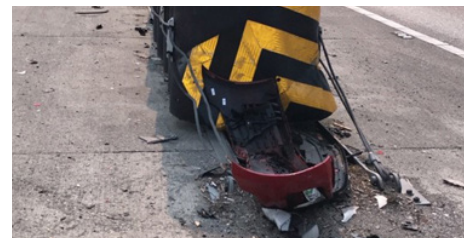
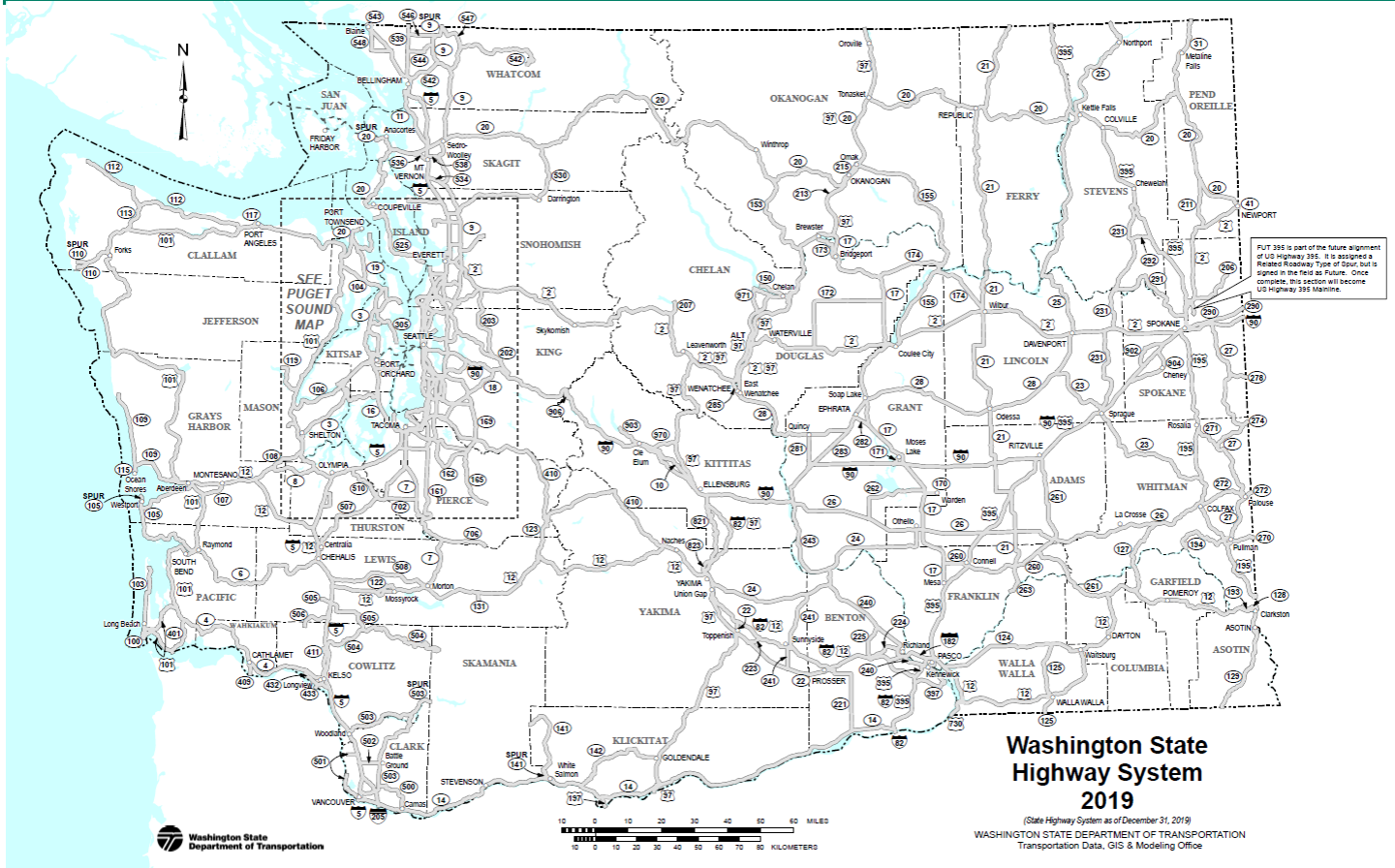


# Community Engagement Support for the Highway System Plan Update

WA-RD 911.1

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Mark Hallenbeck  
Anne Moudon

February 2022



**Research Report**  
Agreement T1461 Task 84  
**WA-RD 911.1**

# **Community Engagement Support for the Highway System Plan Update**

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February 2022

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## **DISCLAIMER**

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## EXECUTIVE SUMMARY

The Highway System Plan (HSP) survey was designed to understand Washington State residents' relative priorities for investment in the state's highway system. Over 1,400 Washington state residents completed the survey. Respondents prioritized a hypothetical annual budget of \$3 billion across nine highway-related budget categories. Their choices were constrained by minimum spending levels and two to four additional set spending steps for each budget category. Minimum spending levels were based on current law budgets approved by the Washington State Legislature and budget proposals from the Governor.

The survey sample was specifically designed to provide insight into potential regional differences in spending priorities. The survey analysis showed that residents held surprisingly consistent priorities, given the survey's constraints, both across regions within the state and across demographic groups. The consistency of survey results both across demographic categories and across respondents' residential locations within the state provided high confidence in the statistical validity of the survey's results as a measure of public sentiment.

The survey results indicated that respondents prioritized allocating considerable funding to state of good repair activities. Across the survey's nine spending categories, pavement repair and rehabilitation was the only category for which a plurality of respondents chose the maximum offered level of funding. A plurality of respondents chose the second-highest spending option for the maintenance and bridges categories, while for all other spending categories, at least a plurality chose the lowest or second-lowest funding options offered. These outcomes were the same for all four regions of the state (Western, I-5 Corridor, Central, and Eastern).

A cluster analysis of the results summarized the observed tendency toward state of good repair funding. This analysis yielded 10 groups of spending tendencies, 53 percent of which were termed "traditionalists" because these respondents completed budgets that emphasized pavement and bridge repair, maintenance, and a moderate amount of spending on new and wider highways—that is, funding traditionally associated with state highway funding. The differences within the traditionalist clusters are discussed further in the Cluster Descriptions section of this report. The next highest cluster represented 22 percent of survey respondents. This second group was characterized by high spending on new and bigger highways. Because of the total budget spending limits imposed on the survey takers, this group had to allocate lower than survey average amounts on safety, increasing travel options, and walking and bicycling, while allocating the survey average for preservation programs. Another 12 percent of survey respondents chose to spend far less than the hypothetical \$3 billion budget provided. As such, this third cluster chose to allocate a lower level of funding than the survey's average across all spending categories, with the exception of the pavement, bridge, and stormwater categories.

Some demographics that seemed to marginally affect spending priorities included age, income, and vehicle ownership. The youngest respondents were less likely to allocate high levels of funding to bridges, pavement, and maintenance and were more likely to allocate higher levels of funding to walking and bicycling. Respondents with higher incomes were more likely to allocate more funds to pavement, and those with the lowest incomes were more likely to choose a higher level of funding for walking and bicycling than those with higher incomes. Those with more vehicles in their household were more likely to allocate less funding for operations, walking, and bicycling and more funding to new and bigger

highways than were those with fewer vehicles in the household. Again, these trends were present in individual spending categories but not across clusters, and differences between demographic groups were not substantial in magnitude.

The survey also presented respondents with the ability to select how they would spend leftover or additional funds. In this section of the survey, a significant fraction of the respondents expressed support for providing funding for programs related to addressing climate change. This outcome was somewhat at odds with the fact that the main budget categories that could help achieve climate change goals, such as walking and bicycling, and increased travel options were typically not allocated large amounts of funding. Instead, funding allocations in the main part of the survey indicated that respondents preferred to fund efforts such as pavement and bridge preservation. Analysis of the survey results was not able to describe the reasoning behind this apparent discrepancy. Additional research, for example using focus groups or additional surveys specifically aimed at understanding underlying knowledge and the reasoning behind these decisions, would be needed to provide that insight.

The report authors hypothesize that respondents may have limited funding for climate change-related transportation funding in the main part of the survey because they were not aware of their connection to avoiding, reducing, or mitigating climate change. However, a number of other hypotheses to explain these outcomes are also possible. For example, one interpretation of this result could be that WSDOT has successfully communicated to state residents the need for state-of-good repair funding but not the connection between the transportation system and climate change. Another possible interpretation is that respondents don't make a connection between climate change and the Department's spending levels in these areas. Other explanations are possible, and additional study may provide more insight.

This report contains an analysis of survey results in terms of spending priorities, the demographics of respondents, and a cluster analysis of results. WSDOT should continue to circulate an opinion poll version of the HSP questions targeted at groups that were underrepresented in the survey sample to learn more about the priorities of Washington state residents.

## INTRODUCTION

The Washington State Department of Transportation (WSDOT) is updating the state's Highway System Plan (HSP), which was most recently [updated in 2007](#). A major consideration for the current update is the inclusion of the opinions, perspectives, and priorities of the state's residents, business owners, and public decision makers. Unfortunately, the COVID-19 pandemic has limited the use of traditional in-person communication for obtaining those insights. To explore alternative methods to traditional in-person outreach efforts, WSDOT requested the assistance of the Washington State Transportation Center at the University of Washington (TRAC-UW) to create, conduct, and analyze the findings of a statewide survey to understand highway system spending priorities of Washington state residents. This report presents the findings from that survey effort. The survey's data set has been made available to WSDOT for future analysis.

The results of the HSP survey are intended to shape WSDOT's updates to the HSP, which defines the state's vision for preserving, maintaining, improving, and operating state highways in Washington. The current HSP covers the years 2007 to 2026, and the updated plan will cover the following 20 years. The state's HSP guides WSDOT's corridor, subarea, and network planning by providing common language for communicating agency priorities and strategies. The plan also informs the agency's recommendations to the Washington State Legislature regarding upcoming funding allocations for the state highway system. In addition, the content of the HSP facilitates external coordination and alignment with other local, state, and regional agencies involved in implementation of HSP policy goals. While all surveys have limitations, the results of the HSP survey represent a statistically significant sampling of the state's residents. See the [Survey Design](#) section for discussion of these limitations.

## PROJECT DESCRIPTION

### Objective

The objective of the HSP survey was to develop and deploy a survey tool that would increase WSDOT's engagement with groups and individuals around the state related to their opinions on the HSP update. The survey was intended to provide a statistically significant representation of Washington residents' highway system investment preferences. WSDOT requested that the UW research team use a discrete choice model for the HSP survey. Such models differ from traditional, standalone survey questions in that respondents are forced to make tradeoffs between different options, forcing a decision about which options are most important to the respondent relative to the other options provided. In addition to performing the discrete choice survey for the HSP project, TRAC-UW researchers created a generic discrete choice survey software tool that WSDOT may use for future public engagement purposes. The survey tool can be easily deployed around the state, may be refined to ensure that the material presented in different parts of the state are reflective of the issues important to that region, and produces data that can be readily analyzed and summarized to support decision making. A copy of the discrete choice survey tool has been provided to WSDOT for use with future surveys.

The project team worked with WSDOT staff to develop the survey questions. It then developed a sampling plan for executing that survey. The plan included oversampling geographic areas with high percentages of groups from overburdened communities, including communities of color and low-income households. This, along with the provision of a small survey incentive, was intended to improve the

participation of these groups. The survey sample was also designed so that it would be possible to understand how priorities in highway system funding varied across different geographic regions in the state.

The project team then conducted the survey of the state's residents by using the tool described above, analyzed those survey responses, and supplied WSDOT with a copy of the survey responses. This report summarizes the survey's findings.

## **Survey Regions**

WSDOT strives to meet the transportation needs of all state residents, businesses, and travelers on the state highway system. Given the geographic and demographic diversity of our state, WSDOT is interested in studying regional differences in transportation priorities. To analyze whether different regions of the state hold different transportation spending priorities, the project team categorized survey response data by the following four regions: Western Washington, I-5 Corridor, Central Washington, and Eastern Washington. Figure 1 shows a map of the survey's four regions of analysis. The team hypothesized that spending priorities would differ regionally.

### I-5 Corridor

Residents living along the I-5 corridor share certain transportation characteristics that result from greater population density and their proximity to one of the state's principal Interstate highways. In general, this corridor is home to a great portion of the state's population, as well as some of the state's greatest population density and diversity.

To study the urban/non-urban divide of WSDOT's interest, the I-5 Corridor boundary was drawn to capture both proximity to I-5 and its accompanying population density. The corridor's region was defined by a 5-mile buffer on each side of I-5, I-405, and I-205, as well as any contiguous urban growth areas<sup>1</sup> (UGAs). Though outside of I-5's 5-mile buffer, Kitsap County's UGAs were included in the survey's I-5 Corridor region because of the county's proximity to I-5 and a population density similar to that of other sections of the I-5 Corridor region.

### Western, Central, and Eastern Regions

The state's remaining regions were divided to best suit geographic variation across the state. The regional boundaries were set in consultation with the WSDOT Regional Offices and WSDOT planning staff. The Western region extended from the Pacific Ocean in the west to the western border of the I-5 Corridor region. The Central region ran east from the eastern edge of the I-5 Corridor region to the western borders of Ferry, Lincoln, Adams, Franklin, and Benton counties. The Eastern region extended from the western border of Ferry, Lincoln, Adams, Franklin, and Benton counties to the eastern border with Idaho.

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<sup>1</sup> UGAs (as defined by the Revised Code of Washington 36.70A.110<sup>1</sup>) are designated by counties to delineate areas in which urban growth is encouraged and outside of which growth can occur only if it is not urban in nature. Counties must designate UGAs with sufficient size and density to accommodate the city or county's projected growth for the succeeding 20-year period.

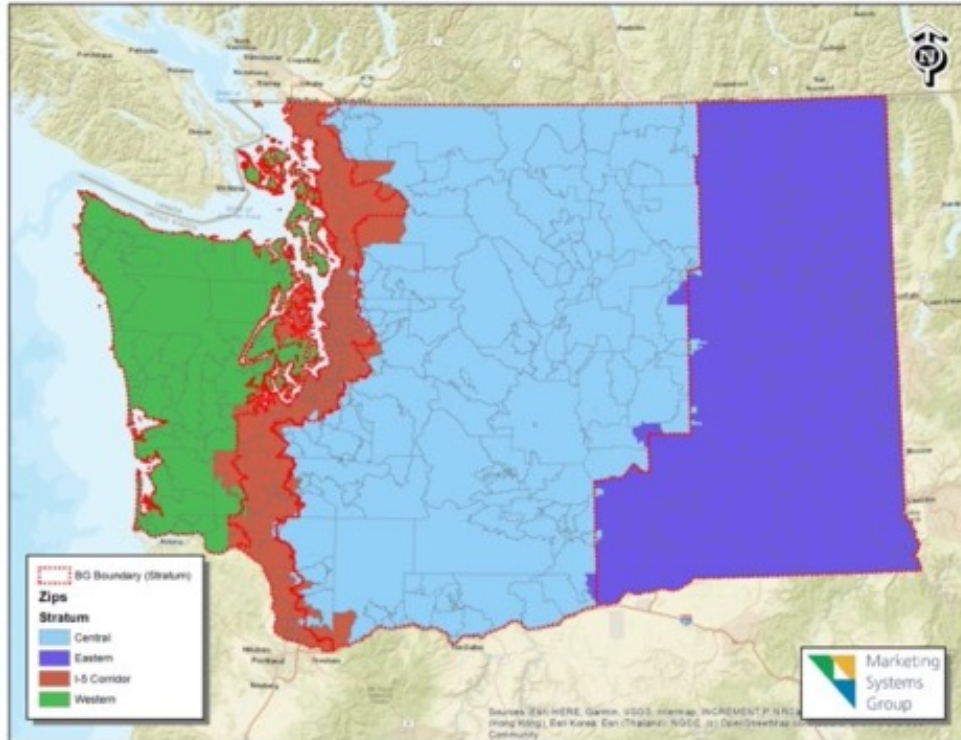


Figure 1. Map Showing the Four Regions Used for Analysis

The online survey collected each respondent’s zip code of residence so that results could be analyzed at the regional level. Regional differences in spending preferences are discussed in the Survey Results section of this report.

## SAMPLING

The survey was intended to provide a statistically significant sample of Washington residents’ transportation investment preferences. After consulting with Puget Sound Regional Council staff who had performed a series of recent public opinion surveys, the project team assumed a 4 percent response rate from recipients of the mailed survey invitation. To achieve statistical rigor in each of the four survey regions, 80,000 paper survey invitations were mailed across the state. Because a large portion of the state’s overburdened population is located along the I-5 corridor, addresses were selected from each of the regions as shown in Table 1, using information from the 2019 United States Census American Community Survey.

The sampling methodology was designed to engage a variety of demographic groups in the state. Historically, WSDOT has received lower than average response rates from geographic areas with high concentrations of communities of color and low-income communities. To help achieve a representative sample of respondents from those communities, and to account for the potential lower response rate, mailed survey invitations were sent at a higher rate to census block groups with higher-than-average populations of Hispanic/Latinx, Black, and low-income residents. Note that the U.S. Census defines Hispanic/Latinx identity as an ethnicity, while White and Black are defined as races. Because these two categories are collected independently of each other, it was not possible to select specifically for White or

non-White Hispanic/Latinx residents. The U.S. Census’s grouping of Asian/Pacific Islander as one race group despite much demographic and cultural diversity complicates targeted sampling efforts. Asian residents of Washington state have large variation in income. Because income is a strong predictor of response rate, the oversampling of high concentration Asian/Pacific Islander block groups would have resulted in an over-representative sample of high-income Asian-Pacific Islander respondents who are more likely to respond, and would have introduced additional bias into the sample. American Indian/Alaska Native residents were not oversampled. Because of this group’s relatively small portion of the state’s population (1.5 percent of Washington residents), oversampling these residents posed a risk of results bias toward a very small group. Despite the fact that American Indian/Alaska Native residents were not oversampled, survey results returned a more than proportionate representation of the state’s American Indian/Alaska Native population. (2.1 percent of respondents). See the [Demographic Results](#) section for additional discussion of the racial identifies of survey respondents.

Table 1. Survey Sample Plan

<b>Region</b>	<b>Number of Mailed Invitations</b>	<b>Number of Expected Responses</b>
I-5 Corridor	27,500	1,100
Western	17,500	700
Central	17,500	700
Eastern	17,500	700
<u>Statewide Total</u>	<u>80,000</u>	<u>3,200</u>

Table 2 shows the criteria used for determining whether addresses in a census block group would be oversampled. For any census block group that had one or more of those criteria, addresses were selected at 2.5 times the number of samples that would have been taken by using a purely random sample. Oversampling thresholds for Black and Hispanic/Latinx census block groups was based on their distributions within the state. We oversampled block groups with 15 percent or more of Black residents and 20 percent or more of Hispanic residents.

Table 2. Criteria for Oversampling Census Block Groups

<b>Demographic Category</b>	<b>Threshold for Oversampling</b>
Low Income	Median household income in the block group is less than \$53,000, which is twice the Federal Poverty Line definition.
Black Residents	Black population is equal to or greater than 15 percent of the block group population
Hispanic/Latinx Residents	Hispanic/Latinx population is equal to or greater than 20 percent of the block group population

WSDOT is also interested in the opinions of Washington state residents with limited English proficiency (LEP). Because of the high correlation between census block groups with concentrations of low income, Black, and Hispanic/Latinx residents and those with limited

English proficiency, census block groups with high concentrations of LEP residents were not separately oversampled.

## **SURVEY DESIGN**

### **Survey Model**

The HSP survey used a discrete choice model, meaning respondents had to choose between a menu of funding options, wherein the choice to fund one program category might imply cuts to another spending category. This mechanism would be helpful to decision makers because it mimicked the constrained environment in which real-world spending decisions are made and forced survey respondents to express their priorities within those constraints. Survey participants communicated their spending priorities not in isolation of other department priorities; rather, their selections communicated their spending priorities *relative to* other department priorities.

