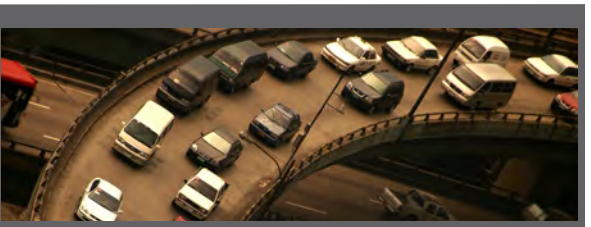
Getting Around When You're Just Getting By: The Travel Behavior and Transportation Expenditures of Low-Income Adults

MTI Report 10-02



MINETA
TRANSPORTATION INSTITUTE
Created by Congress in 1991

MINETA TRANSPORTATION INSTITUTE

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

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

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

Research

MTI works to provide policy-oriented research for all levels of government and the private sector to foster the development of optimum surface transportation systems. Research areas include: transportation security; planning and policy development; interrelationships among transportation, land use, and the environment; transportation finance; and collaborative labor-management relations. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available both in hardcopy and on TransWeb, the MTI website (http://transweb.sjsu.edu).

Education

The educational goal of the Institute is to provide graduate-level education to students seeking a career in the development and operation of surface transportation programs. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and a graduate Certificate in Transportation Management that serve to prepare the nation's transportation managers for the 21st century. The master's degree is the highest conferred by the California State University system. With the active assistance of the California Department of Transportation, MTI delivers its classes over a state-of-the-art videoconference network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI's education program promotes enrollment to under-represented groups.

Information and Technology Transfer

MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. In addition to publishing the studies, the Institute also sponsors symposia to disseminate research results to transportation professionals and encourages Research Associates to present their findings at conferences. The World in Motion, MTI's quarterly newsletter, covers innovation in the Institute's research and education programs. MTI's extensive collection of transportation-related publications is integrated into San José State University's world-class Martin Luther King, Jr. Library.

MTI Report 10-02

GETTING AROUND WHEN YOU'RE JUST GETTING BY: THE TRAVEL BEHAVIOR AND TRANSPORTATION EXPENDITURES OF LOW-INCOME ADULTS

Asha Weinstein Agrawal, PhD
Evelyn A. Blumenberg, PhD
Sarah Abel
Gregory Pierce
Charles N. Darrah, PhD

January 2011

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

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. CA-MTI-10-2806	**2. Government Accession No.**	**3. Recipients Catalog No.**
4. Title and Subtitle Getting Around When You're Just Getting By: The Travel Behavior and Transportation Expenditures of Low-Income Adults		**5. Report Date** January 2011 **6. Performing Organization Code**
7. Authors Asha Weinstein Agrawal, PhD, Evelyn A. Blumenberg, PhD, Sarah Abel, Gregory Pierce, and Charles N. Darrah, PhD		**8. Performing Organization Report No.** MTI Report 10-02
9. Performing Organization Name and Address Mineta Transportation Institute College of Business San José State University San José, CA 95192-0219		**10. Work Unit No.** **11. Contract or Grant No.** DTRT07-G-0054
12. Sponsoring Agency Name and Address California Department of Transportation Sacramento, CA 94273-0001 U.S. Department of Transportation Research and Innovative Technology Administration (RITA) Office of University Programs 1200 New Jersey Avenue, SE Washington, DC 20590		**13. Type of Report and Period Covered** Final Report **14. Sponsoring Agency Code**

15. Supplementary Notes

16. Abstract

How much do people with limited resources pay for cars, public transit, and other means of travel? How does their transportation behavior change during periods of falling employment and rising fuel prices? This research uses in-depth interviews with 73 adults to examine how rising transportation costs affect low-income families. The interviews examine four general areas of interest: travel behavior and transportation spending patterns; the costs and benefits of alternative modes of travel; cost management strategies; and opinions about the effects of changing transportation prices on travel behavior. Key findings include:

1. Most low-income households are concerned about their transportation costs.
2. Low-income individuals actively and strategically manage their household resources in order to survive on very limited means and to respond to changes in income or transportation costs.
3. In making mode-choice decisions, low-income travelers, like higher-income travelers, carefully evaluate the costs of travel (time and out-of-pocket expenses) against the benefits of alternative modes available to them.
4. Some low-income individuals in our sample were willing to accept higher transportation expenditures—such as the costs of auto ownership or congestion tolls—if they believed that they currently benefit or would potentially benefit from the increased expenses.
5. Although low-income households find ways to cover their transportation expenditures, many of these strategies have negative effects on their lifestyles.

The report concludes with recommendations for increasing transportation affordability, minimizing the impact of new transportation taxes or fees on low-income people, and developing new research and data collection strategies.

17. Key Words Travel costs, Low-income groups, Poverty, Equity (finance), Environmental justice	**18. Distribution Statement** No restrictions. This document is available to the public through The National Technical Information Service, Springfield, VA 22161		
19. Security Classif. (of this report) Unclassified	**20. Security Classifi. (of this page)** Unclassified	**21. No. of Pages** 118	**22. Price** $

Form DOT F 1700.7 (8-72)

Library of Congress Catalog Card Number:
2010938045

To order this publication, please contact the following:
Mineta Transportation Institute
College of Business
San José State University
San José, CA 95192-0219
Tel (408) 924-7560
Fax (408) 924-7565

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

ACKNOWLEDGMENTS

We offer our sincere thanks to the many people who helped with this project. Special thanks go to the interviewees, who gave their time and shared their experiences, making the project possible. In addition, we gratefully thank:

- The students in the fall 2009 class of Anthropology 149 at San José State University, who conducted many of the interviews for the study and shared their analysis of their interview data with the research team.

- Stephen Brumbaugh, Cathy DeLuca, Kanhong Lin, and Vinay Murthy, graduate students at San José State University and the University of California, Los Angeles, who provided research, data analysis, and interviewing assistance.

- Todd Madigan and Rebecca Cole of Sacred Heart Community Service, Diane Nguyen and Yarabi Lara of Paseo Senter, and Imelda Rodriguez and Mona Lerna of CommUniverCity San José, who helped us recruit interviewees.

- Dr. Brian Taylor of the University of California, Los Angeles, who provided advice and feedback.

The authors also thank MTI staff, including Research Director Karen Philbrick, Ph.D.; Director of Communications and Special Projects Donna Maurillo; Research Support Manager Meg A. Fitts; Student Publications Assistant Sahil Rahimi; Student Research Support Assistant Joey Mercado; Student Graphic Artists JP Flores and Vince Alindogan; and Webmaster Frances Cherman. Additional editorial and publication support was provided by Editorial Associate Janet DeLand.

Any errors or omissions are the responsibility of the authors.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

Recent increases in fuel prices, combined with the deep downturn in the economy, have raised concerns among policymakers and advocates about the burdens of transportation costs on the poor. Moreover, low-income travelers have been at the center of recent debates over the fairness of proposed transportation finance instruments such as congestion pricing and gas-tax increases. Despite these concerns, relatively little is known about how low-income households manage their transportation costs while also preserving their desired level and quality of mobility. This study begins to fill that gap by exploring the challenges low-income residents face in covering their transportation costs.

STUDY METHODS

The analysis is based on in-depth interviews with 73 low-income adults living in or near the City of San José, California, in the San Francisco Bay Area. The sample was diverse by many criteria, but overrepresented individuals who had extremely low incomes. (Some were homeless; many relied on food banks and/or public benefits and services.) The interviews centered around four general areas of interest: travel behavior and transportation spending patterns; the costs and benefits of alternative modes of travel; transportation cost management strategies; and opinions about the effects of changing transportation prices on travel behavior.

FINDINGS

Key findings include the following:

1. Most low-income households are concerned about their transportation costs.
2. Low-income. individuals actively and strategically manage their limited household resources in order to survive and respond to changes in income or transportation costs. They do so by using strategies such as (a) modifications to travel behavior, (b) creative cost-covering strategies, (c) careful management of household expenditures, including transportation expenditures, and (d) reductions in discretionary spending.
3. In making mode-choice decisions, low-income travelers—like higher-income travelers—carefully evaluate the costs of travel (time and out-of-pocket expenses) against the benefits of each mode available to them.
4. Some interviewees were willing to accept higher transportation expenditures—such as the costs of auto ownership or congestion tolls—if they believed that they currently benefit or would potentially benefit from these increased expenses.
5. Although low-income households find ways to cover their transportation expenditures, many of these strategies create hardship.

POLICY IMPLICATIONS

The study findings suggest a wide variety of policy and planning strategies that could increase transportation affordability, as well as minimize the effects of new transportation taxes or fees on low-income people. These fall under several themes:

1. Target transportation subsidy programs to low-income people in general, in addition to such population subgroups as the elderly and the disabled. This approach would help user-side subsidies reach those who most need them.
2. Divide large, lump-sum transportation costs such as transit passes into smaller, more frequent payments, to make the costs more manageable.
3. Help low-income families access a wide variety of essential destinations such as support services, government offices, and businesses.
4. Recognize that the specific transportation supports needed vary by household structure, life stage, and residential location. For example, reduced-cost transit passes may help those living near public transit but will do little to aid families in rural communities with minimal transit service. Even within the same geographic area, families' travel needs vary by employment patterns, family responsibilities, and disabilities that may make certain modes inaccessible.

In addition, we propose various strategies for collecting new data that would allow policymakers to assess which policies would most effectively and efficiently ease the transportation burden for low-income families.

INTRODUCTION

Recent increases in fuel prices, combined with the deep downturn in the economy, have raised concerns among policymakers and advocates about the burdens of transportation costs on the poor. Moreover, low-income travelers have been at the center of recent debates over the fairness of proposed transportation finance instruments such as congestion pricing and gas-tax increases.

Despite these concerns, relatively little is known about how low-income households manage their transportation costs while also preserving their desired level and quality of mobility. Travel surveys do not typically include data on household transportation expenditures, while consumer expenditure surveys do not include data on travel behavior. Therefore, it is difficult to examine how low-income individuals trade off the costs and benefits of travel, using only the existing data sources. In addition, there is virtually no qualitative research on the topic.

The purpose of this study, therefore, is twofold. First, we explore how low-income families manage their transportation resources given their limited resources. We then examine how low-income individuals feel about, and respond to, changes in transportation costs that arise due to increases in gas prices or transit fares, or hypothetical new congestion tolls or mileage fees.

We conducted in-depth interviews with 73 low-income adults living in or near San José, California, a city of about one million people located 50 miles south of San Francisco. We recruited interviewees through organizations serving low-income members of the San José community. This recruitment strategy generated a sample that was diverse by many criteria, but also overrepresented individuals who had extremely low incomes. Some were homeless; many relied on food banks and/or public benefits and services.

By their very nature, the qualitative interview data allowed us to explore people's attitudes and their reported feelings about their travel, as well as their processes for managing transportation expenditures under varied and changing circumstances. More specifically, the interviews centered around four general areas of interest: travel behavior and transportation spending patterns, the costs and benefits of alternative modes of travel, transportation cost management strategies, and opinions about the effect of changing transportation prices on travel behavior.

MAJOR FINDINGS

The results of our interviews are not readily generalizable to the larger population of poor people in the United States. While our sample is diverse across a number of dimensions, it focuses on the urban poor, was not randomly selected, and is too small to permit meaningful quantitative analysis. However, the findings suggest a number of patterns that could be tested in subsequent research with more representative population samples:

1. Low-income residents tend to worry about paying for transportation. Car owners worry about gas prices, maintenance, and other auto-related costs, while transit

riders worry about transit fares and the ready cash necessary to purchase transit passes that could save them money in the long term. Low-income individuals who receive transportation subsidies (such as free transit passes) have the fewest concerns, but they still report anxiety about maintaining their subsidies.

2. Most low-income individuals actively and strategically manage their household resources in order to survive on very limited means and to respond to changes in income or transportation costs.
3. In deciding whether to drive, get a ride, take transit, bike, or walk, low-income travelers—like higher-income travelers—carefully evaluate the time and money costs of travel against the benefits of each mode available to them.
4. Some low-income individuals in the sample reported a willingness to endure higher transportation expenditures—such as auto ownership or congestion tolls—if they believed that they currently benefit or would potentially benefit from these more expensive travel options.
5. Although low-income households find ways to cover their transportation expenditures, many of these strategies have negative effects on their lifestyles. These negative effects include heightened stress and anxiety, reduced expenditures on necessities such as food, inability to participate in discretionary activities, and spatial entrapment in the neighborhood around their homes.

Many low-income households have difficulty managing their transportation expenditures because of their limited and precarious incomes. Fundamentally, the best way to address their transportation burden is through poverty-alleviation programs, but many of these programs—such as broad income transfers—are expensive and politically unpopular. Therefore, it is also important to support transportation-related policies that help low-income households ease their transportation-expenditure burden. On the basis of our findings, we generated the following transportation-related recommendations:

1. Transportation policies can mitigate the hardships of poverty and the high costs of transportation. In general, low-income families would benefit from policies that reduce their transportation cost burden without also limiting their mobility.
2. Research on transportation expenditures by the poor is underdeveloped, primarily because of inadequate data. Better data are needed to determine accurately both the transportation expenditures and incomes of low-income households, and the data should be linked to residential location at the neighborhood level. The expenditure data collected need to be disaggregated into more detailed expenditure categories, including vehicle ownership costs, vehicle operating expenses, tolls, parking charges, and transit fares by mode and fare type, to allow analysts to examine a wider set of expenditure categories that are potentially relevant to transportation policy.
3. Evaluations of the low-income transportation burden cannot focus solely on costs. Complete analyses should consider both the time and money costs of transportation, as well as the benefits obtained from different types of travel. Existing research tends to emphasize the costs without integrating an assessment of the variable benefits of accessibility.

OVERVIEW OF THE REPORT

This report is organized as follows. The second chapter provides a comprehensive review of the research literature on the travel behavior and expenditure patterns of low-income households. In presenting this review, we first discuss the methodological challenges inherent in obtaining transportation expenditure data, especially from low-income households. We then describe the three national data sources that include transportation expenditure data and summarize key findings from studies based on these data. In addition, we review research in three areas: (1) the combined burden of housing and transportation expenditures; (2) how low-income families respond to changing transportation costs, especially changes in the price of gas and public transit; and (3) how tolling and fees affect low-income families.

The third chapter describes our in-depth interview data collection methods. We explain why we chose interviews as the most appropriate method of data collection and describe the data collection steps and the analysis process. We then summarize the demographic characteristics and residential locations of our sample. Finally, we discuss the limitations of our study.

The fourth chapter describes the environment in which the interviewees live. This information is important, because residential location strongly shapes the transportation options available to the interviewees. The chapter includes a description of the geography of the city, the socio-demographic characteristics of residents, and the travel behavior patterns of San José and Santa Clara County residents. The chapter concludes with a summary of transit service in San José and a listing of services and subsidies available to help low-income residents cover their local transportation costs.

The fifth chapter presents our research findings, focusing on how low-income adults manage their travel and transportation expenditures given limited resources. We review our findings in three principal areas: how low-income households spend their transportation dollars, strategies low-income individuals use to manage their transportation expenditures, and interviewees' attitudes about current and potential changes in transportation costs, including rising fuel prices and congestion tolls. We summarize and analyze these findings in the sixth chapter.

In the seventh chapter, we present planning and policy recommendations to (1) increase transportation affordability and (2) minimize the impact of new transportation taxes or fees on low-income people. A better understanding of the transportation expenditures of low-income families allows us to consider the likely effects of transportation policies on low-income families. It also enables policymakers to better evaluate the effects of transportation finance policies such as congestion pricing and gas-tax increases on the travel behavior and economic security of low-income families. In the eighth and final chapter, we present recommendations for developing new research and data collection strategies.

RESEARCH ON TRANSPORTATION EXPENDITURES AMONG LOW-INCOME HOUSEHOLDS

INTRODUCTION

Transportation is one of the largest categories of expenses for American families—in most cases, second only to housing.[1] However, while affordable housing is a highly prominent policy issue, affordable transportation has received much less attention.[2] Transportation expenditures merit more focused attention from researchers, policymakers, and advocacy groups who wish to address the financial burdens that low-income families face.[3] These expenditures also merit attention from the transportation policy and planning community because they tie into the equity issues surrounding transportation finance and investment, in particular for emerging finance mechanisms such as congestion pricing.[4]

This chapter summarizes and reviews existing research on transportation spending by low-income households, with a focus on research conducted in the United States. Researchers generally agree that transportation expenditures place a heavy financial burden on families with the fewest resources. However, they draw very different implications from this basic finding. Many of the studies emphasize the high costs associated with automobiles and therefore suggest policy strategies to minimize driving. In contrast, other studies acknowledge the high out-of-pocket expenses associated with automobiles but interpret high automobile usage rates among low-income households as an indication of the utility of automobiles, particularly given the dispersed urban structure of most metropolitan areas.

The chapter begins by discussing the methodological challenges inherent in obtaining transportation expenditure data, especially from low-income households, and then describes the three national data sources that include transportation expenditure data—the Survey of Program Dynamics (SPD), the Panel Study of Income Dynamics (PSID), and the Consumer Expenditure Survey (CES). Key findings from these, with emphasis on the CES, are presented next. The chapter then examines one of the prominent themes in current research on transportation costs, the combined burden of housing and transportation expenditures. The final section discusses the literature on how low-income families respond to changing transportation costs, especially changes in the price of fuel and public transit and the introduction of tolling.

WHAT DO WE KNOW ABOUT HOW MUCH LOW-INCOME FAMILIES SPEND ON TRANSPORTATION?

Little solid information exists on how much Americans—of any income level—spend on transportation. This section briefly discusses the challenges of collecting such data, describes the only national sources of transportation expenditure data, and presents findings on what is known from these sources about expenditures among low-income families.

Methodological Issues in Collecting Transportation Expenditure Data

Collecting data on transportation expenditures and estimating them as a portion of total income are not simple matters, especially in the case of low-income households. Two particularly troubling methodological dilemmas are the tendency of respondents to omit information when reporting their income and expenditures and the question of whether to measure the household transportation "burden" by comparing total transportation expenditures against total household income or against total household expenditures.

The first difficulty stems from a problem inherent in expenditure surveys of any type: respondents do not always give complete or accurate information. They may not keep good track of their expenditures, they may distrust interviewers, they may fear repercussions if they describe spending behavior related to illegal activities, or they may wish to avoid the embarrassment of reporting expenditures on goods that can elicit social disapproval, e.g., alcohol. Misrepresentation may be particularly acute among low-income respondents because of their greater economic vulnerability.

Similar problems with misrepresentation occur in income surveys, as illustrated in a study by Edin and Lein, who interviewed nearly 400 single mothers on welfare or working in low-wage jobs to identify their sources of income.[5] The authors found that these women supplemented formal wages and benefits with undocumented income from relatives, boyfriends, and under-the-table employment. To obtain this information, however, the authors had to gain the trust of interviewees through repeat visits or referrals from other interviewees.

With respect to transportation expenditures, people also may rely on cost-cutting strategies that they wish to hide. Some low-income families lie to caseworkers about their vehicle asset holdings to avoid vehicle asset limits associated with public assistance programs, or families may drive uninsured vehicles to avoid both insurance and vehicle registration costs.[6] On the transit side, some households may be hesitant to disclose that they use illegal jitney services[7] or buy black-market transit passes.[8]

The problems of inaccurate data become especially clear when comparing income and expenditure data. According to CES data for households at the bottom income quintile, reported expenditures can be up to two times larger than reported pre-tax income. (By comparison, among all consumer units, total expenditures are about 80 percent of pre-tax income.[9]) While some low-income households certainly take on debt to pay for basic expenses, it is implausible that the *average* poor household spends twice as much as it takes in *each and every year*. While debt is surely a problem among poor households, there is simply no evidence that debts of such magnitude are endemic—especially given the evidence from Edin and Lein that households frequently have unofficial income sources.[10]

The second major methodological issue, related to the first, is the question of whether expenditure statistics should use total household income or total expenditures as a comparative baseline for understanding how severely transportation expenditures burden families. Blumenberg and Rice use the large disparity between income and expenditures

to argue that expenditures should serve as the denominator for calculating transportation spending percentages.[11] Sanchez and Brenman argue that income should serve as the denominator because it "better illustrates the impact of high travel costs on lower-income households," though they do not explain precisely why this is the case.[12] Sanchez and Brenman explicitly note that calculating transportation expenditures against reported income results in much higher estimated transportation-expenditure burdens. Advocacy groups typically follow their lead and use income to calculate percentages as well.[13]

Transportation Expenditure Data Sources

To date, there are very few sources of data on transportation expenditures. Most of the well-known national and regional household travel surveys collect no information at all on expenditures; the exceptions are a few surveys that ask about parking costs at the respondent's workplace and even fewer that ask basic questions about transit fares.[14] The only three major national surveys to collect more-detailed information about transportation expenditures are the SPD, the PSID, and the CES. Table 1 summarizes the transportation-related data in each of these surveys. The SPD contains limited transportation expenditure data; the PSID and the CES are more comprehensive, especially the CES.[15] Indeed, the CES, administered by the Bureau of Labor Statistics (BLS), collects the most complete set of transportation expenditure data of any major survey in the United States.

The CES has collected expenditure data for both urban and rural households in the United States on an annual basis since 1984.[16] The CES project consists of two independent surveys: a quarterly interview survey of 7,500 households and a weekly diary survey of another 7,500 households. The quarterly interview survey focuses on monthly expenditures for such categories as housing, transportation, and insurance. The weekly diary survey focuses on more-frequent purchases such as food, personal care products, and non-prescription drugs. The BLS then combines these data to produce annual data tables and reports. One table shows average annual expenditure data for selected cities in each of four regions in the country (not including San José).

The CES provides a useful overview of transportation spending patterns among low-income households, but it does not paint a comprehensive picture of their expenditures. To avoid issues with sampling errors, the BLS does not publish fine-grained expenditure data—a reasonable choice for such a survey, but one that obscures potentially important differences in spending between low-income and higher-income families. For example, researchers interested in the equity effects of tolling schemes have to look elsewhere, because the public CES data lack a specific category for tolls. In addition, the transportation expenditure data are not linked to data on travel behavior. Therefore, it is impossible to calculate how much households pay per mile of travel. Moreover, the data do not distinguish between the costs of travel for different purposes such as travel to work and travel for recreational purposes. Finally, the CES suffers from the methodological issues associated with expenditure surveys in general, as discussed above.

Table 1. Summary of Transportation Expenditure Data Collected in National Surveys

			Transportation topics covered			
Survey name	**Unit of analysis**	**Geography**	**Transportation expenditures**	**Travel behavior**	**Vehicle ownership/ availability**	**Vehicle characteristics**
Consumer Expenditure Survey (CES)	Household	Region; selected metropolitan areas	Yes—questions on vehicle purchases and leases; recent months' expenses on vehicle maintenance and repair, licensing and registration fees, and operating expenses (including gas, parking, tolls, oil changes); and vacation travel expenses	None on daily travel; a few on vacation travel	Yes	Yes
Panel Study of Income Dynamics (PSID)	Individual and family	Location variables, including PSID/GSA and FIPS state codes, region, and the Beale Rural-Urban code	Yes—questions on vehicle purchases (total price and current payments), plus previous month's expenses on vehicle repairs, gas, parking, carpools, transit fares, taxis, and "other" transportation costs	No	Yes	Yes
Survey of Program Dynamics (SPD)	Household	State	Yes, but only on weekly commute expenditures	A few	Yes	Yes

Sources: U.S. Bureau of the Census, *Current Population Survey Interviewing Manual, 2007*, copies of the questionnaires for each of the three surveys listed, January 2007, http://www.census.gov/apsd/techdoc/cps/CPS_Interviewing_Manual_July2008rv.pdf (accessed September 3, 2010); U.S. Bureau of the Census, "Survey of Program Dynamics (SPD) 2000: Cross-Sectional File SPD_00CS" (no date), http://www.census.gov/spd/pubs/SPD_00CS.pdf (accessed September 3, 2010); U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey Quarterly Interview CAPI Survey," 2008, http://www.bls.gov/cex/capi/2008/cecapihome.htm (accessed September 3, 2010).

Note: GSA = General Services Administration; FIPS = Federal Information Processing Standards.

Transportation Expenditures of Low-Income Families

Since the CES provides the best data on transportation expenditures, we briefly review the most recent CES data, focusing on households ("consumer units") in the lowest income quintile, and then discuss findings from other authors' analyses of CES data.[17]

As shown in Table 2, in 2008, households in the bottom-income quintile spent *slightly less* than other households on transportation as a percentage of total expenditures—15 percent on average for the lowest-income quintile versus an average of 17 percent for all households. Over time, from 1988 to 2008, the transportation-expenditure burden declined significantly among all households but changed very little among households in the bottom income quintile.[18]

The real gap between low-income households and all households is in the magnitude of total expenditures. All households spent an annual average of just over $8,600 on transportation, but households in the lowest-income quintile spent only 40 percent of that amount, around $3,400. The data suggest that low incomes may preclude purchasing as much transportation as these households want or, perhaps, need.

More than 94 percent of all the transportation expenditures of both the bottom quintile and all households were for vehicles, with the largest amount going to vehicle purchases.

Table 2. Transportation Expenditures for the Lowest-Income Quintile versus All Consumer Units in 2008

Expenditure category	Consumer units in the lowest-income quintile	All consumer units
Average annual transportation expenditure, $	3,430	8,604
Change in annual transportation expenditure (1988–2008), percent	12	–9
Transportation as a percent of total expenditures	15	17
Change in the transportation-expenditure burden (1988–2008), percent	1	–14
Average annual expenditure on vehicles, $	3,210	8,091
Percent of transportation expenditure for vehicles	94	94
Average annual expenditure for public transit, $	220	513
Percent of transportation expenditure for public transit	6	6

Sources: U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search," http://www.bls.gov/cex/#tables (accessed May 14, 2010). Data were obtained by searching for the following items: "average number in consumer unit: at least one vehicle owned or leased," "total average annual expenses," "average annual expenses: housing," "average annual expenses: transportation," "average annual expenses: transportation: other vehicle expenses," "average annual expenses: transportation: gasoline and motor oil," "average annual expenses: transportation: vehicle purchases," and "average annual expenses: transportation: public transportation"; U.S Bureau of Labor Statistics, *Consumer Expenditure Survey*, Table 1: Quintiles of Income Before Taxes, 1988, ftp://ftp.bls.gov/pub/special.requests/ce/standard/1988/quintile.txt (accessed June 16, 2010).

(The figure represents an average expenditure among all households in a given year; individual households do not, of course, purchase vehicles every year.) The bottom-quintile households spent an average of $3,210 per year on vehicles. In contrast, the same households spent just $220 per year on public transit.[19]

The proportion of households with access to at least one vehicle is 22 percentage points lower for the lowest-income-quintile households than for all households (67 percent and 89 percent, respectively).[20] Owning fewer vehicles is thus the major way low-income households manage to keep their transportation expenditures low.

Other researchers have examined CES data in more detail to detect overall patterns and trends in transportation spending, and they have arrived at conclusions similar to ours. Rice used CES microdata to examine transportation spending among low-income households in California and found that 13 percent of the total expenditures of those households were on transportation, compared with 15 percent for other households.[21] Using older (1999) CES data and looking only at families living in larger metropolitan areas, Liao also found that low-income families spent a smaller percentage (15 percent) of their household budget on transportation than high-income families (19 percent).[22]

Moehrle used CES data to examine household expenditures among low-income elderly households (those with less than $15,000 in annual income), comparing working and non-working households.[23] He found that overall expenditures varied not only by income, but also by work status: low-income working elderly spent 25 percent more on transportation than low-income non-working elderly, despite having only 12 percent more income on average.

Finally, Sanchez and Brenman calculated changes in transportation spending between 1993 and 2003 and found that households in the lowest-income quintile experienced the greatest rate of increase in transportation spending relative to income. In contrast, households in the highest-income quintile spent a smaller percentage of their income on transportation in 2003 than in 1993.[24] Similarly, Deka used data from the CES as evidence that inequities in transportation have increased over time.[25] The percentage of income spent on transportation by low-income and minority households has increased at a much faster rate than the percentage for other households.

SPENDING TRADEOFFS BETWEEN TRANSPORTATION AND HOUSING

While transportation is generally the second-largest expense category for households in the United States, housing is first. The two expenses are closely linked, because in many communities, cheaper housing is located farther from jobs and other key destinations, so households often make tradeoffs between transportation and housing costs.[26] For example, a family living and working in the central city may choose to move to the suburbs for cheaper housing, even though the move increases their travel costs. Given the tight linkage between the two costs, a number of researchers have investigated the transportation/housing-expenditure burden to estimate the total burden and the relative contribution of each expense.

To understand the effects of this tradeoff, the Center for Neighborhood Technology (CNT), with help from the Brookings Institution, developed a Housing + Transportation Affordability Index that estimates total housing and transportation costs for a given neighborhood.[27] The CNT began by analyzing neighborhoods in St. Paul/Minneapolis but later expanded the analysis, initially to 28[28] and then to 330[29] metropolitan areas in the United States (as of March 2010). In general, the CNT studies find that low- and moderate-income families who live in low-density, suburban-fringe neighborhoods with low housing costs face high transportation costs, since they must rely on private automobiles and drive long distances to access needed destinations.

