What Do Americans Think About Federal Tax Options to Support Transportation? Results from Year Ten of a National Survey

Asha Weinstein Agrawal, Ph.D.
Hilary Nixon, Ph.D.
MINETA TRANSPORTATION INSTITUTE
LEAD UNIVERSITY OF
Mineta Consortium for Transportation Mobility

Founded in 1991, the Mineta Transportation Institute (MTI), an organized research and training unit in partnership with the Lucas College and Graduate School of Business at San José State University (SJSU), increases mobility for all by improving the safety, efficiency, accessibility, and convenience of our nation’s transportation system. Through research, education, workforce development, and technology transfer, we help create a connected world. MTI leads the four-university Mineta Consortium for Transportation Mobility, a Tier 1 University Transportation Center funded by the U.S. Department of Transportation’s Office of the Assistant Secretary for Research and Technology (OST-R), the California Department of Transportation (Caltrans), and by private grants and donations.

MTI’s transportation policy work is centered on three primary responsibilities:

**Research**
MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: bicycle and pedestrian issues; financing public and private sector transportation improvements; intermodal connectivity and integration; safety and security of transportation systems; sustainability of transportation systems; transportation / land use / environment; and transportation planning and policy development. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available on TransWeb, the MTI website (http://transweb.sjsu.edu).

**Education**
The Institute supports education programs for students seeking a career in the development and operation of surface transportation systems. MTI, through San José State University, offers an AACSBl-accredited Master of Science in Transportation Management and graduate certificates in Transportation Management, Transportation Security, and High-Speed Rail Management that serve to prepare the nation’s transportation managers for the 21st century. With the active assistance of the California Department of Transportation (Caltrans), MTI delivers its classes over a state-of-the-art videoconference network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI’s education program promotes enrollment to under-represented groups.

**Information and Technology Transfer**
MTI utilizes a diverse array of dissemination methods and media to ensure research results reach those responsible for managing change. These methods include publication, seminars, workshops, websites, social media, webinars, and other technology transfer mechanisms. Additionally, MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. MTI’s extensive collection of transportation-related publications is integrated into the graduate education program. AALC

---

### Disclaimer
The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented herein. This document is disseminated in the interest of information exchange. The report is funded, partially or entirely, by a grant from the U.S. Department of Transportation’s University Transportation Centers Program. This report does not necessarily reflect the official views or policies of the U.S. government, State of California, or the Mineta Transportation Institute, who assume no liability for the contents or use thereof. This report does not constitute a standard specification, design standard, or regulation.

---

## MTI BOARD OF TRUSTEES

**MTI FOUNDER**
Hon. Norman Y. Mineta

**Founder, Honorable Norman Mineta**
- **Ex-Officio**
  - Secretary (ret), U.S. Department of Transportation
  - Vice Chair
  - Hill & Knowlson, Inc.

**Honorary Chair, Honorable Bill Shuster**
- **Ex-Officio**
  - Chair
  - House Transportation and Infrastructure Committee
  - United States House of Representatives

**President & CEO**
- Ed Hamberger (Ex-Officio)
- Rose Guilbault (TE 2020)
- Dan Smith (TE 2020)
- Don Moshavi, Ph.D. (Ex-Officio)
- San Jose State University

**Research Associates Policy Oversight Committee**

**Directors**
- Karen Philbrick, Ph.D.
- Asha Weinstein Agrawal, Ph.D.
- Hilary Nixon, Ph.D.
- Brian Michael Jenkins

**Founders**
- [Name]
- [Name]
- [Name]
- [Name]

**Research Associates**
- [Name]
- [Name]
- [Name]
- [Name]

**MTI BOARD OF TRUSTEES**

**MTI FOUNDER**
Hon. Norman Y. Mineta

**Founders**
- [Name]
- [Name]
- [Name]
- [Name]

**Directors**
- [Name]
- [Name]
- [Name]
- [Name]

**Research Associates**
- [Name]
- [Name]
- [Name]
- [Name]

**President & CEO**
- [Name]
- [Name]
- [Name]
- [Name]

**Research Associates Policy Oversight Committee**

**Directors**
- [Name]
- [Name]
- [Name]
- [Name]

**Research Associates**
- [Name]
- [Name]
- [Name]
- [Name]
WHAT DO AMERICANS THINK ABOUT FEDERAL TAX OPTIONS TO SUPPORT TRANSPORTATION? RESULTS FROM YEAR TEN OF A NATIONAL SURVEY

Asha Weinstein Agrawal, Ph.D.
Hilary Nixon, Ph.D.

June 2019
What Do Americans Think About Federal Tax Options to Support Transportation?  
Result from Year Ten of a National Survey

June 2019

Agrawal, Asha Weinstein, https://orcid.org/0000-0003-2328-0263  
Nixon, Hilary, https://orcid.org/0000-0001-5378-3473

Mineta Transportation Institute  
College of Business  
San José State University  
San José, CA 95192-0219

Mineta Transportation Institute  
College of Business  
San José State University  
San José, CA 95192-0219

This report summarizes the results from the tenth year of a national public opinion survey asking U.S. adults questions related to their views on federal transportation taxes. A nationally representative sample of 2,723 respondents completed the online survey. The questions test public opinions about both raising the federal gas tax rate and replacing the federal gas tax with a new mileage fee. In addition to asking directly about support for these tax options, the survey collected data on respondents' views on the quality of their local transportation system, their priorities for federal transportation spending, their knowledge of how much they pay in federal gas taxes, their views on privacy and equity matters related to mileage fees, travel behavior, and standard sociodemographic variables. This large set of variables is used to identify personal characteristics and opinions correlated with support for the tax options.

Key findings include: large majorities would support raising the federal gas tax rate under certain conditions; people hold nuanced views about the pros and cons of mileage fees; and linking a transportation tax to environmental goals raises support.

Transportation taxes, transportation fees, public opinion, gasoline tax, mileage fees, highway user taxation, user charges

No restrictions. This document is available to the public through The National Technical Information Service, Springfield, VA 22161
ACKNOWLEDGMENTS

The authors thank the following people for their important contributions to this project:

• Student Research Assistant Cameron Simons, for help with programing the survey, data cleaning, and data analysis;

• Dr. Giovanni Circella, for advice on working with Qualtrics online panel surveys;

• The staff at Qualtrics who assisted with survey administration;

• The 2,723 individuals who responded to the survey;

• Editing Press, for editing services; and

• Mineta Transportation Institute staff, including Executive Director Karen Philbrick, Ph.D.; Graphic Designer Alverina Eka Weinardy; and Executive Administrative Assistant Jill Carter.
# TABLE OF CONTENTS

**List of Figures** vi

**List of Tables** vii

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>II. Survey Design and Administration</td>
<td>2</td>
</tr>
<tr>
<td>Questionnaire Design</td>
<td>2</td>
</tr>
<tr>
<td>Survey Administration</td>
<td>3</td>
</tr>
<tr>
<td>Survey Respondents</td>
<td>5</td>
</tr>
<tr>
<td>III. Findings Related to Respondents’ Views on Transportation System Needs</td>
<td>8</td>
</tr>
<tr>
<td>Perceived Quality of the Local Transportation System</td>
<td>8</td>
</tr>
<tr>
<td>Priorities for the National Transportation System</td>
<td>9</td>
</tr>
<tr>
<td>IV. Findings Related to Federal Gas Taxes</td>
<td>13</td>
</tr>
<tr>
<td>Knowledge of the Federal Gas Tax Rate</td>
<td>13</td>
</tr>
<tr>
<td>Support for Raising the Federal Gas Tax Rate</td>
<td>14</td>
</tr>
<tr>
<td>Variations in Support by Population Subgroups</td>
<td>15</td>
</tr>
<tr>
<td>Support for Spending Some Gas Tax Revenues on Public Transit</td>
<td>24</td>
</tr>
<tr>
<td>V. Findings about Mileage Fees</td>
<td>27</td>
</tr>
<tr>
<td>Opinions about the Advantages and Disadvantages of Mileage Fees</td>
<td>27</td>
</tr>
<tr>
<td>Support for Replacing the Gas Tax with a Mileage Fee</td>
<td>32</td>
</tr>
<tr>
<td>Preferred Way to Pay for Mileage Fees</td>
<td>36</td>
</tr>
<tr>
<td>VI. Conclusions</td>
<td>38</td>
</tr>
<tr>
<td>Appendix A: Survey Questionnaire and Topline Results</td>
<td>40</td>
</tr>
<tr>
<td>Abbreviations and Acronyms</td>
<td>47</td>
</tr>
<tr>
<td>Endnotes</td>
<td>48</td>
</tr>
<tr>
<td>Bibliography</td>
<td>51</td>
</tr>
<tr>
<td>About the Authors</td>
<td>54</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

1. Assessment of the Quality of Transportation Infrastructure and Services in “Your Community” 8

2. Assessment of the Importance of Transportation-Related Goals for the U.S. 9

3. Priority Placed on Different Options for Spending Federal Gas Tax Revenue 11

4. Options Selected as One of the Top Three Priorities for Spending Federal Gas Tax Revenue 12

5. Support\textsuperscript{a} for the Gas Tax Options 15


7. Agreement with Statements about Mileage Fees 29

8. Preferred Way to Pay a Mileage Fee, by Sociodemographic Characteristics 37
LIST OF TABLES

1. Quotas Used for Sampling 4
2. Survey Administration Frequencies and Response and Completion Rates 5
3. Comparison of Survey Respondents to the U.S. Population 6
4. Estimate of the Federal Gas Tax Paid on a Gallon of Regular Gasoline Priced at $3.00 per Gallon 13
5. Percent of Respondents Thinking that the Federal Gas Tax Paid on a Gallon of Regular Gasoline Priced at $3.00 per Gallon is More than 50 Cents, by Sociodemographic Characteristics 14
6. Support for the Gas Tax Options, by Sociodemographic Characteristics 17
7. Support for the Gas Tax Options, by Political Characteristics 18
8. Support for the Gas Tax Options, by Travel Behavior 19
10. Support for the Gas Tax Options, by Census Region and Community Type 21
13. Support for Spending Some Gas Tax Revenue for Transit, by Travel Behavior 26
14. Support for the Gas Tax Options, by Opinion on Spending Some Gas Tax Revenue for Transit 26
15. Agreement with Statements about Mileage Fees and Privacy, by Sociodemographic Characteristics 30
16. Agreement with Statements about Mileage Fees and Fairness, by Sociodemographic Characteristics 31
17. Support for the Mileage Fee Options, by Sociodemographic Characteristics 33
18. Support for the Mileage Fee Options, by Political Characteristics 34
19. Support for the Mileage Fee Options, by Travel Behavior 35
20. Support for the Mileage Fee Options, by Census Region and Community Type  36
I. INTRODUCTION

Over the past several decades, the transportation revenues available from state and federal gas taxes have fallen significantly in terms of inflation-adjusted dollars per mile traveled. At the same time, the transportation system requires critical—and expensive—system upgrades. Among other needs, a large portion of the national highway system requires major rehabilitation, and there is growing desire at all levels of government to substantially upgrade and expand infrastructure to support public transit, walking, bicycling, and micro-mobility modes such as electric kick-scooters.

