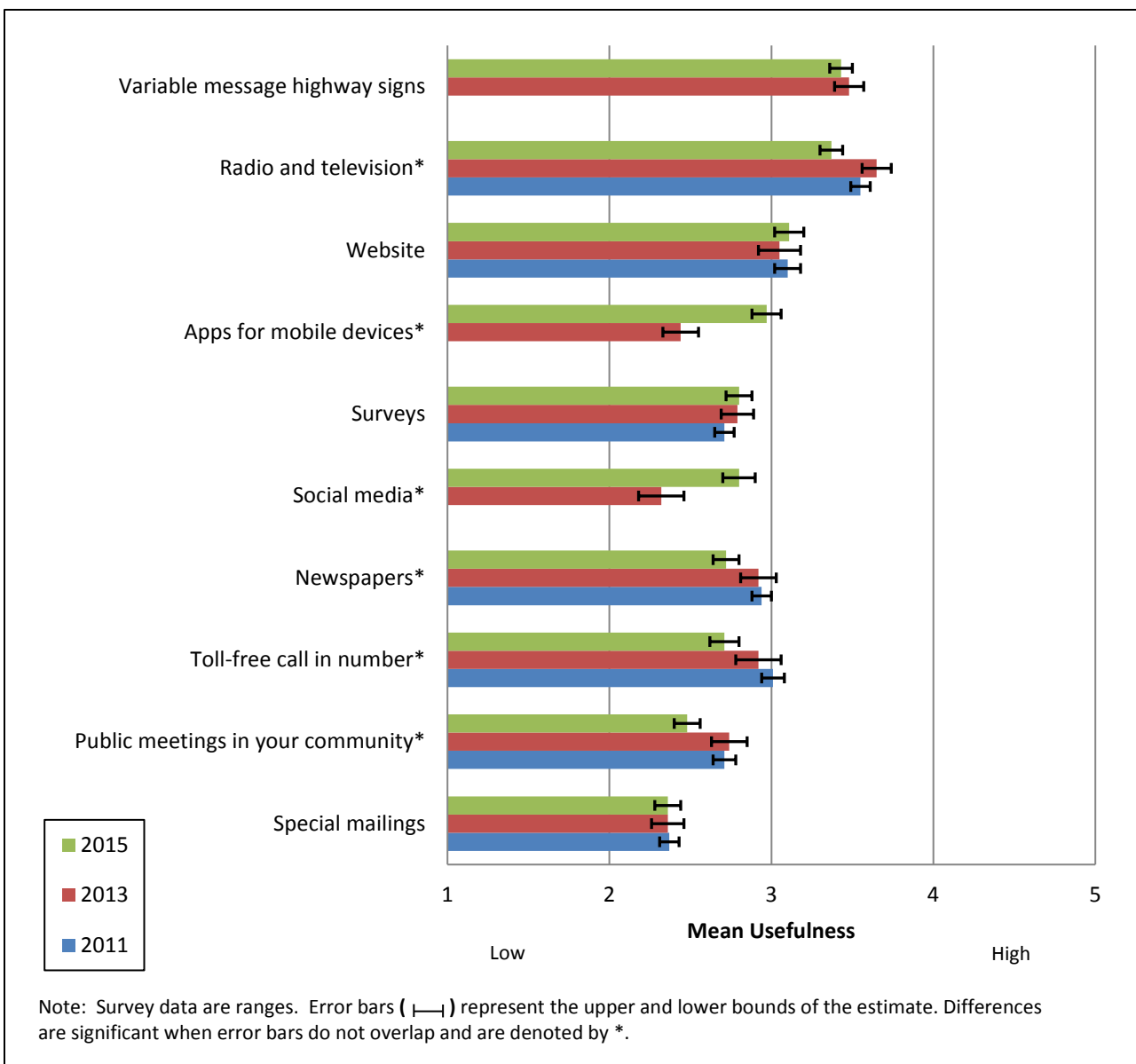
	Extremely useful	Very useful	Somewhat useful	Not very useful	Not at all useful	Don't know	Mean	Number of respondents
Variable message highway signs	9.0%	38.4%	40.4%	5.4%	4.3%	2.5%	3.43	1,017
Radio and television	6.9%	40.3%	38.5%	7.3%	5.1%	2.0%	3.37	1,020
Website	7.8%	29.2%	34.3%	9.5%	12.6%	6.7%	3.11	1,018
Apps for mobile devices	5.3%	28.7%	32.9%	9.4%	16.6%	7.2%	2.97	1,019
Social media	5.9%	25.2%	30.8%	9.7%	23.3%	5.2%	2.80	1,018
Surveys	3.0%	15.1%	48.0%	16.4%	11.7%	5.7%	2.80	1,021
Newspapers	2.9%	16.7%	43.4%	17.3%	16.0%	3.7%	2.72	1,019
Toll-free call in number	6.2%	18.5%	32.1%	17.9%	20.2%	5.2%	2.71	1,021
Public meetings in your community	1.6%	12.3%	37.9%	22.0%	21.6%	4.7%	2.48	1,021
Special mailings	1.6%	12.2%	33.3%	21.6%	28.0%	3.4%	2.36	1,019

Trends

Seven general communication tool questions were asked in surveys since 2011; three additional tools were added in 2013.

- Variable message signs have replaced radio and television as the most useful tool, although the public still finds radio/television relatively useful.
- Apps and social media both significantly increased in usefulness in 2015.
- The toll-free call-in number, newspapers, and public meetings all decreased in usefulness compared to 2011 and 2013.
- The website and surveys have remained fairly constant over time. Special mailings consistently rank last.

Figure 4.1: Usefulness of General MDT Communication Tools, 2011-2015



District

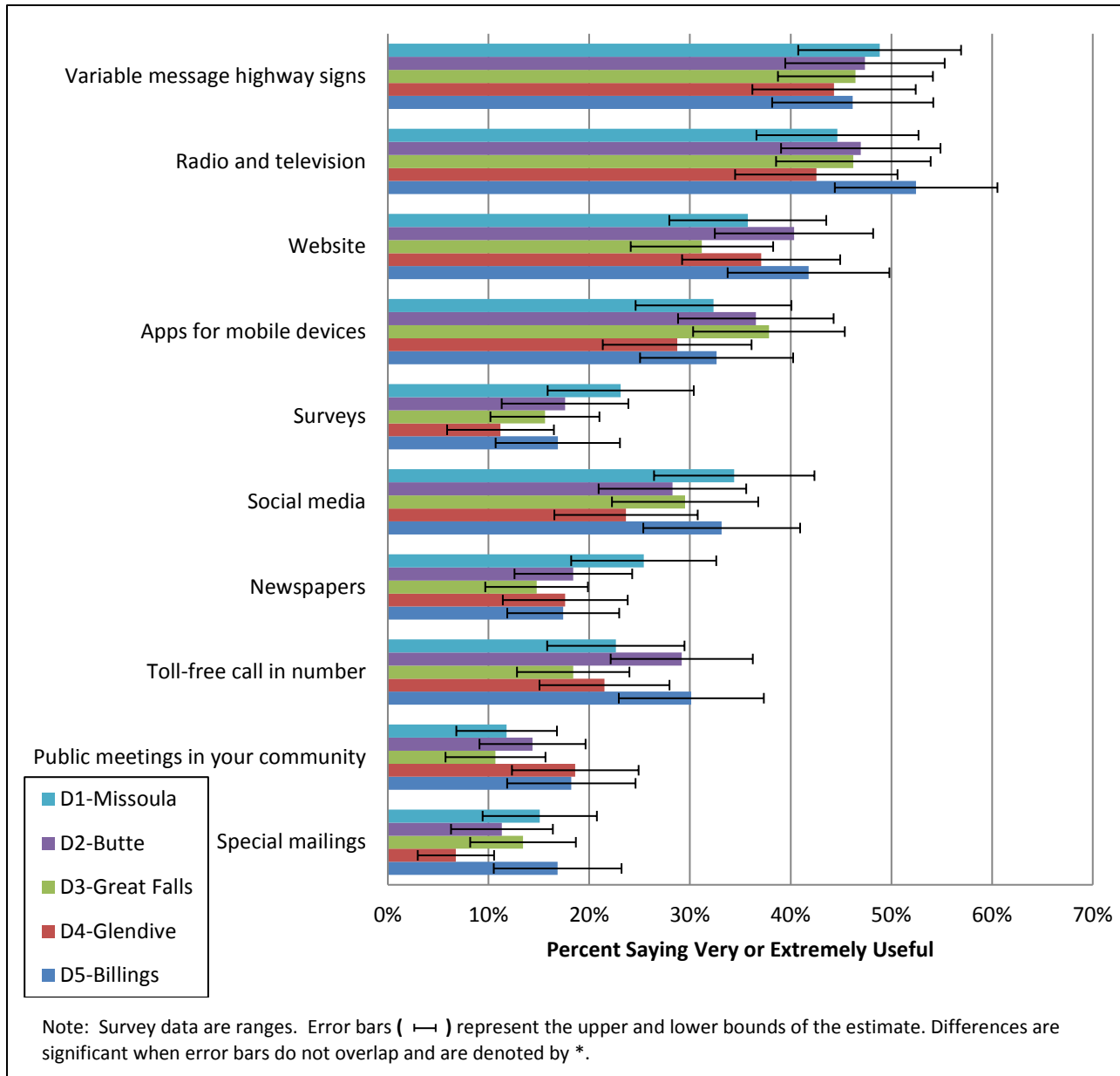
When examined at the MDT District level, residents from different locations within the state generally agreed on their usefulness ratings for each communication tool (Figure 4.2).

- District 5-Billings residents find radio and television the most helpful while other districts

rank variable message signs as most helpful.

- District 4-Glendive residents were slightly less likely to find social media, apps, or surveys useful while District 1-Missoula shows a preference for these communication methods.
- District 3-Great Falls finds the website slightly less useful than other respondents.

Figure 4.2: Usefulness of MDT Communication Tools by MDT District, Percentage Rated Extremely or Very Useful



“How helpful are the tools MDT uses to communicate about plans and proposed projects?”

Adult Montanans also rated tools used specifically by MDT for communicating with the public about planning or projects. They rated each tool on a scale from one to five where one is not at all helpful and five is extremely helpful.

- About half of Montanans (50 percent) said that maps are very helpful or extremely helpful to them in the planning process or in learning about MDT projects.
- Roughly one third said that pictures or graphics (31 percent) and apps (34 percent) are very helpful or extremely helpful to them.
- Newspapers and brochures rank the least helpful communication tools in the planning process for project information.

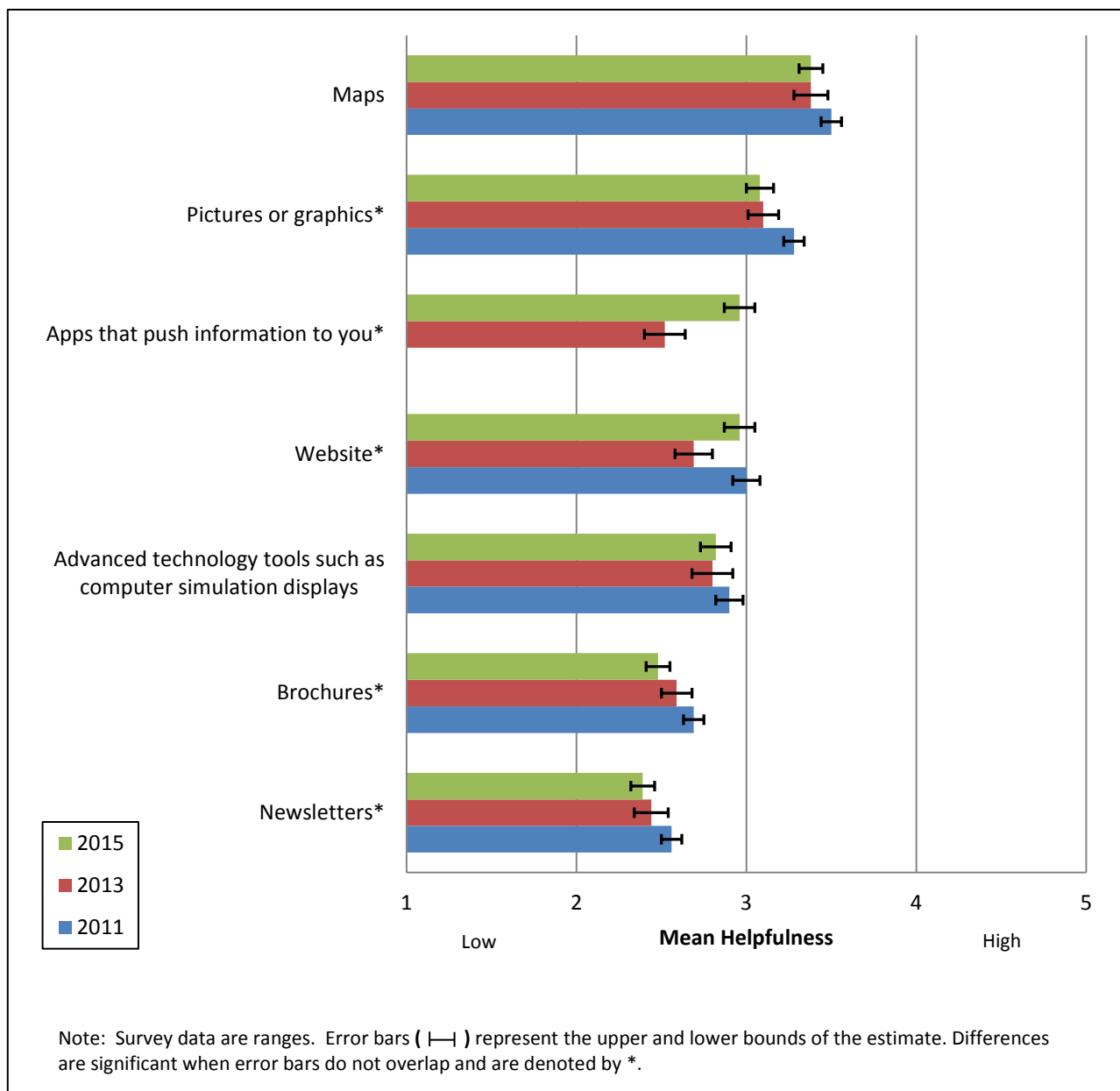
Table 5.1: Helpfulness of MDT Communication Tools in the Planning Process or for Project Information

	Extremely helpful	Very helpful	Somewhat helpful	Not very helpful	Not at all helpful	Don't know	Mean	Number of respondents
Maps	8.2%	41.7%	33.9%	7.5%	6.5%	2.3%	3.38	1,015
Pictures or graphics	4.4%	26.8%	45.0%	9.4%	9.4%	5.1%	3.08	1,015
Apps for mobile devices	6.8%	27.4%	32.0%	10.4%	17.0%	6.4%	2.96	1,015
Website	8.4%	24.1%	35.0%	10.0%	17.5%	5.0%	2.96	1,017
Advanced technology tools	4.6%	24.1%	31.5%	13.6%	18.2%	8.1%	2.82	1,015
Brochures	0.8%	12.0%	39.8%	24.4%	19.8%	3.3%	2.48	1,016
Newsletters	0.4%	11.5%	36.5%	26.0%	22.7%	2.9%	2.39	1,015

Trends

- Maps were rated the most helpful communication tool for presenting project information in all survey iterations.
- Pictures and graphics ranked second and declined slightly from 2011.
- Apps and the MDT website increased in helpfulness compared to 2013.
- Newsletters and brochures as communication tools were not deemed especially helpful and continue to trend downward in 2015.