Other advocacy groups and researchers have also looked at how high transportation expenses affect long-term wealth accumulation for low-income families. McCann, of the Surface Transportation Policy Partnership (STPP), for example, argues that when low-income families trade off low housing costs for high transportation costs, the choice hinders wealth accumulation, because spending on housing can increase a household's wealth, whereas spending on transportation reduces a family's wealth.[30] Similarly, Sanchez and Brenman note that housing appreciation is the primary means of accumulating wealth among low- and middle-income households in the United States; thus, having to accept high transportation costs in exchange for low housing costs hinders low-income households from improving their economic status.[31]

In a policy brief for the Brookings Institution, Waller hints at the possibility of an additional tradeoff between transportation and food expenditures, with lower transportation costs associated with higher food expenditures.[32] (In Rice's analysis, food actually edges out transportation as the second-largest expense for low-income households.[33]) Waller notes other research showing that low-income urban areas, such as South Central Los Angeles, have fewer grocery stores than high-income areas have, as well as a higher proportion of fast-food restaurants and convenience stores.[34] These conditions lead residents to pay higher prices for food of lower quality and nutritional value.[35] Waller speculates that owning cars may allow residents to shop for food in the suburbs, where grocery stores compete more heavily and, therefore, offer a greater range of choices at lower prices. However, researchers have not examined this effect specifically.

HOW RISING TRANSPORTATION COSTS AFFECT LOW-INCOME HOUSEHOLDS

In addition to research on the amount low-income households spend on transportation, the literature also includes examinations of how households adjust their spending when the cost of transportation rises and falls or when incomes fluctuate.

Fuel Prices

Gas prices are not only highly visible—they appear on large signs everywhere you turn—they are also highly volatile, changing every day, sometimes by several cents a gallon. It comes as little surprise, then, that the cost of gas receives widespread attention and concern. Respondents to public opinion polls often state that gas prices affect their habits and, in some cases, pose financial hardships.[36] Higher percentages of low-income respondents

report hardship than do more-affluent respondents. For example, in a June 2009 Gallup poll, 71 percent of low-income households (those earning less than $30,000 annually) reported that current gas prices caused them financial hardship, compared with 60 percent of middle-income households ($30,000 to $74,999) and 39 percent of higher-income households ($75,000 or more).[37] Using slightly different income categories, a recent Public Policy Institute of California (PPIC) study found that 83 percent of low-income California households (less than $40,000 annually) reported that current gas prices cause them financial hardship, compared with 67 percent of moderate-income households ($40,000 to less than $80,000) and 53 percent of higher-income households ($80,000 or more).[38]

Self-reported hardship is one way to assess the impact of high motor-fuel prices; another approach is to look at how people change the amount of fuel they purchase when fuel prices rise. Economists refer to this concept as the *price elasticity* of fuel, which measures the percentage drop in the quantity of fuel purchased that is expected with every percentage increase in fuel price. While many studies—literally hundreds[39]—have analyzed price elasticities for gas, only a few have examined whether price elasticities vary by income group in the United States.

One such study, by Hughes, Knittel, and Sperling, examined the sensitivity of gas demand to changes in prices and income.[40] Their statistical model includes a term measuring the interaction between income and price. This term is negative, suggesting that as fuel prices rise, higher-income households reduce their fuel purchases more than do low-income households. A study by Kayser finds similar results; she speculates that this finding may be due to the greater proportion of discretionary trips taken by higher-income households.[41] In other words, lower-income households already travel at a minimum, leaving little room for reductions.

One might assume that as gas prices rise, some low-income households would choose to replace driving with public transit, but the findings from studies on the relationship between gas prices and transit ridership are ambiguous. Some studies have found that gas prices have relatively little or no influence on public transit ridership,[42] while other studies have concluded that as gas prices rise, so too does use of public transit.[43] Hughes, Knittel, and Sperling explain that in the short run, few people switch from driving to public transit, because the factors that allow people to easily make such a change—land use, employment structure, and transit infrastructure—change very slowly over time.[44] However, if prices remain high or continue to rise, it is possible that many more households might make major lifestyle shifts, such as moving, that would permit them to increase their use of public transit.[45] A study of transit ridership in the Philadelphia area found that even after gas prices had fallen from their peak in the summer of 2008, transit ridership increased, suggesting a permanent change in travel behavior.[46]

A 2009 PPIC study found that more low-income respondents (those earning less than $40,000 annually) reported reducing driving and increasing their use of transit, walking, and bicycling in response to rising gas prices than did moderate- and high-income respondents.[47] In other words, low-income households demonstrated higher elasticity with respect to mode choice than did higher-income households.

In summary, the literature shows clearly that when fuel prices rise, households reduce their motor-fuel purchases. Although relatively few studies have looked at whether low-income households do so more or less than their wealthier counterparts, some research suggests that low-income households may actually reduce their fuel consumption *less* than the highest-income households, perhaps because the former have already reduced travel to the most necessary trips. As for whether high fuel prices stimulate increased used of cheaper modes such as public transit, the evidence is ambiguous, especially with respect to short-term changes.

Public Transportation Fares

Researchers have also calculated general elasticities for public transportation fares. In a summary of transit ridership studies, Litman notes that in the short term (one year), observed fare elasticities range from –0.2 to –0.5.[48] In the longer term (five to ten years), elasticities are larger, ranging from –0.6 to –0.9.

Few studies have examined differences in elasticities between low-income and higher-income transit riders. Two studies, summarized by Cervero, show that riders with annual incomes below $5,000 in 1970 dollars (approximately $28,000 in 2009 dollars) have a fare elasticity of –0.19, while riders with incomes above $15,000 have an elasticity of –0.28.[49] Low-income riders are less sensitive to fare changes because they are more likely to be transit-dependent; higher-income riders are more likely to be choice riders who can decide to drive if transit fares rise. However, a few studies have found that discount fare programs targeted to certain low-income groups (such as students) can induce significant ridership increases.[50] Nevertheless, for most low-income families, costs rarely pose the greatest barrier to using public transit.[51] Service coverage and frequency appear to be the greatest obstacles to transit use—as is the case for families at all income levels.[52]

Regardless of how much public transit ridership levels actually change in the face of fare increases, transit fares may still disproportionately burden low-income riders. Most transit agencies charge a flat per-ride fare.[53] This fare structure is regressive, because low-income riders, on average, make more trips, transfer more frequently, and travel shorter distances than higher-income riders.[54] Further, advocacy organizations such as the Los Angeles Bus Riders Union have criticized transit agencies when they increase fares, arguing that higher fares unduly hurt low-income families.[55] Additionally, some researchers and transit advocates suggest that extremely low-income families cannot accumulate enough money to purchase transit passes that would ultimately save them money.[56] In contrast, however, Doxsey finds that income has no effect on transit pass purchases.[57]

The Impact of Tolling

Transportation proposals that would charge drivers additional fees, such as high-occupancy toll (HOT) lanes or congestion pricing, inevitably raise equity concerns about the financial effects on low-income families. Opponents of HOT lanes, for example, frequently allege that they are “Lexus lanes” that allow wealthy people to avoid congestion at the expense of other drivers who will have to spend more time in traffic.[58] Some also worry that the lanes

reduce travel options for low-income drivers, forcing them to either pay the fees or stop traveling.

Research on the effects of tolls and fees on low-income drivers has produced mixed results. Some studies have focused exclusively on the tolls that low-income drivers would pay. An assessment of two hypothetical tolling systems in Puget Sound—one for 12 road segments and one for a bridge only—found that drivers at the poverty line who used the roads, with no option of a free alternative route, would pay 15 percent and 6 percent of their total income under the two systems; the authors concluded that tolls would pose severe financial hardships.[59] Other studies show that low-income households pay a smaller percentage of their income or expenses on tolls than higher-income households do.[60] Researchers also note that drivers at all income levels benefit from toll lanes when saving time is important to them—for example, when picking up a child from day care to avoid late fees—and when travelers switching to the toll lanes reduce traffic in the general-use lanes.[61]

While the costs of tolls may in fact pose financial hardships for some low-income households, many researchers argue that policymakers must compare those costs against the amounts the households currently pay under existing transportation finance systems.[62] For example, Schweitzer and Taylor used the high-occupancy toll lanes on State Route 91 in Orange County, California, to compare the amount that low-income residents pay for toll roads with the amount they pay through local transportation sales taxes, which are an increasingly popular transportation-finance mechanism in the United States.[63] Schweitzer and Taylor concluded that under the sales-tax approach, low-income households without automobiles end up subsidizing part of the driving costs for wealthy households.[64] They conclude by suggesting that low-income travelers could receive direct “lifeline” discounts for toll roads if policymakers remain concerned about equity issues.[65]

METHODOLOGY

INTRODUCTION

To complement the research described above, which primarily comprises aggregate analyses of quantitative data, this study uses qualitative data from face-to-face interviews with 73 low-income adults living in or near San José, California. This chapter begins with an explanation of why we chose interviews as the most appropriate method of data collection. We then describe the steps of the data collection and analysis process and summarize the demographic characteristics and residential location of our sample. We conclude with a brief discussion of the limitations of the study data and analysis.

WHY INTERVIEWS?

The goal of this survey was to develop a nuanced understanding of how transportation costs shape low-income people's travel options and choices. We chose interviews as the most appropriate method because they make it possible to explore the motivations underlying behaviors of interest. To date, most research into travel behavior has relied on surveys, and these have uncovered relatively little about *how* low-income people decide what trips to make and what modes to use, and even less about how cost considerations influence their decisions. The interviews allowed us to unveil complex relationships between costs and travel behavior that are not captured with survey questionnaires. They allowed us to probe carefully for the motivations behind respondents' travel choices. In addition, interviews were appropriate because so little is known about how cost influences low-income individuals' travel decisions; in such circumstances, it would be difficult to develop appropriate survey questions.

The final sample size of 73 is quite large for a qualitative, interview-based study, giving us ample data for analysis. The sample is large enough to provide a diversity of experiences and large enough to distinguish those attitudes or behavioral choices that appear unique to an individual from more common ones that would be appropriate to examine further through survey-based research.

THE INTERVIEW GUIDE

The interviews were conducted in a semi-structured fashion, following a detailed interview guide (reproduced in Appendix A). Interviewers were given the guide prior to the interviews and were asked to familiarize themselves with it. They also were instructed to bring it with them to use during their interviews. The guide was not intended to be treated as a strict script. The interviewers were encouraged to modify the question wording as needed during the interviews and also to add questions to probe more deeply into relevant topics.

We developed the questions on the interview guide to gather basic information about the interviewees' travel patterns, but more important, to elicit their reflections, values, and decision making processes regarding their travel behavior and transportation expenditure choices. Interviewees also were asked to describe their perceptions about different travel

modes, to discuss the daily tradeoffs they make when deciding how to get around, and to offer general suggestions to policymakers on how to make transportation more affordable. The interviewers also collected basic demographic information and general information on the residential locations of interviewees (the names of major streets intersecting near the interviewees' homes).

The primary topics covered in the interviews were the following:

- **Household composition.** With whom does the interviewee live and consider members of his or her family, and what are the relationships among members of the household?
- **Employment.** Does the interviewee or other household members have paid employment?
- **Household vehicles.** What motor vehicles or bicycles are available to the interviewee?
- **Travel behavior.** By what mode does the interviewee travel, and to what types of destinations? What are the reasons behind the interviewee's mode choices?
- **Expenditures on travel.** What are the interviewee's typical travel costs, including both daily expenses (gas, tolls, taxi fares, parking, transit fares, etc.) and periodic expenses (car payments, insurance, repairs, etc.)? Does the interviewee "pay" for transportation by trading services, such as trading babysitting for rides?
- **Budgeting.** Does the interviewee keep track of personal or household transportation expenditures? If so, how?
- **Impact of rising gas prices.** Did the interviewee change his/her travel behavior or expenditures in response to rising gas prices in 2008? If so, how?
- **Impact of rising transit fares.** Did the interviewee change his or her travel behavior or expenditures in response to the increase in Santa Clara Valley Transportation Authority (VTA) bus and rail fares that went into effect on October 1, 2009? (VTA is the transit authority in the San José area.)
- **Impact of hypothetical changes in transportation costs.** How does the interviewee anticipate that his or her travel behavior might change in response to future changes to transportation costs? Scenarios discussed included doubled or free transit fares, a 10-cent-per-mile mileage fee on driving, and the introduction of high-occupancy/toll (HOT) lanes.
- **Policy suggestions.** What does the interviewee believe are the most important changes policymakers could implement to make transportation better or more affordable for him or her?

On Wednesday, September 9, 2009, four members of the research team tested the recruitment strategy and draft interview protocol at the Sacred Heart Community Services (SHCS) Center in San José. On Friday, September 25, members of the research team conducted a second set of pilot interviews at the Olinder Food Bank, also in San José. Following these pilot interviews, the team made minor adjustments to the interview

questions and established a set of procedures to guide the recruitment and interview processes. The locations of the recruitment sites are shown in Figure 1 on page 23.

SUBJECT RECRUITMENT

Most respondents were recruited through organizations serving low-income members of the San José community. To encourage participation, we told interviewees during the recruitment process that they would receive a $20 gift card to Target as thanks for their participation.

Recruiting interviewees through organizations serving low-income clients made it possible to identify low-income individuals without having to do invasive income screening. Also, working through the partner organizations facilitated recruiting very low-income individuals, including homeless people, who would otherwise have been difficult to identify and reach.

Most interviewees were recruited with the help of three organizations: SHCS, the Olinder Food Program, and a low-income rental housing complex called Paseo Senter. These organizations are located in central San José in neighborhoods with high concentrations of low-income, minority residents, including large Latino and Vietnamese populations. In addition, a handful of interviewees were recruited through referrals by CommUniverCity staff and San José State University anthropology students who put us in touch with low-income acquaintances.

Table 3 shows the distribution of interviewees by place of recruitment. Approximately three-quarters of the interviews were conducted at the SHCS Center. SHCS, which serves over 1,500 low-income customers per day, provides a number of integrated services, including food and clothing assistance, early childhood education, housing assistance, legal services, and a small number of free transit tokens. To recruit interviewees, SHCS staff or the interviewers themselves approached customers waiting in line for food or clothing to ask if they would be willing to do an interview on the spot. Potential interviewees were told that the interview would take 45 minutes to an hour. The interviews took place in both private and communal rooms at the center.

Seven interviews were conducted with Olinder Food Program customers. Olinder is a volunteer-run neighborhood nonprofit organization that gives away food on Monday and Friday mornings. As interviewers did at SHCS, Olinder Food Program volunteers approached customers waiting in line and invited them to be interviewed on the spot. These interviews took place inside the food bank or on benches in an adjacent park.

Table 3. Number of Interviewees, by Location

Interview site	Number of interviewees
Sacred Heart Community Services	55
Olinder Food Center	7
Paseo Senter	6
Other locations	5

A final six interviews were conducted at Paseo Senter, a multifamily, affordable-housing development that is owned and operated by the nonprofit organization Charities Housing. Staff members at Paseo Senter helped recruit tenants by distributing flyers describing the research project and inviting residents to participate. Interested residents gave their names and phone numbers to Paseo Center staff and were later contacted by an interviewer to schedule a time for the interview. These interviews were conducted in a community room at Paseo Senter.

THE INTERVIEWERS

San José State University faculty and students conducted the interviews. Under the supervision of Professor Charles Darrah, undergraduate students enrolled in Anthropology 149—an ethnographic methods course—conducted 34 of the interviews. The other interviews were completed by graduate students in the departments of Urban and Regional Planning and Anthropology, and by the principal investigators.

THE INTERVIEW PROCESS

All participants completed one face-to-face interview lasting from 20 minutes to over an hour. All but one of the interviews was conducted in English; one interview was conducted in Spanish.[66] Most of the interviews took place in the facilities of the three nonprofit organizations or at outdoor (public) seating nearby, though a few interviews were arranged at offsite meeting locations such as a coffee shop or public library. The interviews took place between September 9 and December 2, 2009.

At the beginning of each interview, the interviewer explained the purpose of the study and the interviewee's rights as a subject of research conducted through San José State University. Each subject then was asked to sign an informed consent form. At the beginning of each interview, participants and any children or family members with them were offered bottled water and a granola bar to consume during the interview. All interviews were audio recorded. When an interview concluded, the interviewee received a $20 Target gift card.

After an interview was complete, the interviewers wrote up brief notes, including the time of the interview, the location, and any reflections on the interviewee or the content of the material discussed. For example, interviewers made notes on where the interview took place, how the environment might have influenced the interview, impressions of the interviewee's conduct or attitude, and reflections on the interactions between the interviewee and any family members who were present.[67]

DATA PROCESSING AND ANALYSIS

The audio recordings made during each interview were transcribed by the interviewer or by a professional transcription service. On the transcripts, interviewers replaced the names of the interviewees with pseudonyms to protect the interviewees' confidentiality. They also applied line and page numbers to each transcript.

After the interviews were transcribed, a subset of members of the research team read all of the transcripts, identified trends, and prioritized major themes. They then selected a set of 23 topics around which to code the transcripts. The coding strategy was a mix of deductive coding (reflecting the questions and issues known by the research team to be most relevant to transportation policy) and inductive coding (focusing on key issues raised by the interviewees themselves).

To code the data in each transcript, the coders followed a set process in which they

1. Selected each quotation relevant to a code and applied a “comment” identifying the code name(s) in the margin of the transcript.
2. Copied the relevant quotations, with the identifying line numbers, and pasted them into a spreadsheet organized such that each transcript number was a row and each code topic was a column.
3. Wrote up additional notes summarizing the interview as a whole and/or highlighting particularly important material from it.

The coding process was tested by having multiple coders code the same transcript. After comparing the results, we refined some code definitions to promote better consistency among coders. Three primary coders further tested the coding process by meeting as a group to compare and discuss their results. Their findings were used to make a final round of revisions to the coding definitions and procedures used to analyze all the transcripts. The final set of codes and coding procedures is shown in Part 1 of Appendix B.

In addition to coding the documents for qualitative content, we created a database to enumerate a small set of factors, including demographic characteristics of the interviewees and the modes they used on the travel day discussed during the interviews. Part 2 of Appendix B outlines the specific data analyzed in this way.

During the coding process, coders met with the principal investigators each week to discuss common issues and make further adjustments to the codes as necessary. Throughout the process, the principal investigators reviewed coded transcripts for accuracy and consistency.

Once the data coding was complete, the research team developed a set of key subthemes relevant to each code by reading and re-reading the quotations assigned to each to identify concepts that appeared in quotations made by multiple interviewees. In a few cases, the researchers identified subthemes that related to well-established theories in the literature about travel behavior. The quotations for each code were then assigned to all relevant subthemes for that code, using a new spreadsheet to capture these data.

After all the quotations for each code had been assigned to subthemes, the research team reviewed the material yet again to identify the most prominent subthemes, and the remaining data were discarded from the analysis. A subtheme was kept for further analysis if it captured the content of a reasonable number of interviewees’ comments and also applied directly to the research questions of interest for the study. The final set of subthemes and their associated quotations provide the basis for the findings of the study.

Table 4 presents basic socio-demographic information on the 73 interviewees. For comparison, the table also includes the characteristics of the adult poverty population in San José. Although diverse, the study sample does not precisely represent the composition of the adult poor in San José, underrepresenting young adults, Asians, and persons with very little education. The sample was divided roughly evenly between males and females. About one-fifth of respondents were between the ages of 26 and 40; almost all of the remaining respondents were between the ages of 41 and 65. About one-half of the respondents identified themselves as Hispanic, and one-third identified themselves as white. A very small percentage identified themselves as African-American or Asian. Approximately 40 percent of the respondents had completed only a high-school

Table 4. Demographics of the Interviewees and the Adult Poverty Population in San José

	Interviewees		
Category	**Number**	**Percent**	**Adult poverty population in the San José MSA, percent (2000)**
Sex			
Female	34	53	52
Male	39	47	48
Age range			
18–25	2	3	33
26–40	15	20	30
41–65	47	64	24
66+	2	3	13
Missing	7	10	- -
Ethnicity			
White	22	30	34
Hispanic	30	41	34
African-American	2	3	4
Asian	1	1	23
Mixed/other	9	12	4
Missing	9	12	
Education level			
< High-school graduate	10	14	29
High-school graduate	19	26	27
Some college education	19	26	28
College graduate	4	5	11
Advanced degree	2	3	6
Missing	19	26	—

Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek, “Integrated Public Use Microdata Series: Version 5.0” [machine-readable database], Minneapolis, Minnesota: University of Minnesota, 2010.

education or less, about one-quarter had taken some college classes but had not completed a degree, and 8 percent indicated that they had graduated from college or received an advanced degree.

HOME LOCATIONS OF THE INTERVIEWEES

Sixty-five participants told us the names of major streets intersecting near their homes (see Figure 1). Most of the interviewees lived in central San José, which is not surprising, since this was where we recruited most of them. Therefore, the sample represents the attitudes of urban residents, which are probably different from those of a more isolated rural poverty population. Figure 1 also shows the location of VTA bus and light rail transit lines. A geographic information system (GIS) analysis measuring the straight-line distance between the home locations and VTA stops found that all but one of the 65 participants' stated home locations was within a quarter-mile of a VTA transit stop.

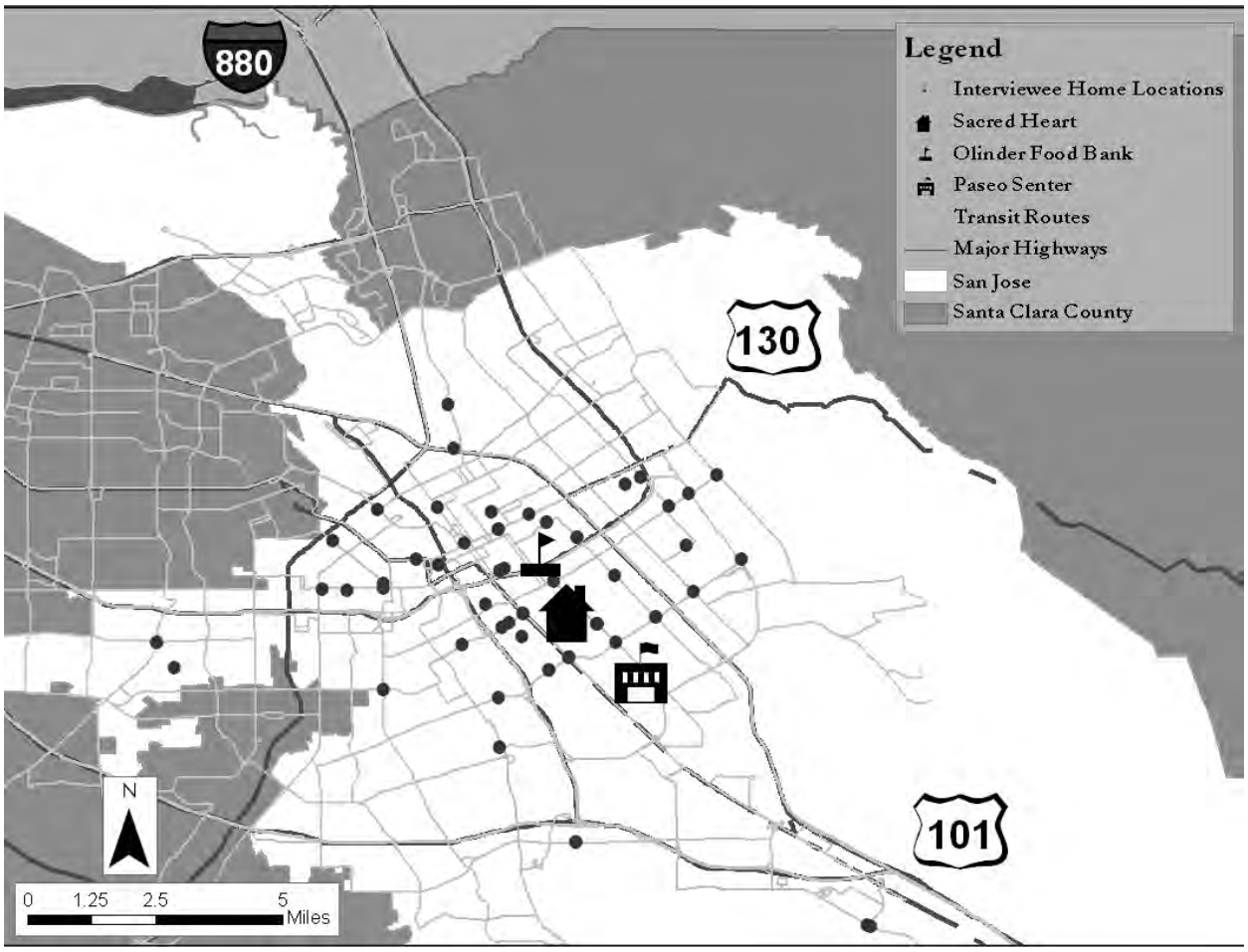


Figure 1. Home Locations of 65 Interviewees, Indicating Proximity to Transit Lines

LIMITATIONS OF THE STUDY DATA AND ANALYSIS

This research entailed a labor-intensive effort to gain insights into the travel needs and burdens of the poor from a relatively small sample of participants. As mentioned previously, there are many advantages to using a qualitative research approach. However, this

strategy has some weaknesses for the present study that are important to note, including the inability to (a) generalize our findings to a larger population since the sample size was not only small but also was not randomly selected and (b) compare our findings across income groups and geographic locations (both within and across urban areas). Further, the study would have been enhanced had we been able to collect information on revealed transportation expenditures. Our data give us insight into how our interviewees think about their transportation expenses but do not indicate whether these thoughts are reflected in their actual behavior.

A second limitation to this qualitative study is the nature of the coding process used. The research team primarily used a deductive coding process designed to identify themes that relate to current policy questions and issues within the transportation community. We chose this process as an efficient method to elicit information with clear and immediate relevance to policymakers. However, an alternative approach to analyzing the data would rely on a purely inductive coding strategy designed to identify themes solely through analysis of the transcripts themselves. Such a coding approach could reveal other aspects of the transportation cost burden thus far not considered by policymakers and researchers.

In the concluding chapter of the report, we recommend additional data collection strategies to address some of the limitations of our study, as well as to supplement the data sources reviewed in the preceding chapter.

THE TRANSPORTATION ENVIRONMENT FOR LOW-INCOME RESIDENTS IN SAN JOSÉ

Low-income households make transportation decisions based, in part, on the environments in which they live. Mode-choice decisions are influenced by the density of land use, public transit proximity and levels of service, and the availability of user-side transportation subsidies, among other factors. In this chapter, we describe the environment in which the interviewees for this study live. We begin with a description of the geography of San José, and we then review the socio-demographic characteristics and travel behavior of San José and Santa Clara County residents. In the last two sections of the chapter, we describe transit service in San José and the support available to help low-income residents cover their local transportation expenses.

THE GEOGRAPHY OF SAN JOSÉ

The city of San José has a population of nearly one million people spread across 174 square miles.[68] Like most cities, San José has a variety of land-use patterns. The downtown core is relatively dense, with a mix of housing and employment opportunities. The core is well served by freeways and a mix of local and regional transit services. The city contains other pockets of dense and mixed-use development around smaller commercial centers as well, though large sections of the city are very low-density residential suburbs. The southern parts of the city include some semi-rural neighborhoods.

Many residents of San José commute north for employment. Although San José does contain jobs, especially in the downtown area and neighborhoods to the north, it also serves as a bedroom community for the rest of Santa Clara County: many residents commute to job-rich communities such as Santa Clara, Mountain View, and Palo Alto.

The city is relatively flat and has a good year-round climate, making walking and bicycling reasonable mode-choice options for short trips.

SOCIO-DEMOGRAPHIC AND TRAVEL DATA OF SAN JOSÉ AND SANTA CLARA COUNTY RESIDENTS

The residents of San José are quite diverse. In terms of race and ethnicity, 2006–2008 American Community Survey data show the city to be 49 percent white, 30 percent Asian, 3 percent mixed race, and 3 percent African-American. Thirty-two percent of the residents identify themselves as of Hispanic or Latino origin. The city also has a high percentage (39 percent) of foreign-born residents.

The median San José household income at the time of this study was just over $79,796, and per capita money income averaged $33,859. Ten percent of city residents fell below the federal poverty line.[69] San José residents are somewhat less affluent than all residents in the county, and more of them are minorities.[70]

The Census Bureau provides limited information on travel behavior for San José residents, consisting of only the "usual" mode used for the work commute. Figure 2 compares the percentage of workers in San José below and above the poverty line by commute mode. Workers below the poverty line are considerably less likely to commute by car (although more than two-thirds of them use this mode) and are slightly more likely to use public transit, bicycling, and walking compared to workers above the poverty line.