Given the complexity of state-level budgets and spending decisions, it was difficult to craft questions that succinctly communicated all budgetary considerations and spending consequences. TRAC-UW researchers worked with WSDOT subject matter experts to create survey questions that explained choices and the expected outcomes from those choices both in plain language and as accurately as possible for the general public’s understanding.

### **Survey Topics**

The survey addressed nine spending areas defined by the WSDOT staff leading the update of the Highway System Plan. The survey’s nine spending categories and their accompanying technical category titles are shown in Table 3.

Table 3. Spending Categories Used in the Survey

<b>WSDOT Internal Spending Category Title</b>	<b>Public-Facing Category Title Used in Survey</b>
Pavement Repair Preservation (SOGR - P1)	Pavement
Bridge Preservation (SOGR - P2)	Bridges
Standalone Stormwater Retrofit (I4)	Stormwater
Maintenance (SOGR M)	Maintenance
Safety (I2)	Safety
Operations (Q)	Operations
Connecting the Active Transportation Network	Walking and Bicycling
Transportation Demand Management	Increasing Travel Options
Roadway Capacity Expansion (I1 & I3)	New and Bigger Highways



For each spending area, the survey provided three to five annual spending level options, with a brief description of predicted outcomes for each respective spending level. The current level of spending for each area was indicated and was the default selection option. For each spending area, a description was also included of the program's role in the state's greater transportation system.

Survey respondents were given a hypothetical annual budget of \$3 billion, and they could not exceed this budget. However, respondents could complete a budget under the \$3 billion limit. The \$3 billion figure was chosen in partnership with WSDOT staff as a number that was within the realm of possibility, given ongoing legislative discussions at the state and federal levels. This amount provided room to explore tradeoff allocations without allowing respondents to maximize all possible funding options. Respondents could not skip any spending category; they had to choose a spending amount from one of the provided options. After completing the hypothetical annual budget allocation, respondents selected how they would spend additional leftover funds, if such funds existed. Options were provided for both small- and large-scale investment options. The survey concluded with demographic questions for analysis of the survey's reach across different groups in the state. A copy of the entire survey is provided in Appendix A.

### **Language Access**

Mailed survey invitations were in English and also noted that a complete version of the survey was available in Spanish. Survey invitations included a translation of the following sentence in English, Spanish, Simplified Chinese, Vietnamese, Korean, Tagalog, and Russian:

*If you have difficulty understanding English, you may, free of charge, request language assistance services for this Department information by calling (360) 705-7090 or email us at: TitleVI@WSDOT.WA.GOV.*

Those who preferred to take the survey in any of the languages above had the option to call or email WSDOT and receive live, spoken interpretation of the survey.

### **Accessibility**

Per WSDOT standards, the UW and WSDOT teams worked together to draft the survey at Grade 9 or lower on the Flesch-Kincaid Grade Level test to ensure readability and ease of comprehension. The survey's images contained descriptive alternative text for users with vision impairments. WSDOT provided guidance to ensure that the survey's visual layout provided sufficient contrast in compliance with Section 508 of the United States Rehabilitation Act of 1973. In addition, survey respondents were given an option to call a WSDOT phone number to take the survey over the phone. Three individuals completed the survey using this option.

### **INCENTIVES**

To encourage recipients of survey invitations to participate, those completing the survey had the opportunity to enter a drawing for \$10 and \$25 gift cards from Tango.com. Through the Tango.com website, winners could select a gift card from a variety of popular vendors. This ensured that the winners would receive a gift card that was useful to them. Survey respondents interested in entering the drawing provided their email address at the end of the survey, which was stored separately from survey responses.

After the survey closed, 25 winners were randomly selected to win a \$10 gift card, and ten winners were randomly selected to win a \$25 gift card. Winners received a link to their Tango.com gift card via email.

Research has shown that incentives to participate in a survey can increase response rates<sup>2</sup> and thus save on the costs of additional mailed invitations.

## **TIMELINE**

On August 23, 2021, Washington State’s Department of Enterprise Services mailed 80,000 written survey invitations to random addresses within the target regions and demographic areas. Survey invitations instructed survey participants to visit a web page to participate in the survey. The web page closed on Sunday, September 12, 2021.

Residents of Washington who did not receive a mailed survey invitation were also welcome to provide their feedback by using a separate survey link (the “public opinion poll”), which is still active. Those who use this link are not eligible for survey incentives. Results from this general opinion poll are being tabulated and analyzed separately from the statistical sample results discussed in this report, as many of the respondents are known to approach the survey with specific interests, and the “by invitation only” survey was designed to be representative of the entire population and not weighted toward specific advocacy or interest groups. WSDOT will continue to promote the public opinion poll survey link on the [online open house website](#) for several months following the close of the “by invitation only” survey. The public opinion poll survey differs slightly in that it specifically records the mechanism used to push the survey taker to the survey. WSDOT can thus send participants in specific outreach efforts to the opinion poll and track how those responses differ from the statistically valid, invitation-only survey results. For example, WSDOT might participate in meetings with the regional transportation planning organizations (RTPOs) or with other transportation professional groups and direct those groups to the opinion poll to gather information on their specific funding priorities.

## **DATA SET PREPARATION**

Of the 80,000 addresses that received mailed survey invitations, 1,484 completed the HSP statistical survey. Of those 1,484 respondents, 20 submitted a survey with a zip code that was either outside of Washington state or invalid. Those responses were removed from the data set for any region-based analysis but were left in for all other analyses. Because these respondents presumably received a mailed invitation to participate in the HSP survey, we assumed they had a substantial connection to Washington state and therefore included their responses in the data set.

In the course of completing the survey, if respondents exceeded the \$3 billion annual budget, they encountered a pop-up message indicating that they needed to reduce spending. However, it was still possible to submit the survey. Consequently, 67 respondents submitted the survey with an annual budget exceeding \$3 billion. These over-budget responses were included in demographic analysis of the survey sample for purposes of understanding who the survey succeeded in engaging. Over-budget responses were also included for analysis of additional funds spending. However, any response with a total budget over \$3.1 billion was removed for the purposes of analyzing spending allocations within the nine

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<sup>2</sup> <https://journals.sagepub.com/doi/10.1177/0002716212458082> or <https://www.surveymonkey.com/mp/using-survey-incentives-to-improve-response-rates/>

categories that composed the annual budget because their spending allocation decisions were not subject to the intended constraints of the survey. Total annual budgets between \$3 billion and \$3.1 billion were included for spending allocation analysis to accommodate the effect of large budget categories crowding out smaller budget categories such as stormwater and walking and bicycling. The survey received 1,441 responses that had a total budget of \$3.1 billion or lower.

Given the limited differences between demographic groups in terms of spending choices, the researchers determined that demographic weighting was not necessary to interpret the results from this survey. The one exception was age, for which some differences in spending allocations did exist. However, the number of respondents under the age of 24 was very low in comparison to all other age groups (30 responses versus the next smallest age group with 158 responses), increasing the risk of modest bias for this age group, especially when surveys were examined at the regional level. The research team determined that the change in conclusions (e.g., summary statistical values) would be small if survey responses were weighted by age and that the potential to add bias to the results was trivial because of the small sample size in this age group. Therefore, the decision was made to not adjust the survey responses by age.

## SURVEY RESULTS

### RESPONSE RATES

This survey’s design predicted a 4 percent response rate from recipients of the mailed survey invitations. Table 4 describes predicted and actual return rates by region.

Table 4. Predicted and Actual Survey Response Rates

<b>Region</b>	<b>Number of Mailed Invitations</b>	<b>Number Predicted Responses</b>	<b>Number of Responses Received</b>	<b>Actual Response Rate</b>
Central	17,500	700	283	1.6%
Eastern	17,500	700	284	1.6%
I-5	27,500	1,100	561	2.1%
Western	17,500	700	336	1.9%
Unable to determine	N/A	N/A	20	N/A
<u>Statewide Total</u>	<u>80,000</u>	<u>3,200</u>	<u>1,484</u>	<u>1.8%</u>

The response rate was lowest for the Central and Eastern regions (1.6 percent) and the highest in the I-5 region (2.1 percent), with a statewide average response rate of 1.8 percent. In every region except for I-5, the survey’s actual response rate was less than half of the predicted response rate of 4 percent. See the [Future Considerations](#) section for a discussion of the lower than predicted response rate. While response rates were lower than expected, there is a high degree of confidence in the outcome of the survey because of repeated results with little variation regionally and demographically. Statistical confidence grows with both increased sample size and when all respondents answer in a similar fashion. Statistical uncertainty grows when variation in the responses provided is high. For this survey, the smaller than expected sample response rate was balanced by the much greater than expected level of consistency in the responses across demographic and geographic categories.

Table 5 describes the regional distribution of responses in comparison to their respective share of mailed invitations. The Central, Eastern, and Western regions each received 21.9 percent of the mailed invitations, while the I-5 Corridor region received 34.4 percent. The I-5 corridor received these additional survey invitations because of the over-sampling of census block groups with higher percentages of Black, Hispanic, and low-income populations. Response rates from the Western and I-5 Corridor regions were greater than their total share of mailed invitations, while responses from the Central and Eastern regions were equal and slightly less than their shared of mailed invitations. WSDOT may consider these disparities in regional response rates for future public outreach.

Table 5. Response Rates by Region as a Percentage of Total

<b>Region</b>	<b>Percentage of Mailed Invitations</b>	<b>Share of Total Responses</b>
Central	21.9%	19.1%
Eastern	21.9%	19.1%
I-5	34.4%	37.8%
Western	21.9%	22.6%
Unable to determine	N/A	1.3%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>

## **DEMOGRAPHIC RESULTS**

After completing survey questions related to spending priorities, respondents answered a set of questions about their demographic information. Survey respondents had the option to skip any demographic question they did not want to answer.

### **Age**

Table 6 compares the age distribution of survey respondents to the statewide distribution as measured by the 2019 American Community Survey (ACS). The survey respondents underrepresented residents between the ages of 18 and 44 and overrepresented residents ages 55 and older. In particular, respondents over 65 composed over 42 percent of the survey sample, but seniors over 65 are only 15.1 percent of the state’s population. Interpretation of the survey’s results should bear in mind that these initial direct survey response summaries overrepresent the opinions of the state’s senior citizens.

Table 6. Age Distribution of Respondents

Age Group	Respondents	Percentage of Respondents	Actual Statewide Age Distribution
18-24	30	2.0%	14.20%
25-34	167	11.3%	15.10%
35-44	158	10.6%	13.20%
45-54	186	12.5%	12.70%
55-64	303	20.4%	12.90%
Over 65	633	42.7%	15.10%
No Answer	7	0.5%	N/A
<u>Statewide Total</u>	1,484	100%	100%

Sample overrepresents age group

Sample underrepresents age group

## Gender

Table 7 compares the gender distribution of survey respondents to the statewide distribution according to the 2019 ACS. The ACS does not track genders other than male and female. However, survey respondents slightly underrepresented people identifying as female and slightly overrepresented people identifying as male.

Table 7. Gender Distribution of Respondents

Gender	Respondents	Percentage of Respondents	Actual Statewide Gender Distribution
Female	625	42.1%	50.0%
Male	834	56.2%	50.0%
Other	11	0.7%	Not provided by ACS
No Answer	14	0.9%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

## Income

Table 8 compares the income bracket distribution of survey respondents to the statewide distribution according to the 2019 ACS. In comparison to the state's income distribution, the survey returned results

with a less than proportionate sample of the lowest two income brackets (under \$25,000), the range of \$35,000 to \$49,000, and the highest income bracket (over \$150,000). This underrepresentation of the state’s lowest income residents occurred despite the effort to oversample low-income neighborhoods. The respondents represented a higher than proportionate share of people with incomes in the \$75,000 to \$99,999 range. For the remaining income brackets, survey respondents reported household incomes within 2 percent of the state’s income distribution rates according to the U.S. Census. As with many surveys, a number of respondents declined to provide their income. If those individuals were concentrated in specific income groups (e.g., very low income) income bias may actually be different than noted.

Table 8. Household Income Distribution of Respondents

Household Annual Income Group	Respondents	Percentage of Respondents	Actual Statewide Household Income Distribution
Under \$15,000	42	2.8%	7.4%
\$15,000 - \$24,999	65	4.4%	6.5%
\$25,000 - \$34,999	82	5.5%	6.6%
\$35,000 - \$49,000	118	8.0%	10.5%
\$50,000 - \$74,999	241	16.2%	16.9%
\$75,000 - \$99,999	249	16.8%	13.3%
\$100,000 - \$149,999	253	17.0%	18.3%
Over \$150,000	237	16.0%	20.5%
No Answer	197	13.3%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

Sample overrepresents income group by over 2%

Sample underrepresents income group by over 2%

### Race and Ethnicity

Per the U.S. Census, the survey asked the following two questions to understand respondents’ race and ethnicity:

*Are you of Hispanic, Latino, or Spanish origin? and*

*How do you identify your race? (Check all that apply)*

The survey responses to these questions and corresponding statewide values from the 2019 ACS are shown in Table 9 and Table 10.

Table 9. Hispanic Heritage of Respondents

<b>Response</b>	<b>Respondents</b>	<b>Percentage of Respondents</b>	<b>Actual Statewide Distribution</b>
Yes	64	4.3%	13.0%
No	1,386	93.4%	87.0%
No Answer	34	2.3%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

Table 10. Race of Respondents

<b>Race Group</b>	<b>Respondents</b>	<b>Percentage of Respondents</b>	<b>Actual Statewide Distribution</b>
White	1,143	77.0%	74.2%
Black/African American	20	1.3%	4.0%
American Indian/Alaska Native	31	2.1%	1.5%
Asian/Pacific Islander	86	5.8%	9.7%
Other	54	3.6%	4.8%
Two or more races	N/A	N/A	6.0%
No Answer	150	10.11%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

The survey sample contained a less than proportional sample of the state’s Black, Asian/Pacific Islander, and Latinx populations. Note that the ACS separates those who identify with one race group from those who identify as two or more race groups. This survey’s question simply provided an “other” option and an option to not answer, without a separate designation indicating a multi-racial identity. Therefore, analysis of the sample’s potential racial bias is difficult.

### **Disability Status**

WSDOT is interested in understanding the needs and preferences of people with disabilities as they use the state highway system. To provide an accessible transportation system, it is helpful to know the needs



and preferences of people who have disabilities. For this reason, respondents were asked if they identified as having any kind of disability, as well as whether they received any government financial assistance as a result of their disability. In response, 15.4 percent of HSP survey respondents identified as having some kind of disability, a slightly greater proportion than the statewide rate of 12.7 percent as reported by the 2019 ACS. It's important to note that the U.S. Census uses specific definitions for disability status<sup>3</sup>, and the HSP survey allowed respondents to self-identify their status. However, the proportion of respondents who reported having a disability suggests that survey results can be considered representative of Washington state residents with disabilities.

Table 11. Disability Status of Respondents

*Do you identify as having a disability of any kind?*

	<b>Respondents</b>	<b>Percentage of Respondents</b>	<b>Actual Statewide Distribution</b>
No	1239	83.5%	87.3%
Yes	228	15.4%	12.7%
No Answer	17	1.1%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

Table 12. Receipt of Government Compensation for Disability

*If yes, do you receive any state or federal compensation for your disability?*

<b>Response</b>	<b>Respondents</b>	<b>Percentage of Respondents</b>
No	966	65.1%
No Answer	429	28.9%
Yes	89	6.0%
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>

## Household Size

The data set included an overrepresentation of respondents who lived in a two-person household and a slight underrepresentation of Washington residents living in one-person households and households of four or more people.

<sup>3</sup> <https://www.census.gov/topics/health/disability/guidance/data-collection-ac.html>

Table 13. Household Size of Respondents

Size	Respondents	Percentage of Respondents	Actual Statewide Distribution
1	313	21.7%	26.6%
2	710	49.1%	35.9%
3	191	13.2%	15.3%
4 or more	202	14.0%	22.1%
Invalid Answer	29	2.0%	N/A
<u>Statewide Total</u>	<u>1,484</u>	<u>100%</u>	<u>100%</u>

The ACS keeps data on the presence of minors in U.S. households, although it specifies children in the category as “related children of householder under 18 years.” The HSP survey asked a broader question of whether *anyone* under 18 lived in the household. Therefore, the ACS may slightly underestimate the number of households with members under 18 in comparison to our data set. Indeed, 77 percent of survey respondents indicated that they lived in a household with no one under the age of 18, whereas the 2019 ACS reported that 70.7 percent of Washingtonians live in a household without someone under 18.

### Vehicle Ownership

Among other identity-based groups that are often underrepresented in the transportation planning process, it is often difficult to engage with people who do not own or have access to a motor vehicle or who do not often drive a motor vehicle. Collecting data about vehicle ownership allowed analysis of whether vehicle ownership affected spending preferences.

Of the 1,436 total valid responses, 48 (3.34 percent of the sample) reported no vehicles in their household. The most common response was two vehicles, followed by one and three vehicles, respectively. Reported vehicle ownership rates from the survey respondents are shown in Table 14.

Table 14. Household Vehicle Ownership of Respondents

<b>Household Size</b>	<b>Respondents</b>	<b>Percentage of Responses</b>
<b>0</b>	48	3.2%
<b>1</b>	374	25.2%
<b>2</b>	612	41.2%
<b>3</b>	250	16.8%
<b>4</b>	88	5.9%
<b>5</b>	34	2.3%
<b>6</b>	13	0.9%
<b>7</b>	5	0.3%
<b>8</b>	5	0.3%
<b>9</b>	2	0.1
<b>10 or more</b>	7	0.5%
<b>Invalid</b>	17	1.1%
<b>No Answer</b>	28	1.9%
<b><u>Statewide Total</u></b>	1,484	<u>100%</u>

## **Language**

Invitations to participate in the HSP survey indicated in English, Spanish, Simplified Chinese, Vietnamese, Korean, Tagalog, and Russian that respondents had the option to contact WSDOT for translation. The survey was also made available in Spanish. Only two respondents completed the HSP survey using the translated Spanish language version. The survey also asked respondents to indicate whether anyone in their household usually spoke any language other than English. Of the respondents, 84.4 percent indicated “no,” while 14 percent indicated that at least one member of their household regularly spoke a language other than English.

## **RESULTS BY SPENDING CATEGORY**

For each of the nine major spending categories, survey respondents read a brief description, and in some cases viewed supporting images, of the category’s role in WSDOT’s highway system. Given this information and the expected results of three to four discrete spending levels, respondents chose how much to fund each category. The following section provides a summary of the statewide results regarding spending preferences for each category.

## Pavement

The plurality of survey respondents chose to fully fund pavement preservation (45.5 percent). There was no substantial difference in funding preference by region (Table 15). In every age group except for respondents ages 18 to 24, the \$300 million funding level received the plurality of allocations. However, for the youngest age group, \$150 million (the lowest option) received the plurality of allocations (Table 16).

Table 15. Pavement Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western
<b>\$150M</b> (Current level)	321	22.3%	21.5%	18.7%	25.3%	21.0%
<b>\$250M</b>	465	32.3%	32.8%	35.5%	30.4%	31.5%
<b>\$300M (full funding)</b>	655	45.5%	45.6%	45.8%	44.4%	47.5%
<b><u>Statewide Total</u></b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Table 16. Pavement Spending by Age Group

Funding level	18-24	25-34	35-44	45-54	55-64	Over 65	No Answer <sup>4</sup>
<b>\$150M</b>	44.8%	29.9%	26.1%	18.9%	19.2%	20.6%	28.6%
<b>\$250M</b>	31.0%	27.4%	29.4%	32.8%	33.0%	34.0%	14.3%
<b>\$300M (full funding)</b>	24.1%	42.7%	44.4%	48.3%	47.8%	45.3%	57.1%
<b><u>Statewide Total</u></b>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Table 17 shows an analysis of pavement funding allocation by income groups. The data suggest that lower income respondents were more likely to fund pavement at the lowest level (\$150 million), while the higher respondents' income was, the less likely they were to choose the lowest spending option in this category. The trend was less pronounced for those who chose the highest spending level (\$300 million),

<sup>4</sup> Did not select a funding level.

although respondents in the highest three income brackets were more likely to fully fund pavement than respondents in the lowest three income groups.