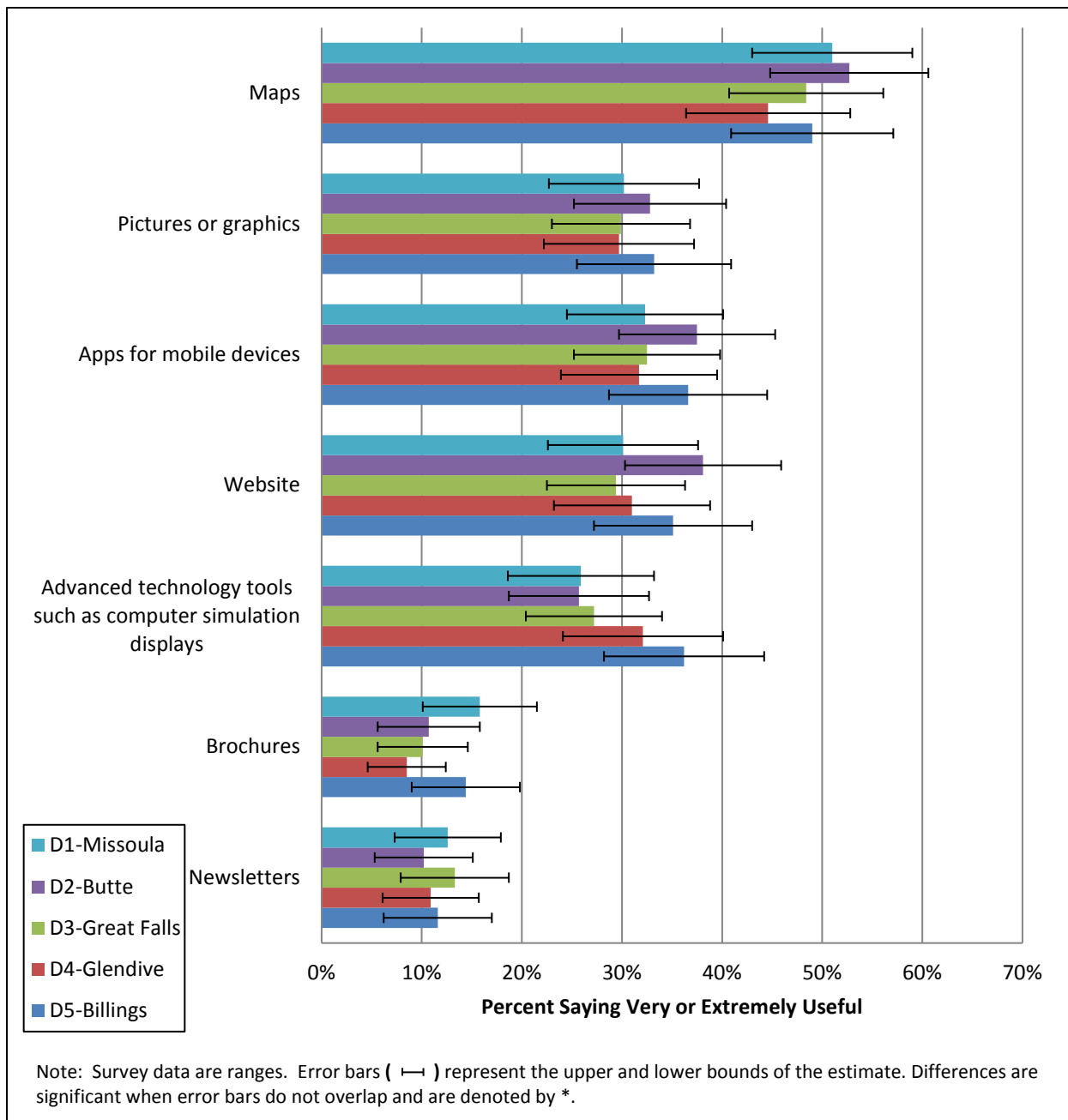
Figure 5.1: Helpfulness of MDT Communication Tools in the Planning Process or for Project Information, 2011-2015



District

- In general, there was very little difference in opinions regarding communication tools among the five MDT Districts.
- District 2-Butte adults find the website and apps slightly more helpful than other districts.

Figure 5.2: MDT Communication Tools in the Planning Process or for Project Information, Percent Rated Extremely or Very Helpful by MDT District



“Please indicate your priority for the following actions that could be taken to improve the function of Montana’s roadways.”

Respondents were asked to prioritize ten possible actions to improve Montana’s roadways (Table 6.1). Respondents were given five choices of priority categories from “very low priority” to “very high priority.” As with the perceived problem items, nearly all respondents felt qualified to prioritize the action items presented.

- The top two possible improvements as measured by the mean score were wider roadways and increased shoulder widths to accommodate motorists. Each of these improvements was rated by Montanans as a somewhat high priority.
- Three items were rated as a medium priority: install rumble strips, increase shoulder widths to accommodate bicyclists, and more guard rails.
- Three potential actions were rated by Montana residents as just under a medium priority: more pavement markings, more lighting of roadways, and more traffic lights and left turn lanes.

- Montanans prioritize narrow travel lanes to allow for bicycles the lowest with 38% ranking as a very low priority.

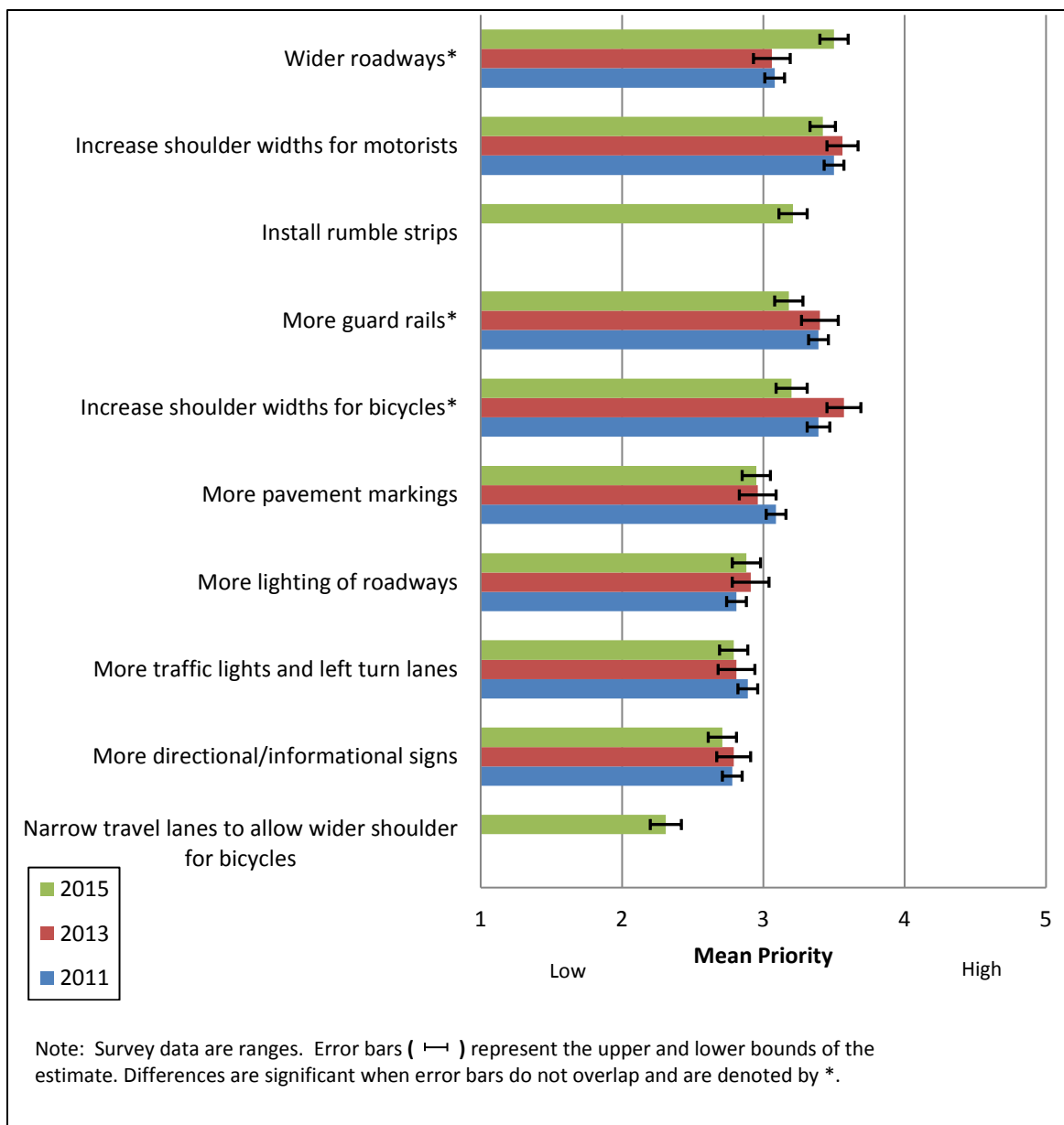
Table 6.1: Priority of Possible Actions to Improve Roadways

	Very high priority	Somewhat high priority	Medium priority	Somewhat low priority	Very low priority	Don't know	Mean	Number of respondents
Wider roadways	26.5%	25.9%	24.6%	13.6%	7.9%	1.7%	3.50	1,026
Increase shoulder widths to accommodate motorists	20.0%	31.2%	26.2%	12.4%	8.9%	1.4%	3.42	1,025
Install rumble strips	19.9%	24.3%	23.1%	15.8%	13.8%	3.1%	3.21	1,023
Increase shoulder widths to accommodate bicyclists	20.6%	21.4%	24.9%	14.3%	14.4%	4.4%	3.20	1,022
More guard rails	16.8%	25.3%	27.2%	16.8%	12.3%	1.5%	3.18	1,025
More pavement markings	13.7%	19.9%	28.8%	21.3%	15.4%	0.9%	2.95	1,027
More lighting of roadways	15.2%	14.7%	27.4%	23.6%	16.4%	2.7%	2.88	1,024
More traffic lights and left turn lanes	11.1%	18.3%	26.4%	21.5%	19.4%	3.4%	2.79	1,023
More directional/informational signs	11.0%	16.1%	24.3%	27.7%	19.5%	1.5%	2.71	1,027
Narrow travel lanes to allow wider shoulder for bicycles	7.7%	13.1%	17.9%	18.4%	37.8%	5.1%	2.31	1,023

Trends

- Wider roadways significantly increased in priority in 2015.
- Increasing shoulder widths for motorists remains a priority action in the opinion of Montanans over time.
- Install rumble strips was added in 2015 and ranks third in priority.
- Increased shoulder width for bicycles significantly decreased over 2013.
- Narrowing travel lanes to allow wider shoulder for bicycles was also added in 2015 and ranks lowest in priority.

Figure 6.1: Priority of Possible Actions to Improve Roadway, 2011-2015

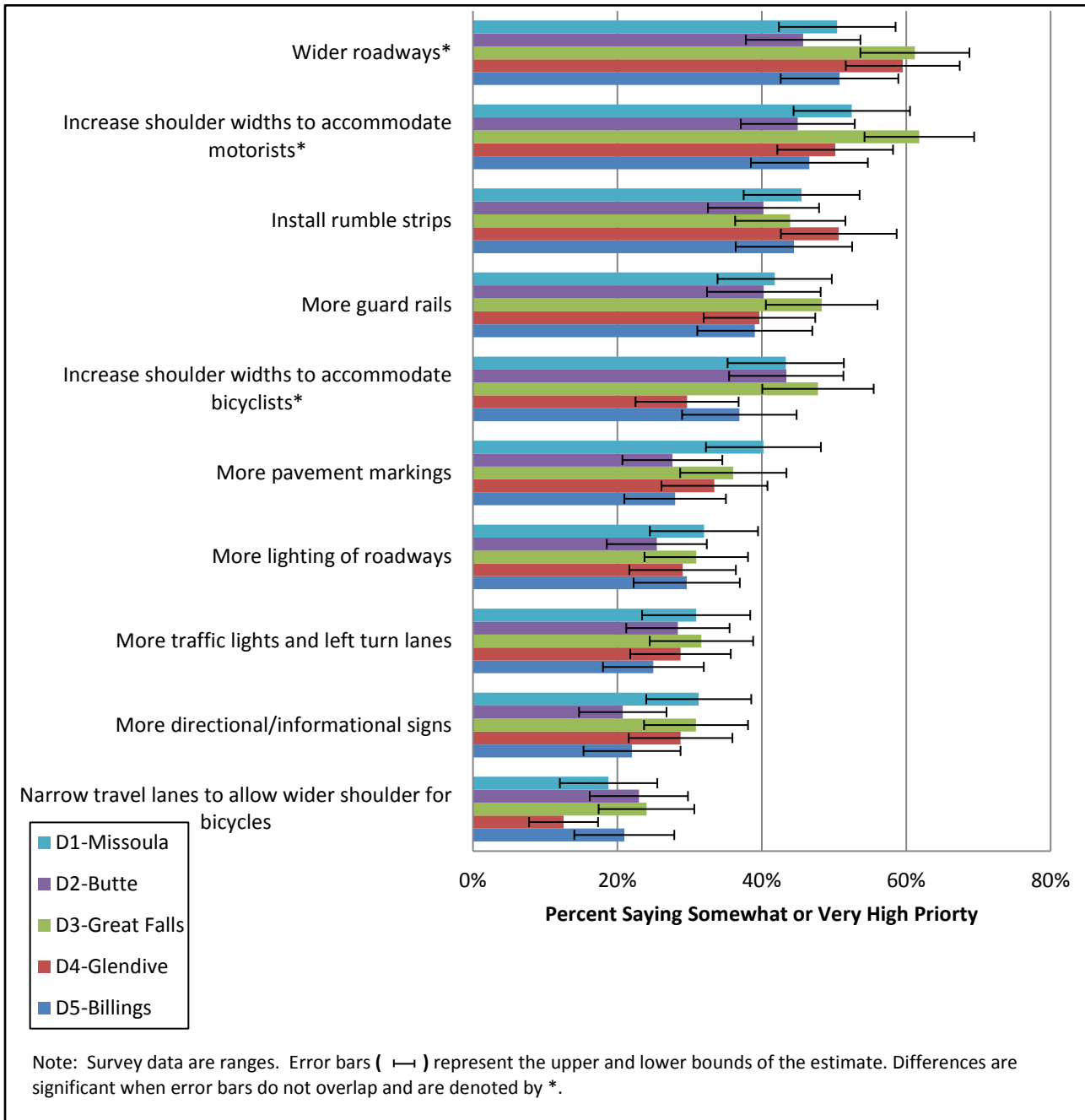


District

There are few differences between the MDT Districts in terms of ranking possible actions to improve roadways.

- District 3-Great Falls residents were more likely to assign a higher priority to increasing shoulder widths for motorist and wider roadways than District 2-Butte residents.

Figure 6.2: Possible Actions to Improve Roadways by MDT District, Percent Saying Somewhat or Very High Priority by MDT District



“The next few questions ask you to grade MDT on its performance.”

The 2015 TranPlan 21 Public Involvement Survey asks a number of questions that examine public opinion regarding overall MDT performance and responsiveness to the public. Respondents were asked to grade MDT on a scale of F (0) to A (4). The responses to those questions are summarized in this section.

- In general, Montanans give MDT an average or above average (B or C+) grade for customer service and performance.
 - Montanans gave the highest grades to MDT’s quality of services compared with five years ago (2.88 on a four-point scale), current MDT quality of service (2.80), MDT’s overall performance over the past year (2.71), and MDT sensitivity to the environment (2.70).
 - Highway maintenance and planning rank slightly lower while convenience of travel through work zones, MDT efforts to keep customers fully informed and public notification of construction projects rank at a C average.
- The lowest grade was given to MDT’s responsiveness to customer ideas and concerns (2.27).

