NCHRP

SYNTHESIS 377

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Compilation of Public Opinion Data on Tolls and Road Pricing

A Synthesis of Highway Practice

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CONSULTANTS
JOHANNA ZMUD
and
CARLOS ARCE
NuStats, LLC
Austin, Texas

SUBJECT AREAS
Planning and Administration and Highway Operations, Capacity, and Traffic Control

Research Sponsored by the American Association of State Highway and Transportation Officials
in Cooperation with the Federal Highway Administration

TRANSPORTATION RESEARCH BOARD

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

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FOREWORD

By Staff
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Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, "Synthesis of Information Related to Highway Problems," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice.*

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

This synthesis study summarizes and analyzes public opinion on tolling and road pricing across the United States and internationally. It compiles existing data from completed public opinion research and presents an interpretive framework for understanding situational context in outcomes from various public opinion polls. Additionally, the study provides a systematic review of how the public feels about tolls and road pricing. What is the overall public opinion concerning charging for the use of roads? Is there widespread support or focused opposition? What factors are associated with its acceptance or rejection? The study does not address behavioral data, such as the effects on travel patterns, route choice, or mode choice. The synthesis is intended as a resource for public and elected officials making decisions about infrastructure policy and projects and officials in the process of considering, planning, implementing, and operating tolled facilities.

This report is based on a thorough review of the published literature, a scan of national and international media on the topic, and direct contact with organizations of interest or those with experience with tolling programs and road pricing. In addition, a survey questionnaire was distributed to agencies responsible for or engaged in tolling and road pricing to both identify data sources and gather perspectives on relevant issues. The synthesis annotates 110 data points, which are defined as poll, survey, or focus groups that capture public opinion.

Johanna Zmud and Carlos Arce, NuStats, LLC, Austin, Texas, collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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COMPILATION OF PUBLIC OPINION DATA ON TOLLS AND ROAD PRICING

SUMMARY

Traffic congestion is perceived as one of the most pressing problems in high density or high growth areas today. Addressing this issue generally involves some type of improvement in roadway infrastructure or capacity. In recent years there has been a significant and widespread interest in the use of flat tolls, variable tolls, and other forms of road pricing, as a source of funding, a means to manage congestion, and a way to provide additional traveler options. This increase in interest and use is occurring in many states and regions that have had little prior experience with road pricing, as well as in areas that have well-established tolling programs. Prior empirical research in transportation indicates that public acceptance of tolls and road pricing is low—in spite of the perception of traffic problems as serious. These prior studies did not have the broad set and more recent data that are compiled and presented in this synthesis.

Our study indicates that in the aggregate there is a clear majority support for tolling and road pricing. A number of factors influence public opinion including the type of pricing, the use of tolling revenues, and any clarifying information that is presented when opinions are being solicited. These findings are based on a quantitative analysis of the survey data presented in this report. We acknowledge that our sample of surveys is small and that it was not randomly generated. At the same time, great care was taken in the development of our sample of public opinion data. We sampled for diversity by including a broad range of public opinion studies and used snowball sampling techniques to uncover rare or hard-to-find research studies.

Although certainly not exhaustive, this synthesis provides a broad perspective on public opinions across the United States and internationally. It was based on a thorough review of the published literature, a scan of national and international media stories on the topic, and contact with organizations with interest in or experience with tolling programs and road pricing. The focus was on breadth of information to provide an empirical review of the state of public opinion on this topic, without regard to positions on the issue. This synthesis annotates 110 data points. Data points are defined as a poll, survey, or focus group that captured public opinion. These data span the geography of the United States, and countries outside of the United States, as well as types of road pricing, including traditional tolling, express toll lanes, high-occupancy toll lanes, cordon tolling and area charging, and public–private partnerships. The synthesis also touches on tax-related initiatives.

In the majority of cases presented here, measured public opinion tended to support rather than oppose charging for the use of roads. In this report, nearly half of the polls or surveys were characterized as having "high" validity. We found public support for tolling in most of these high validity studies. This finding adds credence to the somewhat contradictory finding of majority support for tolling and road pricing.

Popular discourse would have one believe that the public is opposed to tolling and road pricing. This perception often stems from the political nature of given communities and their various interest groups, which can obscure the majority opinion on complex subject matters such as tolling and road pricing. Rather than stimulate discussion, the transformation of pricing into a political issue has in some communities resulted in policies that possess superficial

majority appeal but fail to address the real issues of how to deal with transportation infrastructure financing or congestion management.

Our results highlight an apparent disconnect between political perceptions of the public attitude toward tolling and actual public opinions. The application of tolling programs and pricing policies largely depend on the willingness of public officials and policy makers to do so. Although interest in pricing has grown among these groups, there remains considerable uncertainty and misunderstanding among them about the overall public opinion on charging for the use of roads.

One reason for this uncertainty is the consideration of *public,* rather than of *opinion,* when identifying the public's opinions about road pricing and tolling programs. Instead of a well-defined, distinct public, many publics exist—and the state of public opinion depends on—which particular public has been polled or surveyed. Each of these distinct subgroups may hold different opinions of road pricing and tolling programs. This synthesis uncovered differences in opinion measures when the public is defined as users or potential users, registered voters, or general public.

In addition, the rapid growth of opinion polling since the mid-1930s has meant that the public is polled from many different angles—from questioning randomly selected respondents in telephone interviews to tallying the numbers of self-selected respondents who call in or click a response button on a web page. Regardless of how collection is done, poll results are widely regarded as an accurate gauge of public opinion. Although the quality of scientific research is typically controlled through the process of publication and replication, poll results are often published and quoted without critical scrutiny. This situation leads to seemingly disparate or often conflicting poll results. This synthesis determined that poll results differed based on the sponsor of the research, whether an agency with tolling or pricing authority, the media, or an independent institution.

Although there are many potential sources of error, surveys that are done according to sound scientific methods can provide highly accurate insights into public opinions. Data in this synthesis were analyzed qualitatively to extract eight broad themes in public opinion results. These eight themes were consistent regardless of the public polled, the type of road pricing project, region of the United States, or other potentially discriminating factors.

1. The public wants to see the value. When a concrete benefit is linked to the idea of tolling or charging for road usage (e.g., reducing congestion on a specific highly congested facility) as opposed to tolling in the abstract, public support is higher. It is important to articulate benefits as they pertain to individuals, to communities, and to society as a whole.
2. The public wants to react to tangible and specific examples. When public opinion is measured in the context of a specific project as opposed to a general principle, the level of support is higher. In the former context, road pricing is perceived of as a "choice" rather than as punishment. This is the likely reason that low-income individuals generally support tolling and road pricing. Regardless of their economic circumstances, they appreciate having the choice of paying to use uncongested lanes or roadways.
3. The public cares about the use of revenues. Use of tolling revenues is a key determinant to the acceptance or rejection of tolling and road pricing. Revenues should be linked to specific uses not to specific agencies. Support tends to be higher when revenues are used for highway infrastructure, public transit improvements, or more rapidly completing necessary construction.
4. The public learns from experience. Support from a majority of citizens often cannot be expected from the outset. When the opportunity to use a tolled facility already exists, public support is higher than when it is simply a possibility for the future. Building support is a long-term, continuous process that should not stop after implementation.

5. The public uses knowledge and available information. When opinion is informed by objective explanation of the conditions and mechanics of tolling and its pros and cons, public support is higher than when there is no context for how tolling works. This factor may explain why members of the public may express negative opinions about tolling or road pricing as theoretical constructs but will use a priced facility when it opens.
6. The public believes in equity but wants fairness. Public opposition of tolling is higher where there is perceived unfairness. This aspect relates to why having an alternative cost-free route is so important or why support is generally higher for tolling new facilities than for tolling existing facilities. The public needs to be reassured that the government is not treating them unfairly. In terms of equity, there is general agreement that decisions to use or not use a priced facility revolve around people's needs and preferences. Everyone, regardless of who they are or where they live, benefits from having a choice.
7. The public wants simplicity. When the mechanics of tolling or other user fee programs are simple and clear and therefore easy to understand, public support is higher than in situations where there is a high level of complexity in how pricing should be applied. Opposition is generally lower for the simplest proposals and increases as proposals become more complex.
8. The public favors tolls over taxes. Although there are isolated instances of groups preferring tax increases over tolling, most individuals prefer tolling over taxes. With toll revenues, the public is more assured of getting their fair share, because revenues are generated and applied locally. Also, tolling represents freedom of choice; only users pay.

These themes can be thought of as lessons learned in garnering support for or raising opposition to tolling and road pricing initiatives. Anticipated audiences for the final synthesis report include public officials, experts, and advocates on either side of the tolling and road pricing issue, as well as public relations, public education, or marketing professionals.

CHAPTER ONE

INTRODUCTION

STUDY MOTIVATION

This study summarizes public opinion on tolling and road pricing. Although often used interchangeably, tolling and road pricing reflect different concepts. Both concepts relate to the collection of direct charges for road use. "Tolling" is typically applied to finance transportation, whereas "pricing" is generally used to achieve other broader policy functions. The United States has experienced both a historical tradition of tolling and a growing interest in the economic arguments in support of road pricing to achieve policy objectives.

Many states in the United States are experiencing shortfalls in transportation funding, along with growing needs for surface transportation system improvements to manage congestion. In addition, evaluations of tolling and road pricing projects implemented to date have indicated that travelers are willing to pay for new facilities and faster travel, and that pricing can lead to more efficient use of existing highway capacity (*1*). Still, many motorists and policy makers have expressed concerns about tolling and road pricing; not knowing how it will affect them.

Therefore, tolling and road pricing have risen to the top of the political agenda in many states, regions, cities, and countries. Diverse attempts to introduce tolling and road pricing have been successfully implemented, whereas others have failed politically. The viability of these efforts depends not only on public support but also on elected officials' perceptions of that public support. In many parts of the United States, a gulf exists between elected officials' perceptions of what the public believes about tolling and road pricing and what the public actually believes. Therefore, even within the context of legislative support, political acceptability remains a challenge.

This study focuses on public opinion and provides a systematic review of how the public feels about tolls and road pricing. What is overall public opinion concerning charging for the use of roads? Is there widespread support or focused opposition? What factors are associated with its acceptance or rejection?

Webster's dictionary defines public opinion as "a belief or sentiment shared by most people; the voice of the people." Polls and surveys are the most common ways to measure public opinion; therefore the synthesis focuses primarily on such quantitative data. However, qualitative data (such as focus groups) have been reviewed and cited when they are informative. National data are reviewed and presented, but with the caveat that tolling and road pricing opinion is often best measured and analyzed in the context of a particular project or program. Whereas the focus is on U.S. experience, some international data are included when it is deemed to be useful and instructive to U.S. practitioners. The synthesis examines how outcomes are affected by the situation in which the poll or survey was conducted—timing, background, and other factors—and the methods used to conduct the survey or poll.

Public Opinion, Public Acceptance, and Policy Making

> "Today's public opinion, though it may appear light as air, may become tomorrow's legislation—for better or worse." Earl Newsom, *American Petroleum Institute Newsletter* (1963)

"Most people don't think about most issues most of the time," Nelson Polsby and Aaron Wildavsky once wrote in a famous analysis of American public opinion (*2*). As noted by these sociologists, the public may have little daily contact with many issues on the public agenda, yet their opinions greatly influence policy makers' priorities and behavior. One of the principles of a democratic society is that people's opinions must be reflected in the way that society is managed (*3*). Public opinion, therefore, has formed a part of American politics ever since the authors of the *Federalist Papers* declared that "all government rests on opinion" (*4*). This idea was one of the primary factors that led to an industry with the sole purpose of gauging public opinion.

The rapid growth of opinion polling since the mid-1930s, and the increasing use of polls and other measures of public opinion by politicians and policy makers in recent decades, suggests that people believe that public opinion is, and should be, an influencing factor in politics and policy making. An early pioneer in the science of public opinion measurement, George Gallup suggested that, with measurement of public opinion, politicians "will be better able to represent . . . the general public by avoiding the kind of distorted picture sent to them by telegram enthusiasts and overzealous pressure groups who claim to speak for all the people, but actually speak for themselves" (*5*).

Thus, a primary reason for producing this synthesis is to provide an empirical analysis of public opinion on charging for the use of roads to better inform public officials, policy makers, and others involved in the tolling and road pricing debate. The crux of analyzing or synthesizing public opinion is the consideration of *public* rather than of *opinion.* Instead of a well-defined, distinct public, many publics exist; the state of public opinion depends on which particular public one is interested in. Constituents of the public include various issue groups—special interest groups of citizens who care passionately about a particular issue. Abortion, crime, gun control, protection of the environment, health care reform, campaign finance reform, and increasingly tolling and road pricing have emerged as issues with their own advocates and detractors.

Typically, interest group members hold very strong and well-defined opinions on their own issue, whereas the general public has, at best, a passing interest in political issues. Although the role of public opinion in the policy-formulation process may be limited, it is nonetheless true that political leaders serve at the pleasure of their constituents. From the president to city council members, elected officials are careful to cultivate a high degree of public approval for their own or their party's re-election; therefore, they must pay attention to public opinion on policy issues.

Who controls the quality of the measures of public opinion that are communicated to public officials and policy makers? The quality of scientific research is typically controlled through the process of publication and replication. On the other hand, the way in which survey research or public opinion polls are reported often miss the checks and balances developed as part of the scientific process. Unlike other scientific endeavors, public opinion polls can be (and often are) conducted quickly with relatively little financial investment. Studies are conducted and released essentially without review or context. Media outlets often publish results as received without scrutiny. Many of these "direct to the media" polls are conducted conscientiously and meet exacting standards of science. Others do not. The public, public officials, and policy makers have no way to consistently evaluate the survey research published about tolling and road pricing. And yet, the power of surveys and polls to illuminate the attitudes and behaviors of citizens means that these results are often used as the foundation for decision making and/or policy making.

Although public opinion (correctly and incorrectly) has been and continues to be linked to policy making, public acceptance is often cited as the key to program implementation. Public acceptance generally refers to the seeking of collective consensus from the members of society about a certain issue, and it is premised on their support for the issue concerned. Thus, public acceptance must reflect the public opinion and vice versa. However, public acceptance is not a clear-cut concept. Harsman argues that "if some individuals in the collective perceive a policy measure as acceptable but others do not, what criteria should be used to decide if it is acceptable or not for the collective" (*6*). Should majority rule be applied? Should the most vocal be the arbiters of what is publicly acceptable? What if only a minority finds the measure acceptable, but by some objective criteria it is determined that more than half of those affected would be better off with the measure? Any and all of the aforementioned metrics have been applied at one time or another to advance or hinder the progress of a road pricing concept or project.

There is also a time-related aspect to acceptance. Changing values, new knowledge, or a new "state of the world" may make a formerly unacceptable policy acceptable and vice versa. Public opinion, public acceptance, and policy making are mutually bound and interdependent. This study focuses on the public opinion side of the equation. The public opinion landscape of tolling and road pricing encompasses many complex issues—political leadership, economics, media coverage, new knowledge, and new technologies—that tend to influence opinion formation, consistency, and maintenance. As the next section indicates, this landscape is ever changing.

Changing Context of Tolls and Road Pricing

It is difficult to locate a person in the United States today who has not had to pay a toll to use a road or bridge. Toll roads or priced facilities are ubiquitous in the eastern United States and are becoming more widespread elsewhere in the country. History indicates that during most of the nineteenth century toll roads were commonplace in the United States. The first major toll road (a private road) was built in the late 1790s (*7*). At the time, toll roads advanced social and economic goals, primarily in terms of bringing goods from farm to market (*8*). However, competition for movement of goods from other modes of transportation (e.g., canals and railroads) affected the demand for toll roads and by the turn of the twentieth century private toll roads had almost entirely disappeared.

With mass production and growing use of the automobile, faster and higher capacity roads were needed starting in the 1920s. Limited access highways appeared in the congested corridors of the northeast and mid-Atlantic states. Following World War II, major toll roads and toll road systems were established in New York, Illinois, Indiana, Massachusetts, Connecticut, and New Jersey. Most of the toll roads were operated by state highway departments or by quasi-governmental authorities that issued toll revenue bonds to raise funds for construction and/or operation.

An era of extensive super highways began in the 1950s when the federal Interstate Highway Program was established. The federal government, for primarily military reasons, began building tax-supported high-quality roads across the nation, giving little incentive for states to expand their turnpike systems (*9*). Highways were built on a pay-as-you go basis as

public funds mostly from fuel taxes were available to states and localities. Funding rules initially restricted collection of tolls on new federally funded roadways, bridges, and tunnels. In some situations, expansion or rebuilding of a toll facility using Interstate Highway Program funding resulted in the removal of existing tolls. It is important to consider that most respondents in current opinion polls or surveys grew up traveling on these tax-supported highways.

During most of the twentieth century, the pricing of road space was an ivory-tower idea debated by economists (*10*). In 1975, Singapore was one of the first large cities to adopt congestion pricing. This experiment attracted much attention but limited practical replication until the 1990s. Interest in congestion pricing grew significantly, not only in the United States but around the world, as communities faced increasing congestion and limited capacity. Several factors stimulated the attention given to road pricing. One was federal support through the Congestion Pricing Pilot Program established in 1991 by ISTEA, and reauthorized in 1998 as the Value Pricing Pilot Program in TEA-21 and SAFETEA-LU in 2005. The FHWA supported state and local efforts to plan, test, and evaluate value (or congestion) pricing projects. Another factor was the deployment during the 1990s of technologies for electronic toll collection that essentially eliminated motorist delays at toll booths.

At the same time that congestion pricing was rising to the forefront of transportation policy, states were facing growing (or anticipated) revenue shortfalls from fuel taxes and other traditional sources of funding surface transportation infrastructure. Debt financing (typically tolled highways) emerged as a tool to allow states or other quasi-governmental authorities to fund new infrastructure projects so they could be delivered faster than pay-as-you-go highway construction. These projects also avoided the higher construction costs that existed with long-term staged construction projects. Early practice in debt financing had morphed into a myriad of tools and programs under the banner of "innovative financing" that were first codified as the National Highway System Designation Act of 1995.

Then, with the passage of SAFETEA-LU in 2005, federal highway law provided states with an increased flexibility to use tolling, not only to manage congestion, but to finance infrastructure improvements as well. The new tools included private activity bonds for highways and surface freight transfer facilities, enhanced authority to use tolling to finance construction of Interstate highways, increased flexibility in using design–build contracting, streamlined environmental processes, and improvements to existing innovative finance programs, including Transportation Infrastructure Finance and Innovation Act and State Infrastructure Bank programs (*11*). As states are considering using as well as actually applying these new tools to fund needed transportation infrastructure projects, the public debate has increased as well. This state of the world has intensified the interest of policy makers and decision makers in the public's response to tolling and road pricing proposals and projects.

PURPOSE AND SCOPE

Purpose

The purpose of this synthesis is to provide a comprehensive view of public opinions on tolling and road pricing that have significant value to policy makers and practitioners. Specifically, it

- Compiles existing data from completed public opinion research;
- Presents an interpretive framework for understanding differences in outcomes from various data sources;
- Analyzes each data source for situational context (e.g., type of project, targeted market, nature of questions and the alternatives presented, the conditions where projects are deemed acceptable and unacceptable, the patterns that led to public support of or opposition to tolling and road pricing);
- Identifies common themes, trends, and factors that influence public acceptance or rejection of tolling or road pricing projects;
- Documents public opinion on tolling and road pricing in comparison with other potential revenue sources, such as general taxation; and
- Identifies future research needs that address gaps in current understanding of public opinion on tolling and road pricing.

Scope

The scope of this synthesis report is limited to the compilation of *public opinion* data on tolling and road pricing. It does not address *behavioral* data, such as impacts on travel patterns, route choice, or mode choice. This synthesis documents the results of public opinion polls and surveys and provides the context for the survey results from the information present in the source materials. The analysis provides trends and themes in public opinion, as well as an interpretation of the factors that influence public opinion. Given that the public response to tolling and road pricing is influenced significantly by the context in which the public opinion is being measured and that the context of tolling and road pricing is changing significantly, this synthesis focuses primarily on reviewing public opinion data since 2000. This more contemporary data will provide more insight and utility to current practitioners, policy makers, and other decision makers facing tolling or pricing issues.

In documenting public opinion, the study focused on breadth of information rather than depth of information. It does not document case studies. The information gathering process sought to cast as wide a net as possible to better

represent the range of public support and/or opposition as measured by public opinion research.

ORGANIZATION

This synthesis is organized into five chapters. The remainder of chapter one describes the balance of the report and identifies the intended audiences for the synthesis.

Chapter two describes the methods used for the literature review and for a survey of tolling and road pricing agencies. It also describes analysis techniques. This chapter is not intended to be a detailed discussion, but rather to provide a general understanding of the study's methods.

Chapter three is the core of the synthesis—the raw data. We have defined data in this case as polls, surveys, interviews, or focus groups that were executed to capture public opinion about tolling, road pricing, and related issues. In total, 104 data points are presented. The amount of information provided about each was dependent on the content of the source materials. A source for each data point is provided in the Reference section.

Chapter four presents the results of our data analysis. It identifies common themes, trends, and factors that influence public opinion on tolling and road pricing.

Chapter five offers conclusions drawn from the findings and makes suggestions for future research in the area of public opinion about tolling and road pricing.

Two appendices complement the synthesis. Appendix A is a copy of the original survey as sent to practitioners. Appendix B provides data tables that describe the survey or polls presented in chapter three.

AUDIENCES

This synthesis is intended to serve as a resource for the following several types of individuals and organizations:

- Public and elected officials who must make difficult decisions about infrastructure policy and projects.
- State departments of transportation (DOTs) that are in various stages of considering, planning, implementing, and operating tolled facilities.
- Metropolitan planning organizations that are responsible for developing and selecting projects to finance in urban areas' long-range transportation plans where tolled facilities are being considered.
- Tolling authorities and operators who finance, construct, operate, and manage priced roads.
- Public relations, public education, or marketing professionals charged with communicating with the public or other stakeholders.
- Consultants, academics, and other researchers interested in empirical research on this important and timely transportation issue.

Although it is largely based on practice in the United States, it is expected that the synthesis would be of interest to audiences outside the country for adoption to their local contexts.

CHAPTER TWO

METHODS FOR COMPILING AND ANALYZING DATA

This chapter describes the compilation of the information on which this synthesis is based. The information was gathered in two separate tasks: a literature review and a survey of practitioners. Both methods were used to identify project- and non-project-related surveys or focus groups. These data were analyzed both qualitatively and quantitatively. The first two tasks were conducted in parallel, seeking to compile a broad set of data points.

LITERATURE REVIEW

The literature review relied on several mechanisms to gather the information necessary to prepare this synthesis report. First, a web search was conducted to identify articles, reports, or media accounts of public opinion results on tolls and road pricing. Second, searches of CD-ROMs containing papers presented at TRB annual meetings and of Transportation Research Information Services (TRIS) Online (the web-based version of the TRIS database) were conducted to identify a set of useful papers and presentations on the topic. As published articles, academic literature, conference papers, and presentations were identified, their references were reviewed to identify additional sources of information. Third, the contacts of the authors and of the Topic Panel were used to identify potential sources of information. Fourth, surveys and focus groups conducted on the topic by the authors have also been used as source materials.

A clipping service that covers every daily and non-daily newspaper in the United State was employed to widen the search for information to include more general media articles covering public opinion on tolls and road pricing. A clipping service is a company that collects articles of interest from newspapers and periodicals according to search criteria that are pre-specified by a client. The search criteria given to the service were: "public opinion," "road pricing," and "tolling"; the time criteria were the years 2000 to 2007. The service identified 678 media articles. After a review of the headings, 124 articles were found to be relevant enough to request the full articles.

The entire literature review process identified more than 200 citations for public opinion data on tolling and road pricing; 110 were relevant to the topic and are presented in the compilation of data in chapter three. Public opinion polls conducted in response to ballot measures or other specific policy or planning debates were common. These were sponsored by news agencies, public agencies, or political groups trying to gauge support for a specific proposal. Also quite common were surveys and focus groups used to evaluate toll or road pricing projects prior and subsequent to implementation. Some citations were eliminated after reviewing the full information because they were editorials or op-ed pieces, covered behavioral not opinion data, or contained statements of support or opposition but not the actual data measures.

SURVEY OF PRACTITIONERS

A survey was conducted with agencies responsible for or engaged in tolling and road pricing to both identify data sources and gather their perspectives on relevant issues. The sampling frame was the membership list of the International Bridge, Tunnel, and Toll Road Association. After culling the list of private consultants and engineering firms that had undertaken relevant projects, the sample comprised 42 agencies. Each of these agencies was contacted by telephone to identify the relevant individual within the agency, to explain the purpose of the survey, to request participation, to conduct the interview by telephone or to e-mail the survey document, and to collect copies of relevant reports. The first contact within each agency was with the public information officer or the communications director. It was believed that this individual would be most aware of any public opinion polls or surveys conducted by the agency and would be able to report on or provide direction to the relevant information.