Table 17. Pavement Spending by Income Group

Funding level	Under \$15,000	\$15,000 - \$24,999	\$25,000 - \$34,999	\$35,000 - \$49,000	\$50,000 - \$74,999	\$75,000 - \$99,999	\$100,000 - \$149,999	Over \$150,000	No Answer <sup>1</sup>
<b>\$150M</b>	35.9%	26.2%	32.1%	28.0%	24.2%	21.2%	18.3%	17.3%	20.4%
<b>\$250M</b>	33.3%	35.4%	40.7%	31.4%	35.4%	33.6%	31.5%	31.6%	24.1%
<b>\$300M (full funding)</b>	30.8%	38.5%	27.2%	40.7%	40.4%	45.2%	50.2%	51.1%	55.5%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

There was no substantial difference in spending preferences among races, as defined by White respondents vs. Non-White respondents. However, Table 18 shows that respondents identifying as Hispanic, Latinx, or Spanish were more likely to allocate the lowest funding option to pavement. Similarly, respondents who did not identify as Hispanic, Latinx, or Spanish chose to fully fund pavement at rates almost 7 percent greater than those who did.

Table 18. Pavement Spending by Hispanic Heritage

Funding Level	Yes	No	No Answer
<b>\$150M</b>	32.8%	21.8%	24.2%
<b>\$250M</b>	29.5%	32.7%	18.2%
<b>\$300M (full funding)</b>	37.7%	45.5%	57.6%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

## Bridges

Table 19 shows that a smaller proportion of respondents chose to fully fund bridge preservation than pavement preservation (26.6 percent for full bridge funding versus 45.5 percent for full pavement funding).

Table 19. Bridges Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$200M</b> (Current level)	443	30.7%	31.8%	29.3%	31.8%	29.0%	35.00%
<b>\$310M</b>	615	42.7%	44.9%	43.6%	41.6%	42.6%	30.00%
<b>\$410M (full funding)</b>	383	26.6%	23.3%	27.1%	26.6%	28.4%	35.00%
<b><u>Statewide Total</u></b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

As with the pavement category, respondents in younger age groups were much more likely to fund bridges at the lowest level. Table 20 shows that the older the respondent, the lower the propensity to choose the lowest funding level for bridges. Respondents ages 18 to 24 were the least likely to fully fund bridges, with just 3.4 percent choosing to do so.

Table 20. Bridges Spending by Age Group

Funding level	18-24	25-34	35-44	45-54	55-64	Over 65	No Answer
<b>\$200M</b>	65.5%	42.7%	38.6%	28.9%	26.4%	28.6%	28.6%
<b>\$310M</b>	31.0%	39.0%	36.6%	46.7%	45.8%	14.3%	14.3%
<b>\$410M (full funding)</b>	3.4%	18.3%	24.8%	24.4%	27.8%	57.1%	57.1%
<b><u>Statewide Total</u></b>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

There were no trends in bridge spending preferences based on income. Table 21 shows that respondents who identified as White were less likely to allocate the minimum level of funding to bridges than were Non-White respondents. However, White and Non-White respondents were about equally likely to fund bridges at the second spending level (\$310 million). Similarly, Table 22 shows that respondents who identified as Hispanic, Latinx, or Spanish chose to fully fund bridges (\$410 million) at less than half the rate of respondents who did not identify as Hispanic, Latinx, or Spanish.

Table 21. Bridges Spending by Race

<b>Funding Level</b>	<b>Non-White</b>	<b>White</b>	<b>No Answer</b>
<b>\$200M</b>	40.2%	28.8%	34.0%
<b>\$310M</b>	40.2%	43.7%	42.0%
<b>\$410M (full funding)</b>	19.6%	27.5%	24.0%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Table 22. Bridges Spending by Hispanic Heritage

<b>Funding Level</b>	<b>Yes</b>	<b>No</b>	<b>No Answer</b>
<b>\$200M</b>	41.0%	30.4%	27.3%
<b>\$310M</b>	45.9%	42.8%	33.3%
<b>\$410M (full funding)</b>	13.1%	26.9%	39.4%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

### **Preservation Programs**

The survey’s pavement and bridges sections fall into WSDOT’s broader category of Preservation Programs. Full funding is the amount required to achieve and sustain a state of good repair for highway assets. A state of good repair for a specific asset is defined as a section of pavement or bridge being in fair or good condition. For an inventory of assets to be considered in a state of good repair, WSDOT must meet its network-level targets for condition for the network. For example, the four-year network state of good repair target is less than 10% of National Highway System Bridges classified in poor condition. Given the \$3 Billion spending limit, over 63 percent of respondents wanted WSDOT to increase spending on both bridge and pavement preservation programs over current levels. An additional 15 percent chose to increase spending on one but not the other program, while 21 percent maintained current spending levels on both programs. Of the respondents, 21.6 percent (311 in total) chose to fully fund all preservation programs (pavement and bridges combined). Full funding for both preservation programs was the most common funding combination, followed by mid-level funding (\$250 million for pavement and \$310 million for bridges), which was chosen by 20.41 percent of respondents. Table 23 shows that respondents who chose the lowest option for bridge funding were also likely to choose the lowest level of pavement funding, which held true for the middle and highest spending level options.

Table 23. Spending Allocations for Preservation Categories

Pavement Spending	Bridge Spending			
	\$200M	\$310M	\$410M (full funding)	Total
\$150M	15.8%	4.9%	1.7%	<u>22.3%</u>
\$250M	8.5%	20.5%	3.3%	<u>32.3%</u>
\$300M (full funding)	6.5%	17.3%	21.6%	<u>45.5%</u>
<u>Total</u>	<u>30.7%</u>	<u>42.7%</u>	<u>26.6%</u>	<u>100.0%</u>

One possible explanation for the propensity to fully fund pavement at higher rates than bridges is the magnitude of the spending levels. Pavement’s fully funded level of \$300 million was less than the second level of funding for the bridge category and \$110 million less than bridge’s full funding level. Given the constrained budget, respondents may have opted to fully fund pavement and not bridges because of its relatively lower cost estimate. The middle spending level, \$310 million, received the plurality of respondents’ choices. Another possible explanation is that respondents perceived that their interactions with pavement were of greater importance than their interactions with the state highway system’s bridges.

Between the two preservation categories, the responses of younger participants suggested that the state’s younger residents either did not value bridge and pavement preservation compared to other transportation investments, did not drive, or were not aware of the categories’ importance in a functioning transportation system.

Before moving on to the succeeding spending categories, survey respondents were warned that “benefits from the remaining categories may not happen if pavements and bridges are not fully funded.”

There were no trends in terms of region, income, ethnicity, or race among respondents who chose to fully fund all preservation categories. While respondents who did not have a vehicle composed 3 percent of our overall data set, only 1 percent of respondents who chose to fully fund both preservation categories did not have a vehicle in their household.

### Stormwater

Almost 70 percent of respondents funded stormwater retrofitting at the lowest two levels. Each successively higher funding level received fewer allocations than the previous one. Respondents from the Central Region were the most likely to choose the lowest funding allocation level, while respondents from the I-5 Corridor Region were the most likely to choose the highest funding level (Table 24). However, only 15.1 percent of I-5 Corridor respondents chose to do so. At the same time, in a later section of the survey, many respondents ranked climate change-related spending as a top priority for additional funds spending. See the Additional Funds Results section below for more discussion.



Table 24. Stormwater Funding by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$2M</b> (Current level)	540	37.5%	47.1%	38.1%	31.8%	37.7%	50.0%
<b>\$3M</b>	469	32.5%	35.0%	35.2%	31.5%	30.2%	30.0%
<b>\$10M</b>	257	17.8%	10.6%	16.5%	21.6%	18.8%	15.0%
<b>\$50M</b>	175	12.1%	7.3%	10.3%	15.1%	13.3%	5.0%
<b><u>Statewide Total</u></b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

There were no trends for stormwater funding allocation based on age group, income, race, or ethnicity. Respondents with and without vehicles did not allocate funds differently.

### Maintenance

Over 70 percent of respondents wanted WSDOT to increase maintenance spending from the current level of investment of \$250 million. Across all regions, the highest proportion of respondents chose to fund maintenance at the second level of \$300 million (Table 25). Across all age groups, the \$300 million level of funding received the highest proportion of allocation, except for ages 18 to 24. For this youngest age bracket, the highest proportion of respondents chose to fund maintenance at the lowest level (\$250 million). There were no salient trends in maintenance spending preferences by income, race, ethnicity, or vehicle ownership.

Table 25. Maintenance Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$250M</b> (Current level)	423	29.29%	27.0%	26.7%	31.6%	29.6%	25.0%
<b>\$300M</b>	583	40.46%	44.5%	41.8%	38.9%	39.5%	25.0%
<b>\$350M</b>	436	30.26%	28.5%	31.5%	29.5%	30.9%	50.0%
<b><u>Statewide Total</u></b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Table 26. Maintenance Spending by Age

<b>Funding level</b>	<b>18-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>Over 65</b>	<b>No Answer</b>
<b>\$250M</b>	48.3%	32.3%	30.7%	30.6%	26.6%	27.8%	57.1%
<b>\$300M</b>	37.9%	36.6%	42.5%	37.8%	43.1%	40.9%	14.3%
<b>\$350M</b>	13.8%	31.1%	26.8%	31.7%	30.3%	31.3%	28.6%
<b><u>Statewide Total</u></b>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

### Safety

Over half of survey respondents wanted to increase safety spending from the state’s current level of investment. Three out of 1,441 survey respondents chose to fully fund safety at the transformational level of a \$1.2 billion investment. This sample of three respondents was too small to identify any trends in spending preferences. All three who chose to spend \$1.2 billion on safety also chose the lowest funding levels for pavement preservation, bridge preservation, operations, walking and bicycling, and new and bigger highways. The large jumps in the safety category’s funding options (the highest funding level of \$1.2 billion was over twenty times the lowest level of \$50 million) may have made it difficult for respondents to accurately select their preferred allocation. Across all regions, there was no difference in spending preferences; the lowest two levels received close to an equal allocation statewide regardless of region, followed by the \$500 million level (Table 27). There were no salient trends in terms of safety spending preferences based on age, income, race, ethnicity, or vehicle ownership.

Table 27. Safety Spending by Region

<b>Funding level</b>	<b>All Respondents</b>	<b>Percentage of All Respondents</b>	<b>Central</b>	<b>Eastern</b>	<b>I-5 Corridor</b>	<b>Western</b>	<b>Region Invalid</b>
<b>\$50M</b> (Current level)	615	42.68%	46.7%	45.4%	40.0%	42.0%	35.0%
<b>\$140M</b>	671	46.56%	44.2%	43.6%	48.4%	46.9%	65.0%
<b>\$500M</b>	152	10.55%	8.8%	11.0%	11.5%	10.8%	0.0%
<b>\$1.2B</b>	3	0.21%	0.4%	0.0%	0.2%	0.3%	0.0%
<b><u>Statewide Total</u></b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

### Operations

Given the \$3B budget, 57 percent of respondents chose to increase safety funding over current levels. However, over 80 percent of respondents chose to fund operations at one of the lowest two levels of

investment offered. Across all regions the lowest two levels of investment (\$48 million and \$100 million) received the highest proportion of allocations (Table 28). Figure 2 shows that the youngest respondents were more likely than older respondents to choose the \$48 million investment level. There were no salient trends in operations spending preferences based on income or ethnicity, but Table 29 shows that Non-White respondents were more likely than White respondents to choose the lowest funding level for operations. Conversely, people who identified as White were more likely to choose higher spending levels than people who identified as Non-White. Respondents who owned zero vehicles were more likely than anyone owning a vehicle to choose to fund operations at \$100 million (see Figure 3). The more vehicles in a household, the more likely the respondent was to choose the lowest funding level for operations spending.

Table 28. Operations Spending by Region

Funding level	All Respondents	Percent of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$48M</b> (Current level)	602	41.8%	47.1%	43.2%	42.0%	36.1%	35.0%
<b>\$100M</b>	567	39.3%	37.2%	43.2%	38.0%	40.7%	30.0%
<b>\$136M</b>	205	14.2%	12.4%	10.3%	15.1%	17.0%	25.0%
<b>\$207M</b>	67	4.6%	3.3%	3.3%	4.9%	6.2%	10.0%
<b>Statewide Total</b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

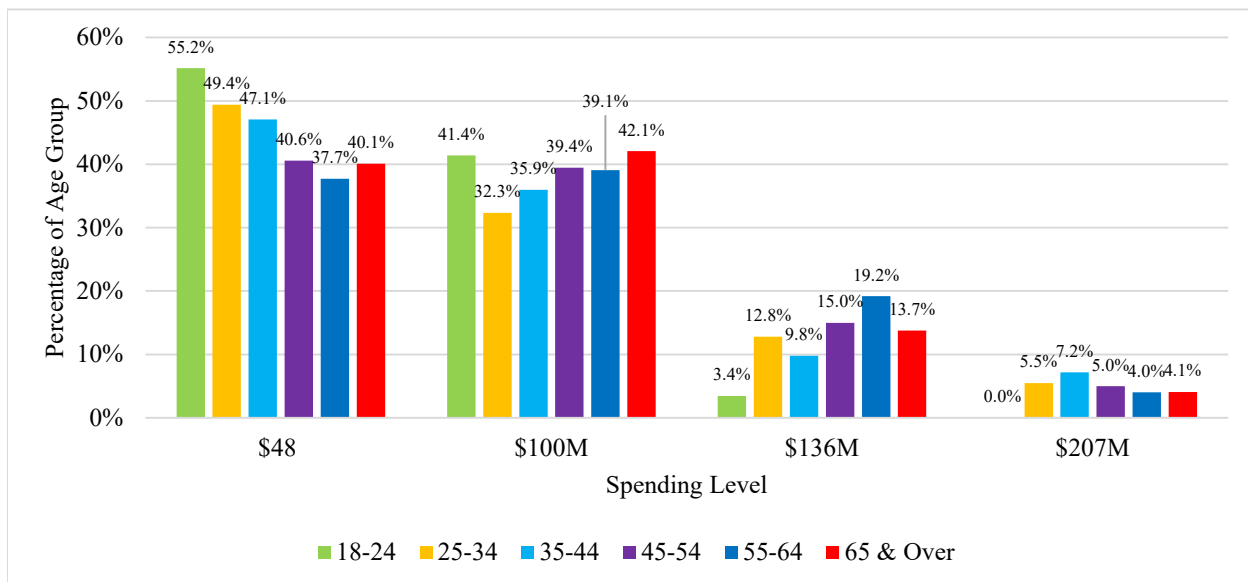


Figure 2. Operations Funding Allocations by Age Group

Table 29. Operations Spending by Race

Funding Level	Non-White	White	No Answer
\$48M	52.7%	37.9%	57.0%
\$100M	29.9%	42.7%	26.2%
\$136M	13.6%	14.8%	10.7%
\$207M	3.8%	4.6%	6.0%
<u>Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

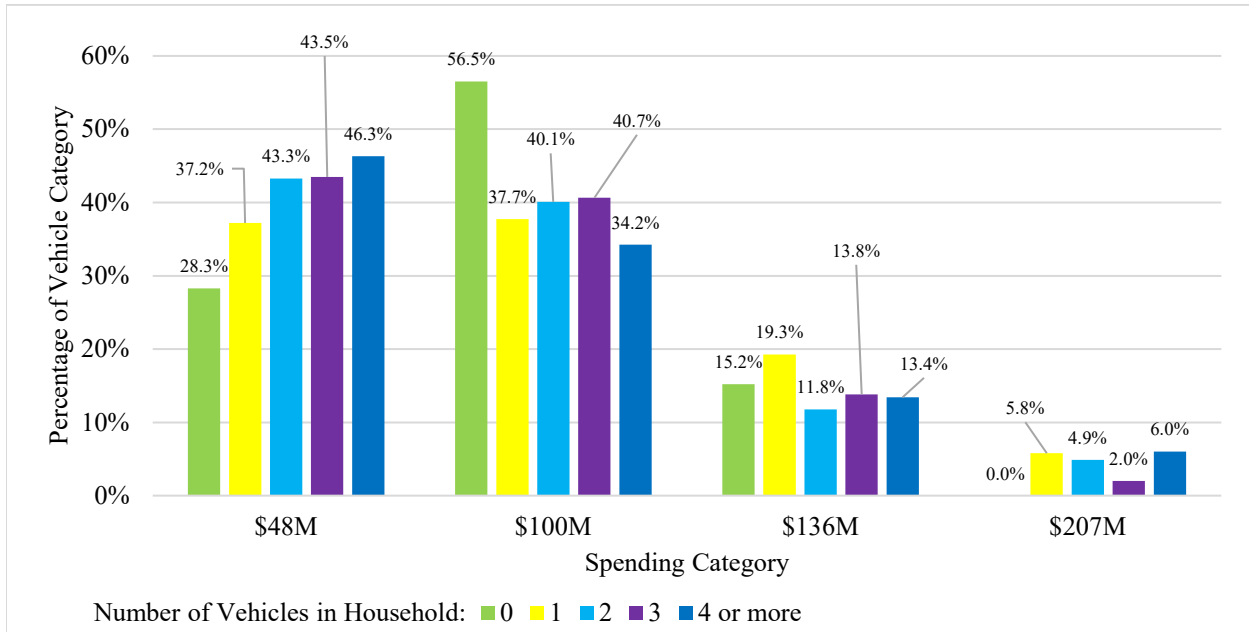


Figure 3. Operations Spending by Vehicle Ownership

### Walking and Bicycling

Walking and Bicycling (the public-facing term for active transportation programs) was the only spending category for which respondents had the option to allocate \$0. While as an agency WSDOT does spend some funds on active transportation, there is no dedicated budget item to represent the current level of spending. For this reason, \$0 was selected by WSDOT subject matter experts as the state’s current spending level. 60 percent of respondents chose to provide some level of funding for walking and biking, an increase over the current condition. Statewide, respondents chose funding allocations of \$0 and \$100 million in almost equal proportions. While in each region over 75 percent of respondents chose either the lowest (zero) or second lowest (\$100M) spending option, there was some regional variation in preferences for this category (Table 30). Figure 4 shows that across all regions, the Central Region was

most likely to allocate \$0 for this category. Central was the only region in which the \$0 spending option received a higher proportion of allocations than the \$100 million option. The I-5 Corridor Region had the highest proportion of respondents who chose the highest option of \$400 million. However, there was not a notable amount of variation across regions in allocation of the highest two funding options.