This dilemma of growing needs and shrinking revenues can be resolved in only two ways: either the nation must dramatically lower its goals for system preservation and enhancement, or new revenues must be raised. If the latter is to happen, legislators must be convinced that increasing taxes or fees is politically feasible. One portion of the political calculus that legislators consider when deciding whether or not to raise new revenues is, of course, likely public support for—or opposition to—raising different kinds of taxes.

This report contributes to the understanding of current sentiment about increasing transportation taxes by presenting results from the tenth year of an annual survey investigating public opinion about a variety of federal transportation tax options. The specific taxes tested were six variations on raising the federal gas tax rate and two variations on creating a new mileage tax to replace the gas tax. In addition, the survey collected data on respondents’ sociodemographic characteristics, travel behavior, views on the quality of their local transportation system, and priorities for government spending on transportation in their state. All of this information is used to assess support levels for the tax options among different population subgroups.

The survey questionnaire described the various tax proposals in only general terms, so the study results cannot be assumed to reflect support for any actual proposal put forward. Nevertheless, the results show likely patterns of support and, more importantly, the public’s relative preferences among different transportation tax options.

The report compares the results of the ten surveys in the series in order to establish how public views may have changed from 2010 to 2019. The surveys used identical question language each year to describe some tax options so as to enable reliable trend analysis. However, this year the survey was administered using an online panel, unlike previous years that gathered data through a random-digit-dial phone survey. Changes in survey mode can influence survey responses, so readers are advised to interpret changes from 2018 to 2019 with caution.

The remaining chapters of the report are organized as follows. Chapter 2 describes the survey methodology and presents an overview of the questionnaire and details of the implementation procedure. Discussion of the survey findings follows in Chapters 3, 4, and 5. Chapter 6 summarizes the key findings and suggests policy implications.
II. SURVEY DESIGN AND ADMINISTRATION

The online survey was completed by 2,723 U.S. adults who were recruited by Qualtrics through an online panel sample. This chapter describes the questionnaire design, survey sampling and administration, and characteristics of the respondents.

QUESTIONNAIRE DESIGN

The survey questionnaire was designed to test public support for variants on two federal taxes that could be used to raise federal transportation revenues: an increase in the federal gas tax rate and a new national mileage fee to replace the federal gas tax. The exact wording used for all questions can be found in Appendix A, which reproduces the survey questionnaire.

Because gas and mileage taxes are revenue options likely to receive considerable policy scrutiny in coming years, the survey tested support for different versions of each tax. Overall, eight different federal tax options were tested: six variants of a gas tax increase and two variants of a new mileage fee to replace the federal gas tax. All but one of the gas tax variants are identical to those tested in earlier years of the survey series, though the mileage fee questions asked this year are slightly different from those asked in previous surveys.

To make these hypothetical taxes easier for respondents to understand, the survey gave specific prices for each. The values were selected to be simple numbers within the range of mainstream current policy discussion.

**Gas-tax increases.** All variants of a federal gas tax increase involved raising the existing 18¢-per-gallon tax\(^2\) to 28¢ per gallon, but each included a different set of information for respondents to consider. The six variations were:

- A “base-case” 10¢ increase in the gas tax, with respondents given no information other than the rate and that proceeds would be spent “for transportation.”

- A 10¢ increase in the gas tax, with the revenues to be spent only for projects to reduce local air pollution caused by the transportation system.

- A 10¢ increase in the gas tax, with the revenues to be spent only on projects to reduce the transportation system’s contribution to global warming.

- A 10¢ increase in the gas tax, with the revenues to be spent only on projects to maintain streets, roads, and highways.

- A 10¢ increase in the gas tax, with the revenues to be spent only on projects to reduce accidents and improve safety.

- A 10¢ increase in the gas tax, with the revenues to be spent only on projects to reduce traffic congestion. (This option was added to the survey in 2019.)
**New mileage fees.** Two variants of a mileage fee were presented, both of which involved replacing the federal gas tax with a new tax per mile driven that relies on electronic meters to track miles driven. Respondents were also told that someone driving 10,000 miles a year would pay $100. The two variants, which differed only in the rate structure, were:

- “Flat-rate” variant: a one-cent-per-mile fee, with every car taxed at the same rate.
- “Green” variant: a mileage fee for which the average rate would be one cent per mile, but vehicles that pollute less would be charged less and vehicles that pollute more would be charged more.

The questionnaire also asked respondents sociodemographic and travel behavior questions, as well as questions about the quality of transportation infrastructure and services in their community, their priorities for spending federal gas tax revenues, their estimates of the federal gas tax rate and how much they spend annually on federal gas taxes, their opinions about fairness and privacy matters related to mileage fees, and their preferred frequency for paying a mileage fee.

**SURVEY ADMINISTRATION**

The survey was administered online, using a survey platform and panel of respondents managed by Qualtrics. Online surveys are increasingly popular, in part due to their low cost, speed at which they can be administered, convenience for respondents, and ability to include question design options that are difficult or impossible to implement via telephone or mail. A 2019 analysis from the Pew Research Center found that 90% of Americans are online, which suggests that online surveys are currently a reasonable method to reach a representative sample of U.S. adults, despite evidence that some population subgroups are often underrepresented in online surveys. Less well represented groups include people who are older, low-income, have less formal education, live in rural communities, and do not have high-speed internet access at home.

Previous surveys in the series gathered data through random-digit-dial telephone surveys. The change in survey mode was made to take advantage of the benefits of online surveys, especially to reduce project costs and to avoid some of the challenges associated with telephone surveys, such as their intrusive nature and increased use of call screening.

Survey mode can impact question responses, and so readers are cautioned that when trends are discussed in this report’s findings, the change in survey mode could account for some of the difference between responses in 2018 and 2019. A study by the authors of this report, for example, found higher support levels for some of the same tax options described here when responses were collected from the online panel “SurveyMonkey Audience” than when responses were collected with a random-digit-dial phone survey. However, research suggests that questions about abstract policy matters (such as those discussed in this survey) are less affected by survey mode than questions about potentially embarrassing personal topics where respondents may feel pressured to give socially acceptable answers. Researchers have also found that respondents to online polls are
less likely than phone survey respondents to answer rating questions with the most positive answers.⁹

**Sampling Approach**

Quota sampling was used in order to ensure a sample that closely represents the U.S. adult population. The authors requested a nationally representative sample, as defined by U.S. American Community Survey (ACS) data on gender, race and ethnicity, employment status, annual household income, and age. Table 1 shows the ACS values used to build the quotas.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>U.S. adult populationa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49</td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
</tr>
<tr>
<td>Of Hispanic/Latino origin/descent</td>
<td>15</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White only</td>
<td>75</td>
</tr>
<tr>
<td>Black/African-American only</td>
<td>12</td>
</tr>
<tr>
<td>Asian/Asian-American only</td>
<td>6</td>
</tr>
<tr>
<td>Other, including multiracial</td>
<td>7</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>60</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>5</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>35</td>
</tr>
<tr>
<td>Income (annual household)</td>
<td></td>
</tr>
<tr>
<td>$0 – $25,000</td>
<td>21</td>
</tr>
<tr>
<td>$25,001 – $50,000</td>
<td>23</td>
</tr>
<tr>
<td>$50,001 – $75,000</td>
<td>18</td>
</tr>
<tr>
<td>$75,001 – $100,000</td>
<td>12</td>
</tr>
<tr>
<td>$100,001 – $150,000</td>
<td>14</td>
</tr>
<tr>
<td>$150,001+</td>
<td>12</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>18 – 29</td>
<td>22</td>
</tr>
<tr>
<td>30 – 39</td>
<td>17</td>
</tr>
<tr>
<td>40 – 49</td>
<td>17</td>
</tr>
<tr>
<td>50 – 59</td>
<td>18</td>
</tr>
<tr>
<td>60 – 69</td>
<td>14</td>
</tr>
<tr>
<td>70 – 79</td>
<td>8</td>
</tr>
<tr>
<td>80+</td>
<td>5</td>
</tr>
</tbody>
</table>

* All data are for adults 18 years and older, with the exception of household income and size, which are for all U.S. households. Statistics are American Community Survey (ACS) 2017 5-year estimates from https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (accessed May 31, 2019).
The interviewing was conducted from April 23 to May 14, 2019. The median time to complete each survey was 11 minutes and the mean time was 14 minutes. A total of 2,723 adults responded with usable data.

Table 2 presents frequencies related to the survey administration, as well as response and cooperation rates. We calculated response and cooperation rates following standards recommended by the American Association for Public Opinion Research (AAPOR).10 The survey had a response rate of 3.1% and a cooperation rate of 27.6%.

Table 2. Survey Administration Frequencies and Response and Completion Ratesa

<table>
<thead>
<tr>
<th>Survey administration frequencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Invitations sent</td>
<td>103,385</td>
</tr>
<tr>
<td>Participants who started the survey but voluntarily dropped out</td>
<td>8,177</td>
</tr>
<tr>
<td>Participants terminated from the survey by Qualtrics because they</td>
<td>2,305</td>
</tr>
<tr>
<td>represented a subgroup whose quota had been filled</td>
<td></td>
</tr>
<tr>
<td>Complete surveys</td>
<td>3,113b</td>
</tr>
<tr>
<td>AAPOR Response Rate 1</td>
<td>3.1%</td>
</tr>
<tr>
<td>AAPOR Cooperation Rate 1</td>
<td>27.6%</td>
</tr>
</tbody>
</table>

a Calculated using the American Association for Public Opinion Research (AAPOR) Response Rate Calculator V4.0, "web" tab. The most conservative rates were chosen. The calculator was downloaded on June 1, 2019, from https://www.aapor.org/AAPOR_Main/media/MainSiteFiles/Response-Rate-Calculator-4-0-Clean-18-May-2016.xlsx.
b An additional 390 responses were cleaned from the dataset due to nonsensical responses, including straight-lining through questions presented in tables and gibberish answers in open-ended questions.

SURVEY RESPONDENTS

The 2,723 adult survey respondents with usable data were generally representative of the U.S. population in terms of Census region and sociodemographic characteristics (Table 3). For the survey findings and analysis presented in this report, we lightly weighted the data using a raking method to match the Census Bureau’s 2017 ACS five-year estimates with respect to gender, race, Hispanic ethnicity, education level, household income, and age.11
### Table 3. Comparison of Survey Respondents to the U.S. Population

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Sample (unweighted) (%)</th>
<th>U.S. adults (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Census region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Midwest</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>South</td>
<td>37</td>
<td>38</td>
</tr>
<tr>
<td>West</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>49</td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Of Hispanic/Latino origin/descent</strong></td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White only</td>
<td>80</td>
<td>75</td>
</tr>
<tr>
<td>Black/African-American only</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Asian/Asian-American only</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Other, including multiracial</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school graduate</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>High school graduate</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Some college</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>College graduate</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>33</td>
<td>35</td>
</tr>
<tr>
<td><strong>Household size (people)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>4+</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td><strong>Income (annual household)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0 – $25,000</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>$25,001 – $50,000</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>$50,001 – $75,000</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>$75,001 – $100,000</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>$100,001 – $150,000</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>$150,001+</td>
<td>15</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 3, continued

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Sample (unweighted) (%)</th>
<th>U.S. adults&lt;sup&gt;a&lt;/sup&gt; (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 29</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>30 – 39</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>40 – 49</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>50 – 59</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>60 – 69</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>70 – 79</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>80+</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

<sup>a</sup> All data are for adults 18 years and older, with the exception of household income and size, which are for all U.S. households. Statistics are American Community Survey (ACS) 2017 5-year estimates from https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (accessed May 31, 2019).