Data from the 2006–2008 American Community Survey on vehicle ownership in San José show that approximately 5 percent of all households have no household vehicles available, 29 percent have one vehicle, and the rest have two or more vehicles. It is not surprising, then, that the dominant modes used for work trips by those in households below the federal poverty line are driving alone and carpooling, which, combined, account for 68 percent of the mode share. Public transit accounts for 6 percent of work trips, and bicycling and walking account for approximately 5 percent and 9 percent of work trips, respectively.[71]

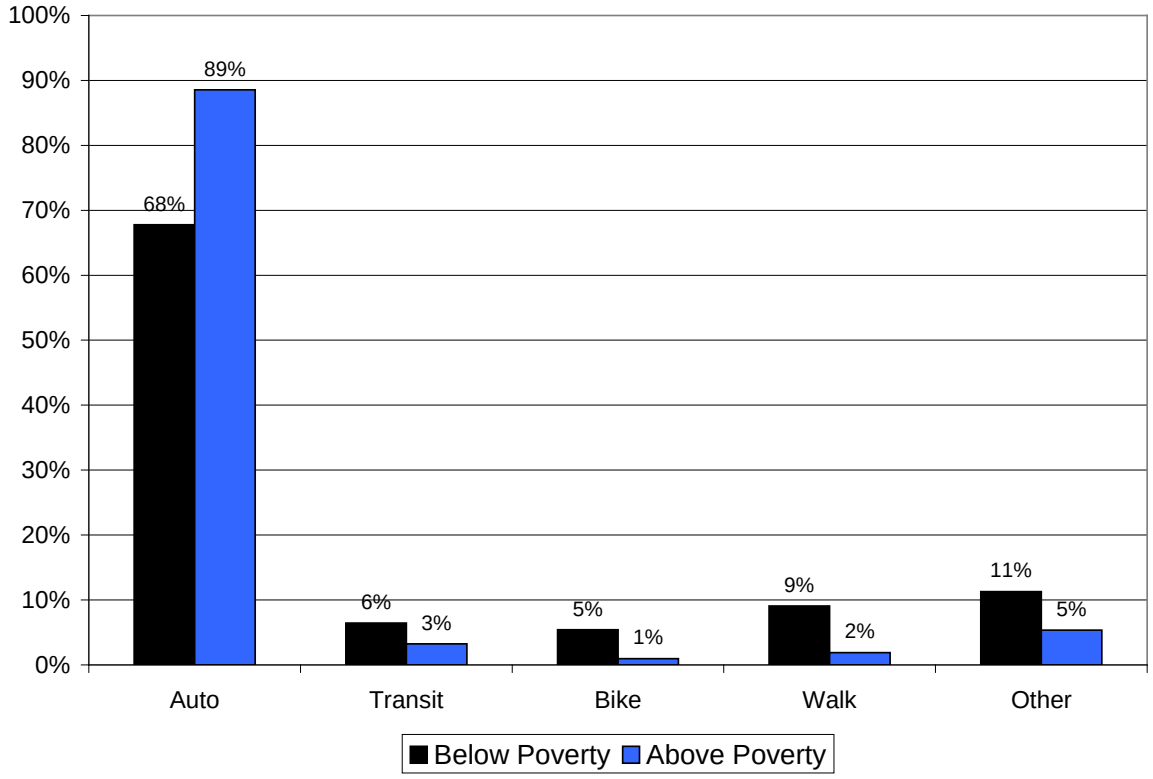


Figure 2. "Usual" Commute Mode, by Poverty Status, in San José (2006–2008)
Source: U.S. Census Bureau, "2006–2008 American Community Survey 3-Year Estimates: San José Metropolitan Statistical Area, California," http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuId=datasets_2&_lang=en (accessed May 14, 2010).
Note: Poverty is defined as the percentage of workers who live in households with incomes below the federally-established poverty threshold.

The 2000 Bay Area Travel Survey provides more-detailed information about travel behavior in Santa Clara County as a whole, although not for San José specifically. Figures 3 and 4 show trip rates by travel mode and purpose for the lowest-income quartile in the county (households with annual incomes below $30,000), as well as for all households in the county. The total number of daily trips does not vary much by income, but modes vary among the income groups. In particular, lower-income residents are much more likely to travel by public transit than county residents as a whole (10 percent of trips for lower-income residents, compared with 2.4 percent of trips for all residents) and are also less likely to travel as vehicle drivers. Lower-income residents are also somewhat less likely to travel as vehicle passengers, although here the variation across income groups is not large. Figure 4, which presents trip rates by trip purpose, shows that low-income individuals make comparatively more trips for shopping and school and fewer trips for work and social purposes.

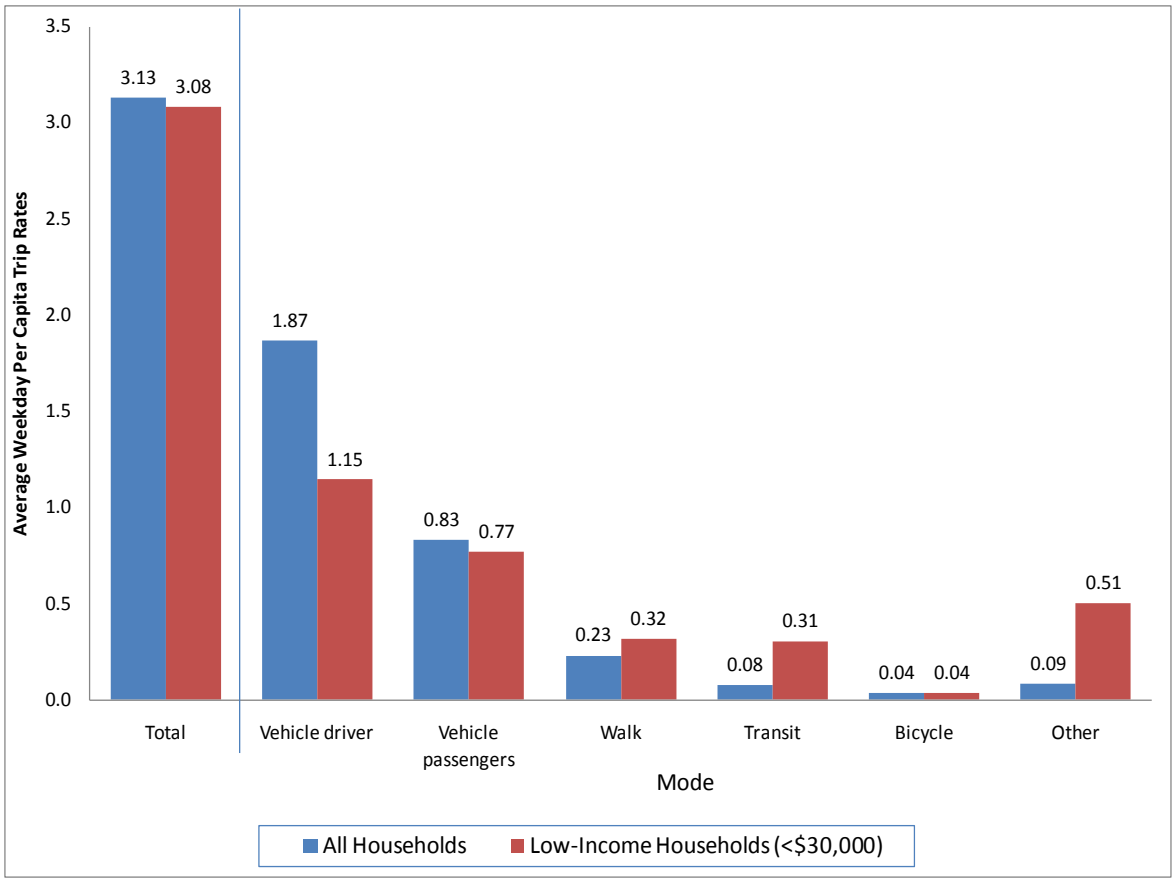


Figure 3. Average Weekday Per Capita Trip Rates in Santa Clara County, by Annual Household Income Status and Travel Mode (2000 Bay Area Travel Survey Data)

Source: Charles L. Purvis (Metropolitan Transportation Commission), e-mail correspondence with the authors.

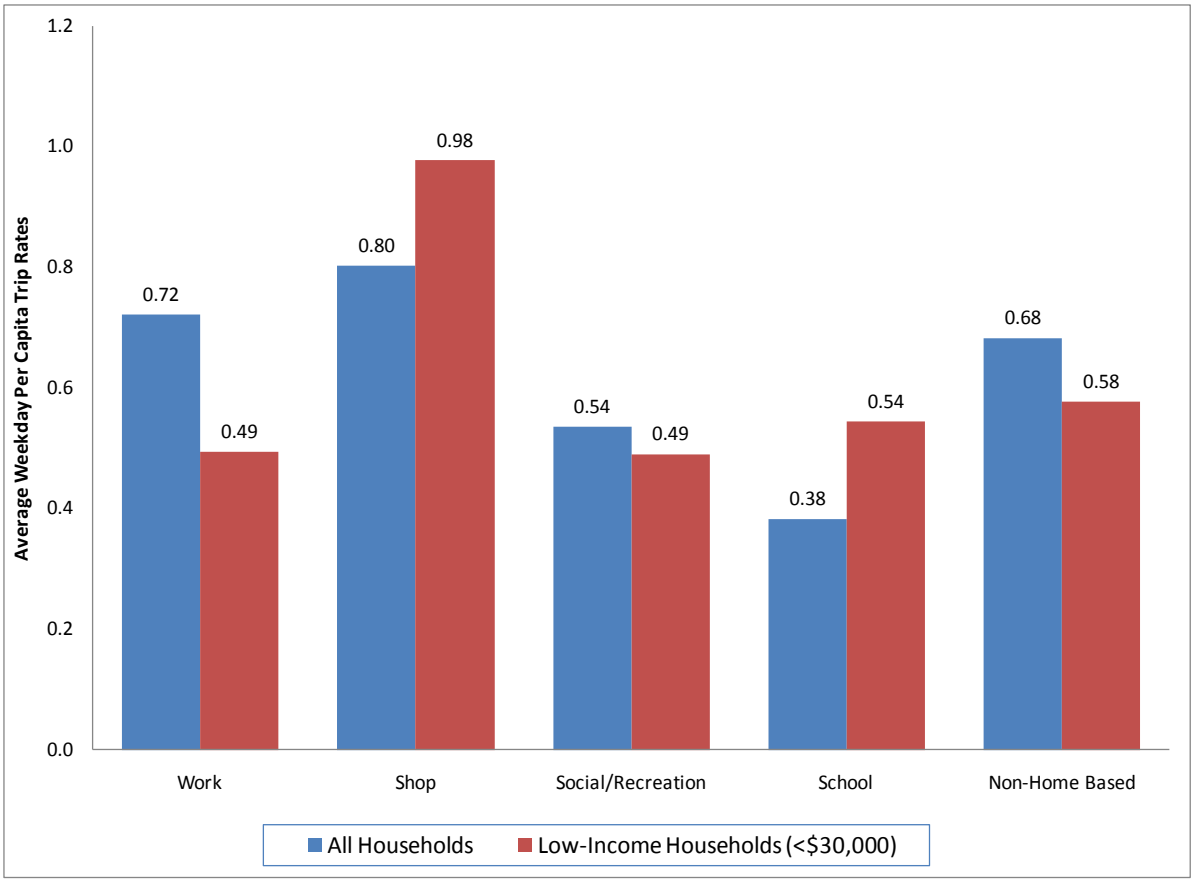


Figure 4. Average Weekday Per Capita Trip Rates in Santa Clara County, by Trip Purpose and Household Income Status (2000 Bay Area Travel Survey Data)

Source: Charles L. Purvis (Metropolitan Transportation Commission), e-mail correspondence with the authors.

A final source of information on travel behavior in the county, a 2005–2006 VTA passenger survey, shows that approximately two-thirds of the riders in the system have no access to automobiles, and only 19 percent have complete access.[72] Further, using 2000 Census data, the survey report estimates that more than half of VTA's riders have household incomes of less than $25,000, as compared with only one-sixth of the county's total population.

TRANSIT SERVICES IN AND AROUND SAN JOSÉ

VTA provides the majority of bus and light rail services for San José and Santa Clara County residents.[73] Service is fairly comprehensive throughout the county—VTA estimates that 80 percent of residents live within one-quarter mile of a local bus stop[74]—although travel is quite slow for many trips.

VTA's fares for single-ride tickets are relatively expensive by U.S. standards, but they are comparable to those of other Bay Area transit operators (see Table 5). The cash fare for bus and light-rail trips is $2.00. However, riders can obtain cheaper rates if they purchase packs of tokens or monthly or annual passes.

Table 5. VTA Fares as of October 1, 2009 (in dollars)

Passenger category	Single ride	Day pass	8-hour light rail pass	Community bus single ride	Pack of 5 day pass tokens	Monthly flash pass	Annual pass
Adult	2.00	6.00	4.00	1.25	27.00	70.00	770.00
Adult express	4.00	12.00	N/A	N/A	N/A	140.00	1,540.00
Youth (5–17)	1.75	5.00	3.50	0.75	22.50	45.00	495.00
Senior (65+)/disabled/Medicare	1.00	2.50	2.00	0.50	N/A	25.00	275.00

Source: Santa Clara Valley Transportation Authority, "VTA Fares," 2010, http://www.vta.org/schedules/fares/vta_fares.html (accessed May 12, 2010).

VTA offers paratransit services for county residents with disabilities that prevent them from using fixed-route service. A nonprofit organization, OUTREACH, operates the county's paratransit services on behalf of VTA. During VTA service hours, paratransit is made available to individuals residing within three-quarters of a mile of a bus or light rail stop. The service can be used both to connect disabled individuals with VTA's fixed-route services and as a substitute for VTA services. Standard paratransit trips cost $4.00, with premium services available for $16.00 per trip.[75]

VTA also operates the Downtown Area Shuttle (DASH) free of charge on weekdays during peak traffic hours. DASH runs through downtown San José and connects to the Diridon Station, which is the primary multimodal transit center in the city.

A variety of transit operators provide interregional transit service. VTA itself offers express buses to connect residents to other employment centers in the Bay Area. In addition, Caltrain provides north-south rail service between San Francisco, San José, and Southern Santa Clara County. The Altamont Commuter Express (ACE) offers weekday rail service east from San José to Stockton, in the Central Valley.

TRANSPORTATION SUPPORTS FOR LOW-INCOME RESIDENTS

The greater San José area has no systematic program to assist low-income individuals with meeting the cost of transportation. However, a few government agencies and nonprofit organizations offer limited transportation assistance to low-income individuals. Moreover, the available programs are nowhere centrally listed and advertised. The following sections summarize available transportation assistance programs in the San José area. This review took a considerable amount of work to compile and relied to a large extent on the researchers' institutional contacts and prior knowledge of public assistance programs, a task most individuals would likely be unable to complete on their own.

Government Programs

The California Work Opportunities and Responsibility to Kids (CalWORKs) program is funded by the federal welfare program and administered at the county level. CalWORKs

provides temporary cash aid transfers and employment assistance to low-income individuals who serve as the primary caregivers for at-risk children or parents. CalWORKs participants also are eligible to receive monetary assistance for transportation costs related to "welfare-to-work" activities, child day care, or schooling.[76] Participants can take transportation assistance in the form of public transit tickets or, if their commute by public transit would exceed two hours, they may obtain mileage reimbursement for personal automobile use. Even if a participant's commute does not exceed two hours, he or she can still choose to receive the cash value of a comparable public transit fare and apply these funds toward personal automobile use. Further, participants may receive taxi vouchers from their employment advisor to use in emergency situations.

In Santa Clara County, OUTREACH provides other CalWORKs services. One of these, the Guaranteed Ride Program, provides scheduled and emergency ride services to transport participants between work and work-related destinations. The Give Kids a Lift! program facilitates transportation to school and day-care locations for participants' children. The Jump Start Program helps participants pay for repairs to personal vehicles that do not exceed the *Kelly Blue Book* value of the vehicles. OUTREACH provides all of these services at no charge to CalWORKs-eligible individuals and to a small number of non-eligible, low-income individuals as resources allow.

Medi-Cal also provides non-emergency transportation to participants for medical appointments when transport by other means is deemed impractical. However, Medi-Cal will provide such services only with the signed confirmation of a medical professional and at the lowest cost adequate for participants' medical needs.[77]

For veterans meeting certain criteria, including low-income classification, the Veterans Administration of Santa Clara County offers either the use of a government vehicle or reimbursed mileage (at a rate of $0.285 per mile) for trips taken for medical appointments or care.[78]

The Consumer Assistance Program of the California Bureau of Automotive Repair also offers low-income individuals and families help with paying for vehicle repairs needed to enable the vehicle to pass the state's smog test. Eligible participants receive up to $500 in emissions diagnostic and repair services. Participants must contribute the first $20 to the repair of the vehicle. The maximum income threshold for a single person to receive this service is $23,400; the threshold increases by $8,100 for each additional family member.[79]

To help homeless individuals with transportation, Santa Clara County and the City of San José Department of Transportation fully subsidize the Universal Pass for Life Improvement in Transportation (UPLIFT) program. Administered by United Way and 24 local community organizations,[80] the program provides homeless individuals who currently receive case management from a participating institution with free three-month bus passes. Case managers have the discretion to renew UPLIFT passes for their clients, depending on the clients' needs.[81] The UPLIFT program appears to be the most widespread transportation assistance program for homeless individuals in Santa Clara County.

Homeless individuals also can receive help through the City of San José Department of Housing, which has an Emergency Shelter Grant (ESG) program funded at a modest level by the U.S. Department of Housing and Urban Development. The program provides a range of services, including transportation assistance. The ESG received $440,000 in total funding for fiscal year 2010–2011,[82] but we were unable to obtain further information regarding the specific transportation services provided with that funding.

Finally, low-income individuals who are disabled or over the age of 65 can take advantage of deeply discounted fares that VTA offers. VTA does not offer discounted fares to other low-income individuals. The only aid it targets specifically to low-income individuals is the informal distribution of transit tokens to local community organizations on a sporadic basis, as its budget allows.[83]

Nonprofit and Private Organizations

According to Rebecca Cole, the community involvement coordinator at SHCS, nonprofit organizations in the San José area generally do not have reliable sources of funding for transportation assistance for low-income clients. For instance, SHCS has no formal transportation assistance programs but "randomly" receives and distributes bus tokens and passes from VTA to assist clients attending SCHS programs or traveling to medical appointments. Similarly, Matt Osment, the director of strategic alliances for InnVision, one of the area's leading providers of housing and services for homeless families and individuals, states that InnVision's only formal transportation assistance program is participation in the UPLIFT program.[84] InnVision sometimes receives bus tokens from VTA as well but has no formal budget for other transportation assistance services.

There are numerous other community organizations in San José, such as First Church Downtown, that draw funding from a variety of sources and provide at least some transportation assistance for poor families.[85] The full range of the services these organizations provide cannot be assessed in this brief survey. However, their transportation-related efforts seem to be piecemeal and are perhaps often dependent on VTA-provided surplus.

Some health organizations, such as hospitals, adult day-care centers, and mental health clinics, also provide ad hoc transportation assistance for their patients. For example, Catholic Charities of Santa Clara County offers escorted transportation for clients in its adult day-care program.[86] (This benefit is not exclusively for low-income clients.)

Some low-income individuals benefit from free transit passes that employers provide to all employees or that are purchased for all residents in certain housing units. VTA offers employers and residential communities with a minimum of 25 units the opportunity to buy deeply discounted annual Eco Passes for their employees or tenants. While there are no other restrictions on the types of residential communities that can participate in the residential Eco Pass program, many of the participating communities are classified as affordable housing.[87] Eco Passes give holders free access to all VTA buses and light rail, and employers or residential communities purchase the passes for far less than the cost of regular adult annual passes.[88]

SUMMARY

To conclude, San José is diverse in both land use and demography. City residents—particularly those living in the urban core—have access to freeways and fairly extensive local and regional transit services. As in other cities, most residents travel primarily by automobile. However, the poor are more likely to use alternative transportation modes such as public transit, walking, and bicycling than are higher-income persons. Consequently, VTA transit riders are disproportionately low-income. Finally, some low-income households receive transportation assistance from public and nonprofit organizations, but this assistance is difficult to identify and often limited.

STUDY FINDINGS: THE TRANSPORTATION SURVIVAL STRATEGIES OF LOW-INCOME ADULTS

This chapter discusses the findings from our interviews. In particular, we focus on how low-income adults manage their travel and transportation expenditures given limited resources. Our data show that low-income households employ, often creatively, a variety of strategies to preserve their mobility, at the same time making ends meet with limited and often unreliable resources.

We begin by reviewing the transportation expenditures of the interviewees in very general terms. We then examine how they manage these expenditures. We conclude with a discussion of the interviewees' feelings about current and potential changes in transportation costs, including rising gas prices and congestion tolls.

TRAVEL BEHAVIOR AND TRANSPORTATION EXPENDITURES

The purpose of the interviews was to explore *how* low-income individuals manage their transportation resources. Therefore, we did not ask for a detailed accounting of interviewees' household expenditures. However, their responses to questions regarding their access to automobiles and their travel behavior provide the basis for a general understanding of their likely transportation expenditures. First, most of the interviewees spend at least some of their household budgets on cars and/or public transit. Second, while many interviewees use no- or very-low-cost modes of travel, such as walking or bicycling, very few are exclusively reliant on these modes. Third, regardless of mode, interviewees devote their resources primarily to non-discretionary travel.

Automobiles

Many of the interviewees, even in our very low-income population group, regularly use automobiles. More than one-third of the interviewees stated that they always had access to a vehicle, and a few others said that they sometimes did. Cars are widely used in some interviewee households. For instance, Juanita, a self-described housewife living with her husband and four children, explained that her family has four or five cars in their household:

> All the cars, they are mine and my husband, but my son, he use one truck . . . and my daughter I give . . . my new car because she need it for the school . . . my son, he goes very very close so he use old car and my son—my husband too—he use old car. And I use—I use the new truck . . . So everybody use a car.

Similarly, as Table 6 shows, slightly less than half of the interviewees drove a car on their most recent travel day, making it the most frequent mode of transportation used, although walking and the bus are not far behind. This rate of car use coheres with interviewees' more general responses about personal car access. The number of trips taken was slightly higher among interviewees with personal access to cars, a finding consistent with the broader travel-behavior literature.[89]

Table 6. Modes Used by Interviewees on Their Most Recent Travel Day

Mode	Percent of interviewees
Drove private vehicle	44
Rode in private vehicle	17
Bus	30
Light rail	7
Bicycle	11
Walk	30

Approximately 45 percent of the interviewees stated that they did not have personal access to a car. Many of these interviewees live in households with no cars or are homeless, but several live in households with cars but have virtually no access to these vehicles. For instance, a young man named Robert, who lives with roommates, stated that he previously owned two cars but had to sell them for cash-flow purposes. He has a long commute between his job at a community center and attendance at a community college. He explained, “There’s three [cars in the household], everybody but me has a car,” but elaborated that he can borrow a car from his roommates only “if it’s late at night and I want to go to the store.”

Public Transit, Bicycling, and Walking

More than half of those without access to a car use public transit. As Table 6 shows, 37 percent of the interviewees used public transit—bus and light rail—on their most recent travel day. Almost one-third walked on that day, and more than 10 percent used a bicycle. These figures include some interviewees who have access to cars. The data suggest that slightly more than one-third of the interviewees used more than one mode of transportation on the travel day. For example, among those with personal access to cars, approximately 15 percent also used public transit on that day. Not all of those with cars chose to drive, since some could not afford the high cost of gas, registration fees, and ongoing maintenance.

Trip Purpose

Regardless of mode, interviewees spend most of their transportation dollars on non-discretionary travel. We distinguished between non-discretionary and discretionary trips by defining a non-discretionary trip as any trip made for work, school, or other purpose necessary for livelihood maintenance.[90] Using this broad definition, only about one-third of all trips were discretionary. There appears to be no major difference between those with and without access to automobiles in the number of discretionary trips taken.

Contrary to stereotypes that the poor travel very little and/or have ample free time,[91] most of the interviewees—even those who are not employed—reported being actively involved in trip-making and activities to support their households. Those who are not working are frequently engaged in livelihood-maintaining activities, such as seeking immediate assistance at a nonprofit organization, traveling to resolve legal or financial issues, or searching for employment. Purchasing food or groceries was the most commonly cited trip purpose, followed by visits to family or friends and medical-related trips.

MANAGING THE COSTS OF TRANSPORTATION

Our interview data suggest that low-income households actively and creatively manage the costs of their travel, using one or more of the following four strategies: (1) modifications to travel behavior, (2) creative cost-covering, (3) careful management of expenditures, including transportation expenditures, and (4) reductions in non-transportation spending. These strategies are summarized in Table 7 and described in detail below.

Table 7. Strategies for Managing Transportation Costs

Strategy	Examples
Modifications to travel behavior	• Shift to travel by less expensive modes; reduce total miles traveled (reduce number of trips, shorten trips) • Consolidate travel by trip-chaining to reduce mileage or the number of days a transit day pass is needed
Creative cost-covering	• Informal income-generating activities • Informal support from friends and families • Formal support from public, nonprofit, and private organizations and agencies • Access to low-cost goods and services (e.g., gas, auto mechanics) • Transit-fare evasion
Careful management of expenditures	• Detailed knowledge of fares and other costs of transportation • Monitoring miles traveled, gas consumption, weekly miles of travel • Cost minimization
Reductions in non-transportation spending	• Reduction in discretionary spending (e.g., cigarettes, cable television, cell-phone service, DVDs or games, going out to eat) • Reduction in non-discretionary spending (food)

Changes in Travel Behavior

Interviewees objected to the high costs associated with both cars and public transit. Consequently, almost all of them reported adjusting their travel behavior to accommodate changes in the costs of travel and household incomes. They adapt their travel behavior in three ways: (1) shifting travel to other, less expensive transportation modes, (2) reducing the total amount they travel, and (3) reorganizing their travel to increase cost efficiency. These are not mutually exclusive strategies; typically, interviewees combine two or more of them.

Some interviewees reported finding various aspects of auto ownership, including the costs of gas, maintenance, and insurance, to be prohibitively expensive. For example, Maria stated, "Gas. It's ridiculously high." Similarly, Jim reported, "Can't afford gas, um . . . insurance, upkeep on a vehicle." The out-of-pocket expenses of using public transit are much lower than those of auto ownership, and, importantly, there are no up-front capital costs. However, the costs of using public transit can be onerous, particularly for the very lowest-income people and those who are most likely to live in households without cars and thus rely on transit. For example, Julio lives with his wife, his cousin, and his cousin's family, but only his cousin and his cousin's daughter are employed in any capacity. Julio depends on General Assistance for his livelihood and told us, "[The] only frustrations [in taking the bus] was the money . . . so altogether it was just the money issue—trying to come up with the money." Jennifer, who has two high-school-aged children and is unemployed because of a knee injury, also complained about the costs of public transit:

> Jennifer: So how are the kids going to get it [the money to ride the bus] for $5.00 a day? (Laughter) . . . It's a lot . . . How much are the bus pass now for a month? $75.00?
>
> Interviewer: About $70.00.
>
> Jennifer: Whoa. That's a lot. (Laughter) That's a lot, I think.

The high costs associated with cars and public transit clearly affect mode choices and prompted many of our interviewees to shift to lower-cost modes of travel. For example, Juanita described her mode-choice process as follows: "If I have to go to two places, I figure out how I can go better. Which one I go was free, I go. Better not to spend a lot of gas." Maria is a stay-at-home mom, and she and her partner use the car for work most of the time. However, she began to walk more, especially when the price of gas increased. She said, "So [when gas prices went up] we wouldn't use the car as much and we decided to walk to closer places like parks and by the house and stuff like that." And Monica responded to the high price of gas by stating:

> Yeah, [the price of gas] is becoming to be a big worry. So now that's kinda we walk around a lot because we don't wanna waste you know like if we can get to it on foot—you know, why should I, you know, waste money on gas.

Some of the lowest-income interviewees indicated that they shifted from public transit to less-expensive travel modes. Manuel lives with his girlfriend and her parents and works

only part-time. He discussed his reliance on rides when he did not have the money for public transit: “I just get a ride if I don’t have the money for it [the bus].”

These data suggest that the out-of-pocket expenses associated with the use of cars or public transit influence the mode-choice decision making of many individuals in our sample. However, out-of-pocket expenditures are not the only criterion. Like higher-income travelers, most of our interviewees carefully consider other important aspects of the available travel modes, particularly speed and convenience. For example, Alice, a 19-year-old single mother who works night shifts at Taco Bell stated:

> Yeah, it is [easier to drive], ’cause it helps out a lot when you want to get to places faster. You have to wait half an hour for the bus. And if you’re carrying something, like the baby, she’s going to get fussy and then in the car, you have everything you need in there. I carry extra juice, extra diapers, and it’s easier when I have to change her diaper. I can just pull over and, you know, just change it, but in the bus it’s a whole lot harder. Yeah, just, the car helps a lot, a *lot*.

Similarly, Tom, a young single father who works and attends San José State University, described the advantages of cars for households with multiple responsibilities:

> Driving . . . I have to move. I have to go to work and go to school and then back to school or get my daughter or drop off my daughter or just go to, ah, whatever appointment I have. It just makes it faster for me to move around.

Therefore, many interviewees in our sample continue to use a more expensive primary mode of travel—cars or public transit—but reduce their costs by curtailing the total amount they travel. Some interviewees have eliminated certain trips altogether, and others make shorter trips. John practices the first of these strategies. Even though he receives a lot of informal support for transportation, John explained, “We don’t go places where we used to go, because of the economy.” Interviewees tend to eliminate discretionary travel as one way to reduce overall trip-making. Joan, who is retired and has trouble traveling because of health problems, focused on this approach:

> Um, yeah, [sometimes I won’t go somewhere because it’s too expensive] because if it isn’t necessary, I won’t spend it and that’s just kind of where I’ve been—and the way I’ve been brought up so.

As a complementary strategy, many interviewees in our sample stay close to home, reducing trip distances by traveling to nearby, albeit less preferred, destinations. Rosa epitomizes the economic difficulty that many of our interviewees experience. She is a mother of three children but recently became unemployed. She discussed traveling only to destinations that are close to her home: “The truth [is], we hardly ever go out, we only go to close places because we are not doing very good.”

Finally, many interviewees have reorganized their travel primarily by engaging in more trip-chaining, stringing trips together. Jim has recently become unemployed and has seen his budget shrink significantly. He had to make changes in the way he travels, and in his interview he made a strong case for the cost savings associated with trip-chaining:

> Um, I mean the biggest way I save money is by planning my week out and see to it that I do all my errands together. You know, if I go to the grocery store, and the doctor's, and the pharmacy, and the food bank, and go by the post office, and stop by all those different places, in order all in one trip, I save a tremendous amount of money on gas by not doing a lot of short trips that are not conserving energy or (inaudible). So I guess that's the number one way I save money is by planning my schedule and then working my plan as far as how I drive and use my vehicle as little as possible, accomplishing the most results.

Trip-chaining is typically accomplished by automobile. However, transit users engage in a form of trip-chaining as well. A number of interviewees spoke about clustering their transit trips on fewer days so as not to purchase an all-day bus pass on more days than necessary. Jeward, who is homeless and on parole, emphasized this strategy. He stated, "Maybe not trips, but as many days to do trips, you know, like I said, instead of doing, going around four or five days a week I might be doing two or three days a week."

Covering the Costs of Travel

To cover their transportation costs, many interviewees, once again, rely on multiple strategies. They engage in informal income-generating activities, solicit formal and informal support from others, and have found creative ways to minimize the ongoing expenses of using both cars and public transit.

A number of interviewees engage in informal income-generating activities specifically to pay for their transportation. For example, they panhandle, recycle cans, and sell merchandise at flea markets, and some interviewees who have automobiles charge others for rides. Julio discussed the use of panhandling:

> This might sound a little desperate but in order—because I'm not working at all . . . we do a lot of panhandling for money to get on the bus to just so we could keep our errands and make our scheduled appointments that we get . . . So, all of our money is pretty much given to us, all people's good faith . . . That's how we've been on [the bus] every single day.

At times, respondents also charge friends, family, or more distant acquaintances for the use of their vehicle, passing on to passengers some of the costs of driving. For example, Lila travels long distances to do housecleaning work as far away as the East Bay (30 miles northeast of San José) and accordingly spends a lot of money on gas. She tries to carpool as much as possible:

> . . . people that go to work with the same trip so you can share the trip. So $10.00, you can put $10.00, I can put $10.00 so it's like half the tag, $20.00. . . Now afford it. And then if you can't take nobody, so I had to pay the whole ten by myself . . . So that affect[s] my budget.

Many interviewees rely on multiple channels of transportation support, both formal and informal. Formal support includes transportation assistance from government agencies, nonprofit organizations, employers, or landlords. Informal support refers to transportation assistance, usually in the form of rides from family members, friends,

or other acquaintances. Interestingly, only about 15 percent of the interviewees who responded to the support question indicated that they received no support whatsoever, and more than half of these had access to personal automobiles.

Formal support from government programs or employer transit pass programs represents a more stable form of support but is limited (by program restrictions or knowledge networks) to a small segment of the population. A significant portion of the interviewee sample receives consistent transportation support from the government or other formal avenues. Government agencies represent the most common sources of formal assistance. Jim, a middle-aged man who lives in a group home for recovering addicts, stated that the government mails him "a check every month and then I go buy a pass at the main office . . . it comes out of my SSDI [Social Security Disability Insurance] check." Employers also provide important transportation assistance in the form of cash or unlimited-use transit passes, although in most of these cases, support does not appear to depend on the employees' low-income status.

Some of the individuals in our sample receive formal support from nonprofit organizations. This type of assistance is often *ad hoc* and is increasingly unreliable in light of economic constraints, which helps to explain the frustration interviewees expressed in regard to such support. Compared with other formal sources, nonprofit organizations provide consistent support to relatively few individuals. Indeed, as many interviewees expressed unsolicited frustration with nonprofit assistance as those who indicated that they received consistent nonprofit assistance. Craig is homeless and without a car, so he is proactive about trying to find transportation assistance. He epitomized interviewees' complaints when he explained, "I went to the Salvation Army, I went here [SHCS], I went to every church up and down San Carlos, nobody helps out with bus passes, nobody. It's like we'll give you all this food, all this clothing, a bus pass no way." Essentially, interviewees find nonprofit transportation assistance to be very sparse and oftentimes unreliable.

Interviewees noted receiving support from informal sources far more often than from formal sources, although the quality and consistency of informal support was likely to be lower. A substantial portion of the interviewees—more than half—benefit from a fairly stable informal support network, although they may utilize this network infrequently. More than half of the respondents indicated that they could either rely on consistent support or could count on support in times of need from family or friends. For instance, approximately one-fourth of the respondents indicated that they receive consistent transportation from individuals. Alice, who runs a mobile vending business in collaboration with her siblings, stated that "if we're going somewhere and we're taking my car, they'll help out with gas . . . Yeah, my brothers help, my boyfriend helps a lot, obviously since he's the dad, and my mom helps out a lot. I have a lot of support." An even greater portion of respondents indicated that they could confidently ask for support from specific individuals in times of need. Nevertheless, they also suggested that they could not rely on support on a daily basis.

Some interviewees expressed strong opinions about the nature of reciprocity for transportation assistance. While low-income individuals are often viewed as passive recipients of support,[92] the interview data indicate that they just as frequently provide support.

Importantly, only respondents who had complete access to cars consider themselves as primary givers in an exchange relationship. A substantial portion of respondents also described a roughly equal exchange for transportation.

By far the most prevalent payment method is cash or the direct purchase of gas, although in-kind transactions are also relatively frequent. In these in-kind transactions, oftentimes nothing is exchanged at the time the ride is given, but those interviewed reported that there was a mutual understanding between participants regarding reciprocity. For instance, Rick lives in a boarding house and stated that he receives rides from friends and "during my time of injuries, no gas payment was asked for anything but there are times when my friend will be low in gas, they'll borrow money and don't come to pay me back . . . or he'll say, 'I'll give you a couple of rides, back and forth to work if you can watch my little kid for me.' We do barter sometimes." Similarly, Julio expressed a mutual understanding with his cousin: "Whatever she asks for. If I can, you know, favors go for favors."

Even more than mutual understanding, several respondents expressed a strong desire to help people with their transportation needs. This was expressed most eloquently by Alice when asked if she gets anything in return for giving people rides:

> You get what you give. And so if I really needed help and I had a problem, I can go to them for that and that's kind of like a support system that every family should have . . . I think it's really important that you support people in their fundamental ideas to give them independence and to structure a good quality of life.

At the same time, there was also a contrasting theme of hesitance to participate in exchanges. Monica stated that "it was so nice that I could take the bus and get here to work independently without asking anybody for rides or anything." However, such hesitance to give and receive support through informal relationships was not commonly expressed.

Finally, interviewees cover their transportation costs by minimizing the ongoing expenses of using both cars and public transit. For example, many auto owners in our sample discussed their efforts to locate cheap gas, parts, and service. Dan stated:

> Um [to cut down on transportation costs], I'd buy secondhand tires, I found a mechanic that charges less, I go the cheapest gas station I can find.

While some interviewees find low-cost service providers, other interviewees maintain vehicles themselves. Tom, for example, studied automotive technology at a local community college, so if there is a problem with the household vehicle, he is able to fix it himself. A few other drivers in our sample minimize their costs by driving conservatively to reduce their gas consumption and wear and tear on their vehicles. Some also avoid areas where they would have to pay for parking. Finally, some respondents defer some of their transportation expenses. Mike owns a relatively old car and explained his strategy for keeping costs low:

> Last time I did the oil change it was 2,400 miles, and the time before that I wasn't able to afford an oil change for the car and I had to stretch it to about 5,000 miles. It's supposed to be done every 3,000.

Transit riders also find creative ways to minimize the costs of travel. For example, more than a few use public transit without paying, boarding trains at times of the day when they are least likely to get caught evading fares. Dave is particularly savvy in this regard:

> I walk to there, and at night, I can just take the light rail. I basically don't have to worry about the fare . . . very few people buy fares at night. It's kind of an agreement, you know, sort of a "We don't check" and "We won't buy." . . . I almost always work graveyard, so I very very rarely pay, if I don't have a day pass already, I very rarely pay for the light rail.

Roger is a homeless man nearing retirement age who lives in a park with a friend. He shares a transit pass with his friend:

> The bus passes, like the one I showed you? . . . so its $6 normal, so . . . I shouldn't be saying this [chuckles] . . . so I get on the bus first and I buy the day pass first, then I immediately get off say "excuse me sir I have to go to the store" and I get off. Then I give the bus pass to Randy and he get on the next bus and does the same thing, so we both get a day pass for $2.50. Doesn't sound like much to you and I laugh about it, but instead of paying $8.50 total, we pay $5. So it's the little things that you have to figure out so you can get on by and stuff.

Another interviewee makes a habit of asking for complimentary transit rides; another changes his appearance, shaving to look younger and therefore less likely to be questioned about his eligibility for a discounted youth ticket. Finally, yet another respondent organizes his travel around the use of DASH, the free downtown shuttle.

Careful Budgeting

Only a few of our interviewees carefully budget for their transportation expenses, that is, earmark fixed sums of money for particular purposes such as transportation. Most of them stated that they did not rely on budgets, although their behavior and comments often suggested otherwise. Most interviewees are well aware of the costs associated with their travel and use informal mechanisms to monitor their expenditures. The few interviewees who did not seem to keep even informal track of their expenses were in situations where budgeting was either too difficult or irrelevant.

A small subset of our interviewees stated that they use budgets to manage their expenses, setting aside a fixed dollar amount to spend on transportation each week or month. However, when asked directly whether they used a budget, most interviewees responded that they did not. For example Julio stated:

> No. I don't have no budget . . . It's just by whatever happens and we get to spend and we get to spend it . . . All pretty much goes to the bus.

Yet comments by many of the interviewees suggest that they do operate with some kind of budget. Even among those who stated that they did not budget, a number made statements such as "but I try to keep it below $50.00 if I can" or "my budget is around $250, and I try to stay in to my budget unless it's, I don't need to do something else."

Many interviewees reported keeping close track of their expenditures and budgeting to minimize their transportation expenses. Joan underscores this point; when asked whether she budgets, she stated, “Not anymore. I, you—uh like I said, I am, I’m—I’m uh fiscally very conservative.” Joan does not keep a formal budget but knows enough about her income and expenses to be financially prudent or, as she puts it, “fiscally conservative.” Similarly, in discussing her expenses, Kari stated, “And then every week I’ll try to lower that amount, get it lower and lower every time.” Again, while Kari may not keep formal records of her expenses, she knows what she spends and aims to reduce these expenditures weekly.

The data suggest that interviewees are aware of their transportation expenses, generally track their expenses in their heads, and use this information to make rational decisions about the tradeoffs between their expenditures and travel behavior. Dan revealed detailed knowledge of his auto-related expenses:

> [I spend] About $40.00 a month [on gas] . . . And that’s—that’s gas only, $40.00. The repairs on my automobile run easily $1,000.00 a year so you break that down and it comes out to $140.00 a month operating and gas. Operating expense and fuel total about $140.00 a month.

Similarly, transit users expressed detailed knowledge about transit fares. They use all of the major fare types—single ride, day pass, monthly pass, and annual pass. They generally know how much it costs to ride the bus, the costs associated with the various transit-pass programs, and the fact that fares had recently increased. For example, Rodger, a disabled man, revealed his knowledge of the discounted transit fares available to him:

> But the bus fare is a pain in the ying yang. You’re asking about that and I have uh . . . OK, so this thing helps out a lot, I have a disabilities pass. It was $20 but it just went up to $25, you know. There is a big difference between paying $6 a day, $180 for the month, and $25.

He was not alone. Dave stated, “In the morning, I pay the $1.75, which I guess is now $2, and get off at the Fruitdale station, and walk back home.”

While some of the interviewees save receipts, most keep track of their expenditures in their heads. In response to a question about how she tracked her expenditures, Je, a middle-aged working woman, stated, “Basically, in my head.” She is not the only one who uses this informal method. Ricardo stated:

> Oh no. I don’t calculate nothing. Everything’s in my head. I know what’s in the bank . . . I don’t make a—I don’t have a statement of the bank. I already know. Because everything I’ve got in there is for bills because I’m kinda like on a budget. You know what I mean?

To keep track of their expenses, interviewees monitor different indicators, including the total amount of money spent on transportation, the cost of gas, weekly miles of travel, fuel consumption, miles per gallon, and bus fares. They then use this information to make expenditure decisions. For example, Dan discussed reducing his expenses as follows: “I

find out how much that costs in comparison to before and if there's anything that I need to cut out to keep the bill down."

A small subset of interviewees does not track their expenses. These interviewees tend to fall into three groups—those who have little need to track their expenditures because they receive guaranteed transportation assistance, those who assert that their lives and expenditures are too variable to track, and those who claim that they are so resource-poor they have nothing to track. Julio claimed, "There's not much to track because there's not much—we don't have much." Peter receives transportation assistance from a school program he attends and stated, "I don't really have to keep track of them [my transportation costs] because I get a three-day bus pass . . . from the program I get from the federal government . . . for participating in something like school." Finally, Jeward highlighted the difficulty of tracking expenses when income is a moving target:

> No [I don't budget], 'cause I never know week to week how much I'm going to have, I mean I can work part time with my partner some weeks and other times nothing, so I can't really plan a budget 'cause I don't know what kind of income I'm steadily gonna have.

In general, these responses suggest that interviewees are aware of the costs of travel, frequently keep ongoing records in their heads, and use this information to make rational decisions regarding their travel and transportation expenditures.

Reducing Discretionary Spending

Some interviewees consistently stated that items such as food and electricity were more important than transportation. For example, Jan claimed that "gas is a concern, but I think I'd spend my last money on a gallon of milk before I'd spend it on a gallon of gas." Carol, an unemployed mother living with her boyfriend, agreed: "My bills come first before my transportation." But many in our sample at least occasionally reduce their spending in other areas to cover the costs of transportation, sometimes stressing the importance of transportation to the functioning of the household. Anthony said:

> First of all you have to sit down and see what is essential . . . And I think transportation is the most essential part of living in city and you gotta transport yourself from one place to another.

Most of the interviewees who expressed a willingness to reduce their non-transportation expenditures focus on reducing or eliminating discretionary purchases such as cigarettes, cable television, cell-phone service, DVDs or games, and going out to eat. However, a few of the interviewees are forced to reduce their consumption of necessities, sometimes facing great hardship. Jeward reported, "Yeah, sometimes I won't pay for the food we need, the water bill or any credit card payments." To reduce her housing costs, Jonatás lives with her husband and four children in Gustine, a small town in the agricultural Central Valley 85 miles east of San José. She also cuts food expenditures when her household budget gets tight: "Oh yeah, at that time, muchos! Less food, less expenses, and less going out, less beans with more water." There is some evidence that reductions in non-discretionary expenditures may be offset by available social programs that provide food

and clothing. For example, Alice stated, “We might cut food back a little bit, but we’ll get it from Sacred Heart.”

HOW DO CHANGING TRANSPORTATION COSTS AFFECT LOW-INCOME PEOPLE?

A central goal of the interviews was learning how the interviewees felt about changes in transportation costs. Toward the end of each interview, a series of questions probed the interviewee’s responses to two real changes in transportation costs and several hypothetical examples. The two real changes were the steep rise in gas prices during 2008 and an increase in VTA transit fares that took effect on October 1, 2009. The hypothetical scenarios included changes in VTA fares—a doubling of fares or the elimination of all VTA fares—and two hypothetical road-pricing scenarios, a fee of 10 cents per mile driven and the creation of HOT lanes on freeways.

These questions were not intended to provide information on actual behavioral responses to changes in transportation prices (the collection of this type of data is not well suited to the qualitative focus of this study). However, the responses enable us to understand how low-income travelers *perceive* the effects of these types of policy changes and instruments.

Rising Fuel Prices

When asked about the substantial rise in fuel prices in 2008, many interviewees said that the increase did not directly affect them, because they did not drive at that time. A few interviewees who had some access or complete access to vehicles also stated that the increase had no or only a very minor impact on them, explaining that they did not drive much anyway, or simply that they were able to afford the added cost. Some interviewees who said they experienced no or little direct impact did mention some of the indirect effects of rising gas prices, however, such as less frequent visits from family or friends or higher prices in general.

Many other interviewees explained that the price increase had affected them directly. The most common response they described was reducing driving, either by eliminating some trips altogether or by shifting some driving trips to other modes. The interviewees who described eliminating trips mentioned cutting out long-distance trips to visit family or for vacations, as well as local trips. As an example of the latter, Maria, a stay-at-home mother living with her four children and boyfriend, explained that, “I didn’t pick up my son as much; I didn’t go out unless I really had to. Then I went out on necessity instead of having fun or for relaxation take a ride. Um, I got really tight.” Only one interviewee stated directly that the rising gas prices made it difficult to access employment. Rachel explained that:

> Even, even for work I had to be open on where I was gonna to go, you know, but they couldn’t just transfer me to uh, they couldn’t just send me to Lodi, like, uh, I had to say no a couple of times ‘cause I didn’t have the money for it.

Finally, a few respondents said that they reduced non-transportation expenditures in order to pay the increased gas cost. Several mentioned reducing recreational expenses, one

mentioned reducing basic food expenditures, and one mentioned having to reduce the number of laundry loads she ran at the Laundromat.

Notably, many of the interviewees' comments appeared to describe problems they face with gas prices in general, rather than problems brought on specifically by the 2008 spike. Consequently, their responses to this question were similar to their responses to the battery of questions on how they manage their transportation expenditures generally.

Fluctuations in Transit Fare Rates

Interviewees were also asked about their response to a VTA fare increase that took effect on October 1, 2009, shortly before most of the interviews took place, and also how they imagined they might respond if VTA fares were to double or transit were to become free.

Interviewees responded to the hypothetical fare-increase question in a variety of ways, from stating that there would be no impact to predicting a severe impact. Once again, most of the specific behavior changes they described were related to changing travel modes or reducing the number of trips.

As they did in response to the question about rising gas prices in 2008, many interviewees responded to the questions about VTA fare increases with language that suggested that even the current levels of fares concerned them. It was often difficult to discern whether their comments reflected their reactions to possible fare increases or simply their sense that fares are already high.

When asked about the recent real increase, the most common response was that it had had no impact. Most of these interviewees felt no impact because they either do not use the bus or else receive free passes, though a small number are regular transit users who pay cash fares. Some interviewees did, however, feel that the impact was severe. One unemployed person who regularly panhandles to raise money for bus fares said:

> [The fare increase is] going to make it extremely rough . . . Extremely rough . . . It's going to cause for a lot more planning ahead . . . and a lot more working on there, just to, you know, just to get the appointments that I need, then just get the money to get in the bus.

Hector, who lives on disability and juggles the use of multiple modes, said:

> I think a lot that affected us is that it went up from—what was that—$65.00 to $70.00. Even that short a little bit . . . it's still quite a bit you know. When you ain't got that money, it's hard and you have to do without.

Relatively few interviewees provided specific explanations of how they had changed their behavior, but those who did elaborate on a change mentioned cutting out some trips and/or changing modes.

The question about the scenario of fares doubling was asked of only about two-thirds of the interviewees. These interviewees tended to see the consequences as more extreme

than those of the recent fare increase. In contrast to what they said about the real fare increases, few said that this scenario would have no impact on them. Also, far more interviewees predicted that the hypothetical doubling would have a significant impact for them; almost half made comments suggesting that they thought the fare increase would have very significant effects on their transportation choices. This group was roughly equally divided between interviewees with and without personal auto access. Those currently with access to an automobile spoke about what might happen if they were they to become dependent on the bus.

The most common change that people said they imagined making was changing modes, although a few mentioned other options, such as cutting out some trips entirely or reducing other expenditures to cover the higher transit costs. Many of those who talked about switching modes mentioned less-expensive modes, i.e., walking or bicycling, but a few predicted that they would switch to either driving or getting rides, as these would now be cost-competitive with the bus. Rachel, a mother of four who relies on a mix of the bus and borrowing a car, reflected on the price of a doubled monthly fare, explaining that:

> It would be cheaper to get a car than paying $140 a month. You know, we could make a car payment. With insurance and car payment, so sounds about right, so. If you're going to do it on a bus, you might as well do it on a car, 'cause that way everybody fits in it, you know.

Similarly, Jason reflected on the price of a day pass, which would go up to $12, and concluded, "I'd probably pay somebody $12.00 and they'll drive me to where I have to be in and take me back instead of taking one or two buses."

In the final question about VTA fares, the interviewees were asked how free VTA access might affect them. More than one-third of the interviewees said they would increase their use of VTA. A few of these people currently have complete access to autos and do not use VTA at all. In this scenario, however, they said that they would start using it, at least on a trial basis. At the same time, most of the people who predicted increasing their use of VTA were already riding VTA. Some said that they would switch trips from other modes to VTA (i.e., from walking), though several also predicted that they would take new trips to places they do not currently go. Some of the new trips described were household-serving, such as to the doctor or shopping, but a number were recreational. Many of the interviewees also made statements that described how liberating free VTA access would be for them. Je, who relies on bicycling and buying VTA day passes when she can afford them, said, "We'd be getting around all over the place, to get out of the house." Similarly, Lisa, a married mother who relies on the bus and rides from her husband, said that free VTA rides would make her "a lot freer . . . I would be able to go out and enjoy other things more."

Mileage Fees

Quite a few interviewees responded to the question about how a hypothetical 10-cent mileage fee might affect them without directly answering it. Instead, they complained about government taxation in general, expressed doubt that collecting a mileage fee would be practical as a government policy, or else criticized the fee as an invasion of

privacy. Similarly, a few focused less on how the fee would affect their personal travel choices and instead said that they thought the fee could be a good thing if the money were used to improve roads and/or public transit service.

Responses from interviewees with limited access to automobiles varied from a complete lack of concern to predictions that the fee would have a major impact on them. A number of these interviewees did predict that the fee would not affect them at all because they do not drive. However, some people currently not using a car responded by imagining a scenario in which they were driving. For example, Steve, an unemployed man currently without a car but hoping to get one some day predicted, "I would cut back my driving . . . At least, 20 percent, 30 percent." Similarly, Rachel, a married mother dependent on transit, walking, and rides or use of a borrowed car, said:

> I'm thinking 10 cents a mile, I mean—that's a lot . . . If we had a car, I wouldn't be able to go anywhere. I mean, we would want that freedom to go anywhere we want. And if they're going to charge 10 cents a mile, even though the person doesn't go very far, that piles up! It piles up. And if you want to go all over the place. To go what, a good 50 mile trip, that would be, wow, it would be pretty expensive. For the rest of your month. That would be $5 or $10 a day? That's $310 a month? No. . . . Uhn-uhn. I think we would just walk [laughs].

Other interviewees, including some who are extremely poor, such as a homeless man named Jeward, expressed less extreme concern over the fee. Jeward compared the cost of driving with the fee to paying for transit:

> Well, it might be cheaper than a day pass, you know, 'cause a lot of the places that I go are only a few miles away, so I don' know, I would have to say it has its pros and cons, I mean, around town it might not be too bad, but going across town like into Sunnyvale, Cupertino, so that could get kinda spendy.

The interviewees who use cars regularly expressed a similar range of opinions. Mary, who uses her car to drive to her jobs cleaning houses, predicted, "I would have to limit my driving to just work and home. That's quite a cost." A few other people seemed to accept with resignation that governments must raise some revenue to pay for services and infrastructure. Dan, a middle-aged man working a retail job, explained:

> Well, that would be 70 cents a day compared to a, $2.00 a day that I spend on gas, so that would be a 33% increase, um, in my, ah, in my travel, ah, expense. Um, that will be a 33 percent increase per mile, the way I have it figured out. Um, that's rough but if I have [to] consider it part of civic duty, I can handle it. But . . . that wouldn't be my wish [laughter].

Finally, a few of the people with complete auto access said that the fee would have little or no impact on them.

HOT Lanes

The last scenario presented to the interviewees concerned HOT lanes that allow toll-paying drivers to bypass traffic delays in the parallel free lanes. The question was posed

slightly differently from the other questions about hypothetical scenarios. Instead of asking interviewees how the proposed lanes might affect them, we asked if there were any situations in which they could imagine choosing to use the HOT lane when it was priced at $5 a trip or, for those who said yes, at $10 a trip.

Across interviewees with all levels of auto access, more said they could imagine using the lanes at least occasionally than flatly stating they would never do so. Approximately half of the interviewees who thought they would use the lane at a cost of $5 also said they might use it at $10.

When asked to state the specific situations in which they might pay to use a HOT lane, most respondents described occasional situations rather than regular ones. Some mentioned long-distance trips out of the region (the question had not specified how long a trip the $5 toll would guarantee, so this was a reasonable answer), others mentioned emergencies, and still others mentioned work-related travel. A few others gave general answers about being willing to pay if there was bad traffic. One particularly enthusiastic response came from Carol, who said, “Oh, yeah. To not be stuck in traffic? You betcha in a heartbeat, yeah! . . . That’d be awesome.” (The response is somewhat surprising given that elsewhere in the interview, Carol expressed considerable concern about the current price of gas.) Finally, several people said that they would be glad to use the lane “if they could afford it,” implying that they could not afford it currently but could imagine a situation in the future where they might have more income and would choose to use it.

SUMMARY

The interviews provide a rich and detailed picture of the hardship that low-income families experience in paying for transportation to access the places that most Americans would consider essential to a basic, no-frills lifestyle, such as jobs, education, health care, grocery shopping, and government offices. They also reveal the wide range of coping strategies used by low-income households to contain and cover their transportation expenses and the hardship that those households face despite these efforts. Finally, the interviews suggest that low-income persons respond to transportation prices in myriad ways, depending on their circumstances—their income, access to automobiles, household composition, residential location, and the availability of transportation assistance.

GETTING AROUND WHEN YOU'RE JUST GETTING BY: SUMMARY AND ANALYSIS OF FINDINGS

Our sample interviewees are very low-income adults who report struggling—on a daily, monthly, and yearly basis—to make ends meet. Some interviewees were recently unemployed or had tenuous connections to the formal labor market. Others rely on aid from various public programs, informal jobs, and loans from family and friends. Almost all of them strategically manage their household resources in order to survive on very limited means. This fact is consistent with the broader literature on the household survival strategies of the poor.[93] Yet data from this study suggest that that this process can be difficult to manage and frequently entails hardships.

MANAGEMENT

For most low-income households, housing is the largest household expenditure, consuming close to 40 percent of the household budget.[94] However, housing costs—at least in the short-run—are fixed. Households must pay their rents or mortgages or else risk eviction or foreclosure. To live within their means, households must manage their remaining expenditures—transportation, food, clothing, health care, etc.—around their housing expenses.

The interviewees in our sample are not passive victims of their circumstances. Their responses exhibited ample evidence of carefully and strategically managing their transportation expenditures, sometimes reducing other household expenditures such as those for food, entertainment, or personal items to cover the costs of travel. They are well aware of their limited incomes and the costs associated with travel, and they deliberately employ a wide variety of strategies to achieve at least minimal levels of mobility given their budgets.

Most of our interviewees manage their transportation expenditures by making careful mode-choice decisions. While their decision making process differs very little from that of higher-income travelers, not surprisingly, the costs of travel play an important role in their decisions. Most of our interviewees revealed an understanding of the various factors (including costs) associated with each of the modes and, albeit within limited incomes, engage in a rational process of selecting the best mode of travel given the specific trip purpose and distance.

As evidence of this process, interviewees discussed shifting to cheaper travel modes when necessary. When interviewees did not have money to pay for fuel, they would rely on getting rides, transit, walking, or bicycling. The complex, trip-by-trip decision making process of low-income individuals oftentimes results in "transportation packaging," the use of multiple modes of travel over the course of a day and among members of the family. Evidence of transportation packaging was apparent even among members of households with access to automobiles.

In addition to using cheaper modes of travel, our interviewees also adjust other aspects of their travel. They make fewer and shorter trips and/or they shift toward making many

stops on a single tour. Much of the literature focuses on stops made between home and work, the two anchors.[95] Many of the respondents in our sample do not work. However, when they have to make a trip to a social service agency, they might stop on the way at the post office and the grocery store. As income decreases, the likelihood of non-work trip chains increases.[96] Trip-chaining tends to be conducted by automobile, since personal vehicles easily accommodate dispersed destinations and frequent stops. For simple trip chains, however, public transit acts as a passable substitute. A number of interviewees commented that they cluster their transit trips on a single day to take advantage of a transit day pass and to limit the number of days that they pay for a pass.

THE DIFFICULTIES MANAGING TRANSPORTATION EXPENDITURES

Low-income households carefully manage their expenditures, but this process can be difficult, particularly if the individuals are reliant on automobiles or if they use public transit without the benefit of transportation subsidies. The concerns of interviewees with access to automobiles tend to focus on the costs of gas and vehicle maintenance. Interviewees who primarily use public transit raised concerns about transit fares and/or maintaining their free or subsidized transit passes. In contrast, although small in number, interviewees who travel principally by walking or bicycling raised the fewest concerns regarding their travel. However, many of these interviewees stated that their use of these no- or low-cost modes was a response to their inability to afford travel by other, more expensive means.

Moreover, interviewees expressed difficulty managing their expenditures due to instability in almost every aspect of their lives. Household incomes of the poor tend to fluctuate, as does their receipt of public benefits and other services.[97] Similarly, the transportation resources and travel patterns of low-income households can be unreliable. For example, low-income households are often dependent on older cars that have frequent mechanical difficulties. Many low-income individuals rely on family and friends to provide rides or money, yet the generosity of family and friends can vary over time. Finally, many low-income transit riders routinely depend on the receipt of transit subsidies from agencies and organizations that may or may not regularly provide them. Some of the subsidy programs require recipients to meet specific requirements to be eligible for services. Budgeting in the face of these volatile conditions can be like shooting at a moving target.

THE COSTS AND BENEFITS OF TRAVEL

Despite these concerns, many low-income individuals in our sample said they were willing to bear higher transportation expenditures—such as the costs of auto ownership or mileage fees—if they believed that they currently benefit or would benefit from these increased expenses. In this way, they are no different from higher-income travelers. Many interviewees prefer to pay the high cost of auto travel because it provides benefits unavailable by other modes. Similarly, some of the interviewees did not reject the idea of new taxes out of hand on the grounds that they would increase costs, but instead reflected on whether the higher fees would bring them worthwhile benefits in exchange for those costs.

The literature concludes that there tends to be a positive relationship between income and the likelihood of supporting increased transportation costs such as new taxes or fees.[98] However, this relationship is mediated by the perceived benefits associated with the new expenditures, either the specific transportation impact of the investment (i.e., reduced travel time) or the use of the additional revenues to offset the distributional effects of the new fees or prices.[99]

Interviewees in our sample discussed the time benefits of using cars, as well as their willingness to pay higher fees if the fees were used to improve roads and/or public transit service. However, the varied circumstances of interviewees in our sample make difficult any uniform understanding of how low-income travelers will respond to policy changes such as taxes, tolls, or fare increases.

TRANSPORTATION HARDSHIP

Although the members of low-income households we interviewed find ways to cover their transportation expenditures, these strategies have frequent and negative effects. Many of the interviewees are worried about their household budgets and, more specifically, how they will cover their expenses, including their transportation expenses. A few of the interviewees were noticeably anxious during the interviews, given the nature of the topic. Some were concerned about their current transportation expenses, complaining about the high costs of driving or about the high costs of transit fares and passes. Others interviewees were comfortable with their current transportation expenditures but expressed fears about the future and, in particular, the increasing costs of travel associated with higher gas prices, rising transit fares, or potential new taxes or fees.

Our data also suggest that low-income households engage in very few non-discretionary activities and purchase few luxury items. Many of the interviewees suggested that higher transportation costs would result in eliminating even more simple—but costly—pleasures, such as eating out, cigarettes, and cable television. These findings are consistent with those of other studies of the expenditure patterns of low-income households, many of which show a positive relationship between income and discretionary spending on such items as food consumed outside the home, leisure goods and services, and vacation travel.[100]

Finally, many interviewees in our sample appeared to be spatially entrapped or strictly limited in how far they travel. Glaeser and Kahn argue that sprawling metropolitan areas have left low-income households behind, since “they do not earn enough to afford the cars that this form of living requires” and so cannot travel freely.[101] In general, there is a positive relationship between travel distance and income, one that persists even controlling for mode.[102] Research also shows that homeless people, a subset of the poor, have spatially constrained mobility patterns that are shaped by their need to walk to destinations and their ability to access bus tokens from social service agencies.[103] In a 1993 study of homeless persons on Skid Row in Los Angeles, Wolch et al. found that in a typical 24-hour period, 57 percent of the people in their sample stayed within the downtown area.[104] Periodic travel to destinations outside of downtown occurred more frequently among homeless people who have social support networks that include family and friends who live in homes.

Certainly, interviewees in our study were more likely than members of higher-income households to use public transit. However, this is not the only indicator of spatial entrapment. Interviewees who have access—albeit sometimes limited access—to automobiles tend not to use them for all trips; moreover, they tend to travel short distances to minimize the costs of driving. Also, some of the more notable responses to the free-transit-fare scenario came from several interviewees who described how the policy would open to them a valued opportunity to travel for non-essential purposes.

The implications of spatial entrapment for interviewees' access to employment, a topic widely addressed in the scholarly literature, was not the focus of our study. Interviewees did not discuss access to employment, since many are not employed. However, some of the interviewees noted that the costs of travel forced them to eliminate longer-distance travel and to reduce the number of trips they took to visit friends or family, for recreation, and for vacation. They complained about the effects of this limitation on their quality of life. For example, Hector does not have a car and complained about rarely seeing his family:

> Yeah, yeah [I stay more local now that I no longer have my truck] . . . [When I had my truck] I would be everywhere. Mainly I'd go back and forth to Hollister, um King City where family is at. I haven't gone out that far in quite a while . . . Because of transportation wise and you know I don't want end up stuck somewhere.

Dan works full-time and owns a car but lamented the lack of fun in his life: "It kind of limits my ah—the scope of my fun. I don't take fun trips." It is likely that many other interviewees also have deferred travel needs. In a study of the travel patterns of very low-income adults in Los Angeles, more than two-thirds of the study sample reported that there were places they wanted to go to but could not reach.[105]

The interviews suggest that households adeptly manage their transportation expenses, making ends meet while preserving at least some mobility. However, the process can be difficult and can result in hardship, including stress, reduced spending on other household goods and services, and deferred travel needs.

PLANNING AND POLICY IMPLICATIONS

The transportation-expenditure burden is a pressing problem among interviewees in our sample. However, it is not their underlying problem. Their underlying problem is poverty or, put another way, not having the income necessary to purchase adequate transportation (as well as other goods and services). Higher incomes would enable low-income families to devote additional resources to transportation (as studies suggest that they would), minimize time spent managing and worrying about their limited resources, and experience fewer hardships. Moreover, it is likely that increased expenditures on transportation would effectively buy additional mobility and greater access to employment, services, shopping, and other important destinations.

Although low-income status is the fundamental problem, transportation access needs are unique in that they enable people to meet almost all other needs, by traveling to shelter, food sources, education, medical care, and so on. Further, public policies can help to mitigate the hardships associated with poverty and the high—and increasing—costs of transportation. In general, low-income people benefit from policies that reduce their transportation burden and/or increase their mobility. Although members of low-income households can minimize their transportation expenses by forgoing travel, and many do, such short-term financial strategies entail longer-term costs to quality of life.

Using the experiences of our interviewees as a guide, we developed the following menu of strategies to mitigate the high costs and low quality of transportation experienced by the poor. This chapter outlines two types of planning and policy suggestions supported by the study findings. The first section discusses policy and planning strategies to make transportation more affordable to low-income people; the second section lays out a set of recommendations to minimize the impact of higher transportation taxes and fees. Since the study relied on qualitative methods and a necessarily small sample, it is impossible to state conclusively that our findings justify these recommendations. But in all cases, the findings support the recommendations as being worthy of careful consideration and further study.

The chapter concludes with a brief note explaining and illustrating the importance of bringing together a wide variety of actors to help implement the types of policies recommended below. Efforts by traditional public-sector transportation agencies are not enough. Public social service agencies, nonprofit organizations serving low-income clients, and private-sector companies all have critical roles to play.

STRATEGIES TO INCREASE TRANSPORTATION AFFORDABILITY

Make Public Transit More Affordable

While not high in comparison with the costs of private vehicles, the out-of-pocket costs of public transit still can be onerous for low-income families. Individuals who rely on public transit tend to have the lowest incomes, since many of those with higher incomes have access to automobiles. Low-income transit users would benefit from discounted or subsidized passes for riders who demonstrate incomes below a particular threshold.

Such passes have historically been eschewed by transit agencies, because determining eligibility can require considerable time, effort, and expense, and they have not always been favored by poverty advocates who fear that such passes can stigmatize users and exclude undocumented residents.

But means testing occurs for other, non-transportation purposes and could be utilized by transit agencies. For example, in 2003, the San Francisco Municipal Transportation Agency (MUNI) adopted a low-income, unlimited-ride "fast pass," the Lifeline Fast Pass.[106] It is available to all San Francisco residents whose incomes fall below 200 percent of the federal poverty line. The transit agency contracts with the San Francisco Department of Health and Human Services to certify the incomes of Lifeline Fast Pass applicants.

Another transit fare modification that could reduce costs for low-income families would be monthly- or annual-pass payment options that spread costs over time. Many of our interviewees recognized the cost savings of transit passes but had difficulty paying the up-front costs to purchase them. Moreover, some low-income families have difficulty paying multiple bills (housing, utilities, transit passes, etc.) at the same time, typically the beginning of the month. Allowing people to pay for monthly passes in installments could help low-income families. It also might be easier for them to purchase transit passes if transit agencies converted monthly passes from a calendar month to being good for 30 days from the date of purchase. The Utah Transit Authority currently is considering such a policy.[107]

Most U.S. bus systems charge riders a flat fare that is the same regardless of distance traveled, time of day, direction, or mode. Such fare structures disproportionately subsidize long-distance, peak, and rail travelers, who are generally not low-income people.[108] Low-income travelers are more likely to travel shorter distances and travel during off-peak hours than higher-income travelers.[109] Consequently, fares that vary by distance, time of day, and transit mode to reflect differences in costs could substantially reduce the transit cost burden for low-income users in an economically efficient way (from the perspective of the transit system).

Adopt or Expand Transportation User-Side Subsidy Programs

As our data show, some public programs and nonprofit organizations already provide transportation subsidies, allowing eligible recipients to use existing transportation free or at reduced costs. One of the largest low-income transportation subsidy programs is funded through Temporary Assistance to Needy Families (TANF), the federal welfare program. The program offsets the costs of work-related transportation expenses. As of fiscal year (FY) 2009, the U.S. Administration of Children and Families allocated 2 percent ($269.8 billion) of federal TANF expenditures to transportation support services.[110] These subsidies could be increased to expand coverage. Moreover, agencies could initiate efforts to improve the "take-up rate" for these subsidies. For example, less than 40 percent of the more than 125,000 enrollees in California's welfare program (CalWORKs) receive any transportation support services.[111]

Targeted programs such as TANF provide benefits to only a subset of low-income families, targeting services primarily to needy low-income, single-parent families. As of 2007, families on TANF comprised less than 7 percent of all families in poverty.[112] Moreover, TANF programs provide transportation subsidies as a component of employment support services and therefore subsidize only employment-related travel. In general, work trips constitute a small percentage of all trips; among low-income travelers, this percentage is even smaller.[113] Yet, as this study shows, low-income individuals travel for many non-discretionary purposes other than work that are essential to their survival. Therefore, public agencies and nonprofit organizations that provide services to low-income clients should adopt or expand formalized programs to offset the costs of travel for multiple purposes.

Make Information About Transportation Assistance Widely Available Through Social Service Agencies and Nonprofit Organizations That Work with Low-Income Families

Although limited, transportation assistance is currently available through some public agencies and nonprofit organizations. Unfortunately, our interviewees appeared to have very little knowledge of what help might be available to them, even though some were receiving bus tokens from local homeless shelters or purchasing reduced-price transit passes available for the elderly and disabled. A centralized listing of available programs providing transportation assistance within a given city or metropolitan area would give low-income families better access to information on these programs and, we would hope, to the services and subsidies they provide. This information could be widely shared with social service agencies and nonprofit organizations, all of which could disseminate it to their clients.

Offset the Costs of Automobile Ownership

Automobiles can be expensive to drive and maintain. The Automobile Association of America (AAA), which estimates driving costs for vehicles of varying sizes, finds that driving a vehicle costs, on average, $9,519 per year, or 56.6 cents per mile; this cost includes fuel, maintenance, tires, insurance, licenses, registration fees, taxes, depreciation, and finance charges.[114] Certainly, as we discussed earlier in this report, low-income households find creative ways to minimize the costs of driving and therefore are unlikely to devote $9,519 per year to their cars. However, for many of the interviewees in this study, auto-related expenses are a necessary but financially onerous burden.

Some travel can be shifted to public transit; other travel is best accomplished by automobile, which is why most low-income households regularly use cars. A variety of programs could be implemented to help low-income drivers manage the high costs of auto ownership and use. In California, these include the California Low Cost Automobile Insurance Program (CLCA) and the Low-Income Repair Assistance Program (LIRAP), which help offset the costs of auto insurance and the repairs on vehicles that have failed the state smog test. Better maintenance of vehicles also could reduce their operating costs. But programs to assist automobile owners reach a very small proportion of low-income drivers. Concerted efforts to encourage more widespread use of existing programs by low-income families could help to ease the often unavoidably high costs of auto use.

The costs of driving—borne by both low-income drivers and society as a whole—could be reduced if low-income households had support enabling them to replace older vehicles with newer vehicles that get better gas mileage, require less maintenance, are safer, and are cleaner. Such support could simply reduce policy disincentives to auto ownership, for example, by eliminating the vehicle asset limitation that prevents many welfare recipients from purchasing reliable vehicles.[115] Some states already have done this. In California, however, recipients of welfare and food assistance (CalWORKs and the Supplemental Nutrition Assistance Program, formerly Food Stamps) are not eligible for benefits if they own vehicles worth more than $4,650—a very low figure given that the average price of a new car is more than $28,000.[116]

While our interviewees told us that operating and maintaining a private vehicle is rarely easy for those with low and unstable incomes, the up-front vehicle purchase costs can pose a particular—and for many—insurmountable, hurdle. There are more than 150 public and nonprofit organizations that offer low-income auto ownership programs.[117] These programs provide low- or no-cost automobiles to qualified low-income applicants through vehicle loans, sales, or donations. Demand is high for these programs, but they tend to be fairly small because resource limitations limit the number of available vehicles.

Provided they can be used to make automobile purchases, Individual Development Accounts (IDAs) can facilitate auto ownership. IDAs are matched savings accounts that provide incentives for low-income families to save for particular purposes. Some of these accounts can be used toward the down payment for automobiles. Currently less than 1 percent of federal dollars go to IDAs.[118] A number of states also sponsor IDA programs. Policies to increase public funds for these programs could increase automobile ownership among low-income families, particularly if the programs included the use of the funds for automobile purchases. For example, the federal Assets for Independence IDA program does not permit funds to be used for automobile purchases. Participants in this program can use the funds only to acquire a first home, capitalize a small business, or enroll in postsecondary education or training.[119]

Enhance Transit Services

Many low-income families, like families at any income level, conclude that auto travel brings benefits of convenience and safety that are worth the comparatively higher cost. If local communities could make public transit a more competitive option, some low-income families would likely benefit financially, i.e., by replacing some or all auto trips with public transit. Today, many transit agencies and community planners seeking to attract “choice” riders onto transit to reduce the problems of widespread automobile use tend to view such riders as economically affluent, forgetting that many very poor people make significant financial sacrifices to travel by automobile; these families would be an effective target market for increasing transit use.

In general, low-income travelers have many of the same concerns about public transit as higher-income households. They complain that transit is too slow, requires long waits at stops, does not easily accommodate multistop trip patterns, and is difficult to use for trips that require carrying groceries or young children.[120] Policies to address these concerns

particularly targeted to low-income neighborhoods would make transit a more desirable option and, in encouraging transit use, would reduce some of the financial burdens associated with driving. Where demand for public transit is high, transit agencies could increase service thereby reducing headways and long waits at stops. Efforts to reduce travel times are important. In high-demand corridors, rapid buses could accomplish this objective.

Some of these service enhancements could be funded through the Federal Job Access and Reverse Commute Program (JARC). Established in 1999, JARC addresses "the unique transportation challenges faced by welfare recipients and low-income persons seeking to obtain and maintain employment."[121] As part of his urban agenda, President Obama proposed doubling funds to this program.[122] However, once again, support for work-related transportation covers only a small—albeit important—component of travel. Other transportation funds need to be leveraged to provide services to this target population group.

Increase Access to Automobiles Without the Burdens of Automobile Ownership

Low-income households in some areas can access automobiles without the costs and responsibilities of automobile ownership. For example, car-sharing programs allow members to rent cars on a short-term basis, often by the hour; members pay an annual membership fee plus fees for the time they use the vehicle. There are numerous car-share programs in the United States, and a few of them specifically target low-income members and neighborhoods. For example, Seattle contributed $30,000 to a car-share organization to place four vehicles in four low-income neighborhoods for a year.[123] The Metropolitan Transportation Commission in the San Francisco Bay Area has used JARC funds to offset the costs of car-sharing for welfare recipients. So far, these efforts have had mixed success. Some of the programs have had difficulty recruiting low-income members, since many were ineligible because of bad credit histories, lack of valid drivers' licenses, and not having checking accounts. For a car-sharing program to be effective in meeting the needs of low-income families, these issues would need to be addressed.

Taxi scrip programs also could increase automobile access by low-income families. Agencies and organizations that provide scrip to meet the transportation needs of seniors and the disabled could provide it to low-income clients to pay for taxi rides. Taxis can be useful, particularly for trips that are not easily made on public transit or on foot, such as trips that entail carrying heavy packages.

Improve Bicycle and Pedestrian Facilities, Especially in Low-Income Neighborhoods

Relatively few Americans outside of college towns regularly rely on bicycle transportation. Given the overall low rates of bicycling to access destinations, a surprisingly high number of the interviewees reported using bicycles extensively. (About 10 percent of the sample reported using a bicycle on their travel day.) Bicycle use was especially high among the very poorest of our sample. Adding infrastructure to make bicycling safer and more convenient

in low-income communities and near services frequented by low-income families could improve their access substantially. In fact, targeting bicycling investments this way might achieve more community benefit than would similar improvements in wealthier neighborhoods, both by enhancing access for the least privileged and by converting vehicle trips to non-motorized modes.

Similarly, targeting low-income neighborhoods for improvements in basic walking infrastructure, e.g., sidewalks and traffic-control devices, could make walking a more feasible travel alternative.

STRATEGIES FOR STRUCTURING NEW TAXES AND FEES TO MINIMIZE THE TRANSPORTATION BURDEN IMPOSED ON LOW-INCOME FAMILIES

It is highly likely that in the future, taxes and fees related to driving will be increased in order to finance badly needed improvements to the transportation system. Rejecting such policies outright because they are unfair to low-income people is problematic. Instead, policy debate and analysis should focus more creatively on improving understanding of the real impacts such taxes and fees will have and how to mitigate them. While our interviews show that even relatively small dollar increases in the cost of driving may create real hardship for the very poorest families, the data also suggest many approaches to crafting new taxes or fees that could minimize the burden on those families. Further, the data demonstrate that some low-income people, like people of any income level, are willing to pay higher fees if they receive enhanced service in return.

When increased taxes and fees for transportation are proposed, the steps described below should be considered.

Assess the Impact of Mileage Taxes and/or Tolls on Household Budgets in Comparison with Other Options

Policymakers and the public have noted that some of the transportation taxes and fees being considered to augment existing revenue sources, e.g., mileage taxes and tolls, are regressive. However, it is critical to assess the equity implications of any new taxes and fees not in the abstract, but in comparison with other realistic revenue options, including current options such as fuel taxes and sales taxes. Research using aggregated datasets such as the CES finds that higher sales taxes, which often have been used to fund transportation improvements in California, are actually more regressive than tolls, at least for the *overall* population of low-income people. Our interviews provide stories illustrating how higher driving costs may have only moderate impacts. For example, even those interviewees who told us they relied primarily on cars often were (1) not traveling very long distances, (2) not traveling on freeways at congested times, (3) flexible in trip timing, and/or (4) willing to carpool if costs rose. All these factors would potentially allow them to avoid paying significantly more to travel under mileage fee or freeway tolling schemes, especially schemes that are sensitively designed. Sales taxes, by comparison, are extremely difficult for families to avoid.

When Allocating the Revenue from New or Increased Taxes, Plan for Improvements to the Transportation System That Will Benefit Low-Income Travelers

Low-income people often lead extremely busy and complicated lives; therefore, improvements to the transportation system that reduce congestion, increase travel options, or improve safety could benefit them greatly. Many low-income people might consider it well worth paying a bit extra—even if that extra cost causes stress to the household budget—in exchange for faster or safer trips. Also, investing new revenues in alternative modes could provide more meaningful alternatives to driving, allowing low-income people to reduce their driving and the associated taxes or fees.

Rely on Taxes or Fees That Can Be Paid in Small, Frequent Increments Rather Than Imposing Taxes or Fees That Require Large, Infrequent Payments

For many low-income people, vehicle-ownership costs were more of a barrier to travel than recurring costs such the cost of gas (or potential new mileage fees or tolls). Substantially increasing annual licensing or vehicle-ownership taxes would prove far more of a hardship than higher gas taxes or tolls or mileage fees that can be paid in small amounts. Our interviewees showed considerable creativity in managing the costs of travel, suggesting that rising travel costs caused by higher taxes or tolls would likely *reduce* the ability of low-income people using vehicles to travel but would not eliminate their vehicle travel. Their coping strategies are not painless—they may add stress or extra time commitments to already difficult lives—but people do prove resourceful in finding ways to travel even when their incomes fall or prices rise. For example, when our interviewees described how they reacted to rising gas prices, they did not say they stopped driving. Rather, they found coping strategies to travel less or in more cost-effective ways (carpooling, using transit for certain trips, more aggressive trip-chaining, etc.).

Structure New Taxes in Ways That Give People Options to Avoid the Higher Charges Through Creative Travel Planning

It would be helpful to structure taxes and fees such that people could avoid them—or at least reduce the cost—by choosing alternative routes or alternative travel times. As noted above, our interviewees are resourceful in their travel planning, and there is no reason to think they would not also be resourceful in finding ways to travel at lower-cost times or on lower-cost routes.

As Part of the Policy-Making Process, Listen Carefully to What Low-Income People Have to Say About How Higher Taxes or Fees on Driving Would Affect Them, and Do Not Assume That All Low-Income People Will Share the Same Views

Our interviewees, just like people with higher incomes, had varied reactions to the mileage-tax and HOT-lane scenarios. Quite a few actually responded positively to the HOT-lane

scenario, describing certain times when they could imagine choosing to pay to use the lanes. Careful, sensitive outreach to low-income communities would allow individuals to share ideas for designing tax and fee programs to be most sensitive to their needs. Such outreach should take place at multiple points during the planning process, including at the outset.

TAKING ACTION: THE NEED FOR COLLABORATION AMONG MANY ACTORS

The preceding sections of this chapter laid out a wide variety of options for reducing the cost burden of transportation for low-income families while preserving or even enhancing their access to needed destinations. Achieving meaningful improvement in this realm will require combining multiple strategies and, in addition, will require active collaboration among a wide variety of actors. Traditional transportation agencies—transit providers and local and state departments of transportation—are only part of the solution. Many of our suggested policies require leadership or participation by government social service agencies, nonprofit organizations that serve low-income populations, and even private companies. To illustrate the need for cooperation among a wide variety of actors, Table 8 lays out a sample of the policies described above and suggests the actors that might take leadership roles in promoting and implementing them.

SUMMARY

To conclude, five cross-cutting themes are worth emphasizing separately from the specific recommendations discussed above:

1. Targeting transportation subsidy programs to low-income people, in addition to population subgroups such as the elderly and the disabled, to help user-side subsidies reach those who most need them.
2. Helping low-income families access a wide variety of essential destinations, such as support services, government offices, health care, and retail businesses.
3. Dividing large, lump-sum transportation costs into smaller, more frequent costs to make them more manageable for low-income families.
4. Recognizing that the specific low-income transportation supports needed vary by household structure, life stage, and residential location. For example, reduced-cost transit passes might help those living near public transit but would do little to aid families in rural communities where transit is less available. Even within the same geographic area, families' travel needs vary by employment patterns, family responsibilities, and disabilities that may make certain modes inaccessible.
5. Soliciting collaboration among a wide variety of actors—transportation agencies, government social service agencies, nonprofit organizations that serve low-income populations, and private companies.

Table 8. Lead Actors for Implementing a Sample of Affordable Access Policies

Access policies	Public social service agencies	Transit agencies	Other state/local government agencies	Nonprofits serving low-income clients	Private Companies
Enhance transit access					
Lower single-ride fares and/or pass prices for riders with documented low incomes		✓			
Give free single-ride tokens and/or passes	✓			✓	
Allow payment for monthly or annual passes in multiple small increments		✓			
Introduce distance-based and time-of-day based fares		✓			
Enhance auto access					
Allow a Pay-As-You-Drive Insurance option			✓		✓
Provide car-sharing in low-income neighborhoods					✓
Subsidize auto ownership programs	✓		✓	✓	
Adopt less restrictive vehicle asset limitations for public assistance programs	✓				
Enhance pedestrian and bicycle access					
Target basic infrastructure improvements such as sidewalks and bicycle lanes in low-income neighborhoods			✓		
Mode-neutral policies					
Better disseminate information on low-income transportation assistance	✓			✓	
Taxes and fees					
Structure new taxes with options for people to avoid the higher charges through creative travel planning			✓		
Choose taxes or fees that can be paid in small, frequent increments rather than large, occasional payments			✓		

NEXT STEPS FOR RESEARCH AND DATA COLLECTION

Better data are needed to allow policymakers to choose the most effective among the many policy options for enhancing low-income people's affordable travel options. We have described the quantitative data and types of analysis available on transportation expenditures and the poor, highlighting some of their shortcomings, and we have discussed the limitations of the present qualitative study. In this concluding chapter, we suggest a broad set of options that researchers and government agencies can use to collect improved data relevant to understanding how transportation expenditures burden low-income families and the types of policies that can effectively and efficiently ease that burden.

NEEDED DATA AND RESEARCH ON TRANSPORTATION EXPENDITURES

Research and data collection on transportation expenditures can be improved in numerous ways. Additional data collection efforts will be necessary to develop an accurate accounting of transportation expenditures among low-income households and to study other aspects of the issue, such as the relationship between transportation expenditures and household debt, vehicle-purchasing behavior, how low-income households insure and maintain vehicles, and the equity implications of new financial instruments.

As a "derived demand," travel enables access to important destinations—employment, services, shopping, recreation, etc.—and therefore confers enormous benefits on travelers. A thorough examination of the transportation-expenditure burden of low-income households must include both the costs and benefits of travel. Although there is a growing body of research on the travel behavior of low-income adults,[124] as described in the literature review above, these studies rely on very incomplete data about expenditures. It is impossible to fully assess the costs and benefits of travel to families, because no existing dataset provides household-level information on transportation expenditures, travel behavior, and residential location.

There is widespread agreement among researchers that transportation expenditures and the transportation-expenditure burden vary by residential location. Current analyses that use neighborhood-level data to predict the behavior of households tend to suffer from an "ecological fallacy," that is, they infer individual or household behavior on the basis of aggregate characteristics of an area. However, it is critical to link data for a specific household's travel behavior and expenditures with data on the characteristics of the neighborhood in which that household lives.

There are many other gaps in the existing data and research on transportation expenditures. Numerous studies of the determinants of automobile ownership show a positive relationship between income and automobile ownership.[125] However, we know relatively little about how low-income households purchase, insure, and maintain vehicles. Some of the unanswered questions are: To what extent do low-income households rely on subprime automobile loans? To what extent do they drive without automobile insurance? How do low-income households maintain their vehicles? How many low-income households have

vehicles that are non-working because of mechanical difficulties the household cannot afford to fix?

Furthermore, few studies have examined the relationship between transportation expenditures and debt. Automobile ownership may put low-income households further into debt and leave them vulnerable to fluctuations in income and unexpected increases in expenses. CES data show that, on average, the expenditures of households in the bottom income quintile are more than twice their incomes.[126] While much of this discrepancy can be explained by the difficulty of collecting accurate income data, some of it is undoubtedly due to debt. According to data from the Panel Study of Income Dynamics, many low-income families with children experience at least some debt, and the amount of debt has increased over time, particularly among households earning from 50 to 100 percent of the federal poverty level.[127]

For some families, transportation expenditures contribute significantly to household debt. Some of the interviewees in our study reported using credit cards to pay for gas; others reported borrowing money from friends and relatives to offset their transportation costs. Studies also show that some households have difficulty managing their transportation debt. In 2008, automobile loan defaults reached a ten-year high of 3.4 percent; the delinquency rate among subprime automobile loans was even higher, 11.5 percent, almost double that of the previous year.[128] To what extent does transportation-related debt exist and disadvantage low-income families?

Finally, our interviews highlight the complexities of determining both the incomes and transportation resources of low-income households. Typical survey instruments such as the Public Use Microdata Sample of the U.S. Census ask respondents for their income from major sources such as wages, farm and business income, welfare, the Supplemental Security Income program, Social Security, interest and dividends, retirement income, etc. There is a category for “other income,” i.e., income that is not reported in any of the specific categories. However, this “other” income can be difficult to track, since it may come from many informal sources—panhandling, friends and family, selling goods at flea markets, charging people for rides, etc.—that are not reported on the typical W-2 form.

Similarly, identifying low-income households’ transportation resources can be challenging. For example, most surveys ask interviewees to report the number of vehicles in the household. By combining this figure with data on the number of household adults or drivers, it is possible to develop a proxy for access to household vehicles. Yet even in households with cars, there can be significant disparities in access to vehicles. Some “auto-deficit” household members might have unrestricted use of household vehicles, while others may have little or no access. At the same time, members of households without automobiles often travel by car, either borrowing vehicles or getting rides from other drivers. Existing data fail to capture such complexities of auto ownership and use.

RECOMMENDED RESEARCH AND DATA COLLECTION STRATEGIES

The following strategies could address some of the shortcomings of existing data and scholarship on the transportation-expenditure burden for low-income families:

- Use in-depth interviews to document in detail the transportation-expenditure burden of low-income households. Edin and Lein (1997) found that developing an accurate accounting of the expenditures of low-income households requires lengthy and multiple interviews. Building trust is an important component of this data collection strategy and therefore, if successful, may produce more accurate data than those collected through surveys.
- Collect detailed data on both transportation expenditures and travel behavior and link the data to local geographic identifiers such as census tracts or block groups. The resulting dataset would allow researchers to analyze the relationships among transportation expenditures, travel behavior, and residential location.
- Ensure that the questions on transportation and expenditure surveys better capture the behavior of low-income households and their transportation expenditures. Survey questions need to be worded to reflect the complexity of household structure, varying levels of access to automobiles, and a variety of formal and informal income streams.
- Develop creative ways to assess low-income households' *revealed* coping behaviors. In this study, we asked interviewees to discuss how they managed their transportation expenses in the face of limited budgets and rising prices. However, we did not examine whether or not they actually manage their transportation expenditures in the ways that they stated.
- Initiate studies and collect data on other important aspects of the transportation burden, such as household debt resulting from transportation expenditures, vehicle-purchasing behavior, and how low-income households insure and maintain their vehicles.
- When evaluating the transportation burden on low-income families, assess both the costs of transportation in time and money and the benefits derived from travel. Existing research tends to emphasize the costs without integrating an assessment of the benefits of accessibility.
- Analyze the effects of new financial instruments (e.g., congestion pricing) on low-income households. In doing so, compare the equity impact of these changes relative to current or other proposed financing methods and evaluate the effectiveness of strategies to mitigate any inequities. It is also important to assess the specific benefits that might accrue to low-income families from programs or infrastructure funded with the higher fees.

CONCLUSION

Over the past two decades, researchers and policymakers have begun to pay much more attention to the limited transportation options available to many poor families. These efforts assess how limited accessibility closes doors to employment, education, health care, civic participation, and other cornerstones of what most Americans would consider a good life. As many recent studies—including our own—have shown, the transportation-expenditure burden can limit accessibility, as low-income households necessarily adjust their travel behavior to manage the high costs of transportation.

Unfortunately, increased research on the transportation-expenditure burden has not been accompanied by significant new efforts to collect data that will shed light on the magnitude and impact of that burden. The lack of rich and detailed data is a serious problem, since good data are foundational inputs for good policymaking. In recognition of this data gap, the study reported here examined existing data to assess its strengths and weaknesses, in addition to presenting new qualitative interview data to complement the current body of research.

We have recommended a set of strategies to make transportation more affordable to low-income people and to minimize the impact of higher transportation taxes and fees. Better data on transportation expenditures would further support these recommendations and enhance transportation policymaking on a wide variety of topics, from transit policy to transportation finance. A variety of data collection strategies and policy tools should be further studied as possible solutions to help alleviate the transportation burden for low-income families.

APPENDIX A: INTERVIEW QUESTIONNAIRE

A. Materials to Bring

- several pens and a notebook
- a tape or digital recorder, several pre-labeled tapes, and spare batteries (even if you've checked your current ones)
- a wristwatch
- the project consent form
- this instrument and the Question #3 paper

B. Introducing Yourself and the Project

Hello, I am _____, a student at SJSU. I am working on a research project with professors in the Anthropology and Urban and Regional Planning Departments to understand better how people living on a limited income manage their daily transportation. We want to learn what means of transportation people use and how the costs of different types of transportation impact their choices. The ultimate purpose of the project is to be able to recommend what types of transportation programs might provide better transportation for people like you. There are no right or wrong answers to any of the questions I'll be asking. The interview will be tape recorded and transcribed so your words are accurately captured, and transcribed interviews will be read by members of the research team.

Your name or identifying information about you will not be used in any report, and only members of the research team will read the interview.

Give the interviewee a copy of the consent form and let them read it over. Ask if they have any questions or concerns. Have them sign two copies, one copy for the research team to keep and one copy to give them for their reference. Remember that you may not begin the interview until consent is received.

C. Interviewing

1. Please tell me a bit about your household.

Probe: In what city do you live?

Probe: What is the closest major intersection to your home?

Probe: Who are all the people you live with?

Probe: How is each person related to you?

Probe: What jobs or work does each person do and/or where do they go to school?

Probe: How do the members of your household share resources or support each other?

2. What are all the vehicles, including cars, trucks, motorcycles, and motorbikes, that belong to members of your household?

    Probe: When do you drive each one?

    Probe: Who owns and who pays for maintaining each vehicle?

[Give the interviewee the prepared paper. The interviewee and/or you can write or draw the destinations and then probe for details about their transportation between them. Remember to use the paper as a prop to get the interviewee to talk on tape about their day.]

3. Using a sheet of paper, please indicate all the places you went yesterday or the day before. For each place:

    Probe: Why did you go there?

    Probe: Where did you go next?

    Probe: How did you get there (by car, by bus, etc.)?

    Probe: Why did you choose that way of getting there?

    Probe: How long did the trip take in hours or minutes?

    Probe: Who, if anyone, went with you?

    Probe: How much did you spend on the trip, such as for fuel, fares, parking, etc.?

    Probe: Did you encounter any difficulties or frustrations in making the trip? If so, what were they?

When they are done be sure to probe again for:

    A. any trips they may have overlooked; and

    B. the sequence or order of the trips they listed

4. Now think about all the different ways of getting around that you use during a typical week, including walking, bicycles, vehicles, and public transit.

    Probe: Which ways of getting around do you use?

    Probe: How did you get here today?

    Probe: What are the advantages and disadvantages of each way?

5. IF THE INTERVIEWEE SOMETIMES DRIVES A CAR, ASK:

    Probe: For what purposes or types of trips do you travel by car?

Probe: How much of your driving is done on freeways?

Probe: Why do you drive instead of getting around some other way, such as using public transit, bicycling, or walking?

Probe: Are there times when you would like to drive but are unable to do so? Why?

Probe: Do you give rides to other people such as coworkers, family members, friends, or neighbors?

Probe: Do they pay you for the ride or do something else in return?

6. Do you sometimes ask someone else to give you a ride to places you need to go?

Probe: For what purposes or types of trips do you get rides?

Probe: Who gives you a ride?

Probe: Do you do anything for them in return?

Probe: Why do you get a ride instead of getting around some other way?

7. IF THE INTERVIEWEE SOMETIMES USES PUBLIC TRANSIT, ASK:

Probe: What kinds of public transit do you use, such as bus, light rail, or Caltrain?

Probe: For what purposes or types of trips do you use public transit?

Probe: Why do you use public transit, instead of some other way of getting around?

Probe: Are there times when you would prefer to use public transit but are unable to do so? Why?

8. Think about ***how*** you make decisions about the monthly transportation expenses of your household.

Probe: How do you keep track of any of your personal transportation expenses?

Probe: Do you keep track of the expenses of any other household members? How do you do this?

Probe: Do you make a budget each week or month for transportation expenses? How do you do this?

Probe: Do you go over your receipts each week or month to figure out how much you spent? How do you do this?

Probe: When you think about your transportation expenses, what are the main concerns you have?

Probe: What decisions do you and others in your household make *together* about how to spend money on transportation?

Probe: What decisions do you *personally* make about how to spend money on transportation?

9. Now, think about your monthly transportation expenses.

Probe: How much do you and each member of your household spend each month to get around?

Probe: What transportation expenses do you have each month, such as gas, bus fares, car payments, insurance, etc.?

Probe: Do you get help paying for any of your transportation expenses from family members, government programs, or other organizations?

Probe: Are there times when you don't go somewhere because it will be too expensive to get there?

Probe: How do you attempt to save money on transportation costs? (Sharing rides/ carpooling, not traveling to places you want or need to visit, finding cheaper ways of getting around, limiting the number of people you take along, repairing vehicles, etc.)

Probe: If you think you need to save more money, what else might you do to save more money on transportation?

10. What are the other major expenses, besides transportation, of your household each month?

Probe: Do you ever cut back on any of these other household expenses in order to get through the month? If so, where do you cut back?

Probe: Do you ever cut back on any of these other household expenses just to meet transportation expenses? If so, where do you cut back?

Probe: Do you ever cut back on transportation expenses in order to meet other household expenses? If so, where do you cut back?

11. Has your level of income changed in the past year? If so, how has this affected the choices you make about transportation?

12. If your income were to drop, which household expenditures, including transportation, would you cut back on?

13. In 2008, gas prices went up to an average of around $4.50 per gallon.

    Probe: How did this increase in gas prices affect how the members of your household got around?

    Probe: Did the increase in gas prices cause you to spend less on other things for your household?

14. The Santa Clara Valley Transportation Agency, the VTA, is about to raise bus and rail fares on October 1. For example, the single fare for adults will go from $1.75 to $2.00, and the monthly pass for adults will go from $61 to $70.

    Probe: How will this increase in fares affect how you get around?

    Probe: Will you cut out any trips? If so, what kinds?

    Probe: Will this fare increase cause you to spend less on other things for your household?

Now I'm going to ask you about some imaginary situations. There are no right or wrong answers—I just want to hear your ideas.

15. First, imagine that VTA buses and light rail are free. How do you think this would affect how you and members of your household get around?

16. Second, imagine that VTA fares double to $4.00 per trip and that the price of a monthly pass also doubles. How do you think this would affect how you and members of your household get around?

17. Third, imagine that the government starts collecting a fee of 10 cents a mile for every trip you make in a car to raise money to fix and improve local streets and highways. How do you think this would affect how you and members of your household get around?

18. Fourth, imagine that you have the option to pay a special toll of $5.00 for trips you make while driving on a freeway that will guarantee that you wouldn't be stuck in traffic during the trip.

    Probe: When do you think you would choose to pay that toll?

    Probe: Now imagine that the toll is $10.00. When do you think you would choose to pay that toll?

19. Imagine that a group of public officials asks you: What is the single most important thing that could be done to make transportation better or more affordable for you? What would you tell them and why would it help you?

20. Now imagine that they took your suggestion and actually made the change. And again they ask: What is the single most important thing that could be done to make transportation more affordable for you? What would you tell them and why would it help you?

Background Information

Please ask the following questions at the conclusion of the interview:

A. What is your year of birth?

B. What is your educational background?

C. How do you describe your ethnicity or your country of origin?

D. [Note or ask about their gender]

Thank you very much for participating in this interview. As a token of appreciation, I would like to give you this $20.00 gift card to Target.

APPENDIX B: CODING PROCEDURES

SUMMARY OF DATA TO COLLECT

For each transcript, we will collect three types of information:

1. All relevant quotations related to the 22 "coding topics."
2. Data on how the interviewees fit into a set of predetermined categories for 15 topics.
3. The reviewer's general impressions about what is notable or important in the interview.

PART 1: CODING TOPICS

How to process each item in a transcript that matches one of the topics we are coding:

1. On the transcript itself:
    - Attach an MS Word "comment" to the entire quotation of interest and record the code in the comment box.
2. For the spreadsheet, see separate document, "CodingInstructions_Excel."

Additional notes on how to code:

1. When in doubt, err on the side of coding too much rather than too little. (e.g., if you aren't sure if certain words should be included in a coded quotation, add them. If there's a quotation that you think is likely to match with one of the codes, add it.)
2. Some quotations may fall into two or more codes. In this case, add all relevant codes to the text.
    - When the exact same quote matches 2 codes, then highlight the text just once and add both codes to the MS Word "comment" bubble. If the codes overlap some but not all of the text, then highlight the relevant text for each, using separate MS Word "comments."
3. If a quotation strikes you as really interesting but doesn't fit with any of the codes, then add the quotation to your notes in Part 3.
4. If at all possible, complete all review of a transcript in a single sitting (Parts 1, 2, and 3).

Saving your work:

After you code each transcript, save it with the file name described below, email a copy to Asha and Evy, and upload a copy to the Google group "GettingAround – Coding Archive."

File naming rule: Transcript_[3-digit transcript #]_CL_[your initials]_[date, written as 6 numbers in the order year-month-day]

Example: Transcript_001_CL_AWA_100213.doc

Save the files as .doc, not .docx (i.e., as files readable by MS Word 2003).

TRANSPORTATION RESOURCES (Family 1)

1. Auto access [**AUTO**]
   - Description: How much access does the interviewee have to private automobiles? This could include discussions of how many autos are in the household, whether the interviewee can use household autos either as a driver or to get rides, and access the interviewee may have to autos in other households.
   - Examples: "I own a car that I can use whenever I need." "My mother [who lives elsewhere], will take me shopping in her car." "A neighbor loads me a car occasionally." "I used to own a car, but when I lost my job I had to sell it."
   - Analysis: (a) can be used to sort responses to other questions by level of auto access; (b) can be used as part of an analysis of transportation packaging; we might expect transportation packaging to be greater among households with more limited access to automobiles.

2. Transportation support **[SUPPORT]**
   - Definitions: Any kind of help that the interviewee receives to help with transportation or statements about where they do not get help.
   - Notes: Include the name of the agency/organization or individual from which/whom they get support. Include resources that come to both the individual and the household.
   - Examples:
     - Get help: free transit passes or bus tokens; mileage reimbursement (GA, VA, welfare); transit passes given by friends/family; an automobile borrowed from friends and family; rides given by family/friends.
     - Do not get help: I do not get any help from my family. Very few organizations give out bus tokens.
   - Analysis: (a) Income packaging. (b) These supports likely affect whether our interviewees believe transportation costs are burdensome; those with stable incomes and/or who receive transportation supportive services may be less concerned about transportation costs.

3. Reciprocity **[RECIPROCITY]**
   - Definitions: Any kind of exchange relationship related to transportation.
   - Inclusions: the complicated pricing schemes that some respondents use to charge for rides; the respondents' feelings about getting rides or giving rides; the medium of exchange.
   - Note: might overlap with [auto], [drive], and [support]
   - Examples: "I give my neighbor a ride and I charge them." "I sometimes do my neighbor's laundry in exchange for rides." "I can't trust anyone to give me rides. I need to rely on myself."
   - Analysis: relates to (a) transportation packaging and (b) use of social networks.

DESTINATIONS

4. Destinations accessed on the trip day [**PURPOSE**]

   - Definition: For all the places the interviewee traveled to on the trip day discussed, code both all destinations and all trip purposes.
   - Note: The "trip day" could be "yesterday," or it could be a different day if the interviewee made no trips "yesterday."
   - Examples: "The doctor's office." "Target, to buy medicine." "To see my brother." "I went shopping." "I traveled to work." "I went by my mother's house to drop off the car [before going home]."
   - Analysis: Will help us learn something about how our interviewees spend their time and whether they are able to make discretionary trips.

FREEWAY USE

5. Freeway use [**FWY**]

   - Definition: Discussion of how often and/or when the interviewee travels on the freeway (either as a driver or passenger).
   - Examples: "I drive on the freeway to get to work every day." "I only use the freeway when I'm visiting my mother out of town." "I try to avoid the freeway, because the traffic is so bad."
   - Analysis: Will help us to understand how much the congestion pricing scenario would impact the interviewees. Also, gives us some sense of how often people make long trips, which would be relevant to the impact of the VMT scenario on interviewees.

REASONS FOR USING AND PERCEPTIONS OF MODES

For this family of topics, follow these guidelines:

- Definition: Code all quotations that describe (a) reasons for using or not using the mode or (b) perceptions about the mode itself. This could include descriptions of why a mode was not chosen for a particular trip, as well as general opinions about the pros and cons of a mode.
- Examples: "I like the bus." "Taking the bus is good for the environment." "I never bicycle because I have knee problems." "Yesterday I drove to work because it's the only way I can be sure to get there on time."
- Note 1: If the quote is "I take the bus because it is faster than walking," this quotation would be coded as both bus and walk since it includes the reason for taking the bus (it is faster) and a reason for not walking (it is too slow relative to the bus).
- Note 2: Mode preferences or opinions also may come up toward the end of the interview, when respondents are expressing their policy preferences.
- Exclusions: Straight descriptions of what travel behavior was used are to be excluded. For example, "I take the bus every day." "I never take the bus." "I typically ride the bus when I'm traveling alone." "Yesterday I took the bus to go shopping."

- Analysis: Will help us learn the extent to which cost keeps people from using certain modes. Will also help us to understand how satisfied they feel with the transportation options they can afford, and which options they may aspire to.

6. Bus **[BUS]**
7. Light rail **[RAIL]**
8. Drive **[DRIVE]**
9. Getting rides **[RIDES]**
10. Walking **[WALK]**
11. Bicycling **[BIKE]**

MANAGEMENT OF TRANSPORTATION COSTS

12. VTA fare payment **[VTA-FARE]**

- Description: What are all the different ways the interviewee pays for VTA fares? Track both what type of fare payment is used (cash, token, etc.) and also whether the interviewee gets help in obtaining tokens/passes.
- Examples:
    - Fare types: e.g., one-way cash fare (adult), one-way cash fare (disabled rate), day pass (adult), day pass (disabled rate), monthly pass, yearly pass, rides light rail without paying a fare or having a pass, uses a pass belonging to someone else, asks bus driver for a free ride
    - How the interviewee obtains tokens/passes: e.g., pays him/herself, gets free pass through from employer, gets tokens from InnVision.
    - Rides VTA without paying: e.g., asks bus driver for a free ride, or rides light rail without having a ticket.
- Analysis: These data will help us to spot patterns in how people obtain transit access, which could help us to make recommendations about fare policies and pass policies. We might also want to sort transit users by those who pay for transit out-of-pocket and those who get help regularly.

13. Tracking Expenditures **[TRACKING]**

- Description: What methods does the interviewee use to track transportation expenditures? This could include conventional methods such as writing all their transportation expenditures down in a book or unconventional methods such as only putting in $5.00 in the gas tank to limit driving.
- Notes: This information will usually follow a direct question from the interviewer.
- Examples: “I keep all my receipts, but I never look at them.” “I buy my bus pass at the beginning of the month, and then I don’t need to worry about transportation expenses for the rest of the month.” “I only put $5.00 in the tank every week.” “I only drive the car when I can keep the tank half full.”

- Analysis: Relates to understanding of how interviewees think about their transportation costs, and how they might budget for them.

14. Change travel behavior **[ΔTRAVEL]**

- Description: How do households adjust their travel behavior when they can't afford their usual or preferred mode of travel? (This could include the respondents' responses to changes or fluctuations in their incomes, as well as changes in the price of transportation.)
- Examples: "I now string trips together (trip chain)." "I take fewer trips." "I walk more." "When I don't have the money, I stay at home."
- Analysis: Relates to the elasticity of demand for travel; has implications for the effects of price increases such as tolls/taxes on travel demand; relates to whether transportation is a fixed or variable cost.

15. Cover costs **[COVERCOST]**

- Description: How they get the money to cover their transportation costs.
- Examples: Panhandle for the day to get transportation money. Borrow someone's transit pass. Get on the bus without paying the fare.
- Exclusion: Changes in travel behavior; cuts in non-transportation expenditures. Does not include their method of payment (a transit pass, tokens) unless it is how they come up with the money to pay for their pass.
- Analysis: Relates to elasticity of demand.

16. Cut non-transportation expenses **[CUTCOST]**

- Description: Reduce non-transportation expenditures to devote more money to transportation or to avoid cutting transportation expenditures.
- Examples: "[If I lost my job], I would get rid of my telephone to pay for a bus pass."
- Analysis: Relates to elasticity of demand for transportation. Allows us to examine how people trade off transportation and other household expenditures.

PERCEIVED IMPACTS OF CHANGES IN TRANSPORTATION COSTS

The following guidelines apply to all six topics in the family.

- Description: The interviewee's thoughts about how the real/perceived change would or has affected him, as well as any other reactions to the change in costs.
- Notes:
    - The discussion will almost always follow a direct question from the interviewer near the end of the interview.
    - Include both general reactions and also any predicted ways the change will impact the interviewee.

- Examples:
    - General reactions: “I don’t understand how this would work.” “That sounds ok for rich people.” “I’d like to have the option to use such a lane.”
    - Predicted impact: “I would never use a lane where I had to pay.” “If I have to pay 10 cents a mile, I’ll stop driving.” “If the government charges 10 cents a mile, my mom won’t be able to come visit me very often.”
- Use in analysis:
    - This information will help us to understand the interviewee’s perception about how burdensome the cost of transportation is to her/him. It may show whether the interviewee thinks the various taxes/fees/fares/prices are unfair to low-income people. The responses should be interpreted as perceptions more than as a factual description of what the interviewee actually would do.

17. Gas-price increase **[GAS]**

18. VTA fare increase **[VTA INCREASE]**

19. Doubling of VTA fare **[VTA DOUBLE]**

20. Free VTA fares [**VTAFREE**]
    - Analysis: The information will help us to understand if interviewees truly perceive transit as a viable mode to use (especially for people who aren’t currently using transit). The responses should be interpreted as perceptions more than as a factual description of what the interviewee actually would do.

21. VMT fee [**VMT**]
    - Note: Include the interviewer’s phrasing of the question, as this often deviated from the script.
    - Analysis: This information will help us to understand the interviewee’s perception about how burdensome the cost of transportation is to her/him. It will show whether the interviewee thinks the concept is unfair to low-income people. The information gives a sense of how sensitive low-income people feel they are to the incremental costs of auto travel. The responses should be interpreted as perceptions more than as a factual description of what the interviewee actually would do.

22. Congestion pricing [**TOLL**]
    - Note: Include the interviewer’s phrasing of the question, as this often deviated from the script.
    - Analysis:
        - In the literature, congestion pricing supporters argue that even low-income people may value having this option. With the information in this topic, we can explore whether our interviewees actually express such an opinion. Perhaps we can use the findings on this topic to generate new questions that could be used in a survey, to better understand and document the range of opinions low-income people may have about congestion pricing.

- In the literature, congestion pricing opponents argue that low-income people couldn't afford to use HOT lanes, and so they are unfair. With the information in this topic, we can explore whether our interviewees themselves express this opinion. Perhaps we can use the findings on this topic to generate new questions that could be used in a survey, to better understand and document the range of opinions low-income people may have about congestion pricing.

PART 2: ASSIGN TRANSCRIPTS TO PREDETERMINED CATEGORIES (DATA TO RECORD IN THE SPREADSHEET)

For the following topics, add the relevant information to the spreadsheet. Do NOT mark up the transcript itself.

For each topic, the spreadsheet has a column to record the official entry, plus a "note" column to the right where the coder can add questions or notes. Try to use the "note" column sparingly, only when having a real problem assigning a value for the entry or when there is a really striking situation that needs special explanation or attention during the analysis phase.

ABOUT THE INTERVIEWEE

1. Health problem—all
   - Note: Does interviewee mention any kind of health problem? (Examples: a medical condition such as diabetes, a mental health condition, or pain such as "aching knees".)
   - Entries: 0=no, 1=yes

2. Health problem—trans
   - Note: Does interviewee mention any kind of health problem that limits his/her transportation options. (For example, "I have trouble taking the bus because of mental health issues," or "I like to walk but it makes my feet hurt, so I can't walk so much.")
   - Entries: 0=no, 1=yes

3. Earnings
   - Note: Does the interviewee currently earn income, either formally or informally? Formal earnings would be a current job (1) with a regular employer or (2) at least half-time self-employment (e.g., works as a gardener with a regular set of clients). Informal would be panhandling or doing odd jobs like gardening on a sporadic basis.
   - Exclude: unearned income, such as Social Security payments, money from family members, free bus pass.
   - Entries: 0=none, 1= informal, 2=formal, 3=both, 99=DK

HOUESHOLD AND TRAVEL RESOURCES

4. Homeless
   - Note: Is the interviewee currently homeless?
   - Entries: 0=no, 1=yes, 99=DK

5. Household
   - Note: Who are the people living with the interviewee, with whom considerable resources are shared (all income, food, etc.)? Do not include boarders in a group house, if they aren't sharing significant resources with the interviewee.
   - Entries: 1=live alone, 2=live with relatives only, 3=live with non-relatives only, 4=live with relatives and non-relatives, 99=DK

6. Children
   - Note: Are there children 18 or under living in the home?
   - Entries: 0=no, 1=yes, 99=DK

7. HH car
   - Note: Is there a car in the household that the interviewee can drive whenever she/he wants to? Exclude cars the interviewee may use that belong to non-household members.
   - Entries: 0=no, 1=yes, always, 2=yes, sometimes, 99=DK

8. HH bicycle
   - Note: Is there a bicycle in the household that the interviewee can ride whenever she/he wants to?
   - Entries: 0=no, 1=yes, always, 2=yes, sometimes, 99=DK

TRIPS YESTERDAY

For this family of topics, we are only interested in travel "yesterday." Exclude information about travel made on any other day.

9. # trips (TRIPS)
   - Note: Enter number of trips. A trip is each time the interviewee changes addresses (i.e., goes to a park, goes from the park to work, goes from work to Target). Note that some interviewees may have made no trips yesterday (0).
   - Entries: Enter the number of trips. If you aren't sure, make your best guess.

10. Bike (BIKE)
    - Note: Did the interviewee make at least one trip by bicycle?
    - Entries: 0=no, 1=yes, 99=DK

11. Walk (WALK)
    - Note: Did the interviewee make at least one trip by walking?
    - Entries: 0=no, 1=yes, 99=DK

12. Drive (DRIVE)
    - Note: Did the interviewee make at least one trip as a driver?
    - Entries: 0=no, 1=yes, 99=DK

13. Ride (RIDE)
    - Note: Did the interviewee make at least one trip as a passenger in a car?
    - Entries: 0=no, 1=yes, 99=DK

14. Bus (RIDE)
    - Note: Did the interviewee make at least one trip by bus? Note that this could be a VTA bus or some other bus.
    - Entries: 0=no, 1=yes, 99=DK

15. Light-rail (LRAIL)
    - Note: Did the interviewee make at least one trip by light rail? Note: Exclude non-VTA rail (Caltrain, Amtrak).
    - Entries: 0=no, 1=yes, 99=DK

PART 3: RECORD REVIEWER'S GENERAL IMPRESSIONS

Reviewer writes brief summary thoughts about what is most important or notable in the interview. This could be a paragraph or two, or a short list of bulleted points. This summary might include any important statement or idea that does not fit neatly into one of the codes.

The reviewer also notes here anything that should be kept in mind during analysis (e.g., "The interviewee appears to be drunk during the interview.")

ENDNOTES

1. Barbara J. Lipman, *A Heavy Load: The Combined Housing and Transportation Burdens of Working Families* (Washington, DC: Center for Housing Policy, 2006), http://www.nhc.org/media/documents/pub_heavy_load_10_06.pdf (accessed September 27, 2010).
2. As an illustrative example, a Google News search performed on May 14, 2010, for the phrase "affordable housing" yielded 4,630 results among recent news articles. In contrast, searches for the phrases "affordable transportation" and "transportation affordability" yielded 30 and 2 results, respectively.
3. In this report, we use *low-income* as a general term, rather than assigning a precise definition. In the literature, researchers have used varying definitions of low-income individuals and households, including households in the bottom income quintile, households eligible for federal welfare assistance, and households making below a certain percentage of the federal poverty level. Differences in data across studies make it difficult to compare results.
4. Mark Garrett and Brian Taylor, "Reconsidering Social Equity in Public Transit," *Berkeley Planning Journal* 13 (1999): 6–27; Lisa Schweitzer and Brian Taylor, "Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes," *Transportation* 35, no. 6 (2008): 797–812.
5. Kathryn Edin and Laura Lein, *Making Ends Meet: How Single Mothers Survive Welfare and Low-Wage Work* (New York: Russell Sage Foundation, 1997): xxxi.
6. Lyn Hunstad, "Characteristics of Uninsured Motorist" (California Department of Insurance, 1999), http://www.insurance.ca.gov/0400-news/0200-studies-reports/0600-research-studies/auto-policy-studies/upload/Characteristics-of-Uninsured-Motorist.pdf (accessed September 27, 2010).
7. Nicole Garnett, "The Road from Welfare to Work: Informal Transportation and the Urban Poor," *Harvard Journal on Legislation* 38, no. 1 (2001): 173–229.
8. WBAL TV Baltimore, "MTA Bus Driver Sentenced for Theft," April 4, 2006, http://www.wbaltv.com/news/8464812/detail.html.
9. U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search" (search using terms "income before taxes," "income after taxes" and "total average annual expenses"), http://www.bls.gov/cex/#tables (accessed February 4, 2010).
10. Edin and Lein, 1997.
11. Evelyn Blumenberg, "Transportation Costs and Economic Opportunity Among the Poor," *Access*, no. 23 (Fall 2003): 40–41; Lorien Rice, "Transportation Spending by Low-Income Households: Lessons for the San Francisco Bay Area" (San Francisco: Public Policy Institute of California, 2003): vi, http://www.ppic.org/content/pubs/report/R_704LRR.pdf (accessed September 27, 2010).
12. Marc Brenman and Thomas Sanchez, *The Right to Transportation: Moving to Equity* (Chicago: Planners Press, 2007).