Table 30. Walking and Bicycling Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$0</b> (Current level)	579	40.2%	51.1%	40.3%	36.7%	37.3%	30.0%
<b>\$100M</b>	578	40.1%	33.2%	41.4%	40.9%	42.9%	50.0%
<b>\$270M</b>	205	14.2%	10.6%	13.9%	15.8%	14.8%	15.0%
<b>\$400M</b>	79	5.5%	5.1%	4.4%	6.5%	4.9%	5.0%
<b>Statewide Total</b>	<u>1,441</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

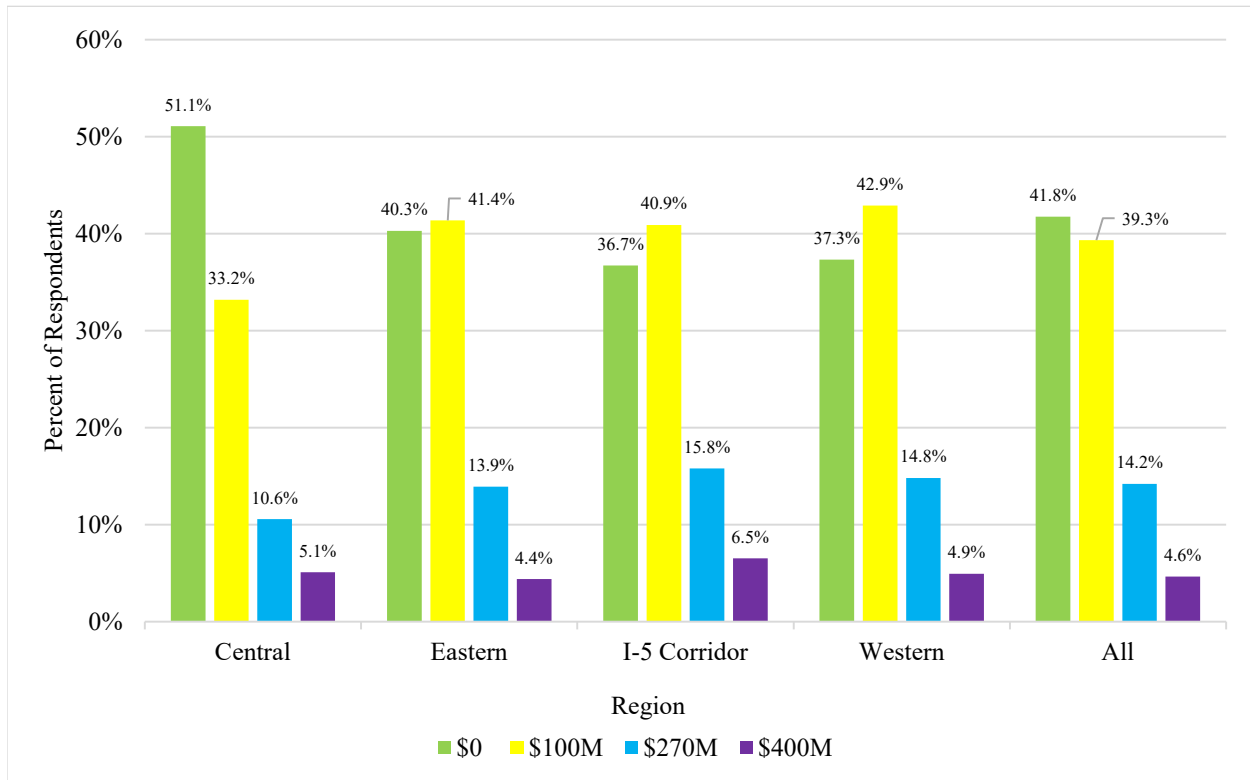


Figure 4. Walking and Bicycling Spending by Region

While overall results showed nearly equal preference between funding walking and bicycling at \$0 or \$100, in the 18 to 24 age group, respondents chose the \$100 million option twice as often as the \$0 option (20.7 percent selected \$0 whereas 44.8 percent selected \$100 million). Among other age groups, the difference between the lower two spending options was within three points, with the exception of the 45- to 54-year-old age group, in which almost 44 percent selected the \$0 option and 33.9 percent selected the \$100 million option. Results by age group are summarized in Table 31.

Table 31. Walking and Bicycling Spending by Age Group

<b>Funding level</b>	<b>18-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>Over 65</b>	<b>No Answer</b>
<b>\$0</b>	20.7%	36.6%	39.9%	43.9%	41.8%	40.1%	57.1%
<b>\$100M</b>	44.8%	39.0%	37.3%	33.9%	40.1%	43.0%	14.3%
<b>\$270M</b>	31.0%	15.2%	17.0%	12.2%	13.8%	13.3%	14.3%
<b>\$400M</b>	3.4%	9.1%	5.9%	10.0%	4.4%	3.6%	14.3%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Across all income levels, the highest and second highest funding options received the least and second least proportions of allocations, respectively. However, respondents with annual incomes of under \$25,000 were more inclined to allocate \$100 million for this category than \$0. In particular, among those with an annual income under \$15,000, over 61 percent of respondents chose the \$100 million option, whereas only 25.6 percent chose the \$0 option. Table 32 summarizes respondents' funding preferences for this category by income group.

Table 32. Walking and Bicycling Spending by Income Group

<b>Funding level</b>	<b>Under \$15,000</b>	<b>\$15,000 - \$24,999</b>	<b>\$25,000 - \$34,999</b>	<b>\$35,000 - \$49,000</b>	<b>\$50,000 - \$74,999</b>	<b>\$75,000 - \$99,999</b>	<b>\$100,000 - \$149,999</b>	<b>Over \$150,000</b>	<b>No Answer</b>
<b>\$0</b>	25.6%	30.8%	40.7%	39.8%	38.3%	43.2%	33.6%	42.2%	50.8%
<b>\$100M</b>	61.5%	43.1%	44.4%	41.5%	41.7%	41.1%	43.6%	32.0%	34.0%
<b>\$270M</b>	10.3%	18.5%	12.3%	13.6%	12.5%	13.3%	16.6%	18.2%	10.5%
<b>\$400</b>	2.6%	7.7%	2.5%	5.1%	7.5%	2.5%	6.2%	7.6%	4.7%
<u>Statewide Total</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

There were no trends in spending preferences by race, although in terms of ethnicity, respondents who identified as Hispanic, Latinx, or Spanish were more likely to choose lower options of funding for this category than respondents who did not identify as such. Over 91 percent of respondents who identified as Hispanic, Latinx or Spanish chose the lowest two levels, whereas under 80 percent of respondents who did not identify as Hispanic, Latinx, or Spanish chose the lowest two options.

The more vehicles in a household, the more likely respondents were to choose the \$0 spending level. The fewer vehicles in a household, the more likely they were to choose the \$100 million and \$270 million spending levels for walking and bicycling funding. Figure 5 shows spending preferences for walking and bicycling spending, depending on the number of vehicles in the respondent’s household.

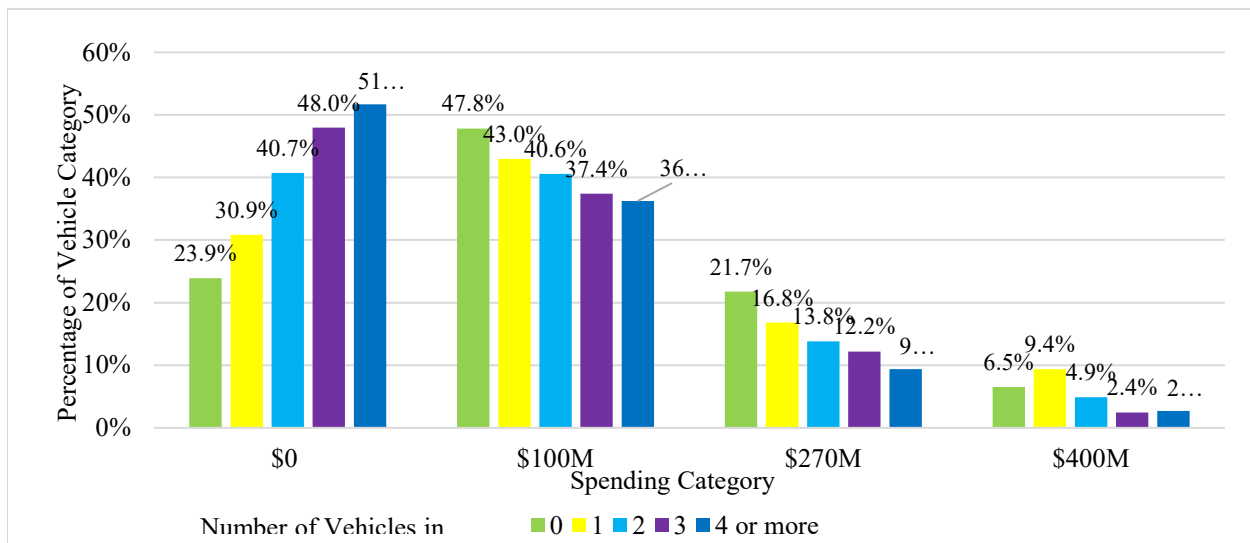


Figure 5. Walking and Bicycling Spending by Household Vehicle Ownership

### Increasing Travel Options

Across all regions, more than 50 percent of respondents chose the lowest level of funding for this category, known within WSDOT as transportation demand management (Table 33). Respondents from the I-5 Corridor region were least likely (53.8 percent) to choose the lowest funding option (\$150 million), whereas those in the Central region were the most likely (64.6 percent) to choose the lowest option. Statewide, over 80 percent of respondents preferred to allocate one of the lowest two funding options for increasing travel options (either \$150 million or \$200 million). The I-5 Corridor region had the highest proportion of respondents who chose this category’s highest option of \$1.2 billion; however, in no region did more than 8 percent of respondents choose the \$1.2 billion option. There were otherwise no notable regional trends.

Table 33. Increasing Travel Options Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$150M</b> (Current level)	837	58.1%	64.6%	61.8%	53.8%	57.7%	45.0%
<b>\$200M</b>	322	22.4%	21.2%	22.4%	22.4%	23.1%	25.0%
<b>\$350M</b>	136	9.4%	7.3%	6.3%	10.7%	10.8%	25.0%
<b>\$600M</b>	64	4.4%	3.3%	4.8%	5.8%	3.1%	0.0%
<b>\$1.2B</b>	81	5.6%	3.6%	4.8%	7.3%	5.2%	5.0%
<b>Statewide Total</b>	<u>1,440<sup>5</sup></u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Over 27 percent of respondents ages 18 to 24 chose to fund increasing travel options at the \$1.2 billion level, the highest proportion of any age group, whereas the average proportion who chose \$1.2 billion among the remaining age groups was just 6.8 percent. There were no other trends by age groups. There were no notable trends in funding preferences based on respondents’ income, race, or ethnicity. Figure 6 shows that those respondents with three or more vehicles in their household were more likely to choose the lowest funding option (\$150 million) for this category.

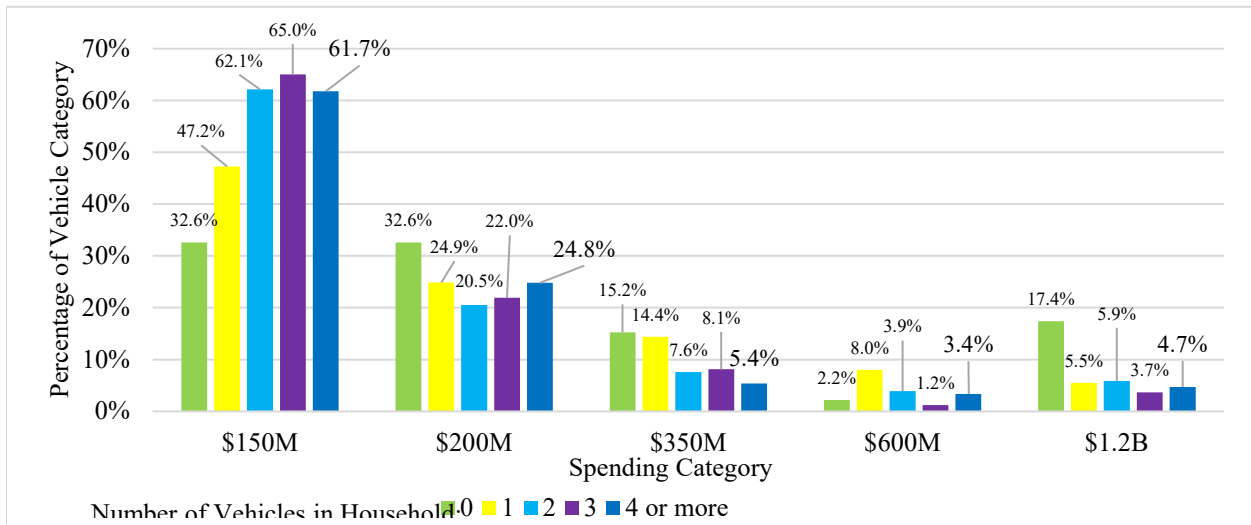


Figure 6. Increasing Travel Options Spending by Vehicle Ownership

<sup>5</sup> One invalid survey response was removed because of programming error.



## New and Bigger Highways

The survey’s New and Bigger Highways spending category, known internally to WSDOT as Roadway Capacity Expansion, was the only opportunity for respondents to reduce spending from current levels. In this case, the stated level of current annual investment was \$1.2 billion. Respondents could choose to delay some projects and reduce spending to \$800 million, maintain it at \$1.2 billion to complete all legislatively funded projects as planned, or raise it. This category also represented the survey’s annual cost estimates, with the current spending allocation occupying over one-third of the given \$3 billion budget. Additionally, three of the four spending levels offered exceeded \$1 billion.

Altogether, 78.5 percent of respondents either wanted to keep capacity expansion funding at its current level or reduce spending. Over one-fourth of respondents chose to reduce spending in this category, and over 50 percent of respondents chose to maintain expansion funding at its current level. Twenty-seven respondents chose to fund capacity expansion at the transformational level of investment of \$2 billion. This sample size was too small to draw significant conclusions about the demographics and funding preferences of those who chose the \$2 billion transformational level of funding.

Regardless of region, the highest proportion of respondents chose to maintain current spending at the \$1.2 billion level, and the second-highest proportion of respondents chose the \$800 million level (Table 34). Looking regionally, the Central Region was most interested in increased funding for road expansion, and even there, 74 percent of respondents chose to maintain or decrease current expansion spending, while only 26 percent chose to increase capacity expansion spending over current levels. There were no notable trends in terms of spending preferences by age, income, race, or ethnicity. Figure 7 shows that respondents with fewer vehicles were more likely to choose the \$800 million option, while those with more cars were more likely to select the \$1.6 billion option than those with fewer vehicles. Allocations to the \$1.2 billion and \$2 billion levels were relatively equal across different vehicle ownership amounts.

Table 34. New and Bigger Highways Spending by Region

Funding level	All Respondents	Percentage of All Respondents	Central	Eastern	I-5 Corridor	Western	Region Invalid
<b>\$800M</b>	402	27.9%	27.7%	21.0%	31.3%	29.3%	10.0%
<b>\$1.2B</b> (Current level)	716	49.7%	46.4%	57.7%	45.6%	51.9%	65.0%
<b>\$1.6B</b>	291	20.2%	23.4%	19.5%	20.7%	17.3%	20.0%
<b>\$2B</b>	31	2.2%	2.6%	1.8%	2.4%	1.5%	5.0%
<b><u>Statewide Total</u></b>	<u>1,440<sup>6</sup></u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

<sup>6</sup> One invalid survey response removed because of a programming error.

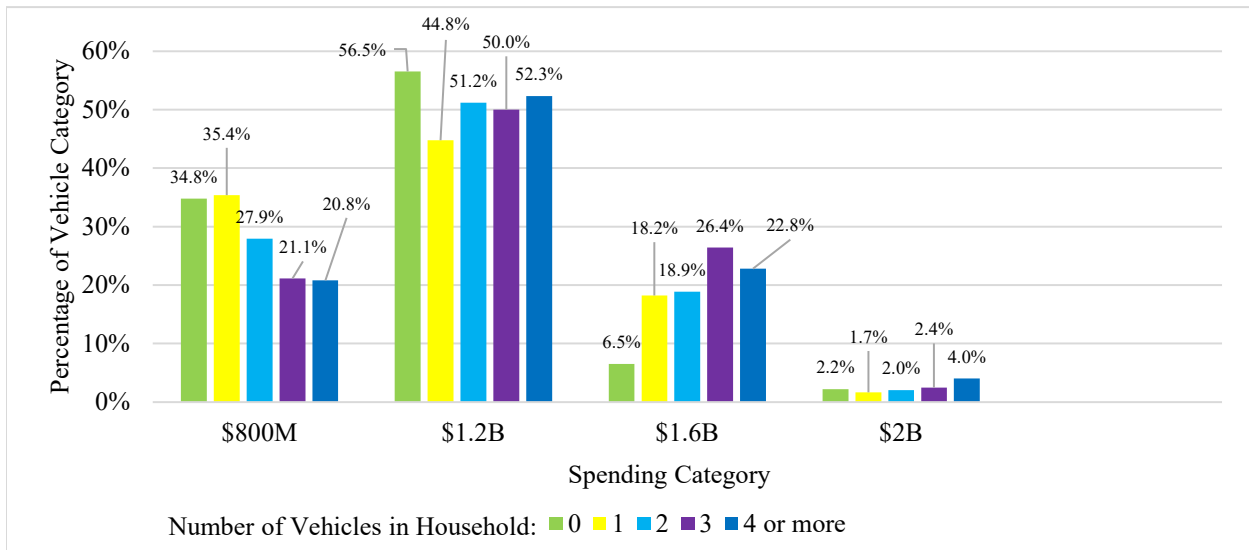


Figure 7. New and Bigger Highways Spending by Vehicle Ownership

### Relative Funding Allocations

Figure 8 assigns values one to five for each spending category’s levels of investment. The investment levels are not continuous variables, nor is each category comparable in spending magnitude. However, this figure shows respondents’ relative interest in funding the various categories in the context of the maximum investment level offered. Bars in blue show the maximum level of funding possible for each category. The green bars show the level of investment selected by the most respondents. Pavement preservation is the only spending category that the plurality of respondents chose to fund at the maximum level offered. For the spending categories of bridges, safety, maintenance, and capacity expansion, the majority of respondents chose to fund at a mid-level of investment. For the spending categories of stormwater, operations, increasing travel options, and walking and bicycling, the plurality of respondents chose to invest at the lowest level offered by the survey.

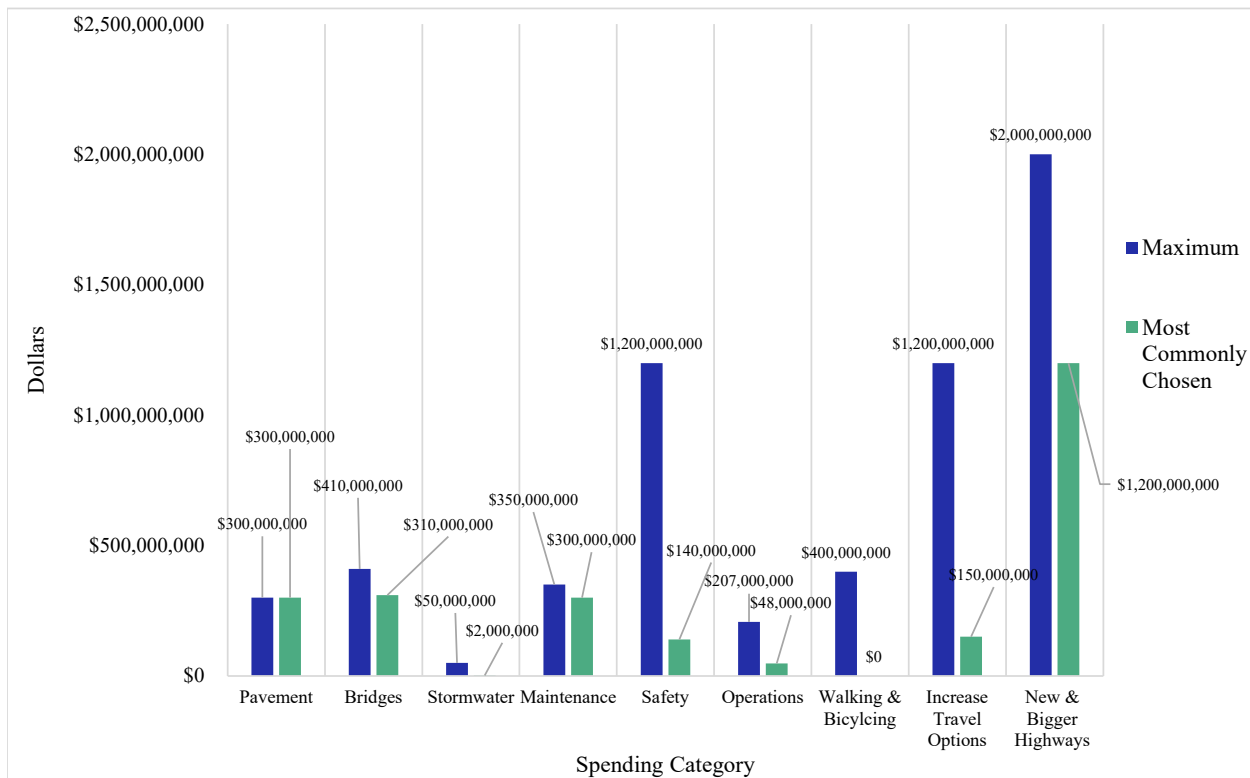


Figure 8. Differential in Maximum Spending Level vs. Most Response

### Billion Dollar Spending Options

Three spending categories offered options for a level of investment exceeding \$1 billion: safety, increasing travel options, and new and bigger highways. In fact, three of the four options available for the new and bigger highways category exceeded \$1 billion; the state’s current funding level was noted as \$1.2 billion, and additional options of \$1.6 billion and \$2 billion were also available. Alternatively, respondents could choose to decrease spending in this category to \$800 million annually.