The survey questionnaire was organized into two parts (see Appendix A). Part 1 elicited general information on surveys or polls sponsored by the organization; requested access to the data, findings, and methods; and asked for the agencies' (individuals') perspectives on various aspects of public opinion about tolling and road pricing. Part 1 included 10 open-ended questions. Part 2 gathered situational context information for specific projects that included 13 questions that were mostly close-ended, such as project type, goals, legislative support, and pricing.

Of the 42 agencies in the sample, interviews were completed with 17. Of these, five agencies responded that no surveys had been conducted. Eleven completed the questionnaires. Of the 25 agencies with which an interview was not completed, 9 explicitly reported that they did not want to

participate in the survey. Sixteen were unresponsive after multiple contact attempts.

ANALYSIS OF DATA POINTS

Both qualitative and quantitative analyses of the compiled data were conducted. Qualitative modes of data analysis were used to discern, examine, and interpret meaningful patterns or themes across the compiled data. Research questions included: What patterns and common themes emerged? Were there any deviations from these patterns? If yes, were there any factors that might explain these atypical responses? Did the patterns that emerge corroborate the findings of the quantitative analysis or any previous analyses that have been conducted? If not, what might explain the discrepancies?

The quantitative data analysis was conducted with a full recognition of the limitations of the dataset especially in terms of external validity, given that data points were selected using non-probability sampling methods. External validity refers to the generalization of research findings, and our sample of surveys and focus groups were not randomly selected from the full set that had ever been conducted on this topic. However, because our review was successful in compiling a broad and diverse range of surveys and focus groups, the data represent a good cross section of public opinion on tolling and road pricing.

A Statistical Package for the Social Sciences dataset containing 10 variables was created to conduct the quantitative analysis. These variables were project number, support or opposition to pricing, year of poll, region of poll, whether clarifying information was provided in the poll questions, the validity of the poll or survey (based on our best assessment of the research), the context of the poll (whether it was general or focused on a particular project), the sponsor of the research, the type of pricing, and the type of respondents. The analysis tables are presented as Appendix B. The data points (i.e., poll, survey, and set of focus groups) comprised the data records or cases for analysis. The analysis activities included both frequency distributions and cross tabulations.

CHAPTER THREE

PUBLIC OPINION DATA ON TOLLING AND ROAD PRICING

This chapter presents public opinion data on tolling and road pricing. The politics and practice of tolling and road pricing are constantly evolving as new issues hit the public agenda, as experiences with tolling and road pricing projects are communicated, as new players enter the industry, and as new technologies alter what is possible in terms of toll collection. Because of this, the synthesis focuses primarily on recent data (i.e., since 2000), but also notes older or longitudinal data as appropriate.

The public opinion data are presented chronologically in seven categories: (1) traditional tolling, (2) express toll lanes, (3) high-occupancy toll (HOT) lanes, (4) cordon tolling or area charging, (5) public–private partnerships, (6) tax-related initiatives for transportation infrastructure funding, and (7) surveys on a range of road pricing and funding issues. Within each category, the individual public opinion polls or surveys are numbered sequentially for cross-referencing purposes. Managed lanes are not listed as a distinct category because the definition varies from agency to agency and may be used to refer to many different applications, including high-occupancy vehicle (HOV) lanes, HOT lanes, or other special use lanes. In this document, research associated with managed lanes is presented in the HOT lane section if single-occupancy vehicles (SOVs) will be charged the toll; otherwise the research is presented under express toll lanes.

In each description of the public opinion data, the sponsor of the research and the relevant public opinion measures are presented as well as pertinent information about the situational context. When presenting the public opinion measures, the exact wording of the item is provided where it is known. In addition, each public opinion data source is annotated with meta-information for evaluation and comparison purposes based on the method of collecting the data. For survey data, the meta-information include survey universe (i.e., who was asked the questions), sample size (i.e., number of respondents), margin of error (i.e., the results spread as a result of random sampling error), and sample type (i.e., method by which the sample was drawn). For focus groups, we provide the number of groups and number of individuals, and who the participants represent. For each, we have indicated whether the research activity was conducted in languages other than English. When "not reported" is noted in the text, this is because these details were not reported in the information available for this synthesis. This does not necessarily mean that this information was not reported in the survey documents provided by the survey organization to the sponsoring organization.

TRADITIONAL TOLLING

Data in this section represent public opinion on traditional tolling projects. A traditional toll road (bridge or tunnel) requires toll collections from all drivers (usually with the exception of emergency vehicles). Typically, those tolls are used to support operations and maintenance, as well as to pay debt service on the bonds issued to finance the toll facility. The toll rate does not typically vary by time of day or day of the week. Tolls may be collected at a flat rate at toll plazas or based on distance traveled using tickets, electronic transponders, or video recording of license plates. Many existing traditional toll roads are converting to some form of electronic toll collection, with most new toll projects incorporating the option to pay electronically.

1. Orange County, California (1999)

Method: Survey. Universe: Orange County residents. Sample size: N = *600. Margin of error: Not reported. Sample type: Not reported.*

The Transportation Corridor Agency (TCA) commissioned a poll that found 75% of respondents supported completion of the toll road system (*12*).

2. Statewide North Carolina (2000)

Method: Survey. Universe: North Carolina registered voters. Sample size: N = *898. Margin of error: ±3 percentage points. Sample type: Not reported.*

In October, the Your Voice, Your Vote partners (a coalition of North Carolina print and broadcast media companies) surveyed North Carolina residents on issues relating to an upcoming election, including transportation issues (*13*). On the issue of tolling, 52% of respondents supported "tolls on new roads as a way of speeding construction." Seventy-three percent said the "governor should make improving traffic flow the primary basis of transportation policy decisions." Of these respondents, 46% reported that "traffic flow should be the only basis for transportation decisions," and 27% said planners should consider "both traffic flow and the control of

development and sprawl." In the poll, North Carolinians also noted that they were more concerned about shorter commutes and cleaner cars than controlling urban sprawl or encouraging mass transit.

3. Chicago, Illinois (2001)

Method: Survey. Universe: Illinois registered voters. Sample size: N = *1,012. Margin of error: Not reported. Sample type: Not reported.*

In May, the *Chicago Tribune*/WGN-TV conducted a poll to assess public reactions to the governor's plan to merge the Illinois State Toll Authority with the DOT, and eliminate the state's tollways (*14*). Most individuals surveyed believed "tollways were convenient to where they live," and among that group 58% believed the "roads were a good value for the money"; with 33% disagreeing. Among those who said they used I-PASS, an electronic collection system, 71% considered the tollways a good value. Fifty-two percent of regular tollway users reported that they would be willing to pay more to maintain and reconstruct the system at the risk of failing to live up to the system's bond obligations, whereas 44% would not. Sixty-six percent of regular tollway users said stopping to pay tolls (at toll booths) was a bigger problem than the cost of the tolls. Only 14% found the cost of the tolls more objectionable than stopping to pay them. Most respondents (74%) did not want gasoline taxes used to maintain the system if tolls were eliminated (*15*).

4. Orange County, California (2001)

Method: Survey. Universe: Registered voters in Orange County. Sample size: N = *1,201. Margin of error: ±4.3% to 5.7%. Sample type: Not reported.*

In May, a telephone survey commissioned by TCA found that most people surveyed in Orange County were supportive of the 241 Toll Road extension (i.e., Foothill-South), a 16-mile tollway from Oso Parkway in Mission Viejo to Interstate 5 south of San Clemente (*16*). TCA oversees Orange County's 51-mile public toll road system. At the time of the survey, TCA was anticipating selling more revenue bonds to finance the extension of the Foothill Eastern toll road after 2004. Several articles were found relating to the survey results, most likely because the extension faced substantial opposition from environmental groups because the proposed routes crossed open space and a habitat for endangered species. This survey asked respondents for their initial view on completing the toll road and then repeated these questions following a presentation of pro and con arguments (*17*). Before receiving the pro and con arguments about completing the extension, 58% of respondents supported completing the Foothill South project, and 29% opposed completing it. After hearing the arguments, the survey found that 54% of county voters supported the Foothill South project, whereas 39% opposed the tollway. The survey indicated that the most persuasive argument for Foothill South was the "need for an alternative to I-5," and the most persuasive argument against it was a "need for spending not on highways but on mass transit and getting cars off the road." The TCA poll also found that 74% believed that "toll roads can be built in an environmentally sensitive way." About 65% said "toll roads have been helpful in relieving local traffic," whereas 70% said "the roads have enhanced the quality of life in the county by reducing stress from traffic and shortening commute times" (*18*).

5. San Clemente, California (2001)

Method: Survey. Universe: Registered voters in San Clemente. Sample size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

A telephone survey commissioned by TCA showed that 55% of surveyed San Clemente residents supported the Foothill South project, the 16-mile extension of the Foothill (241) Toll Road (*19*). San Clemente was the location of the most vocal opposition to the extension during public meetings. Thirty-seven percent said "toll roads should not be built because they encourage urban sprawl"; 56% believed that "developers will build homes with or without the toll road extension, so roads are needed"; 74% said "toll roads can be built in an environmentally sensitive way"; and 72% noted that the "existing toll roads have helped relieve traffic in Orange County." Half of the respondents in San Clemente rated the performance of the existing 241 Tollway as good or excellent, compared with 39% in the county as a whole. More than half of respondents (61%) in San Clemente rated the San Joaquin Hills Toll Road as good or excellent, compared with 46% in the county as a whole.

6. Orange County, California (2001)

Method: Survey. Universe: Adult residents of Orange County; English, Spanish. Sample size: N = *2,004. Margin of error: ±3 percentage points. Sample type: Random digit dial (RDD).*

In September, the Public Policy Institute of California in collaboration with the University of California, Irvine, conducted its first annual series of surveys in Orange County (*20*). The majority of residents surveyed (54%) believed the toll roads (including the Foothill, San Joaquin Hills, and Eastern Corridor) have been a good thing for the transportation system. Only 12% stated that they had been bad. Twenty-five percent said toll roads had made no difference. Fifty-nine percent would favor construction of the Foothill Toll Road South, from I-5 south of San Clemente to the existing Foothill Toll Road along Mission Viejo, 26% would oppose construction, and 15% were not sure. Completion of the toll road was favored more by younger individuals (57%) and those with incomes of $80,000 or more (64%).

7. Lee County, Florida (2001)

Method: Survey. Universe: Drivers in Lee County. Sample size: N = *1,739. Margin of error: N/A. Sample type: Convenience; drivers who stopped at intersections.*

A survey was conducted by researchers from Texas A&M University to gain insight into the potential driver reaction to an intersection queue jump (IQJ) (*21*). An IQJ is an elevated ramp or side lane that can be used by motorists normally stopped in traffic at an intersection to bypass the intersection and traffic congestion. Drivers were surveyed about their overall perception of the IQJ concept and their willingness to pay to use one. Sixty-seven percent of respondents approved of the IQJ concept. In addition, approximately 54% of surveyed drivers indicated a willingness to pay at least a small amount to use the IQJ. Likelihood of using the IQJ was associated with being married with children, and having a household income of less than $16,000 or more than $75,000. Decreasing the likelihood of using the IQJ was being on a shopping trip, age 65 or older, or being male.

8. Orange County, California (2002)

Method: Survey. Universe: Registered voters in Orange County. Sample size: N = *1,200. Margin of error: Not reported. Sample type: Not reported.*

In May, the TCA commissioned a second poll about support or opposition to the construction of an extension to the Foothill South (*22*). This poll was conducted by the same organization that executed the survey in 2001. After being told the arguments, the survey found that 58% of county voters surveyed supported the Foothill South project; 36% opposed the tollway, and about 5% were undecided.

9. San Clemente, California (2002)

Method: Survey. Universe: Registered voters in San Clemente. Sample size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

In May, a telephone survey commissioned by TCA found that after pro and con arguments were presented, 54% of San Clemente residents surveyed supported the Foothill South, the 16-mile extension of the Foothill (241) Toll Road, and 40% opposed it. Six percent were undecided (*23*). Thirty-eight percent said "toll roads should not be built because they encourage urban sprawl"; 56% believed that "developers will build homes with or without the toll road extension, so roads are needed." Sixty-one percent said they favored "toll roads to provide another option to Orange County freeways," whereas 37% opposed toll roads. Sixty-four percent stated that "traffic is going to get worse, and the toll road is a way to handle increasing traffic"; 34% disagreed. Sixty-five percent said the "toll road will worsen sprawl by encouraging more homes in undeveloped areas of the county"; 29% disagreed. Fifty-four percent said the "toll road won't provide long-term traffic solution in the south county"; 40% disagreed.

10. Central Florida (2002)

Method: Survey. Universe: Households in District (parts of Lake, Seminole, and Volusia Counties). Sample size: Not reported, but surveys mailed to 12,500 households. Margin of error: Not reported. Sample type: Not reported.

In April, a mail survey of residents in parts of Lake, Seminole, and Volusia counties by the District Representative's office found that 55% of those surveyed supported an extension of the Western Expressway toll road, 26% opposed it, and 19% said they did not know (*24*). The article is quoted as saying that the early returns showed strong support for the new toll road connection, and that support waned as more surveys were returned. In addition, there were differences by county. The proposed toll road extension was between state route (SR) 417 in Seminole County and Apopka in Orange County (near Orlando). Seventy-three percent of the respondents in Seminole County checked "yes" when asked if they supported the connection; 58% of Volusia residents checked "yes," whereas less than 50% of respondents from Lake County checked "yes."

11. New York, New York (2002)

Method: Survey. Universe: New York state residents. Sample size: N = *1,402. Margin of error: ±2.6%. Sample type: Not reported.*

In February, a survey by the Quinnipiac University Polling Institute showed a strong opposition to placing tolls on the presently toll free East River (Brooklyn, Manhattan, Williamsburg, and Queensboro) bridges (*25*). Twenty-one percent of those surveyed said "yes" that the state legislature should approve of a New York City toll on the bridges, and 65% said "no." Fourteen percent were not sure. Opposition was higher in New York City (74%) than upstate (52%).

12. Citrus County, Florida (2002)

Method: Survey. Universe: Citrus County residents. Sample size: N = *800. Margin of error: Not reported. Sample type: RDD, probability.*

In March, the University of South Florida's Center for Urban Transportation Research conducted a survey as part of a study to determine whether the Suncoast Parkway extension in Citrus County should be built and, if so, where (*26*). Fifty-one percent of those surveyed said "yes" there was a "need for toll roads such as the Suncoast Parkway in Citrus County." Slightly more than one-third (35%) answered "no" to that survey question, and 14% reported that that they had not heard of

the project. When asked specifically for their opinions on the Suncoast Parkway Project (*26*), 59% supported construction of the road—34% with strong support, 17% if certain conditions were met, and 8% if certain locations were avoided. Only 13% opposed the road outright. The majority of the individuals surveyed (58%) were newcomers who had moved to Citrus County since 1990.

13. Orange County, California (2003)

Method: Survey. Universe: Registered voters in Orange County. Sample size: N = *1,200. Margin of error: Not reported. Sample type: Not reported.*

In June, TCA commissioned its third annual survey about the extension of the Foothill South Tollway (*27*). The survey was conducted just as the agency was about to release an alternative analysis of three toll road routes and three non-tollway options for improving traffic in south Orange County as part of the environmental impact study for the road. Support declined slightly—from 56% to 53%—when those polled were informed of pro and con arguments regarding the toll road. Support for the project was highest in South County, where 65% of those polled expressed support. Approximately 74% of respondents countywide said that "roads can be built to be environmentally safe." Of those who have never used one, 60% opposed toll road construction.

14. New York Metro Area (2003)

Method: Focus groups. Number: Four groups. Participants: Randomly selected passenger car drivers; three groups comprised of E-ZPass users; one group that paid cash to travel on Port Authority of New York and New Jersey (PANYNJ) facilities; all used the PANYNJ facility at least once a week since 2001.

In December 2003, PANYNJ sponsored focus groups to assess its facilities users' opinions about various aspects pertaining to a time-of-day initiative (*28*). Time-of-day pricing went into effect in 2001 as a means for reducing congestion, increasing use of transit and E-ZPass, and facilitating commercial traffic control management. Before the focus group discussions, most participants seemed to be unaware or confused about the time-of-day pricing program with its system of tolls and discounts. When it was explained, reactions ranged from neutral to disinterest to irritation that they were being manipulated by the agency that was running the facilities on which they traveled. Passenger drivers rejected off-peak toll discounts because the discount was too small to alter travel plans. Participants believed altering plans would not only be inconvenient, but also cost more money and mental energy. Very few saw the benefit of traveling off-peak as a way to address traffic congestion. Almost all resented having to pay tolls and did not feel they got much value for their money.

Method: Focus groups. Number: Two groups. Participants: Randomly selected truck dispatchers; one group from for-hire carriers; one group from private carriers.

In January 2004, focus groups with truck dispatchers were conducted for the same study as previously discussed (*28*). Use of E-ZPass was more prevalent in the for-hire group than in the private carrier group. Those who recalled anything about time-of-day pricing dismissed it as inconsequential. The discounts were too small and they did not feel that they had the flexibility to travel off-peak. They believed that they would make more money by traveling the fastest route even if the tolls were higher on that route. They were resigned to and not concerned about the price of tolls because increases could be passed on to their customers.

Method: Survey. Universe: Adult users of PANYNJ facilities. Sample size: N = *505. Margin of error: Not reported. Sample type: Not reported.*

A passenger survey was conducted to capture opinions on different toll-related issues: impact of time-of-day pricing on traffic, fairness of the pricing, and willingness to pay more for better services (*28*). A small percentage (15%) reported that they believed the time-of-day pricing had an effect on traffic. Of those, most believed the traffic was a lot worse. The majority of those surveyed (85%) agreed that it would be fair to give discounts to E-ZPass users. Most (78%) were E-ZPass users themselves. However, 66% of cash users also approved of providing toll discounts to E-ZPass users. When asked if it is a good idea to vary toll rates during different times of day to help improve traffic congestion, 59% of respondents agreed. However, when asked if it was fair to charge higher bridge and tunnel tolls during peak travel periods, agreement dropped to 26%. Eighty-three percent agreed that it was fair to provide discounts to frequent travelers. Sixty-five percent of the respondents also indicated that it was fair to use the toll revenues to support public transit. Forty-two percent were willing to pay more for a faster trip, and 37% would pay more for a more reliable trip.

Method: Survey. Universe: Commercial carriers that use PANYNJ facilities. Sample size: N = *200. Margin of error: Not reported. Sample type: Not reported.*

A survey of private and for-hire carriers who have used the PANYNJ toll facilities for at least three years was conducted as part of the larger study (*28*). The carriers who could remember the 2001 toll increase owing to time-of-day pricing believed that it had little, if any, impact on traffic conditions. Most believed traffic congestion had gotten worse. Most surveyed carriers (92%) believed that it would be fair to give E-ZPass users a discount. Most (88%) were also in favor of charging less in tolls during off-peak hours, and most (80%) were against charging more during peak hours.

15. Orange County, California (2003)

Method: Survey. Universe: Adult residents of Orange County; English, Spanish. Sample size: N = *1,004. Margin of error: ±3 percentage points. Sample type: RDD.*

In December, the Public Policy Institute of California, in collaboration with the University of California, Irvine, conducted another special survey of Orange County (*29*). The majority of surveyed residents (52%) believed that the toll roads (including the Foothill, San Joaquin Hills, and Eastern Corridor) had been good for the transportation system. Only 15% said they had been bad, and 22% said that they had made no difference. Toll roads were favored more by younger individuals (57%) and those with incomes of $80,000 or more (64%).

16. Tyler, Texas (2004)

Method: Focus groups. Number: Three groups, with 8 individuals each. Participants: Tyler residents.

In February, the Texas DOT (TxDOT) sponsored several research activities to gauge the public's perceptions of tolling Loop 49, a proposed regional outer loop around the city of Tyler (*30*). At the time of the research, the Texas Transportation Commission had directed TxDOT to examine all projects for toll viability. Tyler, a mid-size urban/rural city in northeast Texas, had no toll roads, and the research was conducted to gain an understanding of the public's acceptance of tolls. Focus groups were held with residents of varied socioeconomic and demographic characteristics. Participants believed that toll roads were convenient in some situations, primarily in larger cities, but that Tyler was not big enough to warrant a toll road.

Method: Survey. Universe: Residents of Tyler. Sample size: N = *199. Margin of error: Not applicable. Sample type: Convenience, shoppers at a mall.*

A survey was also conducted with shoppers at a centrally located mall. Most respondents (84%) agreed that Loop 49 was needed (*30*). Seventy-eight percent agreed that "tolling Loop 49 will keep some people from using it"; 9% disagreed; and 13% were neutral. About half of respondents (49%) agreed that "tolling Loop 49 was a good way to pay for the road"; 32% disagreed and 19% were neutral. Thirty-five percent agreed that "using [a] gasoline tax is a better way than charging a toll to pay for new construction"; 37% disagreed and 28% were neutral.

17. Baton Rouge, Louisiana (2004)

Method: Survey. Universe: Individuals who voted in three of the past five elections. Sample size: N = *400. Margin of error: ±5%. Sample type: Not reported.*

In April, a poll funded and drafted by the political action arm of the chamber of commerce found that 57% of voters supported toll roads when asked if they "favor or oppose toll roads as one means of reducing traffic congestion in Baton Rouge" (*31*). Before asking this question, respondents were told that "federal, state, and local transportation funds are being cut, and many states and communities are building and using toll roads as the best way to address traffic congestion." At the time of the poll, proposals were being floated that would create a toll road to bypass the northern part of the city and connect Interstate 10 west of Port Allen with Interstate 12 in the Denham Springs area.

18. Orange County, California (2004)

Method: Survey. Universe: Registered voters in Orange County. Sample size: N = *1,100. Margin of error: ±4.3% to 5.7% (for different geographical subgroups). Sample type: Not reported.*

In June, TCA commissioned its fourth annual telephone survey about the extension of the Foothill South Tollway, which was conducted by the same survey organization that had done the previous three surveys (*32*). Sixty-one percent of respondents supported toll roads in Orange County as a way of providing an alternative option to the freeways, and 33% were opposed (*33*). Before the reading of the pro and con statements, 54% supported the project and 23% opposed it. After hearing the pros and cons associated with completing the Foothill South, 57% supported the project and 37% opposed it. In San Clemente, where the most vocal opposition was based, 56% supported the completion of the Foothill South, whereas 35% opposed it, and 9% were undecided.

19. Statewide Wisconsin (2004)

Method: Survey. Universe: Wisconsin residents. Sample size: N = *500. Margin of error: ±3.5 percentage points. Sample type: Not reported.*

In July, a survey conducted for a two-year civic journalism project called Building the New Wisconsin Economy found that 53% of surveyed Wisconsinites would oppose turning some of the state's highways into toll roads (*34*). Eighty percent of respondents said they would support investing more money in the highway system and energy infrastructure, but they would not want toll roads or higher energy bills. A large majority (79%) believed that the state was maintaining the highway system well.

20. Statewide California (2004)

Method: Survey. Universe: Registered voters. Sample size: N = *608. Margin of error: ±4%. Sample type: Not reported.*

In August, the Field Poll was commissioned by the Press-Enterprise and other California media subscribers to conduct a survey of California voters about a 2,500 page report

that had been released by a panel appointed by Governor Schwarzenegger to root out waste in state government (*35*). The board made approximately 1,000 proposals that they believed could save the state billions of dollars over a five-year period. The following are the results relating to transportation savings. Forty-one percent of those surveyed supported "increasing the state's number of toll roads to provide more revenue for highway building and repair," and 54% opposed the idea. The commissioners did not recommend specific freeways for new toll lanes, although the report mentioned that San Diego-area freeways had been cited as possible candidates. Respondents also did not support plans to transfer responsibility for some state highways to local government—34% supported the idea, whereas 54% opposed it.

21. Austin, Texas (2005)

Method: Focus groups. Number: Three groups of 10 individuals each. Participants: Adults residing in Bastrop, Hays, Travis, and Williamson counties.

In March, TxDOT sponsored focus groups with a random sample of potential toll road users, defined as currently using roadways parallel to planned toll roads in central Texas and holding positive or neutral attitudes about the toll road plan (*36*). The focus groups revealed that central Texans have complex sets of attitudes about toll roads. For most, toll road issues were not black or white and therefore could not easily be captured with global "yes" or "no" types of questions. Even individuals who believed the system of toll roads was a good idea had questions and doubts about the actual implementation of the toll road plan in central Texas by TxDOT. People's attitudes were still being formed, were not stable, and were sensitive to new information as it arose. Central Texans were not novice toll road users. Most individuals had prior positive experience in using toll roads. Negative experiences regarding congestion caused by correct change toll booths or safety issues caused by poor signage were mentioned, but did not seem to negatively prejudice them.

