

6-1-2010

What Do Americans Think About Federal Transportation Tax Options? Results From a National Survey MTI Report 09-18

Asha Weinstein Agrawal

San Jose State University, asha.weinstein.agrawal@sjsu.edu

Hilary Nixon

San Jose State University, hilary.nixon@sjsu.edu

Follow this and additional works at: http://scholarworks.sjsu.edu/mti_publications



Part of the [Transportation Commons](#)

Recommended Citation

Asha Weinstein Agrawal and Hilary Nixon. "What Do Americans Think About Federal Transportation Tax Options? Results From a National Survey MTI Report 09-18" *Mineta Transportation Institute Publications* (2010).

This Report is brought to you for free and open access by SJSU ScholarWorks. It has been accepted for inclusion in Mineta Transportation Institute Publications by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

What Do Americans Think About Federal Transportation Tax Options? Results From a National Survey



MTI Report 09-18



MINETA TRANSPORTATION INSTITUTE

The Norman Y. Mineta International Institute for Surface Transportation Policy Studies (MTI) was established by Congress as part of the Intermodal Surface Transportation Efficiency Act of 1991. Reauthorized in 1998, MTI was selected by the U.S. Department of Transportation through a competitive process in 2002 as a national “Center of Excellence.” The Institute is funded by Congress through the United States Department of Transportation’s Research and Innovative Technology Administration, the California Legislature through the Department of Transportation (Caltrans), and by private grants and donations.

The Institute receives oversight from an internationally respected Board of Trustees whose members represent all major surface transportation modes. MTI’s focus on policy and management resulted from a Board assessment of the industry’s unmet needs and led directly to the choice of the San José State University College of Business as the Institute’s home. The Board provides policy direction, assists with needs assessment, and connects the Institute and its programs with the international transportation community.

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: transportation security; planning and policy development; interrelationships among transportation, land use, and the environment; transportation finance; and collaborative labor-management relations. 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 both in hardcopy and on TransWeb, the MTI website (<http://transweb.sjsu.edu>).

Education

The educational goal of the Institute is to provide graduate-level education to students seeking a career in the development and operation of surface transportation programs. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and a graduate Certificate in Transportation Management that serve to prepare the nation’s transportation managers for the 21st century. The master’s degree is the highest conferred by the California State University system. With the active assistance of the California Department

of Transportation, 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 promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI’s quarterly newsletter, covers innovation in the Institute’s research and education programs. 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 under the sponsorship of the U.S. Department of Transportation, University Transportation Centers Program and the California Department of Transportation, in the interest of information exchange. 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 Report 09-18

**WHAT DO AMERICANS THINK ABOUT
FEDERAL TRANSPORTATION TAX
OPTIONS?
RESULTS FROM A NATIONAL SURVEY**

Asha Weinstein Agrawal, PhD
Hilary Nixon, PhD

June 2010

a publication of the
Mineta Transportation Institute
College of Business
San Jose State University
San Jose, CA 95192-0219
Created by Congress in 1991

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. CA-MTI-10-2928	2. Government Accession No.	3. Recipients Catalog No.	
4. Title and Subtitle What Do Americans Think About Federal Transportation Tax Options? Results from a National Survey		5. Report Date June 2010	
		6. Performing Organization Code	
7. Authors Asha Weinstein Agrawal, PhD, and Hilary Nixon, PhD		8. Performing Organization Report No. MTI Report 09-18	
9. Performing Organization Name and Address Mineta International Institute for Surface Transportation Policy Studies College of Business—BT550 San José State University San José, CA 95192-0219		10. Work Unit No.	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address California Department of Transportation Office of Research—MS42 Sacramento, CA 94273-0001 U.S. Department of Transportation Research and Innovative Technology Administration 1200 New Jersey Avenue, SE, Rm. E33 Washington, D.C. 20590-0001		13. Type of Report and Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract <p>This report summarizes the results of a national random-digit-dial public opinion poll that asked 1,545 respondents if they would support various tax options for raising federal transportation revenues. The eight specific tax options tested were variations on raising the federal gas tax rate, creating a new mileage tax, and creating a new national sales tax. In addition, the survey collected standard socio-demographic data and some travel behavior data and asked a few attitudinal questions related to the quality of the transportation system and respondents' priorities for government spending on transportation. These questions were used to assess support levels for the tax options among different population subgroups.</p> <p>None of the tax options achieved majority support, but three did fairly well, with support levels around 40%. These were a 0.5¢ sales tax (43% support), a 10¢ gas tax increase with revenue to be dedicated to projects that would reduce the transportation system's impact on global warming (42% support), and a 10¢ gas tax increase spread over five years (39% support).</p> <p>The report also compares public support for alternative versions of the mileage and gas taxes. The base cases tested against alternatives were a flat-rate mileage tax of 1¢ per mile and a 10¢ gas tax with no additional information given about the tax. All variants of these base cases increased support levels, in most cases significantly. Varying the mileage tax by the vehicle's pollution level increased support by 12 percentage points. For the gas tax, all four alternatives to the base case received higher support. Most notably, spreading the gas tax increase over five years increased support by 16 percentage points, and linking the increase to global warming reduction increased support by a full 19 percentage points.</p>			
17. Key Words Transportation taxes, Transportation fees, Public opinion, Gas tax, Mileage fees, Highway user taxation, User charges		18. Distribution Statement No restrictions. This document is available to the public through The National Technical Information Service, Springfield, VA 22161	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 50	22. Price

**Copyright © 2010
by Mineta Transportation Institute**

All rights reserved

Library of Congress Catalog Card Number:

To order this publication, please contact the following:

Mineta Transportation Institute
College of Business
San José State University
San José, CA 95192-0219
Tel (408) 924-7560
Fax (408) 924-7565

E-mail: mti@mti.sjsu.edu
<http://transweb.sjsu.edu>

ACKNOWLEDGMENTS

The authors would like to acknowledge and thank the following people for their important contributions to this project:

- Research assistant Vinay Murthy.
- Melinda Jackson, Director of the Survey Policy and Research Institute (SPRI) at San José State University, who managed the survey implementation and provided advice on the questionnaire design, and her staff at SPRI.
- Editor Janet DeLand.
- The 1,545 individuals who responded to the survey.

The authors also thank MTI staff, including Research Director Karen Philbrick, Ph.D., Director of Communications and Special Projects Donna Maurillo, Research Support Manager Meg Fitts, Student Research Support Assistant Chris O'Dell, Student Publications Assistant Sahil Rahimi, Student Graphic Artists JP Flores and Vince Alindogan, and Student Webmaster Ruchi Arya.



TABLE OF CONTENTS

INTRODUCTION	1
A REVIEW OF POLLING ON GAS, MILEAGE, AND SALES TAXES FOR TRANSPORTATION PURPOSES	3
Gas Taxes	3
Mileage Taxes	4
Sales Taxes	4
SURVEY DESIGN AND ADMINISTRATION	5
Questionnaire Design	5
Survey Implementation	6
SURVEY RESULTS	7
Survey Respondents	7
Overall Support Levels for the Transportation Tax Options	7
Support by Population Subgroups	11
Comparative Support for Different Versions of the Mileage and Gas Taxes	14
CONCLUSIONS	21
Summary of Key Findings	21
Policy Implications for Transportation Professionals and Policymakers	22
APPENDIX A: SURVEY QUESTIONNAIRE AND RESULTS	25
APPENDIX B: PUBLIC OPINION POLLS REVIEWED	33
ENDNOTES	41
BIBLIOGRAPHY	43
ABOUT THE AUTHORS	47
PUBLICATION PEER REVIEW	49

LIST OF FIGURES

- | | |
|---|----|
| 1. Support Levels for the Eight Transportation Tax Options Surveyed | 10 |
| 2. Relative Increases in Support for Variants of the Base-Case Gas Tax and Mileage Tax Concepts | 16 |

LIST OF TABLES

1. Comparison of Socio-Demographic Characteristics of Survey Respondents with Those of the Adult U.S. Population	8
2. Comparison of Political Characteristics of Survey Respondents with Those of the Adult U.S. Population	9
3. Support and Opposition Levels for the Eight Transportation Tax Options Surveyed	10
4. Support for the Tax Options, by Socio-Demographic Characteristics	12
5. Support for the Tax Options, by Political Characteristics	13
6. Support for the Tax Options, by Travel Behavior	14
7. Support for the Tax Options, by Opinions About the Transportation System	15
8. Percentage-Point Increases in Support for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of those Taxes, by Socio-Demographic Categories	17
9. Percentage-Point Increases in Support for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of those Taxes, by Political Characteristics	18
10. Percentage-Point Increases in Support for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of those Taxes, by Travel Behavior	18
11. Percentage-Point Increases in Support for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of those Taxes, by Opinions About the Transportation System	19
12. Findings from Public Opinion Polls on Gas Tax Increases	34
13. Findings from Public Opinion Polls on Gas Tax Increases Linked to Environmental Benefits	37
14. Findings from Public Opinion Polls on Mileage Taxes	39
15. Findings from Public Opinion Polls on Sales Taxes	40

INTRODUCTION

In recent years the transportation revenues from state and federal gas taxes have fallen significantly in real terms, and especially in real dollars per mile traveled. At the same time, the transportation system requires critical—and expensive—system upgrades. For example, a large portion of the national highway system is in need of major rehabilitation, and there is a growing desire at all levels of government to substantially upgrade and expand infrastructure to support public transit, walking, and bicycling, modes that have been relatively neglected in the past 50 years.

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 make when deciding whether or not to raise new revenues is, of course, considering likely public support for—or opposition to—raising different kinds of taxes.

This report contributes to the understanding of current public sentiment about increasing transportation taxes by presenting the results of a national random-digit-dial public opinion poll that asked 1,545 respondents if they would support various tax options for raising federal transportation revenues. The specific taxes tested were variations on raising the federal gas tax rate, creating a new mileage tax, and creating a new national sales tax. In addition, the survey collected standard socio-demographic data and a few attitudinal questions related to respondents' views on the quality of their local transportation system and their priorities for government spending on transportation in their state.

The questionnaire described the various tax proposals in only general terms, so the survey results do not necessarily reflect support for any actual proposal put forward. Nevertheless, the results show likely patterns of support and, more important, the public's likely *relative* preferences among different transportation tax options.

The remaining chapters of the report contain the following material. The next chapter describes findings from other polling on similar transportation taxes, to provide context for understanding this survey's results. The third chapter describes the survey methodology and presents an overview of the questionnaire and details on the implementation procedure. A detailed discussion of the survey findings follows in the fourth chapter, and the concluding chapter summarizes key findings and suggests some implications of those findings for policymakers.

A REVIEW OF POLLING ON GAS, MILEAGE, AND SALES TAXES FOR TRANSPORTATION PURPOSES

To provide context for interpreting the survey results presented in this report, this chapter reviews the results from other public opinion polls that asked about support for gas, mileage, and sales taxes whose revenues would be used for transportation purposes.