A respondent who selected billion-dollar investment options in any of these three categories thus had significant constraints on spending in the survey’s remaining categories. The total budget available to survey respondents was \$3 billion across nine program categories. Table 35 summarizes the overall statewide likelihood of respondents to choose the spending options that exceeded \$1 billion, which constituted over one-third of the total annual budget. Only three respondents chose the safety category’s highest funding options, while cumulatively 1,038 survey respondents (or 72.1 percent) chose to complete funded projects for new and bigger highways as planned or increase funding for highways at costs over \$1 billion.

Table 35. Percentage of Respondents Who Chose Billion Dollar Spending Options

Spending Category	Percentage of Respondents
Safety (\$1.2 billion)	0.2%
Increasing Travel Options (\$1.2 billion)	5.6%
New & Bigger Highways (\$1.2 billion)	49.7%
New & Bigger Highways (\$1.6 billion)	20.2%
New & Bigger Highways (\$2 billion)	2.2%

## ADDITIONAL FUNDING RESULTS

While the main objective of the HSP survey was to understand spending priorities given a constrained budget, WSDOT was also interested in studying respondents' priorities if they had additional funds left over, regardless of a budget. Respondents were given a list of ten small-scale investment options and five large-scale investment options and were asked to choose priorities. The small- and large-scale investment options were separated because of the large difference in the magnitude of the respective projects' costs. This avoided the conflict between choosing funding for a substantial project, such as transformational-level investments to the safety system, and a smaller-scale initiative, such as additional transportation programs to benefit low-income Washington residents. Note that the analysis of the additional funding priorities included all survey respondents, regardless of whether they exceeded the \$3 billion budget. The total data set for additional funds analysis was 1,484 respondents.

In contrast to the survey's nine primary spending categories that were subject to the constrained \$3 billion budget, the additional funds questions allowed respondents to indicate that they did not want to allocate any funds for the spending options provided. This allowed us to analyze whether respondents valued the options provided.

### Small-Scale Additional Funds Investments

Given the following ten spending options, survey respondents ranked their top five priorities in order of most importance. The spending categories they could choose among were as follows, with the short reference used in Figure 9 given after each full category name.

- Address climate change and reduce the impact of natural disasters. (Climate Change)
- Enhance the state highway system's natural environment (habitat for bees and other pollinators, tree canopy coverage, wildlife, animal crossings). (Environment)
- Invest in transportation programs to benefit low-income residents. (Low Income)
- Improve how state highways connect to buses, city/county roads, rail, and airports. (Connections)

- Spend less than we spend now and lower the gas tax. (Nothing)
- Develop new scenic highways. (Scenic Highways)
- Invest in non-transportation programs that lower the need to travel on the highway system (for example, improve broadband access so more people can work from home). (TDM)
- Provide more truck parking facilities to improve freight efficiency and safety. (Truck Parking)
- Develop infrastructure for electric vehicles and electric trucking. (EVs)
- Complete a statewide network of trails that can be used for travel, recreation, and exercise. (Trails)

Over 11 percent of respondents left the spending options in their default order and presumably did not consider their relative ranking. Any responses that left the small-scale investment options in the default order were removed from this analysis. Figure 9 shows the proportion of respondents who chose each of the small-scale additional funding investment options as their first choice. The most common first priorities were climate change, no additional spending, increasing system connections, and electric vehicles.

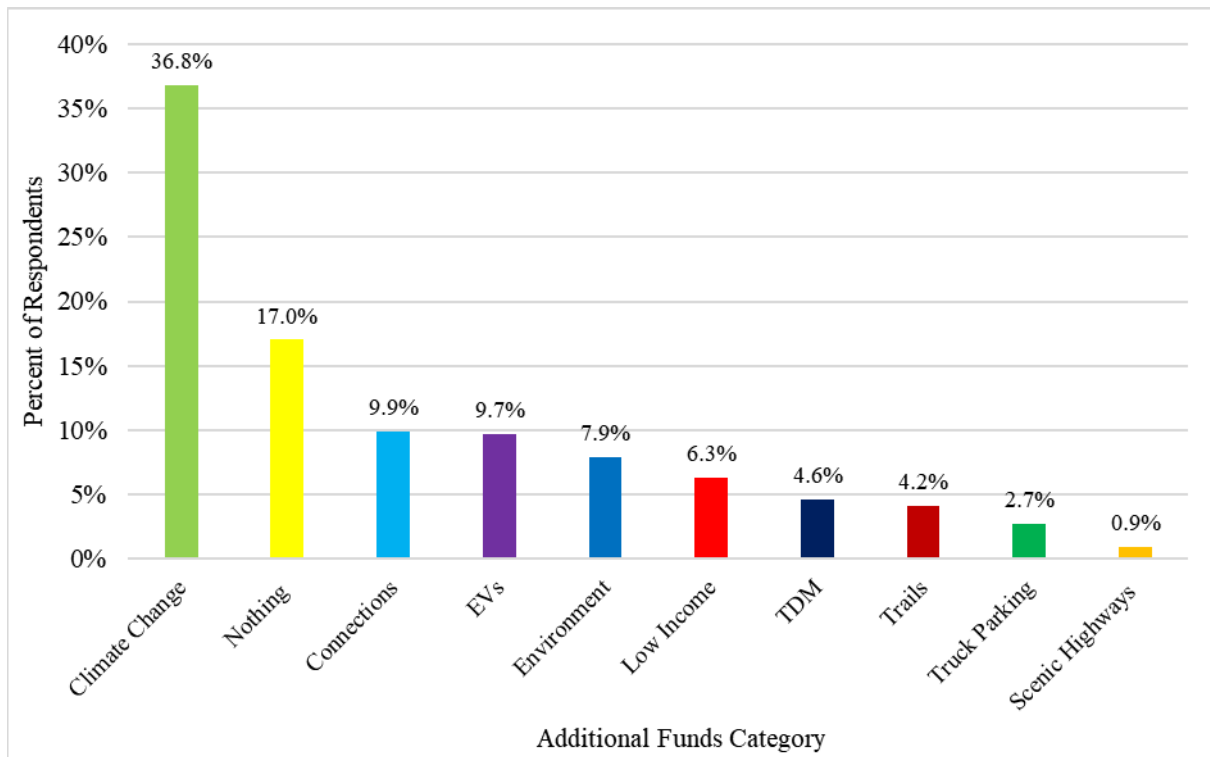


Figure 9. First-Choice Additional Funds Priorities, Small-Scale Investments

However, Figure 9 does not fully capture the preferences of survey respondents because they ranked five priorities. A ranked choice analysis that assigned more weight for higher priority rankings revealed a different order of respondents' priorities (Figure 10). Under this analysis, spending related to climate change, increasing system connections, and electric vehicles were still among the top five of respondents' preferences, with the addition of programs to help low-income residents of the state, and enhancing the state highways' natural environment. Figures 9 and 10 use the same colors for each spending category to help users compare the two different views of additional spending priorities.

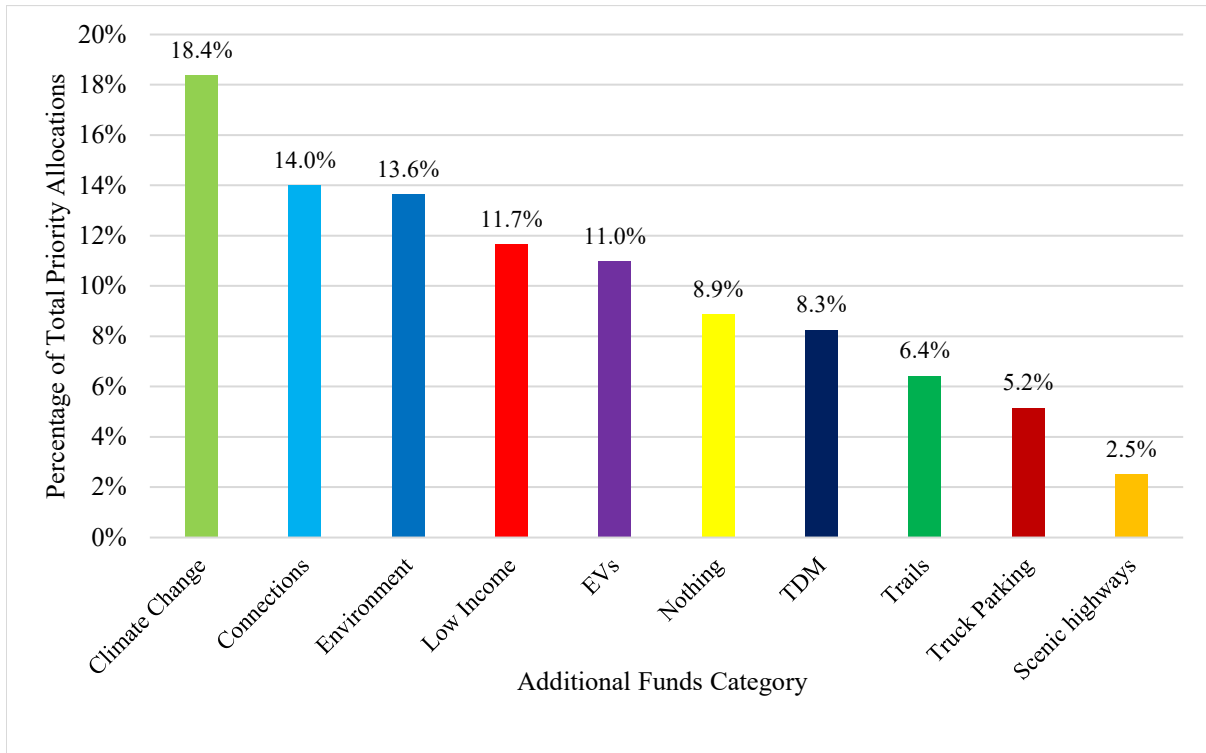


Figure 10. Weighted Additional Funds Priorities, Small-Scale Investment

### Large-Scale Additional Funds Investment

The spending categories of safety, walking and bicycling, and new and bigger highways all offered funding levels over \$1 billion, making full funding of these categories difficult to accommodate within the survey's \$3 billion annual budget constraint. For that reason, the survey also included a question about respondents' large-scale investment preferences that did not affect their budget. Climate change-minded investments were also included in this question, although because of WSDOT budgetary categories, they were not included as a specific spending category as in the survey's small-scale funding section.

Asked the question, "Which of the following large-scale investments is most important to you if you had additional funds?" the survey respondents chose their highest spending priority from the following five options:

- Fund all new and bigger roads in long-range plans.
- Create a climate-friendly transportation system that includes complete facilities for walking and bicycling connected to buses and rail. Build infrastructure for electric vehicles. Coordinate local freight delivery systems.
- Make safety investments that greatly reduce individual, community, and health system cost of crash injuries and deaths.
- Invest in new travel options, including high speed rail between major cities and greatly improved bus systems.
- None of the above.

Table 36 summarizes the results of respondents’ preferences for a large-scale, additional funds investment. Over one-third of respondents chose the climate-friendly transportation system for this question. The least number of respondents chose “none of the above,” indicating that almost 90 percent of respondents believed at least one of these four large-scale options should be a priority for WSDOT. The option related to increasing connectivity of travel options received the second-highest proportion of selections, which was consistent with the findings illustrated in Figure 11, that respondents highly preferred investment in efforts related to climate change mitigation and increasing connectivity within the transportation system.

Table 36. Additional Funds Priorities, Large-Scale Investment

<b>Large-Scale Investment Option</b>	<b>Number of Respondents</b>	<b>Percent of Respondents</b>
Climate -Friendly Transportation System	483	32.6%
Increase Connectivity of Travel Options	360	24.3%
Fund All Expansion Projects in Long Range Plans	230	15.5%
Transformational Safety Investments	200	13.5%
None of the above	140	9.4%
No Answer	71	4.8%
<u>Total</u>	<u>1,484</u>	<u>100%</u>

The climate-friendly transportation system option received the highest proportion of allocations across all regions, although it received the highest allocation in the I-5 Corridor region and the lowest in the Eastern region. Figure 11 shows some regional variation for large-scale additional funds investment. For example, in the Central region, respondents preferred additional funds investment for safety about as equally as they preferred increasing connectivity of travel options. However, in the I-5 Corridor region, these

categories were separated by almost 14 percent. A total of 9.4 percent of respondents statewide did not favor any of the large-scale investment options provided, suggesting that these options might not be a priority for them even if additional funds existed. This figure was highest in the Central and Eastern regions, and lowest in the I-5 Corridor region.

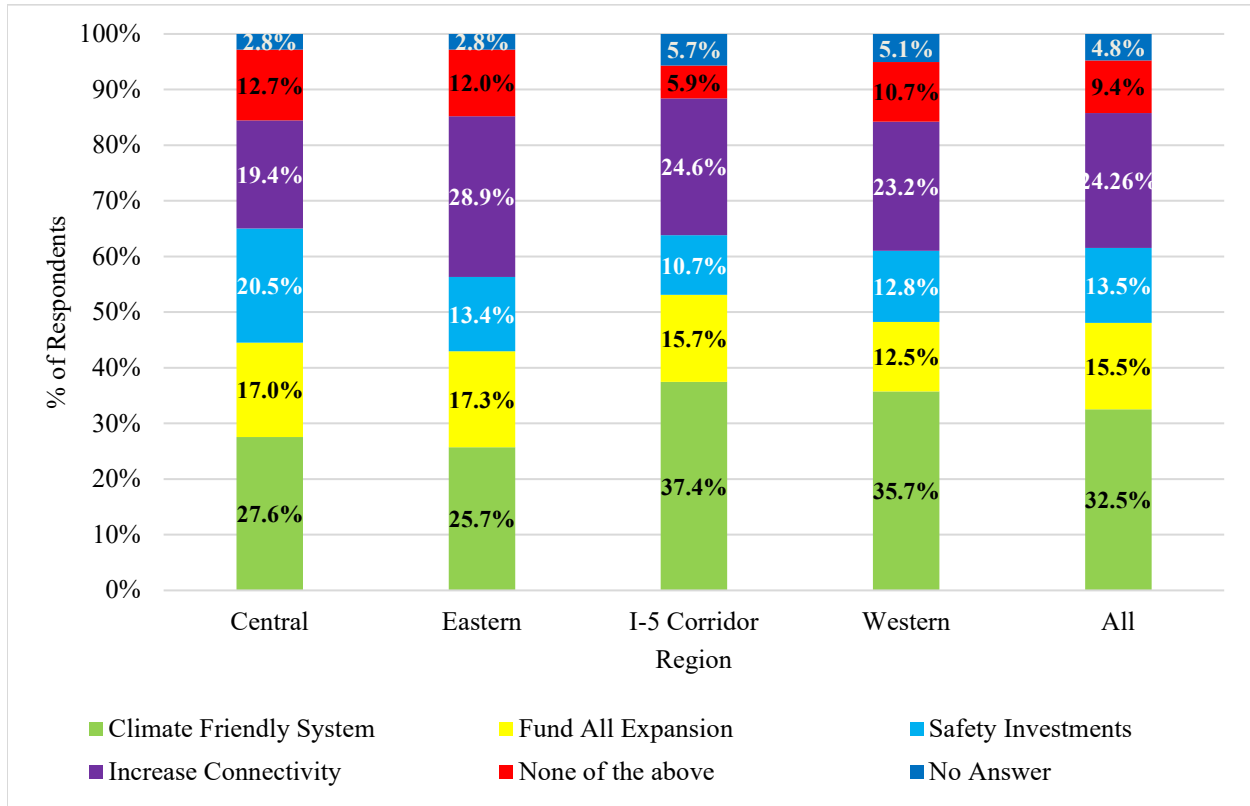


Figure 11. Additional Funds Priorities, Large -Scale Investments by Region



## CLUSTER ANALYSIS

A cluster analysis was performed to gain a better understanding of how the responses from the state's residents might be categorized. The clustering process was performed several times while varying the technique used, the number of clusters formed, and even the inputs used for clustering. Clusters were formed both by using the dollar value selected by survey respondents for each of the nine questions as inputs and by using the ranking values. (These ranged from the least possible amount of money that could be allocated within a category of funding with a value of 1 to values of 3, 4, or 5, corresponding to the category with the most money that could be allocated for that question, depending on the number of funding options available for that spending category.) For example, clusters for the Pavement category could be either \$150 million, \$250 million, or \$300 million, and these were assigned ranked values of 1, 2, and 3, representing each successive spending level.

The clusters are formed across all nine of the survey's primary budgetary categories. The cluster outcomes presented below used the K-means test, with dollar value inputs to form the cluster groups. Ten cluster groups were formed, although two of those clusters identified outlier responses. In general, while the outcome groups differed somewhat, using both dollar values and rankings produced similar outcomes in terms of how groups could be described based on their spending patterns. However, using the dollar values for input produced two specific outlier groups that were not present in the groups based on the ranking of outcomes. The responses found in the two outlier clusters were significantly different than those found in the other groups, and their existence was one important reason that the dollar value input was selected for presentation within this report.

### Cluster Descriptions

As noted above, the K-means technique was used to form ten clusters. The mean attributes of these groups are shown in Table 37. Descriptions of the funding allocation patterns selected by members of these groups are presented below, along with a simple descriptive title that identifies key group characteristics with respect to other cluster groups and the survey responses as a whole.

Four of the clustered groups are described as being "traditionalists." This term is used to suggest that the group had a strong interest in road and bridge repair, and maintenance. However, these groups differed from each other on the basis of the emphasis they placed on the other funding categories. Most, but not all, of these groups also funded a moderate amount of new construction. All together they comprised about 53 percent of the total response.

The order of groups presented below is associated with the random order in which they were numbered by the statistical software package and does not represent any kind of ranking of importance. The "descriptive name" of the group is given in bold text at the start of each description.

**Group 1 (Prioritize issues other than roads).** This group contained about 6 percent of the total survey response. It was characterized by spending the most money of any group on increasing travel options, with lower than average spending on bridge and pavement preservation and maintenance. Members of this group were also near the bottom for funding on all other categories.

In terms of the geographic make-up of this cluster group, the I-5 Corridor was overrepresented in this group. I-5 Corridor responses made up 49 percent of the members of this group, whereas only 38 percent of the overall survey responses were from the I-5 Corridor region. In contrast, residents of the Eastern and Central regions were slightly underrepresented. This group had slightly lower than average car ownership.

**Group 2 (Pro-road construction).** This group was the second largest in the cluster analysis outcome, containing 22 percent of all survey responses. It was characterized by allocating the highest spending to additional roadway capacity. Having spent a lot of money on new capacity, this group then spent among the least on safety, increasing travel options, and walking and bicycling, and it was around the survey average for preservation and maintenance spending. Group 2 had the highest vehicle ownership of all clusters at 2.3 vehicles per household versus the 2.1 average for the survey response as a whole, and it had a regional representation that matched the overall survey fairly closely. That is, these “pro-road construction” attitudes were consistently found in all parts of the state.

**Group 3 (Traditionalists: emphasis on new and repaired roads, but not too much spending).** This group was the first of the “traditionalist” groups. It was by far the largest of the ten groups, consisting of 37 percent of the total survey responses. It had outcomes that closely matched the overall survey mean spending levels. Its respondents spent \$1.2 billion on added capacity, which was at the survey’s \$1.19 billion average. Only in the categories of increasing travel options and safety did this group deviate from the survey averages, and in both cases, the group respondents underspent the survey averages in those categories. Its vehicle ownership was only slightly above the survey average (2.2 vehicles per household). Members of the group were slightly more likely to come from the Eastern region than the overall survey population, with modest regional under-representation in the I-5 Corridor and Central regions.

**Group 4 (Traditionalists: fix and operate existing assets).** Group 4 was fairly traditionalist. It contained 4 percent of the survey responses and was most significantly characterized by fully funding the preservation categories while spending as little as possible on new capacity. This group differed from other traditionalists by choosing to spend more than the average on safety, operations, and walking and bicycling. Its members were slightly more likely to be residents of the I-5 Corridor region than the survey’s overall population, while having lower than average likelihood to be from the Eastern and Central regions. The group had slightly lower than average motor vehicle ownership.