<sup>b</sup> Census regions are defined at U.S. Census Bureau, “Census Regions and Divisions of the United States with State FIPS Codes” (no date), http://www2.census.gov/geo/docs/maps-data/maps/reg_div.txt (accessed May 28, 2019).

Note: Some percentages do not sum to 100% due to rounding.
III. FINDINGS RELATED TO RESPONDENTS’ VIEWS ON TRANSPORTATION SYSTEM NEEDS

This chapter presents key findings from a set of questions asking respondents about their views on the quality of the current transportation system and priorities for improving it. (Appendix A presents the exact questionnaire language and complete top-line results.)

PERCEIVED QUALITY OF THE LOCAL TRANSPORTATION SYSTEM

Figure 1 shows how respondents assessed the quality of transportation infrastructure and services in their own community. The grey bars to the left indicate the percentage of respondents who assessed each type of transportation infrastructure or services negatively (as "somewhat" or "very" bad), while the blue bars to the right show the percentage of respondents who assessed each item positively (as "somewhat" or "very" good).

The majority of Americans rated the transportation system positively, though with some reservations. For every item, more than half of respondents rated it as "somewhat" or "very" good. However, most people in that group selected "somewhat" rather than "very" good.

Comparing responses across the four items, interstates, highways, and freeways were rated positively by the largest percent of respondents (70%). The other three items were rated positively by somewhat smaller majorities: 59% for bicycle and pedestrian facilities, 55% for local streets and roads, and 54% for public transit.

![Figure 1. Assessment of the Quality of Transportation Infrastructure and Services in “Your Community”](image)

Note: An additional 15% and 11% of respondents responded “Not sure/Doesn’t apply” when asked about public transit services and bicycle and pedestrian facilities, respectively.
Findings Related to Respondents’ Views on Transportation System Needs

A separate question asked respondents if they were concerned about traffic congestion in their community. Thirty-three percent were “very” concerned, 42% “somewhat” concerned, and only 26% “not at all” concerned.

PRIORITIES FOR THE NATIONAL TRANSPORTATION SYSTEM

The next set of survey questions asked respondents about their priorities for improvements to the transportation system, asking first about national goals and then about preferred ways to spend federal gas tax revenues.

Figure 2 shows the importance that respondents placed on each of six goals for improving the national transportation system. The blue bars to the right indicate the percentages rating each goal as “somewhat” or “very” important, and the grey bars to the left represent the proportion rating the goal as “not important.” Notably, virtually all respondents (89% or more) rated each of the six goals as somewhat or very important, with more selecting “very” than “somewhat” important. The two most popular goals were to improve safety (97%) and improve maintenance on roads, streets, highways, and bridges (95%).

Figure 2. Assessment of the Importance of Transportation-Related Goals for the U.S.
The questionnaire then explained that the federal government collects a tax on gasoline and asked respondents to indicate how much of a priority they place on various categories of spending. As shown in Figure 3, the great majority of respondents believed that all of these options are of medium to high priority. Even the least popular option had only 13% of respondents rating it as “not at all” a priority.

Looking at respondents’ relative priorities, maintenance was a priority for the largest number of respondents (92%). Large majorities also supported both road and public-transit related options, from building and widening local streets, roads, and highways, to adding more frequent transit service and subsidizing fares for low-income riders. The two options with the lowest support both related to encouraging the use of electric vehicles, but even here clear majorities supported the options as at least a “medium” priority.

Finally, a follow-up question asked respondents to choose their three highest priorities from the list of possible spending categories (Figure 4). There was little consensus here; no single option was selected by a majority of respondents. However, mirroring the findings in Figure 1, the most popular option was maintenance, both of local streets and roads (46%) and of highways and freeways (38%). And again, both road-related and public transit-related options had roughly equivalent support. For example, 20% of respondents selected expanding public transit service into new areas and 19% selected building/widening highways, interstates, and freeways. Finally, as with Figure 1, measures to support electric vehicle use had among the lowest support levels.
Figure 3. Priority Placed on Different Options for Spending Federal Gas Tax Revenue
Findings Related to Respondents’ Views on Transportation System Needs

Figure 4. Options Selected as One of the Top Three Priorities for Spending Federal Gas Tax Revenue
IV. FINDINGS RELATED TO FEDERAL GAS TAXES

This chapter presents findings on questions related to knowledge and opinions about the federal gas tax. Topics covered include how much respondents think they pay in federal gas taxes and support for different variants on raising the federal gas tax rate. (Appendix A presents the exact questionnaire language and topline results.)

KNOWLEDGE OF THE FEDERAL GAS TAX RATE

There is considerable anecdotal evidence suggesting that most Americans are unaware of how much they pay in fuel taxes. To gather evidence on this point, the survey asked respondents to give their best guess about the current federal gas tax rate and also to estimate their annual gas tax payments.

The survey asked respondents to estimate the federal gas tax paid on a gallon of regular gasoline costing $3.00 per gallon. Respondents could choose among a set of ranges as the answer options (Table 4). While about a third (30%) accurately chose the option “11¢ to 25¢,” the majority of respondents over-estimated the rate (55%). The over-estimates were often significant, too; 19% thought the rate was at least 76¢ per gallon.

Table 5 shows an analysis that looks at the correlation between sociodemographic characteristics and incorrectly estimating the gas tax to be substantially higher than the actual rate of 18.4¢ per gallon. Among respondents who believed that the rate is more than 50¢ per gallon, the only statistically significant difference among subgroups is that more men than women made this mistake (35% of men vs. 29% of women). Table 5 also shows a parallel analysis for respondents who overestimated the gas tax by any amount (selecting any option from 25¢ per gallon up). With this lower cut-off, there are more differences among subgroups. Respondents are more likely to overestimate the tax rate if they are male, white, not of Hispanic/Latino decent, in the higher two income groups ($50,000 or more), and the oldest age group (55 and older).

A separate question asked respondents how much they pay annually in federal gas taxes, and most people answered with values that are likely somewhat higher than is actually the case for them. Very roughly, Americans pay about $150 annually in federal gas tax expenditures, considerably less than what the survey respondents estimated. The median value estimated by survey respondents is $200 per year, and the mean value is $452 per year.

Table 4. Estimate of the Federal Gas Tax Paid on a Gallon of Regular Gasoline Priced at $3.00 per Gallon

<table>
<thead>
<tr>
<th>Gas tax rate choices</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10¢</td>
<td>14</td>
</tr>
<tr>
<td>11¢ to 25¢</td>
<td>30</td>
</tr>
<tr>
<td>26¢ to 50¢</td>
<td>24</td>
</tr>
<tr>
<td>51¢ to 75¢</td>
<td>12</td>
</tr>
<tr>
<td>76¢ to $1.00</td>
<td>9</td>
</tr>
<tr>
<td>More than $1.00</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 5. Percent of Respondents Thinking that the Federal Gas Tax Paid on a Gallon of Regular Gasoline Priced at $3.00 per Gallon is More than 50 Cents, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Believe that federal gas tax rate is more than 50¢ (%)</th>
<th>Believe that federal gas tax rate is more than 25¢ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>62</td>
</tr>
<tr>
<td>Female</td>
<td>29**</td>
<td>51**</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>31</td>
<td>58</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>36</td>
<td>54</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td>Other</td>
<td>29</td>
<td>41**</td>
</tr>
<tr>
<td>Of Latino/Hispanic descent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>58**</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>32</td>
<td>56</td>
</tr>
<tr>
<td>More than high school</td>
<td>31</td>
<td>56</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>32</td>
<td>57</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>33</td>
<td>58</td>
</tr>
<tr>
<td>Income (annual household)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>31</td>
<td>52</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>32</td>
<td>58*</td>
</tr>
<tr>
<td>$100,001+</td>
<td>34</td>
<td>62**</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>25 – 54</td>
<td>32</td>
<td>54</td>
</tr>
<tr>
<td>55+</td>
<td>32</td>
<td>61**</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.

SUPPORT FOR RAISING THE FEDERAL GAS TAX RATE

The survey results show that a majority of Americans would support higher taxes for transportation—under certain conditions (Figure 5). For example, only 40% of respondents supported the base-case 10¢-per-gallon gas tax increase, for which respondents were told only that the tax revenues would be spent for transportation purposes. However, five variants of that idea of a 10¢-per-gallon gas tax increase received at least 62% support. The very highest level of support among all the tax options tested was for a gas tax increase of
10¢ per gallon to fund road maintenance. That option was supported by 75% of respondents, an increase of 35 percentage points over support for the base-case gas tax increase. The next most popular options were a gas tax increase with funds devoted to reducing accidents and improving safety (71% support) or one with funds devoted to reducing congestion (70%). The two options that linked a gas tax increase to environment objectives also had strong support: 63% support for the variant related to reducing local air pollution and 62% for the variant related to reducing global warming emissions.

**Figure 5. Support\(^a\) for the Gas Tax Options**

\(^a\) “Support” is the sum of those who said that they “strongly” or “somewhat” support the tax option.

**VARIATIONS IN SUPPORT BY POPULATION SUBGROUPS**

This section presents support for the tax options by different subgroups within the population, categorized by sociodemographics, political characteristics, travel behavior, estimates related to the federal gas tax, and geographic location. The statistical test of two proportions was used to check whether differences among subgroups (e.g., men versus women) are statistically significant at the 95% and 99% confidence levels. Tables 6 through 10 present the results from statistical testing in which the first subgroup listed in a table for that set of population categories is the reference case against which the other subgroups are compared.
Readers should note that the significant differences among subgroups shown in the tables are not necessarily the only important differences that exist. Rather, the differences are those that were statistically significant according to the particular statistical tests used. It is also important to keep in mind that “statistical significance” is not an automatic indicator of scientific or policy importance, as discussed in a 2016 statement from the American Statistical Association.\textsuperscript{13}

The most striking result from the analysis by subgroups is how few differences appear. For example, the five gas tax options that have majority support among all respondents also have majority support among every single group except for three specific cases: only 46\% of Republicans support the global warming gas tax increase, 41\% of people affiliated with a party other than the Democratic or Republican Parties support the maintenance gas tax option, and 48\% of that same group support a gas tax to reduce congestion.

The taxes that had the most statistically significant variation among subgroups were the least popular—namely, the base-case ten-cent gas increase tax and the variant with revenues dedicated to reducing the transportation system’s contribution to global warming.