Table 7.1: MDT Overall Performance and Customer Service Grades

	A	B	C	D	F	Don't know	Mean	Number of respondents
MDT quality of service now vs five years ago	19.2%	44.0%	17.0%	5.4%	0.7%	13.7%	2.88	1,016
MDT quality of service it provides	2.7%	15.1%	52.8%	25.2%	3.6%	0.7%	2.80	1,017
MDT’s overall performance during the past year	11.5%	53.4%	28.0%	4.4%	1.1%	1.7%	2.71	1,017
MDT sensitivity to the environment	16.5%	38.9%	24.6%	6.9%	1.5%	11.6%	2.70	1,013
Highway maintenance and repair	15.6%	43.3%	27.3%	9.7%	3.2%	0.9%	2.59	1,015
Overall planning for statewide transportation needs	11.3%	39.0%	30.2%	7.8%	1.6%	10.2%	2.56	1,015
Convenience of travel through work zones	13.2%	40.5%	27.8%	12.5%	4.0%	2.0%	2.47	1,013
MDT efforts to keep customers fully informed	12.1%	33.6%	31.9%	10.9%	3.2%	8.4%	2.44	1,015
Public notification about construction projects in your area	14.8%	34.6%	29.2%	12.6%	5.0%	3.9%	2.43	1,012
Responsiveness to customer ideas and concerns	6.9%	22.8%	27.7%	8.5%	4.6%	29.5%	2.27	1,012

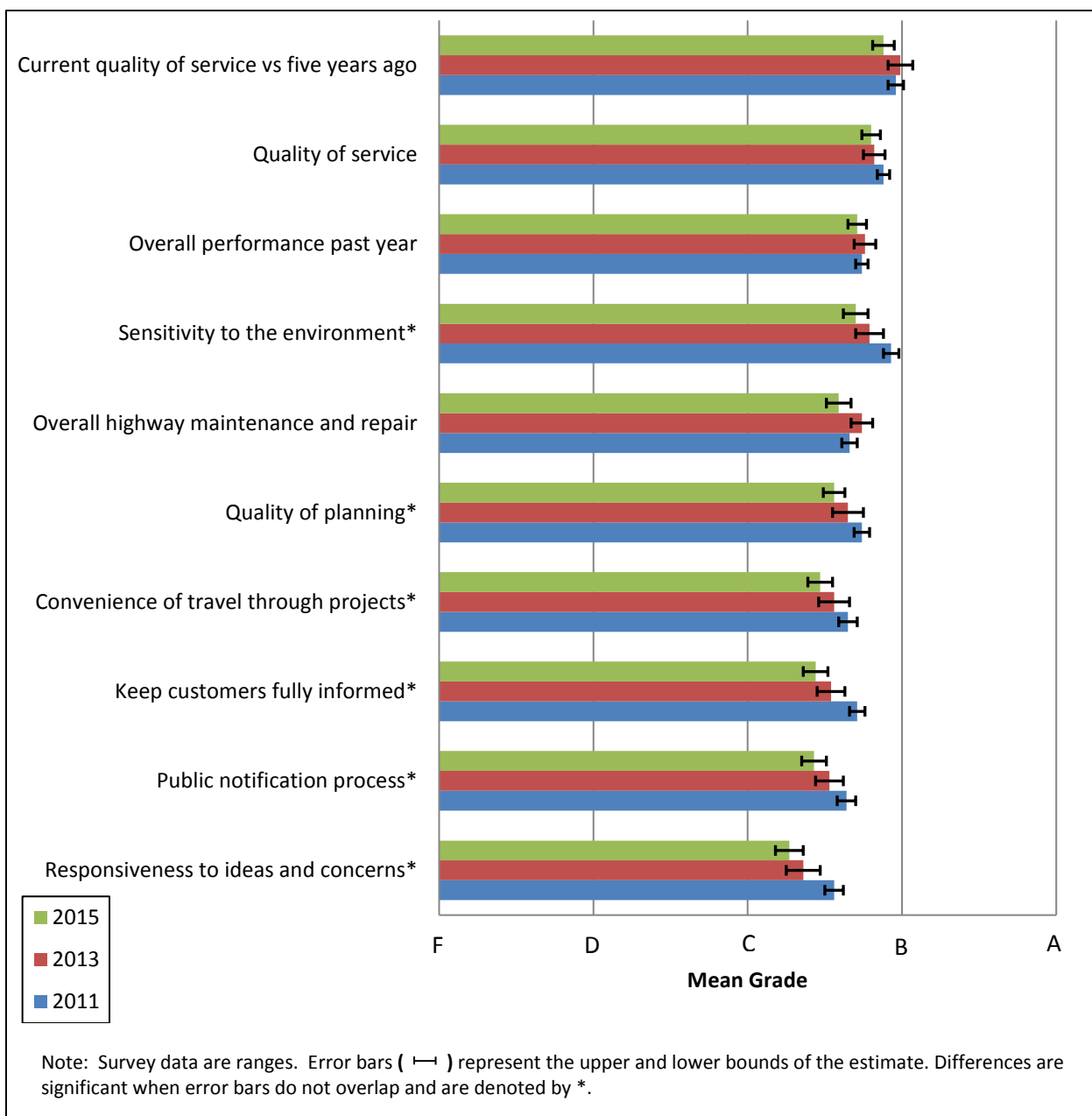
Trends

Grades are available for all statements over time and are displayed in Figure 7.1.

- Grades have remained between C and B over all iterations and display a slight downward trend in 2015.

- Responsiveness to ideas and concerns consistently receives the lowest grade.

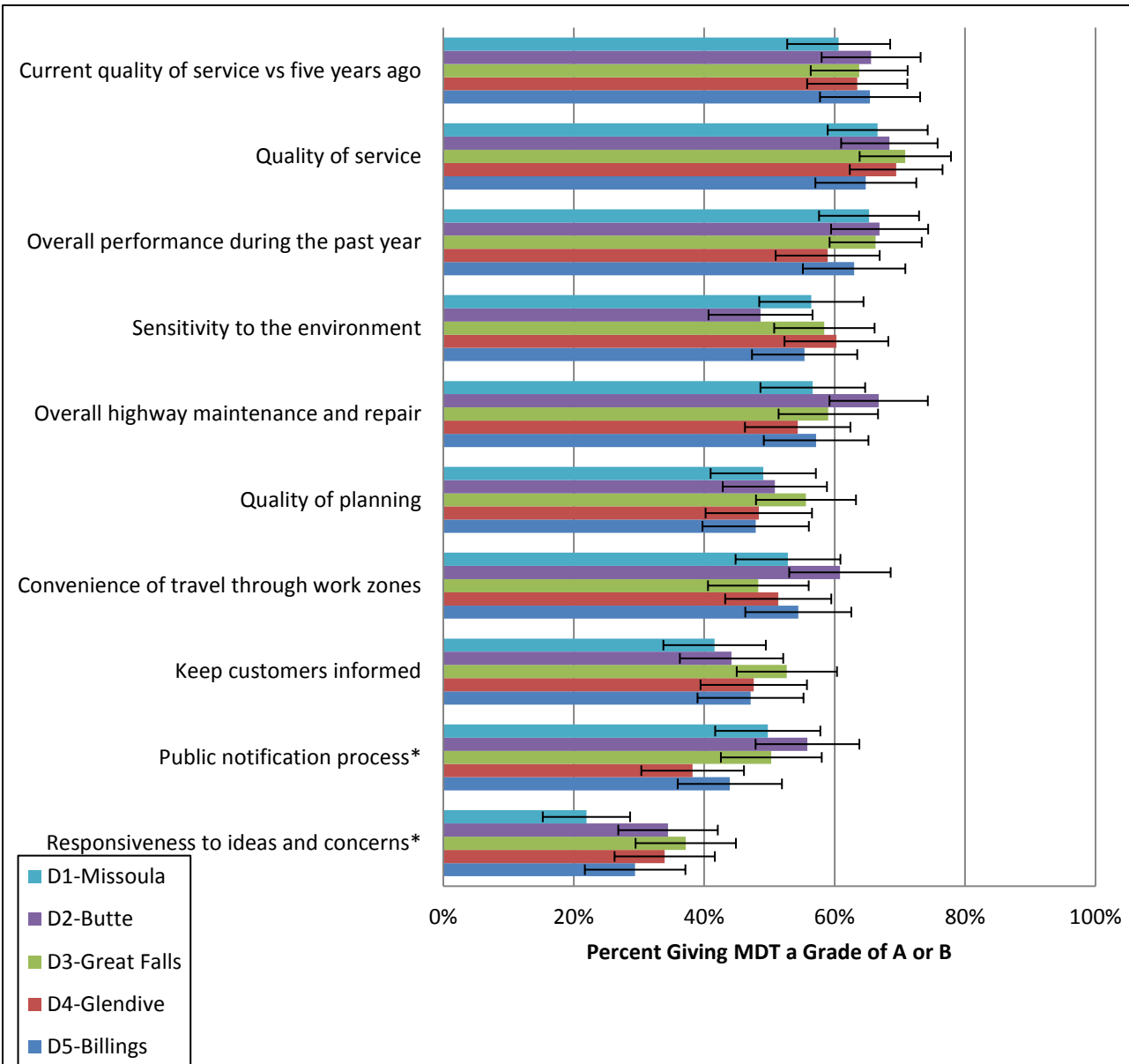
Figure 7.1: MDT Overall Performance and Customer Service Grades, 2011-2015



District

- MDT districts agree on overall performance and customer service grades.
- More District 2-Butte respondents gave a slightly higher grade for overall highway maintenance and repair when compared to other districts.
- District 1-Missoula gave a slightly lower grade for responsiveness to ideas and concerns.

Figure 7.2: MDT Overall Performance and Customer Service Grades in Each MDT District, Percent A or B



Note: Survey data are ranges. Error bars (—) represent the upper and lower bounds of the estimate. Differences are significant when error bars do not overlap and are denoted by *.

“Do you have any comments or suggestions on how MDT could improve?”

Respondents had an opportunity to give further feedback to MDT in an open-ended question format. Responses grouped by subject are presented in Table 8.1. A complete listing can be found in Appendix B of Volume II.

Responses can be viewed as a rough measure of the intensity of people’s feelings about transportation issues. Around 60 percent of respondents chose not to respond, which is not uncommon for open-ended questions.

- The largest category of response (20 percent) was general positive comments towards MDT, such as “They are doing a good job” or “Better than they were ten years ago”.
- Improving road maintenance, including potholes, was also significant with 14 percent of responses.
- Eleven percent of responses were generally negative such as “They waste money”.
- Improving communication and expanding sources of communication received ten percent of comments with an additional three percent specifically citing communication about construction projects.

- The fifth most common response (8 percent) was to improve roadway construction, including improving lane closures or detours, taking down signs when finished, and spreading out work zones.

Six issues received ten or more responses in both 2013 and 2015. These responses were:

- Maintenance and repair
- Snow removal
- Bike and pedestrian issues
- Increase mass/public transit
- Improve secondary and dirt/back-roads
- Widen two-lane highways

Of the responses given by ten or more people in 2015, three also received ten or more comments in 2013, 2011, 2009 and 2007. These were:

- Increase mass/public transit
- Improve snow plowing

Two of these items also received ten or more comments in 2005. They were:

- Increase mass/public transit

In 2015, comments towards passenger rail fell below 10 responses for the first time since 2005.

Table 8.1: Other Transportation Issues that MDT Should Address (more than 4 responses)

	Responses
General positive comment toward MDT	65
Maintain more, fix roads	47
General negative comment toward MDT	37
Improve communication or expand communication sources	34
Improve roadway construction	28
More lanes/widen roadways	15
Public transportation	15
Bike/pedestrian issues	13
Snow removal	12
Communicate about upcoming and existing construction	11
Secondary roads need attention	11
Rest areas	10
Pavement marking/rumble strips/lighting/guard rails/general safety	9
Salt/Sand/Deicer	8
Speed limits	7
Congestion	6
Passenger rail	6
Wildlife	4

District 1 – Missoula

Quality of Service and Performance

Residents of District 1-Missoula indicated they were satisfied with the overall transportation system (Figure 9.1).

- Respondents were most satisfied with airports, interstate highways, and bicycle pathways.
- They were least satisfied with pedestrian walkways.
- No statistically significant differences existed between 2015 and 2013 indicating satisfaction remained relatively constant.

District 1-Missoula respondents graded MDT’s performance and quality of service.

- Grades averaged a B-.
- Roughly 60% of District 1-Missoula respondents gave MDT a grade of A or B for quality of service and overall performance during the past year.
- Only 20% of respondents gave MDT a grade of A or B for responsiveness to ideas and concerns.
- Grades for overall highway maintenance and repair and responsiveness to ideas and concerns dropped slightly from 2013. All other grades remained consistent with 2013 levels.

Figure 9.1: District 1-Missoula Satisfaction with the Condition of System Components

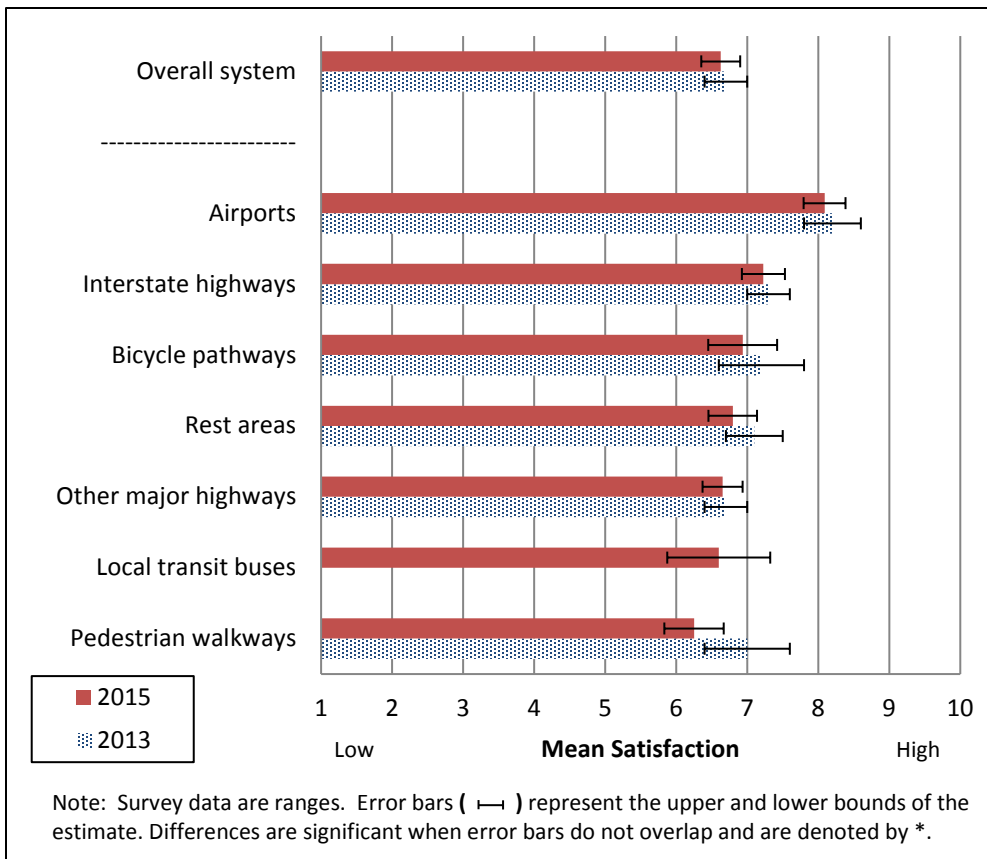
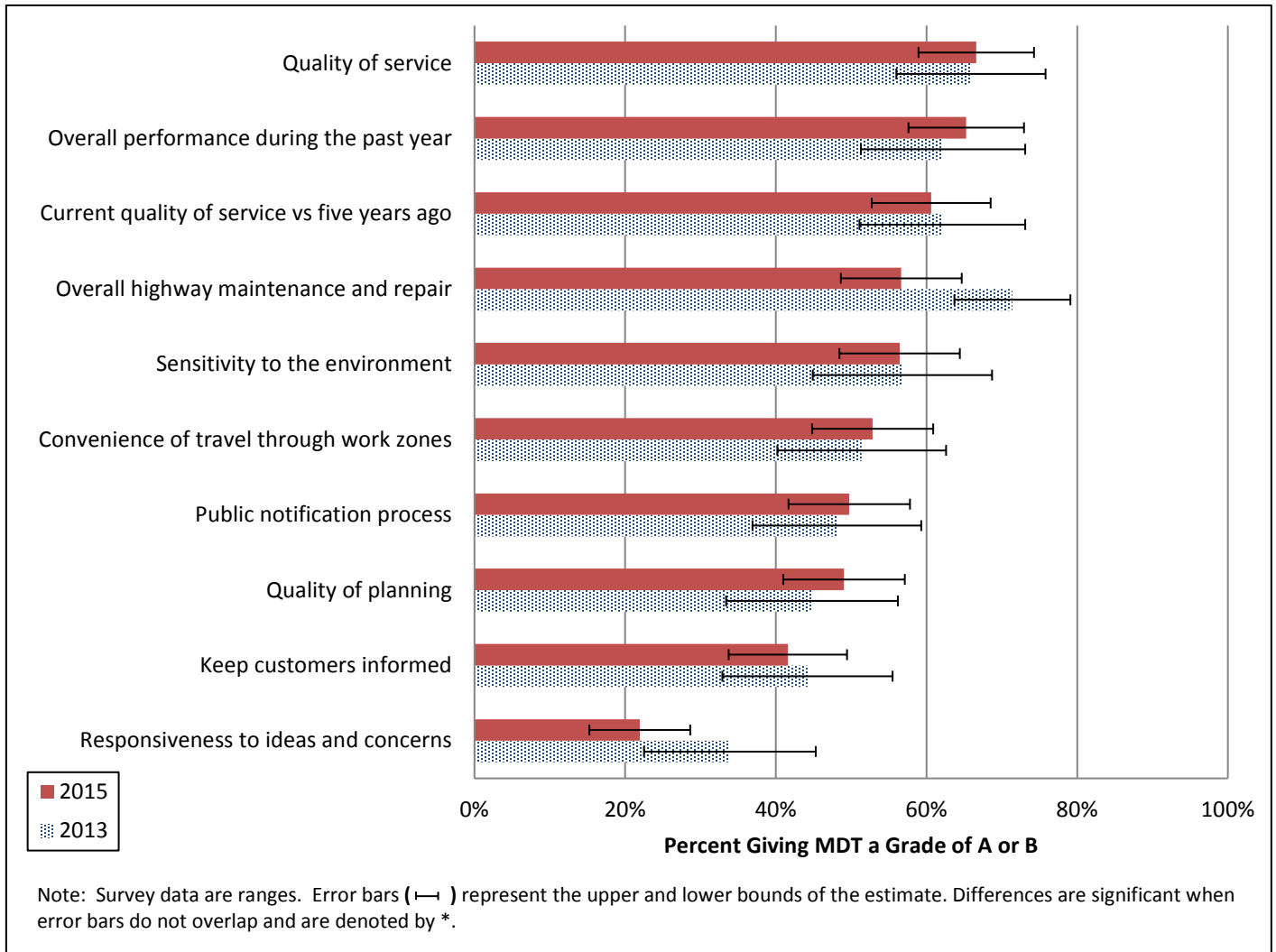