22. Orange County, California (2005)

Method: Survey. Universe: Orange County voters. Sample size: N = *1,200. Margin of error: ±4.4% to 5.6%. Sample type: Not reported.*

In June, TCA commissioned the fifth annual public opinion survey related to the extension of the Foothill South Tollway (*37*). Fifty-four percent of Orange County residents surveyed supported plans to complete the last segment of the Foothill, 23% opposed them, and 23% were undecided (*38*). After reading the arguments for and against, respondents were again asked for their opinions on this plan. With more information, support increased to 57%, but opposition increased as well to 37%. The undecided segment dropped to 6%.

23. San Antonio, Texas (2005)

Method: Survey. Universe: Registered voters. Sample Size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

In June, the Alamo Regional Mobility Authority, which builds toll roads, commissioned a survey of local attitudes (*39*). Forty-nine percent polled said they were against toll roads, whereas 44% were in favor. After being told details and how toll roads would help, the approval rate increased to 58%, whereas opposition dropped to 34%.

24. Austin, Texas (2005)

Method: Survey. Universe: Adults residing in Bastrop, Caldwell, Hays, Travis, and Williamson counties who are potential users of the toll roads under construction. Sample size: N = *1,500. Margin of error: ±2% percentage points. Sample type: RDD.*

In July, TxDOT sponsored a survey to assess baseline attitudes toward toll roads among potential users in central Texas (*40*). When asked a general question about whether toll roads were needed, 45% of central Texans surveyed believed that toll roads were needed, and 49% believed they were not needed (6% did not know or refused to answer). The most frequent reasons mentioned for toll roads *not* being necessary were "not wanting to pay another tax" (21%), followed by "don't want to pay the toll," "need to look for alternative transportation funding," and "need to look for transportation alternatives" (10% each). When specifically asked about toll roads under construction in the region, the majority (51%) supported such construction. When provided with a set of alternatives to building toll roads, 20% did not believe there were better alternatives to toll roads, 19% wanted increased funding for public transit, and 11% wanted to build more roads with current transportation dollars. When provided with a list of potential traffic relief strategies, 68% preferred "converting an existing lane into a carpool lane." Least preferred was implementing a local gas tax (23% preferred). At the time of the survey, several toll roads were under construction or planned, including U.S. 183A, SH 45 North, Loop 1 North, and SH 130.

25. Austin, Texas (2005)

Method: Focus groups. Number: Four groups. Participants: Not reported.

In July, the Central Texas Regional Mobility Authority sponsored focus groups to discuss transportation issues (*41*). Many had used toll roads in other areas of the country and reported having good experiences. "Tollways are a good idea but only for new construction, not for existing roads." The general consensus for funding new roads was that it should *not* come from taxes because taxes were already too high. Most participants would not mind paying tolls because the planning that goes

into them is much superior to the standard roadways. There appeared to be a high expectation that tolls would be eliminated once the roadway is paid for. Perceived benefits of new tolls included less pollution, increased fuel efficiency, shortening of travel time in emergencies, increased safety—fewer accidents, improved quality of life, and convenience.

Method: Survey. Universe: Not reported. Sample size: N = *1,060. Margin of error: ±3 percentage points. Sample type: Not reported.*

In August, the Central Texas Regional Mobility Authority commissioned a survey of local attitudes about tolls, taxes, and traffic (*41,42*). Thirty-eight percent of the respondents believed the best way to pay for new roads was to charge tolls and 37% said the best way was to increase taxes. When asked whether there was a need for toll roads, half of central Texans (50%) said "no" and 42% said "yes." Sixty percent believed adding toll lanes to existing roads was a "bad idea," compared with 26% who believed it was a "good idea." Seventy-eight percent believed "converting existing roads into toll roads" was a "bad idea," compared with 13% who believed it was a "good idea." Nearly half (47%) said "yes" they "plan to use toll roads in central Texas," and 44% said "no." Sixty-eight percent thought it was a "bad idea" to charge "higher tolls during rush hour to discourage unnecessary trips," and 25% thought it was a "good idea." Fifty-three percent thought is a "good idea" to charge "lower tolls during off-peak hours to encourage drivers to avoid peak-hour travel," and 37% thought it was a "bad idea." One-half (50%) supported the "efforts of groups who oppose the toll road plan for various philosophical reasons," and 31% opposed the efforts of these groups.

26. Statewide Utah (2006)

Method: Survey. Universe: Utah residents. Sample size: N = *415. Margin of error: ±5%. Sample type: Not reported.*

In February, a poll sponsored by the Utah DOT (UDOT) showed that 55% of Utah residents surveyed would support construction of toll roads in the state if it meant a needed road could be built within the next 3 years versus the next 20 years (*43*). Almost 40% opposed toll roads, regardless of when a new road was to be built. The poll was taken when SB80, a bill that would allow UDOT to enter into public–private partnerships (PPPs) to build toll roads, was being sponsored. The bill eventually passed.

27. El Paso, Texas (2006)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

In February, an *El Paso Times*/KVIA ABC 7 poll showed that 59% of those residents of El Paso polled opposed toll roads as a way to pay for expensive transportation projects, whereas 38% favored them (*44*). These were the same percentages found in 2004. The article stated that two weeks before the poll, the El Paso City Council voted 5 to 3 to petition the Texas Transportation Commission for the power to establish a Regional Mobility Authority that would use road toll revenues to provide the supplemental funding needed to get expensive and much needed highway projects started decades ahead of schedule. The article also mentioned that tolls would not be paid at traditional toll booths, but electronically.

28. San Clemente, California (2006)

Method: Survey. Universe: San Clemente residents. Sample size: N = *400. Margin of error: Not reported. Sample type: Not reported.*

In July, the city of San Clemente, California, commissioned a survey (the second in two years) to gauge local residents' views of and their satisfaction with city services (*45*). Survey results indicated that managing traffic congestion and managing growth were the most important issues (both at 68%) to residents compared with preventing ocean pollution (63%), fire/paramedic service (62%), policy service (61%), and beach maintenance (59%). Fifty-five percent of respondents supported the extension of the Foothill South tollway, whereas 37% opposed it. Also related to transportation, 66% supported an expansion of the Metrolink train service, whereas 22% opposed it.

29. Statewide Maine (2006)

Method: Survey. Universe: Maine residents, 18 years of age or older, head of household. Sample Size: N = *400. Margin of error: ±4 percentage points. Sample type: RDD.*

In December, the Maine Turnpike Authority (MTA) commissioned a telephone survey to benchmark a variety of citizen perceptions and attitudes (*46*). Surveys had been conducted since 1999. Fifty-six percent of respondents said they supported the idea of funding the fixing of a highway or bridge for safety reasons through establishing tolls on the project as compared with 19% who would support an increase in the state gas tax, and 9% who would support canceling the project. The same percentage (56%) would support the idea of funding a new highway, bridge, or bypass through establishing tolls, 16% would support increasing the state gas tax, and 10% would support canceling the project. Sixty-nine percent opposed using toll revenues from MTA to fund other state budget needs, whereas 24% favored the idea. Nine of 10 (88%) rated the Maine Turnpike as being either "good" or "excellent." Eight of 10 (81%) believe that the MTA is doing either a "good" or an "excellent" job of managing the Turnpike. Nearly half (47%) found a statement pertaining to inadequate funding for transportation projects to be either "somewhat believable" (37%) or "very believable" (9%).

EXPRESS TOLL LANES

This section presents public opinion data associated with express toll lanes—a type of road pricing system where motorists must pay a toll to gain access to lanes that are separated from the mainstream traffic. The lanes are "express"; there are no toll booths. The express toll lanes use a system of cameras and/or transponders to toll vehicles automatically. Typically, these tolls will increase as traffic density within the tolled lanes also increases. This pricing scheme limits the traffic demand within the lanes, ultimately resulting in lanes that can travel freely despite the congestion in the mainstream travel lanes.

30. Orange and Los Angeles Counties, California (1995)

Method: Survey. Universe: SR 91 corridor users. Sample size: N = *645. Margin of error: Not reported. Sample type: Recruited from license plate capture.*

In the fall, an opinion survey of peak period travelers in the SR 91 corridor was sponsored by California Polytechnic State University as part of the evaluation of the variable-toll express lane facility (*47*). This survey was done prior to the lanes being opened. SR 91 was the first site of congestion pricing in the United States. It is located between the junction of SR 91 and 55 at the Anaheim and Orange/Riverside County Line. The facility provided two extra lanes in each direction and incorporated a number of innovative features including tolls that vary by time of day based on expected congestion in the corridor, the requirement that all users be registered customers and carry identifying transponders, the use of discount pricing as an incentive to HOVs, photo enforcement of toll violations, and that the facility was developed and operated by a private company for profit.

The express lanes were built within what had been one of the most heavily congested freeway corridors of California, with typical peak period delays of between 30 and 40 min. The opinion survey was administered to sub-samples of travelers who participated in an origin–destination travel survey. The idea of providing extra toll-financed lanes to bypass congestion received approval ratings of from 62% to 68% among the different occupancy groups reported (i.e., SOV, HOV-2, and HOV-3). Reported approval rates were obtained by dividing the number of respondents stating that they believe the concept is a good idea by the total number of individuals who responded. Approval ratings for the idea of varying tolls based on congestion were lower—ranging from 40% to 45% among occupancy groups. Approval ratings for using toll financing for new highways ranged from 61% to 69%. Between 28% and 33% of the occupancy groups rated toll financing as the best method of paying for new highways (higher than for gas taxes, vehicle registration fees, and sales tax). Most respondents (75% to 80%) approved of replacing toll booths with electronic toll and traffic management technology. The idea of operating the express lanes as a private, for-profit enterprise was not popular, receiving approval ratings of from 37% to 45%.

31. Orange and Los Angeles Counties, California (1996)

Method: Survey. Universe: SR 91 corridor users. Sample size: N = *505 (457 from 1995 survey and 48 new). Margin of error: Not reported, specified that this varies by subgroup. Sample type: Panel and recruited from license plate capture.*

In April–May, a supplemental opinion-only survey was conducted to capture commuters' viewpoints a few months after the SR 91 express lanes opened, during the settling-in period. The survey was sponsored by California Polytechnic State University as part of the evaluation of the variable-toll express lane facility (*47*). Approval for providing extra toll-financed lanes to bypass congestion ranged from 60% to 82% among the different occupancy groups and lane types reported (i.e., free/toll SOV, free/toll HOV-2, and free/toll HOV-3). Approval ratings among toll lane users, which were in the 70% to 80% range, were consistently higher than among non-users of toll lanes. The highest ratings were among toll HOV-2 users. Approval ratings for the idea of varying tolls based on congestion ranged from 51% to 69% among occupancy groups. Approval ratings for using toll financing for new highways ranged from 55% to 68%. Between 18% and 43% of the occupancy groups rated toll financing the best method of pay for new highways (higher than for gas taxes, vehicle registration fees, and sales tax). The toll SOV group was least likely to rank toll financing as the best method. Most respondents greatly approved of replacing toll booths with electronic toll and traffic management technology, with 70% to 98% approval. The idea of operating the express lanes as a private, for-profit enterprise received mixed approval ratings of 37% to 65%. The toll SOV group expressed the lowest approval for this concept.

32. Orange and Los Angeles Counties, California (1996–1997)

Method: Survey. Universe: SR 91 corridor users. Sample size: N = *489 (332 from 1995/1996 surveys and 157 new). Margin of error: Not reported; specified that this varies by subgroup. Sample type: Panel and recruited from license plate capture.*

In the fall/winter, a third opinion survey of peak and off-peak period travelers in the SR 91 corridor was again sponsored by California Polytechnic State University as part of the evaluation of the variable-toll express lane facility (*48*). This survey was done about one year after the lanes opened. Approval for providing extra toll-financed lanes to bypass congestion ranged from 60% to 81% among the different occupancy groups and lane type reported (i.e., free/toll SOV, free/toll HOV-2, free/toll HOV-3, and off-peak). Approval ratings were higher among toll lane users and off-peak users than among free lane

users. Approval ratings for the idea of varying tolls based on congestion ranged from 59% to 72% among occupancy groups. Approval rating for using toll financing for new highways ranged from 61% to 78%. Between 26% and 41% of the occupancy groups rated toll financing as the best method of pay for new highways (compared with gas taxes, vehicle registration fees, and sales tax). Most respondents greatly approved of replacing toll booths with electronic toll and traffic management technology, at 76% to 92% approval. The idea of operating the express lanes as a private, for-profit enterprise received approval ratings of 41% to 75%. Approval of SOV and HOV-2 toll paying users was in the 70% to 75% range.

33. Orange and Los Angeles Counties, California (1999)

Method: Survey. Universe: SR 91 corridor users. Sample size: N = *1,788 (1,375 new, 348 respondents from 1996 survey, 65 from 1997/1998 surveys by University of California, Irvine researchers). Margin of error: Not reported; specified that this varies by subgroup. Sample type: Panel, recruited from license plate capture, RDD.*

In the fall of 1999, an opinion survey was sponsored by California Polytechnic State University as part of the evaluation of the SR 91 variable-toll express lane facility (*48*). The principal objective of the survey was to update earlier investigations of public opinion. Of particular interest was the possible influence on travel and opinion of the new Eastern Toll Road, which opened in October 1998, about a year before this survey was conducted. Approval for providing extra toll-financed lanes to bypass congestion ranged from 50% to 75% among the different occupancy groups and lane type reported (i.e., free/toll SOV, free/toll HOV, free/toll HOV-2, and free/toll HOV-3+). Toll lane users were more supportive than non-users.

Approval ratings for the idea of varying tolls based on congestion ranged from 30% to 50% among occupancy groups. Among SOV commuters, a very large difference in approval was observed between toll lane users (53%) and non-users (28%). Higher-income commuters ($100,000+) were found to show higher approval of variable tolls, as well as of toll financing in general, compared with other groups. The idea of operating the express lanes as a private, for-profit enterprise received approval ratings in the 30% to 45% range. The approval levels for toll lane users generally exceeded non-users. The researchers noted that there were recent highly public controversies occurring in connection with this project. When asked whether it was a good idea to let SOVs use underutilized carpool lanes for a fee, provided the lanes do not become congested, approval ratings ranged from a low of 42% for free HOV users to a high of 74% for toll SOV users. About 45% to 50% of recent HOV commuters approved of the idea, compared with 59% to 74% of SOV commuters. Approval was highest among commuters with household incomes of $100,000+.

34. Orlando, Florida (2000)

Method: Focus groups. Number: Ten groups, with approximately 10 individuals in each. Participants: Individuals who use I-4 during peak period 3+ days per week; Individuals who use I-4 at least once per week, and Orlando visitors who used I-4 during current stay.

From May to June, focus groups were conducted for Florida's Turnpike to determine how Orlando-area I-4 travelers feel about current travel conditions in the I-4 corridor and transportation improvement alternatives (*49*). Participants raised negative sentiments concerning adding tolls to new lanes on I-4. However, most said they would use the express lanes for at least some trips if they were built as conceived, with tolls. Participants' level of use would depend on the toll rates and the amount of time savings that the lanes provided. Positive reaction to the plan came as a result of conveying the full rationale for why the tolled lanes would be necessary and carefully presenting key details of the concept.

35. Miami, Florida (2001–2002)

Method: Focus groups. Number: Six groups, with 8 to 14 individuals in each. Participants: Commuters who use freeways during peak period 3+ days per week; other individuals who use freeways at least once per week; English and Spanish.

In July 2001, focus groups were conducted for the Miami Value Pricing Project to explore reactions to value pricing and express lane alternatives and to pretest a survey instrument (*50*). Most participants reported that they would likely use express lanes at least occasionally if they were available and if they provided acceptable levels of service while not deteriorating conditions on existing lanes. They appreciated the opportunity to have a "real choice" as opposed to current conditions where the available choices involved congested routes during the peak periods. Several said that the opportunity to use these lanes would influence them to acquire SunPass, the Florida DOT's prepaid toll program. Some were concerned that those with lower incomes would have to use the regular lanes, with wealthier travelers using the express lanes. Most did not react favorably to peak pricing. Higher peak prices were believed to unfairly penalize commuters. Virtually all disliked dynamic pricing. They liked the idea of open road tolling and especially the removal of toll plaza bottlenecks.

Method: Focus groups. Number: Six groups, with 8 to 14 individuals in each. Participants: Commuters who use freeways during peak period 3+ days per week; other individuals who use freeways at least once per week; English and Spanish.

In March 2002, a second set of focus groups were conducted after some of the value pricing options had been refined (*50*). In this set of groups, participants were shown a value pricing

video and two sets of concept plans before discussing value pricing alternatives. Four groups were with cash customers and two were with SunPass customers. Most cash customers liked the express lanes and indicated that they would use them at least on occasion. At the same time, all indicated that they would prefer to have the ten-lane roadway open to general use, which was viewed as being fairer to everyone. They did not like the idea of increasing tolls during peak periods and lowering tolls during the off-peak hours. SunPass customers were more opinionated; participants were skeptical as to whether express lanes would work safely without delays. However, most said they personally would use the express lanes if a beneficial time savings was realized.

Method: Survey. Universe: Focus group participants and other Miami area residents and visitors. Sample size: N = *1,161. Margin of error: N/A. Sample type: Intercept.*

In September 2001, a stated preference survey was administered to provide estimates of the population's values of time and the overall response to the value pricing concepts (*50*). In response to the statement, "tolls should be charged on the new I-4 express lanes to ensure that they are not congested," respondents were almost evenly divided between agreeing (40%) and disagreeing (43%). More than half (54%) agreed that "cars with two or more occupants should pay reduced tolls on the new I-4 express lanes." Almost one-third (31%) disagreed. Only 13% agreed and 72% percent disagreed with the statement, "tolls should be higher whenever there is congestion on toll roads and the new I-4 lanes." Respondents also tended to disagree with the statement, "tolls should be higher during peak periods and reduced during off-peak periods." Sixty-two percent disagreed with the statement and 25% agreed. Less than half (44%) agreed that "tolls should be charged to help pay for highway construction." Thirty-eight percent disagreed.

36. Twin Cities, Minnesota (2002)

Method: Survey. Universe: Twin Cities' citizens. Sample size: N = *800. Margin of error: Not reported. Sample type: Not reported.*

In January, a survey of residents found that 57% supported "having the option of paying a fee to use an uncongested freeway when in a hurry," compared with 51% in the same survey that supported a gas tax increase (*51*).

37. Twin Cities, Minnesota (2003)

Method: Survey. Universe: Adults. Sample size: N = *1,000. Margin of error: Not reported. Sample type: Not reported.*

In January, a survey of adults by the *Star Tribune* revealed that 59% of those surveyed suggested increasing user fees as a means to manage the budget shortfall (*51*).

38. Statewide Minnesota (2004)

Method: Survey. Universe: Minnesota adults. Sample size: N = *821. Margin of error: ±3.4%. Sample type: Random telephone.*

In January, the results of a *Star Tribune* Minnesota Poll found that 69% of Minnesota adults polled would support paying for new highway lanes with tolls collected from drivers who choose to use them (*52*). Only 23% preferred to increase the gas tax to build new lanes and open them to everyone. Support for tolls was the same in the metro area as it was statewide. The poll was taken the month that the Minnesota DOT was preparing to invite private companies to present plans to finance and build new lanes in the metro area and recoup their investment by charging tolls. Poll respondents indicated that they would support tolls because users would pay. The article quoted residents as saying, "you don't have to use the toll road; but if you want to get out of congestion and use the toll roads, that's entirely up to you." "We've got enough taxes." "I like tolls because I wouldn't use them and I wouldn't pay for it." Those who favored a gas tax increase saw it as a fairer way to pay for roads. "I think transportation is for everyone. To be fair about it, it's going to cost everybody. A toll road is very selective [and] for the affluent." The poll indicated that those who supported toll lanes included individuals of all ages and incomes, and nearly equal numbers of men and women. But support was more widespread among individuals from 18 to 24 years old (78%) and those making less than $30,000 a year (76%). A larger percentage of registered Republicans than the Democratic–Farmer–Labor party supported the tolled lanes.

39. Miami–Dade County, Florida (2005)

Method: Focus groups. Number: Nine groups, each with approximately 10 individuals. Participants: Residents from a broad area surrounding the proposed project and users of the Homestead Extension of Florida's Turnpike or SR 836; English, Spanish, Creole.

In February, focus groups were conducted by Florida's Turnpike Enterprise to determine how area travelers felt about the current travel conditions in the Homestead Extension of Florida's Turnpike and SR 836 corridors and about potential traffic-improvement alternatives, such as managed lanes (*53*). A short version of a managed lanes video was shown to respondents. Most participants seemed to understand that the project would involve construction of new lanes in the center of existing facilities. However, few fully understood the managed lane concept. They did not recognize that the lanes would be managed to ensure close to free flow conditions and most did not understand how prices might vary to achieve that objective. Once participants came to understand the concept, most believed it addressed both some of their personal needs as well as traffic issues in the study corridors. Respondents were asked how their use of the managed lanes would change at four different price points: $1, $2, $3, and $5 per trip above

current tolls. Most said that their use of the managed lanes would change at the $3 and $5 levels—their uses being restricted to much more occasional situations and emergencies. Participants were asked to rate the amount that they personally would benefit from the managed lane project on a scale of 1 to 5, with 1 representing no real benefit and 5 representing a significant benefit. Almost half the participants saw the project as providing moderate (a "3") benefits to them personally. They were also asked to rate the project overall in terms of how good it was for the area as a whole. Nearly three-fourths rated the project a "4" or a "5."

40. Denver, Colorado (2006)

Method: Survey. Universe: Residents living within 2 miles of existing toll roads or planned toll express lanes. Sample size: N = *384. Margin of error: Not reported. Sample type: Not reported.*

In April, a survey conducted for the Colorado DOT found that 78% of respondents believed toll express lanes were a "good way to reduce congestion on Denver area highways," and 66% approved of them as a means of facilitating traffic flow (*54*). Sixty-eight percent believed tolling was a good way to finance extra capacity. Tolls were preferred as the "best funding for road building and maintenance"—(45%), followed by the issue of bonds (23%), higher gasoline taxes (16%), increased license fees and vehicle registration (11%), and higher income tax (4%).

41. Lee and Collier Counties, Florida (2006)

Method: Focus groups. Number: Eight groups, each with nine or 10 individuals. Participants: Individuals making three or more round trips per week on I-75, individuals making one or two round trips per week on I-75, and individuals residing in Florida six or fewer months per year.

In November, focus groups were conducted for Florida's Turnpike Enterprise to explore the public's reactions to current I-75 conditions and possible implementation of I-75 Express Lanes (*55*). Most participants understood that existing funding would not support increasing capacity on I-75 and that tolls would therefore be necessary. The express lane concept was very appealing to most participants because it offered a choice of lanes. Having an option with increased reliability was cited as one of the most important benefits of the express lane. Initial concerns with the express lane concept were: safety entering and exiting the lanes, especially during peak periods and having enough traffic use the lanes to justify the added expense.

Virtually all participants said they would use the express lanes for at least some of their trips. Most would be selective about when to use the express lanes. Seasonal residents were generally less concerned about toll amounts because most traveled when traffic was not heavy and when they were not in a hurry. Trips to the airport were frequently cited as examples of when they would most likely use the express lanes. None said that requiring SunPass or other electronic tolling would be an obstacle to their use of the facility. Most understood and supported the concept of variable pricing, especially when it was associated with providing reliable service during peak periods. Most believed that dynamic pricing would present difficult real-time decisions on whether to use the facility that could present safety issues. Most believed that it would be best to prohibit trucks from the express lanes.

42. Collier County, Florida (2007)

Method: Survey. Universe: Collier County residents 18 years of age or older. Sample size: N = *710. Margin of error: ±4.0%. Sample type: Random telephone.*

In April, a citizen survey was conducted for the Collier County government to give residents the opportunity to inform county officials about their policy preferences and to grade the effectiveness and efficiency of county services and programs (*56*). One question on tolling was included in the survey: "Would you support or oppose adding tolls to the new lanes that will be constructed on Interstate 75 in Collier and Lee County this year in order to speed up construction of additional traffic lanes on the interstate in the future." In response 39% supported adding tolls, 49% opposed them, and 12% were not sure.

HIGH-OCCUPANCY TOLL LANES

This section presents data on HOT lanes. HOT lanes exact a toll on vehicles not meeting occupancy requirements that wish to use lanes or entire roads that are designated for the use of higher-occupancy vehicles. Tolls are collected exclusively by electronic toll collection systems. The concept is a better use of the capacity formerly designated as HOV lanes because drivers can be eligible to use the facility either by meeting the minimum passenger requirement or by choosing to pay a toll to gain access to the facility.