Just three subgroups had notably lower support, looking across all six tax options: the oldest respondents (55 and older), Republicans, and people who describe their community as “rural.” Many variables that one might expect to correlate with opposition did not prove statistically significant, including annual household income, voter status, annual miles driven, fuel efficiency of the vehicle the respondent drives, estimated federal gas tax rate, and estimated federal gas tax paid annually.
Table 6. Supporta for the Gas Tax Options, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Base-case 10¢ increase (%)</th>
<th>Reduce local air pollution (%)</th>
<th>Reduce global warming (%)</th>
<th>Maintain streets/highways (%)</th>
<th>Improve safety (%)</th>
<th>Reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>45</td>
<td>60</td>
<td>57</td>
<td>76</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Female</td>
<td>37**</td>
<td>66**</td>
<td>66**</td>
<td>74</td>
<td>72</td>
<td>69</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>39</td>
<td>62</td>
<td>60</td>
<td>76</td>
<td>71</td>
<td>69</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>44</td>
<td>68*</td>
<td>68**</td>
<td>76</td>
<td>75</td>
<td>75*</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>53**</td>
<td>71</td>
<td>67</td>
<td>77</td>
<td>77</td>
<td>74</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>62</td>
<td>72**</td>
<td>72</td>
<td>72</td>
<td>66</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>42</td>
<td>69</td>
<td>70</td>
<td>73</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>More than high school</td>
<td>40</td>
<td>62**</td>
<td>60**</td>
<td>76</td>
<td>72</td>
<td>70</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>42</td>
<td>65</td>
<td>62</td>
<td>75</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>46</td>
<td>62</td>
<td>70**</td>
<td>65**</td>
<td>68</td>
<td>66</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>36**</td>
<td>61*</td>
<td>60</td>
<td>78</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>Income (annual household)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>37</td>
<td>63</td>
<td>63</td>
<td>75</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>39</td>
<td>61</td>
<td>61</td>
<td>75</td>
<td>73</td>
<td>73*</td>
</tr>
<tr>
<td>$100,001+</td>
<td>51**</td>
<td>64</td>
<td>62</td>
<td>75</td>
<td>72</td>
<td>73*</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>54</td>
<td>74</td>
<td>72</td>
<td>72</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>25 – 54</td>
<td>40**</td>
<td>64**</td>
<td>63**</td>
<td>74</td>
<td>70</td>
<td>69</td>
</tr>
<tr>
<td>55+</td>
<td>35**</td>
<td>57**</td>
<td>57**</td>
<td>78*</td>
<td>74</td>
<td>73</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.

* Sum of those who “strongly” or “somewhat” supported the option.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 7. Support for the Gas Tax Options, by Political Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Base-case 10¢ increase (%)</th>
<th>Reduce local air pollution (%)</th>
<th>Reduce global warming (%)</th>
<th>Maintain streets/highways (%)</th>
<th>Improve safety (%)</th>
<th>Reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Registered voter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>63</td>
<td>60</td>
<td>76</td>
<td>72</td>
<td>71</td>
</tr>
<tr>
<td>No</td>
<td>39</td>
<td>64</td>
<td>69**</td>
<td>70**</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>Likely voter&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42</td>
<td>63</td>
<td>60</td>
<td>77</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>No</td>
<td>36*</td>
<td>62</td>
<td>64</td>
<td>74</td>
<td>67</td>
<td>65*</td>
</tr>
<tr>
<td>Political affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republican (and lean Republican)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>38</td>
<td>52</td>
<td>46</td>
<td>75</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td>Democrat (and lean Democrat)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>45**</td>
<td>73**</td>
<td>74**</td>
<td>77</td>
<td>75**</td>
<td>73</td>
</tr>
<tr>
<td>Independent, no party affiliation</td>
<td>36</td>
<td>61**</td>
<td>66**</td>
<td>76</td>
<td>73</td>
<td>69</td>
</tr>
<tr>
<td>Some other party&lt;sup&gt;d&lt;/sup&gt;</td>
<td>29</td>
<td>53</td>
<td>51</td>
<td>41**</td>
<td>51**</td>
<td>48**</td>
</tr>
</tbody>
</table>

<sup>a</sup> Statistically significant at p<0.05.

<sup>b</sup> Statistically significant at p<0.01.

<sup>a</sup> Sum of those who said that they “strongly” or “somewhat” support the option.

<sup>b</sup> Likely voters are those respondents who said that they are registered voters and that they vote “all of the time” or “most of the time.”

<sup>c</sup> Includes registered members of the political party and those respondents who stated that they were independent or a member of another political party, but chose to indicate which party they “leaned” towards.

<sup>d</sup> Registered member of any other party.

**Note:** The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
Findings Related to Federal Gas Taxes

Table 8. Support\(^a\) for the Gas Tax Options, by Travel Behavior

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Base-case 10¢ increase (%)</th>
<th>Reduce local air pollution (%)</th>
<th>Reduce global warming (%)</th>
<th>Maintain streets/highways (%)</th>
<th>Improve safety (%)</th>
<th>Reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Annual miles driven</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 7,500</td>
<td>34</td>
<td>64</td>
<td>59</td>
<td>73</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>7,501 –12,500</td>
<td>38</td>
<td>58</td>
<td>57</td>
<td>77</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>12,501+</td>
<td>34</td>
<td>58*</td>
<td>56</td>
<td>74</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Don’t drive</td>
<td>47**</td>
<td>68</td>
<td>72**</td>
<td>76</td>
<td>76*</td>
<td>70</td>
</tr>
<tr>
<td>Miles per gallon(^b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 19</td>
<td>31</td>
<td>60</td>
<td>52</td>
<td>76</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>20 – 30</td>
<td>37*</td>
<td>58</td>
<td>59*</td>
<td>76</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>31+</td>
<td>43**</td>
<td>65</td>
<td>65**</td>
<td>79</td>
<td>77</td>
<td>74</td>
</tr>
<tr>
<td>Transit used in last 30 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>51</td>
<td>69</td>
<td>69</td>
<td>75</td>
<td>73</td>
<td>71</td>
</tr>
<tr>
<td>No</td>
<td>35**</td>
<td>60**</td>
<td>59**</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
</tbody>
</table>

\(^a\) Statistically significant at p<0.05.
\(^b\) Statistically significant at p<0.01.
\(^a\) Sum of those who “strongly” or “somewhat” supported the option.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who support the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 9. Support\(^a\) for the Gas Tax Options, by Estimate of the Federal Gas Tax Rate and Gas Tax Paid Annually

<table>
<thead>
<tr>
<th>Respondents' estimates</th>
<th>Base-case 10¢ increase (%)</th>
<th>Reduce local air pollution (%)</th>
<th>Reduce global warming (%)</th>
<th>Maintain streets/highways (%)</th>
<th>Improve safety (%)</th>
<th>Reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Estimate of federal gas tax rate on a $3 gallon of regular gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25¢ or less</td>
<td>36</td>
<td>65</td>
<td>65</td>
<td>76</td>
<td>72</td>
<td>70</td>
</tr>
<tr>
<td>More than 25¢</td>
<td>44**</td>
<td>62</td>
<td>60**</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Estimated federal gas tax paid annually(^b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1 – $49</td>
<td>40</td>
<td>65</td>
<td>65</td>
<td>70</td>
<td>67</td>
<td>66</td>
</tr>
<tr>
<td>$50 – $99</td>
<td>31*</td>
<td>57</td>
<td>51**</td>
<td>81*</td>
<td>68</td>
<td>72</td>
</tr>
<tr>
<td>$100 – $199</td>
<td>44</td>
<td>68</td>
<td>68</td>
<td>76</td>
<td>76*</td>
<td>73*</td>
</tr>
<tr>
<td>$200 – $399</td>
<td>36</td>
<td>60</td>
<td>60</td>
<td>75</td>
<td>73</td>
<td>71</td>
</tr>
<tr>
<td>$400 – $999</td>
<td>39</td>
<td>64</td>
<td>60</td>
<td>80*</td>
<td>77*</td>
<td>74</td>
</tr>
<tr>
<td>$1,000+</td>
<td>35</td>
<td>54*</td>
<td>53*</td>
<td>68</td>
<td>66</td>
<td>66</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.
\(^a\) Sum of those who said that they “strongly” or “somewhat” support the option.
\(^b\) This analysis excludes respondents who reported paying no gas tax at all.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 10. Support\(^a\) for the Gas Tax Options, by Census Region and Community Type

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Base-case 10¢ increase (%)</th>
<th>Reduce local air pollution (%)</th>
<th>Reduce global warming (%)</th>
<th>Maintain streets/highways (%)</th>
<th>Improve safety (%)</th>
<th>Reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All respondents</strong></td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td><strong>Census region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>40</td>
<td>65</td>
<td>65</td>
<td>70</td>
<td>67</td>
<td>69</td>
</tr>
<tr>
<td>Midwest</td>
<td>41</td>
<td>64</td>
<td>63</td>
<td>78**</td>
<td>73*</td>
<td>67</td>
</tr>
<tr>
<td>South</td>
<td>41</td>
<td>61</td>
<td>60</td>
<td>76**</td>
<td>72*</td>
<td>73</td>
</tr>
<tr>
<td>West</td>
<td>38</td>
<td>63</td>
<td>63</td>
<td>75</td>
<td>74*</td>
<td>70</td>
</tr>
<tr>
<td><strong>Community type (self-reported)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>47</td>
<td>67</td>
<td>65</td>
<td>74</td>
<td>72</td>
<td>71</td>
</tr>
<tr>
<td>Suburban</td>
<td>39**</td>
<td>63</td>
<td>63</td>
<td>78*</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Small town</td>
<td>44</td>
<td>61</td>
<td>60</td>
<td>75</td>
<td>72</td>
<td>66</td>
</tr>
<tr>
<td>Rural</td>
<td>30**</td>
<td>57**</td>
<td>57**</td>
<td>70</td>
<td>65**</td>
<td>65*</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.
\(^a\) Sum of those who “strongly” or “somewhat” supported the option.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who support the individual policies in each of the other subgroups within that category is compared to the reference case.
TRENDS IN SUPPORT OVER TIME, 2010 – 2019

The surveys have asked about support for many of the same gas tax variants each year in order to allow an assessment of trends. Figure 6 and Table 11 both show support for these five tax options over time. In every case, support has risen over the years, with an increase of 13 percentage points or more.

In the past year, support for the tax options has gone up from three to seven percentage points. This increase continues a well-defined pattern seen across the previous surveys. However, readers should note that the survey mode changed in 2019; earlier surveys collected data from an RDD phone survey, whereas this year responses came from an online panel survey. Evidence suggests that changes in survey mode can influence both who responds and how people respond to surveys. For example, Nixon and Agrawal ran a survey experiment with the same gas tax questions presented here, using both an RDD phone survey and an online panel from SurveyMonkey. That study found systematically higher support for the taxes among the online respondents as compared to the phone survey respondents, even though both samples were weighted to match the U.S. population across age, gender, ethnicity, race, and income.¹⁴

Figure 6. Trends in Supporta for the Gas Tax Options, 2010 – 2019

¹⁴ “Support” is the sum of those who “strongly” or “somewhat” supported the tax option.

Note: In 2019, the survey mode changed from a random-digit-dial phone survey to an online panel survey. Readers should interpret changes from 2018 to 2019 with care, since changes in survey mode can affect responses.
Table 11. Trends in Support\(^a\) for the Gas Tax Options, 2010 – 2019\(^b\)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Base case</td>
<td>23</td>
<td>24</td>
<td>20</td>
<td>23</td>
<td>25</td>
<td>31</td>
<td>31</td>
<td>36</td>
<td>34</td>
<td>40</td>
<td>17**</td>
<td>16**</td>
<td>7**</td>
</tr>
<tr>
<td>Revenues spent to reduce local air pollution</td>
<td>30</td>
<td>48</td>
<td>41</td>
<td>53</td>
<td>54</td>
<td>52</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>63</td>
<td>33**</td>
<td>15**</td>
<td>5**</td>
</tr>
<tr>
<td>Revenues spent to reduce global warming</td>
<td>42</td>
<td>45</td>
<td>41</td>
<td>50</td>
<td>51</td>
<td>51</td>
<td>55</td>
<td>54</td>
<td>59</td>
<td>62</td>
<td>20**</td>
<td>17**</td>
<td>3</td>
</tr>
<tr>
<td>Revenues spent to maintain streets, roads, and highways</td>
<td>—(^c)</td>
<td>62</td>
<td>58</td>
<td>67</td>
<td>69</td>
<td>71</td>
<td>75</td>
<td>78</td>
<td>72</td>
<td>75</td>
<td>—(^c)</td>
<td>13**</td>
<td>3(^*)</td>
</tr>
<tr>
<td>Revenues spent to reduce accidents and improve safety</td>
<td>—(^c)</td>
<td>56</td>
<td>54</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td>71</td>
<td>—(^c)</td>
<td>15**</td>
<td>5**</td>
<td></td>
</tr>
</tbody>
</table>

\(^*\) Statistically significant at p<0.05.