**Group 5 (Spend less but repair existing assets).** Group 5 differed from the other non-outlier groups by choosing to spend far less total funding than any of the other groups. This group chose to spend only an average of around \$2 billion of the survey’s possible \$3 billion budget, while most other groups spent between \$2.8 billion and \$3 billion. Consequently, this group’s members underspent the survey average on almost all spending categories. The group average was close to the average spending for pavement and bridge repair as well as stormwater.

Group 5 was the third largest cluster, containing 12 percent of all survey responses. The Central region was particularly well represented in this group. It was the second highest cluster among residents of the Central region (second only the outlier Group 9). The Western region was also present in above average levels, while residents of the I-5 Corridor region were underrepresented. This group had just slightly higher than average car ownership and had the highest fraction of “no extra spending” as their additional funds spending priority.

**Group 6 (Traditionalists: safety-conscious).** Group 6 was another cluster of responses that fully funded the majority of preservation and maintenance requirements. These respondents spent just under \$3 billion, slightly exceeding the spending of the other traditionalist groups. Where this group primarily differed from the other traditionalist groups was by spending more on safety than most of the other traditionalist groups (except for Group 4) and in return underspending in the increasing travel options and walking and bicycling categories. The regional distribution of this group was very similar to that of the overall survey response. It had slightly lower than average vehicle ownership (2.0 vehicles per household, versus the 2.1 average for the whole survey).

**Group 7 (Traditionalists: performance-conscious).** Group 7 was another group that came close to fully funding the pavement, bridge, and maintenance categories. It included 6 percent of the survey population. Like Group 6, this group's members chose to spend almost all of the possible \$3 billion budget and included \$1.2 billion to complete funded projects for new and bigger highways in their spending. Where Group 7 differed from Group 6 was that it spent less on safety and instead shifted those funds to demand management, along with slight increases in operations and network connections. This modest shift in funding suggests that they were more concerned about reducing congestion, and less concerned about improving safety. The regional distribution of this group was only slightly different than that of the overall survey, with the Western region being slightly overrepresented and the Eastern and I-5 Corridor regions being slightly underrepresented in comparison to the overall survey response distribution. As with Group 6, Group 7 had just slightly lower than average vehicle ownership.

**Group 8 (Fix and operate existing assets).** Group 8 members selected funding levels close to the maximum amount for pavement and bridge repair, stormwater, maintenance, operations, and walking and bicycling. This group spent modestly on safety (allocating an average of \$120 million), on new and bigger highways (\$800 million), and increasing travel options, although its increasing travel options spending was still higher than all but one group (Group 1). Of all the survey respondents, 5 percent belonged to Group 10, which also had the lowest car ownership (1.4 motor vehicles per household) of all groups except the two outliers. A very large fraction of the surveys found in this group came from the I-5 Corridor region (55 percent of Group 8 from the I-5 Corridor versus only 38 percent of the total survey response). In contrast, very few of this group's members (9 percent) came from the Central region. Group members were also less likely to be from the Western and Eastern regions than the overall share of survey responses.

**Cluster 9 (Outlier: Safety-first).** This cluster was a mini group that contained only three survey responses. While spending close to the maximum \$3 billion budget, they chose to spend the maximum \$1.2 billion on safety and only the minimum \$800 million on new and bigger highways. The members of this group selected minimum funding for pavement and bridges but the maximum on stormwater. The three respondents came from three different regions; only the Eastern region was not represented.

**Cluster 10 (Outlier: minimalist).** This cluster consisted of a lone survey response. The lone individual chose to spend only \$1.01 billion, figuring out how to not spend money on new construction. They selected moderate spending for pavement and bridge repair but selected minimum allowable spending levels on all other categories but stormwater, for which they selected the second lowest option. This lone respondent reported owning one motor vehicle.

Table 37. Summary Spending by Cluster Group from the Cluster Analysis

Group Number	Average of Pavement	Average of Bridges	Average of Stormwater	Average of Maintenance	Average of Safety	Average of Operations	Average of Walking & Bicycling	Average of Increasing Travel Options	Average of Newer & Bigger Highways	Percent of responses	Total Spend	Central	Eastern	I-5 Corridor	Western	MV Occupancy
1	0.19	0.22	0.01	0.26	0.07	0.06	0.11	1.20	0.80	6%	2.93	12%	16%	49%	21%	1.9
2	0.25	0.29	0.01	0.30	0.09	0.08	0.05	0.17	1.64	22%	2.88	22%	18%	40%	19%	2.3
3	0.26	0.32	0.01	0.30	0.10	0.09	0.10	0.17	1.20	37%	2.55	17%	23%	35%	23%	2.2
4	0.26	0.33	0.02	0.32	0.50	0.11	0.19	0.26	0.80	4%	2.78	11%	17%	48%	24%	1.9
5	0.24	0.29	0.01	0.29	0.08	0.07	0.07	0.17	0.80	12%	2.02	28%	12%	33%	26%	2.2
6	0.24	0.30	0.01	0.31	0.50	0.09	0.08	0.17	1.20	6%	2.91	19%	21%	37%	22%	2.0
7	0.26	0.31	0.01	0.31	0.11	0.11	0.14	0.41	1.20	6%	2.87	19%	16%	34%	26%	2.0
8	0.25	0.33	0.02	0.31	0.12	0.12	0.31	0.43	0.80	5%	2.69	9%	16%	55%	20%	1.4
Outlier: 9	0.15	0.20	0.02	0.28	1.20	0.05	0.03	0.17	0.80	0%	2.90	33%	0%	33%	33%	1.7
Outlier: 10	0.25	0.31	0.00	0.25	0.05	0.05	0.10	0.00	0.00	0%	1.01	0%	100%	0%	0%	1.0
Grand Total	0.25	0.30	0.01	0.30	0.14	0.09	0.10	0.26	1.19		2.64	19%	19%	38%	22%	2.1

Darker shading indicates a spending allocation lower than the overall survey average, while lighter shading indicates a higher than average spending allocation than the survey's overall average.

## **DISCUSSION OF RESULTS**

### **DEMOGRAPHIC TRENDS**

Respondents with certain demographic characteristics were more likely to choose certain funding allocations than others. In particular, the demographic characteristics of age, income, and vehicle ownership repeatedly correlated with modest trends in spending allocation decisions. The youngest respondents were less likely to allocate high levels of funding to bridges, pavement, and maintenance and were more likely to allocate higher levels of funding to walking and bicycling. Respondents with higher incomes were more likely to allocate more funds in the pavement category, and those with the lowest incomes were more likely to choose a higher level of funding for walking and bicycling than those with higher incomes. Those with more vehicles in their household were more likely to allocate less funding for operations, walking and bicycling, and more funding to new and bigger highways than were those with fewer vehicles in the household.

At the same time, these differences in funding allocation trends were typically limited to individual spending categories and were not visible at either the regional analysis level or within the cluster groups. That is, the ten cluster groups had distributions by age group representation that did not differ very significantly from those of the survey as a whole.

The relative uniformity of responses across demographic groups and regions of the state increases the statistical confidence in the survey's results. This does not mean that everyone in the state thinks alike, but the majority of the state's residents across the state selected similar budget allocations when given the overall spending constraints that WSDOT currently faces.

### **PREFERENCES FOR ADDITIONAL FUNDS**

According to the additional funds questions, respondents across all regions expressed a desire for WSDOT to include investments related to climate change mitigation in the Highway System Plan. At the same time, the funding allocations related to the categories of increasing travel options, walking and bicycling, and stormwater were not consistent with this desire. Was this seeming contradiction due to a lack of awareness about the connection between climate change and the transportation system? Alternatively, the survey results may suggest that respondents would be interested in funding climate change mitigation efforts only in the case of additional funds.

Note that stormwater retrofit efforts are not explicitly tied to climate change, but they are an effort on the part of the state to mitigate the impacts of humans' travel on the natural environment. Given that the stormwater category's spending options occupy a small portion of the given budget, respondents should have had substantial leeway to incorporate stormwater funding into their budgets. Again, the results may represent a lack of awareness about the function and importance of stormwater retrofitting in our transportation system.

## REGIONAL DIFFERENCES

This survey was specifically designed to identify and illuminate regional differences in the public’s preferences for WSDOT’s highway system spending. Results suggest that residents of the Western, I-5 Corridor, Central, and Eastern regions did not differ notably in their preferences, given the same constrained annual budget. Preferences across the state appeared fairly uniform.

Among the survey’s nine spending categories, there were few notable differences in investment level preferences based on the respondents’ region. The similarity between regions can be seen in Figure 12, which presents the mean spending level across all surveys submitted within a region and for the state as a whole. This is one way to summarize the more detailed findings presented for each of the nine funding categories earlier in this report.

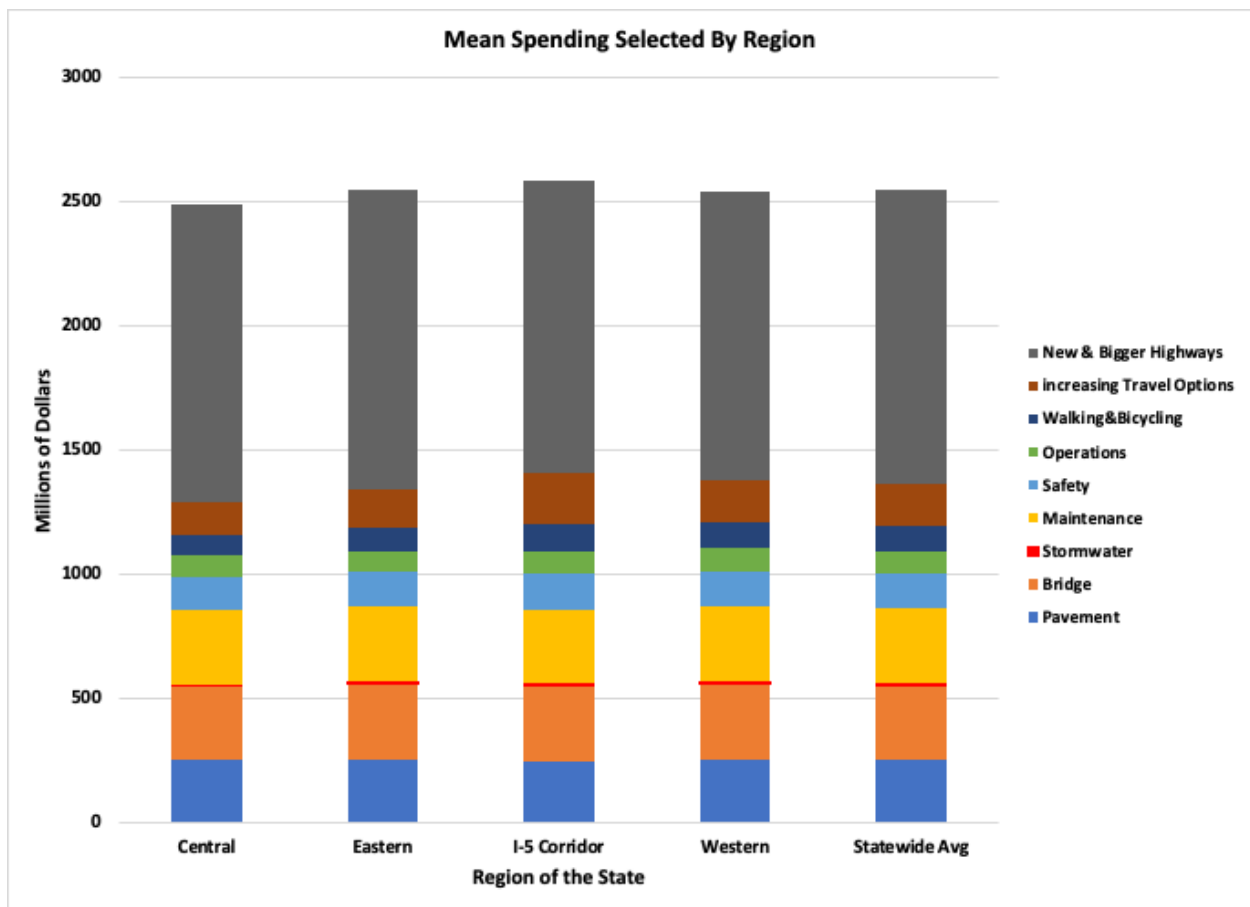


Figure 12. Mean Spending by Category by Region

The two categories with the greatest variation across regions were stormwater and walking and bicycling. Figure 13 shows a greater tendency for residents of the I-5 Corridor and Western regions to allocate higher funding to stormwater than residents of the Central and Eastern regions. Figure 14 shows the relatively higher tendency for respondents in the Central region to choose to allocate \$0 toward walking

and bicycling than those in the other three regions. These two categories had the greatest variation across the nine program options.

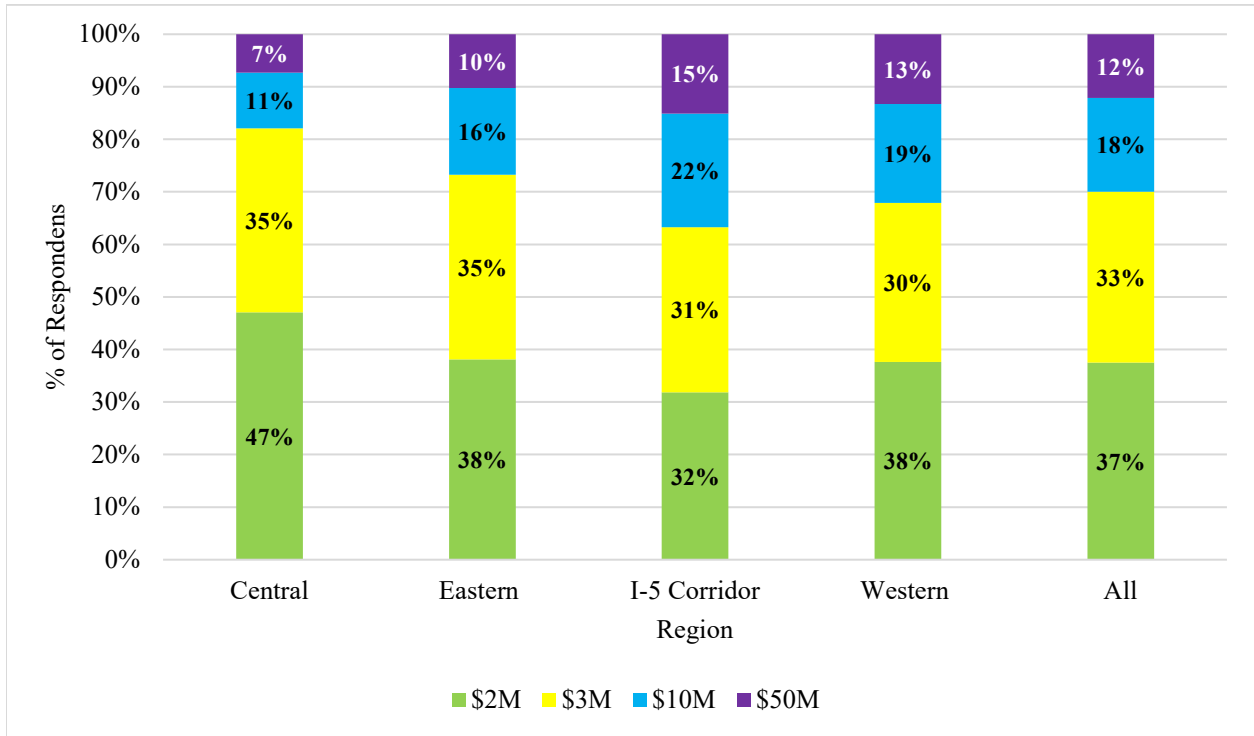


Figure 13. Regional Spending Preferences, Stormwater

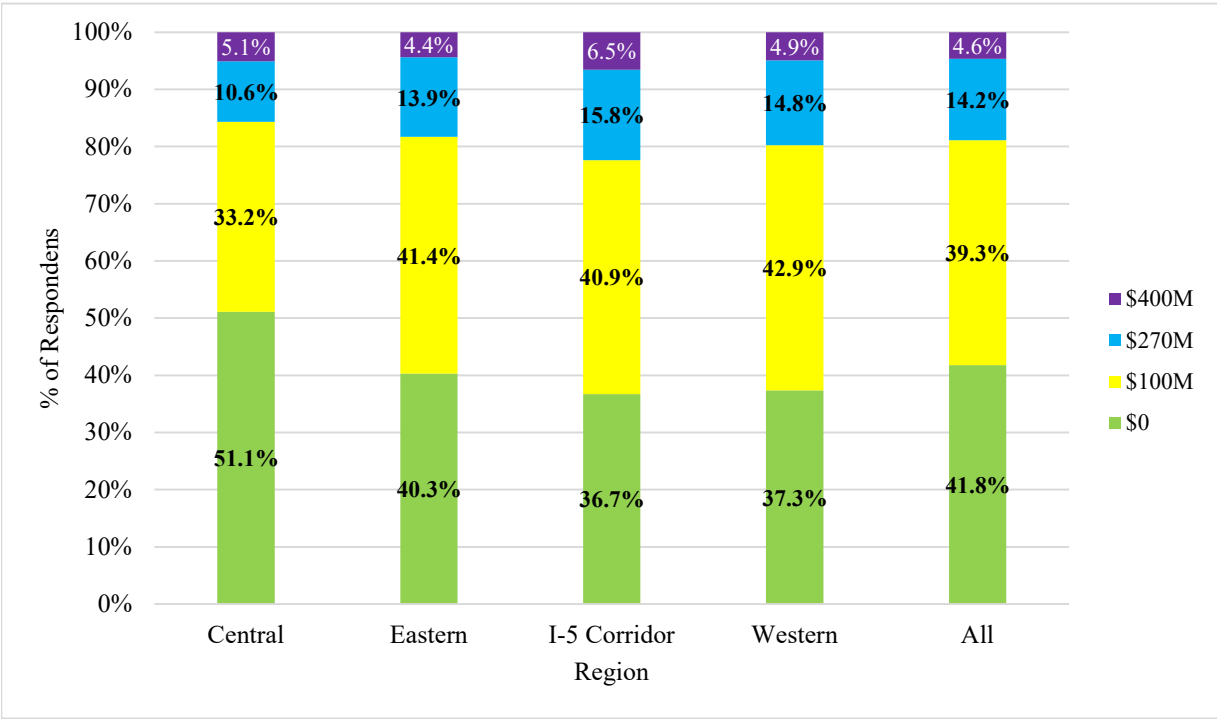


Figure 14. Regional Spending Preferences, Walking and Bicycling



## **DISCUSSION OF SURVEY DESIGN AND IMPLEMENTATION**

The similarity in survey responses reported in this document regardless of the part of the state the respondent lives in, their age, income level, or ethnicity results in considerable confidence in the survey results being a strong representation of the overall attitude of the state's adult population. However, it's important to recognize that no survey is perfect, and specific attributes of the survey design and execution provide potential for bias to be present in the results. This section discusses those the primary areas where bias could have influenced the results of the survey. The project team does not believe any of these potential sources of bias are large enough to change the general conclusions presented in this report. However, as noted in cluster analysis, specific groups within the state have different perspectives on what the highest priority spending categories should be. The exact size of these groups was not determined with statistical precision.

Specific sources of potential bias are described below.

### **SELF SELECTION**

Who responds to surveys is always a potential source of bias. People who are interested in or care about transportation are more likely to responded to the survey. Interested individuals also must have access to a stable mailing address that allows them to check mail regularly, a reliable Internet connection and computer access, and enough free time to allow for survey participation. These are the same groups likely to make their voices heard politically and thus this bias, while important to recognize, is likely acceptable given the interest in informing the Legislature about the opinions their constituents are likely to express to them.

### **RESPONSE RATES**

The HSP survey's response rate was expected to be 4 percent based on consultation with the Puget Sound Regional Council. Per instructions from the University of Washington, the state's Department of Enterprise Services mailed 80,000 survey invitations with the hope of receiving approximately 3,200 responses to constitute a statistically valid data set on the regional level. However, the actual response rate was just below half of the expected rate, at 1.8 percent statewide. Several factors may have affected the lower than expected response rate, including disruptions related to the COVID-19 pandemic, wildfires in the Central and Eastern regions, the survey invitation design, and limited access to Internet and mail. Respondents received just one invitation to participate in the HSP survey, and it is likely that multiple invitations would have increased response rates.