Surveys conducted in the past five years were identified by searching the web-based archives of popular pollsters and aggregators of public opinion polls, including the Pew Center for the People and the Press, the Roper Center for Public Opinion Research, Rasmussen Reports, SurveyUSA, and PollingReport.com. This work was supplemented by searching Google to find mainstream media coverage on polls about transportation taxes.¹ Complete survey results were obtained directly from the survey sponsors' websites or through personal contact with the sponsors' staffs.

Most of the surveys reviewed here were conducted by public agencies, advocacy groups, popular pollsters, or news media, with a few others conducted by academics or research-oriented nonprofits.

GAS TAXES

Gas taxes are a primary source of transportation revenue at the both the state and the federal level. However, the federal government and many states have not raised the tax rates in many years, so the real value of the revenues raised has fallen with inflation. As a result, there is frequent talk about raising gas tax rates, and public opinion on such increases has been extensively polled. Table 12 in Appendix B presents the key findings from 22 polls asking about support for gas tax increases.

Making direct comparisons among the polls is difficult, because the specific tax increases proposed and the contexts in which they are presented all vary widely. For example, some proposals call for unspecified increases in the gas tax, while others propose specific increases that range from 5¢ to \$2 per gallon. Some polls link the gas tax increase to a particular purpose, such as maintaining bridges, while others link the increase to very general uses, such as "to help meet new transportation needs."

Two general trends do emerge across the polls, however. First, support levels tend to be under 50% and are often considerably lower. Second, support tends to be higher when the tax increase is linked to some sort of environmental benefit. Table 13 in Appendix B, which presents the results for just those polls that link a gas tax with environmental benefits, shows that many of these did find support near or over 50%.

MILEAGE TAXES

Far less polling has been done about mileage taxes because they are not currently in use anywhere in the United States, although they are under active discussion among transportation policymakers and researchers. A review of five polls shows that support levels for mileage taxes were often below 30% (see Table 14 in Appendix B). Only the two polls linking a mileage tax to environmental benefits found higher support levels.

SALES TAXES

Very little polling has been done to test public support for a national sales tax to support transportation, most likely because the federal government does not collect sales taxes, leaving them for states and local governments to use as a revenue tool. (If the federal government were to consider imposing its own sales tax, there would likely be a very strong backlash from local officials.) However, public opinion about local sales taxes to fund transportation programs has been extensively tested.

For more than a decade, sales taxes have been one of the most popular methods that local governments have used to raise revenue for transportation purposes. In almost all cases, the taxes were placed on the ballot for voter approval, so the election results provide one clear picture of the level of public support. And in fact, many of these local sales taxes have passed, especially in California. In that state, the great majority of the population currently lives in counties where voters have approved local sales taxes for transportation, even though state law requires two-thirds approval of such taxes. In addition to the evidence from election results, considerable public polling has been done prior to elections to assess the appeal of sales tax increases.

Table 15 in Appendix B summarizes a sampling of six polls testing public opinion on sales taxes. Five of these were administered at the county or regional level, and one was statewide, polling residents in California. Overall support levels were quite high: four of the polls showed support at or near 50%. None found the extremely low support levels (below 30%) that have been found in some polls of gas and mileage taxes.

Conventional wisdom among transportation policymakers holds that the public is relatively supportive of local sales taxes for transportation because people trust local government more than they trust the state or federal government. However, the small number of polls conducted at the state or national level makes this conclusion difficult to confirm.

SURVEY DESIGN AND ADMINISTRATION

QUESTIONNAIRE DESIGN

Our survey questionnaire was designed to test public support for three types of taxes: an increase in the federal gas tax, a new national mileage tax, and a new national sales tax. In all cases, respondents were told that the revenue raised would be dedicated to transportation purposes.

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

Because a gas tax and a mileage tax are revenue options likely to receive considerable policy scrutiny in coming years, the survey tested support for these concepts when the taxes were presented in different forms. Overall, eight different tax options were tested—five variants of a gas tax increase, two variants of a new mileage tax, and a single option of a new sales tax.

Gas tax increases. Every variant of a gas tax increase involved raising the existing 18¢ per gallon tax² to 28¢ per gallon, but each variation included a different set of information for respondents to consider. The five variations were:

- A base-case 10¢ increase in the gas tax without further stipulations.
- A 10¢ increase in the gas tax that would be phased in over five years, increasing by 2¢ a year.
- 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.³
- A 10¢ increase in the gas tax, with respondents informed of the annual tax burden for a typical driver under both the current and increased tax rates. Respondents were told that the tax burden would increase from an average of \$100 a year to \$150 a year for someone driving 10,000 miles a year in a car with a fuel economy of 20 miles per gallon.

New mileage taxes. Both variants of the mileage tax involved levying a new tax per mile driven, with electronic meters being used to track miles driven and drivers being billed when they buy gas. The two variants, which differed only in the rate structure, were:

- A base-case 1¢-per-mile tax, with every car being taxed at the same rate.
- A variable-rate mileage tax for which the average rate would be 1¢ per mile, but vehicles that pollute less would be charged less and vehicles that pollute more would be charged more.

A new national sales tax. In this option, the federal government would levy a new 0.5% sales tax.

The exact wording used to describe each tax in the survey can be found in Appendix A, which reproduces the survey questionnaire.

In addition to testing population-wide support levels for these tax options, the survey was designed to assess how support for the taxes might vary by respondents' opinions about their local and state transportation systems, socio-demographic factors, and travel behavior characteristics. Introductory questions asked respondents to rate the quality of roads and highways and transit service in their community, as well as how high a priority they thought government should place on various options for improving the transportation system for everyone in their state. The questionnaire concluded with a standard set of socio-demographic questions on such factors as age, race and ethnicity, and income. To assess travel behavior, the survey included one question asking how many miles the respondent drove in the previous year and another question asking if the respondent had used any form of public transit within the previous 30 days.

SURVEY IMPLEMENTATION

The Survey and Policy Research Institute at San José State University conducted the random-digit-dial survey from April 27 to May 22, 2010. A total of 1,545 adults (18 years or older) completed the survey in either English or Spanish. For the full sample, the margin of error is plus or minus 2.5 percentage points at the 95% confidence level. (Results for subgroups of the sample have larger margins of error.)

The sample consisted of separate sets of randomly generated land-line and cell-phone numbers. Eighteen percent of the respondents were contacted on cell-phone numbers, and 82% were contacted on land-line numbers.

SURVEY RESULTS

This chapter presents highlights of the survey results, beginning with a description of the survey respondents. It then looks at support for the tax options among all respondents and also among population subgroups. The chapter concludes with findings on how support for the base-case 10¢ gas tax increase and flat-rate mileage tax compares with support for variants on these base-case options. (Appendix A presents the complete results of the survey.)

All survey results presented in this report, unless otherwise indicated, are weighted by gender, age, race, Hispanic ethnicity, education, and income, to match population estimates from the American Community Survey's average data for 2006 to 2008.

SURVEY RESPONDENTS

The 1,545 adult respondents were reasonably representative of the United States population, although the sample diverged from the national average by more than 5 percentage points along a few socio-demographic dimensions (see Table 1). Geographically, the sample had slightly fewer respondents from the Southern Census Bureau region. In terms of race, the sample had a lower percentage of people who identified their race as "Black, African-American," but more who identified their race as "other." The sample also had fewer people with a high-school degree or less and more people with college degrees and graduate school experience. Finally, the sample included fewer people in households with incomes of less than \$25,000 per year, as well as fewer younger adults and more older adults.

Table 2 compares the sample respondents to United States residents 18 or older in terms of political orientation and likelihood of voting. The survey sample had percentages of Democrats and Republicans similar to those in the national population. However, the survey respondents were considerably more likely to say they were registered to vote—the difference was more than 20 percentage points.

OVERALL SUPPORT LEVELS FOR THE TRANSPORTATION TAX OPTIONS

Figure 1 shows the percentage of respondents who strongly or somewhat supported each of the eight tax options tested, ordered from lowest to highest support. None of the options received majority support, though three options did fairly well, with support levels around 40%. The most popular were the 0.5¢ sales tax (43% support) and the 10¢ gas tax increase with revenue to be dedicated to projects that would reduce the transportation system's impact on global warming (42% support). Close behind was support for a 10¢ gas tax increase spread over five years; this option received support from 39% of respondents. The least popular taxes were the flat-rate mileage tax (21% support) and the flat 10¢ increase in the gas tax with no additional information given (23% support).

Table 1 Comparison of Socio-Demographic Characteristics of Survey Respondents with Those of the Adult U.S. Population

Socio-Demographic Category	Survey Respondents (%) (unweighted)	U.S. Adults (18+) ^a (%)
Census Bureau region		
Northeast region	17	18
Midwest region	24	22
South region	31	37
West region	27	23
Gender		
Male	46	49
Female	54	51
Of Hispanic/Latino origin/descent	10	13
Race		
White	77	76
Black, African-American	7	12
Asian, Asian-American	4	5
Other	11	6
Education		
Less than high school graduate	3	16
High school graduate	22	30
Some college	25	29
College graduate	28	16
Some graduate school	4	— ^b
Graduate degree	19	9
Employment status ^c		
Employed	70	74
Not employed	23	26
Retired	8	—
Annual household income		
Less than \$25,000	17	23
\$25,001 to \$50,000	23	25
\$50,001 to \$75,000	23	19
\$75,001 to \$100,000	15	12
\$100,001 to \$125,000	9	8
\$125,001 to \$150,000	5	4
More than \$150,000	8	9
Age		
18 to 29 years	11	22
30 to 39 years	12	18
40 to 49 years	18	19
50 to 59 years	23	17
60 to 69 years	20	12
70 to 79 years	11	7
80 years and older	5	5

Note: Some percentages do not sum to 100 due to rounding.

^a All data are for adults 18 years and older except for household income, which is for all U.S. households, and employment data, which is for the civilian noninstitutional population 18 to 64 years of age.

^b Comparable data are not available.

^c Sample employment figures are for adults 18 to 64 years of age, and U.S. employment figures are for the civilian noninstitutional population 18 to 64 years of age.

Source: U.S. Census Bureau, "American Community Survey Public Use Microdata Sample (PUMS) 2006–2008 3-Year Data." For complete citation, see the Bibliography.

Table 2 Comparison of Political Characteristics of Survey Respondents with Those of the Adult U.S. Population

Political Characteristic	Survey Respondents (%) (unweighted)	U.S. Adults (18+) (%)
Voter registration		
Registered voter	87	65
Not registered voter	10	27
Non-citizen	1	9
Don't know	2	— ^a
Likely voter? ^b		
Yes	77	—
No	23	—
Political affiliation		
Democrat	42	38
Republican	29	33
Other party ^c	11	—
Independent ^d	13	25
Don't know	4	—

Note: Some percentages do not sum to 100 due to rounding.

^a Comparable data are not available.

^b Likely voters are those respondents who are registered voters and who stated that they vote “all of the time” or “most of the time.”