\(^**\) Statistically significant at p<0.01.

\(^a\) Sum of those who “strongly” or “somewhat” supported the option.

\(^b\) In 2019, the survey mode changed from a random-digit-dial phone survey to an online panel survey. Readers should interpret changes from 2018 to 2019 with care, since changes in survey mode can affect responses.

\(^c\) This option was not included in the 2010 survey.

**Note:** The test of two proportions was used to check if there is a statistically significant difference in support for the different tax options from 2010 to 2019, 2011 to 2019, and 2018 to 2019.
SUPPORT FOR SPENDING SOME GAS TAX REVENUES ON PUBLIC TRANSIT

Another survey question probed support for spending some gas tax revenue on public transit. The question was worded as follows:

Some people say that money from gas taxes should only be spent on roads and highways, since drivers pay the tax. Other people say gas tax money should be used to pay for public transit in addition to roads and highways, because transit helps reduce traffic congestion and wear-and-tear on the roads. Would you support or oppose spending some gas tax money on public transit?15

Two-thirds of respondents (68%) agreed with the concept of using some gas tax revenue to support public transit. Tables 12 and 13 compare how different subgroups answer the question. Unlike many other tax-related questions in the survey, this question generated many statistically significant variations by subgroup. In fact, there are significant differences among subgroups in each category (age, income, etc.). The subgroups significantly less likely to support the concept are men, white respondents, non-Hispanics, people with education beyond high school, people not working (by choice), people with household incomes over $50,000 a year, people 25 and older, people who drive any amount (as compared to those who do not drive at all), people with inefficient vehicles (no more than 19 mph), and people who had used transit within the previous 30 days.

We also looked at whether support for spending gas tax money for transit is correlated with support for the different gas tax options (Table 14). The pattern is strikingly clear, with people who oppose this less likely to support all six of the gas tax variants. The magnitude of the differences is also among the largest to show up in the subgroup analysis. There is a 12-percentage-point difference even for the gas tax variant for maintenance, which is the most universally popular among the gas tax options. For the other variants, the percentage point difference rose much higher, including a 31-percentage-point difference for the air pollution gas tax variant.
Table 12. Support for Spending Some Gas Tax Revenue for Transit, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Support for using gas tax revenues for transit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All respondents</strong></td>
<td>68</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>65</td>
</tr>
<tr>
<td>Female</td>
<td>70*</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>64</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>80**</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>75*</td>
</tr>
<tr>
<td>Other</td>
<td>81**</td>
</tr>
<tr>
<td>Of Latino/Hispanic descent</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81</td>
</tr>
<tr>
<td>No</td>
<td>65**</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>71</td>
</tr>
<tr>
<td>More than high school</td>
<td>65**</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>70</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>86**</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>60**</td>
</tr>
<tr>
<td><strong>Income (annual household)</strong></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>70</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>65*</td>
</tr>
<tr>
<td>$100,001+</td>
<td>65*</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>82</td>
</tr>
<tr>
<td>25 – 54</td>
<td>72**</td>
</tr>
<tr>
<td>55+</td>
<td>55**</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 13. Support for Spending Some Gas Tax Revenue for Transit, by Travel Behavior

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Support for using gas tax revenues for transit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All respondents</strong></td>
<td>68</td>
</tr>
<tr>
<td>Annual miles driven</td>
<td></td>
</tr>
<tr>
<td>1 – 7,500</td>
<td>63</td>
</tr>
<tr>
<td>7,501 – 12,500</td>
<td>58</td>
</tr>
<tr>
<td>12,501+</td>
<td>62</td>
</tr>
<tr>
<td>Don’t drive</td>
<td>79**</td>
</tr>
<tr>
<td>Miles per gallon&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>≤ 19</td>
<td>57</td>
</tr>
<tr>
<td>20 – 30</td>
<td>61</td>
</tr>
<tr>
<td>31+</td>
<td>69**</td>
</tr>
<tr>
<td>Transit used in last 30 days</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
</tr>
<tr>
<td>No</td>
<td>60**</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.
<sup>a</sup> Sum of those who “strongly” or “somewhat” supported the option.

**Note:** The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.

### Table 14. Support<sup>a</sup> for the Gas Tax Options, by Opinion on Spending Some Gas Tax Revenue for Transit

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Base-case 10¢ increase (%)</th>
<th>Revenue to reduce local air pollution (%)</th>
<th>Revenue to reduce global warming (%)</th>
<th>Revenue to maintain streets/highways (%)</th>
<th>Revenue to improve safety (%)</th>
<th>Revenue to reduce congestion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>40</td>
<td>63</td>
<td>62</td>
<td>75</td>
<td>71</td>
<td>70</td>
</tr>
<tr>
<td>Support</td>
<td>51</td>
<td>73</td>
<td>71</td>
<td>79</td>
<td>77</td>
<td>76</td>
</tr>
<tr>
<td>Oppose</td>
<td>18**</td>
<td>42**</td>
<td>43**</td>
<td>67**</td>
<td>59**</td>
<td>57**</td>
</tr>
</tbody>
</table>

** Statistically significant at p<0.01.
<sup>a</sup> Sum of those who said that they “strongly” or “somewhat” support the option.

**Note:** The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
V. FINDINGS ABOUT MILEAGE FEES

The survey asked several types of questions related to mileage fees, including whether people agreed or not with arguments for or against them, support for two variants on replacing the gas tax with a mileage fee, and the way people would prefer to pay for a mileage fee.

OPINIONS ABOUT THE ADVANTAGES AND DISADVANTAGES OF MILEAGE FEES

The survey presented a series of statements describing possible advantages and disadvantages of mileage fees and asked respondents how much they agreed or disagreed with each statement. The survey asked multiple questions related to the ideas of privacy (two questions), equity across owners of different vehicle types (three questions), and equity for people with certain driving patterns (two questions).

Figure 7 shows the percentage of respondents agreeing and disagreeing with each statement. The three statements that have the highest proportion of agreement are that a mileage fee is unfair to people who have to drive long distances (76%), that it is unfair to people who live in rural areas (74%), and that it is an invasion of privacy (70%).

Notably, people appear to show nuanced opinions on these topics. For example, when asked if tracking mileage invades privacy, 70% said yes. However, 48% of respondents agreed with the statement that, “I’m already tracked everywhere I go through my phone, so having my mileage tracked for a mileage fee wouldn’t really bother me.” A total of 45% of people who agreed with the statement about invasion of privacy agreed with the second statement as well. One possible explanation for these apparently contradictory results is that even though people instinctively consider tracking mileage an invasion of privacy, when reminded about tracking through phones they realize that a mileage fee would not be an unreasonable new layer of “tracking.”

A similar nuanced understanding of equity is revealed by the way people answered three questions relating to fuel efficiency and the fairness of mileage fees. On the one hand, 60% of respondents agreed that a mileage fee is fairer than a gas tax because everyone pays the same for using the roads, regardless of fuel efficiency or fuel type. On the other hand, 62% thought that less polluting vehicles should pay a lower rate than more polluting vehicles, including 60% of the people who agreed with the statement that the mileage fee is fairer than the gas tax because everyone pays. Also, 59% of respondents agreed that the mileage fee is less fair than the gas tax because it does not “give a break” to people who buy cleaner vehicles, including 72% of the respondents who had earlier agreed that a mileage fee is fairer than a gas tax because everyone pays equally for using the roads. Analysis of these three questions as a group suggests that many people who believe it is fair for everyone to pay for road use nevertheless see value in rewarding owners of less polluting vehicles with a break on the tax rate.

Table 15 looks at the variation in views on privacy among subgroups with different sociodemographic characteristics. There is only one statistically significant difference for
the statements that tracking mileage invades privacy, and it is only a three percentage point
difference. (Slightly more woman than men felt this way.) By contrast, the second privacy
statement has more diversity of opinion among subgroups. The subgroups with statistically
significantly higher percentages agreeing are Black/African-American or of “other” race,
people with no education beyond high school, people unemployed but looking for work,
and people in the lowest income group.

Finally, Table 16 looks at the variation in views on fairness among subgroups with different
sociodemographic characteristics. The statement with the most variation across subgroups
is that the mileage fee is fairer than the gas tax because all drivers pay the same for
using roads, regardless of vehicle type. The subgroups with statistically significantly
higher percentages agreeing are people who are Black/African-American and of
“other” race (compared to whites), people of Latino/Hispanic descent, people with no
education beyond high school, and people in the youngest age group.
Findings about Mileage Fees

Figure 7. Agreement with Statements about Mileage Fees

- A mileage fee is unfair for people who have to drive long distances for work
- A mileage fee is unfair to people who live in rural areas
- Tracking mileage is an invasion of privacy
- Environmentally-friendly vehicles should be charged a lower fee per mile than more polluting vehicles
- A mileage fee is more fair than the gas tax because everyone pays the same for use of the roads, regardless of vehicle fuel efficiency or vehicle type (electric vs. gas vehicle)
- A mileage fee is less fair than the gas tax because the mileage fee doesn’t give a break to people who buy cleaner vehicles
- I’m already tracked everywhere I go through my phone, so having my mileage tracked for a mileage fee wouldn’t really bother me
### Table 15. Agreement \* with Statements about Mileage Fees and Privacy, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Tracking mileage is an invasion of privacy (%)</th>
<th>I’m already tracked everywhere I go through my phone, so having my mileage tracked for a mileage fee wouldn’t really bother me (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>70</td>
<td>48</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>68</td>
<td>50</td>
</tr>
<tr>
<td>Female</td>
<td>71*</td>
<td>47</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>69</td>
<td>55**</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>67</td>
<td>51</td>
</tr>
<tr>
<td>Other</td>
<td>69</td>
<td>58**</td>
</tr>
<tr>
<td>Of Latino/Hispanic descent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68</td>
<td>50</td>
</tr>
<tr>
<td>No</td>
<td>70</td>
<td>48</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>70</td>
<td>51</td>
</tr>
<tr>
<td>More than high school</td>
<td>69</td>
<td>46**</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>71</td>
<td>49</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>68</td>
<td>56*</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>68</td>
<td>44*</td>
</tr>
<tr>
<td>Income (annual household)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>69</td>
<td>49</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>71</td>
<td>43*</td>
</tr>
<tr>
<td>$100,001+</td>
<td>69</td>
<td>53</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>71</td>
<td>48</td>
</tr>
<tr>
<td>25 – 54</td>
<td>70</td>
<td>49</td>
</tr>
<tr>
<td>55+</td>
<td>69</td>
<td>46</td>
</tr>
</tbody>
</table>

\* Statistically significant at p<0.05.