The HSP survey closed on September 12, 2021. At that time, the UW and WSDOT teams discussed the option of mailing additional survey invitations to increase the number of responses. However, after reviewing the survey's preliminary results, the UW team recommended against mailing additional invitations because of lower than expected variability in the responses.

Despite the lower than expected response rate, the very consistent responses to the survey across geographic locations and demographic variables established a high level of confidence in the validity of the results garnered by this survey.

## **SURVEY DESIGN**

The HSP survey aimed to understand how Washington state residents would allocate funding for the state's highway system based on hypothetical constraints similar to those faced by state-level decision-makers. As with any survey, many elements may have influenced a respondent's answers. This section identifies aspects of the survey design that may have influenced how respondents allocated funding. WSDOT may consider these survey design elements in future public outreach efforts. Despite these design factors that may have influenced responses, all questions were written to gauge the public's opinion within the constraints of WSDOT's current budget structure. While a totally different budget structure would undoubtedly result in different numerical answers from respondents, the project team is confident that the survey design's budgetary constraints resulted in the guidance desired by the survey. That is, the insight requested was not intended to be an unconstrained wish list of the state's residents. It was designed to understand the priorities of those residents, given the range of rational budget options being considered by the Legislature.

### **Survey Question Order**

The HSP survey's first two categories, pavement and bridge preservation, were related to infrastructure for vehicles whereas walking and bicycling and increasing travel options were the sixth and seventh categories, respectively. It is possible that respondents were affected by seeing the vehicle infrastructure-focused spending categories first. For technical reasons, the order of spending categories was set consistently for each survey respondent. While the project team is confident that survey order did not significantly affect the outcome, it is possible to test this potential survey bias by funding a second survey that used a randomized order of spending categories to reduce the potential bias created by the impression of priorities within the survey's order. The same change should be considered for the survey's additional funds section, particularly the small investment section that asks respondents to rank their priorities.

### **Spending Amounts**

The magnitude of spending levels also likely affected respondents' decisions. These budgetary figures were carefully selected by WSDOT staff to represent real-world outcomes as accurately as possible. However, the categories' relative differences in dollar-figure magnitude may have made comparisons difficult for respondents. For example, the difference between the lowest and highest funding options for the stormwater category was just \$48 million (or 1.6 percent of the \$3 billion budget), whereas the difference in the lowest and highest options for the new and bigger highways category was \$1.2 billion (or 40 percent of the budget). These different magnitudes may have communicated a degree of importance to respondents. They also may have caused smaller-scale categories to artificially compete with other smaller-scale categories, and likewise for the larger spending categories. Despite these differences in magnitudes, the choices did reflect real-world outcomes and the magnitude of choices for decision-makers.

The walking and bicycling category was the only spending category with the option to allocate \$0 in funding, which was indicated as the state's current level of investment in this area. While WSDOT does not have dedicated pedestrian or bike facility funding for the state highway system, the Department does make active transportation improvements by using grant funding or when building newer and bigger roads. This distinction was described in the survey's FAQs. However, it may not have been clear to

respondents and may have influenced respondents' perception of the state's transportation system investments. Though the Revised Code of Washington (RCW) requires WSDOT to make active transportation investments with improvement dollars, survey respondents did not have the option to spend \$0 on other programs that do not have similar RCW requirements.

### **Use of Graphics**

The survey included supporting images or graphics for all spending category questions except for safety. No supporting image or graphics accompanied the additional funds portion of the survey. The quality of assets depicted in the images may have influenced survey respondents' choices. For example, the images used in the pavement, bridges, and walking and bicycling sections provided examples of both poor and good states of repair, whereas the categories of new and bigger highways, operations, and increasing travel options provided images of example functions performed by that respective program. The images of poor states of repair may have attracted respondents to allocate more funding to those categories. For example, the pavement category included images of pavement assets in poor states of repair, and it was the only spending category in which the plurality of respondents chose the highest funding allocation option.

The additional funds sections introduced new spending areas, such as truck parking, scenic highways, and electric vehicle infrastructure. Unlike the nine primary spending programs in the survey's first section, these spending areas lacked both graphics and a description. This absence may have caused survey respondents to choose categories that were discussed and illustrated more clearly in the survey's first section.

### **Compulsory Spending**

The HSP survey focused on nine principal spending categories that composed the hypothetical \$3 billion budget. While respondents had the option to select from three to five spending levels for each category, they did not have the option to skip a given spending category entirely. When respondents chose the lowest spending option, we cannot conclude whether their choice to do so was in response to their disinterest in the spending category itself or to make funds available for another category.

For example, over 40 percent of statewide respondents chose to fund operations at the lowest funding level (\$48 million). This allocation could be interpreted in one of two ways. Would participants have skipped the operations category entirely if spending in all areas was not compulsory to complete the survey? Or, were respondents comfortable with the outcomes described by the \$48 million spending level to have sufficient funds for other categories, such as pavement, for which a plurality of respondents allocated the maximum funding available? Given this ambiguity, we cannot assume that allocations at the lower funding levels necessarily mean that respondents did not value the outcomes of investing in these categories. Instead, the survey's results illustrate respondents' funding allocation choices given the very specific constraints of this survey's design.

## **EQUITY CONSIDERATIONS**

One of WSDOT's principal goals for the HSP survey was to understand the highway spending preferences of Washington state residents who have experienced disproportionate environmental and health impacts and should be prioritized for equitably distributing resources and benefits and eliminating

harm. In particular, the state strives to hear feedback from people of color, people with disabilities, people with low incomes, and people who usually speak a language other than English. This study also analyzed survey results for people who do not have access to a vehicle.

In comparison to the state's overall population as measured by the 2019 ACS, the data set for the HSP survey underrepresented the following demographic groups:

- People between 18 and 34 years of age
- People who identify as female
- People with incomes under \$25,000 and over \$150,000
- People who identify as Hispanic, Latinx, or Spanish, particularly in the Eastern and Central regions
- People who identify as Black or African American
- People who identify as Asian/Pacific Islander

Residents over age 55 were overrepresented in the survey's respondents. Respondents who identified as American Indian or Alaska Native were close to a proportionate sample of state residents; statewide, about 1.5 percent of residents identify as American Indian or Alaskan, while 2.1 percent of survey respondents indicated this race category. To understand the preferences of the residents of this state, additional outreach efforts should be undertaken to engage the underrepresented groups in the list above.

In addition, almost 14 percent of the respondents indicated that someone in their home usually spoke a language other than English. However, only two people completed the HSP survey's Spanish version. WSDOT did not receive any Title VI requests for live interpretation of the survey into another language. The Department did, however, receive three requests to take the survey by phone. Possible reasons for participation by phone might be a lack of internet access or vision-related impairments. Future survey efforts should also address residents of Washington state who may face literacy barriers in both English and other languages, as well as make the survey more accessible for those with vision impairments.

As WSDOT embarks on additional outreach efforts with the HSP opinion poll, for example, targeting very specific groups (e.g., LEP communities), the results from those focused outreach efforts should be compared with those of the HSP statistical survey to assess the potential bias of the results discussed in this report.

## APPENDIX A: HSP SURVEY LANGUAGE

Note that this is a copy of a website, and some formatting has been lost, including pop-up bubbles providing additional descriptions of each of the nine primary spending categories. For this appendix, the pop-up bubble text is shown as a text box at the end of each survey section. A visual reminder of how much funding they had already allocated was also shown at the top of the screen as the user was taking the survey. An example of this visual is shown at the end of this appendix. The spending shown in that visual changed in real time each time a funding selection was made by the survey taker.

Demographic questions were drafted in accordance with language used by the U.S. Census to allow for direct comparison of the survey's data set with the state's population. Questions were also written for consistency with demographic information collected in previous WSDOT surveys. Responses to all demographic questions were voluntary, and no personal identifying information was collected. The demographic information of respondents who were interested in entering to win a survey incentive was stored separately from their email addresses.

The Washington State Department of Transportation (WSDOT) invites you to take a survey that will help guide WSDOT's recommendations to the Legislature for state highway system spending. WSDOT will use your responses to shape updates to the Highway System Plan (HSP), which defines the State's vision for preserving, maintaining, improving, and operating state highways in Washington. For more information on the HSP update, visit <https://engage.wsdot.wa.gov/>

Here are answers to [frequently asked questions](#) about the survey.

[Click here](#) for more information about your participation in this survey.

Thank you in advance for your participation. Your feedback is important to us.

[Esta encuesta también está disponible en español.](#)

**Please provide the zip code for where you live so we can understand how opinions vary across the state:**

(Next page)

**Instructions:** We wish to learn how you would fund state highways in select spending categories using a budget.

For the survey, you have \$3 billion to spend each year. **You can't spend more than \$3 billion, but you can spend less.** The survey describes the results of spending different amounts in each category. Please choose how much you would like to spend in each category.

You can see your spending total in the bar at the top of the screen. **The amounts in yellow are how much the state spends now.**

**The categories are:**

- Pavement
- Bridges
- Stormwater
- Maintenance
- Safety
- Operations
- Walking and Bicycling
- Increase Travel Options
- New and Bigger Highways

(Next page)

**Pavement** ([Learn more](#))

**How much would you like to spend on pavement repair?**

<b>Yearly Spending</b>	<b>Results</b>
<b>\$150 million</b> (Current Funding)	By 2030, WSDOT will lower speeds on many state highways or close them for safety. By 2040, up to 80% of state highways will have lower speeds or be closed for safety.
<b>\$250 million</b>	By 2030, WSDOT will lower speeds on some state highways. By 2040, up to 45% of state highways will have lower speed limits or be closed for safety.
<b>\$300 million</b>	All state highways remain open, and no speeds are reduced.



Examples of pavement in poor state of repair due to underfunding.



Examples of pavement in good state of repair.

### Pavement ([Learn More](#))

WSDOT repairs highway pavement to keep it lasting as long as possible. Over the last 20 years, the budget for repairing highways has not kept up with the cost to repair them. Currently, there is only enough money to pay for less than half of repairs. Repairing poor pavement costs five times more than timely repairs. Saving money now costs a lot more later.

## Bridges [\(Learn more\)](#)

### How much would you like to spend on bridges?

Yearly Spending	Results
<b>\$200 million</b> (Current funding)	By 2030, some highway bridges will have weight limits or be closed for safety. By 2040, up to 15% of bridges will have weight limits or be closed for safety.
<b>\$310 million</b>	By 2030, a few more highway bridges will have weight limits or be closed for safety. By 2040, up to 7% of bridges will have weight limits or be closed for safety.
<b>\$410 million</b>	All highway bridges remain open with no weight limits for legal truck loads.



Examples of a load posted bridge.



Examples of deteriorated bridges that could become unusable with continued underfunding.





Examples of well-funded bridges in good condition.

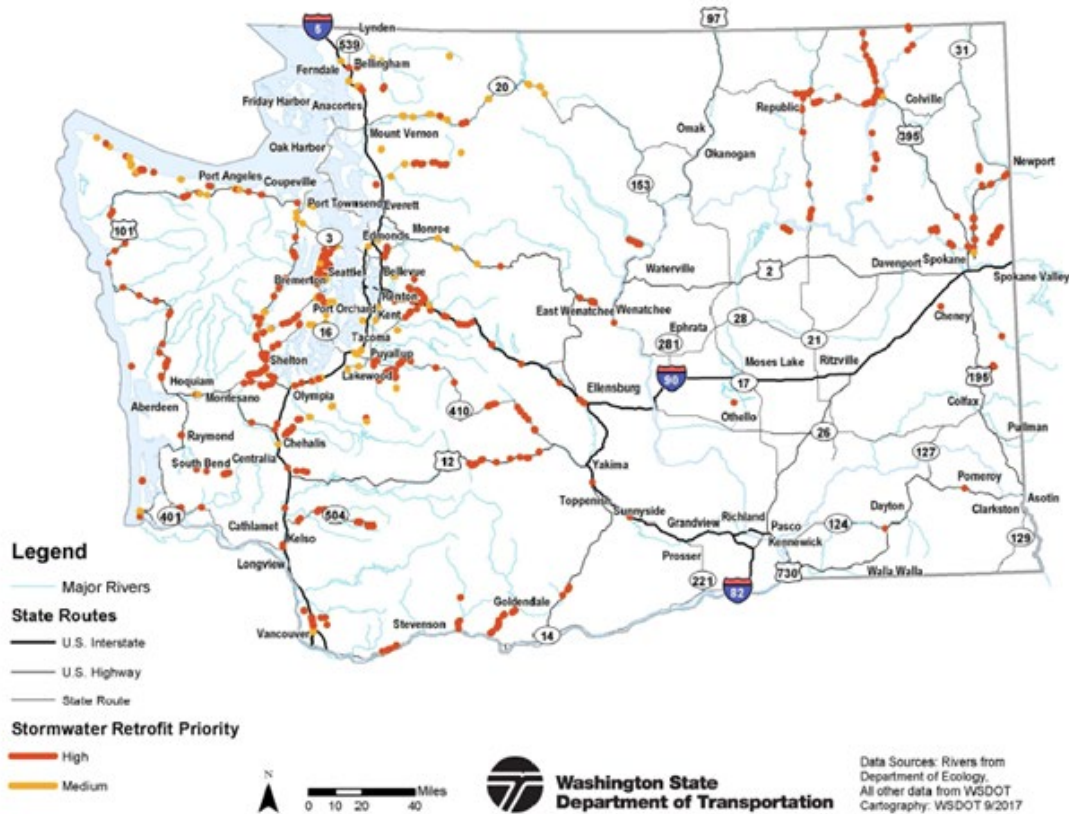
**Please note the benefits from the remaining categories may not happen if pavement and bridges are not fully funded.**

### Bridges ([Learn More](#))

Bridges require repairs to remain open and working. Aging bridges require more work and are weaker to earthquakes. WSDOT replaces bridges and repairs them to be safer and last longer. However, many replacements and repairs are delayed due to lack of funding.

Stormwater ([Learn more](#))

### WSDOT Stormwater Retrofit Priority Locations



### How much would you like to spend on stormwater treatment?

Yearly Spending	Results
<b>\$2 million</b> (Current funding)	Fund 2/3 of prioritized stormwater treatment locations.
<b>\$3 million</b>	Fund all prioritized stormwater treatment locations.
<b>\$10 million</b>	Fund all prioritized stormwater treatment locations and some urban locations.
<b>\$50 million</b>	Fund all prioritized stormwater treatment locations, some urban locations, and additional locations.

### STORMWATER TREATMENT ([Learn more](#))

Stormwater comes from rain or snow that runs off roads. Without treatment, stormwater carries toxins to nearby rivers and streams. It can also increase flooding and erosion.

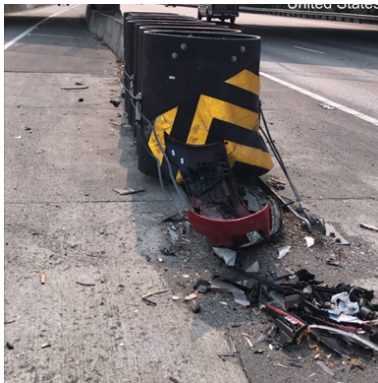
All new highways meet current stormwater standards. However, most highways were built before treatment was required. WSDOT provides treatment for these older highways, called a stormwater retrofit. Locations are chosen based on benefit and cost. There are 221 prioritized stormwater treatment locations. Many are near clean rivers and streams outside cities. Others are in rural areas near rivers and streams where fish could thrive. Locations in cities are lower priority due to high costs and lower ability to improve river and stream water quality.

## Maintenance ([Learn more](#))

Maintenance keeps highways working between larger repair projects.

### How much would you like to spend on maintenance?

Yearly Spending	Results
<b>\$250 million</b> (Current funding)	Most highways are in fair condition. They are occasionally closed for repairs. WSDOT's overall maintenance grade: C+.
<b>\$300 million</b>	Some critical maintenance activities are rated good (guardrails, rest areas, snow removal, draw bridges). Others are fair or poor. Highways are closed for repairs less often. WSDOT's overall maintenance grade: B-.
<b>\$350 million</b>	Most highways are in good condition. Highways rarely close for repairs. In 2007, the state invested at a level to get this result. WSDOT's overall maintenance grade: B.



Example of poorly maintained highway crash cushion.



Example of well-maintained highway crash cushion.

## Maintenance ([Learn more](#))

Maintenance keeps the highway in operating condition by replacing damaged guardrails, fixing potholes, clearing snow and ice, and responding to emergency road closures. Roads close due to events like rockslides, avalanches, road washouts, and falling trees. Each of the 27 types of work has a maintenance grade. The overall grade is the average across all of them.

## Safety ([Learn more](#))

### How much would you like to spend on safety?

Yearly Spending	Results
<b>\$50 million</b> (Current funding)	Minor changes to highways that decrease injuries and deaths. This level of funding saves \$260 million in crash costs each year.
<b>\$140 million</b>	The results from current funding are obtained plus additional safety work in identified areas that decrease injuries and deaths. This level of funding saves \$630 million in crash costs each year.
<b>\$500 million</b>	The results from current funding are obtained plus begin larger-scale changes such as new guardrails and roundabouts, and widespread work on intersections that decrease injuries and deaths.
<b>\$1.2 billion</b>	Previous results plus additional major changes to highways, and separated spaces for people who walk and bicycle. Lowers deaths and serious injuries on highways significantly.

## SAFETY ([Learn more](#))

The number of deaths and serious injuries are rising, especially for people who walk and bicycle. The personal, financial, and societal loss is enormous. There are no acceptable deaths from crashes. In 2019, crashes cost the Washington economy \$14 billion. This includes the costs of lost lives, hospitals, slow traffic, and damage to cars and buildings. Spending on highway safety makes crashes less likely and less serious.

## Operations [\(Learn more\)](#)

### How much would you like to spend on operations?

Yearly Spending	Results
<b>\$48 million</b> (Current funding)	Fund less than 30% of needs. At this level WSDOT delivers a fraction of basic functions. Crashes are cleared more slowly. Less technology, like traffic signals or electronic message signs, is used to keep traffic moving smoothly. New turn lanes and other changes are delayed
<b>\$100 million</b>	Provide additional information for travelers and more low-cost changes for road users who walk, bicycle, and have disabilities. Technology is used to keep traffic moving smoothly and crashes are cleared more quickly.
<b>\$136 million</b>	Expand traveler information and services to more areas and improves highways for buses. Expands use of technology to keep traffic moving smoothly and crashes are cleared more quickly. Ensures current operations strategies continue to work and plans for future needs.
<b>\$207 million</b>	Fund higher-cost strategies that keep highways moving smoothly and safely. Examples include new technology that improves travel time reliability and statewide intersection improvements for all highway users.



Operations funding provides travel time information for drivers.



Incident Response Teams respond to people on state highways in need of help.



Monitoring highway traffic and safety conditions.

### **Operations** ([Learn more](#))

Operations helps get the most from existing highways without spending more on larger highway projects. It includes improvements to keep traffic moving like traffic lights, highway lighting, and intelligent transportation systems technology. It funds small-scale changes to intersections, like turn lanes and crosswalks that make them work better. Operations also provides traveler information and emergency services to help keep highways open and, moving smoothly and safely.

## Walking and Bicycling [\(Learn more\)](#)

### How much would you like to spend on active transportation?

Yearly Spending	Results
<b>\$0</b> (Current funding)	Today the network is inconsistent and incomplete. About 12% of the connections along state highways are complete today. Spending in this category builds walking and biking connections on existing highways.
<b>\$100 million</b>	Build sidewalks and bicycle facilities along and across highways. Complete 50% of highway connections in population centers.
<b>\$270 million</b>	Build sidewalks and bicycle facilities along and across highways. Complete 100% of highway connections in population centers.
<b>\$400 million</b>	The results from current funding are obtained plus connect 100% of regional trails between communities.



\$0 funding level. Person riding along state highway with no bike lane toward their destination.



\$100 million funding level. (Left): Sidewalk before pedestrian improvements. (Right): Sidewalk after pedestrian improvements.



\$270 million funding level. Person using bike lanes along state highway.



\$400 million funding level. Children safely using separated bike trail.

### **Walking and Bicycling ([Learn more](#))**

Walking and bicycling are the most common types of active transportation. This category also includes rolling on scooters, skateboards, and wheelchairs. The goal is to make a comfortable network for most adults walking, bicycling, and rolling.