43. San Diego, California (1996)

Method: Focus groups. Number: Three focus groups. Participants: Residents of the primary market area.

In September, market research activities were conducted for the San Diego Association of Governments as pre-project baseline tasks for the I-15 Congestion Pricing Project (*57*). It was a pilot program that for a monthly fee allowed a limited number of solo drivers to use an 8-mile stretch of carpool lanes (to be known as ExpressPass customers). Revenues generated from the project are used to fund transportation alternatives such as transit and rideshare strategies in the I-15 corridor. The lanes are located between State Routes 56 and 163 in northern

San Diego County. The pilot program research tested attitudes and opinions of commuters traveling in the corridor during peak periods. Among focus group participants, there was general dissatisfaction with the rush hour commute on I-15. Frequent commuters were enthusiastic about being able to access the HOV lanes during peak travel times for a cost.

Method: Survey. Universe: Residents of the primary market area. Sample size: N = *400. Margin of error: Not reported. Sample type: RDD.*

A telephone survey was also conducted (*57*). About two-thirds of respondents expressed a "very" or "somewhat" favorable impression of the I-15 congestion pricing program. Forty-three percent of respondents believed that the program would make a difference in their commute. Most (82%) liked the idea of using program revenues to pay for better transit service. Reasons given for a favorable impression of the program included "saves time" and "eases congestion." More than two-thirds (67%) believe the time they would save would encourage them to sign up for the program. Reasons given for an unfavorable impressions were "keep lanes for carpooling" and "too many will sign up."

44. San Diego, California (1997)

Method: Focus groups. Number: Four groups. Participants: Current ExpressPass users, prior ExpressPass users, HOV users, and SOV users.

In July, focus groups were conducted for the San Diego Association of Governments to assist the agency in evaluating the I-15 ExpressPass program (*58*). All participants cited the same benefits to using the express lanes—reduces stress, saves time, improves the safety of their commutes, is good for emergencies, facilitates getting to work on time, eases congestion, maximizes utilization of the lanes, and increases options available to SOV users. Participants in all groups supported a switch from the monthly pass to a per-use fee, but most strongly opposed the dynamic variable price concept and associated it with price gouging.

45. San Diego, California (1997)

Method: Survey. Universe: Current and former ExpressPass users, I-15 corridor users, and I-8 corridor users. Sample size: N = *1,513. Margin of error: Not reported. Sample type: Customer list for ExpressPass users, RDD for I-15 and I-8 corridor users.*

In the fall, the first wave of an Attitudinal Panel Survey was conducted to examine how the project affected carpoolers and other HOV user groups over the 3-year period (*59*). The study was sponsored by the San Diego Association of Governments and was conducted by the San Diego State University Foundation (*59*). To ensure that sufficient numbers of carpoolers populated the original sample and would be present in continuing panel waves, carpoolers were over-sampled using quotas for I-15, the study area, and I-8, the control area. The same questions with only minor revisions were asked during each panel wave, with the intent to measure characteristics of travel behavior, attitudes, and perceptions during each wave. Respondents were asked whether they "considered the ExpressPass program to be a success." Eighty-nine percent of current users said "yes," compared with 40% of former subscribers. There also are differences in opinion between I-15 solo drivers and I-15 carpoolers. Twenty-four percent of solo drivers versus 33% of carpoolers believed the project was a success. Nearly 40% of I-15 solo drivers and carpoolers were unaware or had no opinion about the program. Similar percentages of I-8 solo drivers (22%) and I-8 carpoolers (26%) believed that the project was a success, and 60% of the I-8 solo drivers were unaware or had no opinion about the program.

When asked whether "solo drivers should be allowed to use the Express Lanes for a fee," 95% of current users agreed, of which 84% strongly agreed. Agreement was also high among former users (86%), I-15 solo drivers (65%), and I-15 carpoolers (56%). In general, I-15 users had more favorable attitudes than I-8 users and, on each route, solo drivers had more favorable attitudes than carpoolers.

When asked about the perceived "fairness" of the program to regular lane drivers, all segments were positive—90% of current users said the program was "fair" as well as 73% of former users, 72% of I-15 solo drivers, and 68% of I-15 carpoolers.

46. San Diego, California (1998)

Method: Survey. Universe: ExpressPass users, I-15 corridor users, and I-8 corridor users. Wave 2 sample size: N = *1,501, of which 985 were panel and 516 were replacement sample. Wave 3 sample size:* N = *1,576, of which 660 were panel (all 3 waves), 301 were waves 2 and 3, and 593 were new. Margin of error: Not reported. Sample type: Customer list for ExpressPass users, RDD for I-15 and I-8 corridor users.*

In spring and fall 1998, the second and third waves of the Attitudinal Panel Survey were conducted on behalf of the San Diego Association of Governments by the San Diego State University Foundation (*60*). Respondents were asked whether they "considered the ExpressPass program to be a success." Of the Wave 2 respondents, 79% of current users said "yes," compared with 28% of solo drivers and 45% of carpoolers. Among the I-8 control groups, 30% of solo drivers and 24% of carpoolers believed the program had been a success. Of Wave 2 current users, when asked whether "solo drivers should be allowed to use the express lanes for a fee," 94% agreed. Agreement was also high among I-15 solo drivers (69%) and I-15 carpoolers (64%).

For Wave 3 respondents, 95% of current users said "yes," along with 73% of I-15 solo drivers and 69% of carpoolers. Within the I-8 control group, perceptions about the success of the project increased among solo drivers (32%) and carpoolers (35%). When asked about the perceived "fairness" of the program for regular lane drivers, Wave 2 respondents were positive—84% of current users said the program was "fair," as well as 68% of I-15 solo drivers and 67% of I-15 carpoolers. For Wave 3 respondents, 88% of current users said the program was "fair" compared with 68% of I-15 solo drivers and 74% of carpoolers.

47. San Diego, California (1998)

Method: Focus groups. Number: Four groups. Participants: FasTrak users, HOV users, SOV users.

In August, focus groups were conducted to assist the agency in evaluating the I-15 FasTrak program (*61*). Focus groups were undertaken with FasTrak users, HOV users, and SOV users. Most users were satisfied with the program; however, they were concerned about the cost. Cost was also mentioned by the SOV group as the reason they did not use FasTrak. Most respondents did not understand how the variable pricing worked, and part-time users expressed concern that the variable pricing was not working. Most did not know how the revenue generated by FasTrak was being used.

48. San Diego, California (1999)

Method: Survey. Universe: FasTrak users, I-15 corridor users, and I-8 corridor users. Wave 4 sample size: N = *1,515, of which 674 were panel (4 waves), 757 were panel (2 or 3 waves), and 84 were refreshment. Wave 5 sample size:* N = *1,502, of which 342 were panel (all 5 waves), 978 were panel (2, 3, or 4 waves), and 182 were new. Margin of error: Not reported. Sample type: Customer list for ExpressPass users, RDD for I-15 and I-8 corridor users.*

In spring and fall 1999, the fourth and fifth waves of the Attitudinal Panel Survey were conducted on behalf of the San Diego Association of Governments by the San Diego State University Foundation (*62*). Respondents were asked whether the I-15 FasTrak program was a success. The trend toward increasingly positive views of the project's success over the course of the first three waves was generally maintained in Waves 4 and 5 for FasTrak users, FasTrak non-users, I-15 solo drivers, and I-8 solo drivers. Both I-15 carpoolers and I-8 carpoolers displayed greater apparent volatility.

At Wave 4, 62% of I-15 carpooler and 41% of I-8 carpooler respondents viewed the project as a success. However, at Wave 5, 55% of I-15 carpooler and 29% of I-8 carpooler respondents viewed the project as a success. Respondents were asked whether they believed solo drivers should be allowed to use the I-15 express lanes for a fee. The intent of this question was to determine support for the FasTrak program concept. The majority of current FasTrak users (88% in both Waves 4 and 5) continued to "strongly agree" that solo drivers should be allowed to use the express lanes for a fee. FasTrak non-users held similar views, but with slightly lower percentages (78% in Wave 4 and 82% in Wave 5). Smaller percentages, but majorities of other I-15 users and I-8 users strongly agreed or somewhat agreed with the concept (58% to 77% in Wave 4 and 66% to 70% in Wave 5).

Wave 4 respondents were asked whether they believed the I-15 FasTrak program was fair to I-15 regular lanes users. Ninety percent of FasTrak users said the program was "fair" as did 85% of non-users, 67% of I-15 solo drivers, and 84% of I-15 carpoolers. Perceptions of fairness increased for Wave 5 with the exception of I-15 carpoolers—96% of users, 90% of non-users, 74% of I-15 solo drivers, and 70% of I-15 carpoolers. Wave 4 and 5 respondents were also asked whether they believed the I-15 FasTrak program was fair to I-15 carpool lanes users. Perceptions of fairness were high among all segments (71% to 94% for Wave 4 respondents and 69% to 96% for Wave 5).

49. Puget Sound Region, Washington (2001)

Method: Survey. Universe: Residents in the Puget Sound area. Sample size: N = *1,161. Margin of error: Not reported. Sample type: Not reported.*

In May, a telephone survey conducted as part of a Washington State DOT Managed Lanes Study found that 66% of those polled did *not* want to convert existing HOV lanes to HOT lanes (*63*). More than 40% were willing to pay tolls for a faster trip, and 58% would not support a toll. About 50% supported varying the toll rate in the express lanes to manage traffic flow to improve congestion and transit services.

50. San Diego, California (2001)

Method: Focus groups. Number: Three groups. Participants: I-15 main lane users, express lane users, and transit riders.

In July, focus groups were conducted for the San Diego Association of Governments as part of community outreach activities before an expansion of the existing HOT lanes on I-15 (*64*). The existing HOT lanes had been in operation for more than 5 years. The new project would add four managed lanes with a movable barrier in the median of I-15 to accommodate three lanes in the peak direction. The lanes would give high priority to HOVs and Bus Rapid Transit (BRT). Support for the project was found among participants in all three groups. Each group mentioned the length of time until project completion as a disadvantage of the project. Equity concerns within the groups (i.e., fairness of tolls for lower-income drivers) dissolved and support for the project strengthened

when participants received clarifying information on features of the project, including the BRT component (85% of each group supporting). That the lanes would ease congestion for everyone on the main lanes was viewed as a balancing force in the "equity equation." The issue of fairness was raised in the groups—"I've paid once for the lanes and now I have to pay again. That's unfair." The double taxation argument was most often raised by higher-income Caucasian participants among the main lane and FasTrak user groups.

Method: Survey. Universe: Residents of target zip codes, 18 years of age or older and who were corridor users, English and Spanish speaking. Sample size: N = *800. Margin of error: ±3.4 percentage points. Sample type: RDD and FasTrak customer lists.*

In September, a telephone survey was conducted as part of the community outreach for the I-15 managed lanes program (*64*). Most respondents (83%) were aware of the managed lanes. Virtually all (92%) agreed that it was a "good idea" to have some sort of time-saving option on I-15. Sixty-six percent (66%) approved of the FasTrak program. (The program was presented as one that allowed motorists who drove alone to travel in the express lanes for a fee that would be charged electronically each time they used the lanes, with the price varying with the amount of traffic in the express lanes.) Twenty-eight percent disapproved of the program. Among FasTrak customers, approval was 88% compared with 66% for other I-15 users. Extending the toll lanes was the preferred method to alleviate congestion on other parts of I-15, even if there were additional free lanes. Approval decreased with an increase in age, and increased with an increase in household income. More respondents (77%) agreed with the statement: People who drive alone should be allowed to use the I-15 express lanes for a fee (compared with 66% for the FasTrak program itself). Seventy-one percent of respondents agreed with the statement "the toll is a good way to keep the express lane moving quickly," and 26% disagreed.

51. Denver, Colorado (2003)

Method: Focus groups. Number: Five groups. Participants: Different commuter groups and business owners.

In spring, public outreach activities were conducted in the Denver area to gauge public perceptions and opinions on the concept of HOT lanes as applied on I-25 north of downtown Denver (*65*). Sponsored by the Colorado DOT, the outreach activities included focus groups and a stated preference telephone survey. The participants in the focus groups were generally supportive of the HOT lanes concept; however, somewhat negative predispositions toward the DOT or the Regional Transportation District prevented enthusiastic support. They believed that discussions of revenues from HOT lanes should focus on uses, like "bus services" or "roadway improvements," not on revenue-receiving agencies (e.g., the Regional Transportation District). In voicing approval, many participants cited the reduction of congestion in the general purpose lanes. Several participants in each group voiced a concern that lower-income drivers would not be able to afford the cost of using the HOT lanes. There was general agreement that HOV lanes are valued, but underutilized. Most believed HOT lanes were an acceptable means of using excess capacity. However, many believed that HOT lanes were a "band-aid" solution to the congestion problem and that longer-term solutions must be found (i.e., more carpools and transit use).

Method: Survey. Universe: Residents who commute along the I-25 corridor north of Denver. Sample size: N = *350. Margin of error: ±3%. Sample type: Not reported.*

In terms of HOT lane survey results, it was found that nearly twice as many residents and commuters on I-25 were in favor than were opposed (*65*). A large portion of respondents were undecided as well. Support or opposition was measured initially and then again after more information and clarification on how the HOT lanes could be used without paying a toll. Respondents were initially inclined to state opposition and tended to change their opinion favorably with the additional information. Nearly half of low-income respondents (45%) supported the concept, 22% disapproved, and 33% were undecided. Additionally, younger respondents were more favorable than older respondents.

52. Alameda County, California (2003)

Method: Survey. Universe: Residents and voters in Alameda, Contra Costa, and San Joaquin counties from cities that contribute significantly to the commute of the Sunol Grade. Sample size: N = *800. Margin of error: Not reported. Sample type: Not reported.*

In August, a poll was conducted with questions on the Smart Car Pool Lane over the Sunol Grade as part of a larger poll for the Congestion Management Agency on their transportation plan (*66*). After giving basic factual information about what the lane was, how it would work, and without giving any reasons or arguments for why it was a good or bad idea, respondents were asked what they thought of the Smart Car Pool Lane. Overall, 58% supported the project ranging from 57% in Alameda County to 60% in Contra Costa and San Joaquin counties. More information was then provided regarding how the project would work and the different elements of the project so that respondents had time to think about the project. After hearing more information and having additional time, support grew significantly to 67% overall. The important issues in support of the project were: (1) carpools travel without cost, (2) there is no physical toll booth since it uses FasTrak technology, and (3) it would generate money both for the completion of a northbound lane and for expanding transit alternatives in the corridor.

53. Oak Brook, Illinois (2003)

Method: Focus groups. Number: Two groups of 11 individuals each. Participants: Randomly selected, frequent, and infrequent I-PASS and cash users of the Illinois Tollway.

In November, focus groups were conducted as part of the larger Illinois Tollway Value Pricing Study (*67*). The groups were designed to obtain a solid qualitative understanding of the issues for the study and to use this understanding to inform the design of the quantitative stated preference survey. Overall, respondents expressed satisfactory opinions of the tollway in comparison with other alternatives. Respondents overwhelmingly disliked the idea of differential rate increases based on time of travel. Commuters have limited flexibility and most would not shift travel times and higher peak prices would unfairly penalize commuters. There was no perceived link in terms of higher costs and more reliable or faster peak travel. Respondents unanimously accepted the addition of lanes as a necessary means of reducing tollway congestion. About half indicated that they would pay at least twice as much for a free-flowing commute (roughly 80 cents per plaza versus the current average of 40 cents). Infrequent and non-peak travelers tended to feel that they were paying enough already and would rather see the addition of lanes without differential tolling. Nearly all believed carpooling was a good idea and that carpools should get preferential pricing; however, almost everyone indicated they would not carpool themselves. Although respondents generally liked the idea of BRT, every one indicated that they would not use it.

54. Dallas/Fort Worth, Texas (2004)

Method: Focus groups. Number: Two groups of 8 to 10 individuals each, and two triad interviews. Participants: Recruited from respondents to a mail survey who had attended the Texas DOT public informational meetings in the Dallas/Fort Worth area.

In spring, focus groups were held to understand potential users' perceptions toward managed lanes (*68*). Most participants did not have a solid monetary idea about the costs of delay, although some were able to relate the costs to a specific trip. Similarly, no one seemed to be able to quantify how much they were willing to pay for a specific time savings. Instead, they stated that willingness to pay depended on the level of necessity for saving time. Participants indicated that they would use managed lanes at least occasionally. Such words as "choice," "preference," "option," and "convenience" were frequently used during the focus group discussions. Before the concept of managed lanes was explained, those who were unfamiliar with the concept viewed it as a new tax and reacted negatively. A significant number of participants questioned how electronic toll collection would work and whether the technology would be able to distinguish SOVs from HOVs. Privacy issues resulting from the use of toll tags did not seem to be a major concern.

There was a fairly strong consensus on the use of toll revenue for building, operating, and maintaining toll facilities. Some suggested that toll revenues be used to reduce taxes. There was an obvious difference between HOV/transit users and other users in views on the effectiveness of HOV lanes. The users in the former group were very positive about HOV lanes as a solution to traffic congestion and strongly advocated the goal of moving individuals rather than cars, although most other users considered HOV lanes to be an underutilized resource.

55. Minneapolis, Minnesota (2004)

Method: Survey. Universe: Individuals within the I-394 travel shed and I-35W travel shed. Sample size: N = *750 I-394 respondents and* N = *250 I-35W respondents. Margin of error: Not reported. Sample type: RDD.*

In November and December, the first wave of an Attitudinal Panel Survey to evaluate the I-394 MnPASS lanes was sponsored by the Hubert H. Humphrey Institute of the University of Minnesota and the Minnesota DOT (*69*). Sixty percent of respondents in the I-394 travel shed and I-35W (i.e., control group corridor) had heard of the MnPass Project on I-394 and knew that it would allow SOVs to use the carpool lanes for a fee and/or that it would charge tolls. Newspaper and TV/radio were their main sources of information. Sixty-three percent believed allowing single drivers to use carpool lanes by paying a toll was a good idea, 27% believed it was a "bad idea," and 10% had no opinion. Individuals residing in the I-394 travel shed were slightly more likely to believe MnPass was a good idea relative to those residing in the I-35W travel shed (64% and 58%, respectively). At the same time, respondents in the I-35W travel shed were more likely to have "no opinion" on this question than those in the I-394 travel shed (15% and 8%, respectively).

Most individuals who approved of the idea believed it was a "better use of carpool lanes" (38%) or it "added capacity to the roadway" (30%). Among those who did not like the idea, they believed either that it would "only benefit the rich" (36%) or that "carpool lanes should be free to all" (24%). Fewer individuals (55%) were supportive of the 24-hour-a-day, 7-day-a-week (24/7) operation of a toll lane program on I-394. Overall, 46% believed both the MnPass concept and operating it 24/7 were "good ideas," and 19% believed both were "bad ideas."

56. Atlanta, Georgia (2004)

Method: Focus groups. Number: Eight groups, with a total of 113 individuals. Participants: Commuters and express bus riders on major Atlanta area highways.

In August, the Georgia State Road and Tollway Authority sponsored focus groups with commuters as part of a feasibility study for HOT lanes and Truck only Toll facilities (*70*).

Participants did not believe that it would be possible to guarantee travel time in a HOT lane, even through the use of dynamic tolls. They are skeptical regarding the travel-time guarantee, but most would use the lane in a time of need. A number of individuals believed that HOT lanes did nothing to address the real problem of congestion on the region's highways. To relieve the problem, it was necessary to take cars off the road through transit improvements. They also believed HOT lane conversions would discourage carpooling. Conversion from HOV-2 to HOV-3 was not supported—individuals believed it was simply too difficult to find an additional person to carpool and therefore HOT lanes penalized HOV users. Individuals believed that HOT lanes should only be considered if they pay for themselves. Most participants cited transit expansion and/or operation as a potential use for HOT lane-generated tolls.

57. Minneapolis, Minnesota (2005)

Method: Survey. Universe: Individuals within the I-394 travel shed and I-35W travel shed. Sample size: N = *549 panel members,* N = *250 transit users, N-151 MnPass subscribers. Margin of error: Not reported. Sample type: Panel and listed sample (transit users and subscribers).*

In the fall, the second wave of an Attitudinal Panel Survey to evaluate the I-394 MnPASS lanes was sponsored by the Hubert H. Humphrey Institute of the University of Minnesota and the Minnesota DOT (*71*). Fifty-nine percent of panel members in the I-394 travel shed and I-35W (i.e., control group corridor) believed allowing single drivers to use carpool lanes by paying a toll was a good idea, 29% believed it was a "bad idea," and 12% had no opinion. Although a majority of respondents in all income groups believed it was a "good idea," higher-income respondents (71%) were more likely to believe it was a "good idea" than were mid-income (60%) or lower-income (62%) respondents. MnPASS acceptance was higher among SOV drivers (70%) and lowest among transit users (45%). Acceptance among carpoolers was high as well (64%).

58. Miami–Dade County, Florida (2004–2005)

Method: Focus groups. Number: 15 groups with 12 to 14 participants in each group. Participants: Stratified random sample of Miami–Dade County residents in each of the county's commission districts; SOV, HOV, and transit users; English, Spanish, Creole.

Between October 2004 and February 2005, focus groups were held as part of the Florida DOT analysis of I-95 managed lane expansion potential between Golden Glades and SR 395 (*72*). Forty-eight percent of SOV and 36% of HOV participants drove cars equipped with SunPass. When the concept of "managed lanes based on open road tolling" was introduced in the groups, the majority of SOV and transit participants approved of the idea, whereas HOV users were more polarized and far less positive, because it would disrupt their use of the HOV lanes. However, 76% of both SOV and HOV participants acknowledged that they would use the managed lanes, at least occasionally, with nearly 20% saying that they would use them all of the time if they could afford it. Only 11% of SOV and 20% of HOV participants said they would never use these lanes because "they don't want to pay any tolls." When the topic of specific toll levels was introduced beginning with a $6 one-way toll, more HOV than SOV participants found it objectionable. SOV participants showed some interest in adding passengers to travel free. It also prompted increased interest in considering express bus service or a vanpool as an alternative to paying tolls, although 54% of SOV and 25% of HOV participants still said they would "most likely continue to commute by myself in my car."

59. Salt Lake City, Utah (2005)

Method: Survey. Universe: Utah residents, heads of household who own and drive a vehicle. Sample size: N = *617. Margin of error: ±4%. Sample type: RDD.*

In July, UDOT commissioned a telephone survey that investigated attitudes toward traffic management options, including HOT lanes, among other attitude and opinion items (*73*). Fifty-six percent of the respondents favored HOT lanes (32% somewhat and 24% strongly) compared with 41% who favored "toll roads to increase revenue" and 37% who favored "toll roads to reduce commute time." Fifty-seven percent favored reversible lanes, and 94% favored HOV lanes. About one-third (34%) reported that they would use HOT lanes once a week or more often, 22% would use toll roads once a week or more often, and 48% would use HOV lanes once a week or more often. Respondents might use toll roads, HOT lanes, HOV lanes, or reversible lanes for emergencies (94%), convenience (82%), to save time (76%), if late for work or an appointment (74%), or just to have the option (63%). Fifty-two percent agreed that "toll road charges that drivers pay are generally reasonable," and 59% agreed that it is reasonable for users of roads to pay for them through toll roads. If UDOT were building a new major highway, most (56%) would prefer building the road in five years using toll roads, compared with 31% who preferred building the road in 20 to 30 years using the traditional method. At the time of the survey, UDOT was considering a HOT lane project for congestion mitigation purposes on I-15. The project would be a conversion of existing capacity, with a flat rate of $50 per month collected by means of stickers in the vehicle window. Opinions of the public had an impact on implementation of the project by changing access points, signing, and striping.

60. San Diego, California (2005)

Method: Survey. Universe: Adults in the San Diego region. Sample size: N = *900. Margin of error: ±3.25%. Sample type: RDD.*

In July, a region-wide survey conducted for the San Diego Association of Governments found that 58% of those polled held a favorable opinion of the I-15 managed lanes (22% very favorable, 36% favorable) (*74*); 14% held an unfavorable opin-

ion (7% very unfavorable). Respondents were asked if "driving by yourself, would you occasionally pay a fee to use the managed lanes during rush hour?" Almost half (48%) said "yes," 41% said "no," and 9% said "depends." The greater a resident's household income, the more likely that individual was to indicate willingness to pay to use the managed lane (73% of those with incomes of $150,000 or greater versus 40% of those with incomes of less than $40,000).