\** Statistically significant at p<0.01.

\* Sum of those who said that they "strongly" or "somewhat" agreed with the statement.

**Note:** The test of two proportions was used to check if there is a statistically significant difference between agreement levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
Table 16. Agreement* with Statements about Mileage Fees and Fairness, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>A mileage fee is more fair than a gas tax because everyone pays the same for use of the roads, regardless of vehicle fuel efficiency or vehicle type (electric vs. gas vehicles) (%)</th>
<th>A mileage fee is less fair than the gas tax because the mileage fee doesn’t give a break to people who buy cleaner vehicles (%)</th>
<th>Environmentally friendly vehicles should be charged a lower fee per mile than more polluting vehicles (%)</th>
<th>A mileage fee is unfair for people who have to drive long distances for work (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>60</td>
<td>59</td>
<td>62</td>
<td>74</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60</td>
<td>60</td>
<td>61</td>
<td>71</td>
</tr>
<tr>
<td>Female</td>
<td>60</td>
<td>58</td>
<td>63</td>
<td>76**</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>57</td>
<td>58</td>
<td>61</td>
<td>75</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>70**</td>
<td>68**</td>
<td>68*</td>
<td>73</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>63</td>
<td>74**</td>
<td>70</td>
<td>74</td>
</tr>
<tr>
<td>Other</td>
<td>68**</td>
<td>53</td>
<td>66</td>
<td>71</td>
</tr>
<tr>
<td>Of Latino/Hispanic descent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>65</td>
<td>56</td>
<td>64</td>
<td>67</td>
</tr>
<tr>
<td>No</td>
<td>59*</td>
<td>60</td>
<td>62</td>
<td>75**</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>64</td>
<td>58</td>
<td>61</td>
<td>72</td>
</tr>
<tr>
<td>More than high school</td>
<td>57**</td>
<td>60</td>
<td>63</td>
<td>75*</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>59</td>
<td>61</td>
<td>64</td>
<td>75</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>64</td>
<td>55</td>
<td>65</td>
<td>69</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>60</td>
<td>58</td>
<td>59*</td>
<td>74</td>
</tr>
<tr>
<td>Income (annual household)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>60</td>
<td>57</td>
<td>61</td>
<td>72</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>57</td>
<td>60</td>
<td>61</td>
<td>77*</td>
</tr>
<tr>
<td>$100,001+</td>
<td>63</td>
<td>62*</td>
<td>66*</td>
<td>76</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>70</td>
<td>57</td>
<td>65</td>
<td>72</td>
</tr>
<tr>
<td>25 – 54</td>
<td>57**</td>
<td>61</td>
<td>64</td>
<td>73</td>
</tr>
<tr>
<td>55+</td>
<td>60**</td>
<td>57</td>
<td>59*</td>
<td>75</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.
* Sum of those who said that they “strongly” or “somewhat” agreed with the statement.

Note: The test of two proportions was used to check if there is a statistically significant difference between agreement levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
SUPPORT FOR REPLACING THE GAS TAX WITH A MILEAGE FEE

Overall, 45% of respondents supported a flat-rate mileage fee and 50% supported a variable version. The fact that nearly half of respondents supported the flat-rate mileage fee, in particular, is surprising through not completely unexpected. A 2016 meta-analysis of 22 survey questions from the U.S. that asked about replacing the gas tax with a mileage fee found mean support was only 23%, though support rates ranged from 8% to 42%, depending on the survey.16

The high support rate in this survey may be partially explained by the fact that many respondents may have thought this tax would be cheaper for them than the federal gas tax. The survey explained that the average driver would pay about $100 per year for the mileage fee, whereas earlier in the survey respondents had been asked to estimate how much they paid annually in federal gas taxes, and the majority of drivers estimated paying more than $200 annually.

Tables 17 through 20 look at support for the mileage fees by subgroup. The subgroups statistically significantly less likely to support both mileage fee variants are white (as compared to Black/African-American), not working by choice, in the lowest income group, in the oldest age group, drive the least fuel-efficient vehicles, have not used transit in the last 30 days, and live outside urban areas (suburbs, small towns, and rural areas).
Table 17. Support* for the Mileage Fee Options, by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Flat (%)</th>
<th>Green (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Female</td>
<td>41**</td>
<td>51</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>53**</td>
<td>63**</td>
</tr>
<tr>
<td>Asian/Asian-American</td>
<td>52</td>
<td>59*</td>
</tr>
<tr>
<td>Other</td>
<td>41</td>
<td>53</td>
</tr>
<tr>
<td>Of Latino/Hispanic descent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>No</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or less</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td>More than high school</td>
<td>43*</td>
<td>50</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working for pay</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td>Unemployed, but looking for work</td>
<td>51</td>
<td>55</td>
</tr>
<tr>
<td>Not working by choice (retired, etc.)</td>
<td>40**</td>
<td>48*</td>
</tr>
<tr>
<td><strong>Income (annual household)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – $50,000</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td>$50,001 – $100,000</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>$100,001+</td>
<td>50**</td>
<td>58**</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td>25 – 54</td>
<td>45</td>
<td>51**</td>
</tr>
<tr>
<td>55+</td>
<td>42*</td>
<td>45**</td>
</tr>
</tbody>
</table>

* Statistically significant at p<0.05.
** Statistically significant at p<0.01.
* Sum of those who “strongly” or “somewhat” supported the option.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 18. Support<sup>a</sup> for the Mileage Fee Options, by Political Characteristics

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Flat (%)</th>
<th>Green (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All respondents</strong></td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Registered voter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Likely voter&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46</td>
<td>51</td>
</tr>
<tr>
<td>No</td>
<td>36**</td>
<td>46</td>
</tr>
<tr>
<td>Political affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republican (and lean Republican)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>Democrat (and lean Democrat)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>48</td>
<td>59**</td>
</tr>
<tr>
<td>Independent, no party affiliation</td>
<td>37**</td>
<td>47</td>
</tr>
<tr>
<td>Some other party&lt;sup&gt;d&lt;/sup&gt;</td>
<td>41</td>
<td>33</td>
</tr>
</tbody>
</table>

<sup>**</sup> Statistically significant at p<0.01.

<sup>a</sup> Sum of those who said that they “strongly” or “somewhat” support the option.

<sup>b</sup> Likely voters are those respondents who said that they are registered voters and that they vote “all of the time” or “most of the time.”

<sup>c</sup> Included registered members of the political party, plus those respondents who stated that they were independent or a member of another political party, but chose to indicate which party they “leaned” towards.

<sup>d</sup> Registered member of any other party.

*Note*: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who supported the individual policies in each of the other subgroups within that category is compared to the reference case.
### Table 19. Support\(^a\) for the Mileage Fee Options, by Travel Behavior

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Flat (%)</th>
<th>Green (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td><strong>Annual miles driven</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 7,500</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>7,501 – 12,500</td>
<td>44</td>
<td>49</td>
</tr>
<tr>
<td>12,501+</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Don’t drive</td>
<td>41</td>
<td>55(^**)</td>
</tr>
<tr>
<td><strong>Miles per gallon(^b)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 19</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>20 – 30</td>
<td>42</td>
<td>45(^*)</td>
</tr>
<tr>
<td>31+</td>
<td>47(^**)</td>
<td>56(^**)</td>
</tr>
<tr>
<td><strong>Estimated federal gas tax paid each year(^c)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1 – $49</td>
<td>49</td>
<td>54</td>
</tr>
<tr>
<td>$50 – $99</td>
<td>40(^*)</td>
<td>47</td>
</tr>
<tr>
<td>$100 – $199</td>
<td>45</td>
<td>53</td>
</tr>
<tr>
<td>$200 – $399</td>
<td>44</td>
<td>46</td>
</tr>
<tr>
<td>$400 – $999</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>$1,000+</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td><strong>Used transit in the last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>40(^**)</td>
<td>45(^**)</td>
</tr>
</tbody>
</table>

\(^*\) Statistically significant at p<0.05.
\(^**\) Statistically significant at p<0.01.
\(^a\) Sum of those who “strongly” or “somewhat” supported the option.
\(^c\) This analysis excludes respondents who reported paying no gas tax at all.

*Note:* The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who support the individual policies in each of the other subgroups within that category is compared to the reference case.
Table 20. Support for the Mileage Fee Options, by Census Region and Community Type

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Flat (%)</th>
<th>Green (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Census region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>49</td>
<td>53</td>
</tr>
<tr>
<td>Midwest</td>
<td>41**</td>
<td>49</td>
</tr>
<tr>
<td>South</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td>West</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>Community type (self-reported)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>52</td>
<td>60</td>
</tr>
<tr>
<td>Suburban</td>
<td>44**</td>
<td>50**</td>
</tr>
<tr>
<td>Small town</td>
<td>44**</td>
<td>45**</td>
</tr>
<tr>
<td>Rural</td>
<td>33**</td>
<td>38**</td>
</tr>
</tbody>
</table>

** Statistically significant at p<0.01.

a Sum of those who “strongly” or “somewhat” supported the option.

Note: The test of two proportions was used to check if there is a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the reference case for the test; the proportion of respondents who support the individual policies in each of the other subgroups within that category is compared to the reference case.

PREFERRED WAY TO PAY FOR MILEAGE FEES

A final question about mileage fees asked respondents to select their preferred way to pay for the fees, should these be introduced. The options were to pay at the time of purchasing gas or when charging an electric vehicle, with a monthly bill, or with an annual bill. The most popular option, selected by 47% of respondents, was “Pay each time I purchase gas/diesel or charge an electric vehicle.” Between the billing options, a monthly bill was preferred by somewhat more (30%) than an annual bill (23%). Figure 8 shows preference for payment option by sociodemographic groups. The same pattern holds for the subgroups; paying with each gas purchase or charging session is the most popular option for every subgroup except for Black/African-American respondents.
Figure 8. Preferred Way to Pay a Mileage Fee, by Sociodemographic Characteristics
VI. CONCLUSIONS

The study findings suggest that policymakers can build support for transportation tax measures through careful program design that takes into account the following key study findings.

1. Large majorities value transportation improvements across transportation modes. When respondents were asked to indicate their priorities for how federal gas tax revenues are spent, large majorities supported both road and public-transit-related options. Maintaining both local streets and roads and highway and freeways were high or medium priorities for 92% of respondents. Public transit programs were also very popular; for example, expanding public transit into new areas was a high or medium priority for 81%.

2. People do not have an accurate understanding of how much they pay in federal gas taxes. Most respondents did not know the federal gas tax rate or have an accurate estimate of how much they pay annually in federal gas tax. For example, when asked to estimate the federal gas tax rate, 19% of respondents thought it was at least 76¢ per gallon, far higher than the correct rate of 18.4¢ per gallon.

3. Support for raising the gas tax rate depends on how the revenue will be spent. When it comes to earning public support, all gas taxes are not alike. Policymakers can increase support by crafting tax measures that dedicate the revenues to purposes the public values. For example, people want better maintenance—and will pay for it. The gas tax variant with proceeds dedicated for maintenance was the most popular variant tested, with 75% supporting this increase. This is close to double the 40% who supported the “base case” gas tax for which the proceeds would be dedicated more generally to “transportation.”