^c Registered member of any other party, including the American Independent party.

^d Registered, but declined to state a party.

Sources: U.S. voter registration figures calculated by the authors from data in Thom File and Sarah Crissey, “Voting and Registration in the Election of November 2008: Population Characteristics.” U.S. party affiliation data from Pollster.com, “National Party Identification (Registered and Likely Voters Only).” For complete citations, see the Bibliography.

Table 3 presents the support and opposition levels for the eight tax options, organized by tax type to highlight how respondents reacted to different variants of the gas and mileage taxes. For the mileage tax, respondents clearly preferred the variant with the rate varying by the vehicle’s pollution emissions; this option received 12 percentage points more support than the base case. Among the gas tax options, the 10¢ increase proposed without any additional information was the least popular. The biggest increase in support was for the variant that dedicated the money to projects that would reduce the transportation system’s contribution to global warming; this option gained 19 percentage points of support over the base case.

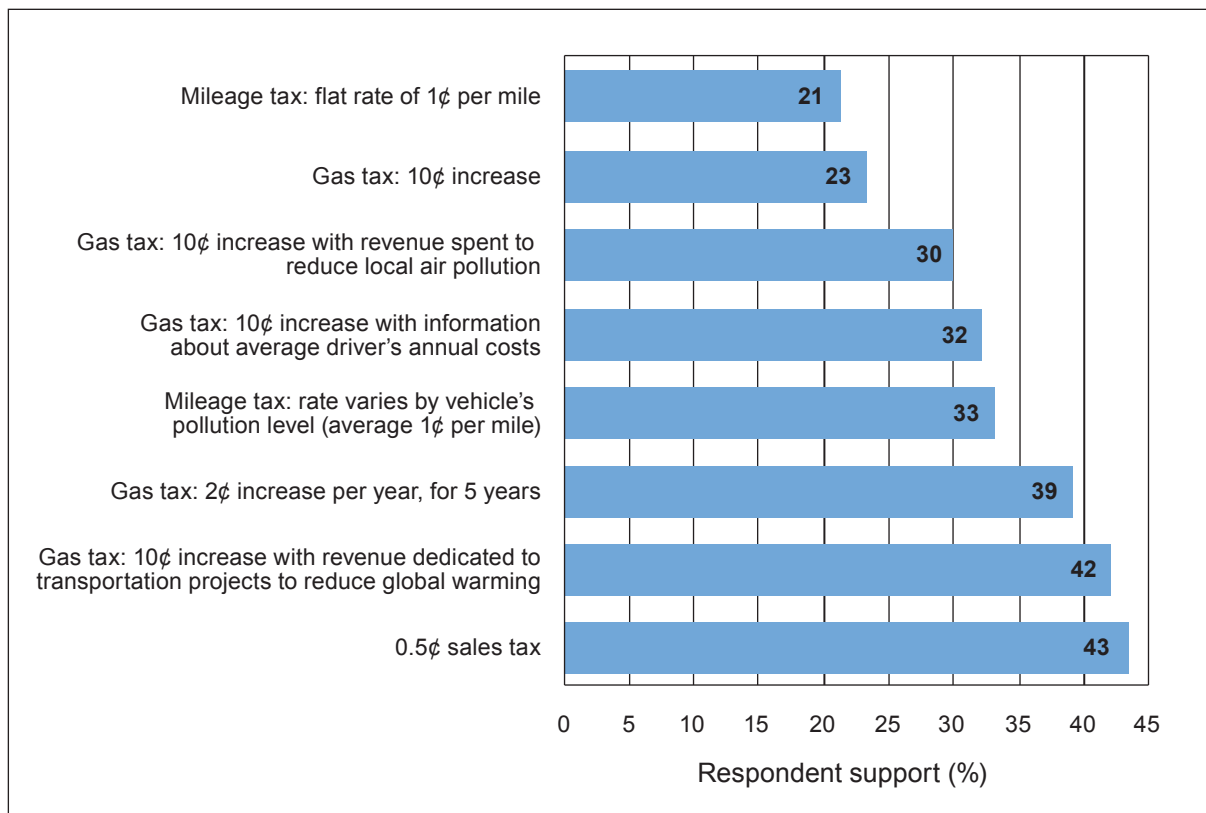


Figure 1 Support Levels for the Eight Transportation Tax Options Surveyed

Table 3 Support and Opposition Levels for the Eight Transportation Tax Options Surveyed

Tax Option	Support ^a (%)	Oppose ^b (%)	Don't Know (%)
0.5¢ sales tax	43	54	4
Mileage tax			
1¢ per mile, flat rate	21	76	3
1¢ per mile, with rate varying by vehicle pollution level	33	64	3
Gas tax			
10¢ increase	23	74	2
10¢ increase, with revenue to reduce local air pollution	30	65	6
10¢ increase, with information about avg. driver's annual costs	32	66	3
2¢ increase/year, for five years	39	58	3
10¢ increase, with revenue spent to reduce global warming	42	55	3

Note: Some row percentages do not sum to 100 due to rounding.

^a Sum of those who said they "strongly" or "somewhat" supported the option.

^b Sum of those who said they "strongly" or "somewhat" opposed the option.

SUPPORT BY POPULATION SUBGROUPS

We also examined support levels for the different taxes by subgroups within the population. 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. In each case, the first subgroup listed in a table for that set of population categories is the base case against which the other subgroups are compared.

As Table 4 shows, breaking the population into subgroups by socio-demographic categories reveals few clear patterns of statistical significance. For example, there are no clear patterns showing support to vary by income⁴ or education.

Breaking up the country by Census Bureau region shows that Northeastern residents may have been less supportive of all the taxes except the gas tax increase dedicated to reducing air pollution and the gas tax increase spread over five years, while Western residents may have been more supportive of all the taxes except the gas tax increase linked with reducing air pollution. In some cases, these differences are statistically significant, but in others, a survey with a larger sample size would be needed to confirm whether the possible trends are real.

Looking at Hispanic/Latino ethnicity shows no clear pattern of support across the eight tax options. In terms of race, Blacks/African-Americans and Asians/Asian-Americans were more supportive of most of the tax options than were whites and people of “other” races; these differences are statistically significant in several cases.

As for age, respondents between 18 and 24 years old were significantly more supportive of two of the tax options than were respondents 55 years or older. (These options were the new sales tax and the gas tax increase linked to reducing global warming.) It appears that a similar pattern may hold for most of the other tax options, but a survey with a larger sample would be needed to test this.

The single clearest pattern that emerged from breaking the population into socio-demographic subgroups was linked to employment. Surprisingly, people who said they were not employed were significantly more likely to support five of the tax options than were employed people.

Table 5 looks at support among respondents divided along various political lines. Likely voters were significantly less supportive of two of the options but more supportive of one. No statistically significant pattern emerges by voter registration status or political party, although it appears that Democrats may have been generally more supportive than Republicans of all of the tax options and more supportive than people of “other” parties for most of the taxes. Further polling would be needed to confirm whether these findings are statistically significant.

The survey asked two questions about travel behavior in order to examine whether support for the tax options varied according to whether or not respondents traveled much by private

Table 4 Support^a for the Tax Options, by Socio-Demographic Characteristics

Socio-Demographic Category	Mileage Tax				Gas Tax			
	Sales Tax (%)	Flat (%)	Variable (%)	10¢ Increase (%)	2¢ Increase/Year for 5 Years (%)	Revenue to Reduce Local Air Pollution (%)	Revenue to Reduce Global Warming (%)	Information About Avg. Annual Costs (%)
All respondents	43	21	33	23	39	30	42	32
Census Bureau region								
Northeast	30	16	21	19	40	38	40	30
Midwest	47*	21	32	24	38	26	43	32
South	43	18	34	18	37	30	42	29
West	45*	30	39*	34*	45	28	44	37
Gender								
Male	44	24	34	29	43	32	37	35
Female	41	19	31	18*	36	28	48*	28
Of Hispanic/Latino origin/descent								
Yes	39	22	39	25	33	37	54	31
No	44	21	32	23	41	29	40*	32
Race								
White	41	18	31	21	38	27	39	29
African-American	53*	35**	35	26	48	24	52	40*
Asian	51	(44)	57**	(44)	55	(57)	(54)	58**
Other	35	17	30	26	30	45*	41	27
Education								
High school or less	41	25	34	21	38	28	42	30
More than high school	44	17	31	26	41	31	42	33
Employment status								
Employed	39	17	29	25	38	32	36	29
Not employed	51**	29*	40*	23	46	28	55**	42**
Retired	36	21	30	20	32	28	31	23
Annual household income								
Less than \$50,000	47	26	36	22	40	27	47	33
\$50,001 to \$100,000	47	20	32	26	45	32	40	36
More than \$100,000	41	(19)	33	34	46	(36)	(37)	41
Age								
18 to 24 years	55	23	35	25	41	41	57	37
25 to 54 years	43	21	34	24	44	30	42*	35
55 years +	38**	22	30	23	34	24	33**	26

Notes: The test of two proportions was used to determine whether there was a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the base case for the test; it is compared with the proportion of respondents who supported the individual policies in each of the other subgroups within that category. Support levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

^a Sum of those who said they "strongly" or "somewhat" supported the option.

Table 5 Support^a for the Tax Options, by Political Characteristics

Political Characteristic	Mileage Tax			Gas Tax				
	Sales Tax (%)	Flat (%)	Variable (%)	10¢ Increase (%)	2¢ Increase/Year for 5 Years (%)	Revenue to Reduce Local Air Pollution (%)	Revenue to Reduce Global Warming (%)	Information About Avg. Annual Costs (%)
All respondents	43	21	33	23	39	30	42	32
Voter registration								
Registered	41	21	30	25	40	30	41	32
Not registered	49	22	43**	21	39	34	46	31
Non-citizen	(54)	(34)	(49)	(12)	(51)	(24)	(95)	(46)
Likely voter? ^b								
Yes	40	19	29	27	40	28	36	31
No	46	25	38*	17*	38	33	50**	34
Political affiliation								
Democrat	51	26	35	27	43	34	48	37
Republican	41	22	31	24	34	28	32	29
Other (including Independent)	31**	15	26	29	41	30	36	30

Notes: The test of two proportions was used to determine whether there was a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the base case for the test; it is compared with the proportion of respondents who supported the individual policies in each of the other subgroups within that category. Support levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

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

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

vehicle or ever used public transit. As Table 6 shows, there were almost no significant correlations, except that not driving and having taken public transit within the previous 30 days were correlated with higher support for the gas tax increase linked to reducing global warming.

A final set of analyses looked at how support for the different tax options correlates with respondents’ opinions about the transportation system. Table 7 presents these findings.

Most of the respondents’ opinions on the quality of the transportation system in their community are uncorrelated with support for the tax options. Respondents’ opinions on the condition of roads and highways in their community are not significantly correlated with support for any of the tax options, and opinions on the quality of the public transit system are significantly correlated only with support for the 10¢ gas tax increase linked to reducing global warming.

There is somewhat more connection between support for the tax options and respondents’ priorities for what government should do to improve transportation in their state. Although there is no significant correlation with priority on maintaining streets and highways, people who placed a high priority on reducing traffic congestion were significantly more likely to

Table 6 Support^a for the Tax Options, by Travel Behavior

Travel Behavior	Mileage Tax				Gas Tax			
	Sales Tax (%)	Flat (%)	Variable (%)	10¢ Increase (%)	2¢ Increase/Year for 5 Years (%)	Revenue to Reduce Local Air Pollution (%)	Revenue to Reduce Global Warming (%)	Information About Avg. Annual Costs (%)
All respondents	43	21	33	23	39	30	42	32
Annual miles driven								
1 to 3,000	46	22	35	23	37	39	27	28
3,001 to 7,500	36	16	32	26	47	37	39	36
7,501 to 12,500	41	19	28	25	45	32	37	34
12,501 +	42	17	27	23	37	22	37	28
Don't drive	48	36	40	22	41	37	69**	41
Don't know	42	22	36	22	30	20	47	29
Taken transit in last 30 days								
Yes	42	25	32	30	41	32	53	35
No	43	20	32	22	39	29	38**	31

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

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

^a Sum of those who said they "strongly" or "somewhat" supported the option.

support one option, the sales tax. People in this subgroup also had higher support levels for the other tax options, though the correlation is not significant. A stronger pattern of significance emerges with respect to priority placed on improving public transit statewide. Respondents who placed high priority on such improvement were significantly more likely to support five of the tax options than were those who placed medium and low priority on transit improvements. The support levels suggest that this trend may hold across all the tax options, but the data cannot confirm whether the trend is significant.

COMPARATIVE SUPPORT FOR DIFFERENT VERSIONS OF THE MILEAGE AND GAS TAXES

A central goal of the survey was to test public support for alternative versions of the mileage and gas taxes. Figure 2 shows how variations on the two taxes increased support as compared to that for the base case of each (the flat-rate mileage tax of 1¢ per mile and the 10¢ gas tax increase proposed without any additional detail). For both tax types the base case had the lowest support level, and applying the test of two proportions confirms that in all cases the increase in support for the variants is statistically significant. The increase is more than 10 percentage points for three of the options, including a striking 19 percentage-point gain for the gas tax increase linked to reducing global warming.

Table 7 Support^a for the Tax Options, by Opinions About the Transportation System

Opinion About the Transportation System	Mileage Tax			Gas Tax				
	Sales Tax (%)	Flat (%)	Variable (%)	10¢ Increase (%)	2¢ Increase/Year for 5 Years (%)	Revenue to Reduce Local Air Pollution (%)	Revenue to Reduce Global Warming (%)	Information About Avg. Annual Costs (%)
All respondents	43	21	33	23	39	30	42	32
Opinion on condition of roads and highways in local community								
Very good	41	24	35	22	39	27	51	36
Somewhat good	42	19	33	24	39	34	38	30
Bad	44	21	28	25	43	24	35	33
Opinion on public transit service in local community								
Very good	45	30	41	20	41	31	58	38
Somewhat good	42	21	30*	24	37	32	41**	32
Poor	45	17	30	28	39	40	44	31
No service	47	21	35	22	42	20	27**	30
Priority placed on reducing traffic congestion in the state								
High priority	44	23	34	26	43	32	43	33
Medium priority	45	19	34	21	38	27	44	32
Low priority	31*	17	22	23	31	28	28	29
Priority placed on maintaining streets, roads, and highways in the state								
High priority	46	23	36	23	43	29	44	33
Medium priority	39	21	29	23	34	31	40	35
Low priority	(25)	(8)	(11)	(33)	(30)	(33)	(21)	(14)
Priority placed on expanding and improving local public transit service in the state								
High priority	51	29	38	30	47	35	50	39
Medium priority	43*	18*	33	17*	36*	26	39*	31
Low priority	22**	(9)	19*	15	25**	(16)	23**	18**

Notes: The test of two proportions was used to determine whether there was a statistically significant difference between support levels among subgroups. The first subgroup listed in each category is the base case for the test; it is compared with the proportion of respondents who supported the individual policies in each of the other subgroups within that category. Support levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

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

Tables 8 through 11 present the change in support levels for the variants on the base-case mileage tax and gas tax options, by socio-demographic and political characteristics, by travel behavior characteristics, and by opinions about the transportation system. Collectively, the tables include 55 population subgroups, for each of which there are five tax comparisons, resulting in a total of 275 cases examined to see whether changes in tax structure or description improved support levels.

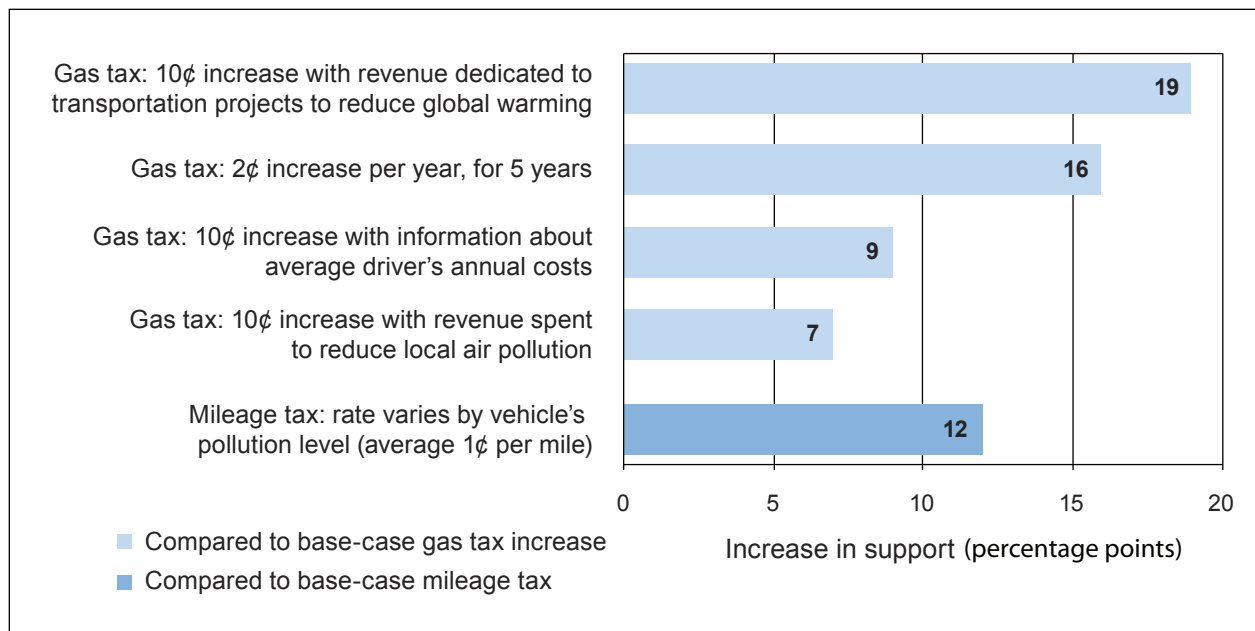


Figure 2 Relative Increases in Support for Variants of the Base-Case Gas Tax and Mileage Tax Concepts

The overall picture that emerges is that the base cases were less popular among virtually every subgroup. For 44% (122 subgroups), there was a statistically significant increase in support for the tax variation over that for the base case. For another 45% (123 subgroups), there was also an increase in support for the variant tax options, but the difference is not statistically significant according to the test of two proportions. Support either remained unchanged or fell for only 3% of the subgroups (11 subgroups), though none of these results are statistically significant.

The tax options that received increased support from the largest number of population subgroups were the two most popular taxes—the 10¢ gas tax increase spread out over five years and the 10¢ gas tax increase linked to reducing global warming. For the former, 73% of the 55 subgroups showed a statistically significant increase in support over the base case, and for the latter, the percentage was 62%. The variable-rate mileage tax also received an increase in support from a wide range (44%) of the subgroups.

In most cases, a particular subgroup increased support for between none and three of the variants. However, respondents who are unlikely voters increased their support for all five variants, and another 15 subgroups increased their support for four of the five variants.

Table 8 Percentage-Point Increases in Support^a for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of Those Taxes, by Socio-Demographic Categories

Socio-Demographic Category	Mileage Tax	Gas Tax			
		2¢ Increase/ Year for 5 Years	Revenue to Reduce Local Air Pollution	Revenue to Reduce Global Warming	Informa- tion About Avg. Annual Costs
All respondents	12**	16**	7*	19**	9**
Census Bureau region					
Northeast	5	21*	19*	21*	11
Midwest	11	14*	2	19**	8
South	16**	19**	12	24**	11*
West	9	11*	-6	10	3
Gender					
Male	10*	14**	3	8	6
Female	12**	18**	10*	30**	10*
Of Hispanic/Latino origin/descent					
Yes	17*	8	12	29**	6
No	11**	18**	6	17**	9**
Race					
White	13**	17**	6	18**	8*
Black, African-American	0	22**	-2	26**	14
Asian, Asian-American	(13)	(11)	(13)	(10)	(14)
Other	13	4	19	15	1
Education					
High school or less	9*	17**	7	21**	9*
More than high school	14**	15**	5	16**	7
Employment status					
Employed	12**	13**	7	11*	4
Not employed	11*	23**	5	32**	19**
Retired	9	12	8	11	3
Annual household income					
Less than \$50,000	10*	18**	5	25**	11*
\$50,001 to \$100,000	12	19**	5	14	10
More than \$100,000	15	12	(2)	(3)	7
Age					
18 to 24 years	12	16	16	32**	12
25 to 54 years	13**	20**	6	18**	11**
55 years +	8	11*	1	10	3

Notes: The test of two proportions was used to determine whether the change in support from the base-case option (either the flat-rate mileage tax or the 10¢ gas tax increase in a single year) was statistically significant. Support levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* p < 0.05.

** p < 0.01.

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

Table 9 Percentage-Point Increases in Support^a for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of Those Taxes, by Political Characteristics

Political Characteristic	Gas Tax				Information About Avg. Annual Costs
	Mileage Tax	2¢ Increase/ Year for 5 Years	Revenue to Reduce Local Air Pollution	Revenue to Reduce Global Warming	
All respondents	12**	16**	7*	19**	9**
Voter registration					
Registered	9*	15**	5	15**	7*
Not registered	21**	18*	13	25**	10
Non-citizen	(15)	(39)	(12)	(83)	(34)
Likely voter? ^b					
Yes	10*	13**	1	9*	4
No	13**	21**	16**	33**	17**
Political affiliation					
Democrat	9	16**	7	21**	10
Republican	9	10	4	8	5
Other (including Independent)	11	12	1	7	1

Notes: The test of two proportions was used to determine whether the change in support from the base-case option (either the flat-rate mileage tax or the 10¢ gas tax increase in a single year) was statistically significant. Support levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

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

^b Likely voters are those respondents who said they are registered voters *and* that they vote “all of the time” or “most of the time.”

Table 10 Percentage Point Increases in Support^a for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of Those Taxes, by Travel Behavior

Travel Behavior	Gas Tax				Information About Avg. Annual Costs
	Mileage Tax	2¢ Increase/ Year for 5 Years	Revenue to Reduce Local Air Pollution	Revenue to Reduce Global Warming	
All respondents	12**	16**	7*	19**	9**
Annual miles driven					
1 to 3,000	13	18*	16	4	5
3,001 to 7,500	16	11*	11	13	10
7,501 to 12,500	9	22**	7	12	9
12,501 +	10	22**	-1	14	5
Don't drive	4	19*	15	47**	19*
Don't know	14	8	-2	25**	7
Taken transit in last 30 days					
Yes	7	11	2	23**	5
No	12**	17**	7	16**	9**

Note: The test of two proportions was used to determine whether the change in support from the base-case option (either the flat-rate mileage tax or the 10¢ gas tax increase in a single year) was statistically significant.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

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

Table 11 Percentage-Point Increases in Support^a for Variants of the Mileage Tax and Gas Tax over Support for the Base-Case Versions of Those Taxes, by Opinions About the Transportation System

Opinion About the Transportation System	Mileage Tax	2¢ Increase/ Year for 5 Years	Gas Tax		Information About Avg. Annual Costs
			Revenue to Reduce Local Air Pollution	Revenue to Reduce Global Warming	
All respondents	12**	16**	7*	19**	9**
Opinion on condition of roads and highways in local community					
Very good	11	17**	5	29**	14*
Somewhat good	14**	15**	10*	14**	6
Bad	7	18**	-1	10	8
Opinion on public transit service in local community					
Very good	11	21**	11	38**	18*
Somewhat good	9	13**	8	17**	8*
Poor	13	11	12	16	3
No service	14*	20**	-2	5	8
Priority placed on reducing traffic congestion in the state					
High priority	11*	17**	6	17**	7
Medium priority	15**	17**	6	23**	11*
Low priority	5	8	5	5	6
Priority placed on maintaining streets, roads, and highways in the state					
High priority	13**	20**	6	21**	10**
Medium priority	8	11*	8	17*	12*
Low priority	(3)	(-3)	(0)	(-12)	(-19)
Priority placed on expanding and improving local public transit service in the state					
High priority	9*	17**	5	20**	9*
Medium priority	15**	19**	9	22**	14*
Low priority	(9)	10	(1)	8	3

Notes: The test of two proportions was used to determine whether the change in support from the base-case option (either the flat-rate mileage tax or the 10¢ gas tax increase in a single year) was statistically significant. Levels in parentheses indicate that too few respondents supported the policies to run the test of two proportions.

* Statistically significant at $p < 0.05$.

** Statistically significant at $p < 0.01$.

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

CONCLUSIONS

SUMMARY OF KEY FINDINGS

Support Levels Among All Respondents

None of the tax options tested in the survey received majority support, although three options did fairly well, with support levels around 40%. The most popular were the 0.5¢ sales tax (43% support) and the 10¢ gas tax increase linked to reducing the transportation system's impact on global warming (42% support). The 10¢ gas tax increase spread over five years did almost as well, receiving support from 39% of the respondents. The least popular taxes were the base cases of the gas and mileage tax options, the 1¢-per-mile flat-rate mileage tax and the flat 10¢ increase in the gas tax proposed without any additional detail. These tax options both had support levels below 25%.

Comparing public support for alternative versions of the mileage and gas taxes shows that all variants on the base cases received significantly increased support among respondents. Support for the mileage tax in which the rate varies by the vehicle's pollution levels increased by 12 percentage points compared with support for the base-case mileage tax. For the gas tax, there were more modest gains in support for two variants, the one that provided information about the annual cost increase for an average driver and the one that linked revenues to reducing local air pollution caused by the transportation system. However, support increased by 15 percentage points for the gas tax increase spread out over five years at 2¢ per year and a full 19 percentage points for the gas tax increase linked to reducing global warming.

Support Levels Among Population Subgroups

When the population is broken into subgroups by socio-demographic and political factors, travel behavior characteristics, or views on the transportation system, only a few significant correlations with support for the taxes emerge.

Breaking the population into subgroups by socio-demographic and political categories reveals surprisingly few links with support for the taxes. For example, there are no clear and statistically significant patterns of support correlated with income, education, or political party. However, age is somewhat more clearly correlated with support: respondents between 18 and 24 years of age were significantly more supportive of two of the tax options than were respondents 55 years or older, and support for the other options was also somewhat higher among the youngest group, although these differences are not statistically significant. More strikingly, unemployed people were significantly more likely to support five of the tax options than were employed people.

Similarly, breaking the respondents into subgroups according to their travel behavior and perceptions of the transportation system reveals only a few significant correlations with support for the tax options. One exception is that not driving and having taken public transit in the previous 30 days are both correlated with higher support for the gas tax increase

linked to reducing global warming. Also, people who placed high priority on reducing traffic congestion were significantly more likely to support the sales tax than were those who placed low priority on this goal. Finally, a stronger pattern emerges with respect to priority placed on improving public transit statewide. Respondents who placed high priority on such improvement were significantly more likely to support five of the tax options than were people who placed medium and low priority on that goal.

Comparing support for the base-case mileage tax and gas tax with their variants showed that the variants were more popular. Support for these rose significantly among 40% of the 55 population subgroups examined. For the remaining subgroups, there was no statistically significant change in support levels, although support for the variants was at least somewhat higher than for the base case among virtually all of them. The preference for the variants held among the different population subgroups, in many cases significantly. Also, for 16 population subgroups, support levels increased across four or five variants.

POLICY IMPLICATIONS FOR TRANSPORTATION PROFESSIONALS AND POLICYMAKERS

The results from the survey suggest several implications for policymakers who wish to craft transportation revenue increases that will be more appealing—or at least less objectionable—to the public.

The basic concept of a gas tax increase is not popular, but there are ways to structure such an increase that would significantly increase its acceptability.

The survey results show that while support for a one-time gas tax increase can be very low when voters are given no other information about the proposed tax, support can be increased by modifying the way the tax is implemented or described.

In this survey, the biggest increases in support came from breaking the one-time increase up over five years and from linking the proceeds of the tax to projects that would reduce global warming. Both approaches are worthy of careful consideration by policymakers crafting tax increase proposals.

Explaining how the increase would impact the average annual cost to drivers also increased support, but much less so—the overall support level went up seven percentage points in this survey. Still, the results suggest that helping the public to understand what different gas tax rates mean for their out-of-pocket costs might be helpful in gaining at least some support. (Anecdotal evidence suggests that many people think they pay far more in gas taxes than they really do.) At the very least, such education would help people make more informed decisions about whether they believe a gas tax increase is desirable.

Linking a transportation tax to environmental benefits can increase public support.

The survey results show that linking a transportation tax increase to environmental benefits can increase support, a trend found among other public opinion polls as well. In

this survey, voters responded particularly favorably to the idea of linking a gas tax increase with combating global warming. Support for this option was 19 percentage points higher than that for the base-case gas tax increase. Linking a gas tax increase with reducing local air pollution increased support much less but still saw an eight percentage-point improvement. The mileage tax concept also gained support when the rate structure was linked to the vehicle's pollution level.

A federal sales tax dedicated to transportation could be relatively acceptable to the public.

Survey respondents supported the sales tax at approximately the same level as they did the most popular version of the gas tax increase, both just over 40%. This result is consistent with experience to date on support for local sales taxes for transportation. These taxes tend to be popular. In California, for example, the great majority of residents live in counties where voters have approved such sales taxes by a two-thirds margin. However, less is known about public support for a national sales tax.

Although a federal sales tax could potentially win public approval, one consideration that might significantly change the political calculus is the likely backlash from state and local policymakers. States and local jurisdictions rely heavily on sales taxes to generate revenue, and their elected officials and staff would likely object strongly to having the federal government tap this revenue source.

APPENDIX A: SURVEY QUESTIONNAIRE AND RESULTS

We are interested in your opinions about the transportation system. When I talk about the transportation system, I mean local streets and roads, highways, and public transit services like buses, light rail, and trains.

1. In the community where you live, would you say that roads and highways are in very good condition, somewhat good condition, or bad condition?

	Unweighted	Weighted
Very good condition	25%	25%
Somewhat good condition	57	54
Bad condition	18	20
Don't know (volunteered)	< 1	< 1

2. Does your community offer very good public transit service, somewhat good public transit service, poor public transit service, or no public transit service at all?

	Unweighted	Weighted
Very good service	16%	17%
Somewhat good service	38	38
Poor service	18	15
No service	22	23
Don't know (volunteered)	6	7

Now, please think about what the government could do to improve the transportation system for EVERYONE in the state where you live. I'm going to read you several options. For each one, tell me whether you think government should make that a high priority, medium priority, or low priority.

[Randomize questions 3–5]

3. How about reducing traffic congestion? Should government make that a high, medium, or low priority?

	Unweighted	Weighted
High priority	44%	47%
Medium priority	35	35
Low priority	19	15
Don't know (volunteered)	2	4

4. How about maintaining streets, roads, and highways in good condition, including filling potholes? Should government make that a high, medium, or low priority?

	Unweighted	Weighted
High priority	67%	68%
Medium priority	27	26
Low priority	5	5
Don't know (volunteered)	<1	1

5. How about expanding and improving local public transit service, like buses or light rail? Should government make that a high, medium, or low priority?

	Unweighted	Weighted
High priority	45%	47%
Medium priority	34	36
Low priority	19	14
Don't know (volunteered)	2	4

There are many ways the U.S. Congress could raise money to pay for maintaining and improving the transportation system. I'm going to ask your opinion about some of these different options. In each case, assume that the money collected would be spent ONLY for transportation purposes.

[Randomize questions Questions 6–8]

6. One idea (a DIFFERENT idea) is to adopt a new national half-cent sales tax to pay for transportation. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this new sales tax?

	Unweighted	Weighted
Strongly support	13%	12%
Somewhat support	28	30
Somewhat oppose	16	16
Strongly oppose	41	38
Don't know (volunteered)	3	4

- 7a. Right now the federal government collects a tax of 18 cents per gallon when people buy gasoline. One idea (a DIFFERENT idea) to raise money for transportation is to increase the federal gas tax by 10 cents a gallon, from 18 cents to 28 cents. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this gas tax increase?

	Unweighted	Weighted
Strongly support	10%	9%
Somewhat support	17	14
Somewhat oppose	17	20
Strongly oppose	55	54
Don't know (volunteered)	2	2

- 7b. A VARIATION on the idea of raising the gas tax by 10 cents AT ONE TIME would be to spread the increase over 5 years. The tax would go up by 2 cents a year for each of 5 years. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose THIS gas tax increase?

	Unweighted	Weighted
Strongly support	14%	14%
Somewhat support	26	25
Somewhat oppose	18	21
Strongly oppose	40	36
Don't know (volunteered)	2	3

- 8a. One idea (a DIFFERENT idea) is to adopt a new tax based on the number of miles a person drives. Each driver would pay a tax of 1 cent for every mile driven. For example, someone driving 100 miles would pay a tax of 1 dollar. Vehicles would have an electronic meter to keep track of the miles driven, and the tax would be paid each time drivers buy gas. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this new mileage tax?

	Unweighted	Weighted
Strongly support	6%	9%
Somewhat support	14	12
Somewhat oppose	15	15
Strongly oppose	64	61
Don't know (volunteered)	2	3

- 8b. 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 cent per mile, but vehicles that pollute less would be charged less, and vehicles that pollute more would be charged more. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose THIS new mileage tax?

	Unweighted	Weighted
Strongly support	14%	14%
Somewhat support	18	19
Somewhat oppose	17	18
Strongly oppose	48	46
Don't know (volunteered)	3	3

[Split sample for Questions 9a and 9b]

- 9a. 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 10 cents per gallon. The Congress also decided that the money from this tax increase would be spent ONLY on projects to reduce LOCAL AIR POLLUTION caused by the transportation system. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this gas tax increase?

	Unweighted	Weighted
Strongly support	9%	9%
Somewhat support	22	21
Somewhat oppose	21	23
Strongly oppose	46	42
Don't know (volunteered)	3	6

- 9b. 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 10 cents per gallon. The Congress also decided that the money from this tax increase would be spent ONLY on projects to reduce the transportation system's contribution to GLOBAL WARMING. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this gas tax increase?

	Unweighted	Weighted
Strongly support	13%	12%
Somewhat support	23	30
Somewhat oppose	18	19
Strongly oppose	43	36
Don't know (volunteered)	3	3

10. Let me give you some information about how much the CURRENT federal gas tax costs an AVERAGE driver. Someone who drives 10,000 miles a year, in a vehicle that gets 20 miles to the gallon, will pay about 100 dollars a year. If Congress raised the gas tax by 10 cents a gallon, that same driver would now pay about 150 dollars a year. Now that you have this information, would you strongly support, somewhat support, somewhat oppose, or strongly oppose a 10 cent gas tax increase?

	Unweighted	Weighted
Strongly support	14%	13%
Somewhat support	18	19
Somewhat oppose	17	19
Strongly oppose	48	46
Don't know (volunteered)	2	3

- D1. What YEAR were you born?

	Unweighted	Weighted
18 to 24 years	5%	12%
25 to 54 years	48	56
55 years and older	48	32

- D2. What is your gender?

	Unweighted	Weighted
Male	46%	50%
Female	54	50

- D3. Are you of Hispanic or Latino origin or descent?

	Unweighted	Weighted
Yes	10%	17%
No	89	82
Don't know	2	2

D4. Which of the following describes your race? You can select as many as apply.

	Unweighted	Weighted
White	77%	69%
Black, African-American	7	15
Asian, Asian-American	4	4
Other	11	12

D5. What is the highest degree or level of education you have completed?

	Unweighted	Weighted
Less than high school	3%	18%
High school graduate	22	31
Some college	25	29
College graduate	28	15
Some graduate school	4	1
Graduate school	19	6

D6. Are you currently employed?

	Unweighted	Weighted
Yes	56%	52%
No	22	32
Retired	22	16

D7. About how many miles did you, personally, drive during the past 12 months in all motorized vehicles? Please do not count miles you drive as part of a job.

	Unweighted	Weighted
N/A (Don't drive)	7%	13%
1 to 3,000 miles	14	15
3,001 to 7,500 miles	17	13
7,501 to 12,500	26	22
12,501 and more miles	22	19
Don't know	13	18

- D8. In the last 30 days, have you taken any form of public transit, like a bus, light rail, or commuter train?

	Unweighted	Weighted
Yes	21%	21%
No	78	78
Don't know	<1	<1

- D9. As you know, many people are so busy these days they can't find time to register to vote, or they move around so often they don't get a chance to re-register. Are you now registered to vote in your precinct, or haven't you been able to register for one reason or another?

	Unweighted	Weighted
Yes	87%	78%
No	10	18
Not a citizen	1	2
Don't know	2	2

- D10. In what party are you registered to vote? (If respondent says "independent," ask: Do you mean you're registered in the American Independent Party or do you mean you're registered but you declined to state a party?)

	Unweighted	Weighted
Democrat	42%	45%
Republican	29	28
Other party, including American Independent Party	11	9
Registered, but decline to state a party	13	12
Don't know	4	6

D11. How often would you say you vote: all of the time, most of the time, occasionally, seldom, or never?

	Unweighted	Weighted
All of the time	62%	52%
Most of the time	26	27
Occasionally	8	13
Seldom	2	3
Never	1	5

D12. What is your zip code?

[Responses were used to assign respondents to Census Bureau regions.]

D13. With regard to your telephone use, do you . . .

	Unweighted	Weighted
Use only a cell phone	10%	14%
Primarily use a cell phone	20	21
Use a cell phone and a regular land-line phone equally	34	29
Primarily use a regular land-line phone	25	21
Use only a regular land-line phone	12	15

D14. Finally, and of course confidentially, what was your total household income in 2009 from all sources, before taxes? Please stop me when I get to the right category.

	Unweighted	Weighted
Less than \$25,000 per year	17%	35%
\$25,001 to \$50,000 per year	23	27
\$50,001 to \$75,000 per year	23	17
\$75,001 to \$100,000 per year	15	9
\$100,001 to \$125,000 per year	9	5
\$125,001 to \$150,000 per year	5	2
More than \$150,000 per year	8	4

APPENDIX B: PUBLIC OPINION POLLS REVIEWED

The tables in this appendix summarize key findings from a sampling of recent public opinion polls asking people about their support for taxes to raise transportation revenues. Tables 12 and 13 present responses to gas tax proposals, Table 14 presents responses to mileage tax proposals, and Table 15 presents responses to sales tax proposals. For complete source citations for all items in the tables, see the Bibliography.

Table 12 Findings from Public Opinion Polls on Gas Tax Increases

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
Public Agenda (Bittle et al.)	2009	U.S. residents	45% of respondents “favored” a 40¢ per gallon gas tax “to support development of clean renewable energy sources” when presented in a series of energy-related proposals. Levels of favor for other gas tax proposals included 40% for a 40¢ tax “to help achieve energy independence,” 38% for a 40¢ tax “to improve roads, bridges, tunnels, and other public works,” and 25% for a federal \$4 per gallon fixed price on gasoline to “encourage the development of alternative fuels.”
CBSNews/ New York Times	2009	U.S. residents	43% of respondents “favored” an unspecified increase to the federal gas tax “if it would reduce U.S. dependence on foreign oil.”
National Association of Realtors (Hart Research Associates)	2009	U.S. registered voters	40% of respondents favored a 5¢ per gallon gas tax increase “to pay for transportation projects and create jobs.” Support fell to 23% for a 10¢ increase.
HNTB Corporation (Kelton Research)	2009	U.S. residents	35% of respondents “would support” a 10¢ per gallon gas tax increase “once the economy improves.” The question informed respondents about the level of the federal gas tax, when it was set, and the reasons why it is no longer sufficient. Earlier in the poll, 57% of respondents agreed that current gas taxes “are no longer sufficient to properly maintain our roads and bridges.”
Quinnipac University Polling Institute	2009	New Jersey voters	37% of respondents “supported” an unspecified gas tax increase “to help finance road improvements and mass transportation.”
Rasmussen Reports	2009	U.S. residents	10% of respondents “favored” a federal government policy to increase gas taxes “a large amount” to encourage the purchase of fuel-efficient cars.
Rasmussen Reports	2009	U.S. residents	22% preferred raising the gas tax an unspecified amount to “cutting back nationally on transportation projects.” 15% of respondents agreed that the federal government should increase gas taxes “to help meet new transportation needs.”
National Highway Users Association (Fabrizio McLaughlin & Associates)	2008	U.S. likely voters	71% of respondents “supported” some form of unspecified increase in the gas tax “to pay for needed transportation projects” when the question followed a series of informative questions on the values of investing in roads and bridges. Initially, 57% of respondents had supported the increase. In both cases, respondents were informed about the current level of the tax and how long it has been set at its current level.

Table 12 (continued)

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
Pew Research Center	2008	U.S. residents	22% of respondents “favored” an unspecified increase in the gas tax “to encourage carpooling and conservation.” This was in response to a series of questions on policies that “address America’s energy supply.”
Boston Globe (Smith)	2008	Massachusetts residents	77% “would be willing to increase” the gas tax 5¢ or more, “knowing that maintaining roads and bridges is expensive.” 40% would “favor” increasing the gas tax to reduce tolls or state debt.
NCPPR (Wilson Research Strategies)	2008	U.S. likely voters	47% of respondents “would be willing to pay” some level of increased gas tax as a way to promote conservation and reduce greenhouse-gas emissions. 62% reported that they would be less likely to accept such an increase if Americans’ transportation emissions were shown to be “a small fraction of a percentage point” of all greenhouse-gas emissions.
CNN (Bursk)	2007	U.S. residents	33% of respondents “favored” an unspecified increase in the federal gas tax to pay for additional “inspection and repair of bridges across the country.” The poll was conducted one week after a bridge collapsed in Minnesota.
Metropolitan Transportation Commission (BW Research Partnership)	2007	San Francisco Bay Area residents	56% of respondents would “support” an unspecified increase in the cost of gasoline to either reduce public transit fares or increase transit service. 57% supported the increase for providing incentives for carpooling, but only 47% supported the increase to pay for bike lanes and sidewalks. 46%, 28%, and 17% were “willing to pay” 25¢, 50¢, or \$1 more per gallon of gas, respectively, when these amounts were called out. All questions framed increased gas costs as a way to reduce greenhouse-gas emissions or global warming.
CBS/ New York Times	2007	U.S. residents	64% of respondents “would be willing to pay” an unspecified increase in the gas tax if proceeds were used to research renewable energy sources, while 38% would “favor” an increase to promote conservation and reduce global warming.
ABC News/ Washington Post/Stanford University (Krosnick)	2007	U.S. residents	32% of respondents “favored” an unspecified increase in gas taxes to promote fuel-efficient vehicles and conservation. This question was asked as part of a series of questions on strategies to reduce global warming.
Minnesota Public Radio (Pugmire)	2007	Minnesota registered voters	51% of respondents supported a 5¢ per gallon increase in the state gas tax “to pay for improvements to roads and bridges.” This was a follow-up question regarding a 10¢ per gallon increase for which support was only 37%. The poll was conducted two months after a bridge collapsed in Minnesota.

Table 12 (continued)

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
Washington Post	2007	Maryland residents	38% of respondents “favored” a 10¢ per gallon increase in the state gas tax “if the money is used for transportation projects such as building roads, traffic management, or public transportation.”
Mineta Transportation Institute (Weinstein et al.)	2006	California likely voters	43% of respondents “would vote for” a 1¢ per gallon increase in the state gas tax during each of the next 10 years. 28% of respondents “would vote for” indexing the state gas tax to inflation when the question prompted that such an increase would have been 0.5¢ per gallon in the previous year.
New York Times/CBS News	2006	U.S. residents	59% of respondents “favored” an unspecified increase in the gas tax if it “would cut down on energy consumption and reduce global warming.” 55% also favored the increase if it “would reduce the United States’ dependence on foreign oil.” This dropped to 28% if the tax increase reduced other taxes, 24% if it helped pay for the war on terror, and 12% if no reason was given. 17% of respondents continued to “favor” the tax increase when it was specified as a \$2 per gallon increase.
ABC News/ Time Magazine/ Washington Post (Langer)	2005	U.S. residents	42% of respondents were “willing to pay” some higher level of gas tax “to fund transportation projects.” 32% of respondents “supported” higher gas taxes for building roads, public transportation, or managing traffic.
Washington Post (Morin and Ginsberg)	2005	Washington, DC, area residents	48% of respondents “supported” a gas tax increase if the money was used for “transportation projects such as building roads, traffic management, or public transportation.” This question was asked after a series of questions on congestion-reduction strategies.
Quinnipiac University Polling Institute	2005	Connecticut registered voters	37% of respondents “supported” a 6¢ per gallon gas tax increase to pay for “transportation improvement projects to reduce traffic congestion.”

Table 13 Findings from Public Opinion Polls on Gas Tax Increases Linked to Environmental Benefits

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
CBS/New York Times	2007	U.S. residents	64% of respondents “would be willing to pay” an unspecified increase in the gas tax if proceeds were used to research renewable energy sources, while 38% would “favor” an increase to promote conservation and reduce global warming.
New York Times/CBS News	2006	U.S. residents	59% of respondents “favored” an unspecified increase in the gas tax if it “would cut down on energy consumption and reduce global warming.” 55% also favored the increase if it “would reduce the United States' dependence on foreign oil.” This dropped to 28% if the tax increase reduced other taxes, 24% if it helped pay for the war on terror, and 12% if no reason was given. 17% of respondents continued to “favor” the tax increase when it was specified as a \$2 per gallon increase.
Metropolitan Transportation Commission (BW Research Partnership)	2007	San Francisco Bay Area residents	56% of respondents would “support” an unspecified increase in the cost of gas to either reduce public transit fares or increase transit service. 57% supported the increase for providing incentives for carpooling, but only 47% supported the increase to pay for bike lanes and sidewalks. 46%, 28%, and 17% were “willing to pay” 25¢, 50¢, or \$1 more per gallon of gas, respectively, when these amounts were called out. All questions framed increased gas costs as a way to reduce greenhouse-gas emissions or global warming.
NCPRR (Wilson Research Strategies)	2008	U.S. likely voters	47% of respondents “would be willing to pay” some level of increased gas tax as a way to promote conservation and reduce greenhouse-gas emissions. 62% reported that they would be less likely to accept such an increase if Americans' transportation emissions were shown to be “a small fraction of a percentage point” of all greenhouse-gas emissions.
ABC News/Washington Post/Stanford University (Krosnick)	2007	U.S. residents	32% of respondents “favored” an unspecified increase in gas taxes to promote fuel-efficient vehicles and conservation. This was in response to a series of questions on strategies to reduce global warming.
Pew Research Center	2008	U.S. residents	22% of respondents “favored” an unspecified increase in the gas tax “to encourage carpooling and conservation.” This was in response to a series of questions on policies that “address America's energy supply.”
Rasmussen Reports	2009	U.S. residents	10% of respondents “favored” a federal government policy to increase gas taxes “a large amount” to encourage the purchase of fuel-efficient cars.

Table 14 Findings from Public Opinion Polls on Mileage Taxes

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
HNTB Corporation (Kelton Research)	2010	U.S. residents	39% of respondents agreed with the statement “the U.S. should try to reduce transportation greenhouse-gas emissions by reducing the number of miles that vehicles travel through a mileage use tax.”
Mineta Transportation Institute (Agrawal et al.)	2009	California residents	28% of respondents “supported” replacing the state gas tax with “a fee of 1¢ per mile for every mile driven within the state.” Respondents were informed that “vehicles would be equipped with an electronic means to keep track of miles driven, and the fee would be paid when drivers buy gas.” Support for the proposal increased to 50% for a variation in which “vehicles that pollute the least would pay less, and vehicles that pollute the most would pay more per mile.”
Mineta Transportation Institute (Weinstein et al.)	2006	California likely voters	23% of respondents “would vote for” replacing the state gas tax with a mileage fee where “each driver would pay a fee of 1¢ per mile for every mile driven within the state.” Respondents were informed that “vehicles would be equipped with an electronic means to keep track of miles driven, and the fee would be paid when drivers buy gas.”
Rasmussen Reports	2009	U.S. residents	18% of respondents “favored” some form of mileage tax “to help fund the building and repair of roads and bridges.”
Civitas Institute	2009	North Carolina registered voters	12% of respondents “would view favorably” a switch to “a plan that would charge all drivers based on the number of miles they drive in North Carolina.” (The question did not specify what the “current system” was.)

Table 15 Findings from Public Opinion Polls on Sales Taxes

Sponsor (and Author, if Different)	Survey Date	Sampling Frame	Findings
Triangle Transportation Authority (Fallon Research)	2010	Durham, Orange, and Wake Counties, North Carolina, registered voters	58% of respondents “would vote for” a 0.5¢ sales-tax increase “to pay for new or expanded public transportation.” 53% of a segment of respondents “would vote for” a 0.75¢ county sales tax to fund “new or expanded public transportation, new school construction, and the purchase of open space for preservation.”
Los Angeles Metro (Fairbank Maslin Maullin)	2007	Los Angeles County registered voters	56% of respondents “would vote yes in favor” of a 0.5¢ county sales tax for transportation projects “with local control, required annual independent financial audits, and no funds to be used for administrators’ salaries.” Respondents were presented with the types of projects that would be funded with the tax. 57% of respondents “would vote yes in favor” of the same measure if the tax was set at 0.25¢.
Denver RTD (The Kenney Group)	2010	Metro Denver and Boulder County, Colorado, likely voters	51% of respondents “would vote for” a 0.4¢ increase in county sales taxes devoted to a set of regional transportation projects. Earlier in the survey, 48% of respondents agreed that “we should double the sales tax from four pennies on ten dollars to a total of eight pennies on ten dollars” in order to complete the set of projects “on time in 2017.”
PPIC (Baldassare)	2005	Los Angeles County residents	47% of respondents “would vote yes” for a 0.5¢ local sales tax “for local transportation projects.”
Mineta Transportation Institute (Weinstein et al.)	2006	California likely voters	41% of respondents would “support” a 0.5¢ increase in the state sales tax “for transportation purposes, such as maintaining and improving local streets, highways, and mass transit.”
SurveyUSA	2007	Seattle-Tacoma MSA residents	38% of respondents “would support” raising the sales tax by 0.6¢ “in order to pay for transportation projects.” Also, 25% of respondents “would support” the sales tax increase in concert with an increased “car license tab tax” to pay for “a combination of road, highway, and mass transit improvements” in the survey area.

ENDNOTES

1. The search terms used included *transportation tax*, *transit tax*, *gas tax*, *mileage tax*, and *transportation finance*.
2. The current federal tax on gasoline is actually 18.4¢ per gallon, but respondents were told that it was 18¢ per gallon to make the survey simpler to understand.
3. This variant and the variant in which revenues would be used to reduce local air pollution were each asked of only half of the sample.
4. To test whether support levels might be lowest for people with the very lowest incomes, we compared support among those households with an annual income of \$25,000 per year or less to support among households with higher income levels, but no clear pattern emerged.

BIBLIOGRAPHY

- Agrawal, Asha, Jennifer Dill, and Hilary Nixon. *"Green" Transportation Taxes and Fees: A Survey of Californians*. MTI Report 08-05. San Jose, CA: Mineta Transportation Institute, June 2009.
- Baldassare, Mark. *Statewide Survey: Special Survey of Los Angeles*. San Francisco, CA: Public Policy Institute of California, 2005.
- Bittle, Scott, Jonathan Rochkind, and Amber Ott. *The Energy Learning Curve*. New York, NY: Public Agenda, January 2009. <http://www.publicagenda.org/pages/energy-learning-curve> (accessed June 1, 2010).
- Bursk, Steve. "Poll: Americans Worried but Reject Higher Taxes to Fix Bridges." CNN.com, August 10, 2007. <http://www.cnn.com/2007/POLITICS/08/09/bridges.poll/index.html> (accessed May 28, 2010).
- BW Research Partnership. "MTC – RTP 2035 – Visioning Resident Survey Toplines." October 2007. http://www.mtc.ca.gov/planning/2035_plan/poll.htm (accessed July 3, 2008).
- CBS News/New York Times. "Barack Obama/George Bush Presidency/Finances." Storrs, CT: Roper Center for Public Opinion Research, January 2009. Results of search on "USCBSNYT2009-01A" in the iPoll Databank at <http://webapps.ropercenter.uconn.edu/CFIDE/cf/action/catalog/> (accessed May 27, 2010).
- Civitas Institute. "Decision Maker Poll." Raleigh, NC: Civitas Institute, January 2009. <http://www.nccivitas.org/files/January%202009%20Poll.pdf> (accessed April 27, 2010).
- Fabrizio McLaughlin & Associates. "American Highway Users Alliance National Survey of Likely Voters." Washington, DC: American Highway Users Alliance, April 2008. <http://www.highways.org/pdfs/survey.pdf> (accessed June 1, 2010).
- Fairbank, Maslin, Maullin and Associates. "Los Angeles County Transportation Ballot Measure Survey 2007," November 2007.
- Fallon Research. "2010 Triangle Transportation Survey (Durham, Orange, and Wake Counties, North Carolina)." Raleigh, NC: Regional Transportation Alliance, March 23, 2010. <http://www.letsgetmoving.org/images/uploads/RTAtransitcompositeresults-Mr%2710.pdf> (accessed June 1, 2010).
- File, Thom, and Sarah Crissey. "Voting and Registration in the Election of November 2008: Population Characteristics." Washington, DC: U.S. Census Bureau, Economic Statistics Bureau, May 2010. <http://www.census.gov/prod/2010pubs/p20-562.pdf> (accessed June 10, 2010).
- Hart Research Associates. "NAR/SGA Survey: Final." Washington, DC: National Association of Realtors and Transportation for America, January 2009. <http://www.realtor.org/wps/wcm/connect/a974a4804d3d185ba091bea1d5758593/Topline+Survey+Results+Jan+2009.doc?MOD=AJPERES&CACHEID=a974a4804d3d185ba091bea1d5758593> (accessed April 27, 2010).