61. Minneapolis, Minnesota (2006)

Method: Survey. Universe: Individuals within the I-394 travel shed and I-35W travel shed. Sample size: N = *1,228; 343 panel members, 178 transit users, 106 MnPass subscribers, 601 new. Margin of error: Not reported. Sample type: Panel, listed sample (transit users and subscribers), and RDD.*

In the spring, the third wave of an Attitudinal Panel Survey to evaluate the I-394 MnPASS lanes was sponsored by the Hubert H. Humphrey Institute of the University of Minnesota and the Minnesota DOT (*75*). Sixty-five percent of panel members in the I-394 travel shed and I-35W (i.e., control group corridor) believed allowing single drivers to use carpool lanes by paying a toll was a good idea, 22% believed it was a "bad idea," and 13% had no opinion (*76*). A majority of respondents in all income groups reacted positively to the idea of allowing SOV drivers to use carpool lanes by paying a toll (*76*). At the same time, acceptance was greater among the higher-income respondents (71%) than among lower-income (64%) or mid-income (61%) respondents. There were no significant differences across the income groups in terms of negative response to the concept. About one-fourth of each income group believed this concept was a bad idea (26% of mid-income, 24% of lower-income, and 21% of higher-income respondents). MnPASS acceptance is highest among SOV drivers (66%) and lowest among transit users (49%). Yet, acceptance among carpoolers was also high (60%).

62. Salt Lake County, Utah (2006)

Method: Survey. Universe: County residents. Sample Size: N = *571. Margin of error: ±4.5 percentage points. Sample type: Not reported.*

In May, a poll showed that 61% of Salt Lake County residents opposed letting individual drivers use the car pool lanes on I-15 for a fee, and 91% said they would not pay the fee to use the lanes (*77*). Qualitative citations in the article quoted one resident as saying, "tolls are just a way for the rich to pay for privileges." A DOT spokesman noted that "people in general don't like to pay for something they perceive that they have gotten for free in the past."

63. Atlanta, Georgia (2006)

Method: Survey. Universe: Individuals 18 years of age or older, residing in Cherokee and Cobb Counties, with telephone service in home, and travel target road segment at least once per week. Sample size: N = *1,500. Margin of error: ±3 percentage points. Sample type: RDD.*

In May, a survey conducted for the Georgia DOT to assess the opinions of individuals in Cherokee and Cobb counties who drove the I-75 corridor between I-285 and I-575 found that respondents were equally divided on whether the HOT concept (i.e., charging vehicles with only one occupant to use the new lanes) was a "good idea" or a "bad idea" (49% each) (*78*). Reasons mentioned for believing it was a good idea were: "people in carpools should be rewarded" (41%) and "it will reduce the flow of traffic" (34%). Individuals tended to believe it was a bad idea because "it was not fair" (43%) and "they were just opposed to tolls" (31%). When asked about HOT-3; that is, charging vehicles with one or two individuals, support decreased and opposition increased significantly (37% and 61%, respectively). When asked about HOT-4 (i.e., charging vehicles with one, two, or three individuals), support decreased again to 29% and opposition increased to 69%. Finally, respondents were asked their opinions about express toll lanes (i.e., regardless of how many occupants, all vehicles tolled). Support for express toll lanes was higher than for HOT-3 and HOT-4 and opposition was less (38% and 59%, respectively). Respondents were asked "if you decided to pay the toll, what is the one reason that would most often influence you." The top reason selected among a provided list was "to reduce overall travel time" (49%), followed by "to reduce the amount of time in heavy traffic" (19%). Thirteen percent said they would never decide to use the lanes.

64. Atlanta, Georgia (2006)

Method: Survey. Universe: Adults in Cherokee, Cobb, Dekalb, Forsyth, Fulton, and Gwinnett counties with telephone in home and using target road segment at least once per week. Sample size: N = *1,810. Margin of error: ±2.5 percentage points. Sample type: RDD.*

In July, a survey was commissioned by the Georgia DOT to assess the opinions of individuals who drive the SR 400 corridor between SR 20 and downtown Atlanta regarding proposed managed lane scenarios (*79*). Respondents were divided on their opinions of the HOT lane concept (i.e., single drivers using the HOV lane for a fee), with 48% saying it was a "good idea" and 49% saying it was a "bad idea." Reasons individuals supported the concept were "it will help reduce traffic" (42%) and "encourages carpooling" (31%). Reasons individuals were opposed were "it is not fair" (39%) and "in general opposed tolling" (26%). When respondents were subsequently asked their opinions of HOT-3, support decreased and opposition rose (36% and 60%, respectively). When respondents were queried about HOT-4, support decreased and opposition increased even more (24% and 72%, respectively). Finally, respondents were asked for their opinions about express toll lanes (i.e., regardless of how many occupants, all vehicles tolled). Support for express toll

lanes was higher than for HOT-3 and HOT-4 and opposition was less (37% and 57%, respectively).

65. Houston and Dallas, Texas (2006)

Method: Survey. Universe: Adults in Houston and Dallas; English and Spanish. Sample size: N = *4,634. Margin of error: N/A. Sample type: Opt-in, Internet.*

From May to July, an Internet survey was sponsored by TxDOT to investigate the benefits and drawbacks of providing preferential treatment to HOVs in managed lanes (*80*). After an explanation of managed lanes, survey respondents were asked to respond to the question, "Would you be interested in using managed lanes?" There was considerable interest in the managed lane concept in both Houston and Dallas. Eighty-one percent of current toll road users polled in Dallas and 75% in Houston expressed interest in using managed lanes. Seventy-three percent of non-toll users in Dallas and 69% in Houston also expressed interest. Private vehicle owners were much more likely to express interest than transit users. The percentage of interest was highest among individuals with a household income greater than $100,000 and lowest among those with a household income less than $25,000. The top reasons for interest were: travel time saving, increased travel time reliability, less stress, and that there were no large trucks on the managed lanes. The primary reason travelers were not interested in using managed lanes was opposition to the tolls required for their use.

CORDON TOLLING OR AREA CHARGING

Data on public opinion associated with cordon tolling and area charging are presented in this section. These strategies are employed to ease urban congestion. In cities that have used this method of pricing, there have been different methods of applying or implementing the schemes. Cordon tolling is generally implemented as a set of tolled links surrounding a designated area so that all travelers entering or passing through the area are tolled. A variant of cordon charging is area charging (or area licensing) in which a charge is levied to use a vehicle within a defined area, rather than just to enter it. Although this synthesis focuses primarily on public opinion data starting in 2000, the history of cordon tolling, which started in Singapore in 1975, suggested that "older" data be reported. Altogether, 16 data points are presented, most of which reflect research activities outside of the United States.

66. Oslo, Norway (1989)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

Oslo instituted a full-scale toll ring system in 1990, with 19 toll stations charging at all times. The imposition of the tolls was timed to coincide with the opening of the Oslo Tunnel, an express bypass for congested downtown arterials that is one of the road projects to be financed by toll revenues. The Oslo model does not represent congestion pricing. It was designed primarily to generate revenue to finance desired transportation infrastructure improvements (*6*). The toll rates were low owing to 50% financial support from the national government and do not vary much with congestion. An electronic charging option, available by subscription at reduced daily or monthly rates, uses a microwave technology; subscribers are billed monthly, and enforcement is by video camera. A survey before the program was implemented found that 29% of respondents were positive, 65% negative, and 6% unsure of the project.

67. Trondheim, Norway (1991)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

In April and May, a survey was conducted before the implementation of a toll ring system in Trondheim (Norway) (*6*). The toll ring system operates 11 h per day on weekdays. Electronic subscribers benefit from a discount for trips entering after 10:00 and from ceilings on their charge liabilities in any given hour or month. Seven percent of respondents were positive toward the toll ring system, 72% were negative, and 21% were unsure. After implementation later that year, 20% were positive, 48% were negative, and 32% were unsure. The article noted that attitudes toward the entire package of tolls and road improvements were more evenly balanced. Before implementation, 28% were positive toward the entire package, 28% were negative, and 44 were unsure. After implementation, 32% were positive, 23% were negative, and 45% were unsure.

68. Cambridge, England (1994)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

Cambridge introduced the concept of congestion-specific charging, making the charge vary in real time based on the severity of the congestion. Although different real-time pricing schemes were proposed and tested, as in Hong Kong, the cordon tolling scheme was not enacted. Surveys in the summer of 1994 found that the road pricing concept was viewed as "acceptable" by only one-third of respondents. This was a larger proportion than favored car bans or parking controls, but far less than public transit improvements (*6*).

69. Oslo, Norway (1999)

Method: Survey. Universe: Residents of the urban region. Sample size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

In the fall, a public opinion survey was conducted to probe attitudes to transport policy measures and in particular to various forms of collecting and utilizing road-user charges. The survey was carried out under the auspices of the "Pricing Measures Acceptance" PRIMA project (*81*). Thirty-nine percent of those surveyed supported cordon tolls on all access roads, 47% supported cordon charges only on urban highways, and 60% supported cordon charges only on new roads.

70. Stockholm, Sweden (1999)

Method: Survey. Universe: Residents of Stockholm County. Sample size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

In fall, a PRIMA survey was also carried out in Stockholm. The survey was taken after a 1992 political agreement for cordon pricing fell apart in spring 1997 (*81*). The toll system was cancelled. Fifteen percent of those surveyed supported cordon tolls on all access roads, 42% supported charges only on urban highways, and 25% supported charges only on new roads.

71. London, England (1999)

Method: Survey. Universe: Residents across Greater London. Sample size: N = *2,100. Margin of error: Not reported. Sample type: Not reported.*

In March through August, a program was conducted of market research surveys that examined the public's current attitudes to charging options in London (*82*). The first stage was 100 qualitative interviews among residents, car drivers, visitors, and commercial vehicle operators, among other market segments. The car-using public voiced strong opposition to the idea of charging, particularly residents who might be affected. They resisted the idea of paying for driving in their own home area, and charging residents was seen as particularly unfair. When the concept of using the revenues to pay for transport improvements was introduced, individuals's attitudes softened slightly. However, they expressed skepticism that improvements would be made and concerns about whether charging schemes could actually be enforced. Visitors were also skeptical about charging and its enforcement. Although they could see some benefits, they believed charging would be unfair, because travel to London was already expensive. Interest group representatives were supportive of road charging in principle, when they knew that the monies would be used to pay for transport improvements.

The second stage was a set of quantitative surveys. Respondents were introduced to the road-user charging schemes.

> Because of increasing levels of congestion the Government intends to provide local authorities with new powers to charge road users. Making driving more expensive can reduce traffic levels and provide a source of money to improve traffic and public transport . . .
>
> There are two road user charging schemes that might be considered: an area road user license scheme for Central London, an area road user license scheme for Central and Inner London . . . the forthcoming Mayor would have the power to spend the money raised from such a road user charging scheme and this has to be spent on additional transport and/or traffic and environmental improvements in London. (*82,* p. 6).

Respondents were then asked whether they believed that a road-user charging scheme as described with a daily charge of £5 would be a "good thing" for London. Fifty-three percent said it was a "good thing," 36% said it was a "bad thing," and 11% were neutral. Only 30% of car drivers in Inner and Central London believed a daily license for Central London would be a "good thing"; whereas 58% believed it was a "bad thing," and 12% were neutral. Sixty-seven percent of the general public believed road-user charges would be a "good thing" if revenues were spent on a mix of transport improvements. This percentage increased to 73% when the respondents' preferred transportation spending package was introduced into the question. Respondents were asked their preferences in a prior question. Women more than men were supportive of the road charging scheme as were younger residents, those without access to a vehicle, and individuals who frequently used public transport. The level of positive response decreased with an increase in the level of the charge.

The majority of the surveyed general public (57%) said road-user charging was necessary and 35% said it was not. There was little difference in response by demographics. Forty-eight percent believed road-user charging would be unfair compared with 44% who believed it would be fair. Concerns for fairness were primarily among drivers on lower incomes, followed by residents of the charging area and car commuters.

72. Helsinki, Finland (2002)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

A survey of residents of the metropolitan area was conducted in relation to a road pricing proposal to reduce congestion and raise revenue to improve the transit network (*83*). To implement road pricing in the region, new legislation would have to be passed allowing for such initiatives. There was no formal structure to the proposed road scheme: therefore, it was developed through feasibility studies and through learning from other cities' experiences, such as those of London and Stockholm. When residents were surveyed about transport issues, 60% believed that road pricing should never be implemented in the Helsinki area, with 69% arguing that public transport improvements should be funded through taxes. Seventy percent believed that public transport should be the first priority for improvement compared with only 18% who believed that improving conditions for car users should be the priority.

73. Ft. Myers Beach, Florida (2003)

Method: Survey. Universe: Drivers stopped at one particular intersection. Sample size: N = *1,398. Margin of error: N/A. Sample type: Convenience.*

Researchers from Texas A&M University re-analyzed data from a Ft. Myers Beach Congestion Mitigation Survey that was conducted in March to estimate the potential effectiveness of a cordon toll around Ft. Myers Beach (*84*). Self-mailer questionnaires were handed to drivers at an intersection and at a grocery store in Ft. Myers. The survey population represented non-residents, seasonal residents, and long-term residents. Overall, 64% of respondents agreed that "tolls are a fair way to pay for transportation improvements." Agreement was highest among non-residents (80%) and lowest among long-term residents (53%). Approval increased to 57% among long-term residents in response to the question, "if there were a way to reimburse residents, how do you feel about the tolls?"

74. Edinburgh, Scotland (2003)

Method: Survey. Universe: Residents of Edinburgh and surrounding communities. Sample size: N = *2,406. Margin of error: Not reported. Sample type: Not reported.*

In the fall, the city of Edinburgh Council assessed the public acceptance of cordon tolling (*85*). The pricing proposal featured two charging cordons; one operating from 7:00 a.m. to 6:30 p.m. around the outskirts of the central heritage area, and one generally following the route of the city bypass, operating from 7:00 a.m. to 10:00 a.m. A total of 19,500 questionnaires were mailed, with 684 returned by Edinburgh residents and 1,722 by residents of the surrounding areas. Respondents were asked to indicate how they would vote in the proposed 2005 referendum, and there was aggregate majority opposition to the proposal. Non-car users gave the proposal clear majority support, whereas among car users there was clear majority opposition. Another question on the survey asked for agreement or disagreement with the statement, "Traffic congestion on Edinburgh's road network will get worse and it needs to be reduced." There was clear majority support for congestion reduction among both groups. Respondents were then given a range of alternatives for reducing congestion and asked to select their preferred options. The rank order of preferences were

- Better quality public transport,
- More park and ride facilities,
- Cheaper public transport,
- Provision of school buses,
- Increased road capacity on key routes,
- Improved cycling and walking facilities,
- More car sharing schemes,
- Congestion charging,
- Re-opening closed road sections to traffic,
- Banning cars in central Edinburgh,
- Fewer bus lanes,
- Stricter enforcement of parking regulations,
- More bus lanes,
- Higher parking charges,
- Increased fuel tax.

Respondents were then asked how transport improvements should be funded. The options provided ranged from congestion charging and higher parking charges to increased income tax and fuel taxes; most car users and non-users preferred congestion charging.

75. Stockholm, Sweden (2005/2006)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

A congestion tax trial was implemented in central Stockholm from January to July 2006. The trial consisted of a cordon-based variable pricing scheme to enter the city center (*86*). Before the trial in fall 2005, approximately 55% of all Stockholm county residents believed that it was a "rather" or "very" bad decision to conduct a congestion tax trial. In May 2006, only 41% believed that it was a "rather" or "very" bad decision. After the seven-month trial was complete, a referendum was held to ascertain whether the people of Stockholm and the surrounding municipalities were in favor of a permanent system of road-user charging. In the city of Stockholm, 53% voted "yes" to the introduction of a permanent scheme, and 47% voted, "no." Outside the city in the commuter belt, 15 of 26 surrounding municipalities held their own referendums; 48% were in support and 52% were against.

76. Shanghai, China (2005)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

Public opinion was measured related to a feasibility study for road pricing in Shanghai to reduce congestion and improve air quality (*83*). Car drivers did not support the scheme. An interest survey indicated that 91% did not agree with the scheme, compared with only 7% who did. The cordon scheme would operate only during weekday morning and evening peak periods and would charge every time a vehicle entered the zone. The priced areas covered the core of the commercial heart of the city, where traffic concentration and congestion delays were greatest, with limited scope for new highway construction to resolve the problems. The technology would be a tag-and-beacon-style approach. The scheme would be implemented as part of a package that included public transport improvements, metro construction, bus priority schemes, traffic management improvements, and road network improvement.

77. London, England (2006)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

The current Central London Congestion Charge run by Transport for London (TfL) has been operational since February 2003 (*83,86*). In this time, it has undergone several variations altering arrangements for payments and arrangements for operations such as fleet schemes. Perhaps most significantly, the charge was increased form £5 to £8 in July 2005. The original scheme was implemented with the aim of reducing congestion, making radical improvement to bus services, improving journey time reliability for car users, and making the distribution of goods and services more efficient. The scheme has been proven to improve air quality and reduce levels of harmful emissions and particulates contributing to poor health and climate change. Public support has been tracked since before the implementation of the scheme. This had demonstrated how support improves with awareness of the scheme and when the positive impacts of the schedule are visible and reported. Surveys reported support to be around 40% in the run up to the scheme and between 50% and 60% in the following year. Sixty percent supported the congestion charge in 2006 and more than 80% reported that they would accept charging if public transport improved.

78. New York, New York (2006)

Method: Survey. Universe: New York City residents 18 years of age and older; English and Spanish. Sample size: N = *800. Margin of error: ±3.5 percentage points. Not reported. Sample type: RDD.*

In June, the Tri-State Transportation Campaign commissioned a survey to explore and benchmark New York City residents' awareness of congestion pricing, factors that would contribute to support or opposition to congestion pricing in the Central Business District of Manhattan, and concepts to inform the development of a communications program, including identification of relevant message and consumer-end benefits (*87*). One in five city residents (18%) stated that they have never heard or read anything about congestion pricing. Respondents were almost equally divided on whether traffic congestion pricing or charging a toll to cars and trucks entering Manhattan below 60th Street would be a "good idea" (44%) or "bad idea" (45%). Twelve percent could not say.

After hearing a description of the congestion pricing program implemented in London, 73% of respondents (40% very likely and 33% somewhat likely) believe congestion pricing would be likely to reduce traffic congestion in Manhattan below 60th Street if put into operation in that area. Among those who believe congestion pricing is very likely to reduce traffic, 62% believe the program is a "good idea" and 31% view it as a "bad idea." Most (65%) of those with little confidence that congestion pricing would ease traffic see it as a "bad idea." Congestion pricing is seen as a "good idea" by Manhattan (49%) and Staten Island (58%) residents more often than other boroughs and by those working in Manhattan (50%) more often than by residents working elsewhere (40%). Reasons why respondents found congestion pricing a good idea included because they believe it would reduce traffic, traffic jams, and congestion in the area; increase use of public transportation; decrease unnecessary cars, trucks, and people in the area; bring increased revenue to the city; and reduce pollution.

Congestion pricing is seen as a "bad idea" by those who travel to work in their cars (55%) more than public transit users (40%), by those in households with cars (49%) more often than those without cars (38%), and by residents under the age of 30 (53%) more than by those in their 40s and 50s (38%). Reasons for believing it is a "bad idea" included:

- There are already too many tolls or taxes;
- It will be too expensive for individuals who are already paying too much;
- It will increase traffic and congestion rather than decrease it;
- It won't solve the problem;
- It is unfair or not right to charge to enter Manhattan; and
- It will hurt businesses and increase prices.

79. New York, New York (2007)

Method: Survey. Universe: New York City registered voters. Sample size: N = *1,013. Margin of error: Not reported. Sample type: Not reported.*

In January, a Quinnipiac University Poll found that New York City voters oppose congestion pricing by a 62% to 31% margin (*88*). This was measured by the question: "Do you support or oppose charging vehicle owners a fee to drive below 60th Street in Manhattan during rush hours?" There was greater support among Manhattan residents (rather than other boroughs), Caucasians (as opposed to Blacks and Hispanics), and public transit users. There were several issues related to the congestion pricing proposal that were tested with survey respondents: (1) Congestion pricing would unfairly tax individuals who live outside of Manhattan—57% agreed and 37% disagreed, with higher agreement among Blacks and Hispanics; women; and residents of the Boroughs of Bronx and Queens, and Kings County; (2) It would be bad for the economy because fewer individuals will come into Manhattan; therefore, restaurants and other businesses will lose revenue—47% agreed and 47% disagreed, with higher agreement among Blacks and Hispanics, women, and residents of Bronx and Queens; (3) It would improve mass transit because increased demand would lead to increased service—48% agreed and 45% disagreed, with higher agreement among men and residents of Manhattan and Staten Island; (4) It would be good for the economy because traffic congestion costs New Yorkers billions of wasted dollars every year—42% agreed and 49% disagreed, with higher agreement among Manhattan residents.

80. New York, New York (2007)

Method: Survey. Universe: Not reported. Sample size: N = *1,150. Margin of error: Not applicable. Sample type: Opt-in.*

In April, New York City's mayor put forth several proposals to improve the environment of the city including congestion pricing (*89*). An online poll conducted by *Crain's New York Business* a few days after the Mayor's announcement found that more than half of respondents supported the Mayor's proposal (53%), with 45% saying that congestion pricing was needed to reduce gridlock and 8% saying that the surcharge would help generate needed funds for the city. Of the 47% who opposed the plan, 38% said congestion pricing was unfair to small business owners and residents who have no choice but to drive into Manhattan; 9% said the plan would increase congestion elsewhere in the city. Under the Mayor's proposal, the city would impose a surcharge on cars and trucks entering Manhattan during peak hours on weekdays. The charge would be $8 for car drivers and $21 for truck operators to drive into Manhattan south of 86th Street. The fee would only be imposed during the week, between 6 a.m. and 6 p.m. Also, motorists driving major highways along Manhattan's east and west sides would not be charged, so it would be possible to go from Brooklyn to Harlem along Franklin D. Roosevelt Drive without entering the zone. The fee would be reduced by the toll commuters who already pay to enter Manhattan by bridges and tunnels and who do not use E-ZPass transponders. A network of cameras would capture the license plate numbers of vehicles crossing the cordon and either charge a driver's existing commuter account or generate a bill to be paid each time. Revenues from fees would be used to make improvements in the transit system.

81. United States National Poll (2007)

Method: Survey. Universe: Individuals who opted-in to website poll. Sample size: N = *1,150. Margin of error: Not applicable. Sample type: Opt-in.*

A Harris Poll found that 37% of U.S. adults say that traffic congestion is a serious problem in their community (*90*). Two-thirds of that 37% say it is not being addressed. The poll asked questions about London-type congestion pricing, calling it a congestion tax. Sixty-six percent were opposed, most of them strongly. Only 22% said they would support it.

82. New York, New York (2007)

Method: Survey. Universe: New York City registered voters. Sample size: N = *1,369. Margin of error: ±2.7%. Sample type: Not reported.*

In June, a Quinnipiac University Poll found that New York City voters statewide oppose 52% to 31% Mayor Michael Bloomberg's proposal to charge a fee for drivers entering Manhattan (*91*). This was measured by the question: "Do you support or oppose the Bloomberg administration's congestion pricing plan?" Upstate voters opposed the idea 42% to 27%, whereas New York City voters opposed it 57% to 35% and suburban voters opposed it 54% to 34%. Those who usually traveled into and out of Manhattan by car opposed it 62% to 11%, compared with 50% to 11% for those whose usual means of travel was public transit.

When asked whether they would "support congestion pricing if the money were used to prevent an increase in mass transit fares and bridge and tunnel tolls," support among statewide voters increased to 52% and opposition decreased to 36%. New York City voters would back the idea 50% to 33%.

When asked "how much have you heard or read about congestion pricing, a plan adopted by some major cities to reduce traffic by charging a fee to drive into congested areas," most persons had heard "a lot" (31%) or some (30%). Very few knew "nothing at all" (22%) or "not much" (13%). Indeed, 52% of respondents in New York City had heard or read "a lot."

PUBLIC–PRIVATE PARTNERSHIPS

To meet the gap in funding highway infrastructure with public capital, policy makers are considering PPPs for selected toll road projects. Typically, these agreements are complex, long-term arrangements that involve the private sector agreeing to construct or rehabilitate a public access toll facility in exchange for rights to the future toll revenues. Although PPPs (or concessions) are not new, the entry of this issue into the public opinion realm is just beginning.