4. Support for raising the gas tax has risen slowly but steadily since 2010. For all five of the gas tax variants that were tested throughout the survey series, support has risen. In 2019, support is at least 13 percentage points higher than it was in 2010.

5. Linking transportation taxes to environmental objectives can increase support. Several survey questions suggest that linking a transportation tax increase to environmental benefits can increase support. The gas tax increase variants that linked the increase to projects reducing air pollution and global warming both had clear majority support (63% and 62%), and the green mileage tax variant was more popular than the flat-rate version (50% as compared to 45% support).

6. People prefer paying a mileage fee “at the pump” rather than being billed periodically. Respondents were asked if they would like to pay for mileage fees at the pump or time of vehicle charging, monthly, or annually. The first option was the most popular of the three (47%) and the annual billing option the least popular (23%).

7. People hold nuanced views on mileage fees with respect to equity and privacy. Results from the survey suggest that privacy and equity are issues of concern to the public,
but also that people are willing to consider different sides to these issues. Almost half of respondents who first agreed that mileage fees are an invasion of privacy also agreed with the follow-up statement: “I’m already tracked everywhere I go through my phone, so having my mileage tracked for a mileage fee wouldn’t really bother me.”

* * *

In sum, the public is most likely to support transportation tax measures that dedicate the revenues to purposes the public values, including maintenance, safety, and reducing environmental impacts. With respect to mileage fees, the way the rates are structured and payments collected will also impact support. Support is likely to be higher for a tax that is collected at the time of purchasing fuel or charging a vehicle, as well as one that varies the tax rate such that less polluting vehicles pay somewhat less.
APPENDIX A: SURVEY QUESTIONNAIRE AND TOPLINE RESULTS

This appendix presents the survey questionnaire and results for the 2019 survey.

The results have been weighted to match the Census Bureau’s 2013 – 2017 American Community Survey five-year estimates with respect to gender, race, Hispanic ethnicity, education level, annual household income, and age. The authors removed missing and refused responses from the dataset before calculating the response rates.

Note that some categories in the tables do not sum to 100% due to rounding.

*          *          *

Researchers at the Mineta Transportation Institute, San Jose State University, are conducting a survey to gather your thoughts about transportation in the United States. Your opinions are very important, no matter how much or little you travel. Public officials can use the survey results to shape transportation services in communities throughout the country. The survey takes about 10 minutes and is anonymous. Your participation is completely voluntary. You can refuse to participate or stop the survey at any time without any negative effect on your relations with San Jose State University. If you participate, there are no anticipated risks to you and no anticipated benefits other than the satisfaction of sharing your views with the researchers. For more information about the study, contact Professor Asha W. Agrawal at asha.weinstein.agrawal@sjtu.edu. By agreeing to participate in the study, it is implied that you have read and understand the above information. Please do not write any identifying information on the survey/questionnaire.

We are interested in your opinions about the transportation system. The “transportation system” means local streets and roads, highways, and public transit services like buses, light rail, and trains.

Q1. In your community, how is the quality of each of the following

<table>
<thead>
<tr>
<th></th>
<th>Very good (%)</th>
<th>Somewhat good (%)</th>
<th>Somewhat bad (%)</th>
<th>Very bad (%)</th>
<th>Not sure / doesn’t apply (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates, highways, and freeways</td>
<td>22</td>
<td>48</td>
<td>20</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Local streets and roads</td>
<td>14</td>
<td>41</td>
<td>28</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Bicycle and pedestrian facilities</td>
<td>17</td>
<td>42</td>
<td>20</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Public transit (bus, rail, etc.)</td>
<td>17</td>
<td>37</td>
<td>20</td>
<td>11</td>
<td>15</td>
</tr>
</tbody>
</table>
Q2. How concerned are you about traffic congestion in your community?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very concerned</td>
<td>33</td>
</tr>
<tr>
<td>Somewhat concerned</td>
<td>42</td>
</tr>
<tr>
<td>Not at all concerned</td>
<td>26</td>
</tr>
</tbody>
</table>

The next questions ask for your opinion about what government can do to improve transportation in the United States.

Q3. How important are the following transportation-related goals for the United States?

<table>
<thead>
<tr>
<th>Goal</th>
<th>Very important (%)</th>
<th>Somewhat important (%)</th>
<th>Not important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce traffic congestion</td>
<td>59</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>Reduce crashes and improve safety for everyone</td>
<td>76</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Reduce health impacts caused by air pollution</td>
<td>64</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td>Reduce greenhouse gas emissions from transportation sources that contribute to climate change</td>
<td>57</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Maintain and improve roads, streets, highways, and bridges</td>
<td>79</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Make it more convenient to go places without driving (bus, walking, bike, etc.)</td>
<td>51</td>
<td>38</td>
<td>11</td>
</tr>
</tbody>
</table>

Q4. As you may be aware, the federal government charges a gas tax and spends the money collected for transportation. Listed below are different ways the government could spend that money to improve the transportation system. How much of a priority should each one be?

<table>
<thead>
<tr>
<th>Priority</th>
<th>High (%)</th>
<th>Medium (%)</th>
<th>Low (%)</th>
<th>Not at all (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build/improve sidewalks</td>
<td>41</td>
<td>38</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Subsidize public transit fares for low-income people</td>
<td>42</td>
<td>35</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Develop programs that encourage people to switch from driving their cars to walking, biking, or using transit</td>
<td>33</td>
<td>36</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Provide financial incentives for people to purchase electric vehicles</td>
<td>28</td>
<td>36</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Build/improve bike lanes and bike paths</td>
<td>32</td>
<td>40</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>Use advanced technologies to reduce congestion and increase reliability</td>
<td>46</td>
<td>38</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Install more charging stations for electric vehicles</td>
<td>27</td>
<td>36</td>
<td>27</td>
<td>11</td>
</tr>
<tr>
<td>Add more frequent public transit service on existing routes</td>
<td>39</td>
<td>37</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Expand public transit service into new areas not already served</td>
<td>46</td>
<td>35</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Maintain local streets and roads</td>
<td>64</td>
<td>28</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Build/widen local roads and streets</td>
<td>40</td>
<td>41</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Build/widen interstates, highways, and freeways</td>
<td>45</td>
<td>39</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Maintain interstates, highways, and freeways</td>
<td>67</td>
<td>25</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>
Q5. Here is the same list of transportation purposes that the federal government could spend the gas tax money on. Select the three you think are most important.

<table>
<thead>
<tr>
<th>Selected as top 3 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build/improve sidewalks 22</td>
</tr>
<tr>
<td>Subsidize public transit fares for low-income people 25</td>
</tr>
<tr>
<td>Develop programs that encourage people to switch from driving their cars to walking, biking, or using transit 15</td>
</tr>
<tr>
<td>Provide financial incentives for people to purchase electric vehicles 12</td>
</tr>
<tr>
<td>Build/improve bike lanes and bike paths 11</td>
</tr>
<tr>
<td>Use advanced technologies to reduce congestion and increase reliability 23</td>
</tr>
<tr>
<td>Install more charging stations for electric vehicles 7</td>
</tr>
<tr>
<td>Add more frequent public transit service on existing routes 16</td>
</tr>
<tr>
<td>Improve safety for pedestrians and bicyclists 17</td>
</tr>
<tr>
<td>Expand public transit service into new areas not already served 20</td>
</tr>
<tr>
<td>Maintain local streets and roads 46</td>
</tr>
<tr>
<td>Build/widen local roads and streets 16</td>
</tr>
<tr>
<td>Build/widen interstates, highways, and freeways 19</td>
</tr>
<tr>
<td>Maintain interstates, highways, and freeways 38</td>
</tr>
</tbody>
</table>

Now we have a few questions about your personal transportation and how you get around.

Q6. What is the most recent time you used each type of transportation?

<table>
<thead>
<tr>
<th></th>
<th>Last 7 days (%)</th>
<th>Last 30 days (%)</th>
<th>Not used (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive yourself (car, truck, motorcycle, etc.)</td>
<td>75</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Ride as a passenger in a personal vehicle</td>
<td>51</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Public transit (bus, train, ferry, etc.)</td>
<td>16</td>
<td>19</td>
<td>65</td>
</tr>
<tr>
<td>Taxi</td>
<td>5</td>
<td>13</td>
<td>82</td>
</tr>
<tr>
<td>Ridesharing services like Uber or Lyft</td>
<td>12</td>
<td>16</td>
<td>72</td>
</tr>
<tr>
<td>Walk to get somewhere (a store, work, friend’s house, etc.)</td>
<td>44</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Bicycle to get somewhere (a store, work, friend’s house, etc.)</td>
<td>12</td>
<td>11</td>
<td>77</td>
</tr>
<tr>
<td>Electric kick-scooter, skateboard, or other small device</td>
<td>5</td>
<td>6</td>
<td>89</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3</td>
<td>95</td>
</tr>
</tbody>
</table>

Q7. Do you have any physical or other health conditions that limit your ability to do any of the following?

<table>
<thead>
<tr>
<th></th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>29</td>
<td>71</td>
</tr>
<tr>
<td>Bike</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Drive</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>Take public transit</td>
<td>13</td>
<td>87</td>
</tr>
</tbody>
</table>
Q8. About how many miles did you, personally, drive during the past 12 months in all motorized vehicles? If you work, include the commute to and from work, but not any miles driven while on the job.

<table>
<thead>
<tr>
<th>Miles Range</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 7,500 miles</td>
<td>36</td>
</tr>
<tr>
<td>7,501 to 12,500 miles</td>
<td>22</td>
</tr>
<tr>
<td>More than 12,500 miles</td>
<td>19</td>
</tr>
<tr>
<td>Don’t drive</td>
<td>23</td>
</tr>
</tbody>
</table>

Q9. Now think about the vehicle you drove the most in the past 12 months, to get around for personal reasons like shopping, commuting to work, or vacation trips. How many miles per gallon does the vehicle get?

<table>
<thead>
<tr>
<th>Miles Range</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 19 mpg</td>
<td>17</td>
</tr>
<tr>
<td>20 to 30 mpg</td>
<td>45</td>
</tr>
<tr>
<td>More than 30 mpg</td>
<td>12</td>
</tr>
<tr>
<td>Have an electric vehicle</td>
<td>3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>23</td>
</tr>
</tbody>
</table>

Now, we have a few questions about what you spend on transportation. In a typical month, how much do you spend on the following expenses?

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>Mean ($)</th>
<th>Median ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10. Fuel for personal vehicles</td>
<td>119</td>
<td>100</td>
</tr>
<tr>
<td>Q11. Parking</td>
<td>43</td>
<td>25</td>
</tr>
<tr>
<td>Q12. Tolls on bridges and highways, including express lane fees</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>Q13. Public transit (buses, trains, subways, ferries, etc.)</td>
<td>57</td>
<td>25</td>
</tr>
<tr>
<td>Q14. Ride-hailing services (e.g., Lyft or Uber)</td>
<td>64</td>
<td>40</td>
</tr>
<tr>
<td>Q15. Vehicle rental charges, including car-share programs like Zipcar and Car2go</td>
<td>74</td>
<td>40</td>
</tr>
<tr>
<td>Q16. Shared bikes, e-scooters, or other micro-mobility devices</td>
<td>37</td>
<td>22</td>
</tr>
<tr>
<td>Q17. Other expenses</td>
<td>68</td>
<td>34</td>
</tr>
</tbody>
</table>

Q18. The federal government charges a tax on gasoline. If a regular gallon of gas costs $3.00, how much of that cost do you think is the federal gas tax?