Figure 9.2 illustrates the quality of service and performance grades given to MDT by District 1-Missoula residents in 2015.

Figure 9.2: District 1-Missoula Quality of Service and Performance Grades % of A or B



Potential Actions

Figure 9.3 presents District 1-Missoula’s top ranked potential actions that MDT could take to improve the transportation system. Seven different items were ranked as a very or somewhat high priority by a majority of District 1-Missoula residents.

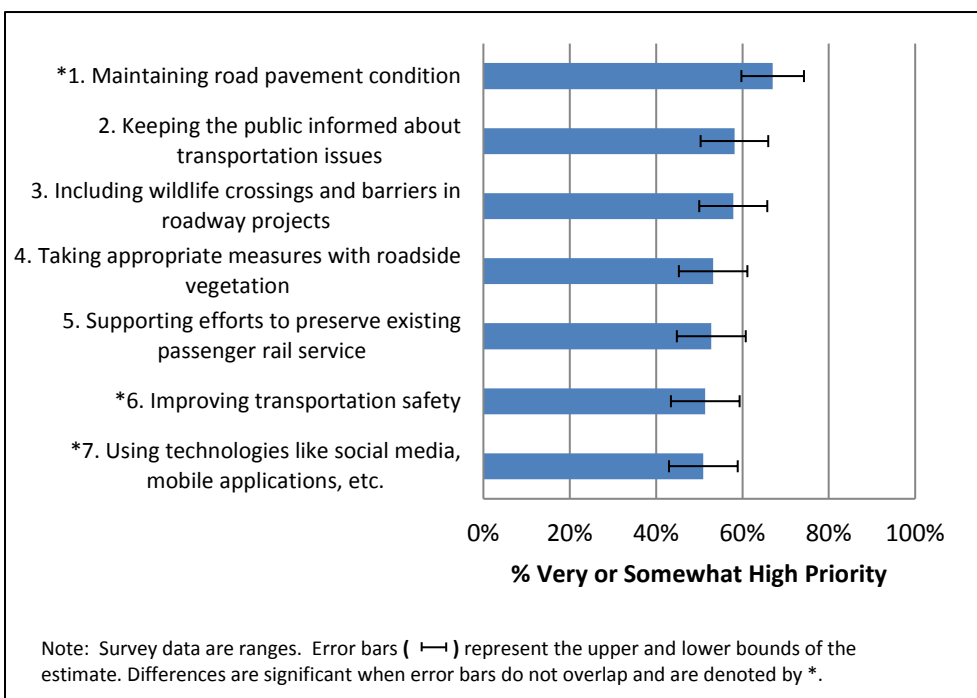
- Maintaining road pavement condition ranked highest in priority for potential improvements.
- Improving transportation safety and using technologies like social media, mobile applications, electronic message signs, website & radio updates, and remote weather information systems were also ranked as very or somewhat high priorities by a majority of District 1-Missoula residents; though both actions ranked lower than maintaining road pavement condition.

Perceived Problems

District 1-Missoula respondents also ranked possible problems with the transportation system.

- Road pavement condition and traffic congestion ranked as the highest priority problems.
- Vehicle damage from highway construction, timely resolution to safety issues, the number and condition of rest areas, and debris on roadways ranked as medium priority items.
- Adequate road signs ranked lowest in priority.

Figure 9.3: District 1-Missoula Potential Actions to Improve the Transportation System Rated by a Majority to be a Very or Somewhat High Priority

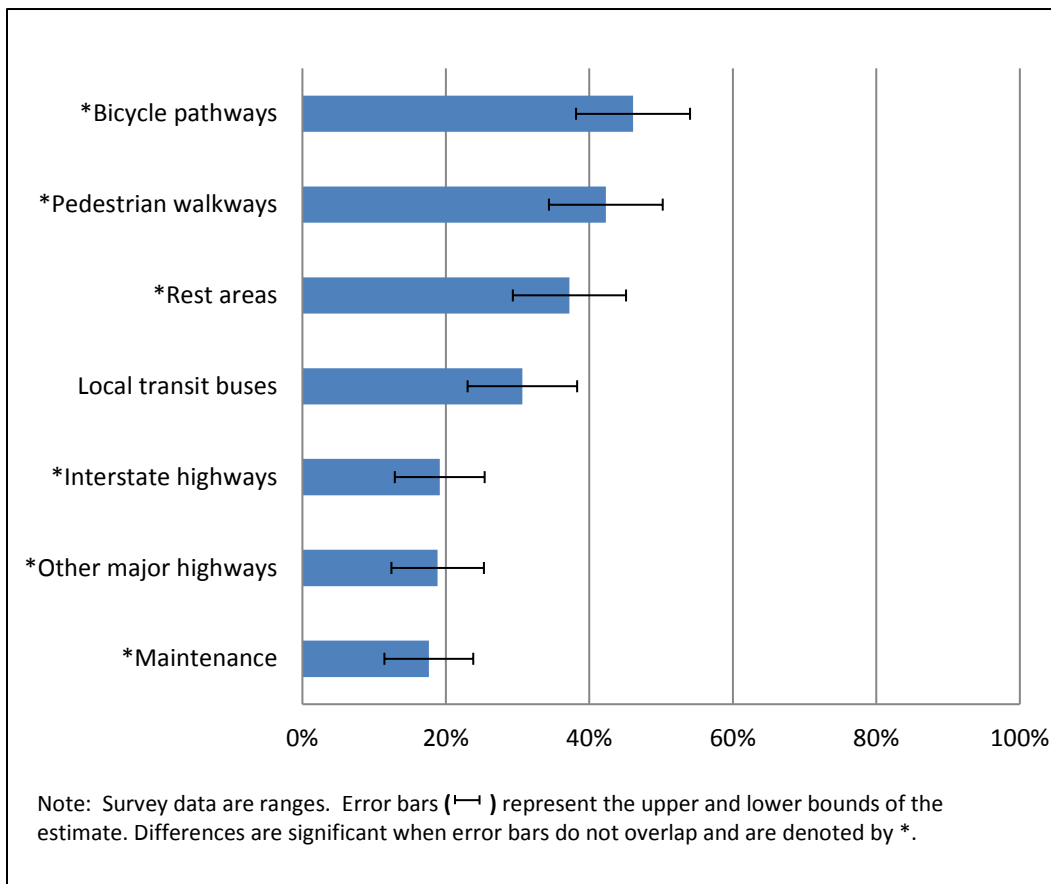


Possible Areas to Decrease Funding

Figure 9.4 illustrates District 1-Missoula residents' preferences for areas within the transportation system to cut if future budgets decline. Less than a majority of residents favored cutting any of the areas examined.

- Bicycle pathways, pedestrian walkways, and rest areas were most often cited as possible areas for cuts if budgets decline.
- Maintenance and highways were least often cited as areas for possible cuts if budgets decline.

Figure 9.4: District 1-Missoula Potential Areas for Cuts if Future Budgets Decline, % Yes Responses



District 2 – Butte

Quality of Service and Performance

Residents of District 2-Butte indicated they were satisfied with the overall transportation system (figure 9.5).

- Respondents were most satisfied with interstate highways and airports.
- They were least satisfied with bicycle pathways.
- No statistically significant differences existed between 2015 and 2013 indicating satisfaction remained relatively constant.

District 2-Butte respondents graded MDT’s performance and quality of service.

- Grades averaged a B-.
- Roughly 70% of District 2-Butte respondents gave MDT a grade of A or B for quality of service.
- Approximately 65% of respondents gave MDT a grade of A or B for overall performance over the past year, overall highway maintenance and repair, and current quality of service versus five years ago.
 - Only 35% of respondents gave MDT a grade of A or B for responsiveness to ideas and concerns.
 - Grades for sensitivity to the environment and repair and quality of planning dropped slightly from 2013 while overall highway maintenance and repair rose slightly from 2013. All other grades remained similar.

Figure 9.5: District 2-Butte Satisfaction with the Condition of System Components

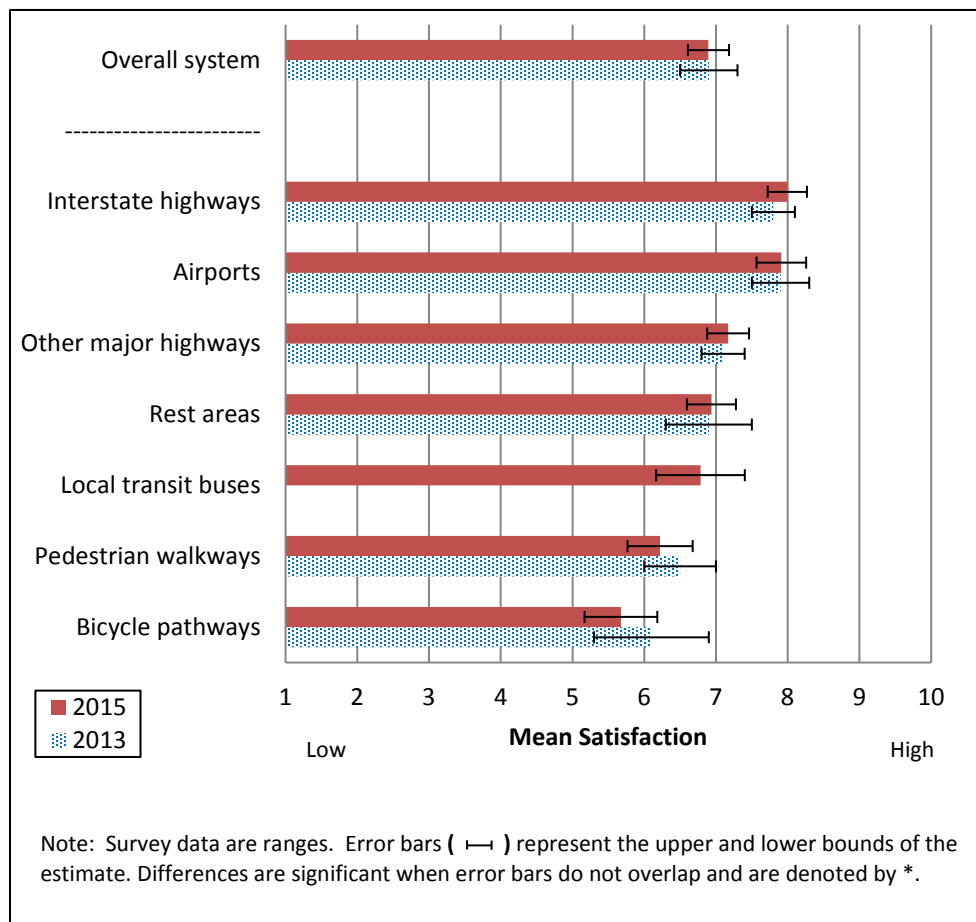
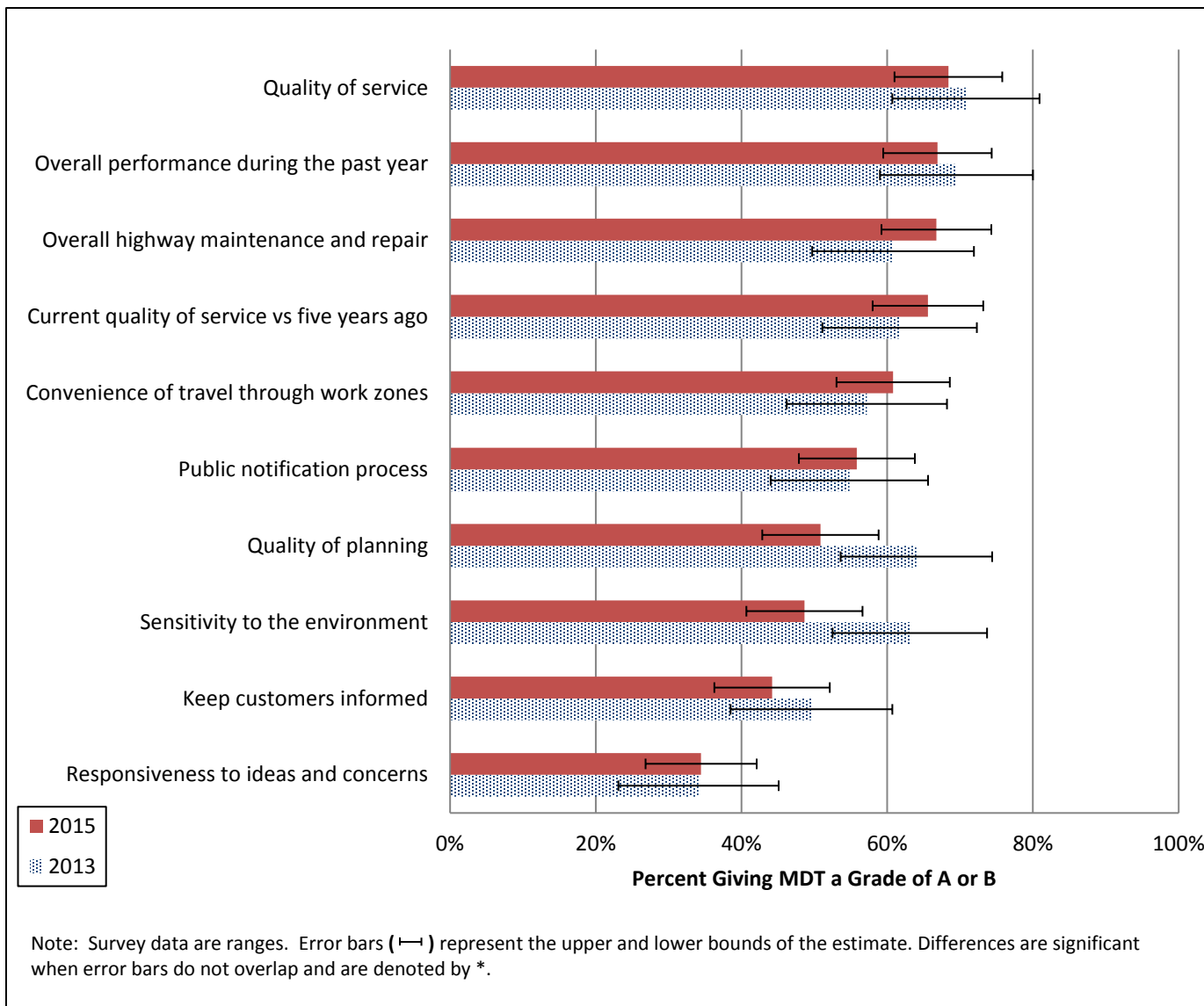


Figure 9.6 illustrates the quality of service and performance grades given to MDT by District 2-Butte residents in 2015.

Figure 9.6: District 2-Butte Quality of Service and Performance Grades % of A or B



Potential Actions

Figure 9.7 presents District 2-Butte’s top ranked potential actions that MDT could take to improve the transportation system. Three different items were ranked as a very or somewhat high priority by a majority of District 2-Butte residents.

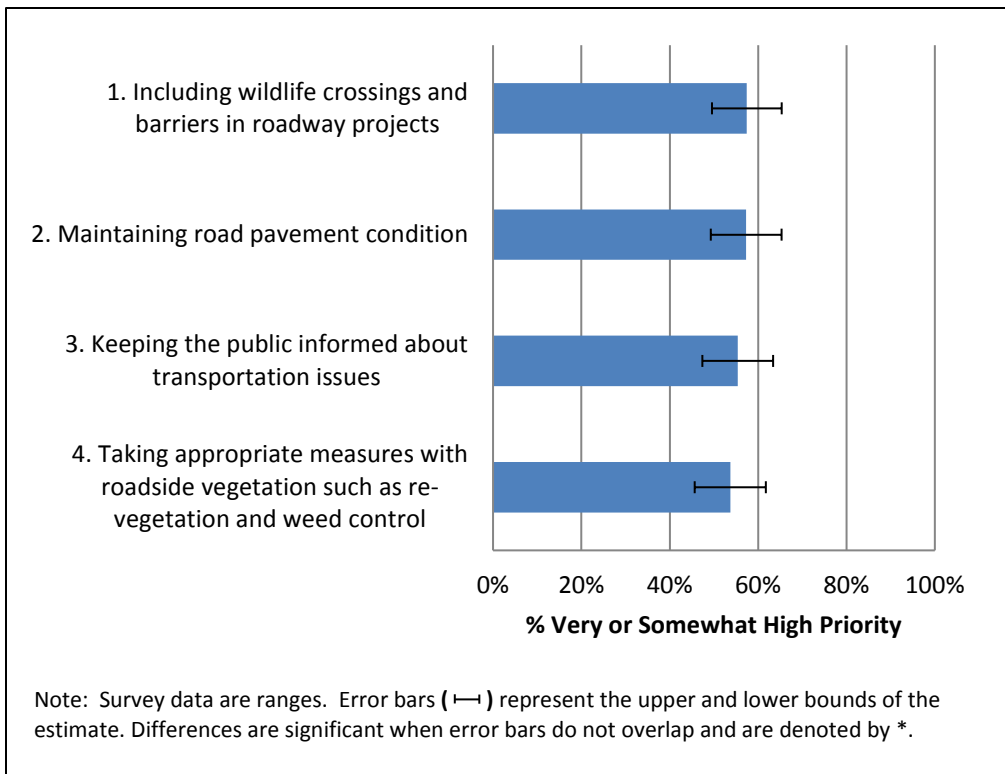
- Roadside vegetation and including wildlife crossings and barriers in projects ranked highest in priority for potential improvements.
- Using technologies like social media and mobile applications was ranked as a moderately high priority.

Perceived Problems

District 2-Butte respondents also ranked possible problems with the transportation system.

- Road pavement condition and traffic congestion ranked as the highest priority problems.
- Vehicle damage from highway construction, timely resolution to safety issues, and impacts on the environment ranked as medium priority items.
- Adequate road signs ranked lowest in priority.

Figure 9.7: District 2-Butte Potential Actions to Improve the Transportation System Rated by a Majority to be a Very or Somewhat High Priority

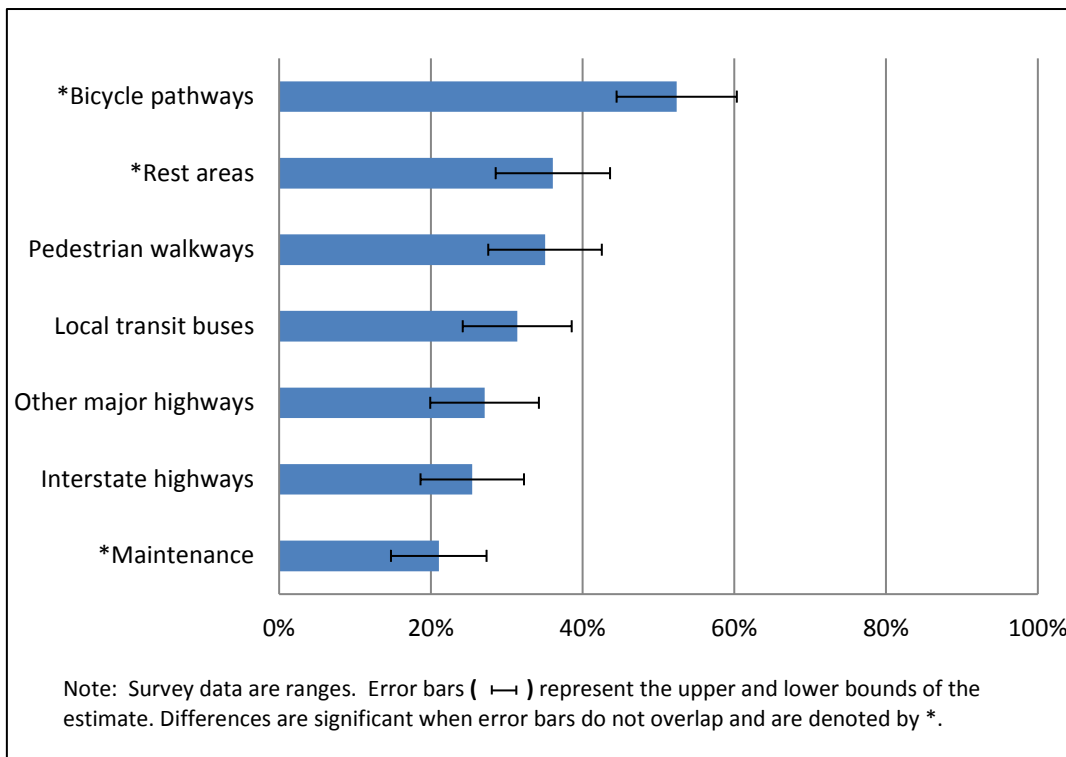


Possible Areas to Decrease Funding

Figure 9.8 illustrates District 2-Butte residents' preferences for areas within the transportation system to cut if future budgets decline. A majority of residents favored cutting bicycle pathway funding if budgets decline in the future.

- Bicycle pathways and rest areas were most often cited as possible areas for cuts if budgets decline.
- Maintenance was least often cited as areas for possible cuts if budgets decline.

Figure 9.8: District 2-Butte Potential Areas for Cuts if Future Budgets Decline, % Yes Responses



District 3 – Great Falls

Quality of Service and Performance

Residents of District 3-Great Falls indicated they were satisfied with the overall transportation system (figure 9.9).

- Respondents were most satisfied with airports and interstate highways.
- They were least satisfied with local transit buses and bicycle pathways.
- No statistically significant differences existed between 2015 and 2013 indicating satisfaction remained relatively constant.

District 3-Great Falls respondents graded MDT’s performance and quality of service.

- Grades averaged a B-.
- Roughly 70% of District 3-Great Falls respondents gave MDT a grade of A or B for quality of service.
- Approximately 65% of respondents gave MDT a grade of A or B for overall performance during the past year and current quality of service versus five years ago.
 - Only 35% of respondents graded MDT an A or B on responsiveness to ideas and concerns. This is up slightly from 30% in 2013.
 - Quality of service showed a slight increase in customer grade from 2013 while overall highway maintenance and repair declined slightly.

Figure 9.9: District 3-Great Falls Satisfaction with the Condition of System Components

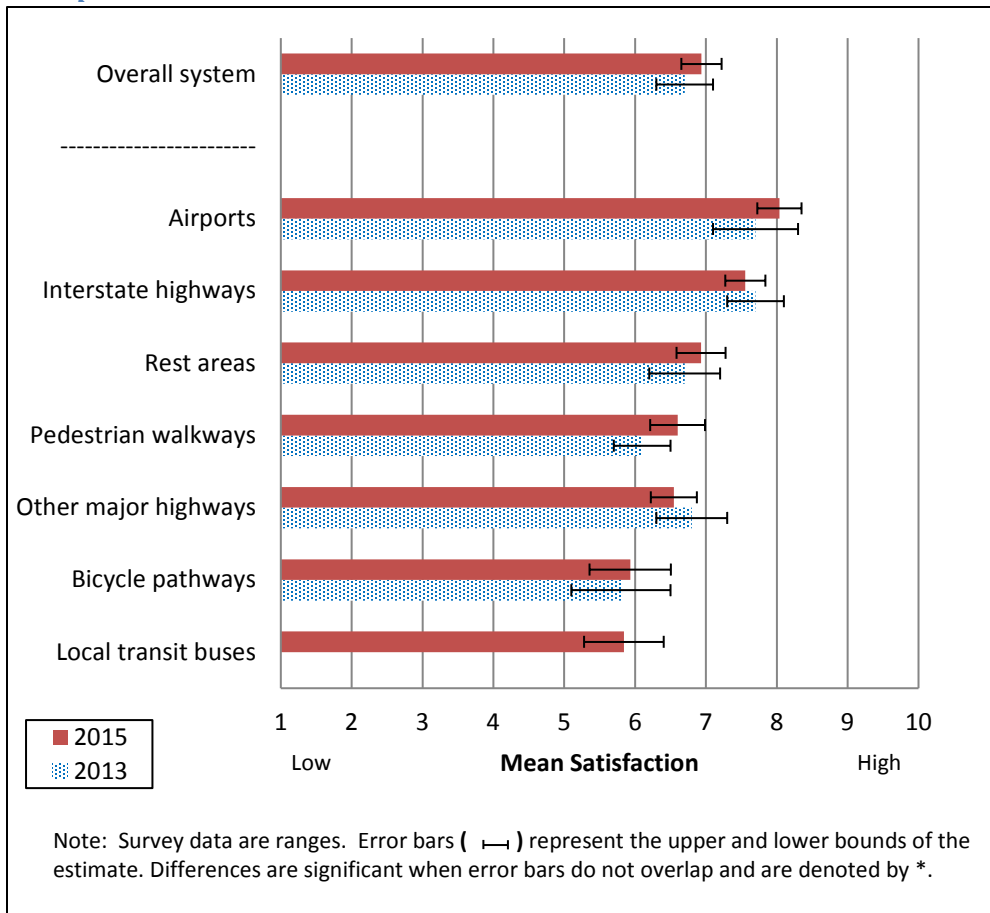
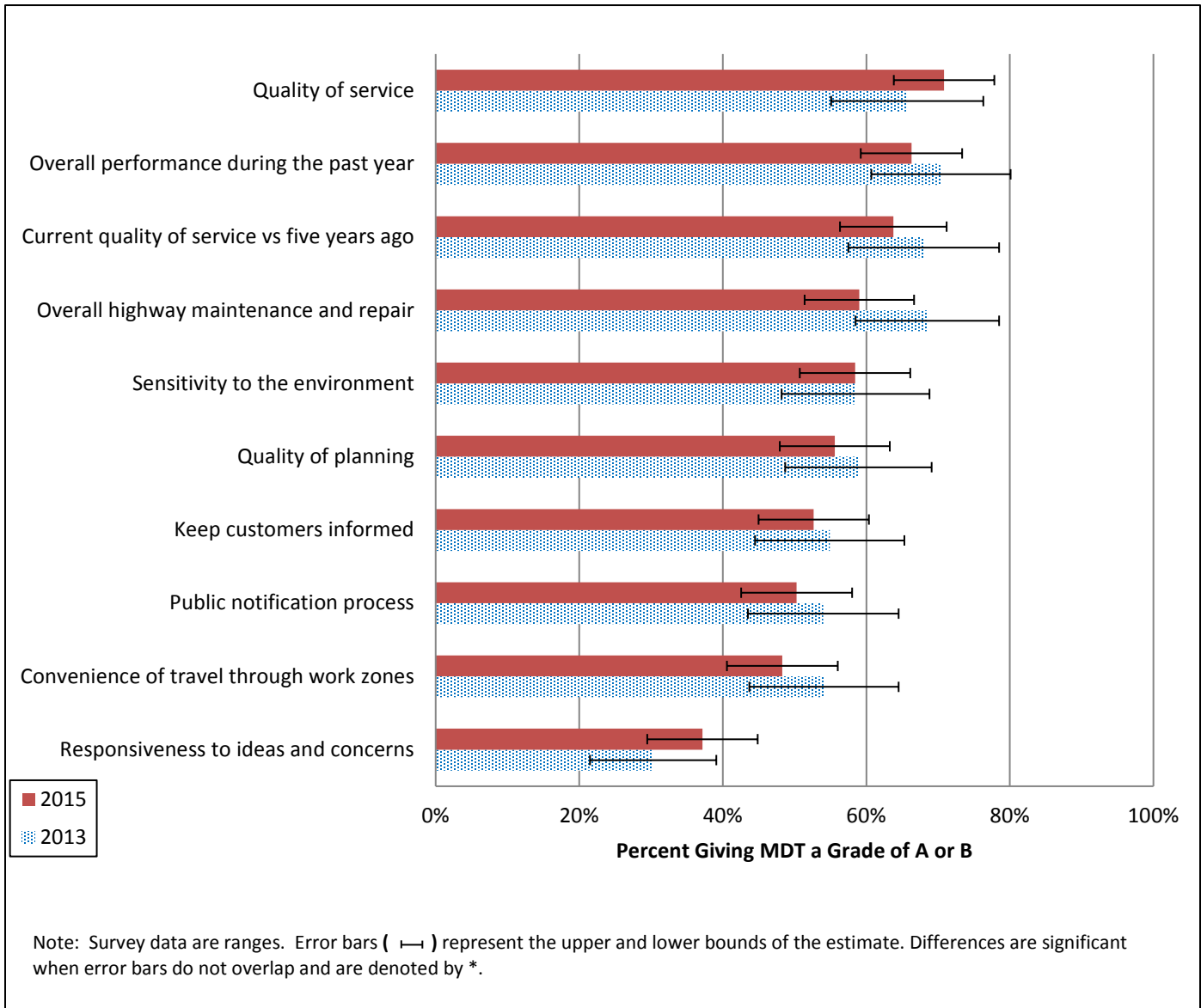


Figure 9.10 illustrates the quality of service and performance grades given to MDT by District 3-Great Falls residents in 2015.

Figure 9.10: District 3-Great Falls Quality of Service and Performance Grades % of A or B



Potential Actions

Figure 9.11 presents District 3-Great Falls’ top ranked potential actions that MDT could take to improve the transportation system. Four different items were ranked as a very or somewhat high priority by a majority of District 3-Great Falls residents.

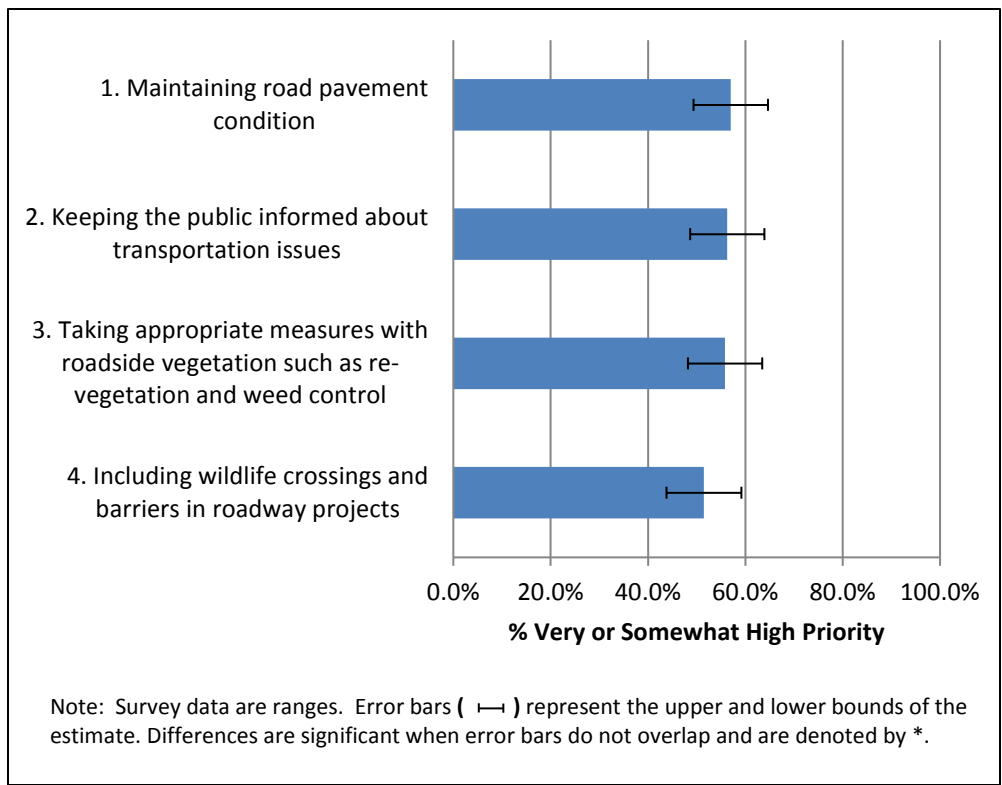
- Maintaining road pavement conditions, keeping the public informed and roadside vegetation ranked highest in priority for potential improvements.
- Including wildlife crossings and barriers in roadway projects ranked as moderately high priority.

Perceived Problems

District 3-Great Falls respondents also ranked possible problems with the transportation system.

- Road pavement condition ranked as the highest priority problem.
- Vehicle damage from highway construction, traffic congestion, timely resolution to safety issues, freight and economic vitality, the number and condition of rest areas, and debris on roadways all ranked as medium priority items.
- Adequate road signs and air quality impacts from highway maintenance ranked lowest in priority.

Figure 9.11: District 3-Great Falls Potential Actions to Improve the Transportation System Rated by a Majority to be a Very or Somewhat High Priority

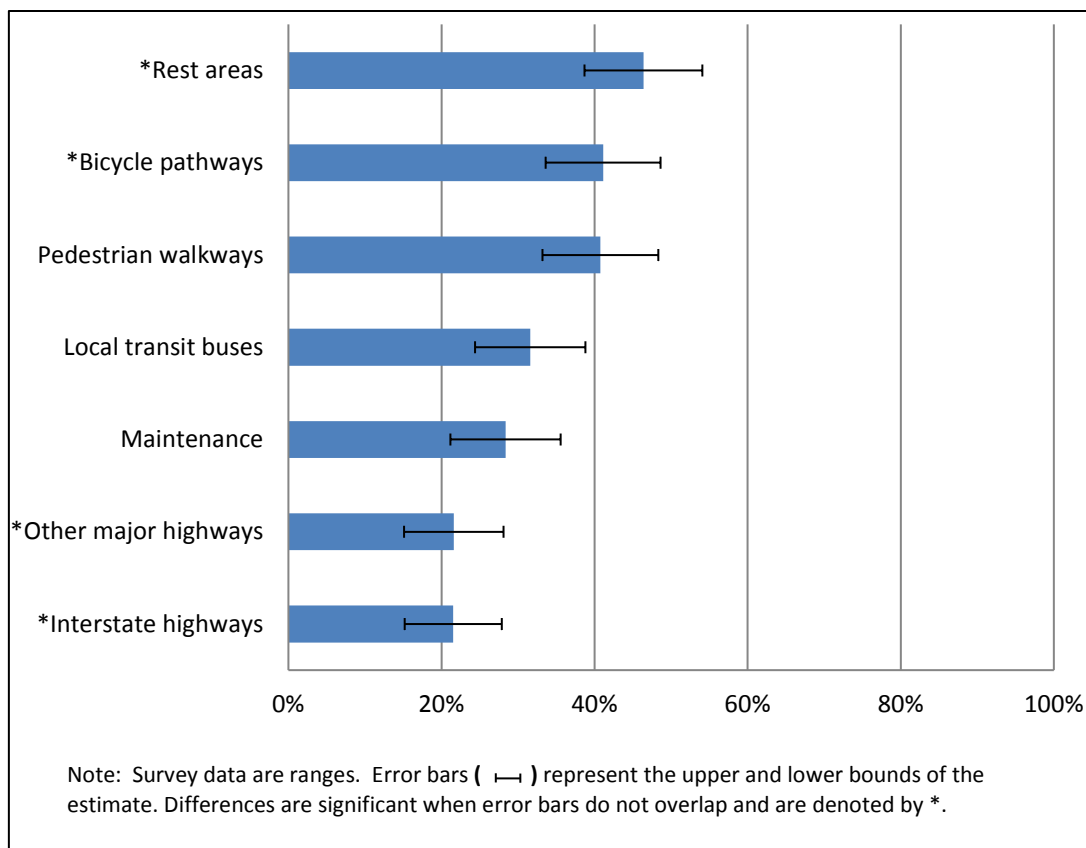


Possible Areas to Decrease Funding

Figure 9.12 presents District 3-Great Falls residents' preferences for areas within the transportation system to cut if future budgets decline. Less than a majority of residents favored cutting any of the areas examined.

- Rest areas and bicycle pathways were most often cited as possible areas for cuts if budgets decline.
- Interstate highways and other major highways were least often cited as areas for possible cuts if budgets decline.

Figure 9.12: District 3-Great Falls Potential Areas for Cuts if Future Budgets Decline, % Yes Responses



District 4 – Glendive

Quality of Service and Performance

Residents of District 4-Glendive indicated they were satisfied with the overall transportation system (figure 9.13).

- Respondents were most satisfied with interstate highways and airports.
- They were least satisfied with local transit buses, bicycle pathways and other major highways.
- No statistically significant differences existed between 2015 and 2013 indicating satisfaction remained relatively constant.

District 4-Glendive respondents graded MDT’s performance and quality of service.

- Grades averaged a B-.
- Roughly 70% of District 4-Glendive respondents gave MDT a grade of A or B for quality of service.
- Approximately 65% of respondents gave MDT a grade of A or B for current quality of service versus five years ago.
- Only 35% of respondents graded MDT an A or B on responsiveness to ideas and concerns.

- Quality of service showed a slight increase in customer grade from 2013 while the public notification process declined slightly.

Figure 9.13: District 4-Glendive Satisfaction with the Condition of System Components

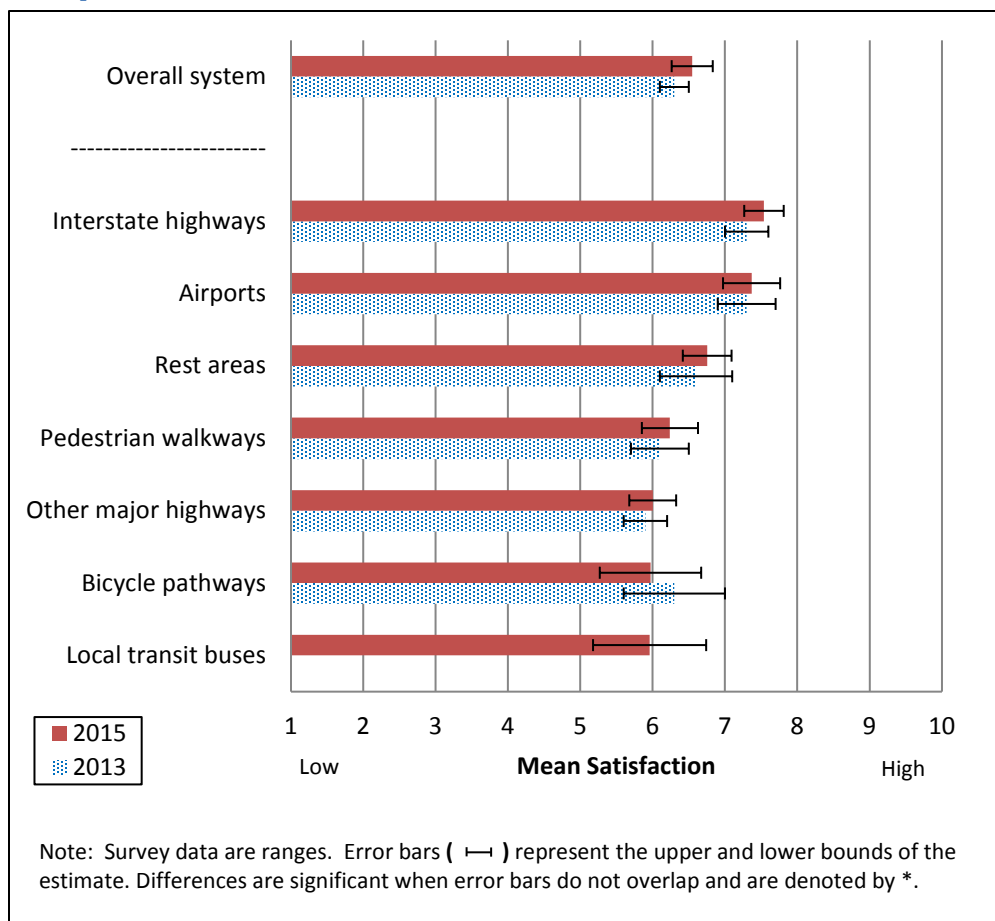
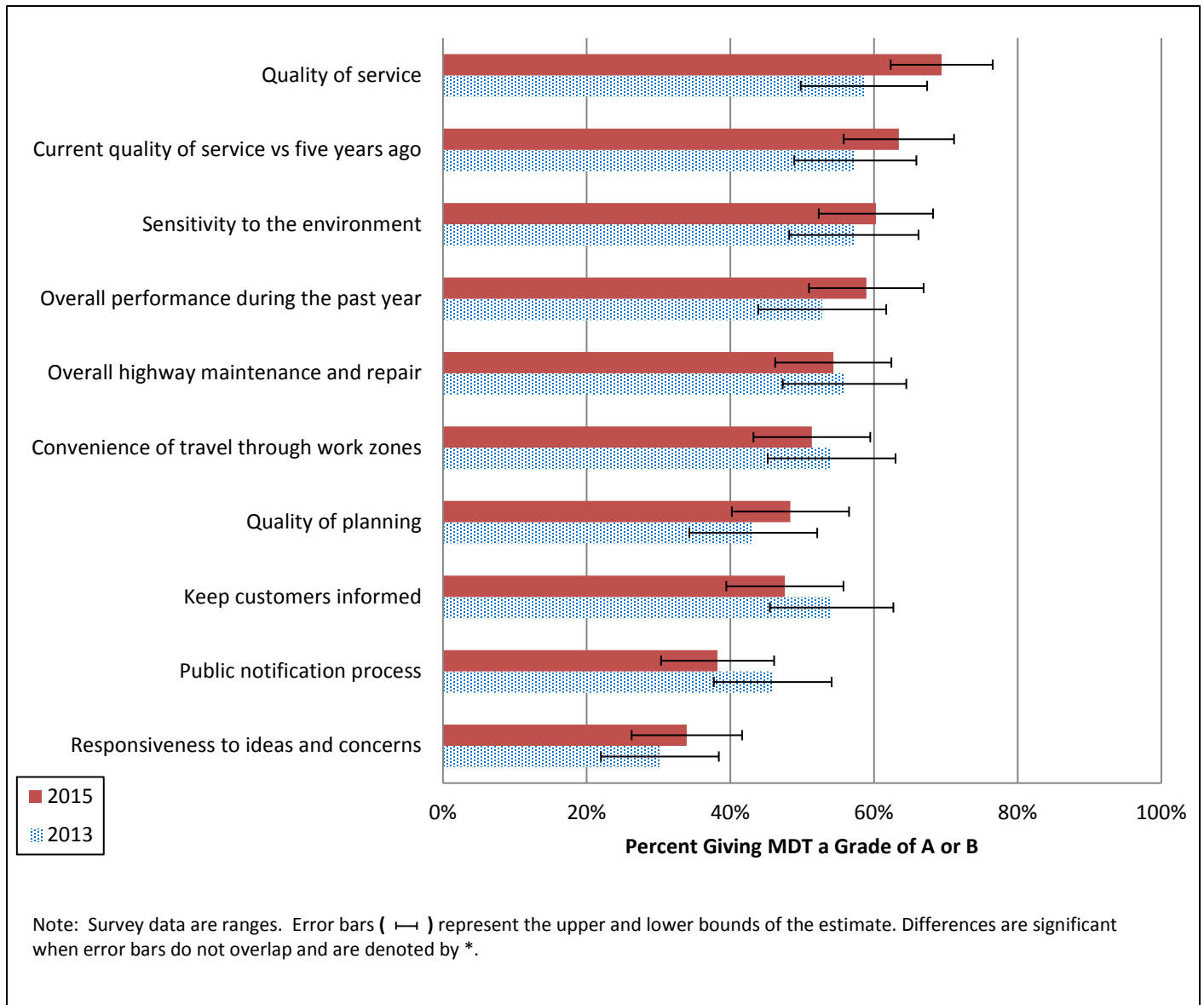


Figure 9.14 illustrates the quality of service and performance grades given to MDT by District 4-Glendive residents in 2015.

Figure 9.14: District 4-Glendive Quality of Service and Performance Grades % of A or B



Potential Actions

Figure 9.15 presents District 4-Glendive’s top ranked potential actions that MDT could take to improve the transportation system. Three different items were ranked as a very or somewhat high priority by a majority of District 4-Glendive residents.

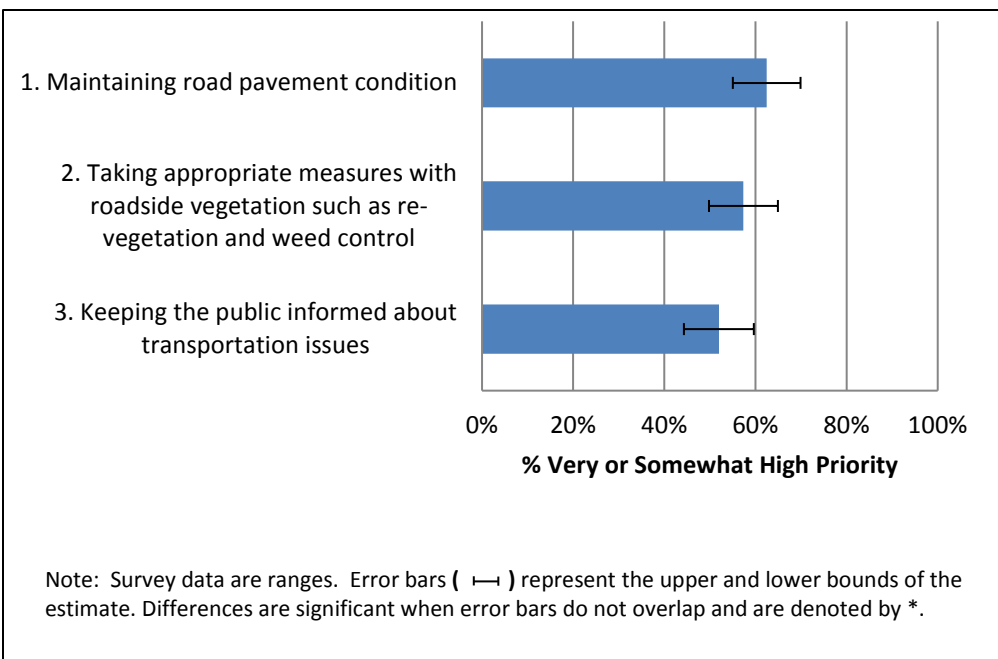
- Maintaining road pavement conditions and taking appropriate measures with roadside vegetation ranked highest in priority for potential improvements.
- Keeping the public informed about transportation issues ranked as a moderate high priority.

Perceived Problems

District 4-Glendive respondents also ranked possible problems with the transportation system.

- Road pavement condition ranked as the highest priority problem.
- Debris on roadways, the ability to manage emergency situations, the number and condition of rest areas and timely resolution to safety issues all ranked as medium priority items.
- Adequate road signs and too many access points (including driveways) onto major roads ranked lowest in priority.

Figure 9.15: District 4-Glendive Potential Actions to Improve the Transportation System Rated by a Majority to be a Very or Somewhat High Priority

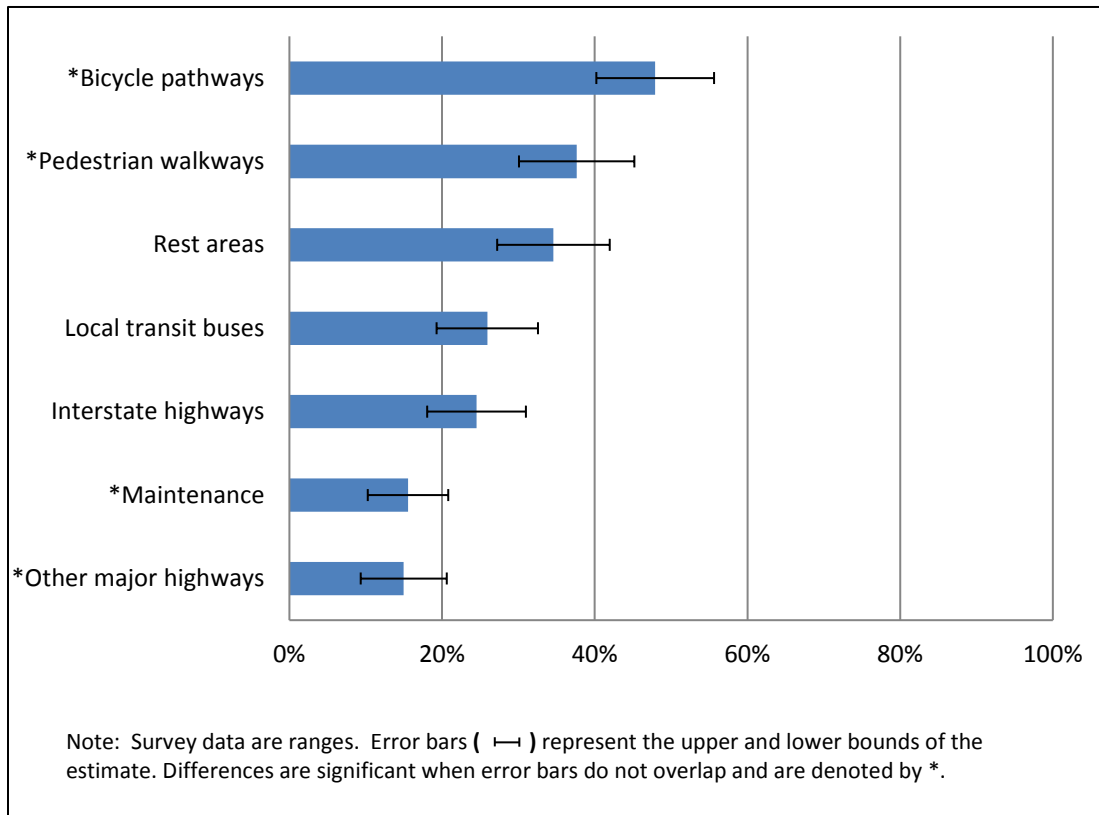


Possible Areas to Decrease Funding

Figure 9.16 illustrates District 4-Glendive residents’ preferences for areas within the transportation system to cut if future budgets decline. Bicycle pathways were favored by a majority of residents as a possible area for cuts if future budgets decline.

- Bicycle pathways and pedestrian walkways were most often cited as possible areas for cuts if budgets decline.
- Maintenance and other major highways were least often cited as areas for possible cuts if budgets decline.

Figure 9.16: District 4-Glendive Potential Areas for Cuts if Future Budgets Decline, % Yes Responses



District 5 – Billings

Quality of Service and Performance

Residents of District 5-Billings indicated they were satisfied with the overall transportation system (figure 9.17).

- Respondents were most satisfied with airports and interstate highways.
- They were least satisfied with local transit buses, bicycle pathways and pedestrian walkways.
- Bicycle pathways decreased in satisfaction from 2013; no other statistically significant differences existed.

District 5-Billings respondents graded MDT’s performance and quality of service.

- Grades averaged a B-.
- Roughly 65% of District 5-Billings respondents gave MDT a grade of A or B for quality of service and current quality of service versus five years ago.
- Approximately 60% of respondents gave MDT a grade of A or B for current overall performance during the past year.
- Only 30% of respondents graded MDT an A or B on responsiveness to ideas and concerns.
 - Roughly 45% of respondents gave MDT a grade of A or B for the public notification process and keeping customers informed.
 - Current quality of service versus five years ago, overall highway maintenance and repair, and quality of planning all slightly decreased from 2013.

Figure 9.17: District 5-Billings Satisfaction with the Condition of System Components

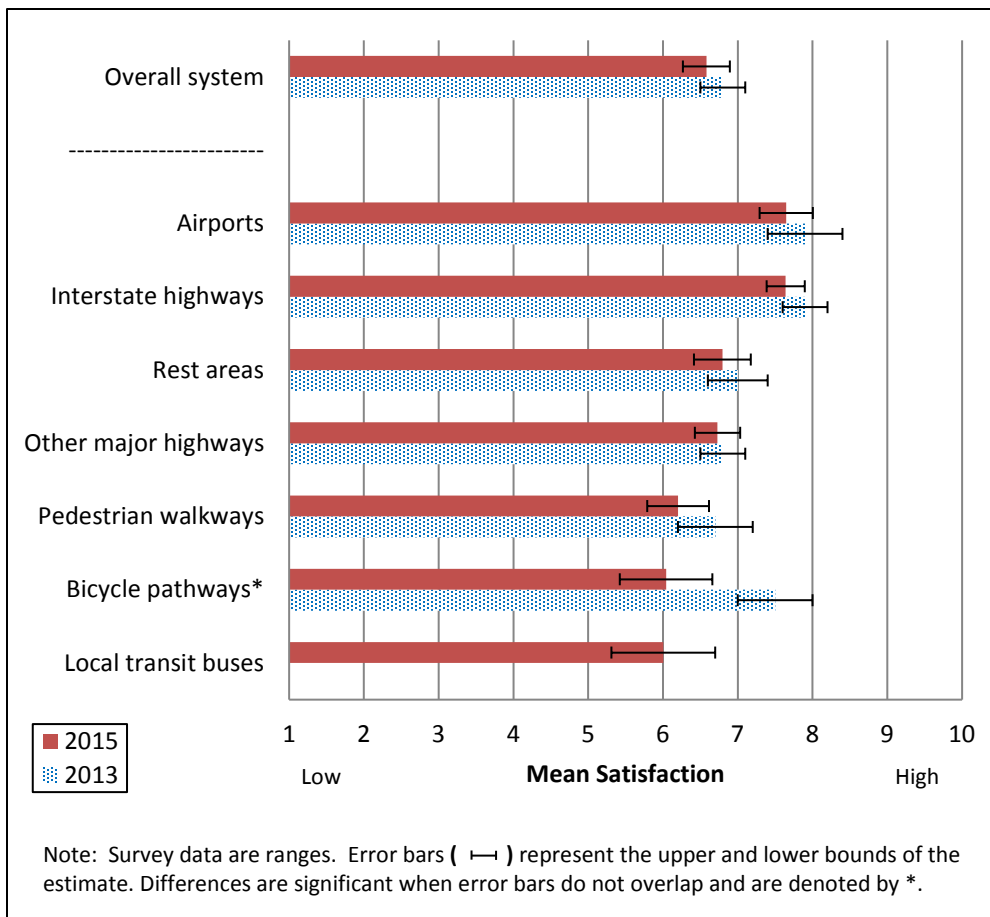
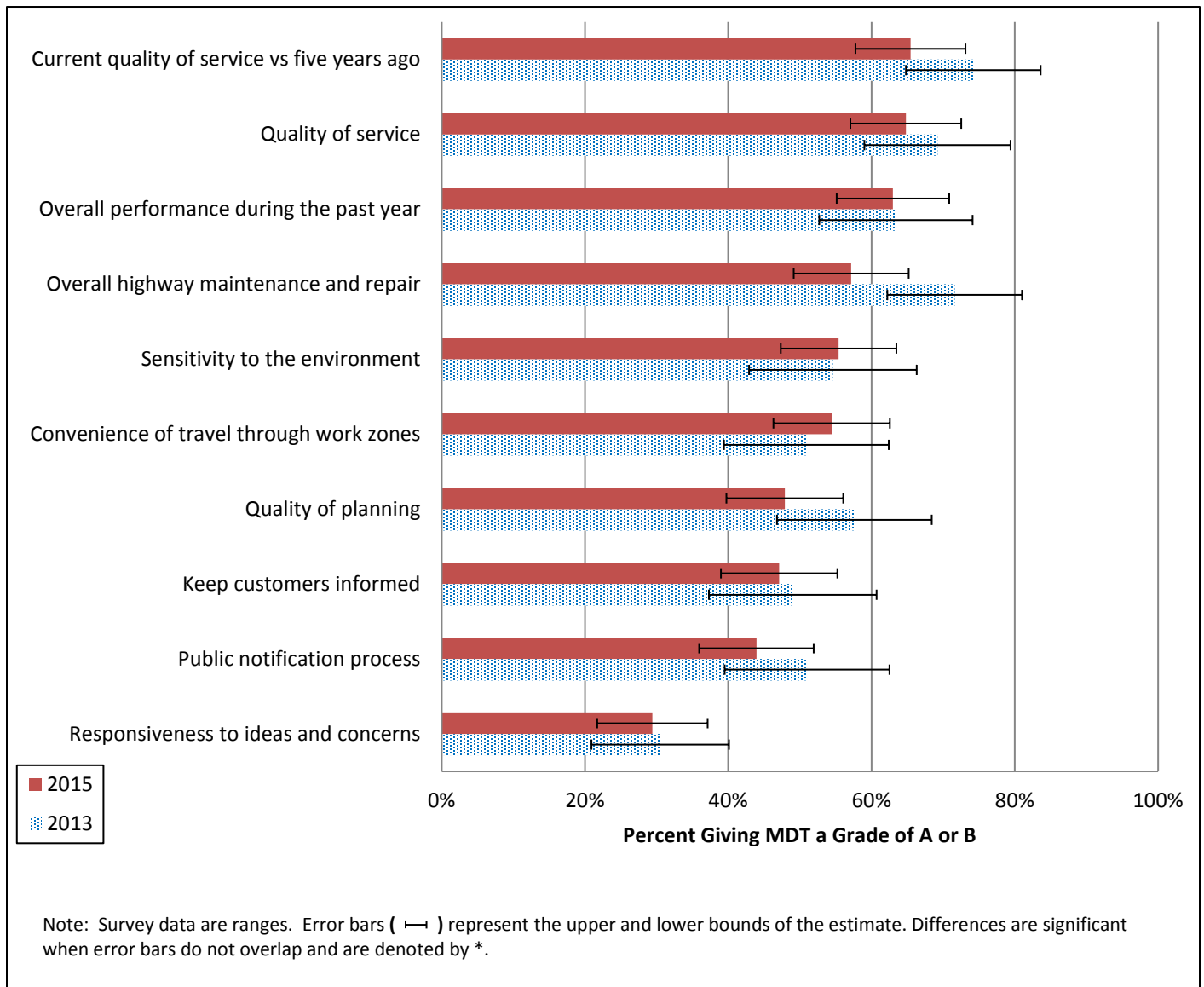


Figure 9.18 illustrates the quality of service and performance grades given to MDT by District 5-Billings residents in 2015.

Figure 9.18: District 5-Billings Quality of Service and Performance Grades % of A or B



Potential Actions

Figure 9.19 presents District 5-Billings’ top ranked potential actions that MDT could take to improve the transportation system. Four different items were ranked as a very or somewhat high priority by a majority of District 5-Billings residents.

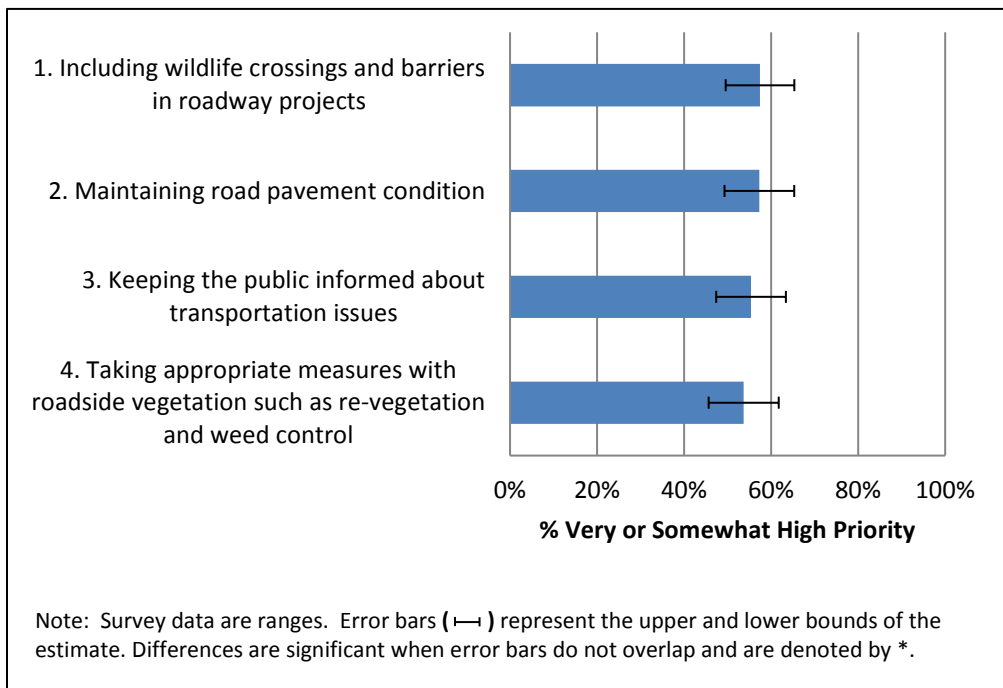
- Including wildlife crossings and barriers in projects and maintaining road pavement conditions ranked highest in priority for potential improvements.
- Keeping the public informed and taking appropriate measures with roadside vegetation ranked as moderately high priorities.

Perceived Problems

District 5-Billings respondents also ranked possible problems with the transportation system.

- Road pavement condition ranked as the highest priority problem.
- Vehicle damage from highway construction, timely resolution to safety issues and debris on roadways all ranked as medium priority items.
- Adequate road signs and too many access points (including driveways) onto major roads ranked lowest in priority.