83. Dallas, Texas (2005)

Method: Survey. Universe: Individuals 18 years of age or older, residing within targeted census tracts in the Dallas/Fort Worth area, who have at least one household vehicle available for use and travel State Highway 121 at least once per week. Sample size: N = *1,011. Margin of error: ±3%. Sample type: RDD.*

In August, a stated preference survey was executed as part of an Investment Grade Traffic and Revenue Study in connection with State Highway 121 (*92*). The stated preference survey measured public opinions, acceptance, travel behaviors, and preferences relating to tolling and the private development of the State Highway 121 toll road located in Denton and Collin counties, north of Dallas, Texas. A majority of respondents (56%) believed that it was a good idea to complete necessary construction on State Highway 121 through the use of tolls, 38% believed it was a bad idea, and 6% did not know. Much fewer (42%) believed it was a good idea for TxDOT to allow a private firm to build State Highway 121 in exchange for the right to collect tolls. About the same percentage (41%) believed it was a bad idea, and 18% did not know.

84. San Antonio, Texas (2006)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: N/A. Sample type: Opt-in.

In February, a *San Antonio Business Journal* online Business Pulse survey indicated that 74% of participants voting in the poll opposed hiring private contractors to build and manage toll roads in San Antonio (*93*). Twenty-two percent supported such a move, whereas 3% were undecided. Toll roads are currently planned in San Antonio along stretches of U.S. Highway 281 and Loop 1604 and possibly a portion of Interstate Highway 35.

85. Statewide Indiana (2006)

Method: Survey. Universe: Indiana residents age 18 and older. Sample size: N = *501. Margin of error: ±4.4%. Sample type: RDD, probability.*

In March, 30% of respondents to a statewide telephone poll believed that the deal to lease the Indiana Toll Road (i.e., take over operations, maintenance, and revenues) to an Australian–Spanish consortium for 75 years to raise money for highway projects was a good idea, whereas 60% said it was a bad idea (*94*). Nearly half of those polled who were against the lease (47%) said they opposed it primarily because of foreign control, 13% of those opposed believed tolls would likely increase, 12% were against private control of a public asset, 27% cited a variety of other reasons, and 1% were not sure of the reason for their opposition. When asked if money raised by leasing the toll road should used be only for highway and transportation projects, 50% said it should be used for other programs as well as transportation, whereas 41% said it should be restricted to highway/transportation uses and 9% were unsure. Also indicated in the poll was that governor's approval rating (in 2006) decreased to 37% from the 55% rating of 2004, a few months after taking office. Several residents quoted in the article (*94*) mentioned that the governor was "trying to do too many things too fast." The article noted that in trying to build support for the toll road lease, the governor has courted businesses and labor groups, held town meetings, and lobbied lawmakers, always underscoring the state's road construction needs in a 10-year timetable of projects, called Major Moves. The governor had cast the toll road lease as "the jobs vote of a generation."

86. Statewide Indiana (2006)

Method: Survey. Universe: Likely voters. Sample size: N = *800. Margin of error: ±3.5 percentage points. Sample type: Not reported.*

In September, 39% of respondents to a statewide telephone poll believed the deal to lease the Indiana Toll Road to an Australian–Spanish consortium for 75 years to raise money for highway projects was a good idea, whereas 55% said it was a bad idea (*95*); 6% were not sure. The governor's administration reported that most of the money would be used to help finance hundreds of highway and other transportation projects, many of which otherwise would never happen or would have been decades away. Democrats made their opposition to the lease a top campaign issue going into November's election. Republicans were more likely than Democrats to support the lease (46% and 30%, respectively). Those respondents in the northern part of the state were more likely to be opposed than those in the south (the toll road bisects the northern Indiana county of St. Joseph). In a list of important issues facing the state, toll roads were far down on the list (6%), compared with health care costs (18%), taxes and state spending (17%), education funding (14%), illegal immigration (10%), and gas prices (5%).

87. Statewide New Jersey (2007)

Method: Survey. Universe: New Jersey residents. Sample size: N = *1,000. Margin of error: Not reported. Sample type: Not reported.*

In February, a statewide poll commissioned by AAA's Mid-Atlantic chapter indicated that 56% of residents opposed selling or leasing the New Jersey Turnpike and Garden State Parkway to private interests to pay down the state's debt (41% strongly opposed and 15% somewhat opposed) (*96*). Twenty percent supported the concept (4% strongly supported and 16% somewhat supported). Twenty-four percent were undecided. Respondents who opposed selling or leasing the New Jersey Turnpike and Garden State Parkway to private interests were more supportive (65%) of using the money from the sale or lease for transportation investment. Sixty-eight percent were aware of the issue. The poll found that 65% of the respondents said money from a sale or lease should go toward transportation investment. The article indicated that the poll results show that many residents are concerned about losing control of well-maintained toll roads that have had few toll increases. A spokesperson for the state's Treasury Department was quoted as saying, "the public is not well-served when public opinion is tested before the Corzine administration has made any proposal."

88. Dallas, Texas (2007)

Method: Survey. Universe: Individuals 18 years of age or older, residing within targeted census tracts in the Dallas/Fort Worth area, who have at least one household vehicle available for use and travel State Highway 121 at least once per week. Sample size: N = *1,011. Margin of error: ±3 percentage points. Sample type: RDD.*

In May, a stated preference survey was executed as part of an Investment Grade Traffic and Revenue Study in connection with L.B.J. Highway (*97*). The stated preference survey measured public opinions, acceptance, travel behaviors, and

preferences relating to value pricing and private development of the L.B.J. Highway toll road located near the cities of Dallas, Garland, Farmers Branch, and Mesquite in Dallas County. About half of respondents (48%) believed that it was a good idea to complete necessary construction of Interstate 635 (the L.B.J. Highway) through the use of tolls. About half (49%) believed it was a bad idea, and 3% did not know. About one-third (34%) believed it was a good idea for TxDOT to allow a private firm to construct and manage the lanes on Interstate 635 in exchange for the right to collect tolls. Almost two-thirds (61%) believed it was a bad idea, and 5% did not know. At the time of the survey, the Texas legislature was debating bill HB 1892, which included a two-year ban on private toll road contracts, with certain exceptions, among other toll-related items.

89. Statewide Pennsylvania (2007)

Method: Survey. Universe: Pennsylvania voters. Sample size: N = *1,318. Margin of error: ±2.7 percentage points. Sample type: Not reported.*

In May, the Quinnipiac University Poll Study conducted a statewide survey in Pennsylvania that asked voters for their opinions on several topical issues (*98*). Several questions addressed leasing the Pennsylvania Turnpike to a private company. "Governor Rendell has proposed leasing the Pennsylvania Turnpike to a private company, but keeping state control over toll increases and maintenance schedules. The money would be used to pay for highway and bridge construction. Do you support or oppose this proposal?" (*98*). Forty-four percent of those polled supported the proposal, 42% opposed it, and 14% had no opinion. Support decreased from 49% reported in March 2007. The provision of additional information, "leasing the turnpike would result in an upfront payment of about $12 to $18 billion by the company leasing the turnpike . . . the state could invest that money and earn nearly one billion dollars a year in interest to be spent on roads and bridges" (*98*) made no difference to 40% of respondents; 38% said it would make them "more likely" to support and 15% said it would make them "less likely" to support leasing the Pennsylvania Turnpike. The majority of respondents (54%) believed that "leasing the turnpike to a private company would result in significant toll increases," whereas 30% did not agree with that statement and 16% did not know. Half (50%) believed a private company would do "about the same job" maintaining the turnpike as the state government. Thirty percent believed that a private company would do a "better job" and 13% a "worse job."

90. Statewide New Jersey (2007)

Method: Survey. Universe: New Jersey voters. Sample size: N = *891. Margin of error: ±3.3 percentage points. Sample type: Not reported.*

In August, the Rutgers–Eagleton Poll found that 61% of voters opposed leasing the New Jersey Turnpike and the Garden State Parkways to a non-profit corporation (*99*). Among those who had heard or read "a lot" about leasing the toll roads, 85% said they opposed the idea. Sixty-four percent of voters polled said they opposed raising tolls on the Turnpike and the Garden State Parkway to pay off state debt. Toll hikes are viewed in a different light when voters are asked to choose between raising tolls, raising taxes, or cutting services to help get the state out of debt. Given those choices, 44% of voters opt for toll increases, 28% for service cuts, and 9% support increasing taxes.

91. Statewide Pennsylvania (2007)

Method: Survey. Universe: Pennsylvania voters. Sample size: N = *1,160. Margin of error: ±3.3 percentage points. Sample type: Not reported.*

In August, a Quinnipiac University poll found state residents oppose the plan of leasing the Pennsylvania Turnpike to a private operator by a margin of 47% to 40%, with the rest undecided (*100*). Support has shifted downward from March 2007 (49%) and May 2007 (44%).

TAX-RELATED INITIATIVES

Public opinion regarding tax-related initiatives is relevant to the topic of tolling and road pricing because pricing decision making is often done within the context of alternatives to increased taxes. With the passage of the Federal-Aid Highway Act and Highway Revenue Act of 1956, federal motor fuel tax revenues have been earmarked only for roadway spending. The fuel taxes are the primary source of roadway and transit infrastructure funding at the state and local levels. The federal Highway Trust Fund was established by the Highway Revenue Act of 1956 for the direct purpose of funding the construction of an Interstate System and aiding in the financing of primary, secondary, and urban routes. After many years of steady growth, federal and state gas tax receipts reached a plateau in the late 1990s. According to the National Surface Transportation Policy and Revenue Study Commission, as a result of recent federal revenue and expenditure trends, the Highway Trust Fund is projected to reach a negative balance in 2009 and the Mass Transit Account balance begins to decline in 2008.

92. Atlanta, Georgia (2002)

Method: Survey. Universe: Residents of the 13-county metro area. Sample size: N = *502. Margin of error: Not reported. Sample type: RDD, probability.*

In the fall, an Applied Research Center Regional Issues Poll found that only one-third (32%) of metro Atlantans would support an increase in Georgia's motor fuel tax to fund roadway projects (*101*). Sixty-three percent would not support an increase and 5% did not know. The poll is conducted quarterly

by the Applied Research Center at Georgia State University. The article noted that even though the state's gas tax was the lowest in the nation (at 7.5 cents per gallon vs. the national average of 20 cents), there was little support for an increase. Of those who supported an increase, most (65%) said that it should be increased by 10 cents—rather than 15 cents, 20 cents, or something else. Few respondents (17%) believed the fuel tax should be decreased; most (80%) believed it should be kept the same. Georgia's constitution limits the gas tax to roads and roadway improvements; however, 59% of respondents said they would support a constitutional change to allow the money to be used for mass transit.

93. Pierce County, Washington (2002)

Method: Survey. Universe: Registered voters in Pierce County. Sample size: N = *400. Margin of error: Not reported. Sample type: Not reported.*

In March, a survey found an even split over the concept of a state plan that included an increase in the gas tax, with 24% of those surveyed strongly in favor and 33% strongly opposed (*102*). Reasons given for voting "yes" included "costs more later," "freight mobility," and "safety needs." Reasons for voting "no" were "over-taxation" and "government wastes too much money." Fifty-seven percent responded that roads and highways need attention over mass transit, and 59% believed Pierce County gets "less than its fair share of funds."

94. Statewide Washington (2002)

Method: Survey. Universe: Not reported. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

In August, a statewide poll conducted for the 1000 Friends of Washington found that of those polled 63% would vote for a tax increase if there were higher priority given to transit and other transportation choices (*103*). Seven-four percent placed a higher priority on safety and maintenance over new road projects. Eighty-three percent wanted the Washington State DOT to reform how it budgets projects to have all the funds needed to complete projects before they got started.

95. King, Pierce, Snohomish Counties, Washington (2002)

Method: Survey. Universe: Residents in King, Pierce, and Snohomish counties. Sample size: N = *500. Margin of error: Not reported. Sample type: Not reported.*

In September, a telephone poll conducted for the *Seattle Times* found majority support for R-51 (*103*). This was a statewide transportation funding package that would be financed through bonds and user taxes: a one-time 1% surcharge on vehicle purchases, weight fee increases for trucks over 10,000 lb (excluding pickups and recreational vehicles), and a 9 cent/gallon gas tax increase over two years. Across the counties, 64% of those polled supported R-51 in King County, 43% in Snohomish, and 40% in Pierce. More than 50% supported transit needs over roads, with 70% supporting the building of a BRT system. The measure was scheduled to be on the November ballot.

96. Statewide Oklahoma (2005)

Method: Survey. Universe: Registered voters. Sample size: N = *750. Margin of error: ±3.8%. Sample type: Not reported.*

In June, a statewide poll co-sponsored by the *Tulsa World* and KOTV Channel 6 found that 64% of Oklahoma residents planning to vote would vote against a fuel tax increase, whereas 25% said they would vote for it and 11% did not respond (*104*). Most opposition (68%) came from the area of the state outside Tulsa and Oklahoma City where the economy is based to a large degree on agriculture, where gasoline and diesel are major costs. In Tulsa, 58% said they would oppose a fuel tax increase, compared with 62% in Oklahoma City. At the time, gasoline prices had topped $2 a gallon and State Question 723 was being considered, which would gradually increase the gasoline tax by 5 cents and the diesel tax by 8 cents, bringing both to 22 cents per gallon within four years to get extra funds for roads and bridges. The measure was not passed.

97. Statewide Oklahoma (2005)

Method: Survey. Universe: Registered voters. Sample size: N = *503. Margin of error: ±4.4%. Sample type: Not reported.*

In August, another statewide poll co-sponsored by the *Tulsa World* and KOTV Channel 6 found that 75% of Oklahoma residents planning to vote would vote against a fuel tax increase, whereas 16% said they would vote for it and 9% did not respond (*105*). The proposal to raise the fuel tax was on the ballot on September 13, 2005. At the time of the poll, gasoline prices were headed to $3 per gallon. Eighty-three percent said the condition of state roads and bridges was fair to poor. Seventy percent said the state should spend more on bridges and roads.

98. Statewide Wyoming (2007)

Method: Survey. Universe: Wyoming residents. Sample size: N = *600. Margin of error: ±4 percentage points. Sample type: Not reported.*

In January, a statewide poll found that Wyoming residents wanted better roads, but they did not want to pay higher fuel taxes to get them (*106*). Nearly nine of 10 residents (89%) of those polled supported spending more money on maintaining the state's highways and widening some busy two-lane roads. Just over 7% oppose spending more and 4% said they did not know. However, when asked if they would support an increase

in the state gasoline tax to maintain and improve the state's roadways, 55% said they would oppose an increase and 8% did not know.

SURVEYS ON A RANGE OF ROAD PRICING AND FUNDING ISSUES

The final section presents polls and surveys that elicited public opinion on a variety of road pricing and funding schemes. Because these research studies were more diverse in their questions and results, it was found to be more appropriate to present them in this general section rather than under the previous specific topics.

99. Statewide Oregon (2000)

Method: Survey. Universe: Oregon voters. Sample size: Not reported. Margin of error: Not reported. Sample type: Not reported.

In the spring, AAA Oregon/Idaho surveyed Oregon voters on a variety of ideas for funding highways (*107*). The results did not show strong support for either a large gas tax increase or electronic tolling. Of the ideas tested, the highest level of opposition (91%) was toward a per-household highway access fee, 81% opposed a mileage fee, 75% opposed an automatic increase system in the fuel tax, and 68% opposed tolls to reduce congestion on highways. In terms of fuel taxes, 54% were willing to pay an extra 2 cents a gallon; however, support declined as the tax increase went to 3 cents and 4 cents. A $10 vehicle fee was supported by 55%.

100. Texas (2003)

Method: Survey. Universe: Texas householders, English and Spanish speaking. Sample Size: N = *2,111. Margin of error: ±1% for statewide responses. Sample Type: RDD.*

The Center for Transportation Research at the University of Texas conducted a statewide public opinion assessment of new toll roads in various areas of the state of Texas on behalf of TxDOT (*108*). About half (51%) agreed that drivers should not have to pay tolls for new roads; 37% disagreed and 12% were neutral. Older individuals and those who were relatively new to the area were more likely to support tolls for both new and existing roads; however, retired individuals were less likely. Seventy-one percent of respondents agreed with the statement that drivers should not have to pay tolls for existing roads, 22% disagreed, and 7% were neutral. This question was asked in two different ways. Survey version one mentioned the costs for construction and maintenance that TxDOT incurs yearly, and version two gave the average yearly costs for an American to own and operate a vehicle. There was greater agreement with the statement that drivers should not have to pay tolls with version two.

Asked to choose between gas tax increases and conversion to toll roads, 23% selected gas tax increases, whereas 61% selected toll roads and 16% had no preference. Given the choice for project management between PPPs and the public alone, respondents were almost equally divided (46% to 45%, with 9% indicating no preference). More educated persons and those aware of toll projects in their areas were more likely to support PPPs. Support increased slightly in the survey version that mentioned that PPPs generally resulted in quicker project completion.

Support for HOT lanes (i.e., SOVs in HOV lanes for a toll) was mixed, with 52% agreeing that it was a good feature and 48% saying it was not. Older individuals, males, those who travel to work on toll roads and those who live 50+ miles from their workplace had a greater tendency to support HOT lanes. Minimal support was evidenced for congestion pricing (i.e., increase in toll rates during rush hours), with 26% agreeing it was a good feature and 74% disagreeing. Significant public support was evidenced for charging higher tolls for trucks, with 79% of respondents saying "yes" this should occur. Seventy-five percent agreed with the statement that tolls should be reduced after construction was paid; 22% disagreed and 7% were neutral. Seventy-eight percent agreed with the statement that revenues from tolls should stay in the region.

101. San Diego, California (2003)

Method: Survey. Universe: San Diego voters. Sample size: N = *1,200. Margin of error: ±2.9%. Sample type: Voter registration list.*

In 1987, San Diego County voters approved a 20-year half-cent sales tax to pay for county transportation improvements (*109*). This sales tax was set to expire in 2009. A survey was conducted in 2003 to gauge support for extending the tax. Respondents were asked if they would "support or oppose extending the half-cent tax for 30 years to pay for additional county transportation improvements and operations." Sixty-two percent supported extending the tax, whereas 29% opposed it. When read the language of the ballot measure that mentioned specific highways to be improved, expansion of transit for seniors and disabled persons, expansion of other public transit services, and expedites and finances improvements, 72% said they would vote "yes" on this ballot measure. The item went to ballot in November 2004 and passed with a slim margin over the mandatory two-thirds requirement.

Respondents were also asked about support or opposition to construction of managed lane facilities in freeway corridors throughout San Diego County for use by BRT and carpools as well as SOVs if they paid a toll. Seventy-six percent supported construction, whereas 20% opposed and 4% had no opinion. Most individuals (73%) believed this system of managed lanes would have a positive effect in reducing traffic congestion (19% a "great deal" and 54% said "some").

When asked about priorities for some specific transportation-related issues, 54% gave a high priority to building new roads and freeways, 42% gave a high priority to building new lanes on existing freeways where buses and carpools would ride free and SOV could pay a toll, and 24% gave a high priority to building new toll roads.

102. Greater Washington, D.C. Area (2005)

Method: Survey. Universe: Adults living in Washington, D.C.; Maryland; and Virginia. Sample size: N = *1,003. Margin of error: Not reported. Sample type: Not reported.*

In January, *The Washington Post* in association with ABC News sponsored a poll of Washington metropolitan region's residents on attitudes toward transportation infrastructure funding (*110*). In response to the survey question, "Which of the following do you think is a better way to pay for highway expansion or new highways in your area?", respondents said charging tolls, 60%; raising taxes, 30%; neither, 9%; and no opinion, 1%. Across the three jurisdictions, support for tolls was 75% in the District of Columbia, 61% in Maryland suburbs, and 53% in Virginia. In addition, 58% of the regions' residents supported the concept of HOT lanes, whereas 48% supported adjustable (or time-variable) tolls. At the time of the poll, there were proposals in Virginia to build HOT lanes on the Beltway and on Interstates 95 and 395. In Maryland, officials were considering adding express toll lanes to the Beltway, I-270, the Baltimore Beltway, and I-95 north of Baltimore.

103. United States—National (2005)

Method: Survey. Universe: Adults nationwide. Sample size: N = *1,204. Margin of error: Not reported. Sample type: Not reported.*

In January, *The Washington Post and* ABC News also sponsored a survey to assess support for various congestion mitigation policies among a national sample of respondents (*110*). Levels of support ranged from 51% for HOV lanes (if none now), 36% for single-driver tolls in HOV lanes, 32% for a higher gas tax, 29% for adjustable tolls, and 11% for city center tolls. At the time of the poll gas was at $1.91 for a gallon of regular unleaded. Sixty-five percent of respondents opposed a higher gas tax, with 43% opposed to implementing HOV lanes.

104. San Antonio, Texas (2005)

Method: Focus groups. Number: Four groups, with a total 19 individuals. Participants: San Antonio residents who traveled the I-35 study corridor.

In February and March, TxDOT sponsored focus groups as part of the San Antonio I-35 Northeast Corridor Value Pricing Study (*111*). The groups were used to test the individuals's understanding and opinions of value priced lanes—both HOT lanes (free HOV travel) and express toll lanes (all travelers pay a toll). None of the participants were familiar with the concept of value pricing. After being given examples, most believed that offering an incentive for carpooling and transit use was a good idea, although most did not feel they were in a position to take advantage of those options owing to time commitments and family constraints. About half of the participants stated that San Antonio was not at the point of needing value priced lanes. Others believed it would be good idea as an option to avoid congestion. The idea of dynamic pricing was strongly opposed in each group. Most participants also believed that the price of tolls paid, up to $8, on the example project in California were "outrageous" and did not believe anyone in San Antonio would be willing to pay that much. All participants were in favor of HOT lanes rather than express toll lanes, because HOT lanes reward or encourage carpooling and public transportation. It was important to most participants that the toll revenue be reinvested in local transportation projects. The question of equity was brought up during the focus groups. In one group, there was a concern about the impact of limited access points along the study corridor for businesses. In another group, the effect of tolling on lower-income drivers was raised. There was general agreement across groups that wealthy drivers would use the facility more often, but that it would be beneficial for everyone to have a choice of using or not using the value priced facility.

Method: Survey. Universe: San Antonio residents who traveled on I-35. Sample size: N = *632. Margin of error: Not reported. Sample type: RDD*

In June, a survey was administered by the Public Policy Research Institute of Texas A&M University (*112*). Thirty-eight percent of those surveyed agreed that "express toll lanes should be constructed on I-35." Forty-three percent disagreed with the statement, and 18% had no opinion. Half of respondents agreed that "charging tolls on the new lanes is acceptable if they are not congested." Thirty eight percent disagreed, and 12% had no opinion. When asked what should be done with the generated toll revenue once the express toll lanes were paid for, most users believed that maintenance of existing highways, local roads (I-35 or in the region), or new lanes should be the priority.

105. Switzerland National (2005)

Method: Survey. Universe: Respondents 18+ years to a Swiss Federal Railroads survey. Sample size: N = *1,005. Margin of error: Not reported. Sample type: Not reported.*

The Institute for Transport Planning and Systems, ETH Zurich, in collaboration with the Transport and Mobility Laboratory, EPF Lausanne, and the Institute for Economic Research, University of Lugano, conducted a survey about preferences for different transport pricing schemes (*113*). At the time of the survey, a simple type of road pricing already existed in the country. Each car driver who wanted to use Swiss motorways

had to buy a one-year window sticker for 40 CHF. The revenues raised by fuel taxes and the stickers are spent on the expansion and maintenance of the road infrastructure. Increased congestion was a primary factor in a possible referendum requiring the government to act on road pricing.

Overall, the new road pricing option was selected in 50% of the responses. There was high approval of the motorway toll (53%) and kilometer-dependent toll (58%), and less support for area licensing (41%) and a time-dependent toll (40%). Acceptability of motorway tolls and area licensing was stronger if the sponsor was a coalition of environmentalists. It was stronger for kilometer-dependent tolls and time-dependent tolls if the sponsor was an automobile club. Respondents in middle- and small-size towns and their suburbs showed high approval rates for area licensing. Large-city residents did not like area licensing; they preferred all other types of pricing by more than 50%. In terms of uses of the revenue, highest preference was given to investments in public transport, followed by a reduction in income tax and the bonus-malus system (i.e., the toll paid would be reduced by individual usage history). The level of pricing was the most important factor, with acceptability decreasing with increasing cost levels. In terms of demographics, higher age and full-time employment increased the probability of choosing the road pricing scheme, whereas owning a car or high car mileage per year reduced it.