<table>
<thead>
<tr>
<th>Cost Range</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10¢</td>
<td>14</td>
</tr>
<tr>
<td>11¢ to 25¢</td>
<td>30</td>
</tr>
<tr>
<td>26¢ to 50¢</td>
<td>24</td>
</tr>
<tr>
<td>51¢ to 75¢</td>
<td>12</td>
</tr>
<tr>
<td>76¢ to $1.00</td>
<td>9</td>
</tr>
<tr>
<td>More than $1.00</td>
<td>10</td>
</tr>
</tbody>
</table>
Q19. What is your best guess of how much you pay per year in federal gas taxes?

<table>
<thead>
<tr>
<th></th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>452</td>
</tr>
<tr>
<td>Median</td>
<td>200</td>
</tr>
</tbody>
</table>

There are many ways the U.S. Congress could raise money to pay for maintaining and improving the transportation system. The next few questions ask your opinion about some of these options. In each case, assume that the money collected would be spent only for transportation purposes.

Q20. Right now the federal government collects a tax of 18¢ per gallon when people buy gasoline. One idea to raise money for transportation is to increase the federal gas tax by 10¢ a gallon, from 18¢ to 28¢. Would you support or oppose this gas tax increase?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly support</td>
<td>12</td>
</tr>
<tr>
<td>Somewhat support</td>
<td>28</td>
</tr>
<tr>
<td>Somewhat oppose</td>
<td>27</td>
</tr>
<tr>
<td>Strongly oppose</td>
<td>32</td>
</tr>
</tbody>
</table>

Q21. Now, imagine that the U.S. Congress decided that the best option to raise money for transportation is to increase the federal gas tax by ten cents per gallon. Would you support or oppose the gas tax increase if the new money were spent only on the following types of projects?

<table>
<thead>
<tr>
<th></th>
<th>Strongly support (%)</th>
<th>Somewhat support (%)</th>
<th>Somewhat oppose (%)</th>
<th>Strongly oppose (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce local air pollution caused by the transportation system</td>
<td>30</td>
<td>33</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Reduce the transportation system’s contribution to global warming</td>
<td>31</td>
<td>32</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Maintain streets, roads, and highways</td>
<td>44</td>
<td>31</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Reduce accidents and improve safety</td>
<td>42</td>
<td>29</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Reduce traffic congestion</td>
<td>37</td>
<td>33</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Q22. Some people say that money from gas taxes should only be spent on roads and highways, since drivers pay the tax. Other people say gas tax money should be used to pay for public transit in addition to roads and highways, because transit helps reduce traffic congestion and wear-and-tear on the roads. Would you support or oppose spending some gas tax money on public transit?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>68</td>
</tr>
<tr>
<td>Oppose</td>
<td>32</td>
</tr>
</tbody>
</table>

*Note on Q22: Half of respondents received the question as worded here, and the other half received the question with the two statements in reverse order: Some people say gas tax*
money should be used to pay for public transit in addition to roads and highways, because transit helps reduce traffic congestion and wear-and-tear on the roads. Other people say that money from gas taxes should only be spent on roads and highways, since drivers pay the tax. Would you support or oppose spending some gas tax money on public transit?"

Now, imagine that the U.S. Congress decides to replace the gas tax with a mileage fee of one penny per mile driven. That means someone driving 10,000 miles a year would pay $100. Vehicles would have an electronic meter to keep track of the miles driven.

Q23. Would you support or oppose replacing the gas tax with such a mileage fee?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly support</td>
<td>14</td>
</tr>
<tr>
<td>Somewhat support</td>
<td>31</td>
</tr>
<tr>
<td>Somewhat oppose</td>
<td>23</td>
</tr>
<tr>
<td>Strongly oppose</td>
<td>32</td>
</tr>
</tbody>
</table>

Q24. A variation on the mileage tax just described is to have the tax rate vary depending upon how much the vehicle pollutes. On average, vehicles would be charged 1¢ per mile, but vehicles that pollute less would be charged less, and vehicles that pollute more would be charged more. Would you support or oppose this new mileage tax?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly support</td>
<td>16</td>
</tr>
<tr>
<td>Somewhat support</td>
<td>35</td>
</tr>
<tr>
<td>Somewhat oppose</td>
<td>23</td>
</tr>
<tr>
<td>Strongly oppose</td>
<td>26</td>
</tr>
</tbody>
</table>

Q25. Do you agree or disagree with the following statements about a federal mileage fee?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree (%)</th>
<th>Somewhat agree (%)</th>
<th>Somewhat disagree (%)</th>
<th>Strongly disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A mileage fee is more fair than a gas tax because everyone pays the same for use of the roads, regardless of vehicle fuel efficiency or vehicle type (electric vs. gas vehicles)</td>
<td>21</td>
<td>39</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>A mileage fee is less fair than the gas tax because the mileage fee doesn’t give a break to people who buy cleaner vehicles</td>
<td>20</td>
<td>39</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>Environmentally-friendly vehicles should be charged a lower fee per mile than more polluting vehicles</td>
<td>25</td>
<td>38</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Tracking mileage is an invasion of privacy</td>
<td>37</td>
<td>33</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>I’m already tracked everywhere I go through my phone, so having my mileage tracked for a mileage fee wouldn’t really bother me</td>
<td>20</td>
<td>28</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>A mileage fee is unfair to people who live in rural areas</td>
<td>37</td>
<td>37</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>A mileage fee is unfair for people who have to drive long distances for work</td>
<td>42</td>
<td>34</td>
<td>18</td>
<td>6</td>
</tr>
</tbody>
</table>
Q26. If Congress does create a federal mileage fee, how would you prefer to pay? Remember that the total amount you pay annually would be the same in each option.

<table>
<thead>
<tr>
<th>Option</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay a bill that comes once a year</td>
<td>23</td>
</tr>
<tr>
<td>Pay a bill that comes once a month</td>
<td>30</td>
</tr>
<tr>
<td>Pay each time I purchase gas/diesel or charge an electric vehicle</td>
<td>47</td>
</tr>
</tbody>
</table>
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>American Community Survey</td>
</tr>
<tr>
<td>AAPOR</td>
<td>American Association for Public Opinion Research</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>EV</td>
<td>Electric Vehicle</td>
</tr>
<tr>
<td>MPG</td>
<td>Miles Per Gallon</td>
</tr>
<tr>
<td>RDD</td>
<td>Random Digit Dialing</td>
</tr>
</tbody>
</table>

2. The current federal tax on gasoline is 18.4¢ per gallon, but respondents were told that it was 18¢ per gallon, to make the survey simpler to understand.
3. The description of the mileage fee options in the 2019 survey is slightly different from the description presented in previous years’ surveys.


12. The estimate was calculated as follows. We divided the U.S. Energy Administration’s 2017 estimated annual gas expenditures per household ($1977) by the estimated average annual price per gallon of gasoline ($2.41) to estimate the average number of gallons of gas purchased per household (820). This figure was then multiplied by the federal gas tax rate of 18.4 cents per gallon. Sources: U.S. Energy Information Administration, “U.S. Gasoline Prices Increased in 2017” (January 4, 2018), https://www.eia.gov/todayinenergy/detail.php?id=34392 (accessed June 6, 2019); and U.S. Energy Information Administration, “U.S. Household Spending for Gasoline is


15. Half of respondents received the question as worded here, and the other half received the question with the two statements in reverse order: “Some people say gas tax money should be used to pay for public transit in addition to roads and highways, because transit helps reduce traffic congestion and wear-and-tear on the roads. Other people say that money from gas taxes should only be spent on roads and highways, since drivers pay the tax. Would you support or oppose spending some gas tax money on public transit?”


BIBLIOGRAPHY


ABOUT THE AUTHORS

ASHA WEINSTEIN AGRAWAL, Ph.D.

Dr. Agrawal is the Director of the MTI National Transportation Finance Center and also Professor of Urban and Regional Planning at San José State University. Her research and teaching interests in transportation policy and planning include transportation finance, bicycle and pedestrian planning, and travel survey methods. She also works in the area of transportation history. She has a B.A. from Harvard University in Folklore and Mythology, an M.Sc. in Urban and Regional Planning from the London School of Economics and Political Science, and a Ph.D. in City and Regional Planning from the University of California, Berkeley.

HILARY NIXON, Ph.D.

Dr. Hilary Nixon is Deputy Executive Director for the Mineta Transportation Institute. She specializes in transportation and environmental planning and policy, and her research focuses primarily on the factors that influence pro-environmental behavior and the relationship between transportation and the environment. In addition, she is a faculty member in the Master of Science in Transportation Management Program at San José State University. She earned a B.A. from the University of Rochester and a Ph.D. in Planning, Policy and Design from the University of California, Irvine.
MINETA TRANSPORTATION INSTITUTE
LEAD UNIVERSITY OF
Mineta Consortium for Transportation Mobility

Founded in 1991, the Mineta Transportation Institute (MTI), an organized research and training unit in partnership with the Lucas College and Graduate School of Business at San José State University (SJSU), increases mobility for all by improving the safety, efficiency, accessibility, and convenience of our nation’s transportation system. Through research, education, workforce development, and technology transfer, we help create a connected world. MTI leads the four-university Mineta Consortium for Transportation Mobility, a Tier 1 University Transportation Center funded by the U.S. Department of Transportation’s Office of the Assistant Secretary for Research and Technology (OST-R), the California Department of Transportation (Caltrans), and by private grants and donations.

MTI’s transportation policy work is centered on three primary responsibilities:

Research
MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: bicycle and pedestrian issues; financing public and private sector transportation improvements; intermodal connectivity and integration; safety and security of transportation systems; sustainability of transportation systems; transportation / land use / environment; and transportation planning and policy development. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available on TransWeb, the MTI website (http://transweb.sjsu.edu).

Education
The Institute supports education programs for students seeking a career in the development and operation of surface transportation systems. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and graduate certificates in Transportation Management, Transportation Security, and High-Speed Rail Management that serve to prepare the nation’s transportation managers for the 21st century. With the active assistance of the California Department of Transportation (Caltrans), MTI delivers its classes over a state-of-the-art videoconference network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI’s education program promotes enrollment to under-represented groups.

Information and Technology Transfer
MTI utilizes a diverse array of dissemination methods and media to ensure research results reach those responsible for managing change. These methods include publication, seminars, workshops, websites, social media, webinars, and other technology transfer mechanisms. Additionally, MTI promotes the availability of complete research to professional organizations and journals and works to integrate the research findings into the graduate education program. MTI’s extensive collection of transportation-related publications is integrated into San José State University’s world-class Martin Luther King, Jr. Library.

Disclaimer
The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented herein. This document is disseminated in the interest of information exchange. The report is funded, partially or entirely, by a grant from the U.S. Department of Transportation’s University Transportation Centers Program. This report does not necessarily reflect the official views or policies of the U.S. government, State of California, or the Mineta Transportation Institute, who assume no liability for the contents or use thereof. This report does not constitute a standard specification, design standard, or regulation.
Exploring Bicycle and Public Transit Use by Low-Income Latino Immigrants: A Mixed-Methods Study in the San Francisco Bay Area

Jesus M. Barajas, MURP
Daniel G. Chatman, Ph.D.
Asha Weinstein Agrawal, Ph.D.