13. See, for example, Surface Transportation Policy Partnership, “Driven to Spend: Chapter One: Transportation Is Expensive,” March 20, 2000, http://www.transact.org/report.asp?id=41 (accessed September 27, 2010); Surface Transportation Policy Partnership, “Transportation Costs and the American Dream: Why a Lack of Transportation Choices Strains the Family Budget and Hinders Home Ownership,” July 2003, http://www.transact.org/library/decoder/american_dream.pdf (accessed September 27, 2010).
14. Examples include the 2001 Atlanta Household Travel Survey and the 2007 Chicago Regional Household Travel Inventory.
15. U.S. Bureau of Labor Statistics, Consumer Expenditure Survey (no date), http://www.bls.gov/cex/ (accessed January 15, 2010).
16. While many reports using CES data refer to “household” spending, the CES technically measures the expenditure patterns of “consumer units.” These units can be financially independent persons, who may or may not live with other people, or a collection of people who make joint spending decisions.
17. Consumer units in the bottom income quintile had pre-tax incomes of less than $19,065. See U.S. Bureau of Labor Statistics, “Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search” (accessed September 29, 2010).
18. U.S Bureau of Labor Statistics, “Table 1: Quintiles of Income Before Taxes, Consumer Expenditure Survey, 1988” (no date) http://www.bls.gov/cex/1988/Standard/quintile.pdf (accessed September 27, 2010).
19. U.S. Bureau of Labor Statistics, “Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search” (search using term “average number in consumer unit: at least one vehicle owned or leased”), http://www.bls.gov/cex/#tables (accessed June 14, 2010).
20. U.S. Bureau of Labor Statistics, “Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search” (search using terms “average annual expenses: transportation,” “average annual expenses: transportation: other vehicle expenses,” “average annual expenses: transportation: gasoline and motor oil,” “average annual expenses: transportation: vehicle purchases” and “average annual expenses: transportation: public transportation”), http://www.bls.gov/cex/#tables (accessed June 14, 2010).
21. Rice, 2003.
22. Yihua Liao, “Expenditure Patterns of High and Low Income Households” (Chicago: University of Illinois at Chicago Institute of Transportation Studies, 2002): 2.
23. Thomas Moehrle, “Spending Patterns of Elderly Workers and Nonworkers,” *Monthly Labor Review* 113, no. 5 (1990): 34–41.
24. Brenman and Sanchez, 2007.
25. Devajyoti Deka, “Social and Environmental Justice Issues in Urban Transportation,” in Susan Hanson and Genevieve Giuliano (eds.), *The Geography of Urban Transportation* (New York: The Guilford Press, 2004).

26. William Alonso, *Location and Land Use: Toward a General Theory of Land Rent* (Cambridge, MA: Harvard University Press, 1964); Richard F. Muth, *Cities and Housing: The Spatial Pattern of Urban Residential Land Use* (Chicago: University of Chicago Press, 1969).

27. Center for Transit Oriented Development and Center for Neighborhood Technology, *The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice* (Washington, DC: The Brookings Institution, January 2006), http://www.brookings.edu/~/media/Files/rc/reports/2006/01_affordability_index/20060127_affindex.pdf (accessed September 3, 2010).

28. Lipman, 2006.

29. The Center for Neighborhood Technology made interactive maps for the 330 metropolitan areas available as of March 2010 at http://htaindex.cnt.org/ (accessed April 3, 2010).

30. Barbara McCann, "Driven to Spend: Sprawl and Household Transportation Expenses" (Washington, DC: Surface Transportation Policy Partnership, January 2001), http://www.transact.org/progress/jan01/driven.asp (accessed February 22, 2010).

31. Sanchez and Brenman, 2007.

32. Margy Waller, "High Cost or High Opportunity? Transportation and Family Economic Success" (Washington, DC: The Brookings Institution, December 2005), http://www.brookings.edu/~/media/Files/rc/papers/2005/12poverty_waller/pb35.pdf (accessed September 27, 2010).

33. Rice, 2003.

34. Linda Ashman et al., "Seeds of Change: Strategies for Food Security for the Inner City" (Davis, CA: University of California Sustainable Agriculture Research and Education Program, Summer 1994), http://www.sarep.ucdavis.edu/newsltr/v6n3/sa-9.htm (accessed January 20, 2010); LaVonna Blair Lewis et al., "African Americans' Access to Healthy Food Options in South Los Angeles Restaurants," *American Journal of Public Health* 95, no. 4 (2005): 668–673.

35. Samina Raja, Changxing Ma, and Pavan Yadav, "Beyond Food Deserts: Measuring and Mapping Racial Disparities in Neighborhood Food Environments," *Journal of Planning Education and Research* 27, no. 4 (2008): 469–482.

36. Sean Alfano, "Poll: Gas Prices Affecting Habits," CBS News (September 1, 2005), http://www.cbsnews.com/stories/2005/09/01/opinion/polls/main812533.shtml (accessed January 25, 2010); Dalia Sussman, "Poll: Americans Angry About Gas Prices," ABC News (August 25, 2005), http://abcnews.go.com/Politics/PollVault/story?id=1058451 (accessed January 25, 2010); Mark DiCamillo and Mervin Field, "Reactions to Rising Gas Prices," The Field Poll (July 17, 2008), http://www.field.com/fieldpollonline/subscribers/Rls2277.pdf (accessed January 25, 2010).

37. Lydia Saad, "Most Americans Don't Foresee $4 Gas Prices This Year" (June 19, 2009), http://www.gallup.com/poll/120995/Americans-Don-Foresee-Gas-Prices-Year.aspx (accessed January 29, 2010).

38. Mark Baldassare et al., *PPIC Statewide Survey: Californians and the Environment* (San Francisco, CA: Public Policy Institute of California, July 2009), http://www.ppic.org/content/pubs/survey/S_709MBS.pdf (accessed September 27, 2010).
39. Carol Dahl and Thomas Sterner, "Analyzing Gasoline Demand Elasticities: A Survey," *Energy Economics* 13, no. 3 (1991): 203–210.
40. Jonathan Hughes et al., "Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand," *Energy Journal 29*, no. 1 (2008): 113–134.
41. Hilke Kayser, "Gasoline Demand and Car Choice: Estimating Gasoline Demand Using Household Information," *Energy Economics* 22, no. 3 (2000): 331–348.
42. John Kain and Zhiu Liu, "Econometric Analysis of Determinants of Transit Ridership: 1960–1990" (Cambridge, MA: Volpe National Transport Systems Center, 1996): 76–84; M. S. McLeod, Jr., et al., "Multivariate Time-Series Model of Transit Ridership Based on Historical, Aggregate Data: The Past, Present and Future of Honolulu," *Transportation Research Record* no. 1297 (1991): 76–84.
43. Graham Currie and Justin Phung, "Transit Ridership, Auto Gas Prices, and World Events: New Drivers of Change?" *Transportation Research Record* no. 1992 (2007), 3–10; Ashley Raye Haire and Randy B. Machemehl, "The Impact of Rising Fuel Prices on U.S. Transit Ridership," *Transportation Research Record*, no. 1992 (2007): 11–19.
44. Hughes et al., 2008.
45. Jeremy Mattson, "Effect of Rising Gas Prices on Transit Ridership," Community Transportation (Spring 2008): 38–41; Donald Maley and Rachel Weinberger, "Rising Gas Price and Transit Ridership: Case Study of Philadelphia, Pennsylvania," *Transportation Research Record*, no. 2139 (2009): 183–188.
46. Maley and Weinberger, 2009.
47. Baldassare, 2009.
48. Several such studies are summarized in Todd Litman, "Transit Price Elasticities and Cross-Elasticities" (Victoria, BC: Victoria Transport Policy Institute, August 17, 2007), http://www.vtpi.org/tranelas.pdf (accessed September 27, 2010).
49. Robert Cervero, "Transit Pricing Research: A Review and Synthesis," *Transportation* 17, no. 2 (1990): 117-139.
50. Jeffrey Brown, Daniel Hess, and Donald Shoup, "Fare-Free Public Transit at Universities: An Evaluation," *Journal of Planning Education and Research* 23, no. 1 (2003): 69-82; Noreen McDonald, Sally Librera, and Elizabeth Deakin, "Free Transit for Low-Income Youth: Experience in San Francisco Bay Area, California," *Transportation Research Record*, no. 1887 (2004): 153–160.
51. Rice, 2003.
52. Paul M. Ong et al., "Los Angeles County CalWORKs Transportation Needs Assessment," Working Paper #36 (The Ralph and Goldy Lewis Center for Regional Policies Studies: University of California, Los Angeles, May 2001), http://www.lewis.ucla.edu/publications/workingpapers/36.pdf (accessed September 27, 2010); Kevin M. Roy, Carolyn Y. Tubs, and Linda M. Burton, "Don't Have No Time: Daily Rhythms and the

Organization of Time for Low-Income Families," *Family Relations* 53, no. 2 (2004): 168–178.

53. B. E. McCollum and R. H. Pratt, "Chapter 12—Transit Pricing and Fares," in *Traveler Response to Transportation System Changes*, TCRP Report 95 (Washington, DC, Transportation Research Board, 2004), http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rpt_95c12.pdf (accessed September 27, 2010).
54. Robert Cervero, "Efficiency and Equity Implications of Transit Fare Policies," *Journal of Planning Education and Research* 1, no. 1 (1981): 48; Cervero, 1990; Cornelius Nuworsoo, Aaron Golub, and Elizabeth Deakin, "Analyzing Equity Impacts of Transit Fare Changes: Case Study of Alameda–Contra Costa Transit, California," *Evaluation and Program Planning* 32, no. 4 (2009): 360-68; Kurt F. Luhrsen and Brian D. Taylor, "The High Cost of Flat Fares: An Examination of Ridership Demographics and Fare Policy at the Los Angeles MTA" (Los Angeles: UCLA Institute of Transportation Studies, August 1997), http://www.uctc.net/papers/703.pdf (accessed September 27, 2010).
55. Bus Riders Union, "No Fare Hike" (no date), http://www.thestrategycenter.org/campaign/no-fare-hike (accessed January 23, 2010).
56. Shirley Loveless, "Access to Jobs: Intersection of Transportation, Social, and Economic Development Policies" (paper presented at the Refocusing Transportation for the 21st Century Conferences, Irvine, CA, and Washington, DC, 1999).
57. Lawrence Doxsey, "Demand for Unlimited Use Transit Passes," *Journal of Transport Economics and Policy* 18, no. 1 (1984): 7–22.
58. Asha Weinstein and Gian-Claudia Sciara, "Unraveling Equity in HOT Lane Planning: A View from Practice," *Journal of Planning Education and Research* 26, no. 2 (2006): 174-84; Elena Safirova et al., "Are HOT Lanes a Hot Deal? The Potential Consequences of Converting HOV to HOT Lanes in Northern Virginia" (Washington, DC: Resources for the Future, May 2003), http://www.rff.org/rff/documents/RFF-IB-03-03.pdf (accessed September 27, 2010).
59. Robert Plotnick, Jennifer Romich, and Jennifer Thacker, "The Impacts of Tolling on Low-Income Persons in the Puget Sound Region" (Seattle, WA: Washington State Transportation Center, April 2009), http://www.wsdot.wa.gov/research/reports/fullreports/721.1.pdf (accessed September 27, 1010).
60. Safirova, 2003; Elizabeth Deakin and Greg Harvey, "Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy, and Equity Impacts," Draft Report (Berkeley, CA: California Air Resources Board, 1995).
61. Safirova, 2003; Weinstein and Sciara, 2006.
62. Schweitzer and Taylor; 2008; Liisa Ecola and Thomas Light, *Equity and Congestion Pricing: A Review of the Evidence* (Santa Monica, CA: Rand Corporation, 2009), http://www.rand.org/pubs/technical_reports/2009/RAND_TR680.pdf (accessed September 27, 2010).
63. Martin Wachs, "A Dozen Reasons for Raising Gasoline Taxes" (Berkeley, CA: Institute of Transportation Studies, March 2003).
64. Wachs, 2003.

65. Center for Transit-Oriented Development and Center for Neighborhood Technology, *The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice* (Washington, DC: The Brookings Institution, January 2006), http://www.brookings.edu/~/media/Files/rc/reports/2006/01_affordability_index/20060127_affindex.pdf (accessed September 27, 2010).
66. One interview was conducted in Spanish; the transcript was then translated into English.
67. A few of the interviewees were caring for children at the time of the interview, so the children were present.
68. U.S. Census Bureau, "State and County QuickFacts: San José (City), California" (August 16, 2010), http://quickfacts.census.gov/qfd/states/06/0668000.html (accessed September 27, 2010).
69. U.S. Census Bureau, "2006–2008 American Community Survey 3-Year Estimates: San José (City), California," http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=291908146475&_ds_name=ACS_2008_3YR_G00_&_program= (accessed May 14, 2010).
70. U.S. Census Bureau, "2006–2008 American Community Survey 3-Year Estimates: Santa Clara County, California," http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=291908146475&_ds_name=ACS_2008_3YR_G00_&_program= (accessed May 14, 2010).
71. U.S. Census Bureau, "2006-2008 American Community Survey 3-Year Estimates: San José Metropolitan Statistical Area, California," http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=291908146475&_ds_name=ACS_2008_3YR_G00_&_program= (accessed May 14, 2010).
72. Kevin Connolly, Kevin Smith and Mike Tasosa, "2005–2006 On-Board Passenger Survey: Final Report" (San José, CA: Santa Clara Valley Transportation Authority, 2006): 26–27.
73. Santa Clara Valley Transportation Authority, "About VTA: Organization History" (no date), http://www.vta.org/inside/ about/index.html (accessed May 6, 2010).
74. Santa Clara Valley Transportation Authority, "About VTA: Organization History" (no date); Santa Clara Valley Transportation Authority, "Regional-Services: Bus Services" (no date), http://www.vta.org/ services/bus_services.html (accessed May 6, 2010).
75. Santa Clara Valley Transportation Authority, "Accessible Services" (no date), http://www.vta.org/services/accessible_services.html#paratransit_service (accessed May 6, 2010).
76. CALWORKs, "Your Rights and Responsibilities to Transportation Services Under CalWORKS," Low-Income Families Empowerment Through Education (August 2008), http://www.geds-to-phds.org/Parent%20Resource%20Center/CalWORKs%20Transportation%20Information%20-%20update%208%2008.doc (accessed September 27, 2010).
77. Medi-Cal, "SHD Paraphrased Regulations – Medi-Cal: 532 Scope of Benefits – Other" (June 23, 2010), http://www.dss.cahwnet.gov/shd/res/pdf/ParaRegs-Medi-Cal-Scope-Other.pdf (accessed July 1, 2010).

78. U.S. Department of Veterans Affairs, "Change in Beneficiary Travel Mileage Reimbursement Rates and Deductibles," VHA Directive 2008-006 (January 28, 2008), http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1642 (accessed September 27, 2010).

79. California Department of Consumer Affairs, "Smog Check Consumer Assistance Program Application" (March 2003), http://www.smogtestonlycenters.com/CAP%20APPLICATION.pdf (accessed September 27, 2010).

80. United Way Silicon Valley, "UPLIFT Transit Pass Program" (no date), http://www.211scc.org/Documents/UPLIFT%20PARTICIPATING%20AGENCIES.pdf (accessed February 12, 2010).

81. United Way Silicon Valley, "UPLIFT Info Flyer" (no date), http://www.211scc.org/Documents/UPLIFT%20INFO%20FLYER.pdf (accessed September 27, 2010).

82 City of San José Housing Department Homeless Program, "Notice of Funding Availability 2010–2011" (November 3, 2009), http://www.sjhousing.org/homeless/PDF/NOFA.pdf (accessed September 27, 2010).

83. Santa Clara Valley Transportation Authority Media Relations and Community Outreach Department, telephone correspondence with author, February 12, 2010.

84. Matt Osment, telephone correspondence with author, February 4, 2010; Rebecca Cole, e-mail correspondence with author, February 4, 2010.

85. First Church Downtown, "Brief History of a Long-Lived Church" (no date), http://www.sanJoséfirst.org/about/ history.html (accessed February 12, 2010).

86. Catholic Charities of Santa Clara County, "Day Break I, Day Break Senior Activity Center" (2010), http://www.catholiccharitiesscc.org/services/older_adults/daybreak.htm (accessed May 14, 2010).

87. Santa Clara Valley Transportation Authority Residential Eco Pass, "Participants" (no date), http://www.vta.org/ecopass/ecopass_resi/eprendorsements.html (accessed May 14, 2010).

88. Santa Clara Valley Transportation Authority, "Eco Pass Frequently Asked Questions," (no date), http://www.vta.org/ecopass/ecopass_corp/epfaq.html (accessed September 27, 2010).

89. Genevieve Giuliano and Joyce Dargay, "Car Ownership, Travel and Land Use: A Comparison of the US and Great Britain," *Transportation Research Part A* 40, no. 2 (2006): 106–124.

90. The more common classification of all non-work trips as discretionary trips was not useful in analyzing trip patterns, because very few interviewees indicated that they worked on the travel day of reference.

91. Marlene Kim, "Are the Working Poor Lazy," *Challenge* (May-June 1998): 91; Richard Arneson, "Egalitarianism and the Undeserving Poor," *The Journal of Political Philosophy* 5, no. 4 (1997): 327–350.

92. Saundra K. Schneider and William G. Jacoby, "Elite Discourse and American Public Opinion: The Case of Welfare Spending," *Political Research Quarterly* 58, no. 3 (2005): 369.

93. See, for example, Edin and Lein, 1997; Robin Jarrett, "Living Poor: Family Life Among Single-Parent, African-American Women," *Social Problems* 41, no. 1 (1994): 30–49; Frank Munger (ed.), *Laboring Below the Line; The New Ethnography of Poverty, Low-Wage Work, and Survival in the Global Economy* (New York: Russell Sage Foundation, 2002).

94. U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search" (search using terms "income before taxes" and "average annual expenses: housing"), http://www.bls.gov/cex/#tables (accessed May 14, 2010).

95. Nancy McGuckin and Elaine Murakami, "Examining Trip-Chaining Behavior: A Comparison of Travel by Men and Women" (Washington, DC: Federal Highway Administration, 1999), http://nhts.ornl.gov/1995/Doc/Chain2.pdf (accessed September 27, 2010).

96. David Hensher and April Reyes, "Trip Chaining as a Barrier to the Propensity to Use Public Transport," *Transportation* 27, no. 4 (2000): 341–361.

97. Peter Gosselin and Seth Zimmerman, "Trends in Income Volatility and Risk, 1970–2004," (Washington, DC: The Urban Institute, 2008), http://www.urban.org/UploadedPDF/411672_income_trends.pdf (accessed September 27, 2010; Karen Dynan, Douglas Elmendorf, and Daniel Sichel, "The Evolution of Household Income Volatility" (Washington, DC: The Brookings Institution, 2008), http://www.brookings.edu/~/media/Files/rc/papers/2008/02_useconomics_elmendorf/02_useconomics_elmendorf.pdf (accessed September 27, 2010).

98. Robert Hannay and Martin Wachs, "Factors Influencing Support for Local Transportation Sales Tax Measures," *Transportation* 34, no. 1 (2007): 17–35; David Brownstone et al. "Drivers' Willingness-to-Pay to Reduce Travel Time: Evidence from the San Diego I-15 Congestion Pricing Project," *Transportation Research Part A: Policy and Practice* 37, no. 4 (2003): 373–387.

99. Ecola and Light, 2009; Hannay and Wachs, 2007; Kenneth Small, "Using the Revenues from Congestion Pricing," *Transportation* 19, no. 4 (1992): 359–381.

100. Laura Castner and James Mabli, *Low-Income Household Spending Patterns and Measures of Poverty* (Washington, DC: Mathematica Policy Research, Inc., 2010), http://www.fns.usda.gov/ora/menu/Published/snap/FILES/Participation/SpendingPatterns.pdf (accessed September 27, 2010); Edin and Lein, 1997; Christopher Farrell and William O'Connor, *Low-Income Families and Household Spending* (Leeds, UK: Department for Work and Pensions, 2003), http://campaigns.dwp.gov.uk/asd/asd5/rrep192.pdf (accessed September 27, 2010); Paul Gregg, Jane Waldfogel, and Elizabeth Washbrook, "Expenditure Patterns Post-Welfare Reform in the UK: Are Low-Income Families Starting to Catch Up?" (London: Centre for Analysis of Social Exclusion, London School of Economics, 2005) http://sticerd.lse.ac.uk/dps/case/cp/CASEpaper99.pdf (accessed September 27, 2010).

101. Edward Glaeser and Matthew Kahn, *Sprawl and Urban Growth* (Cambridge, MA: Harvard Institute of Economic Research, May 2003): 1.

102. John Pucher and John L. Renne, “Socioeconomics of Urban Travel: Evidence from the 2001 National Household Travel Survey,” *Transportation Quarterly* 57, no. 3 (Summer 2003): 49–77.

103. Jennifer R. Wolch, Afsaneh Rahimian, and Paul Koegel, “Daily and Periodic Mobility Patterns of the Urban Homeless,” *Professional Geographer* 45, no. 2 (1993): 159–169; Jennifer R. Wolch and Stacy Rowe, “On the Streets: Mobility Paths of the Urban Homeless,” *City & Society* 6, no. 2 (1992): 115–140.

104. Wolch, Rahimian, and Koegel, 1993.

105. Alex Meyerhoff, Martine Micozzi, and Peter Rowen, “Running on Empty: Travel Patterns of Extremely Poor People in Los Angeles,” *Transportation Research Record* no. 1395 (1993): 153–160.

106. For information about the program, see City and County of San Francisco, Human Services Agency, “MUNI Lifeline” (no date), http://www.munilifeline.org/ (accessed September 17, 2010).

107. María Villaseñor, “UTA Studies Possible Discounts for Low-Income Riders,” *The Salt Lake Tribune* (April 19, 2010).

108. Robert Cervero, “Flat Versus Differentiated Transit Pricing: What’s a Fair Fare?” *Transportation* 10, no. 2 (1981): 211–232; Cervero, 1990; Brian D. Taylor, Mark Garrett, and Hiroyuki Iseki, “Measuring Cost Variability in Provision of Transit Service,” *Transportation Research Record* 1735 (2000): 101–112.

109. Elaine Murakami and Jennifer Young, “Daily Travel by Persons with Low Income,” (paper presented at Nationwide Personal Transportation Survey conference in Bethesda, Maryland, 1997), http://ntl.bts.gov/lib/5000/5100/5141/LowInc.pdf (accessed September 27, 2010).

110. U.S. Department of Health and Human Services: Administration for Children and Families, “TANF Financial Data: Summary of Expenditures on Assistance in FY 2009” (updated May 21, 2010), http://www.acf.hhs.gov/programs/ofs/data/2009/table_a2_2009.html (accessed June 9, 2010).

111. California Department of Health and Human Services, “CalWORKs Welfare-to-Work Monthly Activity Report: All (Other Families),” Version 3 (August 5, 2010), http://www.cdss.ca.gov/research/res/pdf/WTW25/2010/WTW25Apr10.pdf (accessed September 27, 2010).

112. U.S. Department of Health and Human Services: Administration for Children and Families, “Combined TANF and SSP-MOE: Fiscal and Calendar Year 2007; Total Number of Families” (May 29, 2009), http://www.acf.hhs.gov/programs/ofa/data-reports/caseload/2007/2007_fycy_family_tanssp.htm (accessed September 27, 2010); U.S. Census Bureau, “POV02: People in Families by Family Structure, Age, and Sex, Iterated by Income-to-Poverty Ratio and Race: 2007; Below 100% of Poverty—All Races” (no date) http://www.census.gov/hhes/www/macro/032008/pov/new02_100_01.htm (accessed September 27, 2010).

113. Pat S. Hu and Timothy Reuscher, *Summary of Travel Trends: 2001 National Household Travel Survey* (Washington, DC: U.S Department of Transportation, Federal Highway Administration, December 2004), http://nhts.ornl.gov/2001/pub/STT.pdf (accessed June 20, 2010).

114. Automobile Association of America, "Your Driving Costs" (2010), http://www.aaaexchange.com/main/Default.asp?CategoryID=16&SubCategoryID=76&ContentID=353 (accessed September 27, 2010).

115. James Sullivan, "Welfare Reform, Saving, and Vehicle Ownership: Do Asset Limits and Vehicle Exemptions Matter?" *Journal of Human Resources* 41, no. 1 (2006): 72-105.

116. Federal Trade Commission, "Facts for Consumers: Buying a New Car" (April 2006), http://www.ftc.gov/bcp/edu/pubs/consumer/autos/aut11.shtm (accessed September 17, 2010).

117. Opportunity Cars, [home page] (2010), http://www.opportunitycars.com/ (accessed September 17, 2010).

118. Signe-Mary McKernan and Caroline Ratcliffe, "Asset Building for Today's Stability and Tomorrow's Security," *New England Community Developments*, no. 2 (2009), http://www.urban.org/uploadedpdf/1001374_asset_building.pdf (accessed September 27, 2010).

119. U.S. Department of Health and Human Services, Administration for Children and Families, "About Assets for Independence" (August 10, 2010), http://www.acf.hhs.gov/programs/ocs/afi/assets.html (accessed September 27, 2010).

120. Paul M. Ong et al., "Los Angeles County CalWORKs Transportation Needs Assessment," (Los Angeles, CA: The Ralph and Goldy Lewis Center for Regional Policies Studies, UCLA, May 2001), http://www.lewis.ucla.edu/publications/workingpapers/36.pdf (accessed September 27, 2010); Roy, Tubs, and Burton, 2004: 168–178.

121. U.S. Department of Transportation, Federal Transit Administration, "Job Access and Reverse Commute Program (5316)" (no date), http://www.fta.dot.gov/funding/grants/grants_financing_3550.html (accessed June 14, 2010).

122. Office of the President-Elect, "The Obama-Biden Plan [Agenda: Urban Policy]" (no date), http://change.gov/agenda/urbanpolicy_agenda/ (accessed June 14, 2010).

123. Adam Millard-Ball et al., *Car-Sharing: Where and How It Succeeds*, TCRP Report 108 (Washington, DC: Transportation Research Board, 2005), http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_108.pdf (accessed September 27, 2010.

124. Evelyn Blumenberg, "En-Gendering Effective Planning: Spatial Mismatch, Low-Income Women, and Transportation Policy," *Journal of the American Planning Association* 70, no. 3 (September 2004): 269–281; U.S. Department of Transportation, Federal Highway Administration, "You Can't Get There from Here," NPTS Brief (December 2005), http://www.travelbehavior.us/Nancy-pdfs/You%20Can't%20Get%20There%20From%20Here--Poverty%20and%20Mobility%20in%20America%20brief.pdf (accessed September 27, 2010); Murakami and Young, 1997; Pucher and Renne, 2003.

125. See, for example, Dargay and Giuliano, 2006; Paul Schimek, "Household Motor Vehicle Ownership and Use: How Much Does Residential Density Matter?" *Transportation Research Record,* no. 1552 (1996): 120–125.

126. U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey 2008: CE Database: One-Screen Data Search" (search using term "quintiles of income before taxes") http://www.bls.gov/cex/#tables (accessed June 17, 2010).

127. Robert Wagmiller, *Debt and Assets Among Low-Income Families* (New York: National Center for Children in Poverty, Mailman School of Public Health, Columbia University, October 2003), http://nccp.org/publications/pdf/text_534.pdf (accessed September 27, 2010).

128. Sheila Cooper and Carolyn Hayden, "Disclosure and Transparency in the Automobile Finance Industry" (Landover, MD: One World Consulting Group, 2009), http://www.opportunitycars.com/documents/documents/DisclosureandTransparencyintheAutomobileFinanceIndustry.pdf (accessed September 17, 2010).

ABBREVIATIONS AND ACRONYMS

ACE	Altamont Commuter Express
BATS	Bay Area Travel Survey
BLS	Bureau of Labor Statistics
CalWORKs	California Work Opportunities and Responsibility to Kids
CES	Consumer Expenditure Survey
CLCA	California Low Cost Automobile Insurance Program
CNT	Center for Neighborhood Technology
DASH	Downtown Area Shuttle
ESG	Emergency Shelter Grant
HOT	High-Occupancy/Toll
IDA	Individual Development Account
JARC	Job Access and Reverse Commute Program
LIRAP	Low-Income Repair Assistance Program
SHCS	Sacred Heart Community Services
STPP	Surface Transportation Policy Partnership
TANF	Temporary Assistance to Needy Families
UPLIFT	Universal Pass for Life Improvement in Transportation
VTA	[Santa Clara] Valley Transportation Authority

REFERENCES

Alfano, Sean. “Poll: Gas Prices Affecting Habits.” CBS News (September 1, 2005). http://www.cbsnews.com/stories/ 2005/09/01/opinion/polls/main812533.shtml (accessed January 25, 2010).

Alonso, William. *Location and Land Use: Toward a General Theory of Land Rent*. Cambridge, MA: Harvard University Press, 1964.

Ashman, Linda, Jaime de la Vega, Marc Dohan, Andy Fisher, Rosa Hippler, and Bill Romain. “Seeds of Change: Strategies for Food Security for the Inner City.” Davis, CA: University of California Sustainable Agriculture Research and Education Program, Summer 1994. http://www.sarep.ucdavis.edu/NEWSLTR/v6n3/sa-9.htm (accessed January 20, 2010).

Automobile Association of America. “Your Driving Costs.” 2010. http://www.aaaexchange.com/main/Default.asp?CategoryID=16&SubCategoryID=76&ContentID=353 (accessed September 27, 2010).