106. Statewide Minnesota (2005)

Method: Survey. Universe: Adults in Minnesota. Sample size: N = *800. Margin of error: ±3.5%. Sample type: RDD.*

Annually since 1987, the Minnesota DOT has sought public opinion about transportation through an omnibus survey (*114*). In December and January, the omnibus survey included questions on toll lanes and on a dedicated motor vehicle sales tax. The Minnesota DOT looked at toll lanes as a new option. "Unlike toll roads where all drivers pay to travel on a highway, a toll-lane would be built alongside existing highway lanes, which would continue to be free. Toll lanes could be a new lane added or the conversion of an existing carpool lane, and you pay a fee only when you choose to travel on it. Would you want to have the option to use a toll lane, for a fee, on congested roads?" Forty-eight percent answered, "yes." This was a decrease from the 55% who answered "yes" in 2004. Respondents were presented with four reasons for building toll lanes and asked to rank the importance of each reason on a scale of 1 to 10, with 10 being "extremely important" and 1 being "not at all important." The percentages rating each as a 7, 8, 9, or 10 were

- Help manage roadway congestion, 54%.
- Provide a reliable BRT route, 51%.
- Generate some additional revenue for roadways, 48%.
- Offer motorists an option for faster and more reliable trip times, 47%.

Respondents were also asked about a dedicated tax. "Currently, roughly half of the motor vehicle sales tax that is paid when you buy a car goes to transportation needs. There is a proposal to dedicate all of this particular tax in the state to transportation needs. How do you feel about this proposal?" Seventy-four percent supported the proposal, of which 26% supported it strongly. Greater support was associated with increased age and income. Males were more likely to support the proposal than females. Overall, 16% opposed the proposal.

107. Statewide Washington (2006)

Method: Focus groups. Number: Three groups in Puget Sound, Yakima, and Vancouver. Participants: Washington State voters.

In February, focus groups were held as one part of public attitudes of Washington State voters toward transportation issues for the Washington State Transportation Commission (*115*). It was found that most participants were aware of how transportation projects are funded. They believed that the gas tax was generally fair. Attitudes toward tolling were split. Tolls were seen as fair because users pay or tolls were seen as unfair because the participants believed that if the government were more efficient with the gas tax, tolls would not be necessary. An outdated mental picture of tolling systems is hobbling people's acceptance of it in spite of having heard about electronic toll collection. Conditions for acceptance of tolling included: (1) a general apprehension of a statewide tolling system because of its complexity, fears of abuse and fraud, and writing a blank check; (2) toll revenue should be spent on the tolled facility; (3) tolled routes must have alternative free routes; (4) anything already built should not be tolled; (5) revenue-generating tolling is preferred over congestion-management tolling; (6) cynicism about government spending blocks acceptance of creating funding approaches; and (7) cordon tolling and an annual mileage fee are considered unacceptable and unfair.

108. Seattle, Washington (2006)

Method: Focus groups. Number: Two groups of eight individuals each. Participants: Respondents in the Travel Choices Study, a federally funded pilot that tested mileage-based charging using Global Positioning System (GPS) and cell phone technology.

In April, focus groups were held with participants at the conclusions of the Travel Choices Study to develop a better understanding of their experience with and reactions to it (*116,117*). After eight months of using the pay-as-you-go tolling system, not all participants seemed to appreciate its congestion-reducing benefits. Respondents were divided on whether or not the Traffic Choices system makes more or less sense than gas or excise taxes. Those who preferred the GPS-based system liked the idea of being taxed on the particular roads used and the time

of travel (as opposed to a gas tax), and scaled to actual use (as opposed to an excise tax). Those who expressed a preference for gas taxes did so because that collection infrastructure is already in place and does not require that individuals adapt to an additional complex system. The gas tax also penalizes those who drive vehicles with poor gas mileage. Above all, participants were skeptical that this GPS-based system would replace an existing form of taxation, but rather would simply be added on top of current taxes. Participants were concerned that such a mileage-based tolling system would impose a financial burden on households with limited or fixed incomes. Participants were very clear that revenue collected should fund transportation, as opposed to general government expenditures, and transportation in the region. Concerns about privacy were less focused on the collection of the information per se and more on how that information could be used if it got into the wrong hands.

Method: Survey. Universe: Registered voters. Sample size: N = *1,118. Sample margin of error: Not reported. Sample type: Not reported.*

A statewide telephone survey was conducted as one part of public attitudes of Washington State voters toward transportation issues for the Washington State Transportation Commission (*116,117*). Generally, the public was amenable to using tolls to fund specific projects and in specific situations. People want assurances from government leaders that if tolls are used, they will be used efficiently and implemented fairly.

Thirty-eight percent of respondents were aware of "tolling roads or bridges as a way to shift traffic patterns and spread out road usage by charging higher tolls when there is a lot of traffic and lower tolls when there is less traffic." Of those individuals who responded that they were aware, 52% believed this was a "good idea" and 42% a "not-so-good idea." Sixty-three percent preferred that "tolls be considered only in special project-by-project situations," 18% said "tolls should be considered as a general source of transportation revenue," and 17% said "tolls should never be considered."

Respondents were read three statements about the goals of tolling and were asked if they agreed or disagreed. Fifty-eight percent favored the use of tolls as a way to "provide funds to improve our highway system," compared with 36% who favored the use to "shift traffic patterns and spread out road usage by charging higher tolls to discourage use when there is a lot of traffic and lower tolls when there is less traffic." Forty-four percent favored use of tolls to "both raise funds and to shift traffic patterns and spread out road usage."

Respondents were asked about their awareness of and support for HOT lanes. Support was measured with two different wording formats. Version one described HOT lanes as "high-occupancy toll lanes, where carpools use the lanes for free and solo drivers can choose to use the lanes for a toll. The toll would vary based on the number of cars in the toll lanes to keep the lanes free flowing." Awareness was 30% and, of those, 61% approved of HOT lanes (21% strongly and 40% somewhat). Version two added the following phase to the end of version one "and gives everyone an opportunity for a faster, reliable trip when they really need it." Awareness was 36% and, of those, 65% approved of HOT lanes (32% strongly and 33% somewhat).

Half of the sample was asked whether it was fairer to increase the gasoline tax or increase the number of tolls on highways and roads. Forty-seven percent said more tolls; 35% said increase the gas tax. The other half of the sample was asked the same question with the added phrase "be more fair to lower-income groups and those on fixed incomes." Fifty-two percent said more tolls, and 27% said increase the gas tax. The vast majority of respondents (84%) had driven a toll road, 89% had used a toll bridge, and 88% had used HOV lanes.

109. Statewide California (2006)

Method: Survey. Universe: California adults 18+ years, English and Spanish speaking. Sample size: N = *2,705 and 815. Sample margin of error: Not reported. Type: RDD.*

Researchers supported by the Mineta Transportation Institute at San Jose State University conducted two surveys in 2006 to measure public opinion regarding a range of revenue options to fund transportation, including tolls and road pricing (*118*). Support for various options in rank order was

- Truck-only-toll lanes, 64%.
- HOT lanes, 55%.
- Toll roads, 47%.
- Variable registration fees, 44%.
- Express toll lanes, 44%.
- Gas tax, 40%.
- Sales tax, 40%.
- Vehicle license fee, 40%.
- Tolls on new highway lanes, 40%.
- Registration fees, 32%.
- General obligation bonds, 30%.
- Indexed gas tax, 27%.
- Mileage fee, 22%.

Generally, highest support for toll roads was evidenced among those respondents from 18 to 34 years old (54%) compared with respondents older than 55 years (43%). Support was also higher among women (50%) than among men (43%). For tolls on new highway lanes—highest support was noted among respondents with annual incomes above $100,000 (46%) compared with 36% for those under $50,000.

110. Nationwide (2006)

Method: Survey. Universe: Adults (18 years of age and older) living in private households in the continental United States. Sample size: N = *2,394. Margin of error: ±2 percentage points. Sample type: Telephone probability.*

In November, an AAA survey indicated that 71% of those Americans polled believed "more money is needed for transportation because we are not keeping pace with demands on the system" (*119*). Respondents were presented with five tolling options for managing congestion. "Some states are looking at various types of toll options to help manage congestion. In choosing among the following options, which would you likely favor? I will read the entire list to you and then repeat each option to you, at which time you can answer yes or no." Support for each option in rank order was

- Add tolls only on new roadways, 34%.
- Allow solo drivers to pay a toll and ride in HOV lanes, 34%.
- Add tolls only on new roads and increase tolls during times of high traffic volume, 31%.
- Add tolls on new and existing roadways, 28%.
- Add tolls on new and existing roadways and increase tolls during times of high traffic volume, 27%.

Respondents were then provided with five options to help pay for the transportation system. Respondents generally favored raising transportation funding through the addition of tolls over non-toll initiatives. "I am going to read 5 options to help pay for our transportation system. Assuming each of the options would raise equal amounts of money, please tell me if you support using each option as a means to increase funding for transportation." Overall, 52% of respondents selected one of the toll options, whereas 40% chose one of the non-toll options. Support for each option in rank order was

- Add tolls only on new roads and highway lanes, 39%.
- Add tolls on new and existing roads and highway lanes, 33%.
- Increase motor fuel taxes, 21%.
- Impose a vehicle-mile tax based on the number of miles driven, 19%.
- Increase non-fuel taxes such as sales, income, and property taxes, 15%.

CHAPTER FOUR

FACTORS AND CIRCUMSTANCES AFFECTING PUBLIC OPINION

Today, traffic congestion is perceived as one of the most pressing problems in high density or high growth areas. Addressing this issue generally involves some type of improvement in roadway infrastructure or capacity. Tolls and road pricing are interrelated with such solutions because of reliance on tolls as financing tools, and road pricing as traffic demand management tools. We have now reached the situation where the major constraint on the successful implementation of tolling and road pricing relates largely to policy making (i.e., lack of stakeholder and political acceptability) rather than to technical or administrative barriers. Examinations of historical data in fields outside of transportation have found a strong link between policy making and public opinion. Two separate studies found that in two-thirds of cases in which a proposed policy change resulted in legislative action, that action was in the direction preferred by majority public opinion (*120,121*).

Prior empirical research in transportation indicates that public acceptance of tolls and road pricing is low—in spite of the perception of traffic problems as serious (*1,6,122,123*). These prior studies did not have the broad set and more recent data points of this synthesis from which to draw conclusions. With this information, it is possible to identify the factors and circumstances that affect public opinion, to examine trends in public opinion, and to derive crucial implications for future policy and planning in this area.

PUBLIC OPINION ON PRICING

Our review indicates that in the aggregate there is majority support for tolling and road pricing. Among all the surveys presented in chapter three, 56% indicated support for tolling or road pricing concepts (see Table 1). Opposition was encountered in 31% of cases, and mixed results (i.e., no majority support or opposition) occurred in 13% of cases. The level of aggregate support for road pricing contrasts sharply with that found for tax-related initiatives. The aggregate level of support for tax-related initiatives was 27%, with 60% opposed and 13% mixed.

The results in Table 1 were derived by coding each of the surveys presented in chapter three on a 5-point scale of support or opposition (i.e., strongly support, support, mixed, oppose, strongly oppose). Is this valid? We acknowledge that the sample of surveys is small and it was not randomly generated. The outcomes of a few surveys can have a big effect on the data and may render the data less representative of the universe of all surveys on these topics. Furthermore, we recognize that the results from the different surveys may have been measured on different scales and with different analysis designs. At the same time, great care was taken in the development of the sample of public opinion data presented in chapter three. We sampled for diversity, including a broad and diverse range of public opinion studies and used snowball sampling techniques to uncover rare or hard-to-find research studies. Have we represented the population well? It is hard to know how well we have done because a perfect listing of the universe does not exist. That said, and with consideration of the caveats associated with analyzing these data, we examined the general patterns of support and opposition to pricing according to various factors and contexts using the poll or survey data only. Also we have factored out the results related to tax-related initiatives in the following analyses.

Methodological Factors

Given that there is a link between policy making and public opinion, the quality of public opinion data is critical. A poorly administered poll or inaccurate survey can misrepresent actual public opinion and, in turn, influence future policy debates. A poll or survey is a method of gathering information from a sample of individuals within a particular group or population. This information is then used to draw conclusions about the entire group or population. The key to a representative survey is that the chance (or probability) of every unit (or individual) in the population being selected for the sample must be known and properly accounted for in the analysis of the results. If a sample is drawn by convenience, intercept, or other non-random methods, the resulting data are not governed by probability theory. The data represent only the narrow slice of the group or population that was surveyed.

A survey is also different from a focus group. Focus groups typically have eight to ten participants and therefore it would take many groups to build up a significant sample size. More importantly, focus group participants are rarely sampled by probability methods. Typically, they are recruited from a database or intercept methods. Focus groups may provide interesting insight for certain purposes, but they cannot be used to draw inferences about the larger population. Therefore, focus group results have not been included in our analyses of public opinion trends and patterns presented in this section.

TABLE 1
PUBLIC OPINION ON PRICING VERSUS TAX-RELATED INITIATIVES

	Tolling or Road Pricing	Tax-Related Initiative
Majority Support	57%	27%
Majority Opposition	31%	60%
Neither Majority	13%	13%
Total Percent	100%	100%
Total Cases	103	15

Several factors can affect the accuracy of survey results. Groves provided an excellent overview of the components of survey quality in which he classified errors in surveys into four main types (*124*):

- Coverage errors, referring to the exclusion of some members of the study population from the sample frame.
- Sampling errors, indicating the estimating quality of sample statistics that are primarily a consequence of sample sizes and sample design.
- Non-response errors, when certain individuals selected in a sample do not participate in the survey or fail to answer an item in the interview.
- Measurement errors, relating to the discrepancy between an individual's true opinions and the individual's responses in a survey interview.

The first two sources of error can be controlled through the way in which the sampling frame has been selected and the sample has been designed, and the latter two sources are intrinsically linked to the quality of the survey execution and the instrument design (*125–127*). Awareness of these errors and their sources is a way to identify surveys that have not been conducted scientifically. Such surveys include "opt-in" surveys in which respondents select themselves. Examples are polls on the Internet where visitors to websites are asked to vote on one issue or another. Push polls are another type of fake survey. A push poll is where, using the guise of opinion polling, disinformation about a candidate or issue is planted in the minds of those being surveyed. Push polls are designed to shape, rather than measure, public opinion. Although there are many potential sources of error, surveys that are conducted according to sound scientific methods can provide highly accurate insights into public opinions.

Understanding that the samples are small and that the characteristics of the public opinion data differ significantly, interesting findings in the level of support or opposition can be explained by methodology factors, including the validity of the research, its sponsor, the survey population, and question wording.

Assessing the validity of the surveys presented in chapter three without full access to the documentation is challenging. However, available information, primarily sample size and sample type, were used to rate the validity of each survey. Nearly half (54%) of the polls or surveys were coded as having "high" validity, about one-third (30%) as having "moderate" validity, and 16% were coded as "low." We found public support for tolling in 59% of the studies coded as "high" validity, compared with 61% of the "moderate" validity and 38% of the "low" validity cases. This finding adds credence to the general finding of majority support for tolling and road pricing.

Differences in aggregate results were found based on the sponsor of the poll or survey. When the poll or survey was sponsored by a tolling entity or agency responsible for the project, support was significantly higher in the aggregate (70%) than opposition (22%). Aggregate support was higher than opposition in media-sponsored polls but by a smaller margin (54% to 46%). When it was sponsored by another organization (i.e., university or association), aggregate support (47%) was below the majority threshold, but still higher than opposition (34%). Mixed results (i.e., neither clear support nor opposition) were highest among surveys sponsored by organizations other than sponsoring agency (19%), followed by the media (8%). In surveys sponsored by the tolling or road pricing entity, there was either clear majority support or majority opposition.

Polling and sponsoring agencies have a choice in the selection of the respondents to be surveyed or interviewed. This analysis indicates that support and opposition vary depending on the type of respondent pool selected. For data representative of "potential users," aggregate support was significantly higher (74%) than opposition (15%). A similar outcome was observed with public opinion measures of registered voters—support was found in 71% of cases and opposition in 24%. However, for those polls or surveys that targeted the general public, a different pattern was observed. In these latter polls, support and opposition were equal in proportion at 42% each. The mixed results were highest among surveys of the general public (16%), followed by potential users (11%), and then registered voters (5%).

Most of the polls or surveys did not include clarifying or additional information in the question wording that might influence public opinion. However, support was higher when this information was presented to respondents as part of the survey question, such as "would you support congestion if the money were used to prevent an increase in mass transit fares and bridge and tunnel tolls?" Support for tolling was noted in 94% of these cases when additional information was provided, compared with 48% of cases in which no additional information was presented as part of the survey question. Higgins reached this same conclusion in his article on public polling and congestion pricing (*128*). He points out that when congestion pricing is simply described as a way to reduce congestion with no other information, support is low. However, that support increases when the definition provides clarifying information or a description of benefits.

Project- or Issue-Related Characteristics

Our compiled public opinion data also supported analysis of differences in public opinion results based on project- or

TABLE 2
PUBLIC OPINION BASED ON TYPE OF PRICING

	Cordon Tolling	Public–Private Partnership	Express Toll Lanes	Traditional Toll Road	HOT Lanes
Majority Support	32%	0%	62%	71%	73%
Majority Opposition	53%	60%	23%	26%	15%
Neither Majority	16%	40%	15%	3%	12%
Total Percent	100%	100%	100%	100%	100%
Total Cases	19	10	13	35	26

issue-related characteristics, such as type of pricing, year, and context.

Most of the surveys and polls compiled in this synthesis report (63%) were done in association with a specific project (i.e., pre- and post-surveys to evaluate the impact of the I-394 MnPass Lanes in Minneapolis, Minnesota). Other times public opinion was elicited in a general public opinion survey on multiple issues (i.e., citizen survey for the Collier County, Florida government). Public opinion was more supportive when a specific project or concept was targeted (62% of cases) versus general questioning on tolling or road pricing (48% of cases).

Level of support or opposition varied according to the type of project on which public opinion was solicited (see Table 2). The notable standouts are cordon pricing and PPPs, both of which show higher opposition than support. Support was present in 32% of cordon tolling cases, and none of the PPP cases. Although support was higher than opposition for HOT lanes, express toll lanes, and toll roads, different patterns were found. Aggregate support was evidenced in 73% of HOT lane cases, 71% of toll road cases, and 62% of express toll lane cases. The spread between support and opposition was largest in the toll road surveys.

Discussing trends in support and opposition is challenging because the sample sizes for any given year were quite small. In Figure 1 we have identified in parentheses the number of polls or surveys that were available for analysis by year. With these caveats in mind, we found a rise in support for pricing in the mid-1990s and a drop-off in support starting in 2002. Support averaged 70% of those cases before 2002. Subsequent to 2002, support averaged 49% of cases. In addition, public opinion was much more polarized before 2003.

The number of cases in these two time periods differed significantly, with 27 public opinion polls or surveys before 2002 and 76 afterward. This increase in the number of surveys or polls is indicative of the growing interest in tolling and road pricing as solutions for financing or congestion challenges. The drop-off in support may be associated with the type of pricing that was referenced in the public opinion research. The early surveys were done in association with the early cordon or area pricing experiments. In the mid-1990s to 2002, the types of projects being considered were traditional toll roads, express toll lanes, and HOT lanes. In more recent years, cordon tolling and PPP projects have been brought into the public sphere.

One way of disentangling the trend data is to examine individual projects. Table 3 presents the trend data that were compiled in chapter three for several different types of projects in different geographic areas. These trend data need to be considered carefully because they represent surveys conducted by different polling or survey agencies of different survey populations, representing different sample sizes and sampling approaches. Also, the manner in which the questions were asked was not always the same across the surveys. Given all these caveats, there are still interesting findings. For a toll road that had yet to be built—the Foothill South Extension—public opinion was generally very stable across years—with support ranging from 54% to 59%. Clear majority support for the express toll lanes and HOT lanes projects continued after the roads began operation (SR 91, I-15, I-394). In Utah, where HOT lanes had not yet been built, support increased nearly 5 percentage points to the level of the support for the operating HOT lane projects.

In London, support for area charging increased after the project was implemented. In New York City without area

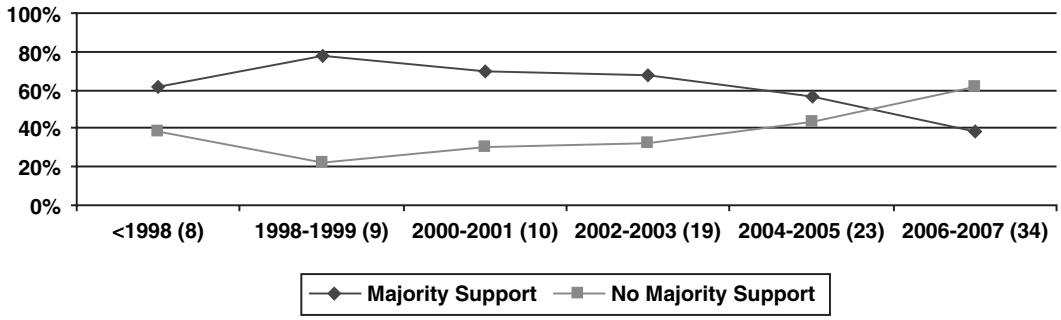

FIGURE 1 Trends in support versus opposition to pricing.

TABLE 3
PUBLIC OPINION TRENDS FOR INDIVIDUAL PROJECTS

Project	Majority Support	Majority Opposition	No Majority
Orange County, California—Foothill South Extension			
1999—Transportation corridor agencies	75%	Not reported	Not reported
2001[a]—Transportation corridor agencies	54%	Not reported	39%
2001—Public Policy Institute of California	59%	26%	15%
2002[a]—Transportation corridor agencies	58%	36%	5%
2003[a]—Transportation corridor agencies	53%	Not reported	Not reported
2004[a]—Transportation corridor agencies	57%	37%	Not reported
2005[1]—Transportation corridor agencies	57%	37%	6%
Orange and Los Angeles Counties—SR 91 ETL			
1995—California Polytechnic State University	62%–68%	Not reported	Not reported
1996—California Polytechnic State University	60%–82%	Not reported	Not reported
1996–1997—California Polytechnic State University	60%–81%	Not reported	Not reported
1999—California Polytechnic State University	50%–75%	Not reported	Not reported
San Diego, California—I-15 HOT Lanes			
1996—SANDAG	66%	Not reported	Not reported
1997—Wave 1: San Diego State University Foundation for SANDAG	56%–95%	Not reported	Not reported
1998—Wave 2: San Diego State University Foundation for SANDAG	64%–94%	Not reported	Not reported
1999—Wave 4: San Diego State University Foundation for SANDAG	58%–88%	Not reported	Not reported
1999—Wave 5: San Diego State University Foundation for SANDAG	70%–88%	Not reported	Not reported
2001—SANDAG	66%	28%	Not reported
2005— SANDAG	58%	14%	Not reported
Minneapolis, Minnesota—I-394 MnPASS HOT Lanes			
2004—Humphrey Institute, Univ. of Minnesota	63%	27%	10%
2005—Humphrey Institute, Univ. of Minnesota	59%	29%	12%
2006—Humphrey Institute, Univ. of Minnesota	65%	22%	13%
Salt Lake City, Utah—HOT Lanes			
2005—Utah Department of Transportation	56%	Not reported	Not reported
2006—Utah Department of Transportation	61%	Not reported	Not reported
London, England—Area Charging			
1999—Government Office for London	53%	36%	11%
2006—Transport for London	60%	Not reported	Not reported
New York City—Area Charging			
2006—Tri-State Transportation Campaign	44%	45%	12%
2007—Quinnipiac University Poll (January)	31%	62%	7%
2007—Quinnipiac University Poll (June)	31%	52%	17%
Statewide New Jersey—Lease to Private Interests			
2007—AAA Mid-Atlantic Chapter (February)	20%	56%	24%
2007—Rutgers–Eagleton Poll (August)	Not reported	61%	Not reported
Statewide Pennsylvania—Lease to Private Interests			
2007—Quinnipiac University Poll (May)	44%	42%	14%
2007—Quinnipiac University Poll (August)	40%	47%	13%

[a]Public opinion after pro/con arguments for extending the highway have been presented to respondents as part of the interview.
SANDAG = San Diego Association of Governments; ETL = express toll lane.

TABLE 4
PUBLIC OPINION BASED ON U.S. GEOGRAPHY

	Northeast	Midwest	South	West
Majority Support	36%	64%	44%	84%
Majority Opposition	36%	27%	32%	13%
No Majority	27%	9%	24%	3%
Total Percent	100%	100%	100%	100%
Total Cases	11	11	25	38

charging in operation, support decreased over time, presumably as the issue has been discussed more and more in the public sphere. According to Habermas (*129*), the public sphere is "a network for communicating information and points of view," which eventually transforms them into a public opinion. Without the actual experience with congestion charging as in London, public opinion is formed based on information (even misinformation) that is shared and gained in the public sphere. In Pennsylvania and New Jersey, opposition to leasing the state's turnpikes to private interests increased over time, perhaps for the same reasons cited earlier for the New York City case. A spokesperson for New Jersey noted that "the public is not well-served when public opinion is tested before the Corzine administration has made any proposal."