Investing in this category builds sidewalks and bicycle lanes. It also builds separated paths along or near highways. It makes walking and bicycling to school safer. It connects homes and businesses across highways. It provides connections to local trails.



## Increase Travel Options [\(Learn more\)](#)

### How much would you like to spend on Increasing Travel Options?

Yearly Spending	Results
<b>\$150 million</b> (Current funding)	Help employers in cities encourage their workers to take the bus, carpool, bicycle, walk, and work from home. Maintain carpool (HOV) lanes and park and ride lots. Provide a small amount of support for local bus routes. Provide special bus service for people with disabilities in cities and suburbs.
<b>\$200 million</b>	Help more employers in cities encourage their workers to take the bus, carpool, bicycle, walk, and work from home. Improve bus service on a few routes. Pay for crosswalks and bicycle storage at train and bus stations. Provide more special bus service for people with disabilities in larger cities. Pay for part of train and bus passes for people with low incomes.
<b>\$350 million</b>	Help employers have even more people work from home. Encourage people to take trains, buses, carpools, or bike or walk for work and personal travel. Provide more vans that employees can use to go to work together. Build more carpool (HOV) lanes. Work with cities to plan to build housing around train and bus stations.
<b>\$600 million</b>	Work with cities to allow building houses closer to places like grocery stores, medical offices, restaurants, and movie theaters so people do not need to go as far to get to the things they want. Build things like ramps and special lanes that only buses can use to help them avoid congestion. Spend a lot more to provide additional bus options for people with disabilities.
<b>\$1.2 billion</b>	Greatly expand commuter rail across Washington. Start building high-speed rail between major cities. Expand light-rail options in all parts of the state. Provide travel options for all people with disabilities in all parts of the state.



This funding category provides alternatives to driving, like bicycling and vanpools.



This funding category helps provide transit services for commuters.

## **INCREASE TRAVEL OPTIONS** [\(Learn more\)](#)

This category increases the use of trains, buses, and carpools. It helps people work from home more. It helps people with disabilities travel and may decrease the number of cars on state highways.

## New and Bigger Highways [\(Learn more\)](#)

How much would you like to spend on new and bigger highways?

Yearly Spending	Results
<b>\$800 million</b>	Delay some projects to spend more in other categories. Delays benefits of projects.
<b>\$1.2 billion</b> (Current funding)	Complete funded projects as planned.
<b>\$1.6 billion</b>	Complete funded projects as planned. Address some locations with known congestion today
<b>\$2 billion</b>	Complete funded projects as planned. Address all locations with known congestion today.



Before - 2018



After - 2021

WSDOT added capacity to the highway overpass.



New highway lane expansion and paving.

## NEW AND BIGGER HIGHWAYS [\(Learn more\)](#)

Examples of spending on new and bigger highways include widening roads, expanding intersections, adding new interchanges, adding passing lanes, and improving ramps. It includes projects funded from the gas tax increase in 2015.

## Remaining funds

If there were additional funds available, how would you spend them? Please rank your top five priorities in order of importance:

*Instructions: Drag your top five (5) categories to the top in order of most importance.*

1. Address climate change and reduce the impact of natural disasters.
2. Enhance the state highway system's natural environment (habitat for bees and other pollinators, tree canopy coverage, wildlife, animal crossings).
3. Invest in transportation programs to benefit low-income residents.
4. Improve how state highways connect to buses, city/county roads, rail, and airports.
5. Spend less than we spend now and lower the gas tax.
6. Develop new scenic highways.
7. Invest in non-transportation programs that lower the need to travel on the highway system (for example, improve broadband access so more people can work from home)
8. Provide more truck parking facilities to improve freight efficiency and safety.
9. Develop infrastructure for electric vehicles and electric trucking.
10. Complete a statewide network of trails that can be used for travel, recreation, and exercise.

## Which of the following large-scale investments is most important to you if you had additional funds?

Fund all new and bigger roads in long-range plans.

Create a climate-friendly transportation system that includes complete facilities for walking and bicycling connected to buses and rail. Build infrastructure for electric vehicles. Coordinate local freight delivery systems.

Make safety investments that greatly reduce individual, community, and health system cost of crash injuries and deaths.

Invest in new travel options including high speed rail between major cities and greatly improved bus systems.

None of the above.

## Demographic questions

You are almost at the end of the survey! We need you to fill in a few additional questions which will tell us which

### What is your age range?

18-24  
25-34  
35-44  
45-54  
55-64  
65 and over

### What is your gender?

Female  
Male  
Other

### What is your household's annual income?

Under \$15 thousand  
\$15,000 to \$24,999  
\$25,000 to \$34,999  
\$35,000 to \$49,999  
\$50,000 to \$74,999  
\$75,000 to \$99,999  
\$100,000 to \$149,999  
\$150,000 or more  
Prefer not to answer

### Are you of Hispanic, Latino, or Spanish origin?

Yes  
No

### How do you identify your race? (CHECK ALL THAT APPLY)

White or Caucasian  
Black or African American  
Asian or Pacific Islander  
American Indian or Alaska Native  
Other  
Prefer not to answer

### Do you identify as having a disability of any kind?

Yes  
No

### If yes, do you receive any state or federal compensation for your disability?

Yes  
No

**How many people live in your household, including you?**

**How many people in your household are under 18 years old?**

**How many vehicles are in your household?**

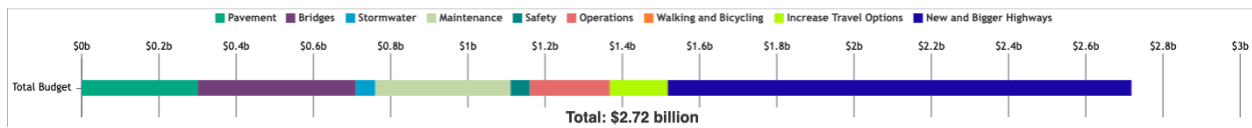
Please include all working vehicles regardless of how often the vehicle is driven.

**Does anyone in your household usually speak a language other than English?**

Yes

No

### Example of Visual that Tracked Spending



## **APPENDIX B: PUBLIC-FACING SURVEY FAQs**

The following information was made available on the HSP survey website to answer questions the public might have about the purpose and execution of the survey. The FAQ page was linked to the survey itself, as well as WSDOT's online open house page. The entire FAQ page was also available in Spanish.

### **FREQUENTLY ASKED QUESTIONS**

What is the Highway System Plan (HSP)?

The Washington State Department of Transportation's (WSDOT) Highway System Plan is WSDOT's blueprint for preserving, maintaining, improving, and operating interstates, US routes, and state routes in Washington. The plan also serves as the basis for highway funding decisions.

What is the purpose of this research?

The Highway System Plan is being updated. WSDOT is seeking your input on spending priorities. As budgets allow, your feedback on spending priorities will be reflected in the plan. Your priorities can be considered by the State Legislature, where funding decisions are made.

Areas of funding in the plan include pavement repair, bridge repair, stormwater runoff, general road maintenance, safety improvements, operational improvements, congestion reduction, active transportation, and capacity expansion. Invitations were mailed to a representative sample of 80,000 Washington state residents inviting them to participate in the online survey.

Why should I participate in the survey?

By providing feedback about your priorities for transportation spending, the State can better allocate our limited funds to what is most important to Washington state residents.

How do I access the survey?

To take the open-to-anyone opinion poll, visit <https://bit.ly/wa-hwy-poll> using any web browser. If you received a survey invitation via mail, please use the link in your invitation so we may track survey response rates. Free, temporary Internet access is available in locations throughout the state to those who do not have broadband service. To find the nearest Drive-In Wi-Fi Hotspot visit: [www.commerce.wa.gov/building-infrastructure/washington-state-drive-in-wifi-hotspots-location-finder/](http://www.commerce.wa.gov/building-infrastructure/washington-state-drive-in-wifi-hotspots-location-finder/)

What is the University of Washington's role in the study?

WSDOT has hired researchers at the University of Washington's Washington State Transportation Center to design, conduct, and analyze the statewide survey. The University of Washington will also publish a report of the survey findings.

How are participants selected?

Our sampling methodology was designed to engage all demographic groups in our state. A regionally representative sample of residential addresses was selected from U.S. Census data and sent invitations to take the survey. Historically, we have received lower than average response rates in geographic areas with high concentrations of communities of color and low-income communities. To help achieve a representative sample of respondents from those communities, and account for the potential lower response rate, we oversampled those areas by sending mailers to a higher percentage of residents.

How will WSDOT ensure that people whose first language is not English are involved in the study?

As noted in the mailed invitation, the online survey is available in Spanish, as well as English. The 80,000 survey invitations that WSDOT mailed to residents of Washington also provide information on how to access the survey in Spanish, simplified Chinese, Vietnamese, Korean, Tagalog, and Russian with the following translation:

If you have difficulty understanding English, you may, free of charge, request language assistance services for this Department information by calling (360) 705-7090 or email us at: [TitleVI@WSDOT.WA.GOV](mailto:TitleVI@WSDOT.WA.GOV).

People with difficulty understanding English who call or email WSDOT will receive live verbal interpretation of the HSP Opinion Poll.

How is my information kept confidential?

Your responses will be combined with the responses of other Washington State residents and will be completely confidential. In order to take the version of the survey that corresponds to your geographic region, you will be asked to provide your zip code of residence. The end of the survey requests basic demographic information which is voluntary. WSDOT is interested in understanding the background of survey respondents in order to improve future outreach efforts, and to compare the results to the overall demographic profile of the state. No personally identifiable information will be connected with your demographic information.

How will the results of the survey be used?

WSDOT will use the summary results of this survey to inform the Highway System Plan. The HSP aids WSDOT in making program funding recommendations to the State Legislature, which determines budget allocations of the state's available highway funding.

What if I don't drive very much?

WSDOT highway spending affects all residents of the state, whether or not you personally drive. Spending in categories such as public transportation and safety are important for everyone. We are interested in getting feedback from people who are dependent on public transportation or who don't drive a car.

Can more than one member of my household participate?

Yes. The state is interested in the opinions of all residents of Washington, and anyone is welcome to share their opinion in the HSP Opinion Poll.

How were the alternative budgetary figures in the survey developed?

The budgetary figures were selected to accomplish two goals:

1. Give survey respondents strong, realistic options that reflect their transportation priorities.
2. Present a range of publicly supported funding options. They do not account for inflation.

How much confidence does WSDOT have in the transportation outcomes expressed in the survey questions?

The results described for each proposed funding level are based on predictions from WSDOT's asset management teams. They are in the middle of the range of likely outcomes and include assumptions about funding of complementary budget categories.

Does the state really spend \$0 to improve walking and bicycling on highways?

WSDOT does not have dedicated funding to construct sidewalks or bike facilities (such as bike lanes or wider shoulders) on or adjacent to state highways. However, some improvements are made as part of other programs:

1. When building newer and bigger roads, WSDOT can incorporate walking and bicycling improvements where those projects are located. However, that funding does not connect the network between those projects.
2. Grant funding, such as the [pedestrian and bicycle program](#) and [safe routes to school program](#), is available to improve walking and biking infrastructure for cities and counties. Most grant projects are not on state highways.

Who do I contact if I need more information about the survey?

More information on the Highway System Plan, including contact information, is available at <https://wsdot.wa.gov/planning/hsp.htm>. Please email [hsp@wsdot.wa.gov](mailto:hsp@wsdot.wa.gov) for more information about the study.

Who do I contact for technical support with the survey?

Please email [trac@uw.edu](mailto:trac@uw.edu) for technical support.



## APPENDIX C: DETAILED MAP OF SURVEY REGIONS

The map below indicates the four survey regions used for analysis of the HSP survey.

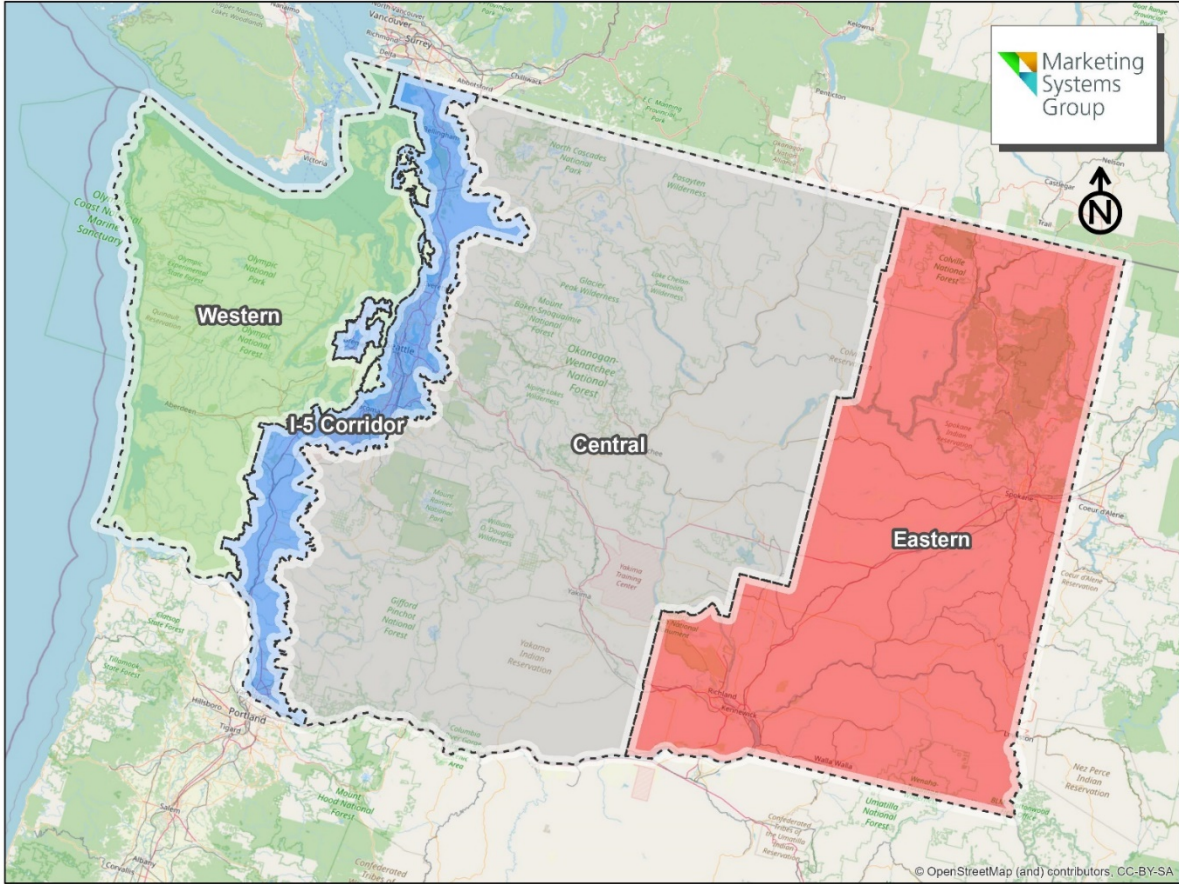


Figure C-1. Regions of Analysis for HSP Survey

## APPENDIX D: SURVEY INVITATION

In August 2021, WSDOT mailed 80,000 copies of the invitation below to randomly selected residents across the state inviting them to take the HSP survey.



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Dear Washington State Resident,

The Washington State Department of Transportation (WSDOT) invites you to take a survey that will help guide WSDOT's recommendations to the Legislature for state highway system spending. WSDOT will use your responses to shape updates to the Highway System Plan (HSP), which defines the State's vision for preserving, maintaining, improving, and operating state highways in Washington. For more information on the HSP update, visit <https://engage.wsdot.wa.gov/>.

Your participation is voluntary and should take no more than fifteen minutes to complete. **Please complete the survey by September 12.** If you complete the survey, you will be entered in a random drawing sponsored by WSDOT to win one of ten \$25 and one of twenty-five \$10 gift cards. The odds of winning \$25 are 1:8,000 or 0.0125% and the odds of winning \$10 are 1:3,200 or 0.0312%. Winners will be notified by mail. Thank you in advance for your participation. Your feedback is important to us.

This survey is administered by the University of Washington on behalf of WSDOT to inform the next Highway System Plan update. Your responses will be combined with the responses of other Washington State residents and will be completely confidential.

Sincerely,

*The University of Washington & The Washington State Department of Transportation*

**To fill out the survey:** Visit: <https://bit.ly/3zx5Rmj>. The survey is available in English and Spanish. Se puede llenar la encuesta en inglés o en español.

### Language access

If you have difficulty understanding English, you may, free of charge, request language assistance services for this Department information by calling (360) 705-7090 or email us at: [TitleVI@WSDOT.WA.GOV](mailto:TitleVI@WSDOT.WA.GOV).

Aviso a personas con dominio limitado del idioma inglés: Si usted tiene alguna dificultad en entender el idioma inglés, puede, sin costo alguno, solicitar asistencia lingüística con respecto a

esta información llamando al (360) 705-7090, o envíe un mensaje de correo electrónico a: TitleVI@WSDOT.WA.GOV.

給英語能力有限人士的通知: 如果您不懂英語, 或者使用英語有困難, 您可以要求獲得向大眾提供的語言協助服務, 幫助您理解教育部資訊。這些語言協助服務均可免費提供。如果您需要有關口譯或筆譯服務的詳細資訊, 請致電 (360) 705-7090, 或電郵: TitleVI@WSDOT.WA.GOV.

Thông báo dành cho những người có khả năng Anh ngữ hạn chế: Nếu quý vị gặp khó khăn trong việc hiểu Anh ngữ thì quý vị có thể yêu cầu các dịch vụ hỗ trợ ngôn ngữ cho các tin tức của Bộ dành cho công chúng. Các dịch vụ hỗ trợ ngôn ngữ này đều miễn phí. Nếu quý vị muốn biết thêm chi tiết về các dịch vụ phiên dịch hay thông dịch, xin vui lòng gọi số (360) 705-7090, hoặc email: TitleVI@WSDOT.WA.GOV.

영어 미숙자를 위한 공고: 영어를 이해하는 데 어려움이 있으신 경우, 교육부 정보 센터에 일반인 대상 언어 지원 서비스를 요청하실 수 있습니다. 이러한 언어 지원 서비스는 무료로 제공됩니다. 통역이나 번역 서비스에 대해 자세한 정보가 필요하신 경우, 전화번호 (360) 705-7090 또는 이메일주소 TitleVI@WSDOT.WA.GOV 으로 연락하시기 바랍니다.

Paunawa sa mga Taong Limitado ang Kaalaman sa English: Kung nahihirapan kayong makaintindi ng English, maaari kayong humingi ng tulong ukol dito sa inpormasyon ng Kagawaran mula sa nagbibigay ng serbisyo na pagtulong kaugnay ng wika. Ang serbisyo na pagtulong kaugnay ng wika ay libre. Kung kailangan ninyo ng dagdag na impormasyon tungkol sa mga serbisyo kaugnay ng pagpapaliwanag o pagsasalin, mangyari lamang tumawag sa (360) 705-7090, o mag-email sa: TitleVI@WSDOT.WA.GOV.

Уведомление для лиц с ограниченным знанием английского языка: Если вы испытываете трудности в понимании английского языка, вы можете попросить, чтобы вам предоставили перевод информации, которую Министерство Образования доводит до всеобщего сведения. Этот перевод предоставляется бесплатно. Если вы хотите получить более подробную информацию об услугах устного и письменного перевода, звоните по телефону (360) 705-7090, или отправьте сообщение по адресу: TitleVI@WSDOT.WA.GOV.

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**Americans with Disabilities Act (ADA) Information:**

This material can be made available in an alternate format by emailing the Office of Equal Opportunity at [wsdotada@wsdot.wa.gov](mailto:wsdotada@wsdot.wa.gov) or by calling toll free, 855-362-4ADA(4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

**Title VI Statement to Public:**

It is the Washington State Department of Transportation's (WSDOT) policy to assure that no person shall, on the grounds of race, color or national origin, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated, may file a complaint with WSDOT's Office of Equal Opportunity (OEO). For additional information regarding Title VI complaint procedures and/or information regarding our non-discrimination obligations, please contact OEO's Title VI Coordinator at (360) 705-7082.

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