Baldassare, Mark, Dean Bonner, Jennifer Paluch, and Sonja Petek. *PPIC Statewide Survey: Californians and the Environment*. San Francisco, CA: Public Policy Institute of California, July 2009. http://www.ppic.org/content/pubs/survey/S_709MBS.pdf (accessed September 27, 2010).

Blumenberg, Evelyn. “En-Gendering Effective Planning: Spatial Mismatch, Low-Income Women and Transportation Policy.” *Journal of the American Planning Association* 70, no. 3 (2004): 269–281.

———. “Transportation Costs and Economic Opportunity Among the Poor.” *Access*, no. 23 (Fall 2003): 40–41.

Brenman, Marc, and Thomas Sanchez. *The Right to Transportation: Moving to Equity*. Chicago: Planners Press, 2007.

Brown, Jeffrey, Daniel Hess, and Donald Shoup. “Fare-Free Public Transit at Universities: An Evaluation.” *Journal of Planning Education and Research* 23, no. 1 (2003): 69–82.

Brownstone, David, et al. “Drivers’ Willingness-to-Pay to Reduce Travel Time: Evidence from the San Diego I-15 Congestion Pricing Project.” *Transportation Research Part A: Policy and Practice* 37, no. 4 (2003): 373–387.

Bus Riders Union. “No Fare Hike” (no date). http://www.thestrategycenter.org/campaign/no-fare-hike (accessed January 23, 2010).

California Department of Consumer Affairs. “Smog Check Consumer Assistance Program Application.” March 2003. http://www.smogtestonlycenters.com/CAP%20APPLICATION.pdf (accessed September 27, 2010).

California Department of Health and Human Services. “CalWORKs Welfare-to-Work Monthly Activity Report: All (Other Families),” Version 3. August 5, 2010. http://www.cdss.ca.gov/research/res/pdf/WTW25/2010/WTW25Apr10.pdf (accessed September 27, 2010).

CALWORKS. “Your Rights and Responsibilities to Transportation Services Under CALWORKS.” Low-Income Families Empowerment Through Education, August 2008. http://www.geds-to-phds.org/Parent%20Resource%20Center/CalWORKs%20Transportation%20Information%20-%20update%208%2008.doc (accessed September 27, 2010)

Castner, Laura, and James Mabli. *Low-Income Household Spending Patterns and Measures of Poverty*. Washington, DC: Mathematica Policy Research, Inc., 2010. http://www.fns.usda.gov/ora/menu/Published/snap/FILES/Participation/SpendingPatterns.pdf (accessed September 27, 2010).

Catholic Charities of Santa Clara County. “Day Break I, Day Break Senior Activity Center.” 2010. http://www.catholiccharitiesscc.org/services/older_adults/daybreak.htm (accessed May 14, 2010).

Center for Transit-Oriented Development and Center for Neighborhood Technology. *The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice*. Washington, DC: The Brookings Institution, January 2006. http://www.brookings.edu/~/media/Files/rc/reports/2006/01_affordability_index/20060127_affindex.pdf (accessed September 3, 2010).

Cervero, Robert. “Efficiency and Equity Implications of Transit Fare Policies.” *Journal of Planning Education and Research* 1, no. 1 (1981): 48.

———. “Flat Versus Differentiated Transit Pricing: What’s a Fair Fare?” *Transportation* 10, no. 3 (1981): 211–232.

———. “Transit Pricing Research: A Review and Synthesis.” *Transportation* 17, no. 2 (1990): 117-39.

City of San José Housing Department Homeless Program. “Notice of Funding Availability 2010–2011.” November 3, 2009. http://www.sjhousing.org/homeless/PDF/NOFA.pdf (accessed September 27, 2010).

Connolly, Kevin, Kevin Smith, and Mike Tasosa. “2005–2006 On-Board Passenger Survey: Final Report.” San José, CA: Santa Clara Valley Transportation Authority, 2006.

Cooper, Sheila, and Carolyn Hayden. “Disclosure and Transparency in the Automobile Finance Industry.” Landover, MD: One World Consulting Group, 2009. http://www.opportunitycars.com/documents/documents/DisclosureandTransparencyintheAutomobileFinanceIndustry.pdf (accessed September 27, 2010).

Currie, Graham, and Justin Phung. “Transit Ridership, Auto Gas Prices, and World Events: New Drivers of Change?” *Transportation Research Record*, no. 1992 (2007): 11–19.

Dahl, Carol, and Thomas Sterner. “Analyzing Gasoline Demand Elasticities: A Survey.” *Energy Economics* 13, no. 3 (1991): 203–210.

Dargay, Joyce, and Genevieve Giuliano. “Car Ownership, Travel and Land Use: A Comparison of the US and Great Britain.” *Transportation Research Part A* 40, no. 2 (2006): 106–124.

Deakin, Elizabeth, and Greg Harvey. “Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy, and Equity Impacts.” In *Draft Report to the California Air Resources Board and the TCM Working Group*. Berkeley, CA: California Air Resources Board, 1995.

———, Sally Librera, and Noreen McDonald. “Free Transit for Low-Income Youth: Experience in San Francisco Bay Area, California.” *Transportation Research Record*, no. 1887 (2004): 153–160.

Deka, Devajyoti. “Social and Environmental Justice Issues in Urban Transportation.” In Susan Hanson and Genevieve Giuliano (eds.). *The Geography of Urban Transportation*. New York: The Guilford Press, 2004.

DiCamillo, Mark, and Mervin Field. “Reactions to Rising Gas Prices” (The Field Poll). July 17, 2008. http://www.field.com/fieldpollonline/subscribers/Rls2277.pdf (accessed January 29, 2010).

Doxsey, Lawrence. “Demand for Unlimited Use Transit Passes.” *Journal of Transport Economics and Policy* 18, no. 1 (1984): 7–22.

Dynan, Karen, Douglas Elmendorf, and Daniel Sichel. *The Evolution of Household Income Volatility*. Washington, DC: The Brookings Institution, 2008. http://www.brookings.edu/~/media/Files/rc/papers/2008/02_useconomics_elmendorf/02_useconomics_elmendorf.pdf (accessed September 27, 2010).

Ecola, Liisa, and Thomas Light. *Equity and Congestion Pricing: A Review of the Evidence*. Santa Monica, CA: Rand Corporation, 2009. http://www.rand.org/pubs/technical_reports/2009/RAND_TR680.pdf (accessed September 27, 2010).

Edin, Kathryn, and Laura Lein. *Making Ends Meet: How Single Mothers Survive Welfare and Low-Wage Work*. New York: Russell Sage Foundation, 1997.

Farrell, Christopher, and William O’Connor. “Low-Income Families and Household Spending.” Leeds, UK: Department for Work and Pensions, 2003. http://campaigns.dwp.gov.uk/asd/asd5/rrep192.pdf (accessed September 27, 2010).

First Church Downtown. “Brief History of a Long-Lived Church” (no date). http://www.sanjosefirst.org/about/ history.html (accessed February 12, 2010).

Garnett, Nicole. “The Road from Welfare to Work: Informal Transportation and the Urban Poor.” *Harvard Journal on Legislation* 38, no. 1 (2001): 173–129.

Garrett, Mark, and Brian Taylor. “Reconsidering Social Equity in Public Transit.” *Berkeley Planning Journal* 13 (1999): 6–27.

Glaeser, Edward, and Matthew Kahn. *Sprawl and Urban Growth*. Cambridge, MA: Harvard Institute of Economic Research, May 2003.

Gosselin, Peter, and Seth Zimmerman. “Trends in Income Volatility and Risk, 1970–2004.” Washington, DC: Urban Institute, 2008. http://www.urban.org/UploadedPDF/411672_income_trends.pdf (accessed September 27, 2010.

Gregg, Paul, Jane Waldofgel, and Elizabeth Washbrook. *Expenditure Patterns Post-Welfare Reform in the UK: Are Low-Income Families Starting to Catch Up?* London,

UK: Centre for Analysis of Social Exclusion, London School of Economics, 2005. http://sticerd.lse.ac.uk/dps/case/cp/CASEpaper99.pdf (accessed September 27, 2010).

Haire, Ashley, and Randy Machemehl. “The Impact of Rising Fuel Prices on U.S. Transit Ridership.” *Transportation Research Record*, no. 1992 (2007): 11–19.

Hannay, Robert, and Martin Wachs. “Factors Influencing Support for Local Transportation Sales Tax Measures.” *Transportation* 34, no. 1 (2007): 17–35.

Hensher, David, and April Reyes. “Trip Chaining as a Barrier to the Propensity to Use Public Transport.” *Transportation* 27, no. 4 (2000): 341–361.

Hu, Pat, and Timothy Reuscher. *Summary of Travel Trends: 2001 National Household Travel Survey.* Washington, DC: U.S. Department of Transportation, Federal Highway Administration, December 2004. http://nhts.ornl.gov/2001/pub/STT.pdf (accessed June 20, 2010).

Hughes, Jonathan, et al. “Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand.” *Energy Journal* 29, no. 1 (2008): 113–134.

Hunstad, Lyn. “Characteristics of Uninsured Motorists.” Sacramento, CA: California Department of Insurance, February 1999. http://www.insurance.ca.gov/0400-news/0200-studies-reports/0600-research-studies/auto-policy-studies/upload/Characteristics-of-Uninsured-Motorist.pdf (accessed September 27, 2010).

Jarrett, Robin. “Living Poor: Family Life Among Single-Parent, African-American Women.” *Social Problems* 41, no. 1 (1994): 30–49.

Kain, John, and Zhiu Liu. “Econometric Analysis of Determinants of Transit Ridership: 1960–1990.” Cambridge, MA: Volpe National Transport Systems Center, 1996.

Kayser, Hilke. “Gasoline Demand and Car Choice: Estimating Gasoline Demand Using Household Information.” *Energy Economics* 22, no. 3 (2000): 331–348.

Lewis, LaVonna Blair, et al. “African Americans’ Access to Healthy Food Options in South Los Angeles Restaurants.” *American Journal of Public Health* 95, no. 4 (2005): 668–673.

Liao, Yihua. “Expenditure Patterns of High and Low Income Households.” Chicago, IL: University of Illinois at Chicago Institute of Transportation Studies, 2002.

Lipman, Barbara. *A Heavy Load: The Combined Housing and Transportation Burdens of Working Families*. Washington, DC: Center for Housing Policy, 2006. http://www.nhc.org/media/documents/pub_heavy_load_10_06.pdf (accessed September 27, 2010).

Litman, Todd. “Transit Price Elasticities and Cross-Elasticities.” Victoria, BC: Victoria Transport Policy Institute, 2007. http://www.vtpi.org/tranelas.pdf (accessed September 27, 2010).

Loveless, Shirley. “Access to Jobs: Intersection of Transportation, Social, and Economic Development Policies.” Paper presented at the Refocusing Transportation for the 21st Century Conferences, Irvine, CA, and Washington, DC, 1999.

Luhrsen, Kurt, and Brian Taylor. "The High Cost of Flat Fares: An Examination of Ridership Demographics and Fare Policy at the Los Angeles MTA." Los Angeles, CA: UCLA Institute of Transportation Studies, August 1997. http://www.uctc.net/papers/703.pdf (accessed September 27, 2010).

Maley, Donald, and Rachel Weinberger. "Rising Gas Price and Transit Ridership Case Study of Philadelphia, Pennsylvania." *Transportation Research Record*, no. 2139 (2009): 183–188.

Mattson, Jeremy. "Effect of Rising Gas Prices on Transit Ridership." *Community Transportation* (Spring 2008): 38–41.

McCann, Barbara. "Driven to Spend: Sprawl and Household Transportation Expenses." Washington, DC: Surface Transportation Policy Partnership, 2004. http://www.transact.org/progress/ jan01/driven.asp (accessed February 22, 2010).

McCollum, Brian E., and Richard H. Pratt. "Chapter 12—Transit Pricing and Fares. In *Traveler Response to Transportation System Changes*, TCRP Report 95. Washington, DC: Transportation Research Board, 2004. http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rpt_95c12.pdf (accessed September 27, 2010).

McGuckin, Nancy, and Elaine Murakami. "Examining Trip-Chaining Behavior: A Comparison of Travel by Men and Women." Washington, DC: Federal Highway Administration, 1999. http://nhts.ornl.gov/1995/Doc/Chain2.pdf (accessed September 27, 2010).

McKernan, Signe-Mary, and Caroline Ratcliffe. "Asset Building for Today's Stability and Tomorrow's Security." *New England Community Developments*, no. 2 (2009). http://www.urban.org/uploadedpdf/1001374_asset_building.pdf (accessed September 27, 2010.

McLeod, M. S., Jr., K. J. Flannelly, L. Flannelly, and R. W. Behnke. "Multivariate Time-Series Model of Transit Ridership Based on Historical, Aggregate Data: The Past, Present and Future of Honolulu." *Transportation Research Record*, no. 1297 (1991): 76–84.

Medi-Cal. "SHD Paraphrased Regulations—Medi-Cal: 532–Scope of Benefits-Other," June 23, 2010. http://www.dss.cahwnet.gov/shd/res/pdf/ParaRegs-Medi-Cal-Scope-Other.pdf (accessed July 1, 2010).

Meyerhoff, Alex, Martine Micozzi, and Peter Rowen. "Running on Empty: Travel Patterns of Extremely Poor People in Los Angeles." *Transportation Research Record* 1395 (1993): 153–160.

Millard-Ball, Adam, Gail Murray, Jessica Ter Schure, Christine Fox, and Jon Burkhardt. *Car-Sharing: Where and How It Succeeds,* TCRP Report 108. Washington, DC: Transportation Research Board, 2005. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_108.pdf (accessed September 27, 2010.

Moehrle, Thomas. "Spending Patterns of Elderly Workers and Nonworkers." *Monthly Labor Review* 113, no. 5 (1990): 34–41.

Munger, Frank (ed.). *Laboring Below the Line. The New Ethnography of Poverty, Low-Wage Work, and Survival in the Global Economy*. New York: Russell Sage Foundation, 2002.

Murakami, Elaine, and Jennifer Young. “Daily Travel by Persons with Low Income.” Paper presented at *National Personal Transportation Survey* Symposium, Bethesda, MD, October 29–31, 2007. http://ntl.bts.gov/lib/5000/5100/5141/LowInc.pdf (accessed September 27, 2010).

Muth, Richard F. *Cities and Housing: The Spatial Pattern of Urban Residential Land Use*. Chicago, IL: University of Chicago Press, 1969.

Nuworsoo, Cornelius, Aaron Golub, and Elizabeth Deakin. “Analyzing Equity Impacts of Transit Fare Changes: Case Study of Alameda–Contra Costa Transit, California.” *Evaluation and Program Planning* 32, no. 4 (2009): 360–368.

Office of the President-Elect. “The Obama-Biden Plan [Agenda: Urban Policy].” (no date). http://change.gov/agenda/urbanpolicy_agenda/ (accessed June 14, 2010).

Ong, Paul M., Douglas Houston, John Horton, and Linda L. Shaw. “Los Angeles County CalWORKs Transportation Needs Assessment.” Los Angeles, CA: The Ralph and Goldy Lewis Center for Regional Policies Studies, UCLA, May 2001. http://www.lewis.ucla.edu/publications/workingpapers/36.pdf (accessed September 27, 2010).

Paulley, Neil, Richard Balcombe, Roger Mackett, Helena Titheridge, John Preston, Mark Wardman, Jeremy Shires, and Peter White. “The Demand for Public Transport: The Effects of Fares, Quality of Service, Income and Car Ownership.” *Transport Policy* 13, no. 4 (2006): 295–306.

Plotnick, Robert, Jennifer Romich, and Jennifer Thacker. “The Impacts of Tolling on Low-Income Persons in the Puget Sound Region.” Seattle, WA: Washington State Transportation Center, April 2009. http://www.wsdot.wa.gov/research/reports/fullreports/721.1.pdf (accessed September 27, 1010).

Pucher, John, and John Renne. “Socioeconomics of Urban Travel: Evidence from the 2001 NHTS.” *Transportation Quarterly* 57, no. 3 (2003): 49–77.

Raja, Samina, Changxing Ma, and Pavan Yadav. “Beyond Food Deserts: Measuring and Mapping Racial Disparities in Neighborhood Food Environments.” *Journal of Planning Education and Research* 27, no. 4 (2008): 469–482.

Rice, Lorien. “Transportation Spending by Low-Income Households: Lessons for the San Francisco Bay Area.” San Francisco, CA: Public Policy Institute of California, 2003. http://www.ppic.org/content/pubs/report/R_704LRR.pdf (accessed September 27, 2010).

Roy, Kevin, Carolyn Tubs, and Linda Burton. “Don’t Have No Time: Daily Rhythms and the organization of Time for Low-Income Families.” *Family Relations* 53 (2004): 168–178.

Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. “Integrated Public Use Microdata Series: Version 5.0” (machine-readable database). Minneapolis, MN: University of Minnesota, 2010.

Saad, Lydia. “Most Americans Don’t Foresee $4 Gas Prices This Year” (June 19, 2009). http://www.gallup.com/poll/120995/Americans-Don-Foresee-Gas-Prices-Year.aspx (accessed January 29, 2010).

Safirova, Elena, Kenneth Gillingham, Winston Harrington, and Peter Nelson. “Are HOT Lanes a Hot Deal? The Potential Consequences of Converting HOV to HOT Lanes in Northern Virginia.” Washington, DC: Resources for the Future, May 2003. http://www.rff.org/rff/documents/RFF-IB-03-03.pdf (accessed September 27, 2010).

Santa Clara Valley Transportation Authority. Department of Media Relations and Community Outreach. http://www.vta.org/ (accessed May 6, 2010).

Schimek, Paul. “Household Motor Vehicle Ownership and Use: How Much Does Residential Density Matter?” *Transportation Research Record*, no. 1552 (1996): 120–125.

Schweitzer, Lisa, and Brian Taylor. “Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes.” *Transportation* 35, no. 6 (2008): 797–812.

Small, Kenneth. “Using the Revenues from Congestion Pricing.” *Transportation* 19, no. 4 (1992): 359–381.

Sullivan, James. “Welfare Reform, Saving, and Vehicle Ownership: Do Asset Limits and Vehicle Exemptions Matter?” *Journal of Human Resources* 41, no. 1 (2006): 72–105.

Surface Transportation Policy Partnership. “Driven to Spend: Chapter One: Transportation Is Expensive” (March 20, 2000). http://www.transact.org/report.asp?id=41 (accessed September 18, 2010).

———. “Transportation Costs and the American Dream. Why a Lack of Transportation Choices Strains the Family Budget and Hinders Home Ownership” (July 2003). http://www.transact.org/ library/decoder/american_dream.pdf (accessed September 18, 2010).

Sussman, Dalia. “Poll: Americans Angry About Gas Prices.” ABC News (August 25, 2005). http://abcnews.go.com/ Politics/PollVault/story?id=1058451 (accessed January 25, 2010).

Taylor, Brian, Mark Garrett, and Hiroyuki Iseki. “Measuring Cost Variability in Provision of Transit Service.” *Transportation Research Record* 1735 (2000): 101–112.

U.S. Census Bureau. “2006–2008 American Community Survey 3-Year Estimates” (no date). http://factfinder.census.gov/servlet/ DatasetMainPageServlet?_lang= en&_ts=291908146475&_ds_name= ACS_2008_3YR_G00_&_program= (accessed May 14, 2010).

———. “POV02: People in Families by Family Structure, Age, and Sex, Iterated by Income-to-Poverty Ratio and Race: 2007. Below 100% of Poverty—All Races” (no date). http://www.census.gov/hhes/www/macro/032008/pov/new02_100_01.htm (accessed September 27, 2010).

———. “Current Population Survey Interviewing Manual, 2007” (January 2007). http://www.census.gov/apsd/techdoc/cps/CPS_Interviewing_Manual_July2008rv.pdf (accessed September 3, 2010).

———. “Survey of Program Dynamics (SPD) 2000: Cross-Sectional File SPD_00CS” (no date). http://www.census.gov/spd/pubs/SPD_00CS.pdf (accessed September 3, 2010).

U.S. Department of Health and Human Services, Administration for Children and Families. “About Assets for Independence.” August 10, 2010. http://www.acf.hhs.gov/programs/ocs/afi/assets.html (accessed September 27, 2010).

———. “Combined TANF and SSP-MOE: Fiscal and Calendar Year 2007—Total Number of Families.” May 29, 2009. http://www.acf.hhs.gov/programs/ofa/data-reports/caseload/2007/2007_fycy_family_tanssp.htm (accessed September 27, 2010).

U.S. Department of Labor, Bureau of Labor Statistics. “Consumer Expenditure Survey” (no date). http://www.bls.gov/cex/ (accessed January 15, 2010).

———. “Consumer Expenditure Survey Quarterly Interview CAPI Survey” (updated in 2008). http://www.bls.gov/cex/capi/2008/cecapihome.htm (accessed September 3, 2010).

U.S. Department of Transportation, Federal Highway Administration. “You Can’t Get There from Here.” NPTS Brief. December 2005. http://www.travelbehavior.us/Nancy-pdfs/You%20Can’t%20Get%20There%20From%20Here--Poverty%20and%20Mobility%20in%20America%20brief.pdf (accessed September 27, 2010).

U.S. Department of Transportation, Federal Transit Administration. “Job Access and Reverse Commute Program (5316)” (no date). http://www.fta.dot.gov/funding/grants/grants_financing_3550.html (accessed June 14, 2010).

U.S. Department of Veterans Affairs. “Change in Beneficiary Travel Mileage Reimbursement Rates and Deductibles.” VHA Directive 2008-006, January 28, 2008, http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1642 (accessed March 3, 2010).

United Way Silicon Valley. “Uplift Info Flyer” (no date). http://www.211scc.org/Documents/UPLIFT%20INFO%20FLYER.pdf (accessed September 27, 2010).

———. “Uplift Transit Pass Program” (no date). http://www.211scc.org/Documents/ CBB/UPLIFT% 20PARTICIPATING%20AGENCIES.pdf (accessed February 12, 2010).

Villaseñor, María. “UTA Studies Possible Discounts for Low-Income Riders.” *The Salt Lake Tribune*, April 19, 2010.

Wachs, Martin. “A Dozen Reasons for Raising Gasoline Taxes.” Berkeley, CA: Institute of Transportation Studies, March 2003.

Wagmiller, Robert. *Debt and Assets Among Low-Income Families*. New York, NY: National Center for Children in Poverty, Mailman School of Public Health, Columbia University, October 2003. http://nccp.org/publications/pdf/text_534.pdf (accessed September 27, 2010).

Waller, Margy. “High Cost or High Opportunity? Transportation and Family Economic Success.” Washington, DC: The Brookings Institution, December 2005. http://www.brookings.edu/~/media/Files/rc/papers/2005/12poverty_waller/pb35.pdf (accessed September 27, 2010).

WBAL TV Baltimore. “MTA Bus Driver Sentenced for Theft.” April 4, 2006. http://www.wbaltv.com/ news/8464812/detail.html (accessed January 30, 2010).

Weinstein, Asha, and Gian-Claudia Sciara. “Unraveling Equity in HOT Lane Planning: A View from Practice.” *Journal of Planning Education and Research* 26, no. 2 (2006): 174–184.

Wolch, Jennifer, Afsaneh Rahimian, and Paul Koegel. “Daily and Periodic Mobility Patterns of the Urban Homeless.” *Professional Geographer* 45, no. 2 (1993): 159–169.

———, and Stacy Rowe. “On the Streets: Mobility Paths of the Urban Homeless.” *City & Society* 6, no. 2 (1992): 115–140.

ABOUT THE AUTHORS

SARAH ABEL

Sarah Abel is a graduate student earning her Master's degree in Urban and Regional Planning at San José State University. She has interests in environmental and transportation planning policy. Sarah was recently nominated by her department for the Continuing Student Scholarship and was selected by the California Planning Foundation to receive the Northern Section Scholarship. She was also accepted into the 2010 Dwight David Eisenhower Transportation Fellowship Program awarded by the Federal Highway Administration for her thesis project, "Increasing Bus Ridership and Transit Cost-Assistance Awareness Among San José's Very-Low Income Community." She has Bachelor's degrees in Mathematics and Environmental Studies from the University of California, Santa Cruz.

ASHA WEINSTEIN AGRAWAL, Ph.D.

Asha Weinstein Agrawal is Director of the MTI National Transportation Finance Center and Associate Professor in the Department of Urban and Regional Planning at San José State University. Her research interests in transportation policy and planning include transportation finance, pedestrian planning, and planning and transportation history. She has a Bachelor of Arts degree from Harvard University, a Master of Urban and Regional Planning degree from the London School of Economics and Political Science, and a Ph.D. from the University of California, Berkeley. For a complete list of her publications, see http://www.sjsu.edu/faculty/weinstein.agrawal/.

EVELYN BLUMENBERG, Ph.D.

Evelyn Blumenberg is an Associate Professor of Urban Planning in the School of Public Affairs at the University of California, Los Angeles. Professor Blumenberg's research examines the effects of urban structure—the spatial location of residents, employment, and services—on economic outcomes for low-wage workers and on the role of planning and policy in shaping the spatial structure cities. Her recent research focuses on the role of transportation in facilitating the welfare-to-work transition, the travel behavior of immigrants, and the transportation-expenditure burden of low-income and minority households. Professor Blumenberg holds a Bachelor's degree in Political Science from the University of California, Berkeley, and a Master's degree and Ph.D. in Urban Planning from the University of California, Los Angeles.

CHARLES N. DARRAH, Ph.D.

Charles Darrah is Chair and Professor in the Department of Anthropology at San José State University. An applied anthropologist, his research interests include work, technology, organizations, and health care. He has a Master of Arts degree from the University of Alberta, a Master of Public Health degree from San José State University, and a Ph.D. from Stanford University.

GREGORY PIERCE

Gregory Pierce is a Master's degree candidate in the Department of Urban Planning at the University of California, Los Angeles. His research interests include the economic vulnerability of the urban poor, water privatization, and urban sanitation, particularly in the context of the developing world. He holds a Bachelor's degree in Economics and History from the University of California, Los Angeles.

PEER REVIEW

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

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

MTI FOUNDER

Hon. Norman Y. Mineta

MTI BOARD OF TRUSTEES

Honorary Co-Chair
Hon. James Oberstar **
Chair
House Transportation and
Infrastructure Committee
House of Representatives
Washington, DC

Honorary Co-Chair
Hon. John L. Mica **
Ranking Member
House Transportation and
Infrastructure Committee
House of Representatives
Washington, DC

David L. Turney *
Chair/President/CEO
Digital Recorders, Inc.
Dallas, TX

William W. Millar ^
Vice Chair/President
American Public Transportation
Association (APTA)
Washington, DC

Hon. Rod Diridon, Sr. #
Executive Director
Mineta Transportation Institute
San Jose, CA

Ronald Barnes
General Manager
Veolia Transportation/East
Valley RPTA
Mesa, AZ

Rebecca Brewster
President/COO
American Transportation
Research Institute
Smyrna, GA

Donald H. Camph
President
California Institute for
Technology Exchange
Los Angeles, CA

Anne P. Canby
President
Surface Transportation
Policy Project
Washington, DC

Jane Chmielinski
President
DMJM Harris
New York, NY

William Dorey
President/CEO
Granite Construction, Inc.
Watsonville, CA

Mortimer Downey
Chairman
PB Consult Inc.
Washington, DC

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

Steve Heminger
Executive Director
Metropolitan Transportation
Commission
Oakland, CA

Hon. John Horsley #
Executive Director
American Association of State
Highway & Transportation
Officials (AASHTO)
Washington, DC

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

Will Kempton
Director
California Department of
Transportation
Sacramento, CA

Brian Macleod
Senior Vice President
Gillig Corporation
Hayward, CA

Dr. Bruce Magid
Dean
College of Business
San José State University
San José, CA

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

Hans Rat
Secretary General
Union Internationale des
Transports Publics
Bruxelles, Belgium

Vickie Shaffer
General Manager
Tri-State Transit Authority
Huntington, WV

Paul Toliver #
President
New Age Industries
Seattle, WA

Michael S. Townes #
President/CEO
Transportation District
Commission of Hampton Roads
Hampton, VA

Edward Wytkind
President
Transportation Trades
Department, AFL-CIO
Washington, DC

** Honorary
* Chair
^ Vice Chair
# Past Chair

Directors

Hon. Rod Diridon, Sr.
Executive Director

Karen E. Philbrick, Ph.D.
Research Director

Peter Haas, Ph.D.
Education Director

Donna Maurillo
Communications Director

Brian Michael Jenkins
National Transportation Security Center of
Excellence

Asha Weinstein Agrawal, Ph.D.
National Transportation Finance Center

Research Associates Policy Oversight Committee

Asha Weinstein Agrawal, Ph.D.
Urban and Regional Planning
San José State University

Jan Botha, Ph.D.
Civil & Environmental Engineering
San José State University

Katherine Kao Cushing, Ph.D.
Enviromental Science
San José State University

Dave Czerwinski, Ph.D.
Marketing and Decision Science
San José State University

Frances Edwards, Ph.D.
Political Science
San José State University

Taeho Park, Ph.D.
Organization and Management
San José State University

Diana Wu
Martin Luther King, Jr. Library
San José State University

MINETA
TRANSPORTATION INSTITUTE
Created by Congress in 1991

SAN JOSÉ STATE
UNIVERSITY

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