- Kelton Research. "Surface Transportation Survey: Topline Report" [*America THINKS 2009 Infrastructure Survey*]. Kansas City, MO: HNTB Corporation, August 2009.
- . "Sustainability Survey: Topline Report" [*America THINKS 2010 Sustainability Survey*]. Kansas City, MO: HNTB Corporation, April 2010.
- Krosnick, Jon A. "ABC News/Washington Post/Stanford University poll." Stanford, CA: Woods Institute for the Environment at Stanford University, April 20, 2007. http://woods.stanford.edu/docs/surveys/GW_2007_ABC_News_Release.pdf (accessed April 27, 2010).
- Langer, Gary. "A Look Under the Hood of a Nation on Wheels: ABC News/Time Magazine/Washington Post Poll." ABC News, February 13, 2005.
- Morin, Richard, and Steven Ginsberg. "Painful Commutes Don't Stop Drivers." *Washington Post*, February 13, 2005. <http://www.washingtonpost.com/wp-dyn/articles/A19884-2005Feb12.html> (accessed June 13, 2010).
- New York Times/CBS News. "New York Times/CBS News Poll, February 22-26, 2006," New York, NY: New York Times, February 28, 2006. http://www.nytimes.com/packages/pdf/national/20060228_poll_results.pdf (accessed April 27, 2010).
- Pew Research Center for the People and the Press. "Public Sends Mixed Signals on Energy Policy." Washington, DC: Pew Research Center for the People and the Press, March 6, 2008. <http://people-press.org/report/400/public-sends-mixed-signals-on-energy-policy> (accessed May 18, 2010).
- Pollster.com. "National Party Identification (Registered and Likely Voters Only)." Washington, DC: Pollster.com, 2009. <http://www.pollster.com/polls/us/party-id-rl.php> (accessed June 10, 2010).
- Pugmire, Tim. "MPR Poll on Gas Tax: Five Cents. . . Maybe." Saint Paul, MN: Minnesota Public Radio News, May 11, 2007. <http://minnesota.publicradio.org/display/web/2007/05/11/gastax/> (accessed June 1, 2010).
- Quinnipiac University Polling Institute. "Connecticut Gov. Rell's Approval Slips, Quinnipiac University Poll Finds; Voters Say No to Gas Tax, Yes to Beer, Cigarette Tax." Hamden, CT: Quinnipiac University, February 18, 2005. <http://www.quinnipiac.edu/x1296.xml?ReleaseID=651> (accessed April 27, 2010).
- . "New Jersey Voters Say 3-1 Freeze State Worker Wages, Quinnipiac University Poll Finds; Voters Back Layoffs Almost 2-1." Hamden, CT: Quinnipiac University, November 24, 2009. <http://www.quinnipiac.edu/x1299.xml?ReleaseID=1399> (accessed April 27, 2010).
- Rasmussen Reports. "73% Steer Clear of Mileage Tax." Ashbury Park, NJ: Rasmussen Reports, February 23, 2009. http://www.rasmussenreports.com/public_content/business/taxes/february_2009/73_steer_clear_of_mileage_tax (accessed April 27, 2010).
- . "81% Oppose Gas Tax Hike to Encourage Sales of More Efficient Cars." Ashbury Park, NJ: Rasmussen Reports, May 11, 2009. http://www.rasmussenreports.com/public_content/business/gas_oil/may_2009/81_oppose_gas_tax_hike_to_encourage_sales_of_more_efficient_cars (accessed April 27, 2010).

-
- . “Just 15% Favor Higher Gas Tax to Fund More Transportation Projects.” Ashbury Park, NJ: Rasmussen Reports, December 7, 2009. http://www.rasmussenreports.com/public_content/business/taxes/december_2009/just_15_favor_higher_gas_tax_to_fund_more_transportation_projects (accessed April 27, 2010).
- Smith, Andrew E. “Boston Globe Poll #20: Transportation Issues in MA.” Durham, NH: The Survey Center, University of New Hampshire, December 2008. http://www.unh.edu/survey-center/news/pdf/bg_2008-dec21.pdf (accessed January 7, 2009).
- SurveyUSA. “Results of SurveyUSA News Poll #12214.” Clifton, NJ: SurveyUSA, May 31, 2007. <http://www.surveyusa.com/client/PollReportEmail.aspx?g=d19736e9-c3a8-44b5-9612-28b2af3e96ff> (accessed June 4, 2010).
- The Kenney Group. “Survey of Likely Voters in RTD District.” Denver, CO: Coalition for Smart Transit, March 2010. http://www.rtd-fastracks.com/media/uploads/main/FasTrack_survey_March_2010_RTD_summary.pdf (accessed June 4, 2010).
- U.S. Census Bureau. “American Community Survey Public Use Microdata Sample (PUMS) 2006-2008 3-Year Data.” No date. http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuid=datasets_2&_lang=en&_ts=294539856545 (accessed June 7, 2010).
- Washington Post*. “Poll: Maryland Poll—State Politics and Finances.” Storrs, CT: Roper Center for Public Opinion Research, October 2007. Results of search on “USWASH2007-160464” in the iPoll Databank at <http://webapps.ropercenter.uconn.edu/CFIDE/cf/action/catalog/> (accessed May 27, 2010).
- Wilson Research Strategies. “NCPPIR Global Warming Poll.” Washington, DC: National Center for Public Policy Research, February 26, 2008. http://www.nationalcenter.org/NCPPIR_Global_Warming_Poll_Questions_0208.pdf (accessed February 26, 2008).
- Weinstein, Asha, et al. *Transportation Financing Opportunities for the State of California*. MTI Report 06-01. San Jose, CA: Mineta Transportation Institute, October 2006.

ABOUT THE AUTHORS

ASHA WEINSTEIN AGRAWAL, Ph.D.

Dr. Agrawal is the Director of the MTI National Transportation Finance Center and also an Associate Professor of Urban and Regional Planning at San José State University. Her research and teaching interests in transportation policy and planning include transportation finance, pedestrian planning, and urban street design. She also works in the area of planning and transportation history. She has a B.A. from Harvard University in Folklore and Mythology, an M.Sc. from the London School of Economics and Political Science in Urban and Regional Planning, and a Ph.D. from the University of California, Berkeley in City and Regional Planning. For a complete listing of her publications, see <http://www.sjsu.edu/faculty/weinstein.agrawal/>.

HILARY NIXON, Ph.D.

Dr. Nixon is an Assistant Professor of Urban and Regional Planning at San José State University. Her research and teaching interests in environmental planning and policy focus on the relationship between environmental attitudes and behavior, particularly with respect to waste management and linkages between transportation and the environment. She has a B.A. from the University of Rochester in Environmental Management and a Ph.D. in Planning, Policy, and Design from the University of California, Irvine.

PUBLICATION PEER REVIEW

San José State University, of the California State University system, and the MTI Board of Trustees have agreed upon a peer review process required for all research published by MTI. The purpose of the review process is to ensure that the results presented are based upon a professionally acceptable research protocol.

Research projects begin with the approval of a scope of work by the sponsoring entities, with in-process reviews by the MTI Research Director and the project sponsor. Periodic progress reports are provided to the MTI Research Director and the Research Associates Policy Oversight Committee (RAPOC). Review of the draft research product is conducted by the Research Committee of the Board of Trustees and may include invited critiques from other professionals in the subject field. The review is based on the professional propriety of the research methodology.

MTI FOUNDER

Hon. Norman Y. Mineta

MTI BOARD OF TRUSTEES

Honorary Co-Chair

Hon. James Oberstar **

Chair

House Transportation and Infrastructure Committee
House of Representatives
Washington, DC

Honorary Co-Chair

Hon. John L. Mica **

Ranking Member

House Transportation and Infrastructure Committee
House of Representatives
Washington, DC

David L. Turney *

Chair/President/CEO
Digital Recorders, Inc.
Dallas, TX

William W. Millar ^

Vice Chair/President
American Public Transportation Association (APTA)
Washington, DC

Hon. Rod Diridon, Sr. #

Executive Director
Mineta Transportation Institute
San Jose, CA

Ronald Barnes

General Manager
Veolia Transportation/East Valley RPTA
Mesa, AZ

Rebecca Brewster

President/COO
American Transportation Research Institute
Smyrna, GA

Donald H. Camph

President
California Institute for Technology Exchange
Los Angeles, CA

Anne P. Canby

President
Surface Transportation Policy Project
Washington, DC

Jane Chmielinski

President
DMJM Harris
New York, NY

William Dorey

President/CEO
Granite Construction, Inc.
Watsonville, CA

Mortimer Downey

Chairman
PB Consult Inc.
Washington, DC

Nuria Fernandez

Commissioner
City of Chicago, Department of Aviation,
Chicago, IL

Steve Heminger

Executive Director
Metropolitan Transportation Commission
Oakland, CA

Hon. John Horsley #

Executive Director
American Association of State Highway & Transportation Officials (AASHTO)
Washington, DC

Joseph Boardman

President/CEO
Amtrak
60 Massachusetts Ave., N.E.
Washington, DC 20002

Will Kempton

Director
California Department of Transportation
Sacramento, CA

Brian Macleod

Senior Vice President
Gillig Corporation
Hayward, CA

Dr. Bruce Magid

Dean
College of Business
San José State University
San José, CA

Stephanie Pinson

President/COO
Gilbert Tweed Associates, Inc.
New York, NY

Hans Rat

Secretary General
Union Internationale des Transports Publics
Bruxelles, Belgium

Vickie Shaffer

General Manager
Tri-State Transit Authority
Huntington, WV

Paul Toliver #

President
New Age Industries
Seattle, WA

Michael S. Townes #

President/CEO
Transportation District
Commission of Hampton Roads
Hampton, VA

Edward Wytkind

President
Transportation Trades Department, AFL-CIO
Washington, DC

** Honorary

* Chair

^ Vice Chair

Past Chair

Directors

Hon. Rod Diridon, Sr.

Executive Director

Karen E. Philbrick, Ph.D.

Research Director

Peter Haas, Ph.D.

Education Director

Donna Maurillo

Communications Director

Brian Michael Jenkins

National Transportation Security Center of Excellence

Asha Weinstein Agrawal, Ph.D.

National Transportation Finance Center

Research Associates Policy Oversight Committee

Asha Weinstein Agrawal, Ph.D.

Urban and Regional Planning
San José State University

Jan Botha, Ph.D.

Civil & Environmental Engineering
San José State University

Katherine Kao Cushing, Ph.D.

Environmental Science
San José State University

Dave Czerwinski, Ph.D.

Marketing and Decision Science
San José State University

Frances Edwards, Ph.D.

Political Science
San José State University

Taeho Park, Ph.D.

Organization and Management
San José State University

Diana Wu

Martin Luther King, Jr. Library
San José State University



MINETA
TRANSPORTATION INSTITUTE

Created by Congress in 1991



SAN JOSÉ STATE
UNIVERSITY

Funded by U.S. Department of
Transportation and California
Department of Transportation