Figure 9.19: District 5-Billings Potential Actions to Improve the Transportation System Rated by a Majority to be a Very or Somewhat High Priority

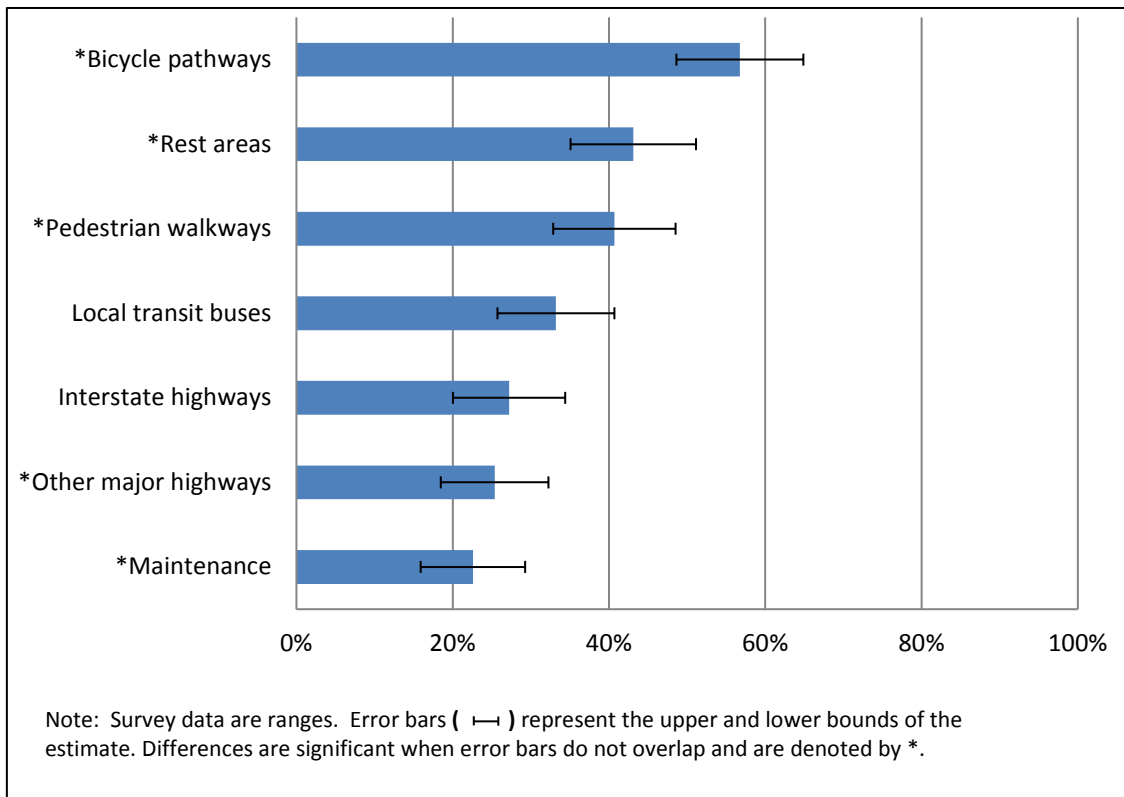


Possible Areas to Decrease Funding

Figure 9.20 illustrates District 5-Billings residents' preferences for areas within the transportation system to cut if future budgets decline. A majority of residents favored cutting bicycle pathways if future budgets decline.

- Bicycle pathways, rest areas, and pedestrian walkways were most often cited as possible areas for cuts if budgets decline.
- Maintenance and other major highways were least often cited as areas for possible cuts if budgets decline.

Figure 9.20: District 5-Billings Potential Areas for Cuts if Future Budgets Decline, % Yes Responses



Survey Design

The 2015 TranPlan 21 Public Involvement Survey is the tenth iteration of a repeated, cross-sectional analysis designed to provide both a snapshot of current public opinion and also trends over time. The survey was administered by telephone using a Computer-Assisted Telephone Interviewing (CATI) process and sampling was conducted using a Random-Digit Dial (RDD) process. The sample population was adult Montanans who live in a household with a working landline or cell phone. This population differs from all Montanans as it excludes households without working telephones, the institutional population, and those absent from the state during the survey period.

The survey was stratified by MDT district with a minimum of 200 respondents interviewed per district. Post-stratification weights were applied so that statements about all adult Montanans could be made. The approximate sampling error for this survey is plus or minus 3.8 percent, or equivalently in 95 of 100 samples a sampled mean would be within 2.9 percent of the population mean.

Survey respondents were selected randomly from the stratified adult population and participation within households was not determined by who answered the phone. If the selected participant was not home an appointment was made to conduct the interview later. Sampled individuals who were out of state for the duration of the survey and individuals with medical conditions precluding participation were ineligible. Additionally, telephone numbers drawn by the RDD process were ineligible if they were out-of-service, fax machines, or businesses. Numbers for which there was no answer were called repeatedly during morning, evening, and weekend hours.

BBER documented case status in a manner that allows calculation and reporting of a unit response rate using the American Association for Public Opinion Research

(2015) standard definition (RR3).⁴ The response rate for this survey was 26.7 percent.

Data Set Preparation

Following collection the data were inspected to ensure cleanliness and accuracy. Duplicate cases were eliminated and any interviewer miskeys were corrected. Appropriate data labels were added as well as composite variables and flags to facilitate analysis. Missing values for age, necessary for comparison to the 2010 Census, were imputed using the hot deck method which substitutes the responses of similar cases for missing data.

Post-stratification weights were applied to the data. This is a common data processing technique that has been shown to improve the accuracy of estimates. The data are weighted by MDT region, age, sex and telephone type.

The Respondents

The weighted median age of 2015 respondents is 49 years, while the median age of Montanans age 18 and over in 2010 was 47.⁵ The age difference is small but statistically significant. A likely reason for this small discrepancy is that older people may be easier to reach on the telephone. Furthermore respondents living in exclusively landline households are significantly older than those who live in wireless only or both households. According to the U.S. National Center for Health Statistics as of 2011, 32.6% of Montanans aged 18 and

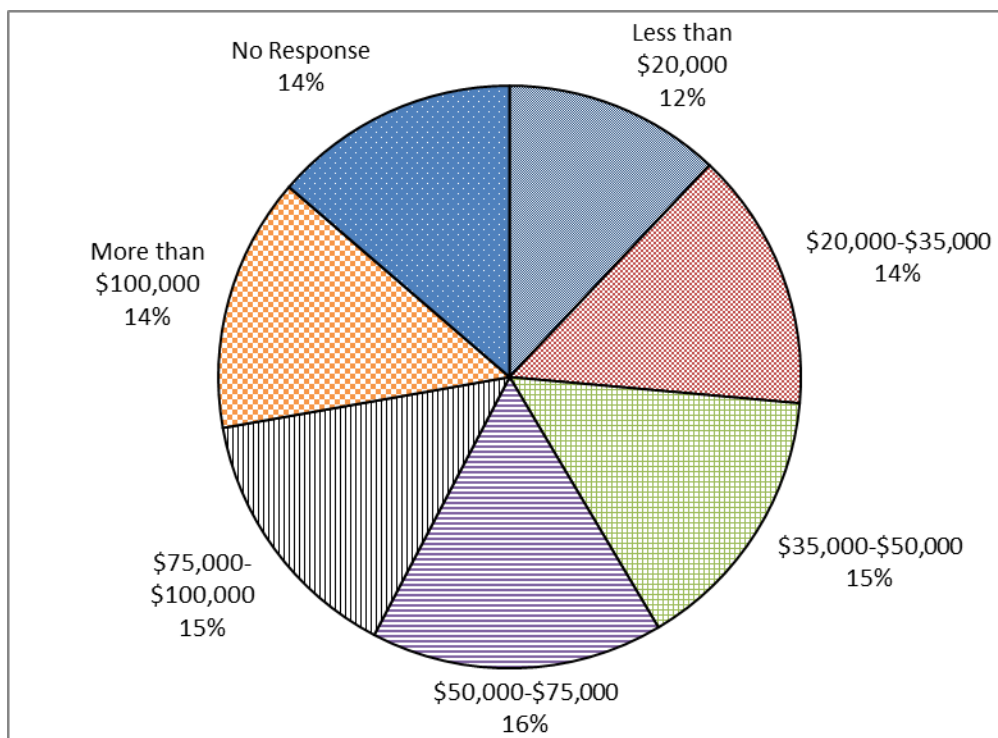
⁴ The American Association for Public Opinion Research. 2015. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 8th edition.* AAPOR.

⁵ Age estimate, U.S. Census Bureau, 2010 Census, Montana Table DP-1.

older lived in cell phone-only households.⁶ Nonetheless the probable effect of this difference on the data is small especially as exclusively wireless households are represented in the data.

The income distribution for respondents is shown in Figure 10.1. Income was collected as a categorical variable and therefore an exact median income cannot be calculated to compare Census Bureau estimates. However, the surveyed population income distribution appears slightly higher than the Census Bureau's 2014 estimate of \$46,230.⁸

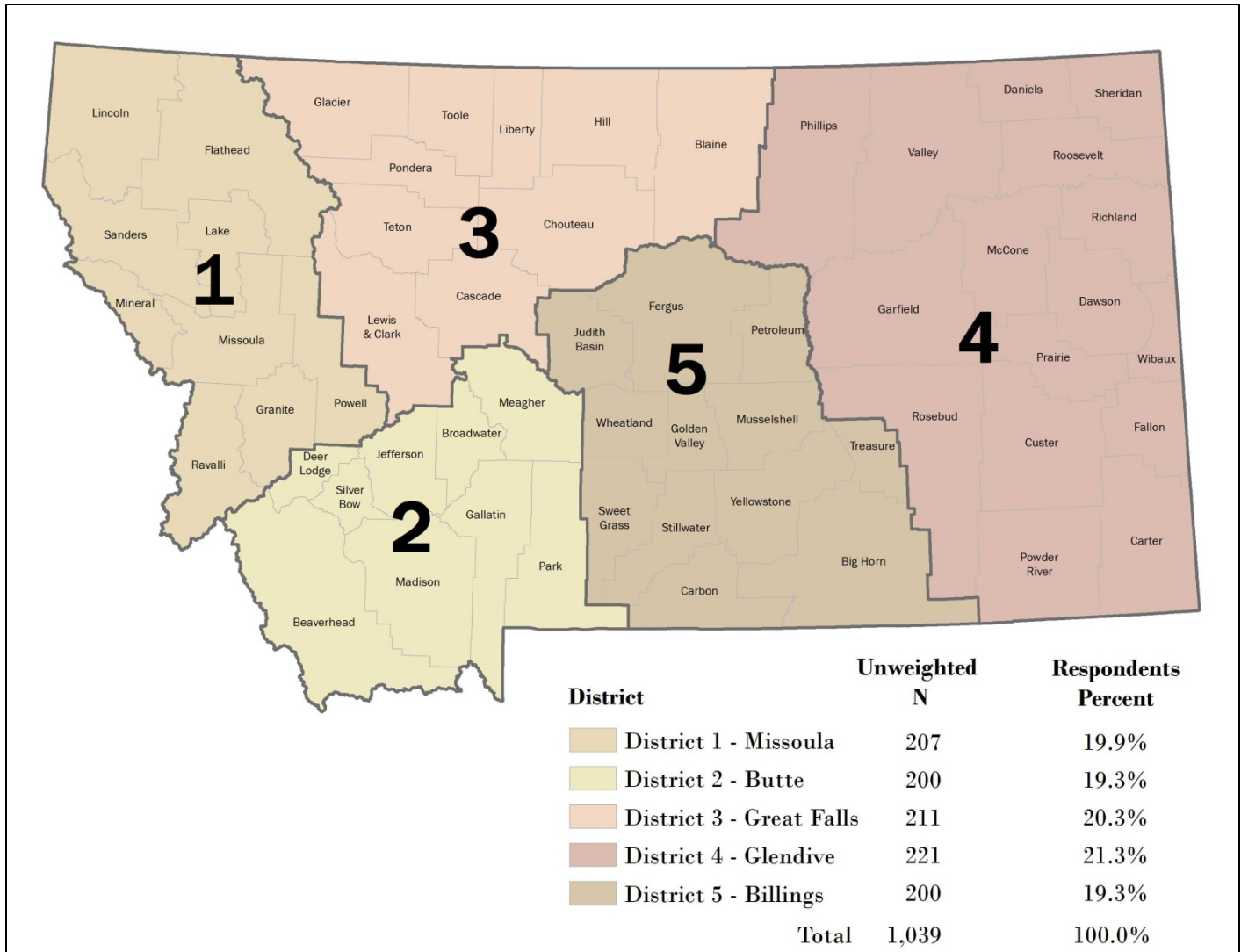
Figure 10.1: Income Distribution of 2015 Respondents



⁶ Blumberg SJ, Luke JV, Ganesh N, et al. Wireless substitution: State-level estimates from the National Health Interview Survey, 2010–2011. National health statistics reports; no 61. Hyattsville, MD: National Center for Health Statistics. October 12, 2012.

⁸ U.S. Census Bureau, 2014 American Community Survey.

Figure 10.2: MDT Regions and 2015 Unweighted Respondents



The figure above shows that 19.9 percent of respondents live in MDT District 1 (Lincoln, Flathead, Sanders, Mineral, Missoula, Ravalli, Granite, Powell, and Lake counties), 19.3 percent live in District 2 (Beaverhead, Madison, Deer Lodge, Silver Bow, Jefferson, Broadwater, Meagher, Gallatin, and Park counties), 20.3 percent live in District 3 (Glacier, Pondera, Teton, Lewis and Clark, Cascade, Toole, Chouteau, Liberty, Hill, and Blaine counties), 21.3 percent live in District 4 (Phillips, Valley, Daniels, Sheridan, Roosevelt, Richland, McCone, Garfield,

Dawson, Prairie, Rosebud, Fallon, Custer, Powder River, Carter, and Wibaux counties) and 19.3 percent live in District 5 (Big Horn, Treasure, Stillwater, Sweet Grass, Wheatland, Yellowstone, Golden Valley, Petroleum, Fergus, Musselshell, Judith Basin, and Carbon counties).

Structure of this Report

The report is broken into two volumes. Volume I describes data collected by the 2015 TranPlan21 Public Involvement Survey and presents summary statistics, analytical results, and trends over time. Volume I is organized into sections progressing from attitudes about Montana's transportation system, security priorities, MDT communication, actions to improve roadways, customer service, and finally other issues/special topics. Volume II contains the appendices and includes the full text of the survey as well as a complete set of tables documenting responses to all questions.

The 2015 TranPlan 21 Public Involvement Survey was designed to facilitate trend analysis over time. The wording of questions was repeated exactly (to the extent possible) so that responses from the 2015 survey could be compared to those from previous years. Results in Volume I are compared to 2011 and 2013. Several questions have been added over time and thus in some cases comparisons can only be made since the question's inception.

This report presents an extensive set of figures and tables. To determine the difference between group means and percentages, t-tests were calculated and are reported throughout the report. T-test results reported here will use the .05 significance level unless stated otherwise. This is interpreted as in 95 out of 100 samples a reported value will differ from another if their difference is significant at the .05 level.

T-tests here are calculated using specialized software that estimates sampling error while accounting for the stratified random sampling design of this survey. These estimates of the sampling error are the most accurate

estimate possible and cannot be derived using most off-the-shelf statistical software packages.

Failure to account for the sampling design when estimating sampling error in this study could falsely identify differences between groups when none statistically exist. For example, in Figure 10.3 below, differences in 2013 MDT District levels of satisfaction with pedestrian walkways are illustrated by displaying 95% confidence intervals calculated assuming either simple random sampling or the stratified random sampling design actually used. Assuming simple random sampling, a data analyst would conclude that District 1-Missoula is more satisfied than District 3-Great Falls. However, as the figure demonstrates, the actual 95% confidence intervals overlap when calculated assuming this stratified random sampling design.

Figure 10.3: Comparison of Confidence Intervals, Simple Random Sampling and Complex Sampling