One final way to interpret the compiled data is to examine differences by geography. Certainly, some geographic regions in the United States have more experience than others with tolling and road pricing (see Table 4). Different types of projects have been introduced in different regions. The polls and surveys in the western United States have resulted in support for pricing to a much greater degree than opposition. The West also has the longest history with pricing initiatives. Public opinion support for pricing in the Midwest is also strongly apparent. Public support is less evident in the South, where there is less history with road pricing and there was the introduction of many new pricing initiatives after 2003. In the Northeast, public support is also mixed. This is likely the result of the types of new initiatives that are being introduced.

THEMES IN PUBLIC OPINION RESULTS

Data were also analyzed qualitatively; that is, extracting the broad themes in public opinion results. These themes can also be thought of as the "lessons learned" in garnering support for or raising opposition to road pricing initiatives. Eight general themes have been identified. The themes are supported with specific data from the surveys and the focus groups presented in chapter three. Quotes from respondents in the focus groups have been pulled out because they represent the "voice of the people."

1. The Public Wants to See the Value

When a concrete benefit is linked to the idea of tolling or charging for road usage (e.g., reducing congestion in an area where congestion is a problem) as opposed to tolling in the abstract, the public support of tolling is higher. Support is related to perceived benefits by users and non-users. The public is comprised of individuals who may value the benefits differently. Some individuals may be concerned only about their own self-interest, others may be willing to accept the tolling or road pricing scheme because society or their community are better off, whereas still others may need to perceive the tolling or road charging scheme as benefiting both themselves and their communities.

In Edinburgh, non-car users gave a cordon tolling proposal clear majority support, whereas among car users there was clear majority opposition, indicating a clear case of self-interest affecting public opinion. In Atlanta, focus group participants believed that HOT lanes gave them, personally, another viable transportation option. "I think it offers more choices. It gives me benefits—I can get to places faster." An I-15 focus group respondent (an HOV user) saw personal and social value in the ExpressPass lanes, "when they opened [the lanes] to single drivers I looked at it as reducing congestion on the regular lanes." In London, public support for the Central London Congestion Charge has increased as the scheme has been proven to improve air quality and reduced levels of harmful emissions and particulates contributing to poor health and climate change—evidence of support based on a larger public good. Support for congestion pricing in London has definitely improved with awareness of the scheme and as the positive impacts have been visible and reported. In the survey of New Yorkers, respondents who found congestion pricing to be a good idea cited several factors that indicated a range of self- and social-interest factors—reduce traffic, traffic jams, and congestion; increase use of public transit; decrease unnecessary cars, trucks, and people in the area; bring increased revenue to the city; and reduce pollution. Many individuals who voiced opposition to the road pricing concept in the latter survey and others cited in chapter three did so because they believed that there was "no value." The tolls or charges "wouldn't solve the problem."

2. The Public Wants to React to Tangible and Specific Examples

When public opinion on tolling is measured in the context of a specific project as opposed to a general principle, the level of support is higher. Traffic problems must be evident, and it must be demonstrated that road pricing or tolling of the specific facility is the best way to handle the problems for users as well as non-users. Of the general issue polls presented in chapter three, most indicated mixed support or majority opposition to the tolling or road pricing proposal. In California, the public did not want to increase the number of the state's toll roads. In San Antonio, half of the individuals polled were against toll roads. In a U.S. national poll, one-third or less supported any of the road pricing concepts presented during the survey. On the other hand, majority support was found for specific projects such as SR 91, I-15 ExpressLanes, and I-394 HOT lanes. In the Miami Value Pricing Focus Groups in 2002, most respondents said that they would likely use the proposed express lanes, and that they "appreciated the opportunity to have real choice as opposed to current conditions where the available choices all involve congested routes in the peak periods."

Road pricing should be perceived as a choice not as a kind of a punishment. In many of the European examples in chapter three, support was higher when road pricing was put forth as part of a comprehensive policy package of road and public transit investments. In an Orange County (California) survey, the most persuasive argument for the Foothill South toll road was the "need for an alternative to I-5." It is probably for this reason that low-income respondents tend to be supportive of tolling and road charging concepts, as evidenced in evaluation studies in California and Minnesota. Regardless of their economic circumstances, they appreciate having the choice of paying to use uncongested lanes or roadways.

3. The Public Cares About the Use of the Revenues

As Higgins ascertained, use of tolling revenues is a key determinant to acceptance of rejection of congestion pricing (*128*). When the perceived beneficiaries of tolling revenues are special interest groups (private companies or investors), public support for tolling is lower. In Indiana, more than half of those polled were against the lease of the Indiana Toll Road. Most opposed it because of foreign control; others were against private control of a public asset. In New Jersey, respondents were against the sale of the New Jersey Turnpike and Garden State Parkway to pay down the state's debt. However, they were more supportive when the money was used to fund transportation infrastructure in the state. In a similar vein, respondents in a Quinnipiac University Poll (2007) were more supportive of the congestion charging proposal for New York City "if the money were used to prevent an increase in mass transit fares and bridge and tunnel tolls."

Support tends to be higher when revenues are used for highway infrastructure or public transit improvements and/or to complete necessary construction faster. In many of the European cordon pricing trials such as Cambridge, England, pricing was not viewed as acceptable as much as the public transport improvements that could be funded with the revenues. One respondent in an I-15 focus group in California said, "Keep it on the highway. I wouldn't want to use those funds for some other program." Participants in the Travel Choices Study focus groups in Washington State were very clear that "revenue collected should fund transportation, as opposed to general government." "The legislature should have hands off. They have a way of getting in there and spending money on other stuff. [Tolls] should be for transportation only." In focus group discussions on HOT lanes in Denver, there was general agreement that revenues should not be linked to specific agencies but to specific uses such as "bus services or roadway improvements."

4. The Public Learns from Experience

Support from a majority of citizens often cannot be expected from the outset. When the opportunity to use tolled facilities already exists, public support of tolling is higher than when or where tolling is simply a possibility for the future. In Chicago, the majority were willing to pay more to maintain and reconstruct the Illinois State Toll Authority at the risk of failing to live up to the system's bond obligations, because most individuals believed that "tollways were a good value for the money." Experiences from several cities show that support tends to increase with exposure to the concept of tolling. In Oslo, Sweden, and London, support for cordon tolling increased after the pricing program was implemented. However, it must be recognized that building support is a long-term, continuous process that should not stop after implementation of the pricing scheme. In the SR 91, I-15, and I-394 HOT lane evaluations, support remained high and even increased slightly the longer respondents had to experience the benefits. Positive experiences with tolling and road pricing can also be exported from one area of the country to another through residential mobility. Among focus group participants in Central Texas where there were no priced roads at the time, most participants had used toll roads and reported good experiences in when traveling in other areas of the country, including Chicago; Houston; Dallas; and Washington, D.C. "The roads are better patrolled" and attract "a different kind of driver."

5. The Public Uses Knowledge and Information Available

When informed opinion is guided by means of objective explanation of the conditions and mechanics of tolling and the pros and cons of tolling, public support of tolling is higher than when there is no context for how tolling works. In Orlando, focus group participants were initially negative about the concept of adding tolls to new lanes on I-4, but eventually most said that they "use the Express Lanes for at least some trips." Positive reaction to the plan came as a result of the moderator conveying the full rationale for why the tolled lanes would be necessary and carefully presenting key details of the concept. In surveys in both Denver and Alameda County, support for HOT lane projects increased after there was information and clarification on how the HOT lanes worked. In San Diego, equity concerns (i.e., fairness of tolls for lower-income drivers) within focus groups relating to the I-15 managed lanes dissolved and support for the project strengthened when participants received clarifying information on the features of the project. These types of situations may also explain why the public sometimes appears to have an attitude-behavior inconsistency; that is, expressing negative attitudes about tolling and road pricing as theoretical constructs, but using the priced facility when it opens.

6. The Public Believes in Equity but Wants Fairness.

Public opposition of tolling is higher where there is perceived unfairness. Those in opposition to pricing projects in Minneapolis, Atlanta, and Denver, among others, tended to cite the characteristic of being "unfair" as a reason for considering

these proposals to be a "bad idea." In Atlanta, respondents were more supportive of proposals that would toll vehicles with as many as three individuals (HOV-4) than of proposals that would toll vehicles with two individuals (HOT-3). HOT-3 was perceived as penalizing carpoolers, whereas almost everyone would be tolled in HOT-4. Focus group respondents were not generally supportive of peak period pricing. In PANYNJ groups, it was mentioned that peak period pricing is "unfair to commuters." Fifty-nine percent agreed it was a good idea to vary toll rates during different times of day to help improve traffic congestion, but only 26% agreed it was fair to charge higher bridge and tunnel tolls during peak travel periods. In Miami, focus group participants also believed that peak pricing would "unfairly penalize commuters." On the other hand, the Attitudinal Panel Survey evaluating the I-15 ExpressPass program found a high level of support for the program, along with a high rating of the fairness of the program for regular and carpool lane users.

Also encapsulated in this perception is the notion that it is unfair for individuals to have to "pay for something that they have gotten for free in the past." In San Diego focus groups, one participant voiced the concern of many in other studies, "I've paid once for the lanes, and now I have to pay again. That's unfair." This also relates to why having an "alternative cost-free route" is so important for public support or why support for tolling new roads and bridges is higher than for tolling existing facilities. The public needs to be reassured that the government is not disrespecting people or treating them unfairly by double billing.

Although equity was raised by at least one individual in many of the focus groups cited in chapter three, in most the idea was raised as a rhetorical question, "Would the lanes be used only by the wealthy?" In many groups, participants such as the following quoted from Dallas appeared to agree that decisions on whether to use such lanes "revolve around people's preferences; namely, if a person wants the convenience badly enough, she or he will be willing to pay for it." In San Antonio focus groups, there was general agreement that "wealthy drivers would use a managed lane facility more often, but that it would benefit everyone to have a choice of using or not using the lane." In London and other European cordon tolling projects and proposals, the use of the revenues to improve public transit was considered a way of making the project "more fair" for low-income constituents.

7. The Public Wants Simplicity

When the mechanics of tolling or other user fee programs are simple, clear, and therefore easy to understand, public support of tolling is higher than in situations where there is a high level of complexity in how pricing would be applied. There were two failed cordon tolling attempts in Hong Kong. The alternatives tested in both attempts were comprised of complex pricing structures and numerous charging locations. In a statewide survey in Oregon, a variety of ideas for funding highways was tested. Opposition was lower for the simplest idea (i.e., toll roads, 68%) than for more complex ideas (i.e., a per-household highway access fee, 91% and a mileage fee, 81%). In South Florida, there were several focus groups held in which participants were initially negative about managed lanes because so few fully understood the concept. Once participants understood the concept, most believed that it addressed some of their personal needs, as well as traffic issues in the study corridor.

In focus groups around Washington State, there was a general apprehension of a statewide tolling system because of its complexity and fears of abuse or fraud. Some participants in the focus groups actually preferred the gas tax as a revenue instrument rather than the mileage-based system using global positioning system and cell phone technology that was tested in the study. "I would rather pay a higher gas tax than [have] another system to keep track of." Public response to the idea of dynamic variable pricing also is influenced by its complexity. Focus group respondents in California referring to I-15 believed that the variable price "introduced too much uncertainty into an already complex system." One participant remarked, "What's the price today? You got to worry about the guy in front of you and the guy in back of you . . . it's too much."

8. The Public Favors Tolls over Taxes

Although there are some instances of the surveyed public preferring tax increases over tolling, these are isolated instances. The quantitative analysis depicted in Table 1 indicates that in the aggregate across all of the data presented in this synthesis the public prefers tolling over tax increases. In Maine, survey respondents were given a list of alternatives for funding a new highway or bridge. Fifty-six percent supported establishing tolls, 16% increasing the gas tax, and 10% would cancel the project. Generally, the same distribution was found on a question relating to fixing a highway or a bridge for safety reasons. One individual in Minneapolis was quoted as saying, "I like tolls because I wouldn't use them and I wouldn't pay for it. We've got enough taxes." In New Jersey, nearly two-thirds of voters opposed raising tolls on the state's turnpikes to pay off state debt. However, when asked to choose between raising tolls, cutting services, or raising taxes, more individuals opted for raising tolls (44%, 28%, and 9%, respectively). In a statewide survey in California, respondents favored HOT lanes, tolls roads, and express toll lanes over gas and sales tax increases. Likewise, in a national AAA survey, the public supported adding tolls on new and existing roads and highway lanes over increasing motor- and non-fuel taxes or imposing a vehicle-mile tax.

In focus groups in Central Texas, the general consensus for funding new roads was that it should not come from taxes. "Taxes are already too high." Also, unlike the revenue generated from tolls, participants in focus groups often believed that their gas taxes went to help fund projects in other parts of the state. A common theme was "we're not getting our fair share."

CHAPTER FIVE

CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Given the widespread concerns about congestion and the need for infrastructure expansion, an increase in local and regional proposals to price transportation capacity to both generate revenue and manage transportation demand is inevitable. Understanding public opinion on tolling and road pricing in this context is of enormous importance to transportation policy. Some proposals will be virtually meaningless without reference to public opinion. It is therefore not surprising that policy makers and practitioners have come to increasingly focus on public opinion regarding charging for the use of roads. This topic often dominates the local media and regularly influences political campaigns from the mayor's to the governor's office, and throughout the legislative branch.

Our study indicated that, in the aggregate, the public supports tolling and road pricing. A number of factors influence public opinion, including the type of pricing, whether clarifying or additional information is presented, the use of revenues, and communication of the benefits of pricing concept. Public opinion measures of support or opposition were also associated with survey methods factors, including sponsor of the research, target respondent population, or wording of questions.

Given these results, it is obvious that there is a separation or disconnect between political perceptions of the public attitude toward tolling and actual opinions. The following example from Illinois is just one way in which this disconnect plays out in policy making. The *Chicago Tribune* survey in Illinois, which was reported in chapter three, was in direct response to a proposal by the Illinois governor to remove tolls from the Illinois Tollway. That entire proposal resulted from the perception by the governor that the public was opposed to tolls and wanted tolls removed. The survey actually showed that the majority did not want the tolls removed and were willing to increase tolls to maintain and reconstruct the system.

However, popular discourse would have one believe that the public is opposed to tolling and road pricing. The political nature of a community and its interest groups often shape the public debate and can obscure the majority opinion on the issue. A vocal minority can often transform what is an intrinsically complex subject matter into an object of politicking. Rather than stimulate discussion, the transformation of pricing into a political issue has in some places resulted in policies that possess superficial majority appeal but fail to address the real issues of how to deal with infrastructure financing or congestion management.

Specific research efforts are needed to focus on shifts in public opinion over time, particularly in the context of regional or local initiatives—from the idea stages to implementation and ultimately usage by the public. It is important to track both support and opposition across any variations in project type and to document how public opinion can shift as conditions become more severe or new initiatives reach the public sphere. Before-and-after surveys were implemented in high-occupancy toll lane evaluations in San Diego (I-15) and Minneapolis (I-394). These designs, referred to as panel or longitudinal designs in the survey literature, provide direct information on how the attitudes, opinions, or behavior of individual households or individuals change over time in response to other factors. Although both surveys yielded important findings, both encountered unforeseen methodological challenges. Although panel designs have enjoyed widespread use in other fields, they have rarely been adopted in transportation surveys in the United States. Research is needed not only to document how these designs can be used to address a variety of transportation policy and planning issues, but also how to better design and execute panel surveys. Higgins in "Congestion Pricing: Public Polling Perspective" concluded, "Good survey design will illuminate shifts in the magnitude and intensity of opposition and support as well as in net effects."

Guidance on best practice survey methods in general and, more specifically on reporting public opinion survey results, is needed to ensure better comparisons across locations or timeframes and for better evaluating how the public perceives diverse options related to pricing. The quality of survey data is not always questioned as much as it might be. Recently, concerns have been expressed about various aspects of survey quality. Partly, these concerns stem from increased awareness and understanding of quality issues and improved methods for estimating their effects on analysis, and partly from an awareness of possible future trends that could further jeopardize survey quality. In particular, the survey research field has noted from several sources an increasing concern with declining response rates. However, response rates are rarely reported when measures of public opinion are reported in the media or by other sponsoring organizations. This research would seek to develop standardized procedures for improving the conduct, reporting, evaluation, and reliability of public opinion surveys on tolling and road pricing.

Tolling and road pricing have become part of contemporary transportation planning and policy making vernacular out of the

need to address traffic congestion and infrastructure funding short-falls. However, the public still lacks credible, available information on these issues. Guidebooks could be developed to assist state departments of transportation and other transportation agencies in more effectively and proactively communicating, to decision makers and the public, the benefits and challenges in tolling and road pricing. The key research question to be answered is: "How can the value of pricing and tolling be communicated to influence the perceptions of potential customers and decision makers?" The objective of this project would be to develop a guide for successfully communicating the value of tolling and road pricing for individuals, communities, and societies. The material in the guide would be based on the results of communications research and best practices.

The industry should also consider a scoping study for a Pricing Data Exchange Network. Good pricing data exist, and the data are available from many public and private sources that vary by collection method, timeframe, format, and quality. For potential users of such data, a major limitation comes from knowing which data are available. For data providers, a major limitation is finding ways to let users know what data are available. One possible way to minimize these limitations is to establish an exchange network for pricing data that enables data providers and data users to share data efficiently and securely over the Internet. This scoping study would investigate new approaches to providing timely access to higher quality data while saving time, resources, and money. A workable approach could centralize as much data as possible and allow participants to freely add and access data. Data providers or users would have the ability to enter or access datasets and add meta-data as well as reports of quality or other data issues. It would provide a versatile tool for researchers, engineers, planners, and operations personnel. Such a system would not only increase the use of data and statistics from all available sources, but also would increase the demand for improvements in the completeness, quality, and timeliness of the data; and in their collection, processing, and distribution.

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APPENDIX A

Survey Questionnaire

Information on how the survey was conducted and its outcomes is presented in chapter two in the section on Survey of Practitioners.

Part I: General Information and Perspectives

We are doing an interesting national study for the National Cooperative Highway Research Program (NCHRP) to synthesize public opinion data on tolls and road pricing. We are interviewing relevant persons from state DOTs, metropolitan planning organizations, (MPOs), toll road authorities, and other agencies to identify public opinion surveys and polls on these topics so that we can gather the pertinent data.

1. Do you know of surveys or polls sponsored by your organization or any other organization since 2000 that measured public opinion on road pricing or toll roads? *Who? When? Topics?*
2. *If talking to sponsor*: Can we have access to the data? Findings? Methods?
3. What do you think influences public opinion on toll roads or road pricing? On what do you base that?
4. Have you noticed any shifts in public opinion about road pricing or toll roads in your region? State? On what do you base that?
5. Do you think public opinion varies according to type of project? e.g., toll road, HOT lane, truck only toll lanes, managed lanes, cordon pricing, congestion pricing? What evidence do you have?
6. What do you think public opinion is on Public–Private Partnerships (private investment in road infrastructure)?
7. What arguments supporting road pricing and tolling are prevalent among the customers/public you serve? Please detail.
8. What arguments for rejecting road pricing and tolling are prevalent among the customers/public you serve? Please detail.
9. How does media attention fit into your observations about public opinion on toll roads or road pricing? Was there any media attention about tolling or road pricing prior to this activity?
10. Any last comments about public opinion on toll roads or road pricing?

Part II: Situational Context Description (for specific projects)

1. Project Sponsor:
2. Project Type:
   ☐ Toll Road

- ☐ Managed Lanes: What type:
  - ☐ Express Toll Lanes
  - ☐ HOT Lanes
  - ☐ Truck Only Toll Lanes
  - ☐ Other:_____

3. Project Goals: (Check all that apply).
   - ☐ Congestion Mitigation
   - ☐ Revenue Generation
   - ☐ Finance the Facility
   - ☐ Other:_____
4. Enabling Laws or Legislative Support:
5. Does the project represent new capacity or conversion of existing capacity?
6. Price Structure:
7. Is Pricing:
   - ☐ Flat
   - ☐ Congestion Priced
   - ☐ Dynamically Priced
   - ☐ Other:_____
8. Tolls collected via:
   - ☐ Attended Toll Booths
   - ☐ Electronic Toll Collection Technology
   - ☐ Open Road Tolling
   - ☐ Other:_____
9. Constraints of Pricing (i.e., use of revenues or time limitation):
10. Technology used for enforcement?
11. History or experience of potential customers or users with road pricing?
12. Did the opinions of the public have an impact on the implementation of the project or program?
    - ☐ Yes: What was that impact?
    - ☐ No
    - ☐ Don't Know
13. Any other important attributes of situational context. Please detail.

APPENDIX B

Analysis Tables

Information on how these data were compiled, coded, and analyzed is presented in chapter two in the section on Analysis of Data Points.

FREQUENCY TABLES: SURVEYS ON TOLLING AND ROAD PRICING

MAJORITY OPINION IN POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Strongly Oppose	6	5.8	5.8
Oppose	26	25.2	31.1
Mixed	13	12.6	43.7
Support	51	49.5	93.2
Strong Support	7	6.8	100.0
Total	103	100.0	

AGGREGATED MAJORITY OPINION IN POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Oppose	32	31.1	31.1
Mixed	13	12.6	43.7
Support	58	56.3	100.0
Total	103	100.0	

YEAR POLL OR SURVEY WAS DONE ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
1989	1	1.0	1.0
1991	1	1.0	1.9
1994	1	1.0	2.9
1995	1	1.0	3.9
1996	2	1.9	5.8
1997	2	1.9	7.8
1998	2	1.9	9.7
1999	7	6.8	16.5
2000	2	1.9	18.4
2001	8	7.8	26.2
2002	8	7.8	34.0
2003	11	10.7	44.7
2004	7	6.8	51.5
2005	16	15.5	67.0
2006	24	23.3	90.3
2007	10	9.7	100.0
Total	103	100.0	

CENSUS REGION OF POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Northeast	11	10.7	10.7
Midwest	11	10.7	21.4
South	25	24.3	45.6
West	38	36.9	82.5
U.S. National	5	4.9	87.4
International	13	12.6	100.0
Total	103	100.0	

TYPE OF PRICING MEASURED IN POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Cordon	19	18.4	18.4
PPP	10	9.7	28.2
Express Toll Lanes	13	12.6	40.8
Toll Road	35	34.0	74.8
HOT Lane	26	25.2	100.0
Total	103	100.0	

RESPONDENT POOL FOR POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
General Public	55	53.4	53.4
Potential Users	27	26.2	79.6
Registered Voters	21	20.4	100.0
Total	103	100.0	

SPONSOR OF POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Media	13	12.6	12.6
Agency	37	35.9	48.5
Other	53	51.5	100.0
Total	103	100.0	

VALIDITY OF METHODS FOR POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
Low	16	15.5	15.5
Moderate	31	30.1	45.6
High	56	54.4	100.0
Total	103	100.0	

CONTEXT OF POLL OR SURVEY ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
General Issues	40	38.8	38.8
Specific Project	63	61.2	100.0
Total	103	100.0	

INFORMATION PROVIDED IN THE PUBLIC OPINION QUESTIONS ON TOLLING AND ROAD PRICING

	Frequency	Percent	Cumulative Percent
No	84	81.6	82.4
Yes	18	17.5	100.0
Total	102	99.0	
Missing	1	1.0	
Total	103	100.0	

FREQUENCY TABLES: SURVEYS ON TAX-RELATED INITIATIVES

Since the number of cases is small, we have only provided minimal data points.

MAJORITY OPINION IN POLL OR SURVEY ON TAXES

	Frequency	Percent	Cumulative Percent
Strongly Oppose	2	13.3	13.3
Oppose	7	46.7	60.0
Mixed	2	13.3	73.3
Support	4	26.7	100.0
Total	15	100.0	

AGGREGATE MAJORITY OPINION IN POLL OR SURVEY ON TAXES

	Frequency	Percent	Cumulative Percent
Oppose	9	60.0	60.0
Mixed	2	13.3	73.3
Support	4	26.7	100.0
Total	15	100.0	

YEAR POLL OR SURVEY WAS DONE ON TAXES

	Frequency	Percent	Cumulative Percent
2000	1	6.7	6.7
2002	4	26.7	33.3
2003	2	13.3	46.7
2005	5	33.3	80.0
2006	2	13.3	93.3
2007	1	6.7	100.0
Total	15	100.0	

CENSUS REGION OF POLL OR SURVEY ON TAXES

	Frequency	Percent	Cumulative Percent
Midwest	1	6.7	6.7
South	5	33.3	40.0
West	7	46.7	86.7
U.S. National	2	13.3	100.0
Total	15	100.0	

RESPONDENT POOL FOR POLL OR SURVEY ON TAXES

	Frequency	Percent	Cumulative Percent
General Public	10	66.7	66.7
Registered Voters	5	33.3	100.0
Total	15	100.0	

Abbreviations used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation