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The Equity Challenges and Outcomes of California County Transportation Sales Tax

Final Report

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THE EQUTIY CHALLENGES AND OUTCOMES OF CALIFORNIA COUNTY TRANSPORTATION SALES TAXES

PREPARED FOR THE UNIVERSITY OF CALIFORNIA CENTER ON ECONOMIC COMPETITIVENESS

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EXECUTIVE SUMMARY

WINNERS AND LOSERS

This report examines equity among local option sales tax (LOST) measures for transportation in California between 1976 and 2016. Since the first was enacted in 1976 in Santa Clara County (Silicon Valley), 76 LOST measures have appeared on county ballots, 48 of which (63%) were approved by voters. These measures have proven to be popular methods to finance transportation system construction, operations, and maintenance over the past four decades, increasing in number even after a 1995 ruling in *Santa Clara County Local Transportation Authority v. Guardino* required that LOSTs secure two-thirds support to pass.

LOSTs are currently in place in 24 of California's 58 counties that are home to 88 percent of the state's population. Sales tax revenues dedicated to transportation today produce over $4 billion per year for transportation construction and maintenance in these "self-help counties." Sixteen counties have enacted more than one sales tax measure: Alameda, Los Angeles, and Santa Clara counties have three, four, and five passed measures, respectively.

Despite their popularity with voters and the local public officials who craft them, LOSTs raise several important questions concerning equity and fairness:

- Sales taxes are regressive with respect to income, meaning that they collect larger shares of household income from poorer households, on average, than from richer ones. While fuel taxes are similarly income regressive, their incidence rises and falls in proportion to fuel consumed—and therefore in rough proportion to road system use.[1] Transportation sales taxes, by contrast, are levied on nearly all consumer purchases, and their payment is not directly related to travel. This means that, unlike fuel taxes, light users of transportation systems pay more in transportation sales taxes per mile travelled than heavy users of transportation systems. In this way, transportation sales taxes might be "doubly regressive." These issues concern income equity.

- Securing supermajority (two-thirds) support for a LOST measure entails persuading enough voters to support a tax increase that will pay for the proposed expenditure plan. These plans (and the limited resources available to fund them) can pit groups of voters against one another, raising additional equity issues. How should LOST expenditures be divided among roads, public transit, and other travel modes? Even within a given mode, should priority be given to an expensive closure of a gap in the freeway network in one part of the county, or on resurfacing existing roads across the entire county? Should public transit expenditures support building a single new rail line, or improving bus service across the county? Should expenditures go to already built-up, congested parts of the county, or to outlying, growing

[1] Although the emergence of more hybrid, electric, and alternative-fuel vehicles (that require less gas or no gas at all) disrupts this connection between road use and gas taxes paid.

areas where new transportation infrastructure is needed? These questions concern both modal and geographic equity.

- LOST measures are almost always linked to itemized expenditure plans, which specify how much is to be spent on which projects or programs, often in order of priority. Since LOSTs are typically in place for 20 or more years, *when* a specific project is delivered is key to determining the benefits of the plan. That an expenditure plan may propose widening a rural highway a decade before commencing an urban public transit project thus raises fairness questions as well. Further, such detailed expenditure plans may usurp transportation planning processes designed to solicit input and adapt to new circumstances. Is it fair that such plans can be locked into place, leaving certain projects or programs out, or at the back of the line, even when expert and popular opinion regarding priorities might change over time? Such questions concern temporal equity.

- These several dimensions of equity—income, modal, geographic, and temporal—can be conflated into more general assertions about the benefits and fairness of these taxes and their associated expenditure plans. In this report, we use the term "general equity" to refer to this conflation of equity concerns.

To understand how these dimensions of equity have played out in the crafting of LOST measure expenditure plans, debates over the merits and fairness of the measures put before the voters, and in the delivery of the expenditure plans for approved measures, our research uses a mixed methods approach in which we draw from quantitative analyses of measures, financial, voter, and demographic data, as well as qualitative analyses of theories of equity and the language used to debate them.

WHAT'S FAIR IN THEORY?

Equity is a critically important concept in public policy, but is less clearly defined than the concepts of efficiency and efficacy. Equity is about fairness or justice in the distribution of resources, services, or burdens, and thus is a more normative concept than equality. While these distributions can often be measured objectively, whether they are considered fair or just is ultimately subjective. How equity is measured and with respect to what units of analysis (individuals, geographies, interests, etc.) are critical decisions for transportation analysts because they can greatly affect findings, conclusions, and policy recommendations.

Theories of distributional justice offer two main principles from which to evaluate equity: (1) the *benefits received* principle argues that people should pay amounts proportionate to the benefits they receive, while (2) the *ability-to-pay* principle holds that those who can pay more should pay more, regardless of benefits; in other words, the rich should pay more than the poor because they can afford to do so. Policy choices regarding both the "unit of analysis" of the collection or distribution of costs/benefits (individuals, groups or geographic areas) and the logic of that collection or distribution (based on fortune, merit, or need) influence definitions and findings related to equity (Taylor and Norton 2009). Because equity can be assessed from multiple viewpoints and according to different distributional logics, the same policy may be viewed as equitable from one perspective but not from another (Transportation Research Board 2011).

LOSTs have been evaluated from the perspectives of multiple disciplines, including transportation planning, public finance, and political science. Most LOST studies in the planning literature focus largely on factors influencing the passage or failure of LOST ballot measures. Though sales taxes are income regressive, people often perceive *transportation* sales taxes as "fair" for several reasons. First, sales taxes encourage horizontal equity within income groups to the extent that groups with similar incomes have similar expenditure patterns. Second, by taxing expenditures as opposed to income, sales taxes are perceived to be a better proxy than income or property taxes for a person's "ability to pay." Third, sales taxes capture revenues from people who do not necessarily live in the jurisdiction, but utilize the county's transportation infrastructure. Fourth, sales taxes are harder for people to evade compared to other tax mechanisms such as income taxes. Fifth, some argue that LOSTs are a more equitable source of transportation funding than fuel taxes because users of non-automobile modes (transit users, bicyclists, pedestrians) also pay to directly fund infrastructure (Goldman and Wachs 2003).

Studies of the equity implications of transportation LOSTs have typically focused on two dimensions of equity apart from income: first, researchers have concluded that geographic equity is an especially crucial element of successful measures, and second, the mix of projects across transportation modes is widely viewed as a key factor affecting the perceived fairness of a measure.

A BRIEF HISTORY OF LOSTS

While conventional wisdom holds that voters do not like to tax themselves, LOST measures have proven remarkably popular with California voters. A total of 76 measures have been put before the voters since the first LOST passed in 1976 and 63 percent of them (48 measures) passed; 14 measures were on the 2016 ballot alone, four of which were in counties that had never before proposed a LOST measure.

The clear majority (93%) of LOSTs are" termed" measures that run for some fixed period (20 years is common) and then expire; just 7 percent are slated run in perpetuity. The amount of the added levies in the measures range from $0.00125 per dollar (one-eighth cent) to $0.01 per dollar (one cent), but most are $0.005 per dollar (half-cent).

While each of the LOST expenditure plans examined in this study is unique in some way, most tend to program the largest portion of expenditures to road projects, followed by public transit projects—with suburban and rural counties earmarking a higher share of revenue for roads, and urban counties devoting larger shares to transit. Calculating the exact modal breakdown in the expenditure plans is complicated because a share of funds (and sometimes a substantial share) is usually slated for "local return," which typically leaves the ultimate expenditure of the funds up to local discretion at some future date. Our best estimate is that about three-fifths of all LOST expenditures go to roads projects (34% for local roads, and 27% for highways, on average). An average of 31 percent of LOST expenditures are allocated to public transit projects (though, again, these vary substantially from measure to measure), and about 8 percent is dedicated to such projects as transportation for the elderly and disabled, bicycle and pedestrian facilities, and safe routes to school programs.

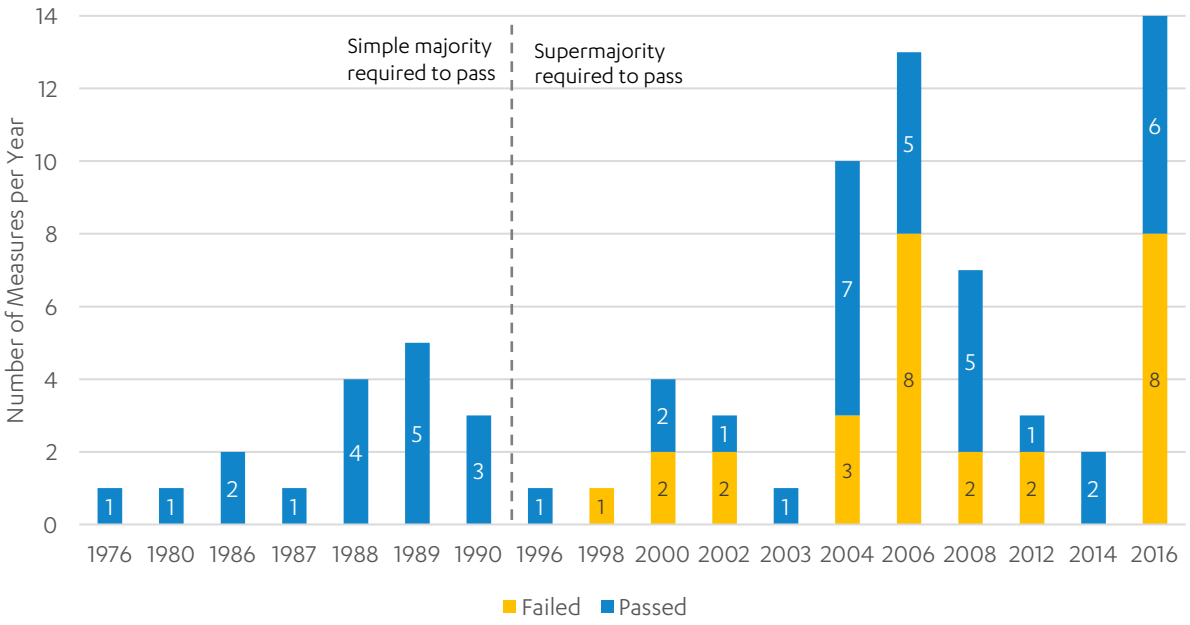
Since 1976, nearly nine out of ten LOST measures (68 of 76, or 89%) have received a majority of the votes cast. Accordingly, one would be hard pressed to find a more popular mechanism for garnering

popular support to raise taxes. Unfortunately for LOST proponents, the California Supreme Court ruled in *Santa Clara County Local Transportation Authority v. Guardino* (1995) that LOSTs were special purpose taxes subject to a supermajority (two-thirds) passage requirement under California law. At the time, many political observers thought that this would be a death knell for LOSTs. But remarkably, the average share of "yes" votes for LOST measures has climbed, as has the rate of passage under the supermajority requirement. Between 2003 and 2016, 50 LOST measures were put on the ballot:

- 8 of the 50 (16%) failed to garner a simple majority of the votes cast
- 15 of the 50 (30%) received a simple majority of votes in favor, but not a supermajority
- 27 of the 50 (54%) received supermajority support and were enacted

Figure 1 depicts the number of LOST measures in each election, and the number of these measures passed into law by voters.

Figure 1. Number of Passed and Failed Measures by Year



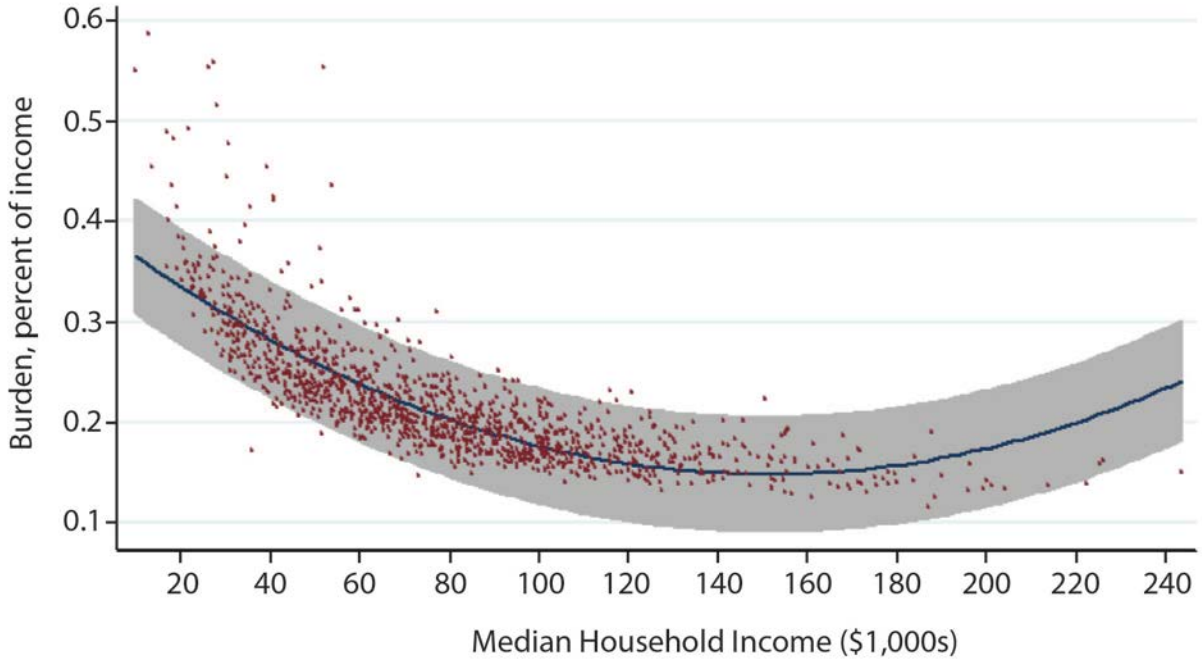
TAXING PROPOSITIONS

Our wide-ranging examination of LOST equity included a detailed analysis of six case studies chosen to represent a cross-section of diverse measures in California in Fresno, Madera, Orange, Santa Barbara, and Santa Clara counties. As noted above, previous research has found sales taxes to be regressive. The level of regressivity depends on the household expenditure patterns and the expenditures subject to the sales tax (which can vary substantially from state to state); as taxable expenditures increase as a share of household income, so too does the share of income dedicated to the sales tax.

Using precinct-level voting data, U.S. Census data, and data from the Consumer Expenditure Survey (CES) for the six LOST counties analyzed, we compared the tax burden across income groups. We

found that LOSTs in California are indeed regressive, as previous research on sales taxes would predict. Specifically, we observe a negative correlation between median household incomes and average sales tax burden across the sample ranging from -0.59 to -0.76; the distribution of this relationship is shown in Figure 2.

Figure 2. LOST Tax Burden with Respect to Household Income



ARGUING ABOUT EQUITY

Finally, to systematically analyze how these measures are presented to and debated before voters, we analyzed the ballot text and arguments (pro and con) presented to voters for 37 of 76 LOST measures; these were all the measures for which we could secure ballot and argument language. Ballot arguments are presented in official voter guides mailed to each voter before the election. We summarized the language in the ballots arguments analyzed in the "word cloud" shown in Figure 3.

Figure 3. Frequency of Words Used in All 37 Pro and Con Ballot Arguments

We find that equity issues do frequently appear in ballot arguments. Of the 37 measures analyzed, 32 (86%) either directly mention or allude to equity questions. Table 1 summarizes the number of ballot arguments that raise each type of equity concern.

Table 1. Equity Argument Frequency in LOST Measures

Type of Equity	Number of Measures in which Equity is Debated
General Equity	29
Income Equity	14
Geographic Equity	28
Modal Equity	26
Temporal Equity	8

In addition to the frequency with which different types of equity arguments were raised, we observed a rhetorical divide between the ways in which supporters and opponents of the measures address LOST equity issues. Supporting arguments speak only in praise of measures' providing funding that meets the many transportation needs of county residents, and present the measures as equitable in only the most general of terms. Opposing arguments, by contrast, are more likely to cite specific (modal, geographic, income, or temporal) equity concerns. Supporters frequently did not take the opportunity to respond to these equity critiques in the space provided for rebuttal arguments, opting instead to ignore opponents' equity criticisms in favor of reiterating the initial supporting arguments.

Aside from general discussions of promoting the fairness and equity of the proposed expenditure plan, modal funding equity is the most frequently debated equity topic. This is likely because LOST expenditure plans are increasingly comprised of lists of projects with corresponding funding amounts. Such lists cast funding allocations across modes in sharp relief and form the basis for arguments over the funding of one mode relative to another.

Previous research has argued that a geographically balanced distribution of expenditures is critical to the success of a proposed measure, and indeed we observe some debates over the geographic distributions of expenditures in ballot arguments—although these were more muted than the literature would suggest. Why was geographic equity not a prominent issue in most of the ballot arguments? It may be that geographic equity is understood to be so important to the success of LOST measures that those crafting ballot measures often address it *before* the measure appears on the ballot. We were not able to test this hypothesis directly, however.

While much previous research has examined the income equity of sales taxes, this type of equity was mentioned in the ballot arguments of only 14 measures (38%), ten of which directly stated how measures will affect lower-income residents and two of which specifically characterized seniors as low-income residents. However, most of the income equity arguments centered on claims that expenditures from the proposed new tax would *benefit* disadvantaged groups by increasing the affordability of transit; arguments that that the LOST would disproportionately *burden* low-income residents (a common finding in the academic literature) appeared in only two opposing arguments.

Because there are inevitably winners and losers in the distribution of limited resources in all the measures, it is perhaps not surprising that virtually all LOST measures engender at least some modal equity debates. LOST measure opponents frequently argue that the proposed distribution of funding among modes is inequitable because it is out of proportion with the use of that mode. Because it is both geographically fixed and serves a relatively small share of trips in only the most densely developed areas, rail transit investment is frequently targeted by measure opponents who complain that high construction costs will far exceed the anticipated benefits.

Some discussions of equity attempt to persuade voters by using statistics and claims about probable policy outcomes. Other ballot arguments take a more visceral, rhetorical approach, appealing to the emotions or specific group identities of voters. This duality is most evident in arguments critical of modal funding equity: for every opposition argument based on statistics, there is another that is simply disdainful about spending on transit.

We also find a lively interaction among equity issues inherent to the provision of transportation services. Investment choices can reveal multiple equity concerns, which are illustrated perhaps most vividly in simultaneous debates over the geographic and modal equity implications of significant investments in a single large-scale capital project. Measure expenditure plans inherently involve tradeoffs, and the most equitable outcome may not be the one that results in the largest probability that a measure will pass. Measure-sponsoring agencies have grown increasingly sophisticated in their use of focus groups to maximize the probability of measure passage, which affects equity outcomes as the political calculus of passage may not always align with the most equitable division of projects and tax spending.

Finally, while equity issues are frequently raised in ballot arguments, it is important to note that these are rarely prominent. Instead, most arguments typically center on whether the measure's proposed projects will *really* reduce traffic congestion as promised. Accordingly, we do not observe any obvious connections between equity debates in ballot arguments and whether the measure passed or failed. This is perhaps because, when they arise, equity concerns often pit one type of equity against another. Therefore, while questions of equity are present in the 76 LOST measures analyzed for this study, they were not a significant factor in this now firmly-entrenched form of ballot box planning in California.

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I. INTRODUCTION

OVERVIEW

California's transportation revenue crisis has been well documented (Perry et al. 2017). Inflation-adjusted federal funding of transportation projects has been decreasing for decades, and on a per vehicle mile of travel basis the funding decline has been even greater. The state 18-cent per gallon gasoline excise tax remained unchanged between 1993 and 2016, despite inflation and increased vehicle fuel efficiency. While a 12-cent per gallon increase in the state gasoline excise tax goes into effect in November 2017, statewide bond measures and a fuel tax "swap"[2] during the 24 years between state motor fuel tax increases were not enough to keep up with the transportation investments needed to serve a growing population and expanding economy.

Since the 1980s, the growing gap between transportation program needs and revenue has been partly met by county sales tax measures for transportation. These local option sales taxes for transportation, or LOSTs, are currently in place in 24 of California's 58 counties that house 88 percent of the state's population. The current round of measures in these so-called "self-help counties" have been approved by two-thirds voter majorities. Sales tax revenues dedicated to transportation today produce over $4 billion per year for transportation construction and maintenance in the self-help counties (Wachs 2010). A few counties have enacted as many as three separate sales tax measures at different times (Self-Help Counties Coalition 2017).

While transportation sales tax measures produce essential revenue for the maintenance, operation, and expansion of some transportation facilities and services, one important drawback of sales taxes is their "regressivity," meaning that they collect larger shares of household income from lower-income households, on average, than from upper-income ones. While fuel taxes are similarly regressive with respect to income, their incidence rises and falls in proportion to fuel consumed – and thus in rough proportion to road system use. Transportation sales taxes, by contrast, are levied on nearly all consumer purchases, and their payment is less related to travel. This means that light users of transportation systems tend to pay more in transportation sales taxes per mile travelled than heavy users of transportation systems. In this way, transportation sales taxes might be seen as "doubly regressive" (Dill, Goldman, and Wachs 1999).

Despite their regressive nature, LOSTs for transportation have proven to be politically popular. Voters like that the taxes are levied in small increments (often a half-cent or cent per dollar) over a very large number of transactions, and that projects to be funded by the LOSTs are specified. And while these measures have often been debated, concerns over their fairness—to light users of transportation systems, to low-income households, to minority communities, to users of various travel modes, and across geographies within and between counties—have rarely been studied. To assess the efficiency, fairness, and political acceptability of expanding the state's reliance on sales

[2] The California fuel tax "swap" was legislation passed in 2010 that traded the existing fuel sales tax for a variable excise tax with the express purpose of relieving the state General Fund from transportation debt financing. Additional background and policy implications of the swap is detailed in Wachs, Garrett, and Brown (2016).

taxes for transportation in the future, California needs to know more about the equity effects of these increasingly popular taxes.

This report examines the equity outcomes of LOST elections. In the pages that follow, we examine the complicated question of fairness in taxation and public finance from philosophical, empirical, and practical perspectives. Next, we compare the 70 highly varied local option sales tax measures that have been put before California voters. We then turn to an analysis of how LOSTs work in practice, with a focus on whether the promises made in these measures to so many interests and jurisdictions were kept. Following that, we consider how these complex measures are presented to voters through an analysis of ballot arguments for and against these measures. Finally, we present our findings, conclusions, and recommendations regarding the fairness of using sales taxes to finance transportation systems.

SIGNIFICANCE OF THE RESEARCH

Policymakers at all levels of government are seeking ways to increase revenue for transportation programs in California and across the nation. Whether by increasing per gallon excise taxes—as California did for the first time in nearly a quarter of a century in 2017—introducing tolls or high-occupancy/toll (HOT) lanes, initiating new road use charges, or relying more heavily upon general revenues, policymakers must address the fairness or equitability of the mechanisms by which transportation revenue is collected and expended. We hope that the research presented in this report will help decision-makers account for the various dimensions of equity when considering future efforts to enhance transportation revenue. Our findings with respect to the equity dimensions of local option sales taxes may influence future ballot initiatives, and we hope that the methods developed for this study may be adapted to the study and analysis of future revenue instruments.

II. THEORY AND MEASUREMENT OF TRANSPORTATION SALES TAX EQUITY

Equity is a critically important concept in public policy, but one that is less clearly defined than the concepts of efficiency and efficacy. Equity is about fairness or justice in the distribution of resources, services, or burdens, and is a more normative concept than equality. While these distributions can often be measured objectively, whether they are ultimately considered fair or just is subjective. How equity is measured and with what units of analysis (individuals, geographies, interests, etc.) are critical decisions for researchers as they can greatly affect findings, conclusions, and policy recommendations. The goal of this literature review therefore is to assess equity definitions and evaluation methods in transportation policy and planning research to assess their application to the analysis of local option sales taxes in California.

We first examine the philosophical bases for assessing equity and then review various ways in which transportation researchers have framed equity across a range of transportation issues. Next, we review the research on local option sales tax equity, the central question motivating this work. Finally, we turn to transportation and economic research to glean best practices for measuring sales tax burdens. Together, these reviews provide the context for our analysis of equity in California's transportation sales tax expenditures.

MEASURING EQUITY IN TRANSPORTATION

Researchers have considered transportation finance equity across a variety of topics including: transit fares (Cervero 1981, Nuworsoo, Golub, and Deakin 2009), road pricing (Eliasson and Mattsson 2006, Levinson 2010, Poterba 1991, Santos and Rojey 2004, Bonsall and Kelly 2005, Bureau and Glachant 2008, Kalmanje and Kockelman 2004, Rajé 2003, Rich and Nielsen 2007), the gas tax (Bento et al. 2009), vehicle emissions taxes (West and Williams III 2005, Walls and Hanson 1999), vehicle registration (Dill, Goldman, and Wachs 1999), transportation finance generally (West 2011, Zhu and Brown 2013, Rosenbloom 2009), and transportation sales taxes in particular (Schweitzer and Taylor 2008). Although each of these studies explicitly addresses questions of equity, they do so in varying ways that employ sometimes contrasting definitions and methods.

Theoretical Underpinnings of Equity Analysis

Equity considerations in the transportation literature typically stem from theories of distributional justice (Rosenbloom 2009, Taylor and Norton 2009), which offer two main principles from which to evaluate equity (Rosenbloom 2009). Under the *benefits received* principle, it is most fair for people to pay an amount proportionate to the benefits they receive. Conversely, the *ability-to-pay* principle holds it is fairer for those who can pay more to pay more, regardless of benefits received; in other words, the rich should pay more than the poor because they can afford to do so. The ability-to-pay and benefits received principles often conflict. For example, people typically pay equal taxes based on benefits received (e.g. the same tax per gallon of gasoline), but unequal amounts based on ability to pay. As a result, lower-income travelers will typically pay a larger proportion of their income in gasoline taxes compared wealthier travelers even if they pay an equal amount in gasoline taxes (Rosenbloom 2009).

Policy choices regarding both (1) the "unit of analysis" of the collection or distribution of costs/benefits (individuals, groups or geographic areas) and (2) the logic of that collection or distribution (based on fortune, merit, or need) influence definitions and findings related to equity (Taylor and Norton 2009). For example, a policy that aims to achieve geographic equity will address the spatial allocation of revenues, while a policy intended to achieve group equity (e.g. equalizing revenues across modal, racial, or income groups) may address the collection or distribution of these same resources among income groups or modal interests. Thus, even when considering the same unit of distribution (e.g. income groups), the logic of distribution (i.e., based on ability-to-pay or benefits received) may result in very different assessments of equity. Comparing equity among groups or geographies, for example, may also be considered in terms of vertical and horizontal equity. Vertical equity examines how taxes are distributed among taxpayers or jurisdictions that have different abilities to pay (i.e., different income groups) and horizontal equity considers how taxes are distributed among taxpayers who have the same ability to pay (i.e., same income groups) but differ in other respects (Atrostic and Nunns 1991). These concepts are entwined when choosing among differing policy objectives. For example, if policy makers seek to distribute public transit resources equitably, should they distribute resources equally across various classes of users ("opportunity" equity), in proportion to the taxes paid ("market" equity), or equalize mobility across groups ("outcome equity") (Taylor and Norton 2009)?

Equity Dynamics Prevalent in Transportation Research

In transportation research, some units of equity are considered far more often than others. Equity among modal groups (Bureau and Glachant 2008), income groups (Bonsall and Kelly 2005, Dill, Goldman, and Wachs 1999, Pucher 1981, Schweitzer and Taylor 2008), and geographies (Garrett and Taylor 1999) attract the most attention; less attention has been paid to transportation finance equity across households (Bento et al. 2009, Walls and Hanson 1999), household types (Eliasson and Mattsson 2006), or individuals (Nuworsoo, Golub, and Deakin 2009). In addition, geographical equity analyses are not conducted at a uniform scale, and most commonly compare counties (Afonso 2016) or states (Zhu and Brown 2013).

Because equity can be assessed from multiple viewpoints and according to different distributional logic, the same policy may be viewed as equitable from one standpoint but not from another (Transportation Research Board 2011). Congestion tolls, for example, generate revenues that are spent to improve transportation for users who paid the tolls. Such a scheme would be considered highly equitable if the tax burden were evaluated based on market equity principles and among modal groups. (i.e., drivers who paid the tolls would receive the benefits). However, the same policy would be considered relatively inequitable from an outcome equity perspective, which would require revenues also to be used to increase the relative mobility of travelers using other modes, such as transit (Taylor and Norton 2009). Conflicting conceptions of equity also arise in debates over what has been called donor-donee state relationships in national transportation finance, because what states contribute to the Federal Highway Trust Fund is based on the amount of gasoline purchased in the state, but what benefits states receive is determined by a distribution formula that uses other criteria (Zhu and Brown 2013); as a result, some "donor" states contribute more fuel tax revenues to the federal program than they receive in federal transportation expenditures. The disparities between donor and donee states have declined over time due largely to fairness arguments put forth by representatives of donor states.

Guiding Principles for Evaluating the Equity of Transportation Policies

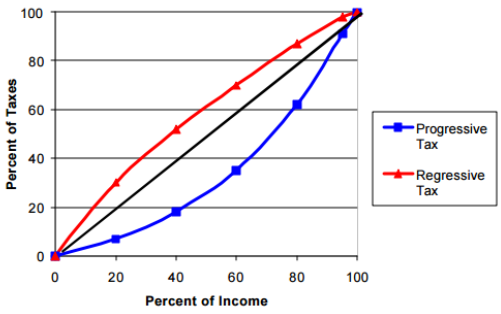
Transportation policies are most often assessed using three principles of equity. The first concerns whether a transportation tax is regressive; that is, whether it takes a larger *share* of income from poor households compared to wealthy ones. A progressive tax, by contrast, takes a larger share of income from the wealthy than from the poor. The second concerns the incidence of taxation and whether the burden of taxes has a corresponding balance of benefits from their expenditure. Third, policy makers evaluate the comparative equity of policy options by balancing equity tradeoffs that arise from financing transportation using different finance mechanisms (Rosenbloom 2009); for example comparing the incidence of sales taxes and congestion tolls (Schweitzer and Taylor 2008). These approaches do not constitute a rubric for determining equitable outcomes, but they do form a loose framework for policy makers to use in evaluating the relative equity of policy options. While these three principles are not comprehensive, they loosely form a framework from which many policy makers operate.

LESSONS FROM ECONOMICS: MEASURING SALES TAX BURDENS

Most commonly, transportation researchers assess market equity in terms of tax burdens across different groups in order to evaluate the regressivity of the tax (Bonsall and Kelly 2005, Bureau and Glachant 2008, Dill, Goldman, and Wachs 1999, Schweitzer and Taylor 2008). To determine whether it is progressive or regressive, the tax burden is typically calculated relative either to a measure of material well-being or an ability to pay (West 2011). The regressivity of the tax is then evaluated by comparing the burden across groups with different abilities to pay. In this way, calculating tax burdens is a way of assessing how a tax policy affects the distribution of income and wealth in a population (Atrostic and Nunns 1991).

Researchers employ a variety of methods to calculate tax burdens. In Table 2 we outline four of the most commonly used methods. The first involves measuring the ratio of an individual or household's tax paid relative to income earned. To account for the uneven distribution of households across income groups, the ratio may be weighted either by an income class' share of the population, or by an income class' share of the total population's income (Schaefer 1969). The second method measures the ratio of a tax to annual expenditures rather than annual income. The third calculates tax burden as the ratio of the share of the total tax burden to the share of income for each income group. A ratio higher than one indicates that an income group bears a disproportionate share of the tax (Derrick and Scott 1998). The fourth, the Suits Index, uses a single measurement to calculate the overall regressivity or progressivity of the tax. Mathematically, the Suits Index is a ratio of the area under a Lorenz curve (which shows the distribution of income across a population) to a proportional income line—i.e., a line that shows where an income group would bear an amount of tax proportional to the size of their income group. A ratio of zero represents a proportional tax, a negative ratio indicates a regressive tax, and a positive ratio is a progressive tax (Suits 1977). However, Derrick and Scott (1998) warn that a single summary value of tax burden, such as the Suits Index, may obscure how the tax burden varies across income groups by reporting a single measure for the population rather than multiple measures for different income groups.

Table 2. Four Measurements of Tax Burden

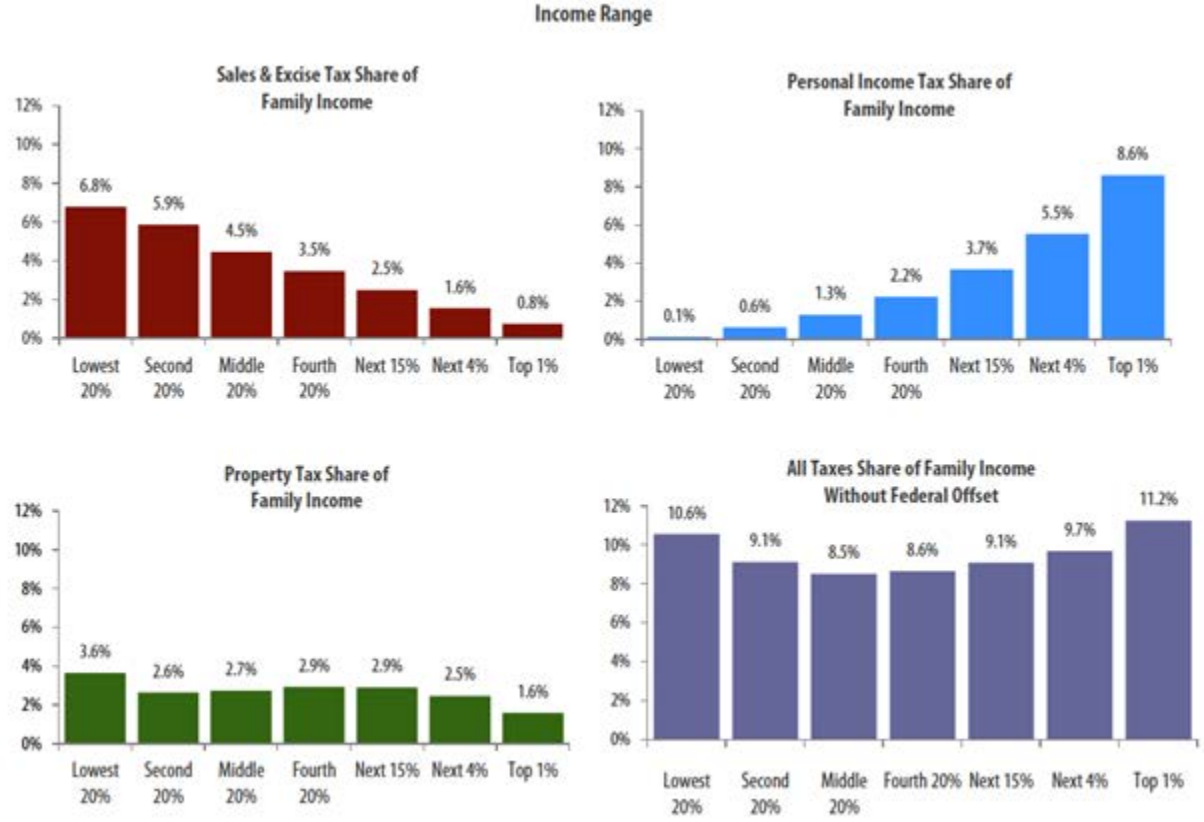
Method	Definition	Example
$\frac{Annual\ Tax\ Amount}{Annual\ Income}$	*Tax as percentage of income.* A higher percentage of income that goes to pay a tax is more burdensome.	A household that earns $10,000 and pays $100 in taxes would pay 1% of their income in taxes. $1\% = \frac{\$100}{\$10{,}000}$
$\frac{Annual\ Tax\ Amount}{Annual\ Expenditures}$	*Tax as percentage of expenditures.* A higher percentage of expenditures that goes to pay a tax is more burdensome.	A household that spends $5,000 annually on expenditures and pays $100 in taxes would pay 2% of their expenditures in taxes. $2\% = \frac{\$100}{\$5{,}000}$
$\frac{Group\ Share\ of\ Total\ Tax}{Group\ Share\ of\ Total\ Income}$	*Ratio of a group's share of total tax burden to the group's share of total income.* Higher ratios indicate a tax is more burdensome.	An income group that bears 20% of the total tax, but only earns 10% of total income would have a tax burden ratio of 0.5. $2 = \frac{20\%}{10\%}$
$\frac{Proportion\ of\ Tax\ Borne\ By\ Income\ Group}{Proportion\ of\ Tax\ Borne\ By\ Income\ Group\ if\ Tax\ Were\ Proportional\ to\ Group\ Size}$	*Suits index: A ratio of proportion of the tax borne by an income group versus what proportion they would bear if the tax were proportional to the size of the income group.* A ratio of zero represents a proportional tax, a negative ratio indicates a regressive tax, and a positive ratio is a progressive tax	The diagram below illustrated a regressive sales tax and progressive income tax compared to a proportional line.  Source: Roach (2003)

The Regressivity of Sales Taxes

Academics frequently acknowledge that the degree of regressivity is dependent on specific features of the tax (Schaefer 1969), such as where and how it is collected and what exemptions are applied. For this reason, it is difficult to generalize about the regressivity of sales taxes. It is also important to compare sales taxes' general regressivity with that of other taxes, such as the progressive income tax (Schaefer 1969). Alternatively, a comparison to the generally regressive gas tax may be more appropriate (Chernick and Reschovsky 1997); for example, both sales and fuel taxes, which are commonly employed to fund transportation systems, have been found to be regressive with respect to income (West 2011). Therefore, it is most useful for our purposes to examine how sales taxes in California compare to other forms of taxation in the state.

Davis et al. (2015) find that California is the third *least* regressive state in terms of overall tax burden (behind only Delaware and Washington, D.C.), due largely to its highly progressive income tax. The same study also finds that a high reliance on sales and excise taxes characterizes the most regressive tax systems (Davis et al. 2015). Figure 4 shows how California's sales and excise taxes are currently the most regressive of its various taxes; thus, if California relies increasingly on sales taxes to finance transportation, its overall tax burden is likely to become less progressive. To measure a tax burden, researchers must select from a variety of assumptions and measurements. In this section, we review the transportation and economics literature to inform our selection of an appropriate measure of tax burden.

Figure 4. Tax Burden and Regressivity of Various Taxes in California



Source: Davis et al. (2015)

Income vs. Expenditures

Both annual income and expenditures may be used to calculate tax burdens, but the outcomes of equity analyses vary depending on which is used. For example, West (2011) finds that taxes measured as a proportion of annual expenditures—rather than annual income—are generally found to be less regressive as consumption spending is "more evenly distributed across the population than annual income is" (p. 11). This is because much of the variability observed in annual income is attributable to life-cycle variations (Fullerton and Rogers 1993). Walls and Hanson (1999) likewise find that vehicle emissions fees are less regressive when measured over a lifetime than as an annual measure.

Most transportation studies use annual income in measuring tax burdens (Bento et al. 2009, Schweitzer and Taylor 2008, Dill, Goldman, and Wachs 1999, Bonsall and Kelly 2005), although the way in which studies categorize income varies. For example, Walls and Hanson (1999) divide the population into varying numbers of equal population strata, resulting in unequal income bands. Others divide income groups into equal income increments, regardless of how many people or households fall within each stratum (Bento et al. 2009, Schweitzer and Taylor 2008, Dill, Goldman, and Wachs 1999). While dividing the population into equal-sized income groups has the advantage of providing sufficient sample sizes within each bracket, its forced distribution can also lump together individuals who have different levels of economic well-being. Instead, dividing the population based on prescribed income cutoffs, such as low, middle, or high-income can yield clearer research conclusions about people who share similar economic characteristics and thus tax burdens (Bonsall and Kelly 2005).

While researchers commonly measure tax burden using annual income, some argue that lifetime income is a better reflection of household economic status than annual income because many individuals with low annual incomes may actually have high lifetime incomes (Fullerton and Rogers 1993). For example, a business student or retired engineer may have a low annual income in a given year, but a high lifetime income. This is particularly salient during periods of economic recession when temporary job losses may not reflect longer-run conditions (Poterba 1991).

Because lifetime income is difficult to measure, researchers often use annual household expenditures as a proxy for long-term economic well-being. West (2011) argues that consumption and expenditures reflect lifetime income and can "capture values important to standards of living not included in annual income, such as the value of a home" (p.10). Similarly, Blumenberg (2010) argues that, compared to income, "consumption is a better indicator of household wealth, permanent income, and overall material well-being" (p. 8) because household expenditures reflect individuals' expectations of future earnings. Finally, expenditure data also prove a more reliable measure of short-term household economic well-being compared to annual income. Blumenberg (2010) uses Consumer Expenditure Survey (CES) data to show that households in the bottom income quintile actually reported expenditures twice their household income: while reported pre-tax income in the lowest income quintile was about $10,600, average annual expenditures totaled about $22,300. This suggests that households are consuming more by leveraging debt, underreporting income, or some combination of the two (Blumenberg 2010). So while transportation research tends to use annual incomes rather than annual expenditures, the use of expenditures in addition to annual incomes in measuring tax burden research has considerable merit and is not without precedent (Poterba 1991, Metcalf 1999).

Where Does the Tax Burden Fall?

In addition to understanding how taxes affect consumption, we must also consider who actually pays the tax; for example, suppliers may choose to pay the tax and not pass on the added cost, thus lowering their profit (or increasing their loss). Alternatively, they may choose to pass the tax along to customers, raising prices that customers pay. Poterba (1991) finds that, for the most part, general, state, and local sales taxes are fully "shifted" onto the consumer because prices tend to rise by the amount of the tax increase. Thus, in this study of local option sales taxes, we have opted to assume that consumers, rather than commercial intermediaries, bear the added cost of the tax.

Understanding where the tax burden falls requires certain assumptions about how an individual or household responds to the added cost; in economic terms, the tax burden depends on how elastic or inelastic demand for a good is. If demand is inelastic, the percentage change in quantity purchased is less than the corresponding percentage change in price, and prices can rise or fall without large changes in consumption. The reverse is true with elastic goods for which people are sensitive to price, meaning that a small change in price can lead to a correspondingly large change in consumption.

Elasticity of demand for transportation goods and services is well studied in the transportation literature. Demand for such transportation goods, including gasoline consumption (Poterba 1991), carbon emissions (Metcalf 1999), vehicle registration, and miles driven (Walls and Hanson 1999), is generally found to be relatively inelastic at least in the short run. In the long run, however, the price elasticity of demand for gas is around -0.8, about three times more elastic than in the short run (Graham and Glaister 2002); in other words, people alter their gas consumption patterns very little in the short term, but adjust behavior over the long term. Behavioral adjustments could include people driving less, purchasing fewer cars, or buying more fuel-efficient cars.

When calculating tax burdens, researchers must make numerous assumptions, regardless of whether the methods are relatively simple or complex. Most transportation tax studies take a simplified approach to market complexity; rather than accounting for market shifts or how taxes affect other goods, services, and markets, "the preponderance of the research looks at out-of-pocket costs alone" (Schweitzer 2009, 4). For example, Schweitzer and Taylor (2008) compare the relative tax burden of different finance mechanisms by contrasting the relative share of household income that consumers would pay in either sales taxes or road tolls. Using Consumer Expenditure Survey data to predict both the probability that a consumer buys a good and the total amount expended on taxable goods, the authors find that, compared to road tolls, sales taxes place a greater burden on the very lowest and very highest income groups (Schweitzer and Taylor 2008). Eliasson and Mattsson (2006) use Stockholm's regional travel model to assess the burden of yearly congestion charges across low, medium, and high-income households. They find that both pre-existing travel patterns and revenue recycling—how revenues are redistributed back across the population—are the greatest determinants of a tax's regressivity. Specifically, drivers bear the costs of congestion charges, but the net effects depend on how revenues are spent (Eliasson and Mattsson 2006). For example, if revenues from the congestion charge are used to offset costs for the poorest travelers, a congestion charge would be less regressive on net than one that funneled all revenues into the general fund without providing rebates to poor travelers. LOSTs are a transportation finance tool for which the revenue raising mechanism is largely disconnected from travel, and the revenue-raising potential of an incremental sales tax increase is a function of the price elasticity of demand for purchases subject to sales taxes, and not travel or transportation expenditures specifically. Consumers typically ignore sales taxes' marginal effects on total prices because sales taxes are typically omitted from posted prices and are instead automatically added at the time of purchase – consumers pay the tax when they pay for their purchase; there is no separate and highly specific act of settling one's tax bill, as there is with income and property taxes. Two potential explanations for consumers' relatively inelastic responses to incremental sales tax increases are 1) that consumers are unaware of the tax rate, and 2) that individuals know the rate but do not pay attention if the rate is not posted on goods

(Chetty, Looney, and Kroft 2009). This finding is echoed by Finkelstein (2007), who finds that drivers who pay tolls electronically are less aware of changing toll rates and thus are more muted in their behavioral responses. In both these cases—electronic tolls and sales taxes added at purchase—consumers exhibit relatively inelastic demand because the marginal increases in prices are relatively hidden at the time of purchase and often are not on the price tag.

LOCAL OPTION TRANSPORTATION SALES TAXES (LOSTS)

The Political Appeal of LOSTs

Most LOST studies in the planning literature focus largely on factors influencing the passage or failure of LOST ballot measures. Studies have found that many factors influence a measure's passage, including the development of the expenditure plan (Beale, Bishop, and Marley 1996, Crabbe et al. 2005), public marketing campaigns (Haas et al. 2000), and contextual and socio-economic factors (Hamideh et al. 2008, Hannay and Wachs 2007). For example, Hannay and Wachs (2007) and Haas et al. (2000) report that measures are more likely to pass if they dedicate funding to a mix of highway and transit projects rather than to a single mode.

The public finance literature tends to compare the revenue raising potential of LOSTs in different types of jurisdictions. Multiple studies find that LOSTs have the highest revenue potential where non-residents are likely to spend money, including retail centers (Goldman and Wachs 2003) and where tourism is common (Afonso 2016). Findings are mixed on the revenue capacity, and therefore attractiveness, of LOSTs in suburban areas. Afonso (2016) finds that suburban counties in North Carolina (which are small and numerous) have the lowest revenue capacity, while Rogers (2004) finds that suburban municipalities in Oklahoma have high revenue potential compared to cities and towns in rural areas.

The Politics of Taxation

What motivates people to tax themselves?

What motivates people to tax themselves is a question explored extensively in the political science literature. The influences and motivations for self-taxation identified generally fall into two general categories relating to whether they are affected by the specific tax measures' content (endogenous) or are not (exogenous).

Exogenous influences on choices to self-taxation include the current economic climate, the manner in which current services are paid for (i.e., the status quo), the composition of current taxes, and prevalent partisanship. The importance of economic climate is reflected in findings that initiatives are less likely to pass during recessions (Donovan and Bowler 1998). Voters also appear to consider strongly their local jurisdiction's status quo in taxation to a significant degree: one study found people preferred taxes to user fees when similar goods or services were already paid for in taxes, and that they preferred fees to taxes when no taxes were in place (Franko, Tolbert, and Witko 2013). Similarly, the composition of existing taxes matters: people "seem willing to consider higher total tax burdens if there are more smaller taxes" (McCaffery and Baron 2006, 124) like LOSTs. Partisanship is also found to be "a critical determinant of support for specific policies in today's environment" (Franko, Tolbert, and Witko 2013, 933). Party affiliation matters a lot, as borne out in a study on voters' responses to a redistributive taxation ballot initiative (Washington state's Initiative 1098 of 2010): a

belief that taxes are the most important issues decreased support for the measure by 0.15 among Democrats and 0.22 for Republicans, all else equal (Franko, Tolbert, and Witko 2013). At the same time, a belief that the economy is most important found decreased support for the measure among Republicans by 30 percent and increased support for it among Democrats by 20 percent, lending the authors to conclude that although "framing the policy in terms of the economy was salient among members of both parties, [...] each group reached different conclusions about the policy's economic effects, demonstrating the important role of partisan filtering in such debates" and reflecting "the powerful effect that party has in mediating elite messages and ultimately redistributive preferences" (Franko, Tolbert, and Witko 2013, 933).

Endogenous influences on voters' willingness to tax themselves include the content of the initiative, how much opposition spending has occurred, how tax impacts are perceived, how taxes are named or labeled, what benefits are perceived, and how existing services are viewed. As might be expected, the content of the initiative is important: voters tend to be risk-averse when voting on economic initiatives (Bowler and Donovan 1994) and in direct democracy elections (Bowler and Donovan 1994, Donovan and Bowler 1998). What amount of money is spent in opposing an initiative or candidate is also found to increase the likelihood that voters elect the status quo whereas spending in favor is less effective (Donovan and Bowler 1998, Gerber 1999). On the subject of what explains support for transportation sales taxes specifically, Manville and Cummins (2015) find that supporters are more likely to be motivated by collective benefits than private ones, for example, by concerns over congestion and pollution as opposed to wanting to use transit themselves: the authors note that a 2013 American Public Transportation Association (APTA) shows 70 percent of Americans support increased transit spending even though transit accounts for fewer than 3 percent of all trips (Manville and Cummins 2015).

Literature that bridges political science and cognitive psychology finds that voters' willingness to approve taxes is influenced depends in part upon their perceptions of such taxes' impacts as well as the names the taxes are given. People's perception of tax impacts tends to change when taxes are presented in percentage rather than dollar terms, and people support "both higher and more steeply progressive taxes" in such cases (McCaffery and Baron 2006, 114). Similarly, labels matter: "levies" elicit different responses than "taxes" (McCaffery and Baron 2006). Finally, the perception of existing service matters. A study of transportation tax measures in two southern California counties found that "respondents in both counties are approximately 7 percent more likely to support the extension of the transportation sales tax measures when [existing] transit options are viewed favorably" (Green et al. 2013, 658). However, a poor view of existing transit was not found to cause opposition in any significant way (Green et al. 2013).

How well informed are voters?

The extent to which voters are informed or can be expected to be informed about complex LOST measures is perhaps best explained in the political science literature on campaign influences and their limitations in reaching voters. For example, one study finds that although some voters will acquire costly information, "a positive fraction of the electorate will choose not to acquire information—even if the cost of information is minimal" although the authors also find "changes in the quality and cost of information impact both the fraction informed and election outcomes" (Feddersen and Sandroni 2006, 3).

Much focus in the literature on voter knowledge examines young citizens, defined as between the ages of 18 and 29, because they are the least involved and informed group of voters (Kaid, McKinney, and Tedesco 2007). Possible reasons for their lack of electoral engagement include their less settled, "still developing...nature", and their lower rate of TV and print media consumption than older voters (Kaid, McKinney, and Tedesco 2007, 1094). Another study argues that candidates and campaigns ignore young citizens, which causes them to disengage because they perceive their interests to be ignored (Freyman and McGoldrick 2000). Similarly, the media may not be sufficiently attuned to young persons' interests: one study finds the internet is the preferred source of information for young citizens because they "could not get" the news they wanted from traditional media (Pew Research Center 2003).

Since research shows young voters cite not having "enough time or information" as reasons to abstain from voting (Murphy 2000), providing information sources that is pertinent and accessible to these voters is critical, Kaid et al. argue, particularly as young voters' confidence in their knowledge and self-perception of their competence is "an important determinant of political engagement and voting" (Kaid, McKinney, and Tedesco 2007, 1097). Research suggests that, to this end, campaign advertising is effective at increasing feelings of political information efficacy among younger citizens (Kaid, McKinney, and Tedesco 2007). It "remains one of the most frequent (and frequently reviled forms of campaign communication, a format that consistently outperforms both debates and news as a source of political information for voters" (Kaid, McKinney, and Tedesco 2007, 1105). Furthermore, "exposure to television advertising, like exposure to debates, increases young citizens' confidence in their political information and knowledge and significantly increases the likelihood that they will [vote]" (Kaid, McKinney, and Tedesco 2007, 1106).

For all voters, not just young ones, the literature suggests information management is a limitation. Although voters are rational in attempting to maximize their decision-making utility, "they suffer from isolation or focusing effects, reacting to salient aspects of choice or decision sets and not taking a wider, globally consistent perspective" (McCaffery and Baron 2006, 127). Furthermore, people have tendency to ignore or underuse "logically relevant information that is not immediately before them" (McCaffery and Baron 2006, 107). Other researchers observe that "people base most of their choices [...] on very simple kinds of information" (Lupia and Matsusaka 2004) but many nevertheless figure out "what they are for and against in terms of their values in ways that make sense in terms of their underlying values and interests" (Donovan and Bowler 1998, 168). However, "others appear to use a strategy of voting no when information is lacking or when worries about general state conditions are greatest" (Donovan and Bowler 1998, 168). This possibly explains why, as noted earlier, negative campaigns that raise doubts in voters' minds or displace information appear to be effective. Other research suggests, however, more nuance is needed. Lupia and Matusaka find, for example, that business groups supporting a campaign need to have preexisting public support in order for their financial contributions to be effective in changing the status quo (Lupia and Matsusaka 2004).

Equity Issues in LOSTs

Goldman and Wachs (2003) note that sales taxes are inherently regressive, especially in states where food and other essential items are not exempt. Despite this prevailing view of sales taxes in general, transportation sales taxes are often perceived as "fair" for several reasons. First, sales taxes encourage

horizontal equity within income groups to the extent that groups with similar incomes have similar expenditure patterns. Second, by taxing expenditures as opposed to income, sales taxes are perceived to be a better proxy for a person's "ability to pay." Third, sales taxes cannot be easily evaded and are paid both by residents and by non-residents who use contribute to infrastructure wear and tear, but may not contribute to its maintenance. Fourth, some argue that LOSTs are a more equitable source of transportation funding than the gasoline tax, since users of non-automobile modes (transit users, bicyclists, pedestrians) also pay to directly fund infrastructure (Goldman and Wachs 2003).

Schweitzer and Taylor (2008) explore comparative equity issues between congestion pricing and LOSTs by comparing revenues from high-occupancy toll lanes on a portion of the State Route 91 in Orange County to revenues from Measure M, the county's half-cent sales tax. They found that while both finance mechanisms are regressive in an absolute sense, LOSTs are comparatively more regressive than congestion pricing; in other words, low-income travelers pay a higher share of their income under a sales tax than they would under a toll because relatively few low-income travelers travel in the peak hours and peak directions when tolls are charged. LOSTs in addition violate benefits-received equity principles by requiring that facilities be funded in part by non-users.

Studies that evaluate the equity implications of transportation LOSTs often focus on geographic equity as a crucial element of successful measures. In a case study of multiple measures in Sonoma County, Hannay and Wachs (2007) note that proximity to enumerated projects was correlated with the percentage of "yes" votes on proposed measures, which supports the notion that geographic equity is on the minds of LOST voters. Haas et al. (2000) note the increasing prevalence of geographic equity principles in LOST measure construction, resulted in counties increasingly seeking to return benefits to localities that are proportional to the revenue raised in the area. While they note that these strategies are reflective of political objectives leading to their passage rather than to transportation planning or policy objectives, Haas et al. (2000) are unable to conclude whether or to what degree geographic equity affects the passage of LOSTs.

The mix of projects across transportation modes is another equity perspective by which LOSTs are frequently evaluated. Hannay and Wachs (2007) partially attribute the eventual passage of Sonoma County's Measure M (2004) after multiple failures to its incorporation of a multi-modal funding plan. Haas et al. (2000) found limited evidence that a balanced mix of highway and transit projects increased the likelihood of voter approval, which they attribute to the influence of interest groups, such as environmentalists, that prefer specific modal outcomes.

Tax Spending and Equity

How sales tax revenues are used, or what projects or programs they fund, likewise affects relative equity across different income groups. Collected tax revenues may also be used to either rebate or reduce taxes for some groups, a principle known as revenue recycling. Despite the effect that revenue spending may have on overall tax progressivity/regressivity, only a few transportation studies on tax burden consider either revenue recycling or even how expenditures of tax revenues affect equity. Without revenue recycling or targeted redistribution, congestion tolls, for example, may result in net losses to society (Parry and Bento 2001). Small (1983) argues that taxes can be made more progressive through targeted rebates to low-income travelers through reduced gas taxes,

registration fees, tolls, while Eliasson and Mattsson (2006) find that using tax revenues for public transit redistributes revenues to low-income and single-mother households. Additionally, De Borger and Wuyts (2009) find that spending revenues on transit services yields greater net welfare gains compared to spending revenue on non-transportation tax rebates such as lower payroll taxes.

Both the units of analysis and logic of distribution affect equity analysis outcomes. In transportation research, equity is most commonly assessed across groups and geographies, with tax burdens measured as the percentage of income consumed by a particular tax. However, an argument found in the economic literature (West 2011) and also made by some transportation scholars (Blumenberg 2010) is that expenditures, rather than income, are more appropriate measures of household economic well-being. However, research evaluating LOST regressivity has thus far only considered the tax as a percentage of income (Schweitzer and Taylor 2008). In addition, no research has yet linked transportation tax burdens to either socioeconomic—other than income—or voting data. In other words, it is not easy to know how transportation sales tax burdens are distributed across populations and whether voting patterns reflect the perceived tax burdens.

III. RESEARCH DESIGN

INTRODUCTION

This report examines the intersection between equity and local option sales taxes in California in three distinct chapters. In Chapter IV, we present a descriptive overview of all 76 California local option sales taxes voted on between 1976 and 2016. In Chapter V, we select five case study counties and assess the tax burden and regressivity with respect to income of each measure. Finally, in Chapter VI, we analyze ballot arguments in 37 LOST measures and assess how types of equity are used in arguments supporting and opposing LOST measures. While details of each analysis are described in individual chapters, in this chapter we present an overview of data sources and methods employed in this report. We likewise highlight Appendices that contain detailed data tables used in this report. The Appendices provide references to readers, as well as resources for future research.

DATA

The 76 measures included in this analysis are voter-approved ballot measures with dedicated funding for transportation purposes. All LOST measures are countywide measures; except for Marin/Sonoma (R, 2006; Q, 2008), all measures impose an additional sales tax on a single county. We exclude two ballot measures (Santa Clara 2006, Sonoma 2015) that propose general use—rather than transportation-only—sales taxes, because, although they may propose funding transportation projects, they are fungible and thus not guaranteed sources of transportation funding.

Each chapter in this report focuses on a selection of the 76 measures; Table 3 lists the counties and measures included in the analysis of each chapter, while Table 4 lists the specific variables, data sources, and analyses employed in each chapter.

Chapter IV presents an overview of descriptive statistics for all 76 measures. For each measure, we gathered 21 unique variables spanning five general categories: administration, temporal factors such as the period specified as the life of the tax, financial characteristics, voter support, and modal funding splits. While we obtained complete records for most measures and variables (see Appendix A. Complete records of California LOST Measures), our analyses of modal funding split are limited to the 53 measures for which we could collect expenditure plans. In general, measures excluded from this analysis (those without available expenditures plans) are older and more likely to have failed compared to the ones in analysis. In addition, of the measures for which we have expenditure plans, over two-thirds passed (68%) compared to just over half (52%) of measures for which we were unable to locate expenditure plans. Thus, all modal funding analyses offer an incomplete and somewhat slanted picture of LOST expenditure plans. Nonetheless, the analysis in this chapter offers the most comprehensive analysis of California LOSTs to date.

Chapter V offers case studies of expenditure burdens, tax regressivity, and voter support across five select counties: Fresno, Madera, Orange, Santa Barbara, and Santa Clara. We selected these counties to reflect diversity with respect to geography, economy, demographics, and level of urbanization.

Finally, in Chapter VI we analyze 37 measures for which we could obtain ballot arguments. We relied primarily on voter guides as source material and obtained arguments online from electronic versions of voter information pamphlets, or in hard copy from county voter registrars. Despite these efforts,

data were limited by both the existence and availability of ballot arguments. Many counties do not keep records of past voter guide text, particularly for older measures. Thus, our analysis focuses less on the evolution of ballot arguments over time, and more on the general equity themes that emerge across ballot arguments.

In each chapter, we report measure sample sizes. Appendices included at the end of this report include detailed tables of data collected, including descriptive statistics (Appendix A. Complete records of California LOST Measures) and full lists of ballot arguments (Appendix C. List of Ballot Arguments) and word search coding structures (Appendix D. Ballot Argument Coding Structures) employed in Chapter VI. Arguing Over Taxes for Transportation: Analyzing LOST Ballot Arguments. Appendices likewise include records of missing data.

Table 3. LOST Measures Included in Report

Chapter IV: Ballot Box Transportation Finance: Comparing and Contrasting 76 LOST Measures in California between 1976 and 2016

Alameda, B, 1986	Merced, V, 2016	San Luis Obispo, J, 2016
Alameda, B, 1998	Monterey, A, 2006	San Mateo, A1, 1988
Alameda, B, 2000	Monterey, Z, 2008	San Mateo, A2, 2004
Alameda, B1, 2012	Monterey, X, 2016	Santa Barbara, D, 1989
Alameda, BB, 2014	Monterey, Q, 2014	Santa Barbara, D, 2006
Contra Costa, C, 1988	Napa, H, 2006	Santa Barbara, A, 2008
Contra Costa, J, 2004	Napa, T, 2012	Santa Clara, A1, 1976
Contra Costa, X, 2016	Orange, M1, 1990	Santa Clara, A/B, 1996
Fresno, C1, 1986	Orange, M2, 2006	Santa Clara, A, 2000
Fresno, C, 2002	Placer, M, 2016	Santa Clara, B, 2008
Fresno, C, 2006	Riverside, A1, 1988	Santa Clara, B, 2016
Humboldt, U, 2016	Riverside, A2, 2002	Santa Cruz, J, 2004
Imperial, D, 1989	Sacramento, A1, 1988	Santa Cruz, D, 2016
Imperial, D, 2008	Sacramento, A2, 2004	Solano, E, 2002
Kern, I, 2006	Sacramento, B, 2016	Solano, A, 2004
Los Angeles, A, 1980	San Benito, P, 2016	Solano, H, 2006
Los Angeles, C, 1990	San Bernardino, I, 1989	Sonoma, C, 2000
Los Angeles, R, 2008	San Bernardino, I2, 2004	Sonoma, B, 2000
Los Angeles, J, 2012	San Diego, TransNet1, 1987	Sonoma, M, 2004
Los Angeles, M, 2016	San Diego, A, 2004	Stanislaus, K, 2006
Madera, A, 1989	San Diego, A, 2016	Stanislaus, S, 2008
Madera, T, 2006	San Francisco, B, 1989	Stanislaus, L, 2016
Marin, A, 2004	San Francisco, K, 2003	Tulare, R, 2006
Marin / Sonoma, R, 2006	San Joaquin, K, 1990	Ventura, B, 2004
Marin / Sonoma, Q, 2008	San Joaquin, K, 2006	Ventura, AA, 2016
Merced, G, 2006		

Chapter V: Burdened by the Ballot Box: Tax Burdens Imposed by California LOST Measures

Fresno, C, 2002	Orange, M2, 2006	Santa Clara, A, 2000
Fresno, C, 2006	Santa Barbara, D, 2006	Santa Clara, B, 2008
Madera, T, 2006	Santa Barbara, A, 2008	

Chapter VI: Arguing Over Taxes for Transportation: Analyzing LOST Ballot Arguments

Alameda, B1, 2012	Merced, V, 2016	Santa Clara, B, 2008
Alameda, BB, 2014	Monterey, Z, 2008	Santa Clara, B, 2016
Contra Costa, J, 2004	Orange, M2, 2006	Santa Cruz, J, 2004
Contra Costa, X, 2016	Placer, M, 2016	Santa Cruz, D, 2016
Fresno, C, 2002	Sacramento, B, 2016	Sonoma, B, 2000
Fresno, C, 2006	San Benito, P, 2016	Sonoma, C, 2000
Humboldt, U, 2016	San Diego, A, 2016	Sonoma, M, 2004
Los Angeles, R, 2008	San Francisco, K, 2003	Sonoma/Marin, Q, 2008
Los Angeles, J, 2012	San Joaquin, K, 2006	Stanislaus, L, 2016
Los Angeles, M, 2016	San Luis Obispo, J, 2016	Tulare, R, 2006
Madera, T, 2006	San Mateo, A1, 1988	Ventura, AA, 2016
Marin, A, 2004	San Mateo, A2, 2004	
Marin / Sonoma, R, 2006	Santa Barbara, A, 2008	

Table 4. Data, Units of Analysis, and Methods per Chapter

Chapter IV: Ballot Box Transportation Finance: Comparing and Contrasting 76 LOST Measures in California between 1976 and 2016			
Data	**Unit of Data**	**Sources**	**Analysis**
Administrative Data - County - Measure Title - Year - Pass (yes/no)	Measure	Measure expenditure plans, county websites, California statement of votes	Descriptive analysis
Temporal Data - Number of Years - Time period - Permanent (yes/no) - Measure status	Measure	Measure expenditure plans	Descriptive analysis
Financial Characteristics - Tax amount - Annual estimated revenue	Measure	Measure expenditure plans	Descriptive analysis
Voter Support - Percent voted for	Measure	County Voter Registrar Statement of Votes; county websites	Descriptive analysis
Modal Funding Split	Measure	Measure Expenditure Plans	Descriptive analysis; Modal Funding Balance analysis
Commute Mode Split	County	2011-2015 American Community Survey	Modal Funding Balance analysis
Chapter V: Burdened by the Ballot Box: Tax Burdens Imposed by California LOST Measures			
Data	**Unit of Data**	**Sources**	**Analysis**
Household Income	Census Tract	2000 U.S. Census, 2009-2014 5-Year American Community Survey	Tax Burden analysis
Household Income	County	2014 Integrated Public Use Microdata	Tax Burden analysis
Household Expenditures	Western region	2014 Consumer Expenditure Survey	Tax Burden analysis
Voting Data	Voter Precinct	County registrars	Correlation between tax burden and measure support
Precinct Boundaries	Voter, registration, consolidated precincts	County registrars, Berkeley Statewide Database	Correlation between tax burden and measure support
Chapter VI: Arguing Over Taxes for Transportation: Analyzing LOST Ballot Arguments			
Ballot Arguments	Measure	County websites, County Registrar of Voters, Ballotpedia, Smartvoter	Textual analysis, word cloud

OUR FOUR CONCEPTIONS OF EQUITY

To assess the various equity dimensions of local option sales taxes for transportation, we draw on the literature reviewed above to consider four measures of LOST equity: 1) temporal, 2) modal, 3) geographic, and 4) income. We consider each in turn below.

Temporal equity concerns the rollout of projects, costs, and benefits over time. In other words, do systematic differences exist in projects that are first versus last priority? This is important to consider as some LOST measures (see for example Madera Measure T in 2006) include tiers of projects that specify first priority projects to be completed immediately, versus projects that may not be completed for 30 years. In this case, the costs and benefits may be unevenly distributed over time, with some residents realizing benefits in the near term, but others not realizing benefits for many years.

Modal equity concerns the division of sales tax spending by mode: roads and highways, transit, active modes, paratransit, and other. Spending on auto travel supports the construction and maintenance of highways, regional arterials, and local streets and roads. Spending on transit supports transit capital purchases and operations of buses, trains, and cross-modal facilities such as transit centers. Paratransit spending supports both paratransit services, as well as additional services for seniors or disabled riders specifically, such as subsidized transit passes for seniors. Other transit spending includes funds that enhance multiple modes or represent generalized spending categories such as "system-wide improvements" or signal synchronization. Finally, spending on active modes includes bicycle, pedestrian, and complete streets projects.

Geographic equity is measured as the distribution of sales tax burden and benefits over space, typically by jurisdiction. For example, we consider if spending mirrors population distribution within a county, focuses on areas of greatest demonstrated need, or is evenly distributed across space.

Income equity concerns how costs and benefits fall across different income groups. Of course, significant overlap may exist between the four conceptions of equity. For example, because poverty is often spatially concentrated, a sales tax that invests no dollars in a low-income area may fail across both measures of geographic and income equity.

IV. BALLOT BOX TRANSPORTATION FINANCE: COMPARING AND CONTRASTING 76 LOST MEASURES IN CALIFORNIA BETWEEN 1976 AND 2016

INTRODUCTION

Since 1976, California residents have voted on 76 LOST transportation measures in 30 of the most populated of the state's 58 counties.[3] As of 2017, 24 counties, home to 88 percent of the state's population (U.S. Census Bureau 2015), have active LOST Measures. Despite LOST's increasing role in transportation finance, there was no comprehensive data source for statewide transportation sales tax measures prior to this project. In addition, no previous research had assessed the prevalence, passage rates, types of measures proposed, or modal funding splits among California's LOST measures. To fill these gaps, we assembled a wide array of data on all 76 California LOST measures to create what is to date the most complete record of countywide transportation sales tax measures in California. With this dataset assembled, we conducted a thorough descriptive analysis of these 76 measures to produce the first comprehensive assessment of the breadth, diversity, and trends among California's local option sales tax transportation measures.

METHODS

We collected data on 21 variables for each of the 76 measures. Table 5 presents the assembled variables, categorized by topic. Where applicable, each variable's source is indicated in italics. In some cases—particularly older and failed measures—data for all the variables were not available. In our analysis below, we include all measures for which data were available for a particular variable and note the counties missing from analysis. We also categorize each measure by type as follows: original, extension, renewal, or extension/renewal. Figure 5 illustrates the distinctions between these measure types.

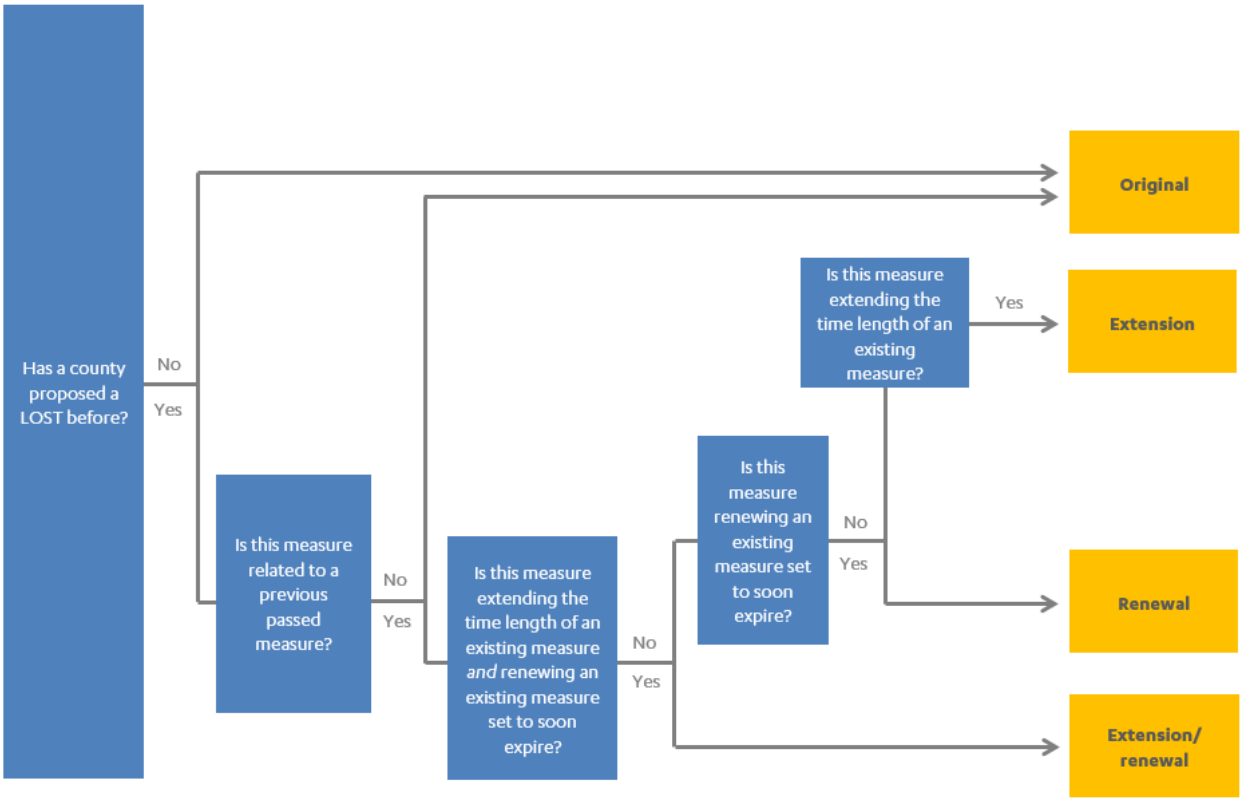
[3] Two additional counties voted on general sales tax measures: Santa Clara (2006) and Sonoma (2015). Although these measures listed transportation among funding possibilities, funding categories were fungible and thus not solely dedicated to transportation. We therefore excluded Santa Clara (2006) and Sonoma (2015) from this analysis.

Table 5. Collected Measure Data and Sources

Administration			
County	Measure Name/Title *(Measure expenditure plan, county websites)*	Election Year	Pass (yes/no) *(California statement of votes, county websites)*
Measure type[a]	Administering agency *(Measure expenditure plans)*		
Temporal Factors			
Number of Years *(Measure expenditure plans)*	Time period *(Measure expenditure plans)*	Permanent (yes/no) *(Measure expenditure plans)*	Measure status (current, expired, not applicable (i.e., failed))
Financial Characteristics and Voter Support			
Tax amount *(Measure expenditure plans)*	Estimated Annual Revenue *(Measure expenditure plans)*	Percent Voted For *(County Voter Registrar statement of Votes, county websites)*	
Modal Funding Split *(Measure expenditure plans)*			
Highway	Transit	Bike/Pedestrian	Senior/Disabled
Safe Routes to School	Local Streets and Roads		

[a]Measure types: original, extension, renewal, extension/renewal. See Figure 5 for classification methods into the four measure type categories. Data sources are indicated in italics.

Figure 5. Types of Measures



For each of the 53 measures with an available expenditure plan, we classified earmarked expenditures into five categories: public transit, bike/pedestrian, senior/disabled, safe routes to school, local roads, and highways. To classify expenditures by mode, we relied only on project lists and funding categories outlined in the measures' expenditure plans, which are published with proposed measures. We defined transit funding to include funding for all types of transit, including heavy, light, and commuter rail; local, express, and rapid bus, as well as funding for transit operations and fare subsidies. Bike and pedestrian funding included a range of projects benefitting active travelers such as sidewalk repairs or new bike lanes. Seniors/Disabled and Safe Routes to School funding is revenue specifically allocated to these categories in expenditure plans. Specific highway projects, as well as funding for "regional" road projects, are categorized as "Highways." In cases where the expenditure plan listed a modal funding breakdown that differed from its listing of projects, we used data from project lists as this more detailed listing of expenditures is likely a more accurate representation of modal expenditures.

We calculated local roads funding from two sources. We primarily based the amount of funding specifically allocated to local roads in measure expenditure plans. Secondarily, when measures did not specify the percentage of funding allocated to local roads, we calculated funding as part or all funding dedicated to local return. We allocated a portion of local return funding to local roads if a measure specified how local return revenues must be spent. For example, a measure may require that a minimum or specified percentage of the revenues be dedicated to specific uses (for example, local transit services, bike paths, and complete streets programs). However, in many other measures, local

return funding is flexible, allowing local jurisdictions to decide what transportation projects—including local road repair and maintenance—to prioritize over the life of the measure. In these cases, we categorized any flexible local return funding not dedicated to a specific modal use as local roads funding. We did so for three reasons. First, local roads is the single most common expenditure category for local return funds when the modal splits are known.[4] Second, measure expenditure plans typically describe flexible funding as local roads funding unless there is a portion dedicated to a specific mode.[5] Third, ballot arguments overwhelmingly tout the benefits of local return funding for local road repair and maintenance first and foremost.[6] Under this methodology, for a measure that dedicated 25 percent of revenues to local return with no restrictions, we ascribed 25 percent of measure revenues to local roads. If a measure dedicated 25 percent of revenues to local return, but required 3 percent be used for bike paths, we counted 22 percent of revenues as local roads, and 3 percent as bike/pedestrian funding. While we recognize the limitations of such an assumption, because local return expenditures are rarely enumerated in proposed measure expenditures plans, the best determination of local return funding split would require reviewing yearly spending by each jurisdiction. Such detailed methodology is beyond the scope of this report and could only accurately be assessed when the measure sunsets.

Tailored to local needs, many measures also include projects or expenditures that either do not fit into any of these modal classifications, or span all modes. For example, funds earmarked for regional planning or environmental mitigation could benefit road users, transit, bikes, and pedestrians simultaneously. "Other" funding is one of several potential reasons that our modal funding categories may not sum to 100 percent. First, in addition to "other funding," some funds may be double-counted across categories for legitimate reasons. For example, if a percentage of revenues is dedicated to fare subsidies for seniors and disabled riders, we counted these funds both "transit" and "senior/disabled." Second, local return funding is flexible and in many cases can be used for alternative transportation or other planning exercises (for example, complete streets planning). Thus, the modal breakdown likely underestimates the actual share of measure revenues spent on non-automobile modes. Lastly, a number of measures dedicate funding to competitive grant programs that are not limited to a particular mode. This funding cannot be categorized at the time of the election and is therefore not considered in the modal breakdown.

We used modal breakdowns of expenditures to calculate how "balanced" a measure's expenditure plan was; to do this we examined how closely a measure's expenditure plan reflects the current commute travel modes of county residents. We used commute mode share rather than share of all trips as these data are typically included in regional transportation plans and frequently cited by measure proponents and opponents (See Chapter VI. Arguing Over Taxes for Transportation:

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[4] See, for example, Imperial County Measure D (2011); Riverside County Measure A2 (2002) (Ordinance No. 02-001).

[5] See, for example Ventura County Measure AA (2016).

[6] For example, the ballot arguments in support of San Joaquin Measure K (2006) begin with "Vote YES on Measure K to relieve congestion, improve traffic safety and fix local roads— without raising taxes!" Similarly, arguments for Orange County Measure M (2006) begin with "Vote YES on Measure M to relieve congestion, improve traffic safety and fix local roads—without raising taxes!"

Analyzing LOST Ballot Arguments). Using countywide commute share from the 2015 5-year American Community Survey and previously calculated modal expenditure breakdowns, we calculated modal balance for mode *m* using the following formula for each county:

$$balance(m) = share\ of\ expenditure\ plan(m) - countywide\ commute\ share(m)$$

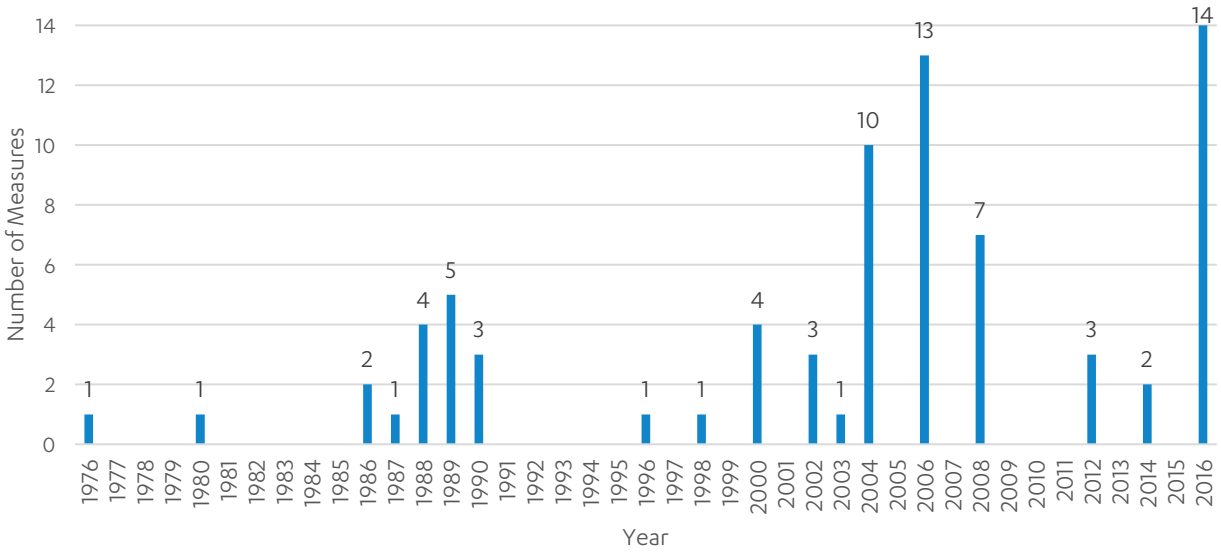
We calculated modal balance for only two modes: highways/local roads and transit. We omitted senior/disabled from consideration as both groups may travel by a wide range of modes. We likewise omitted walking and biking infrastructure, which—although critical to mobility—are disjointedly classified by the Census, making identification of commute share by walking and biking as a combined category impossible. Positive balances indicate that a measure dedicates a greater share of funding towards a mode compared to the share of commuters taking that mode. A negative balance indicates that a measure dedicates less funding towards a mode compared its share of total commute modes.

Data for all 76 California LOST transportation measures are included in Appendix A. Complete records of California LOST Measures are available for download at www.its.ucla.edu/LOSTdata. Using the data outlined in Table 5, we report descriptive statistics for California LOST measures in order to document the considerable diversity across the transportation sales tax measures.

FINDINGS

The first California LOST was enacted in Santa Clara County in 1976; since then, 75 additional measures have been placed before California voters in various counties for approval. LOST measures have become increasingly popular means for counties to finance their transportation systems over the years, even as the bar for passage has increased to two-thirds. Figure 6 shows that about a quarter of the 76 LOST measures were proposed in the 24 years between 1976 and 1999, and about three-quarters during the first 16 years of the 21st century. More popular than ever, over half (39) of all LOST measures were proposed in the last decade (2006-2016 alone), despite the Great Recession's depressing effects on ballot measures between 2008 and 2014.

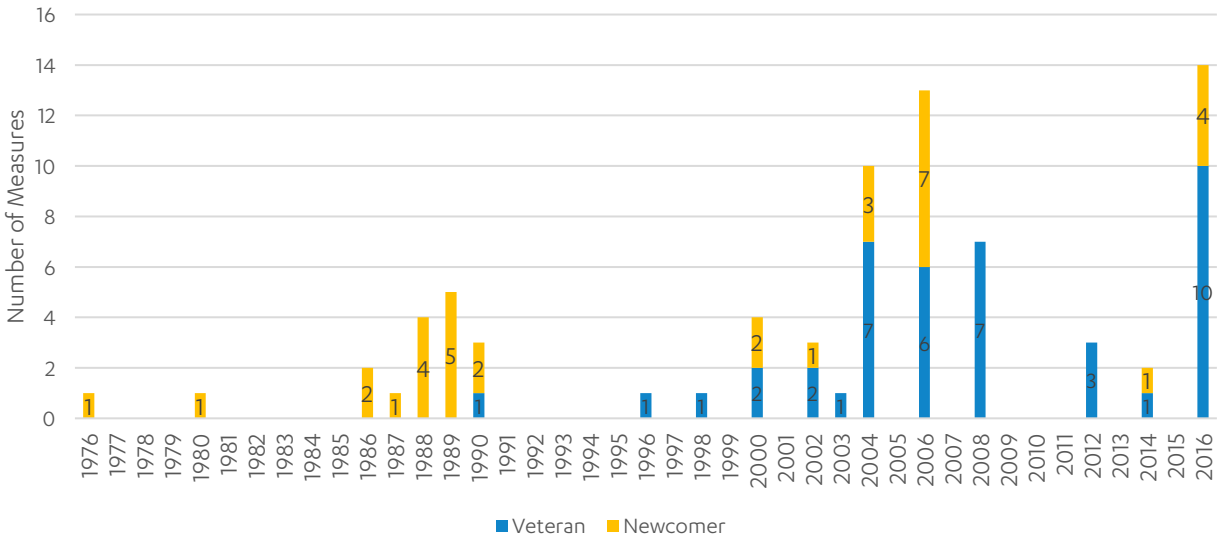
Figure 6. Number of California LOST Measures by Year, 1976 - 2016



One reason for their waxing popularity is that more California counties have pursued LOST measures over time. Figure 7 shows that before 2000, 15 California counties had proposed LOST measures. Between 2000 and 2016, an additional 17 counties proposed LOST measures, with four new counties entering the arena in 2016 alone.

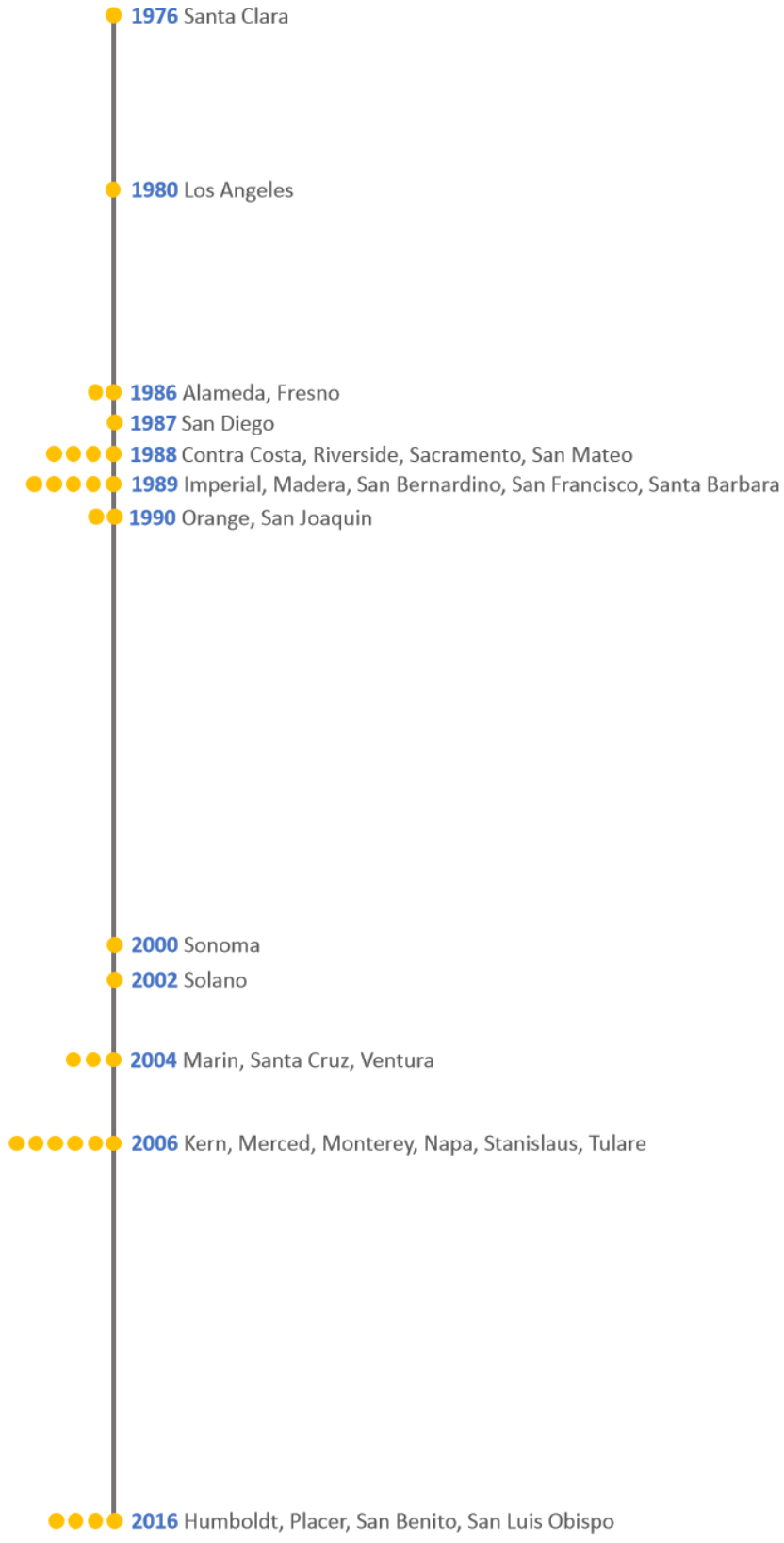
Figure 8 depicts a timeline showing when counties proposed their first ballot measure.

Figure 7. Types of County by Year



Veteran counties are those that have already proposed one or more LOST measures. Newcomers represent the first LOST ever proposed in that county.

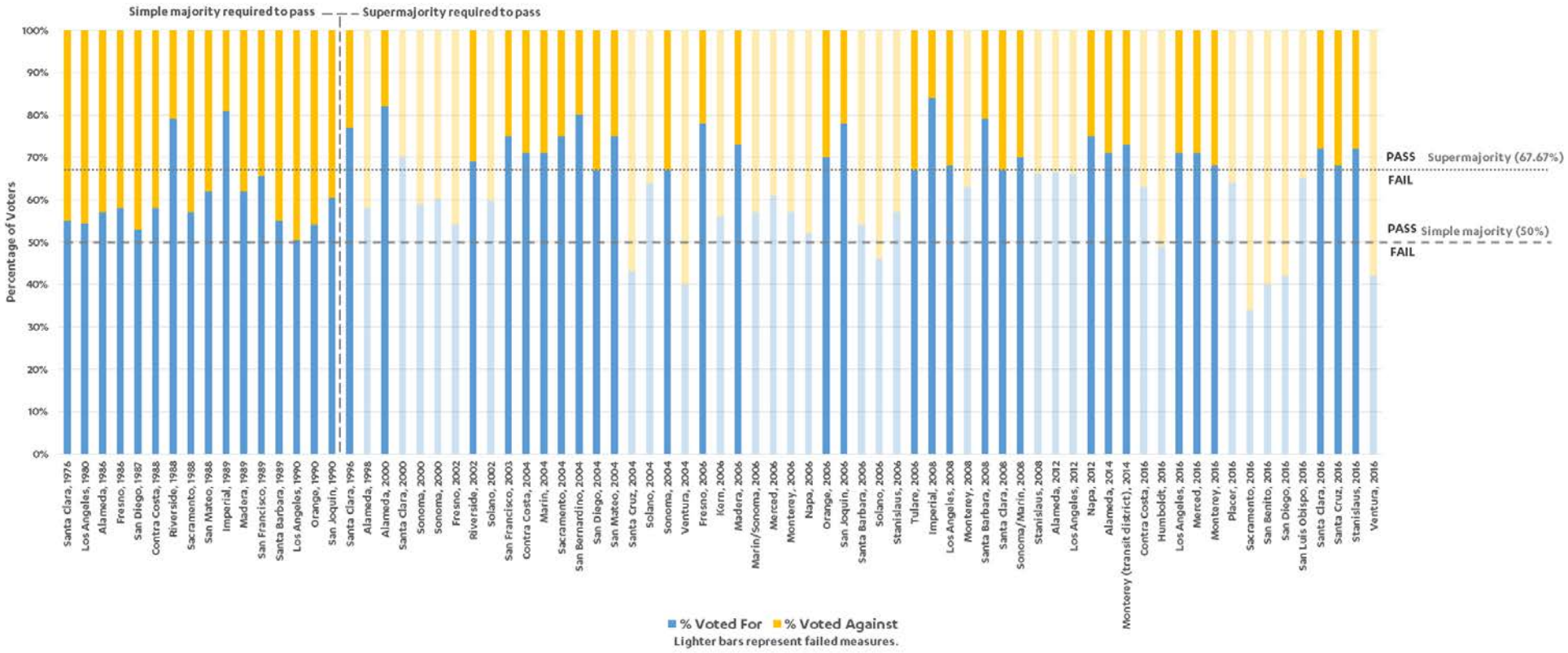
Figure 8. Timeline of Counties' First Proposed Ballot Measure



Measure Passage Rates Over Time

In 1995, the California Supreme Court ruled in *Santa Clara County Local Transportation Authority v. Guardino* that LOSTs are considered a "special" tax for a specific purpose under Proposition 62, and therefore require approval by a two-thirds supermajority of voters (1995). Prior to this decision, only a simple majority was required to approve a LOST, but since 1995 each "no" vote on a LOST measure effectively counts twice as much as a "yes" vote. Figure 9 shows the percentage of voters who voted for and against in each measure from 1976 to 2016, as well the thresholds needed under a simple majority and supermajority rule for a measure to pass. Figure 9 clearly demonstrates the dramatic implications the majority rule change had on passage rates. All 17 measures proposed before the supermajority rule passed, while about half of measures (53%) proposed following the supermajority requirement passed. Of the 28 failed measures, all but eight would have passed under a simple majority requirement. The divergence between what would have been approved under the two different majority requirements underscores the importance of the supermajority ruling on LOST outcomes.

Figure 9. Measure Support Over Time



Note: San Bernardino (1989) is omitted from above figure due to missing data.

Between 1976 and 1995, every single one of the 16 LOST measures placed before the voters received at least the simple majority required for passage. Following the 1995 *Guardino* decision, some feared (while others celebrated) that the era of sales tax transportation finance would be short-lived. Indeed, between 1996 and 2002, nine LOST measures were placed on the ballot in California counties and while all nine received a majority of the votes cast in favor of passage, six of the nine measures (67%) failed to clear the new two-thirds supermajority hurdle and were not enacted.

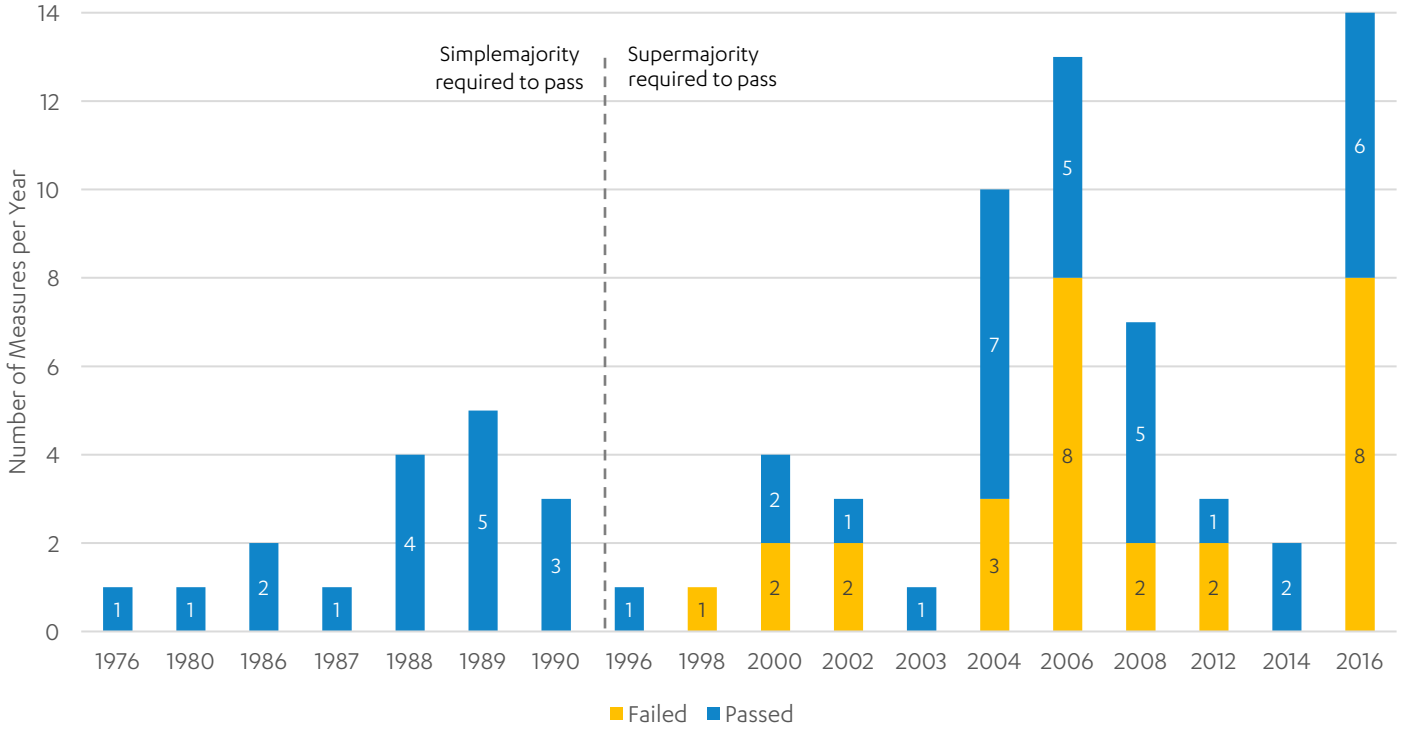
Since those few tumultuous post-*Guardino* years, however, the average share of "yes" votes for these measures has climbed, as has the rate of passage under the supermajority requirement. Between 2003 and 2016, no fewer than 50 LOST measures were put on the ballot:

- 8 of the 50 (16%) failed even to garner a simple majority of the votes cast
- 15 of the 50 (30%) received a simple majority of votes in favor, but not a supermajority
- 27 of the 50 (54%) received supermajority support and were enacted

This means that, since the first LOST was put on the ballot in 1976, nearly nine out of ten measures (68 of 76, or 89%) put before the voters have received a majority—if not the supermajority—of the votes cast. California's supermajority rule notwithstanding, one would be hard pressed to find a more popular tax mechanism.

While Figure 9 above shows each measure over time, Figure 10 below shows each election over time, and the number of LOST measures that were approved or rejected in each. Overall 48 of the 76 measures (63%) have passed, while 28 of the 76 (37%) were rejected—eight in 2016 alone.

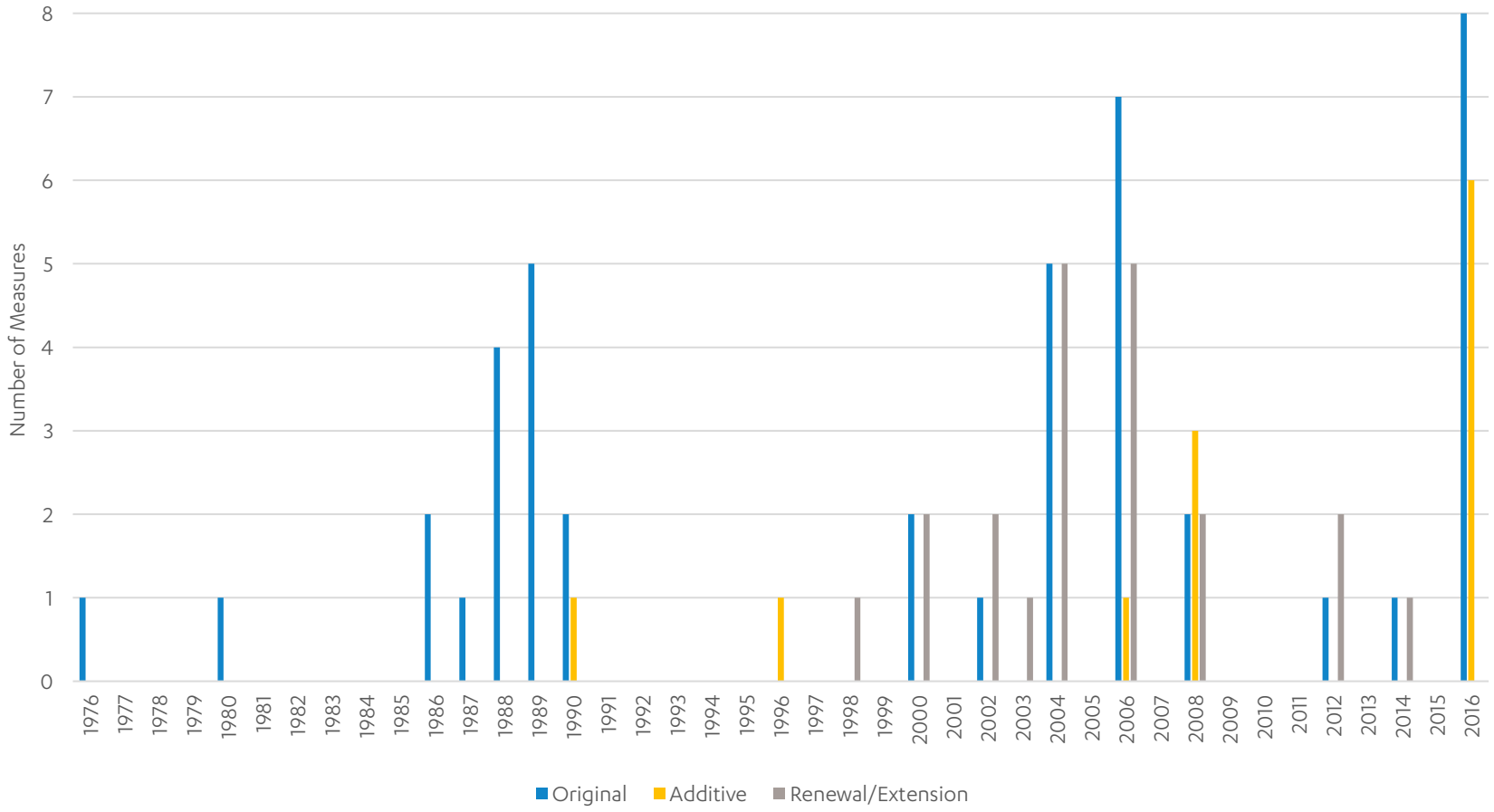
Figure 10. Number of Passed and Failed Measures Over Time



Measure Type and Tenure

More than half of the 76 (57%) LOST measures were original, that is, they appeared on ballots in counties that had not yet passed a transportation sales tax. An additional 21 measures (28%) extended or renewed LOST measures already in place. As the clear majority (93%) of measures have sunset clauses, i.e., they expire after a set number of years, it is unsurprising that renewals and extensions have become increasingly common as original sales tax measures have reached their sunset dates (see Figure 11). Renewal and extension measures were more likely to pass than were the original sales tax measures (58%), even though all extensions and renewals were subject to the supermajority requirement while only two-thirds (69%) of original measures were required to pass with a supermajority.

Figure 11. Types of Measures Over Time



When examining only measures subject to the supermajority requirement, passage rates diverge between original measures and renewals/extensions. Only 30 percent of original measures following 1995 were approved, while 72 percent of additive or renewal and extension measures passed in the same period. This suggests one of two possibilities. First, it may suggest general voter satisfaction with these measures and willingness to continue funding transportation improvements. In other words, as counties demonstrate their ability to deliver projects from past measures, voters are more willing to vote on subsequent measures.

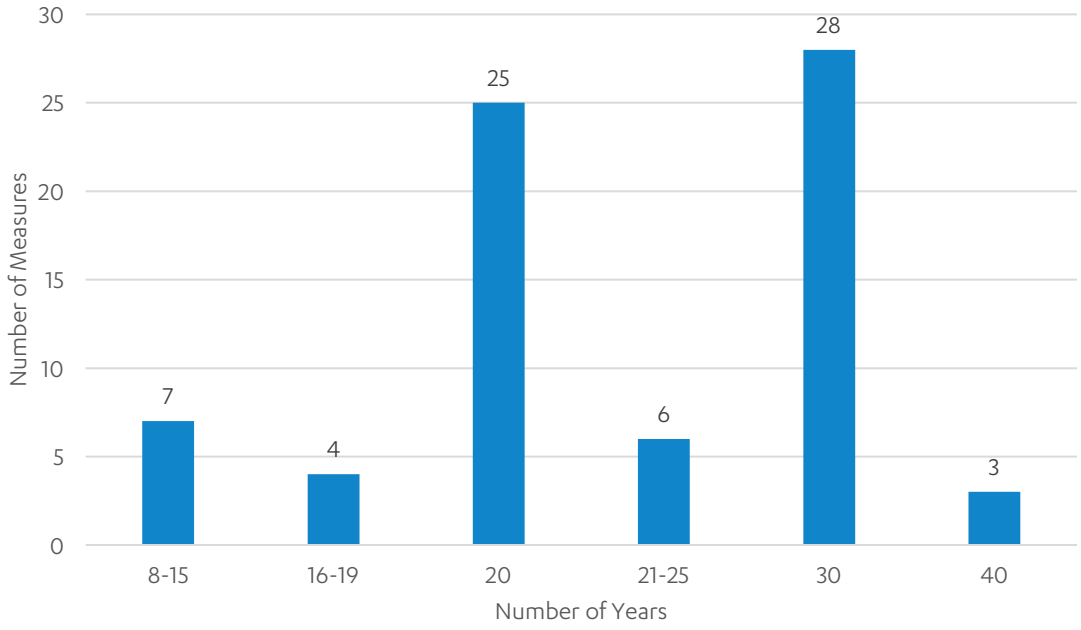
A second possible explanation is that the temporal distribution of original measures—those proposed by counties without previously passed LOSTs—represents a political, geographical, or cultural divide between more urban and more rural counties. For example, Figure 8 shows that since the supermajority requirement, many more rural and/or conservative counties have placed a LOST on the ballot for the first time. It is possible that residents of more urban counties may simply be more supportive of LOST measures, transportation spending, or taxation more broadly, compared with residents of more rural counties. Future research is needed to better understand factors influencing measure support across geography and populations.

The clear majority (71 of 76, 93%) of California LOSTs are termed measures, meaning the increased sales tax levy is in place for a fixed period only, after which the added tax expires. Only five (7%) of the measures were permanent, and four of these passed:

- Los Angeles, Proposition A, 1980
- Los Angeles, Proposition C, 1990
- Los Angeles, Measure M, 2016
- Santa Clara, Measure A1, 1976

For the termed measures, the duration of the tax increase ranges from eight to 40 years, with an average of 24 years, although more than three-quarters of LOSTs are slated to last at least 20 years (see Figure 12). The shortest proposed LOST period was Sonoma County's unsuccessful 2000 Measure B, which proposed a half-percent sales tax for eight years.

Figure 12. Measure Duration in Years, Finite Measures



Tax Rates and Expected Revenues

The proposed sales tax increases range from 0.125 percent (Monterey, 2014; Santa Clara, 2008) to 1 percent (Alameda Measure B, 2012; Alameda Measure BB, 2014), although a substantial majority (86%) of LOSTs impose a half-percent (alternatively referred to as a half-cent) sales tax. The small amounts levied in the 2014 Monterey measure (Measure Q) and 2008 Santa Clara measure (Measure B) fund specific public transit improvements and/or narrowly-defined projects. For example, Monterey's Measure Q funds only Monterey-Salinas Transit, while Santa Clara's Measure B funds only a BART rail transit extension to Santa Clara, pending matching state and federal funds (County of Santa Clara 2015). The half-cent sales tax standard has remained popular over time; a half-cent is the median sales tax increase amount in every election year, except for 2014, in which the median rose slightly to 0.56 percent.

LOST expenditure plans forecast a wide range of annual revenues from the tax increases. The wide range in expected annual revenues reflects both counties that vary widely in both population and economic composition, as well as differences in underlying forecast assumptions, which are rarely detailed in expenditure plans. Expected annual revenues ranged from a minimum of $2.5 million (Monterey Measure A, 2006) to $1.3 billion (Los Angeles Measure R, 2008), with an average of $183 million per year. As expected, we find that county population alone is strongly and positively correlated (0.44) with expected annual revenue from these measures. Other factors thought to explain revenue levels include the presence of venues where both county residents as well as residents from elsewhere are likely to spend money, such as at large regional retail centers (Goldman and Wachs 2003) or at major tourist destinations (Afonso 2016).

Modal Funding Split

Table 6 shows the large range in funding of various transportation modes across the measures, drawn from the 53 available expenditure plans. While most measures split funding among modes, a few proposed to dedicate all tax revenues to a single recipient. For example, Monterey's 2008 Measure Q, Santa Clara's 2000 Measure A and 2008 Measure B dedicated 100 percent of revenue to public transit projects, while Humboldt County's 2016 Measure U proposed to return all funding to local jurisdictions.

Each funding category developed for this analysis includes a wide variety of investment types. Our qualitative analysis of expenditure plans reveals that most itemized projects are for capital investments, as opposed to operating or maintenance expenditures (see Chapter VI. Arguing Over Taxes for Transportation: Analyzing LOST Ballot Arguments).

Table 6. Modal Funding Split

Mode	Mean	Median	Range	25th - 27th Percentile
Highways	27%	26%	0-66%	9-44%
Public Transit	31%	26%	0-100%	10-43%
Local Roads	34%	30%	0-100%	20-40%
Bike/Pedestrian	2.4%	0.7%	0-17%	1-4%
Safe Routes to School	1.8%	0%	0-11%	0-0%
Seniors/Disabled	4.4%	1%	0-100%	0-4%

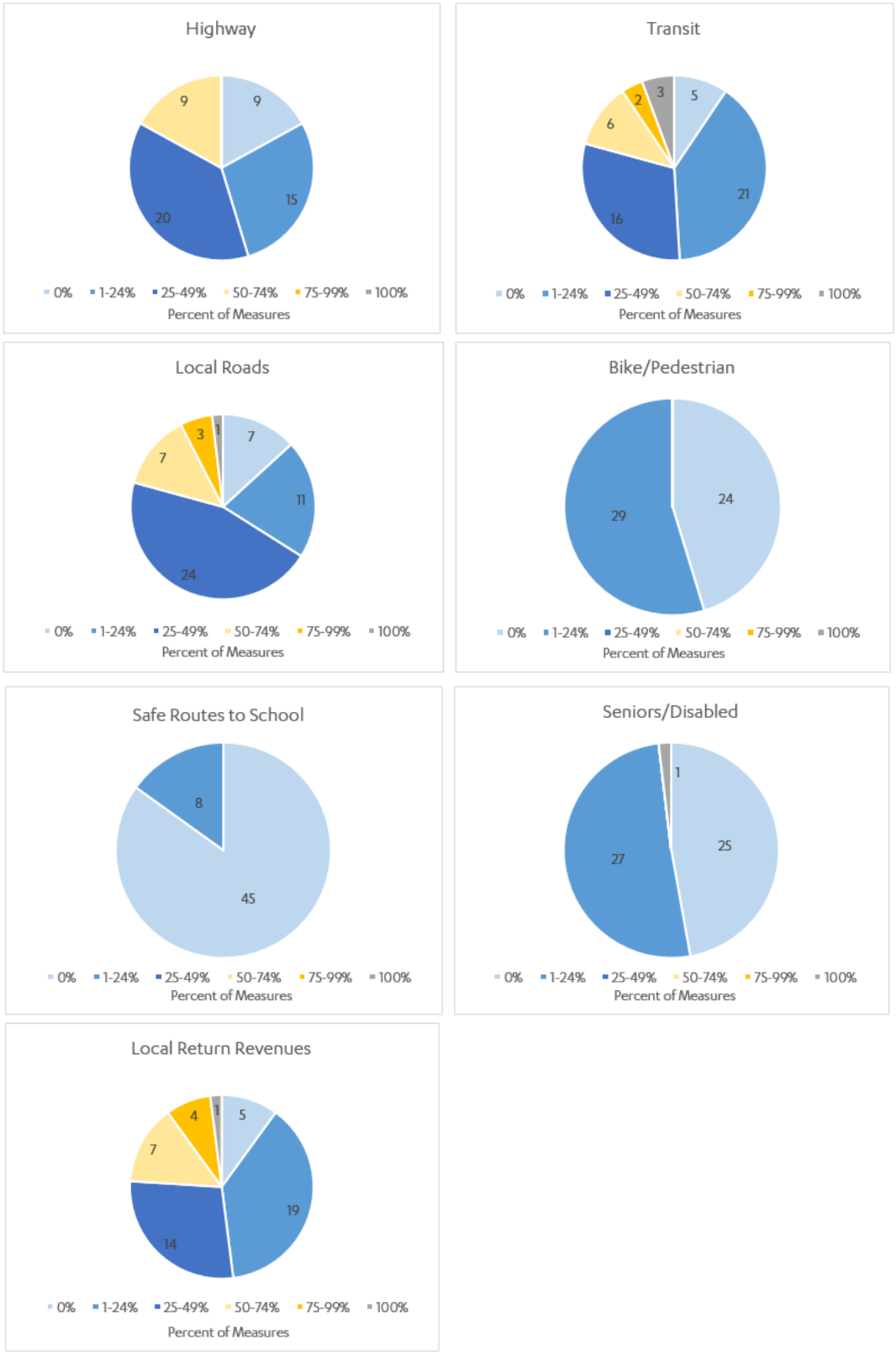
Figure 13 shows the share of funding allocated to each of the major expenditure categories across the various measures. Most measures contained at least some funding for transit (91%), local roads (87%), and highways (83%). While most counties allocated some funding for car-alternative modes,[7] together, local roads and highways funding accounted for an average of 61 percent (and a median of 69%) of funding across all measures. This is far higher than spending for public transit, which received an average of 31 percent (and a median of 26%) of dedicated funding across the measures.

Although allocated fewer dollars compared to roads and transit, over half (55%) of the measures allotted at least some funding to bike and/or pedestrian projects. Santa Cruz's 2016 Measure D proposed the highest share of bike/pedestrian funding, with 17 percent of revenues dedicated to bike and pedestrian projects. Half (52%) of sales tax measures also specifically cited funding for seniors and those with disabilities, often in the form of subsidized transit passes, improved paratransit, or more general calls to "improve transit for seniors and disabled persons" (Contra Costa Measure J, 2004). As noted above, one measure, Monterey's 2014 Measure Q, proposed to funnel all tax revenue into Monterey-Salinas Transit, specifically funding "services and equipment that support

[7] Only Humboldt County's 2016 Measure U provided highway or local roads funding without also funding other modes.

transportation programs for veterans, senior citizens, and persons with disabilities." By contrast, only a few (15%) measures allocated funding for Safe Routes to School projects. While Santa Barbara first earmarked funding for Safe Routes to School in its 1989 Measure D, Safe Routes to School funding has been markedly more popular in recent elections. Of the eight measures that allocated any funding to Safe Routes to School projects, half were proposed between 2014 and 2016 (Alameda Measure BB, 2014; Contra Costa Measure X, 2016; Monterey Measure X, 2016; San Luis Obispo Measure J, 2016). An uptick in Safe Routes to School funding may represent increased interest in such programs, or alternatively they may reflect increasingly well-presented and detailed expenditure plans. It may also reflect that counties perceive Safe Routes to School funding as popular with voters; four out of five measures that specified Safe Routes to Schools funding passed between 2004 and 2014. However, the 2016 election demonstrated that designating funding for Safe Routes to School does not assure passage; only one (Monterey Measure X) of three 2016 measures that included Safe Routes to School funding passed in 2016.

Figure 13. Share of Measures with Select Modal Funding Splits (n=53)



As mentioned earlier, the modal categories defined in this project are not exhaustive of the expenses and projects listed in LOST measures; however, other expenses often defy categorization or go unspecified. For example, measures often allocate funding to a catchall of projects that cross modal lines, or incorporate environmental or smart growth goals. Typically, they include overarching goals such as "environmental enhancement" (Fresno Measure C, 2006), "sustainable land use and transportation linkages" (Alameda Measure B1, 2012), smart growth incentives (Monterey Measure Z, 2008), and traffic management systems (San Francisco Proposition K, 2003; San Bernardino Measure I2, 2004). Flexible funding that promotes general goals rather than project-specific lists is often strategically included by those assembling these measures to implicitly acknowledge that unforeseen changes in the economy, demographics, or technology may obviate the need for certain projects over the course of their long lifespan (Lengyel 2017).

Modal Funding Balance

The programs detailed in these measures reflect both the diversity of counties across California, and differences in philosophy regarding the need to better accommodate current transportation needs on one hand, versus aspirations for shifting future travel behavior and transportation modes on the other. One way to cast light on this "needs" versus "aspirations" dichotomy is to compare the expenditures proposed in the plan with current travel patterns. No LOST expenditure plan precisely mirrors the commute mode share in a county, and Table 7 lists the 10 most and 10 least balanced measures. In general, the plans for the most part fund public transit at much higher levels than local transit usage levels for the journey to work (which is the trip purpose that typically enjoys the highest transit mode share). Further, the mix of funding for various transportation mode does not appear to be changing appreciably over time.

Table 7. Most and Least Balanced Measures

Rank	County	Year, Measure	Overall Car/ Transit Balance
Most Balanced			
1	Alameda	2012, B1	-0.002
2	San Bernardino	2004, I2	0.002
3	Santa Clara	2016, B	0.007
4	Santa Cruz	2016, D	0.008
5	Tulare	2006, R	-0.014
6	Merced	2016, V	-0.014
7	Placer	2016, M	-0.019
8	Ventura	2016, AA	-0.019
9	Fresno	2002, C	-0.020
10	San Diego	2004, A2	-0.023
Least Balanced			
1	Santa Barbara	2008, A	0.251
2	San Francisco	1989, B	0.231
3	Orange	2006, M2	0.193
4	Contra Costa	2004, J	-0.186
5	Contra Costa	2016, X	-0.186
6	San Francisco	2003, K	0.177
7	Santa Barbara	2006, D	0.169
8	Humboldt	2016, U	0.166
9	Monterey	2014, Q	0.156
10	Santa Cruz	2004, J	-0.147

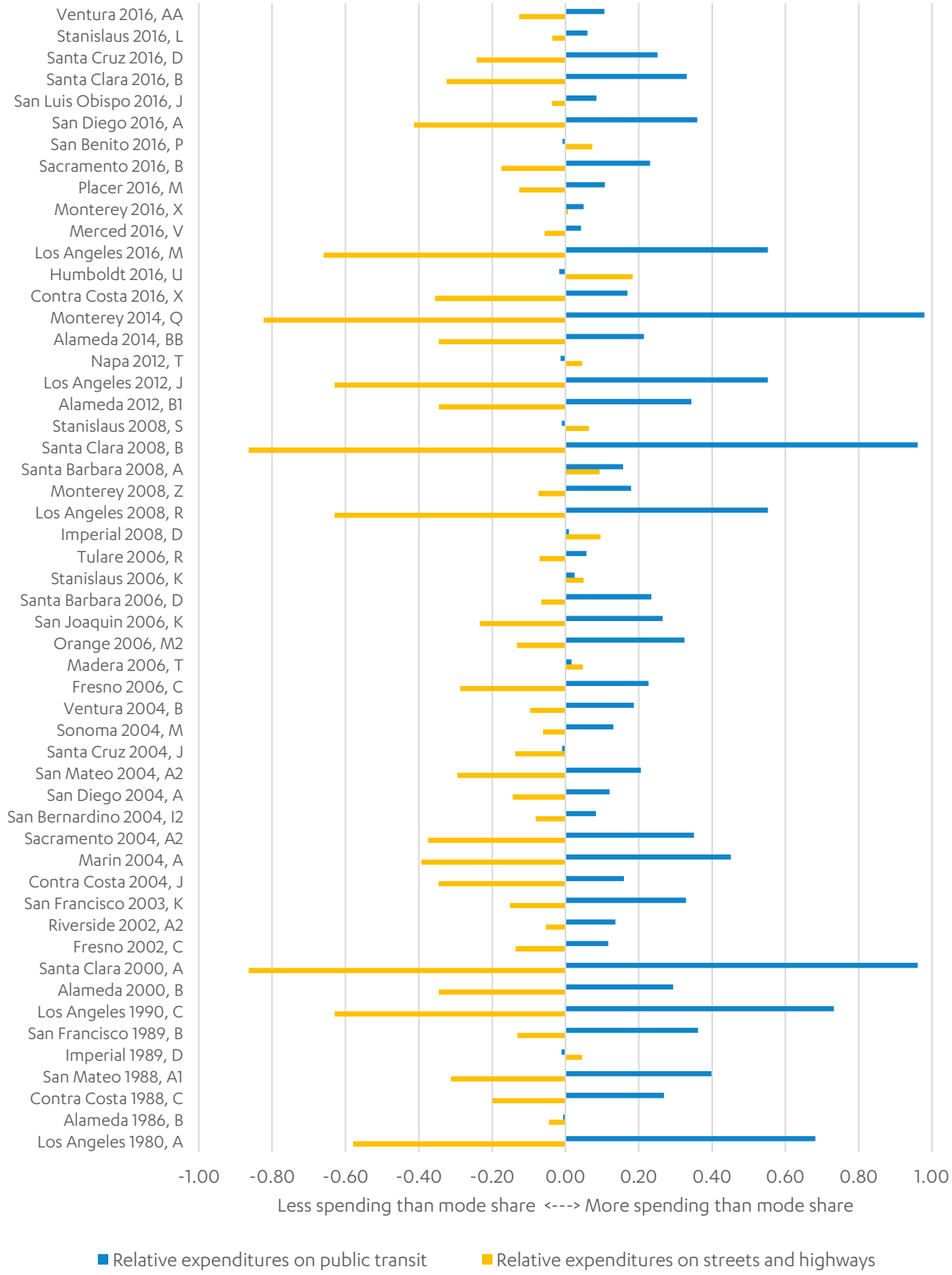
A complete list of measure car/transit balances can be found in Appendix B. Modal Balances.

Figure 14 shows that, among the 53 measures for which we could secure expenditure plans, all but seven (87%) allocated a higher share of measure expenditures to public transit than the public transit commuting mode share in that county. Two county measures (Alameda 1986, Santa Cruz 2004) proposed public transit expenditures at levels roughly equivalent to the transit commute mode share. The remaining five counties dedicated either most (Imperial 1989, 95%; Napa 2012, 92%; Stanislaus 2008, 98%) or all (Humboldt 2016; San Benito 2016) funding to streets and roads. Expenditures in service of motor vehicle travel in these LOST measures are generally proportionally lower than motor vehicle travel in the county. Although the majority of expenditures across all of the county measures (61%) are allocated to streets and highways, motor vehicle travel accounts for more than four out of five (83%) trips across the California counties with expenditure plans. Collectively, these data suggest two possibilities: first, that the authors of these county expenditure plans, on average, aspire to fund and support higher levels of public transit use and less dependence on driving. Alternatively, the measures' authors perceive transit as popular with voters and believe that voters will support transit, even if they do not intend to use it. For example Manville and Cummins (2015) find that people often support transit spending based on a belief in its collective benefits—

such as improved air quality and reduced congestion—rather than a personal intention to ride transit or private benefit from doing so.

That funding for public transit in the LOST measures is disproportional to its modal share could reflect aspirations to increase transit use, as discussed above. But it could also reflect the current structure of transportation funding in California, whereby streets and highways receive more funding from traditional revenue sources such as the gas and property taxes than does transit (California Department of Transportation 2014). Finally, transit's relatively high shares of measure funding may simply reflect a political calculus intended to buoy a measure's chances of passage. For example, Hannay and Wachs (2007) and Haas et al. (2000) report that measures are more likely to pass if they dedicate funding to a mix of highway and transit projects. However, we find that—although the majority (85%) of measures *do* include some amount of both highway and transit funding—the simple inclusion of both highway and transit funding is not enough to increase a measure's chances of passing, and in fact, does not meaningfully explain whether a measure passes or fails.

Figure 14. Most LOST Measures Fund Transit at Higher Levels than Current Transit Use



V. BURDENED BY THE BALLOT BOX: TAX BURDENS IMPOSED BY CALIFORNIA LOST MEASURES

INTRODUCTION

As discussed in Chapter IV, LOSTs (both proposed and approved) in California range from 0.125 percent (Monterey, 2014; Santa Clara, 2008) to 1 percent (Alameda Measure B, 2012; Alameda Measure BB, 2014), although the majority (86%) of LOSTs impose a half-cent (0.5%) sales tax. While these added sales taxes may yield transportation benefits—widened highways, new public transit service, resurfaced streets, and improved traffic operations and bike facilities—these new taxes also impose a financial burden on county residents. While small in increments, they are paid by the typical resident over hundreds or even thousands of transactions per year, resulting in substantial tax payments. For example, previous research finds that sales taxes place higher burdens on the lowest (in relative terms) and highest (in absolute terms) income groups compared to road tolls (Schweitzer and Taylor 2008).

To understand how LOSTs affect people of different incomes, we analyze in this chapter the average expenditure burden (sales tax as a share of taxable expenditure) that LOSTs impose on different income groups across five counties in California: Fresno, Madera, Orange, Santa Barbara, and Santa Clara. We consider the regressivity of these sales tax measures and the relationship between expenditure burden and voter support of a measure.

METHODS

Selection of Case Studies

We selected five counties from the 30 California counties that have had at least one LOST measure put to voters. The five counties selected—Fresno, Madera, Orange, Santa Barbara, and Santa Clara—were chosen to reflect diversity with respect to geography, economy, demographics, and level of urbanization. One county (Santa Clara) is in northern California, two (Madera and Fresno) in central California, and two (Orange and Santa Barbara) are in southern California. Two (Orange and Santa Clara) are urban, two (Fresno and Santa Barbara) are a mix of urban and rural, and one (Madera) is a rural county.

Beyond these diversity factors, other considerations played into our selection of the case studies. First, we chose counties for which the LOST expenditure plan included explicit project investment plans across multiple transportation modes, because we hypothesized that these proposed projects might influence voting patterns. For example, significant investment in rail service in Santa Barbara County could increase support for the measure in precincts surrounding the rail line compared with precincts located farther away. We further refined these choices by reviewing whether potential equity issues were raised in local newspaper articles at the time of the election. Lastly, we limited our sample to counties for which we could obtain precinct-level voting data.

Data Collection

We used three types of data in this analysis, which we discuss in turn below: voting data, U.S. Census data, and data from the Consumer Expenditure Survey (CES).

Voting data

Voting data were collected by precinct for each election year in the five case study counties. The voting data were obtained directly from county registrar offices. County registrar voting data included the number of "yes" and "no" votes on each LOST measure per precinct. To connect voter data to census tracts (the geography at which socioeconomic data are available) we aggregated all the precinct-level "yes" and "no" votes to the census tracts. Using the census tract aggregated votes, we calculated the percentage of voters in each tract who voted in favor of the LOST measures. To compare each Census tract to the county as a whole, we also calculated the percentage difference between the tract passage rate and the county-wide passage rate. For example, if census Tract A approved a ballot measure by 72 percent and the overall passage rate was 70 percent, we recorded census Tract A as having a +2 percentage points passage rate. This metric allows us to assess the support for a measure relative to other census tracts within the county. Table 8 lists the five counties, the years, and names of the ballot measures, if a measure passed or failed, the percentage of the population that voted for the measure, and election turnout measured as the percentage of eligible voters.

Table 8. County Transportation Ballot Measures

County	Year - Measure	Pass/Fail	% Voted to Pass Measure
Fresno	2002	Fail	54%
	2006	Pass	78%
Madera	2006 – Measure T	Pass	73%
Orange	2006 – Measure M	Pass	70%
Santa Barbara	2006 – Measure D	Fail	54%
	2008 – Measure A	Pass	79%
Santa Clara	2000 – Measure A	Pass	70%
	2008 – Measure B	Pass	67%

Census data

In addition to voting data, we gathered census tract-level socioeconomic data from the 2000 U.S. Census and the 2009-2014 five-year American Community Survey. Selected data include: median household income, race/ethnicity, commute modes, household vehicle ownership, educational attainment, population age distributions, and the share of renters and homeowners.

Calculating Tax Burden

As previously discussed, calculating tax burden as a measure of expenditures can better reflect long-term economic well-being (West 2011) and the "overall material well-being" (Blumenberg 2010, 8) of a

household than using only annual income as a measure. Therefore, we rely on expenditure data from the 2014 Consumer Expenditure Survey (CES) to calculate the relative tax burdens imposed by each LOST. CES data were obtained for the "Western" region of United States, which provided the most geographic specificity while still differentiating expenditures by income decile. CES data provide detailed expenditures for 71 categories of goods and services; 29 of these categories are taxable expenditures under the California tax code. We summed all taxable expenditures to tally the total expenditures per income group that would be subject to LOST taxation. Table 9 shows the breakdown of total taxable expenditures compared to both household income and average annual expenditures by income group. On average, about 37 percent of annual expenditures—such as apparel and vehicle purchases—are subject to the sales tax, while 63 percent of annual expenditures—including food at home and shelter—are not subject to sales taxes in California.

Table 9. CES Expenditures for "Western Region", 2014

Item	Total	Less than $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 and more
Average annual expenditures	$56,298	$28,931	$25,186	$26,015	$27,845	$34,077	$37,898	$45,957	$53,605	$88,684
Total Taxable Expenditures	$20,690	$11,275	$10,010	$9,164	$8,905	$12,464	$13,838	$17,929	$19,855	$32,404
Income before taxes	$68,459	$(886)	$8,041	$12,757	$17,517	$24,889	$34,685	$44,760	$59,069	$134,582

Income and expenditures are highly correlated (0.94) and CES data may be used to predict taxable expenditures as a percentage of income, yielding the relationship:

$$taxable\ expenditures = \$1.79 * household\ income + \$8{,}429.50$$

Given this observed relationship between household income and taxable expenditures, we next calculated the average tax burden per census tract. The U.S. Census reports the number of households per census tract that falls within each 11 income categories.[8] Of course, these categorical variables belie the diversity of incomes within each county. To more accurately measure median household incomes within each Census income category, we utilized individual records from the 2014 Integrated Public Use Microdata (IPUMS) data per county (Ruggles et al. 2015). Using these individual data, we could more accurately calculate median incomes within each income category per county. For example, the median household income for households earning more than $200,000 per year was $291,810 in Santa Barbara, far higher than Fresno, in which the median household in the same income category earned $268,121.

[8] (1) $0-9,999, (2) $10,000-14,999, (3) $15,000-19,999, (4) $20,000-24,999, (5) $25,000-34,999, (6) $35,000-49,999, (7) $50,000-74,999, (8) 75,000-99,999, (9) $100,000-149,999, (10)$150,000-199,999, and (11) $200,000 or more (U.S. Census Bureau 2014).

Using the median household income calculated for each income category by county, we then predicted total expenditures by income group using the above equation.

We then calculated how much sales tax each income group would pay under each LOST sales tax by multiplying taxable expenditures per income group by the sales tax amount or rate. We assume a half-cent sales tax in all calculations as the majority (86%) of LOST measures propose this rate (see Chapter IV. Ballot Box Transportation Finance: Comparing and Contrasting 76 LOST Measures in California between 1976 and 2016). For example, a household that spent $10,000 in taxable expenditures and is subject to a half-cent sales tax would pay $50 in transportation sales taxes per year ($10,000 * 0.005 = $50.00). We then calculate burden as "percentage of income." Using the same example above, if a household earns $50,000 before taxes, $50 spent on the sales tax represents 0.1 percent of income; this is the calculated tax burden. Sales taxes that consume higher percentages of household income impose higher tax burdens. We calculated the following burden x of census tract j based on the number of households h in different income groups i:

$$\bar{x}_j = \frac{\Sigma(x_{ij} * h_{ij})}{h_j}$$

Statistical Analysis

We next determined whether, like other sales tax measures (see for example, Davis et al. (2015) and Schweitzer and Taylor (2008)), California's LOST measures are regressive with respect to income. To determine this, we calculated correlations between median household income and expenditure burden by census tract.

FINDINGS

Figure 15 shows that California's LOST measures are indeed regressive with respect to income, with lower-income neighborhoods shouldering a disproportionate sales tax burden. Figure 16 illustrates that the tax burden closely mirrors taxable expenditures by income; a higher percentage of low-income household expenditures are taxable compared to higher-income households. In particular, our measured tax regressivity reflects previous findings in the transportation literature that transportation sales taxes are regressive and disproportionately burden very low (in relative terms) and very high (in absolute terms) income households (Schweitzer and Taylor 2008). For the six county measures studied, negative correlations between median household income and average sales tax burden range between -0.59 and -0.76. In other words, as median household expenditures decrease, average sales tax expenditures as a share of income increase, and vice versa.

Figure 15. LOST Tax Burden with Respect to Household Income

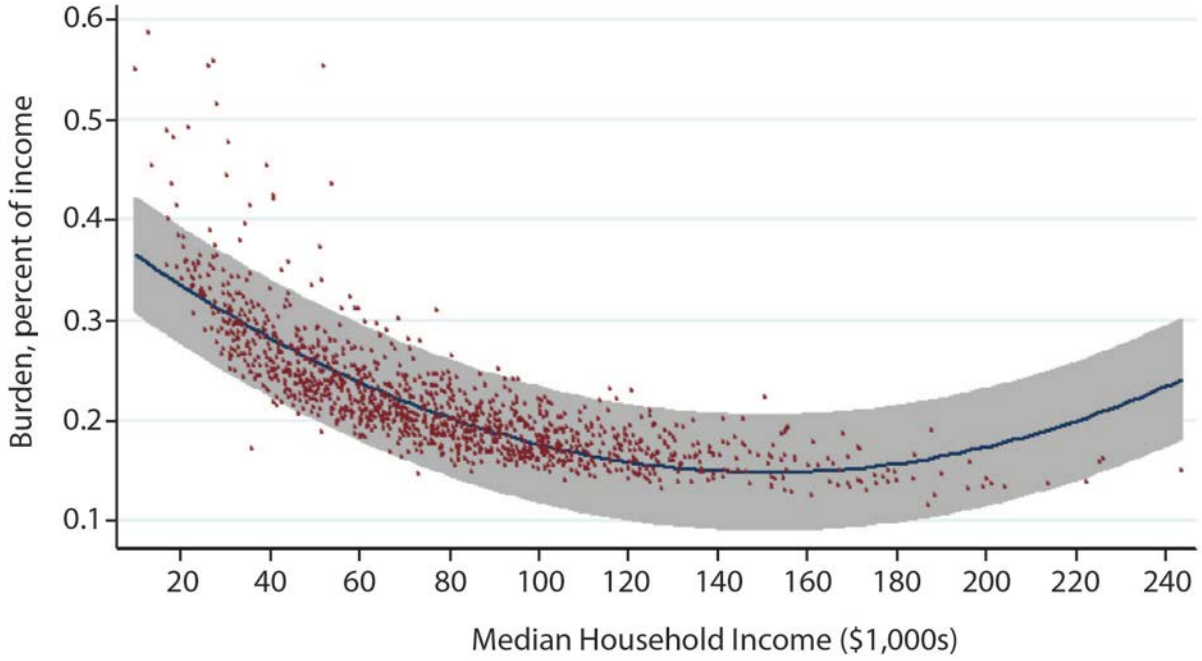
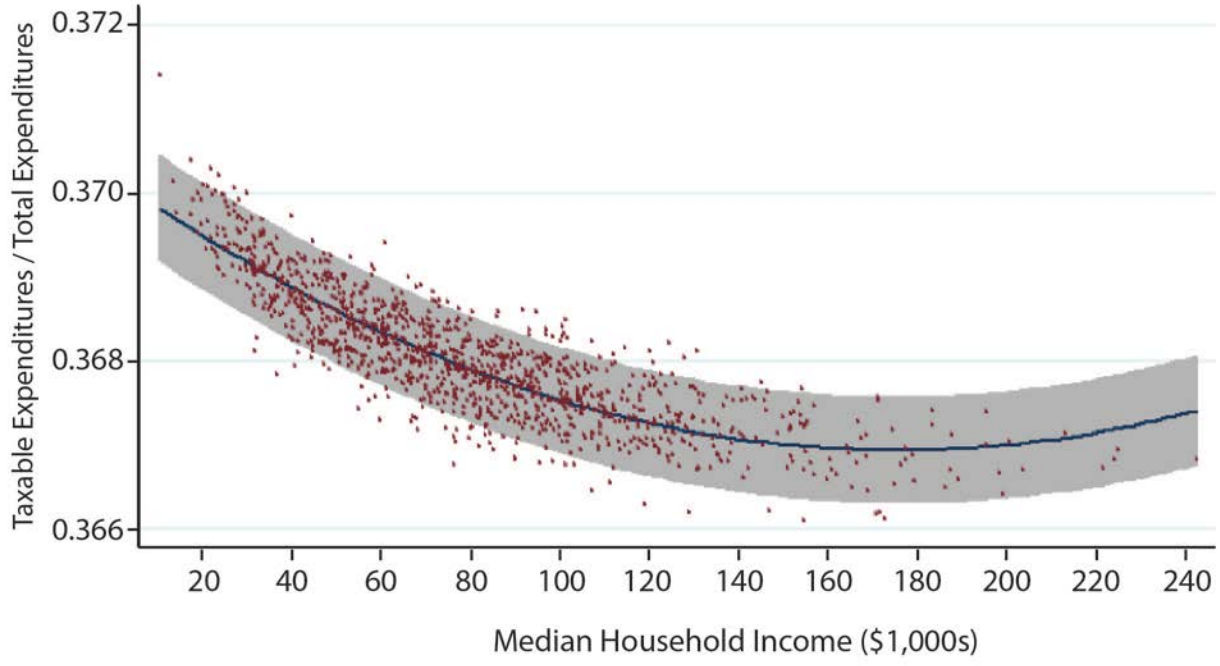


Figure 16. Household Taxable Expenditures as Share of Total Expenditures



Tract-level average tax burden is positively correlated (0.37) with support for LOST measures. There are several possible explanations for increased support among those who are most burdened by tax increases, i.e., lower-income voters. First, it is possible that people do not consider or know the relative tax burden they would bear. Thus, the relative tax burden, i.e., how much of a person's

income they spend on a sales tax compared to other people, would not affect voting decisions. Second, people may consider the absolute rather than the relative amount of tax that they pay; in other words, higher income people may (correctly) perceive that they will have higher out-of-pocket costs compared to lower-income people and thus are less likely to support LOSTs. Third, it is possible that low-income voters vote for LOSTs because they perceive greater benefits from expenditure plans more than do wealthier voters. A potential reason for this is that low-income people comprise the majority of transit riders (California Department of Transportation 2012) and thus expect transit expenditures to benefit them. Finally, it is possible that measure support is not a story about income at all, but is instead based on external factors such as marketing, voter political affiliation, etc. Future research is needed to evaluate these possible factors.

DISCUSSION

Although further research is needed to understand motivations for measure support, findings reveal that LOST measures in California are regressive with respect to income; although typical sales tax regressivity is well-established in the economics literature (Davis et al. 2015), it raises a larger policy question about transportation finance and equity. With falling gas tax revenues, counties have turned to sales taxes as a way to bolster transportation revenues, maintain and repair existing infrastructure, and construct new infrastructure. While the benefits of such projects may likewise be uneven—and have yet to be thoroughly assessed by research—sales taxes should be weighed against alternative transportation finance mechanisms. Two primary reasons exist for counties to consider alternative transportation finance mechanisms rather than sales taxes in the future.

The first reason to consider alternatives to sales taxes concerns equity: sales taxes are at least as, if not more, regressive than other forms of transportation finance measures. Sales taxes are as regressive as the pre-existing gas tax but are less equitable because they burden not only drivers but all residents, regardless of how much they drive (Wachs 2003). For example, they charge the non-driving poor as much as the driving poor; thus, sales taxes increase the number of people subject to a regressive tax compared to the gas tax. Similarly, Schweitzer and Taylor (2008) find that road tolls are less regressive compared to a sales tax, which transfers the financial burden onto the lowest and highest income groups, as observed in Figure 15.

A second reason to consider alternatives to sales taxes is that, unlike other transportation finance mechanisms such as tolls, the gas tax, or mileage-based user fees, sales taxes do not send price signals to influence travel behavior (Wachs 2003). Mileage-based user fees and the gas tax, for example, increase with each additional mile driven, discouraging excessive or wasteful travel. Tolls, which often vary by time of day, use lower prices to encourage people to travel at less congested times. The sales tax, by contrast, is not linked in any way to travel behavior. Thus, it does not provide price signals to encourage people to drive less or drive at different times. Relying on sales taxes rather than price-signaling forms of transportation finance mechanisms may impede efforts to manage car travel.

VI. ARGUING OVER TAXES FOR TRANSPORTATION: ANALYZING LOST BALLOT ARGUMENTS

INTRODUCTION

There have been 76 local option sales tax elections in urban, suburban, and rural counties in California, and each campaign to enact a measure has unique characteristics reflecting local priorities. Despite their uniqueness, there are also similarities: similar transportation problems often motivate public officials to craft LOST measures, and all were put on the ballot by either a vote of the county board of supervisors or by a petition signed by the required number of voters.

In most instances, discussions were underway within a county for some time about growing traffic congestion, the closure of critical gaps in the network, deteriorating pavement, or the expansion of transit service to growing areas of a county, but the proposed projects have often stalled due to a lack of financial resources. Typically, coalitions of businesses, labor, and other civic groups are formed to discuss these needs with local political leaders. Often, such coalitions create formal committees to advance a measure toward adoption. In the process of building a base of support sufficient to make supermajority passage possible, coalitions expand in both their constituencies and, concomitantly, the number of preferred projects that would be funded in the measure. Project lists emerge through negotiation, and new requirements—such as mechanisms to ensure accountability in the expenditure of funds—are shaped to reflect the arguments of interest groups that join the discussions. Local return provisions may well be added to secure support from cities within the county.

The difficulty of achieving a passage by a two-thirds majority leads counties to emulate the strategies of previously successful measures when crafting their own and to seek the services of consultants who participate in shaping the campaigns and sometimes in writing the measures themselves.

Often, chambers of commerce, other business-oriented groups, organizations that promote tourism, and labor unions are among the interests forming coalitions, joined by construction and consulting firms and transportation equipment suppliers. Fundraising for an election campaign begins with such interests and is broadened by encouraging contributions by individuals and organizations committed to county development. Of course, interests opposed to the passage of the local tax measure may also form committees, shape their arguments, and raise funds in similar ways (Advocacy Advance 2014).

Some LOSTs are enacted the first time they are placed on the ballot, but in many instances when a measure fails, its proponents seek passage a second and perhaps even a third or fourth time, changing the terms of the measure each time to persuade more voters, and changing their public advocacy strategy (Kitty and Michael Dukakis Center for Urban and Regional Policy 2014).

In advance of each election, a voter guide is mailed to all registered voters. The voter guide usually presents the entire proposition or initiative verbatim, as well as brief arguments for and against the measures and rebuttals to each argument. We refer to these arguments as "ballot arguments" even though they appear in the voter guide and not on the formal ballot.

Proponents and opponents of a measure have an opportunity, but are not required, to prepare arguments for inclusion in the ballot instructions handbook. Rules governing ballot language are established by the relevant jurisdictions, typically counties. The rules typically specify the length of arguments (in words) and dates by which the arguments must be submitted. Often, a ballot measure has a signed argument in favor presented by supporters and a rebuttal to that argument prepared by opponents. An argument against the measure may be submitted by the opponents, and a rebuttal to that opposition prepared by proponents.

We analyze these ballot arguments to understand how often equity issues are raised, and identify any patterns of expenditures that lead to equity concerns. The purpose of our analysis of the ballot arguments is not to test the veracity of claims made in ballot arguments; rather our purpose is to understand how debates over LOSTs are framed, and how the issues of taxation and challenges of transportation are addressed by LOST proponents and opponents, particularly as these arguments relate to questions of equity. We reproduce quotes from ballot arguments exactly as they are presented to the voters, including original emphases and grammatical errors, to accurately convey the tone and manner in which the authors addressed voters.

We find that equity arguments typically play a minor role in the debate surrounding LOSTs and are secondary to concerns regarding congestion and local roads maintenance. The largest portion of ballot argument text debates whether the measure will be successful in delivering promised projects and benefits, and whether a tax is necessary to achieve these benefits. We find that arguments in support of measures rarely allude to possible tradeoffs inherent in the measure expenditure plan, including potential inequitable outcomes. Supporting arguments are typically presented as a list of projects and their benefits.

Arguments made in opposition to measures are often highly place-specific; nonetheless, patterns of concern and rhetoric emerge from the analysis. Income equity arguments are rare compared to other types of equity arguments, and most often address the affordability of transit fares. Few ballot arguments mention the inherent regressivity of a sales tax. Measure supporters often maintain that proposed expenditures are geographically equitable (i.e., spread funding evenly across a county), while opponents argue that specific areas of the county do not receive benefits that justify the cost of the sales tax, often when a large percentage of the measure revenues are dedicated to a few large capital investments. Arguments over equitable modal funding was found in almost every ballot argument, as measure supporters and opponents frequently debate the proper balance between modal investment. Depending on the transportation landscape of a given county, modal funding equity arguments can center on funding transit as opposed to automobile interests, or the relative merits of differing transit modes. Lastly, we find that measures also raise issues of temporal equity through their prioritization of specific projects.

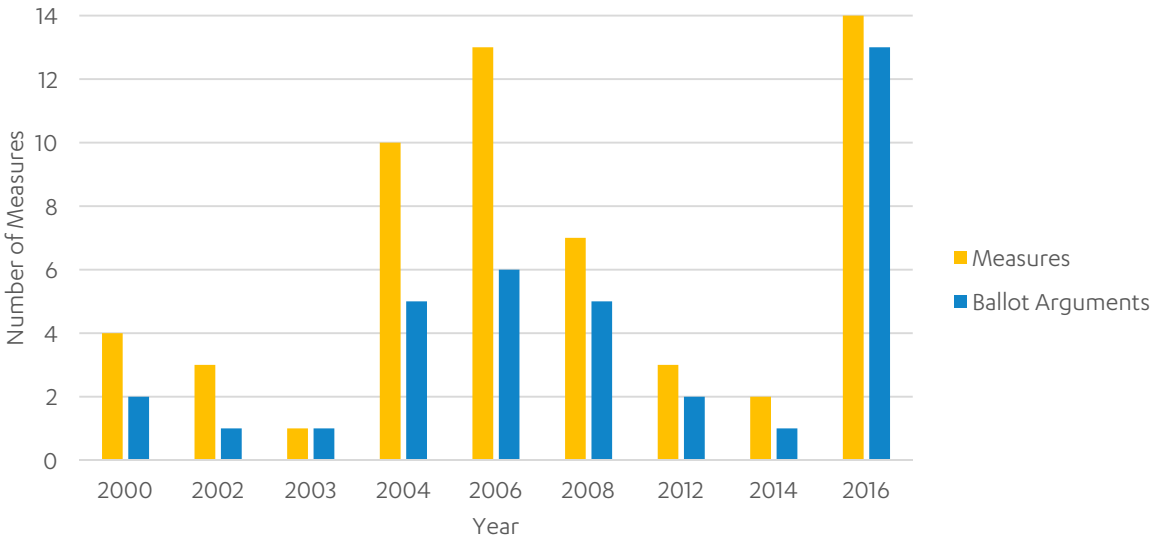
METHODS

Collection of Ballot Arguments

We sought to identify ballot arguments from all 76 LOST measures that have been put before voters in California. Of these 76 measures, we were able to gather arguments for 37. Though not required to

do so, counties frequently publish arguments and rebuttals written by supporters and opponents of each measure, which are published in voter guides and mailed to each voter in the county. We relied primarily on source material to collect our data and obtained arguments online from electronic versions of voter information pamphlets, or in hard copy from county voter registrars. Despite these efforts, our data were limited by both the existence and availability of ballot arguments. To our surprise, many counties do not keep records of past voter guide text, particularly for older measures from the pre-digital era. Where primary sources yielded no data, we relied on secondary sources, such as Ballotpedia and Smartvoter. Both Ballotpedia and Smartvoter claim they post text verbatim from official ballot pamphlets at the time of the election. To validate the use of secondary sources, we compared Ballotpedia and Smartvoter text to primary source text where we had both; we found the text to be identical. Our sample is skewed toward more recent measures; Figure 17 shows the number of measures per year for which we have ballot arguments. A full list of measures for which we collected ballot arguments, along with the sources of those arguments, is included in Appendix C. List of Ballot Arguments.

Figure 17. Number of LOST Measures and Ballot Arguments Available per Year (2000-2016)[9]



Atlas TI: Textual Analysis Tool

We used Atlas.ti, a qualitative data analysis software program, to perform textual analysis of official ballot arguments for and against LOST measures in California. Using Atlas.ti, we performed a textual analysis to determine whether equity issues were raised by either supporters or opponents of measures, and the language used to articulate such arguments. The analysis included 1) equity argument identification, and 2) a word search analysis.

In using this textual analysis, we aimed to identify statements in ballot arguments that raised equity issues related to the four "types" of equity: income, modal, geographic, and temporal. Atlas.ti was used to organize and analyze ballot arguments for the four equity themes using a method similar to

[9] This chart omits all measures before 2000 as we collected no ballot arguments prior to 2000.

that described in the document analysis section. We used the framework analysis described by Ritchie and Spencer (2002) to code the data, indexing for larger issues and creating subheading codes for specific types of arguments that were examples of the four equity frameworks. The coding guide emerged from the research, growing as the types of arguments and frequency were determined. A single researcher completed all coding to maintain consistency after the categories were reviewed by the research team. It is important to note that this research focused solely on potential equity issues. For many of the measures discussed, equity concerns played a small role in the ballot arguments compared to issues such as congestion, economic development, and whether additional taxation was necessary to achieve transportation goals.

Using a word frequency tool, we generated a list of the all the words used in ballot measure arguments and assessed how often they appeared across all ballot arguments. Our word search analyzed the frequency with which equity-related terms were used in both the "for" (supportive) and "against" (opposed) ballot arguments for LOST measures. We selected words that pertained to the equity concepts that had been identified in the coding analysis. (See Appendix D. Ballot Argument Coding Structures). We then examined the frequency with which these words were used in ballot arguments, and compared their usage by supporters and opponents of the measure.

QUALITATIVE ANALYSIS FINDINGS

The Concept of General Equity

In general, the arguments in support of measures often tout a long lists of projects in an apparent effort to demonstrate that there is something in these measures for almost everyone – residents of different parts of the county, drivers, cyclists, and so on. Since supporting ballot arguments are written to convey to voters that the measure includes "something for everyone," these are assertions of equity in the broadest sense. Because such discussions of equity are so (and perhaps intentionally) non-specific, we refer to them as "general equity" arguments. By contrast, measure proponents rarely address particular equity issues or debates over the appropriation of measure revenues directly, even when measure opponents raise such issues in their arguments.

Such supporting arguments are frequently formatted as bullet-pointed lists of specific projects, travel modes slated to receive funding, the proposed distribution of revenue across the county, and specific groups that would benefit if the measure passes. Here are typical "for" arguments, drawn from the voter guide arguments supporting Measure M2 (2006) in Orange County:

> *Vote YES on Measure M to relieve congestion, improve traffic safety and fix local roads—without raising taxes!*
>
> *Measure M renews the transportation improvement program that helped finance every major highway, transit improvement and street repair in Orange County since 1991.*
>
> *Vote YES to improve traffic flow on Orange County freeways—the 91, 5, 405, 55, 57, and 22.*

Vote YES to fix potholes, resurface streets and synchronize traffic signals in every city in Orange County.

Vote YES to reduce gridlock and improve police, fire and paramedic response times.

Vote YES to provide transit services for seniors and disabled persons and to expand Metrolink with connections to local communities. Measure M includes new protections to keep oily roadway runoff from our beaches.

Arguments in favor of Santa Clara's Measure B (2016) provide another example:

Measure B will:
• Finish the BART extension to downtown San Jose and Santa Clara
• Relieve traffic congestion on all 10 Expressways (Almaden, Capitol, Central, Foothill, Lawrence, Montague, Page Mill, San Tomas, Santa Teresa, Hale) and key highway interchanges
• Protect and enhance transit options for seniors, the disabled, students and the poor
• Repair roads and fix potholes in all 15 cities
• Improve bicycle and pedestrian safety, especially near schools
• Increase Caltrain capacity, easing highway congestion and improving safety at grade crossings
• Connect BART/Caltrain in downtown San Jose and Santa Clara, with platform-to-platform connections, to finally provide rapid rail around the entire Bay Area

Typically, specific equity arguments are raised in the "against" arguments, and are sometimes, though not always, addressed by supporters in greater detail in rebuttal arguments. If equity issues are raised in supporting arguments, it is through language that signals that there are no equity concerns, such as the use of the word "affordable" for example or through anticipating geographic equity concerns by specifying that "every community" would receive measure revenue. Examples of preemptive signaling language is discussed further in the section below that reviews each type of equity concern.[10]

Of the 37 measures reviewed, 29 include "general equity" arguments. Table 10 shows the number of measures in which each type of equity argument was used by either supporters or opponents. Geographic and modal equity appeared most frequently in LOST measure ballot arguments, in 27 and 26 measures respectively. Income equity concepts were used in the ballot argument for 11 measures, and temporal equity issues were debated in the arguments for seven measures. See Appendix C. List of Ballot Arguments for a list of equity arguments marshalled in support of the ballot measures.

[10] While outside the scope of this report, ballot proponents also seek to demonstrate benefits to many other societal or interest groups in the ballot arguments including seniors, the disabled, students, environmentalists, and the business community.

Table 10. Equity Argument Frequency in LOST Measures

Type of Equity	Number of Measures in which Equity is Debated
General Equity	29
Income Equity	14
Geographic Equity	28
Modal Equity	26
Temporal Equity	8

Income Equity

Fourteen LOST ballot measures address income equity in either the supporting arguments, opposing arguments, or both. Income equity (like most forms of equity other than the pre-emptive general equity arguments) is typically not directly addressed in supporting arguments. Of the measures that invoke income equity in the supporting arguments, five argue that the sales tax revenue will be used to keep public transit "affordable."[11] None of these measures specifically reference transit affordability for low-income riders, arguing only for general transit affordability or specifying affordable transit for groups such as seniors, students, and the disabled. Using the word "affordable" signals income equity as it addresses the price of transportation, particularly for transit-dependent residents who cannot afford to own a car.[12]

Opposing arguments in five[13] of the 37 ballot measures analyzed directly state that an increased sales tax will disproportionately harm low and middle-income residents. Opponents of two measures (both in Alameda County) address the regressivity of sales taxes. Arguments against Alameda Measure BB (2014) encourage voters to "Reject this regressive tax increase!" Opponents of Alameda County Measure B1 (2012) argue that the measure is "A MASSIVE TAX INCREASE: Disproportionately harming working families. (A greater percentage of their income goes to sales taxes.)"

Other measures reference decreases in real wages associated with the increasing sales tax rates. For example, opponents of Placer County's Measure M (2016) plainly state in their opening sentence:

> *Measure M is a SALES TAX INCREASE that will damage our economy, hurting those who can least afford it*

Arguments against Santa Barbara's Measure A (2008) note that:

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[11] Alameda Measure B1 (2012), Los Angeles Measure M (2016), Alameda Measure BB (2014), Sonoma/Marin Measure R (2006), Ventura Measure AA (2016). Supporters of Los Angeles Measure J (2012) argued that bus fares must be kept low for seniors, students, and the disabled.

[12] Supporters of Contra Costa Measure J (2004) argued that the measure was endorsed by social justice advocacy groups.

[13] Alameda Measure B1 (2012), Alameda Measure BB (2014), Placer Measure M (2016), Santa Barbara Measure A (2008), and Stanislaus County Measure L (2016).

...because this is a sales tax, Measure A will hit seniors and working families especially hard

Opponents of Stanislaus County's Measure L (2016) focus on the disproportionate impacts of a sales tax on seniors, stating:

Seniors and disabled are currently shuttled by federally funded dial-a-ride. Many elderly citizens live in poverty. This tax will hurt seniors; reduces their buying power

As with support for affordable public transit fares, income equity is most frequently associated with discussions of transit funding and project selection. Opponents of Measure X (2016) in Contra Costa County argued that the measure did not dedicate enough funding to transit, while burdening lower-income residents who rely on the mode. Opponents of LOSTs in Los Angeles Measure M (2016), San Mateo Measure A (2004), and Sacramento Measure B (2016) argued that measures whose funding was dedicated to transit projects—including a BART extension in San Francisco, commuter rail investments in Sacramento, and expansion of rail in Los Angeles—would come at the expense of bus service that tends to benefit lower and middle-class residents. Sacramento Measure B (2016) opponents decried projects that benefit the politically influential at the expense of low-income residents:

Everyone agrees that Sacramento County needs better roads and transit. But Measure B isn't a comprehensive transportation plan for addressing our transportation needs. Instead, it's a patch-work scheme developed by politicians and their cronies that will lead to more congestion and will fund the wrong kind of transit spending, while imposing higher taxes on vulnerable low and middle-income families.

Opponents of San Diego's Measure A (2016) framed the impact of an increased sales tax in the context of their skepticism about what they thought the measure would do for the county:

Many working families are struggling in this high-tax state. This $18 Billion tax will be paid by our children and grandchildren and last for 40 years! Twelve years ago voters passed a 40-year sales tax increase for SANDAG's transportation improvements but commutes have not gotten any better. With billions and billions of dollars in proposed tax increases on this year's ballot already, send a message and vote NO on Measure A!

Rebuttal arguments supporting measures generally avoid income equity concerns raised by the opposition, beyond reiterating the affordability of transit fares. Only the rebuttal arguments in support of Measure BB in Alameda County (2014) alluded to income equity arguments by opponents:

The United Seniors of Alameda County endorse Measure BB because it will expand services and keep transit affordable for seniors, young and disabled people. It will expand and upgrade BART in Alameda County and provide transportation independence for our most vulnerable populations.

While income equity arguments are raised—most directly by opponents referring to the added tax burdens on the poor, students, seniors, and those with disabilities, and less directly by supporters who frequently tout subsidies of public transit fares to keep them affordable—they are addressed in general terms, often with little in the way of data to support their contentions. Supporting arguments in particular rarely directly address the effects of LOSTs on low-income communities.

Discussion of income equity in voter guides does not appear to influence the success of a LOST measure on the ballot. Table 11 tallies the success/failure of measures by supporting/opposing arguments pertaining to income equity. Measures in which the ballot arguments reference income equity are slightly more likely to fail, regardless of whether the argument stresses potential inequities, or describes the measures increasing the affordability of transportation services.

Table 11. Measure Success When Income Equity Issues Were Raised in Ballot Arguments

	Measure Passed	Measure Failed
Measure for Which Supporters Made Arguments Pertaining to Income Equity	3	4
Measure for Which Opponents Made Arguments Pertaining to Income Equity	4	6

Geographic Equity

Geographic equity refers to whether LOST measure revenues will be spatially distributed fairly throughout the county, though of course fairness is a subjective concept. For example, some ballot arguments assert that the funding for projects in an area should be proportional to the number of taxpayer residents in that area; while to others, fairness means spending the money equally in all parts of the county regardless of the taxpaying population's distribution. Our ballot argument text coding structure employed subheadings for specific types of arguments that imply geographic equity concerns. The following list explains the textual analysis coding we used for arguments that invoke geographic equity concerns. We provide example quotations of each in the following sections.

- Local Return: Any mention of revenues being returned directly to cities
- Local Roads: Any mention of revenue being used to fix local roads outside of the context of local return funds
- Local Congestion: Any mention of congestion on local roads (in contrast to more frequent mentions of congestion on major highways)
- Urban vs. Rural Residents: Arguments that the measure does not distribute funding equitably between urban and rural residents
- Does Not Help Some Part of the County: Ballot argument language that identifies a specific area of the county that is not benefitting (enough) from the expenditures proposed under the measure

- Extra-County Residents: Argument that the measure revenues benefit people who do not live in the county
- High- vs. Low-Income Residents: Argument that projects are concentrated in either the wealthier or poorer areas of the county (implies income equity concerns)
- "Every Community": Language implies that benefits of the measure are distributed throughout the county

Comparing geographic equity arguments in support of and against lost measures

Table 12 shows the number of measures wherein each type of geographic equity argument was raised, and whether the geographic equity issue raised was broached by supporters or opponents of the measure. For example, urban vs. rural geographic equity was specifically raised in support of one measure, while urban versus rural inequities were used to argue against two other measures. Note that some ballot arguments may raise more than one type of equity argument. In total, 24 measures mention one or more type of geographic equity in support of the measure, while opponents of five measures argue that the LOST proposal is geographically inequitable in some manner.[14]

Table 12. Number of Measures with Supporting and Opposing Geographic Equity Arguments

Geographic Equity Argument Type	For	Against
Local Return	8	1[15]
Local Roads	19	1[16]
Local Congestion	3	0
Urban vs Rural Residents	1	2
Does Not Help Part of the County	0	3
Extra-County	0	1
High- vs. Low-Income Residents	0	1
"Every Community"	9	0
Totals	40	9

As shown in Table 12, there is a clear distinction between the type of geographic equity issues raised by supporters and opponents of a LOST measure. Geographic equity arguments stressing local return, reduced local congestion, and the involvement and endorsement of "every community" are

[14] Contra Costa (2004), Fresno (2006), Los Angeles (2016), Los Angeles (2012), San Mateo (2004), Fresno (2002).

[15] Opponents of Marin County's Measure A (2004) argued that too much of the measure revenue would fund local "'feel good' projects negotiated with city and town councils to obtain their support for the tax" while underfunding Highway 101 improvements.

[16] Opponents of Fresno's Measure C (2002) argued against over-investment in regional projects at the expense of local funding for road maintenance.

almost always used in favor of a measure, while opponents employ arguments that reveal geographic inequities, such as not benefiting part of the county, perceived slights on rural or urban populations, or expenditure plans that focus resources on wealthy neighborhoods at the expense of low-income areas.

Only supporters of Santa Clara Measure B (2008), which was dedicated solely to funding an extension of Bay Area Rapid Transit (BART) service, addressed geographic equity in place-specific terms, telling voters that if the measure was passed:

> *...91 percent of Santa Clara County residents will be within three miles from a BART, Caltrain, or Light Rail station, finally connecting Santa Clara County residents in a comprehensive, Bay Area-wide system*

Supporters of Measure L in Stanislaus County (2016) offered voters assurance of geographic equity by proxy, saying that the measure had been vetted through and approved by every local government in the county: "Every city in Stanislaus County voted to support Measure L because local road repairs benefit everyone - drivers, cyclists, walkers, seniors, kids and businesses."

Geographic equity issues raised by LOST measure opponents are generally more specific in their assertions. Most common are arguments that a part of the county will not benefit enough under the proposed measure expenditure plan. For example, opponents of Measure A in San Mateo (2004) argued that residents of the coastal portion of the county were not getting their fair share of benefits:

> *Year after year, the county bus service has been reduced to pay for the expansion of low-use systems such as BART, isolating residents who live on the coast side, as well as county youngsters and students, senior citizens, and low income residents*

Opponents of Fresno Measure C (2006) argued that the measure would not alleviate congestion for east-west commuters, and opponents of Measure J (2012) in Los Angeles argued that a previous measure had allocated the majority of the benefit to a minority of county residents, particularly slighting residents of populous San Fernando Valley.

Geographic equity can also be framed in terms of a division between rural and urban parts of the county. Supporters of Tulare County's Measure R (2006) specifically noted that investments under the proposed measure would benefit urban and rural residents. Opponents of the Fresno measures additionally categorized geographic inequities along the urban/rural divide. In Fresno County, Measure C (2006) opponents argued that the proposed measure did not allocate enough highway funding to urban areas, in contrast to a previous measure:

> *Old Measure C spent 70% of its freeway monies in the urban region. Where 70% of our community lives. Where 70% of the sales taxes are collected. It returned taxes to the taxpayers. This Measure C returns just 50% of freeway monies to the urban community. Taxpayers haven't moved out of the cities. Cities still suffer the most congestion. Why abandon the old formula?*

Lastly, opponents of Contra Costa's 2004 LOST measure argued that improvements to the Caldecott Tunnel would mainly benefit people who commute into the county at the expense of Contra Costa residents. While this is a unique assertion among the many ballot arguments we reviewed, it highlights one of the factors credited with the increasing popularity of LOSTs as a transportation finance mechanism—all revenues collected from county residents are used to benefit county residents.[17]

Table 13 shows that raising geographic equity concerns in ballot arguments is not strongly associated with the overall popularity of the LOST measures among voters, either positively or negatively. Ballot measure supporters repeatedly use certain terms and concepts to signal positive geographic equity implications of the proposed measure, including promising funding to repair local roads and reduce local congestion, and touting the benefits of the measure for every community.

Table 13. Geographic Equity Arguments by Pass/Fail[18]

	Measure Failed	Measure Passed
Geographic Equity: Does Not Benefit Part of County	1	2
Geographic Equity: Extra-county Equity	0	1
Geographic Equity: Reduces Local Congestion	2	1
Geographic Equity: Local Return	3	6
Geographic Equity: Local Roads	10	15
Geographic Equity: Rich vs. Poor	0	2
Geographic Equity: Urban vs. rural	1	2
Geographic Equity: "Every community"	5	4
Totals	22	33

Meeting geographic equity needs

Historically, geographic inequities have been thought to contribute to multiple measure failures. Parts of counties slated to receive fewer transportation benefits than they contribute in sales tax revenue have been shown to be less likely to vote for a LOST transportation measure, which could easily lead to defeat given the supermajority requirement (Hannay and Wachs 2007, Haas et al. 2000). Over time, those writing the measures appear to pay attention to addressing geographic equity by assembling project lists that fund major capital projects in all parts of the county. For

[17] This echoes the research of Afonso (2016), which focuses on how LOSTs impacts differ across residents, business and tourism.

[18] Note that the ballot arguments for a given measure may include more than one type of geographic equity argument.

example, Figure 18 was published in the expenditure plan for Orange County Measure M2, illustrating for voters the geographic diversity of planned projects.

Figure 18. Map of Orange County Measure M2 (2006) Highway Projects

Using local return to ease geographic equity concerns

To secure local government support for a measure throughout the county, almost all measures dedicate a portion of revenue to be returned directly to cities and the county as flexible funding for local priority projects. This funding is referred to as "local return," and typically disbursed using a formula that often accounts for population, lane miles of road, and revenues raised in the jurisdiction.[19] In most cases, the clear majority of local return is spent on local road projects. Some measures stipulate that a certain portion of local return is dedicated to specific modes (often bike and pedestrian infrastructure), although jurisdictions are free to select specific projects.

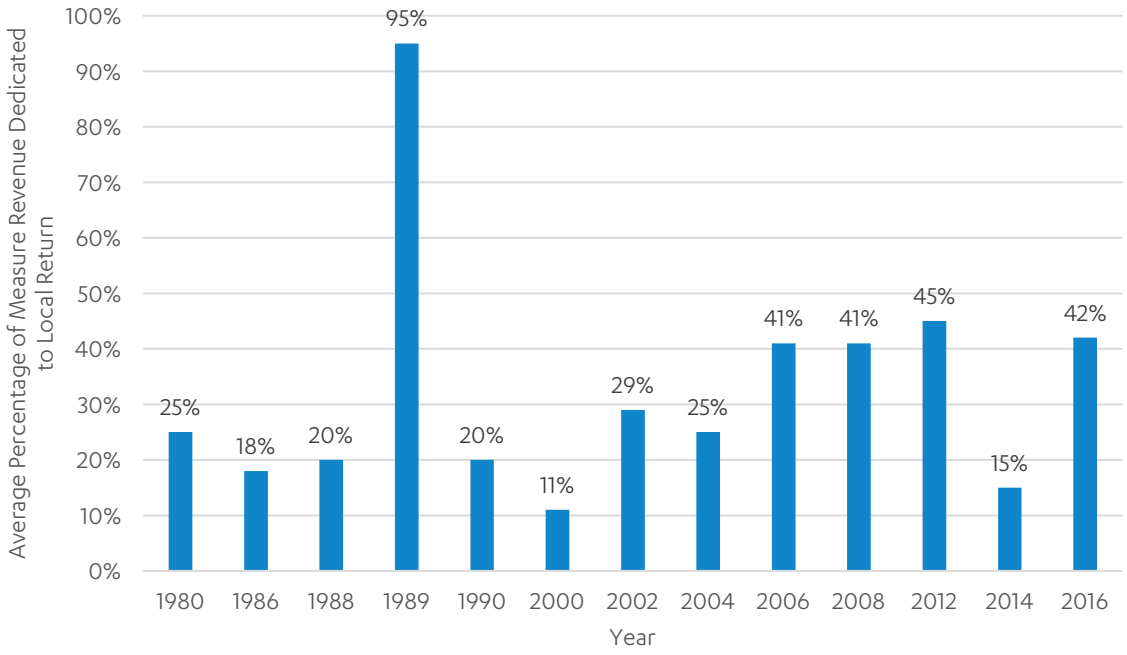
We calculated local return percentages using figures from measure expenditure plans. For the 49 measures for which we could collect data on local return,[20] an average of 35 percent of measure

[19] In a small minority of measures, additional factors such as a guaranteed minimum return to specific jurisdictions may be used to calculated local return distribution.

[20] Stanislaus Measure S (2008) and Sacramento Measure B (2016) did not clearly identify local return in their expenditure plans. Additionally, San Francisco Proposition B (1989) and Proposition K (2003) were not included in local return analysis as all of San Francisco County is the City of San Francisco.

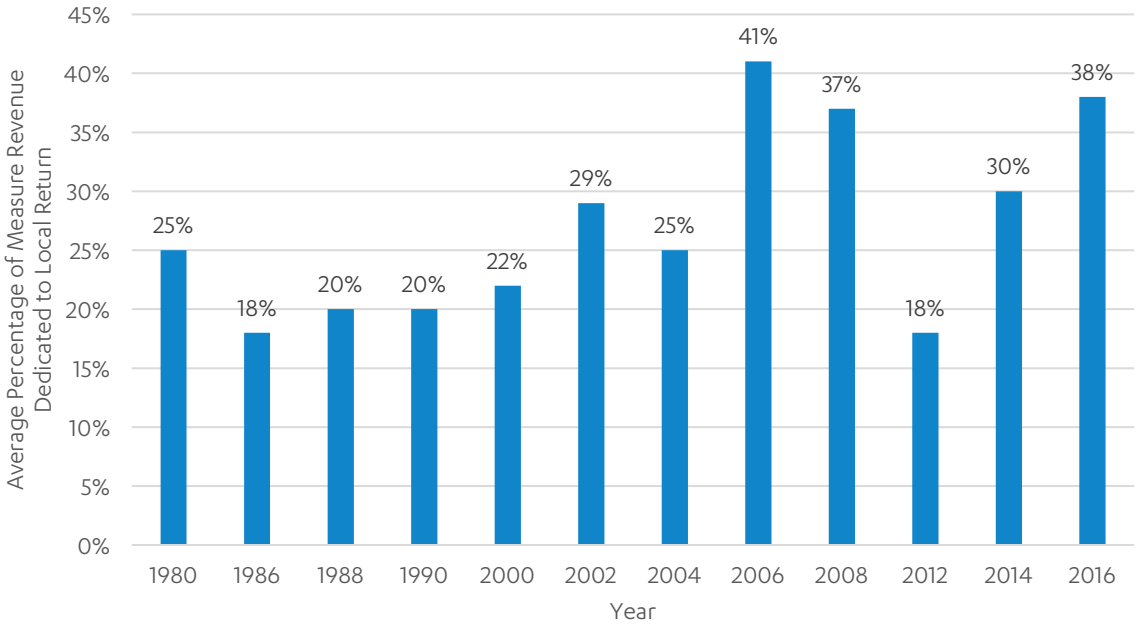
revenues were dedicated to local return. As shown in Figure 19, even the earliest LOST measures include revenue dedicated to local return.

Figure 19. Local Return Over Time (All Measures)



Each county has a unique transportation system geography, and LOST measures tend to reflect this place specificity. For example, several measures have local return values that appear as outliers, but which logically reflect local geography. Revenues from Santa Clara Measure A (2000) and Measure B (2008), and Monterey County Measure Q (2014), were entirely dedicated to specific transit projects, and thus have zero percent local return funding (as well as no highway or local roads funding). At the other extreme, four measures dedicated over 90 percent of measure revenues to local return. Imperial County Measure D (1989), Napa County Measure T (2012), Humboldt's Measure U (2016) dedicated all measure revenue to local return. Imperial County's second Measure D, in 2008, dedicated 95 percent of revenues to local return, reserving five percent of revenue to fund a single highway project. Although they comprise a small share of measures, the six counties with outlying local returns have large effects on the yearly average revenue dedicated to local returns. To examine trends over time among the remaining 42 measures, we re-ran the analysis excluding these outliers. The results in Figure 19 show that local return percentage increased over time, and local return averaged 31 percent across the included measures. The marked decrease in 2012 local return percentage and increase in 2014 in Figure 20 demonstrate the impact of outliers observed in Figure 19.

Figure 20. Local Return Percentage Over Time (Excluding Outliers)



While previous studies found that, over time, LOST-sponsoring agencies have increased attention to geographic equity (Haas et al. 2000) and local return percentages have grown, heightened attention to geographic equity concerns is not clearly reflected in the ballot argument language analyzed for this project. Instead, as shown in Table 14, the occurrence of geographic equity arguments does not appear to be increasing or decreasing over time. This may be because our sample of ballot arguments is somewhat biased towards more recent LOST measures. It may also suggest a disconnect between ballot argument language and the actual revenue expenditure plan, as it may be popular to use geographic equity arguments in opposition to a measure, even if expenditure plans are increasingly geographically balanced. Figure 21 shows that a portion of almost every measure is dedicated to local return, yet local return is not always mentioned in arguments in support of the measure.

Figure 21. Local Returns as Share of Measure Revenues

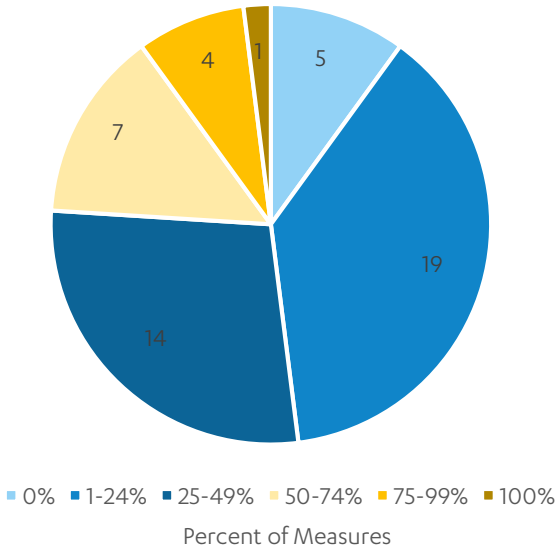


Table 14. Geographic Equity Supporting Arguments by Year

Measure Year	"Every Community"	Local Roads	Local Return	Local Congestion	Urban vs. Rural	Total Number of Measures with Supporting Geographic Equity Arguments	Total Number of Measures in Ballot Argument Sample
1988	-	-	-	-	-	0	1
2000	-	-	-	-	-	0	2
2002	-	-	-	-	-	0	1
2003	1	-	-	-	-	1	1
2004	1	4	3	2	-	4	5
2006	-	4	-	-	1	5	5
2008	2	1	-	-	-	2	5
2012	2	1	2	-	-	2	2
2014	-	-	-	-	-	0	1
2016	1	10	3	1	-	10	13

Opponents of Fresno's Measure C (2002) illustrate the primacy of local return and the pitfalls of balancing funding between local and regional funding in their ballot argument:

> *Potholes and public safety are priority number one. But only 10% of Measure C's $3 Billion is planned to be spent on potholes and repairs. And politicians will play shenanigans to divert these funds. Already the Fresno City Council is shortchanging road and sidewalk repair in neighborhoods to divert money to pet projects.*

Modal Funding Equity

Ballot argument language related to modal funding equity typically falls into one of two main categories: funding roads versus public transit, and funding one mode of transit versus another (for example, rail versus bus funding). While the debate between road versus transit investments plays a

central role in many of the ballot measure arguments we analyzed—and indeed has been central to conventional policy debates for decades—our analysis reveals a nuanced set of arguments regarding different transit modes, which often raised income and geographic equity issues as well. As with the idea of general equity discussed above, arguments in support of LOST measures typically reference highways, roads, and all forms of public transit. Opposition arguments, by contrast, typically voice opposition to the allocation of revenues among modes.

Supporting arguments: modal balance and mode choice

As with general equity, modal equity arguments supporting a measure frequently present the measure as modally inclusive, stating that the measure will balance investment in roads and transit and provide a choice of transportation alternatives. Supporting arguments rarely pit modes against one another. Instead, inclusive language in supporting arguments attempts to paint a win-win picture to satisfy all constituents, including those who "choose" to drive a car instead of taking transit. Placer County's Measure M (2016) is representative of the language used to "sell" modal choice to the voters:

> *Measure M relieves congestion, repairs local roads, and improves safety, all with strict accountability. Sick of growing traffic on highways and roads, robbing us of time with family? Vote Yes on Measure M. Troubled to see more dangerous accidents, and unsafe routes around schools? Vote Yes on Measure M. Concerned about potholes and poor street maintenance that cost you money? Vote Yes on Measure M. Want alternatives to automobile commuting; by train to Sacramento, or even biking or walking? Vote Yes on Measure M.*

Overall, very few arguments in favor of LOST measures point specifically to a need for balanced spending between transit and automobile interests, perhaps because such language would introduce the idea that there is an opportunity cost of funding one mode at the expense of another. As described above, the typical format for arguments in support of LOST measures is to simply list the projects will be delivered and be sure to promise something for everyone.

Six of the measures we analyzed describe splitting revenues among diverse modes as a way to provide "alternatives" or "balance" among modes. For example, supporters of Monterey's Measure Z (2008) put the goal of funding alternatives to automobile travel at the forefront:

> *Alternatives to driving are important. Measure Z will provide funding for Monterey-Salinas Transit to increase bus service for seniors, persons with disabilities, students and commuters. Measure Z will pay for sidewalks, bikeways and "smart growth" projects so we can safely walk or bike to school and work.*

The rebuttal arguments in support of Sonoma County's Measure M (2004) specifically point to the need to "provide alternatives to those who cannot or choose not to drive cars," and describe the expansion of bus service as critical for people without alternative transportation options. Rebuttal arguments supporting Proposition K (2003) in San Francisco highlighted the need to "deliver a balanced selection of transportation alternatives to San Francisco neighborhoods and residents."

Both supporters and opponents of Contra Costa's Measure J (2004) stressed the importance of balancing modal funding, but disagreed on whether the measure delivered such a balance. Supporters outlined five priorities, one of which was to expand transit programs that have "a demonstrated ability to get people out of their cars." Supporters argued that:

> *Measure J authorizes an expenditure plan to relieve congestion in every major commute corridor in Contra Costa County, providing a balance of road improvements and mass transit solutions to manage our traffic problems*.

In contrast, opponents maintained that:

> *Measure J would not make buses a viable transportation alternative. And as conceived, the Caldecott Tunnel project would improve only reverse commutes + e.g. weekday-morning traffic INTO Contra Costa County...MEASURE C WON'T EXPIRE UNTIL 2009. Contra Costa's transportation plan should reasonably balance highways, local streets, public transit, positive trip-reduction incentives, quality of life, and a healthy economy. Given Measure C's/Measure J's high cost, there's time enough to plan genuine solutions for Contra Costa's transportation problems.*

Opponents of Fresno's Measure C (2002) similarly maintained that the proposed expenditure plan was not a balanced transportation plan, stating that "Its backers seek to confuse voters with token amounts for road repair, accessibility for the disabled, bicycle paths, trails, and bus service."

Opposing Arguments: Variation and Some Vitriol

Arguments against funding transit generally

Arguments against LOST measures frequently create an adversarial framing of the issues, often by highlighting the unfairness of the allocations of funds. Opponents frequently raise the issue of transit funding versus funding for highways and roads, often by arguing that proposed increases in funding for transit necessarily entails decreased funding for streets and highways. These arguments are sometimes framed as against increased funding for transit generally, while others attack specific transit projects, which they argue would receive too large a portion of measure revenues. These arguments can be divided into two categories, although some measures contain arguments that fall into both. The first type argues that funding transit as opposed to automobile infrastructure is inequitable because the modal funding split is out of proportion with modal usage. These arguments frequently cite travel behavior statistics (the veracity of which we do not investigate). The second type of arguments rely purely on rhetoric, and in some cases, are vitriolic in attacking public transit and the funding of it.

Aligning funding with usage

Opponents of Measure M2 in Orange County (2006), a renewal of the original Measure M (1990), bemoaned the new measure's failure to provide as much funding for freeway expansion as the original, and argued "38% of funds are for transit costing 10 to 100 times as much for the same transportation (person-miles) as roads, and providing less than 2% of our total transportation. Transit share will grow by only one percent of trips." Objections to Contra Costa Measure J (2004), citing trip projections by the MTC, also pointed to an imbalance between the modal funding and modal use,

arguing that "Despite many Billions in new transit subsidies [including Measure J], automobiles will still provide 82% of Bay Area trips in 2025, transit just 6%."

Opponents of San Diego's Measure A (2016) pointed to the expenditure plan's assertion that the measure would not shorten automobile commutes:

> *No Traffic Congestion Relief - Measure A documents literally state "travel times to work remain flat for drivers alone and improve for transit uses." So while over 3/4 of commuters travel alone, only 3.4% of this tax is going to help them. Additionally, over $7.5 Billion is earmarked for mass transit despite the fact only 2.7% of commuters use it – and the percentage of transit riders has decreased since 2005.*

Arguments against Santa Clara's Measure B (2016) similarly questioned why measure revenue should fund public transit given decreasing ridership, stating:

> *Santa Clara County has tremendously congested roadways and one of the very worst performing light rail systems in the nation. Bus service is unusable and scheduled to get worse. Population has increased since 2001, while transit ridership has declined 23 percent. If allowed to continue, the whole county will end up in gridlock. Let's not put even more money into a failed strategy!*

Visceral arguments

Other arguments direct vitriol instead of evidence-based arguments against the promotion and funding of public transit in LOST measures. Arguments against Alameda County Measure B (2012) lamented that the measure would fund:

> *...inefficient, expensive, and underutilized public transportation systems at the expense of automobile drivers...Increasing the costs of driving is intended to reduce the number of people who can afford to own and drive a car, forcing many to use public transportation.*

Placer County Measure M (2016) opponents stated, "We need freeways, not bicycle giveaways, empty busses [sic], and train subsidies!" In Ventura County, opponents of Measure AA (2016) derided a "$3 billion tax increase, made up of a thirty-year increase in the sales tax that it says will fund 'transportation'." The Measure AA opponents further declared that the proposed measure will support "$191 million for more empty rider-less buses to clog streets and freeways," and attacked rail spending by arguing that "Except for proponents, no one believes we have a train crisis in the County."

Opposing arguments aimed at specific modes and projects

Some arguments against funding public transit are framed in terms of more general opposition to specific modes or larger-scale transit projects. For example, proposed rail projects in Sonoma County were under attack in three failed measures in 2000, 2004, and 2008. An analysis of the arguments against rail investment over an 8-year period in Sonoma County reveals an evolution of debates over transit investment and usage. Opponents of Measure C (2000) argued that "people will not give up

their cars," and that road improvement funding should be limited to gas tax revenues. The opposition to the proposed 2004 Measure M described a proposed rail project as a "train to nowhere" that would provide "convenient transportation to and from work for practically no-one." The arguments also argued that funding rail projects also raised income equity issues, stating that "people who would not use a train should not be stuck paying a tax to subsidize one." Lastly, arguments about rail funding in the proposed 2008 Measure Q questioned whether proposed rail improvements would reduce greenhouse gas emissions.

Commuter rail investment also drew the ire of measure opponents in Santa Barbara and Orange Counties. Opponents of Measure A (2008) in Santa Barbara argued that commuter rail investment was "uneconomical" and would not deliver "real benefits." In Orange County, Measure M2 (2006) opponents argued that investment under the previous Measure M provided huge subsidies for rail commuters instead of promised subsidies for seniors using transit.

Funding buses as opposed to roads and highways appears to particularly provoke measure opponents. In Sonoma County, opponents to the Measure M (2004) argued that buses are already heavily subsidized by existing taxes, saying "If buses are so great let them pay their own way." Arguments against bus funding in Fresno County's Measure C (2006) stated:

> *Measure C spends 30% of funds on alternative transportation that studies show is used by no more than 2% of the population. They want to force you onto public busses by congesting our streets. Are you going to ride the bus?*

Arguments that transit receives too little funding

A minority of measure opponents object to the measure at hand for not dedicating enough revenue to public transit. Opponents of Santa Cruz's Measure J (2004) argued that a true transportation tax must include revenue dedicated to transit, arguing that the measure was really a "30-year sales tax to widen Highway 1...The tax sacrifices bus, rail, and other transportation needs, for the sake of widening." Opponents of Alameda's Measure BB (2014) similarly lament that the proposed expenditure plan does not increase transportation choices, categorizing the expenditure plan as having "misplaced priorities" that will ultimately increase congestion. Arguments against Contra Costa Measure X (2016) raised potential income equity issues, arguing that the measure did not protect transit funding "even though the tax falls most heavily on those who need transit the most."

Competition among public transit modes for funding

The preceding section exemplifies a recurring transportation policy debate in which ballot arguments frame transit funding as counter to the interests of drivers. The arguments above group all transit together as a competitor with street and highway expenditure needs. Another subset of ballot arguments singles out investments in a specific mode of transit (e.g. rail or bus) that would be funded under the measure.

Ballot arguments can also highlight competition among transit modes for investments. These arguments discuss the merits of funding one mode of transit over another, and are typically limited to urban and suburban counties with multiple transit operators and modes. The transit modal debates also tend to be highly place-specific, reflecting the transportation dynamics of a particular county.

Debates over the relative merits of particular transit modes are sometimes nuanced, suggesting, for example, a need to rebalance funding among modes. In other cases, opponents argue that specific forms of transit will never be worth the investment.

Opponents of San Mateo's Measure A2 (2004) contended that too much funding was slated to go to both a proposed extension of BART rail transit service into the county and proposed ferry service between the county and downtown San Francisco. They argued that both projects were "boutique" transit services that would serve a small number of commuters at a high cost per passenger, and that funding would be better spent on expanding bus services that would serve a larger number of residents at a lower cost per trip. These arguments reveal again how issues of modal equity implicate geographic and income equity issues as well:

> *Year after year, the county bus service has been reduced to pay for the expansion of low-use systems such as BART, isolating residents who live on the coast side, as well as county youngsters and students, senior citizens, and low income residents.*

These ballot arguments further illuminate how the policy nuances of LOST expenditure plans are treated and debated:

> *The new measure allocates $30 million taxpayer dollars to fund a BART extension that has lost money since it opened. In addition, $30 million will be diverted to support a new ferry service catering to the pharmaceutical companies in South San Francisco at a cost of $22 per new ferry passenger.*

Opponents of San Francisco's Measure K (2003) similarly question whether the costly investment in ferry services would provide worthwhile transportation gains. Unlike in San Mateo County, the San Francisco Measure K opponents supported subsidizing BART, which they asserted was integral to mobility within the county; in contrast, they referred to ferry funding as "questionable," describing them as "big money losers because nobody uses them."

The proposed Sonoma-Marin Area Regional Transit District faced similar opposition to Measure Q (2008), which planned to fund both ferry and rail service between the two counties. Supporters argued that the proposed rail lines were necessary to meet greenhouse gas emission reduction goals. Opponents not only questioned whether the benefits of rail service would warrant the costs, but whether the new service would meaningfully address greenhouse gas reduction goals; they argued that carpools and express bus lanes could better meet transportation and environmental goals at a lower cost.

Opponents of Orange County's Measure M2 (2006) took similar issue with the cost-effectiveness of funding commuter rail, just as Measure A opponents did in San Mateo. Measure M2 proposed a renewal of the existing Measure M, which was approved in 1990. Opponents of Measure M2 argued that investment in Metrolink commuter rail under the original Measure M had provided "massive subsidies for a handful of railway commuters," particularly at the cost of better transportation options for seniors. The proposed measure dedicated 39 percent of transit funding to increasing Metrolink

service, and another 37 percent to improve other transit connections to Metrolink stations. Opponents argued that Metrolink:

> *...will carry only 0.2 percent of all trips. It will serve only a part of the county, with the rest getting minimal improvements for the next 30 years. OCTA considers Metrolink the backbone transit system, but 0.2 percent is hardly a wishbone.*

Transit capital vs. operations

While ballot arguments for multiple measures debate funding one mode of public transit over another, only one of the ballot arguments reviewed raised the tradeoff between funding capital expansion of transit at the expense of investing in the operations of existing transit services. Opponents of San Mateo Measure A2 (2004) argued:

> *Measure A will waste scarce taxpayer dollars by diverting funds to support new transit services while existing services continue to be cut. Proponents ignore the fact that the old tax funded only capital improvements to existing and proven transit systems.*

Debates over bike and pedestrian funding

While some LOST measure supporters view (often passionately) bicycle and pedestrian travel and infrastructure as integral the overall transportation network, others do not consider it an important, or even legitimate, transportation investment. Regardless, only a small portion of LOST revenue, if any, is dedicated to bicycle and pedestrian infrastructure. Supporters of Sonoma County's Measure C (2000) point out that "Non-vehicular transportation opportunities must be made available...bicycle and pedestrian travel an integral part of our transportation network." On the other hand, opponents of San Diego's Measure A (2016) argued that bicycle and pedestrian funding was not a legitimate transportation investment, grouping it with what they called other "non-transportation" investments including incentives for infill developers, streetlights, beach sand replenishment, greenhouse gas reduction, and monitoring open space. They argued that the measure provided "$2.54 Billion for bike lanes and open space but only $0.6 Billion for normal highway lane expansions." Arguments against Placer County's Measures M (2016) pointed out that "Placer County Transportation Planning Agency has a "Bucks for Bikes" program that pays people to buy their own bicycles. No kidding!"

Temporal Equity

As discussed above, we identified issues of temporal equity through our initial review of LOST ballot measures and expenditure plans. Issues of temporal equity raise concerns that, while a measure may include projects in its expenditure plan that strike a popular balance along other dimensions of equity, actual project delivery may not be carefully specified or, if specified, not be implemented according to the expenditure plan. Of the eight measures for which opponents argued there were temporal equity issues, four measures passed and four measures failed.

There is a recent trend in the LOST expenditure plans towards a temporal "tiering" of projects, in which specific projects are prioritized to receive funding earlier and others later. In some counties, additional projects are listed in the ballot measure expenditure plan conditioned upon the availability of funding after the priority projects are completed. While not as explicit as tiering, still other LOST expenditure plans list projected timelines of major capital projects included in the measure.

Prioritizing projects through tiering was done in the expenditure plans for Madera Measure T (2006) (see Figure 22) and Fresno Measure C (2006) (see Figure 23 and Figure 24).

Figure 22. Madera Measure A (2006) Project Tiering

20-YEAR MEASURE 1/2 CENT TRANSPORTATION SALES TAX

1. Regional Streets and Highways Program

Candidate Capacity Increasing Projects and Recommended Priorities

Approved by the Steering Committee on March 16, 2006 and approved by local agencies in June 2006

Map #	Route	Limits	Description	Cost[*1]	Other Funds (at least 20%)[*2]	Measure + STIP/TE (Cost Minus Other Funds)[*3]	Balance of Measure & STIP/TE[*4]
							$164,354,000
			TIER 1 PROJECTS[*5]				
1A	SR 41	Between SR 145 and Road 200	Construct passing lanes	$30,560,000	$6,112,000	$24,448,000	$139,906,000
1B	SR 145 [*7]	At SR 99	Reconstruct/widen interchange	$6,800,000	$6,800,000	$0	$139,906,000
1C	4th Street	At SR 99	Reconstruct/widen interchange	$11,000,000	$2,200,000	$8,800,000	$131,106,000
1D	Ave 12 [*8 *9]	At SR 99	Reconstruct/widen interchange	$39,292,000	$19,646,000	$19,646,000	$111,460,000
1E	SR 41 [*8]	Ave 10 to Ave 12 w/interchange at Ave 12	Extend freeway/build interchange	$46,400,000	$23,200,000	$23,200,000	$88,260,000
1F	SR 233 [*9 *10]	At SR 99	Reconstruct/widen interchange	$35,000,000	$25,000,000	$10,000,000	$78,260,000
1G	Ellis/Avenue 16	Granada to Road 26 & new SR99 Overcrossing	Reconstruct street & Construct overcrossing	$25,447,665	$12,723,833	$12,723,833	$65,536,168
1H	Gateway Ave	Cleveland to Yosemite	Reconstruct/widen from 2 to 4 lanes	$3,200,000	$640,000	$2,560,000	$62,976,168
1I	Gateway (SR 145)	Yosemite to SR 99	Reconstruct/widen from 2 to 4 lanes	$2,800,000	$560,000	$2,240,000	$60,736,168
1J	Cleveland	Schnoor to SR 99	Reconstruct/widen from 4 to 6 lanes	$3,400,000	$680,000	$2,720,000	$58,016,168
1K	SR 41	Road 420 to SR 49 (South of Oakhurst)	Widen from 2 to 4 lanes	$22,900,000	$4,580,000	$18,320,000	$39,696,168
1L	AVE. 12 [*9]	Road 38 to SR 41	2 to 4 lanes	$21,239,169	$10,619,585	$10,619,585	$29,076,583
1M	Rd 29	Olive to Ave 13	2 to 4 lanes	$4,857,311	$1,943,000	$2,914,311	$26,162,272
1N	4th	SR 99 to Lake	Reconstruct/widen from 2 to 4 lanes w/RR Xing	$1,800,000	$360,000	$1,440,000	$24,722,272
1O	Ave 12	SR 99 to Road 32	2 to 4 lanes	$12,200,000	$2,440,000	$9,760,000	$14,962,272
1P	Rd 29 [*11]	Ave 12 to Ave 13	2 to 4 lanes and realignment	$9,567,994	$3,828,057	$5,739,937	$9,222,335
1Q	Gateway	At SR 99	Reconstruct/widen interchange	$6,650,000	$0	$6,650,000	$2,572,335
				$283,114,139	$121,332,474	$161,781,665	
			TIER 2 PROJECTS (if funding available)[*6]				
2A	Cleveland	Tozer to Lake	Restripe to 4 lanes	$280,000	$280,000	$0	$0
2B	Children's Blvd	SR 41 NB Ramps to Peck Blvd.	6 to 8 lanes	$3,800,795	$3,800,795	$0	$0
2C	Ave 12	SR 41 to North Rio Mesa Blvd	2 to 6 lanes	$2,451,208	$2,451,208	$0	$0
2D	Airport	Ave 17 to Yeager	Restripe to 4 lanes	$270,000	$270,000	$0	$0
2E	Children's Blvd	Road 401/2 to Peck Blvd	2/4 to 6 lanes	$2,280,000	$2,280,000	$0	$0
2F	Cleveland	Lake to Rd. 26 (Country Club Dr.)	Restripe to 4 lanes	$30,000	$30,000	$0	$0
2G	Schnoor	Trevor to Sunset	Pavement rehab & restripe to 4 lanes	$830,000	$830,000	$0	$0
2H	Yeager	Airport to Falcon	Pavement rehab & restripe to 4 lanes	$270,000	$270,000	$0	$0
2I	Ave 10	Road 401/2 to SR 41	2 to 4 lanes	$4,336,462	$4,336,462	$0	$0
2J	Peck	At Children's Blvd	2 to 6 lanes	$2,933,441	$2,933,441	$0	$0
2K	Rd 30 1/2	Ave 12 to Ave 13	2 to 4 lanes	$4,830,687	$4,830,687	$0	$0
2L	Sunset/4th	RR Xing/K to SR 99	Reconstruct/widen from 2 to 4 lanes w/RR Xing	$1,600,000	$320,000	$1,280,000	$0
2M	Lake	4th to Cleveland	Reconstruct/widen from 2 to 4 lanes	$1,600,000	$320,000	$1,280,000	$0
2N	Sunrise	B Street to Road 28	Reconstruct/widen from 2 to 4 lanes	$1,600,000	$320,000	$1,280,000	$0
2O	SR 41	NB On Ramp/SR 41 @ Children's Blvd	1 to 2 lanes	$20,200,000	$20,200,000	$0	$0
2P	SR 41	Madera County Ln to Ave 10	4 to 6 lanes	$4,700,000	$4,700,000	$0	$0
2Q	Cleveland	Rd 26 to SR 99	Reconstruct/widen from 4 to 6 lanes w/RR Xing	$8,300,000	$1,660,000	$6,640,000	$0
2R	Fig Tree Overpass [*12]	Over SR 99	Overpass	$10,800,000	$10,800,000	$0	$0
2S	Avenue 26 [*12]	SR 99 to Coronado	Widen to 4 lanes	$5,400,000	$5,400,000	$0	$0
				$76,512,593	$66,032,593	$10,480,000	
				$359,626,732	$187,365,067	$172,261,665	

Figure 23. Fresno Measure C (2006) Tier 1 Urban Projects

MEASURE "C" EXTENSION EXPENDITURE PLAN

REGIONAL TRANSPORTATION FUNDING PROGRAM - URBAN TIER 1

URBAN AREA PROJECTS ASSUMING ALLOCATION OF 50% OF REGIONAL TRANSPORTATION FUNDING PROGRAM FUNDS

(The Tier 1 projects are in a generalized priority order. The funding order would be determined by Fresno COG during preparation of the biennial Expenditure Plan Update and could be affected by project cost benefit, project readiness, funding availability, etc.)

Project Identifier	Project Name	Project Limits	Project Description	Uninflated Costs	Inflated Costs *1	Cumulative Inflated Costs
Tier 1 Projects						
A	SR 180 East	Clovis to Temperance	New 4 Lane Freeway within 6 Lane Right of Way	$ 33,479,701	$ 63,169,246	$ 63,169,246
B	SR 180 West	Brawley to Hughes/ West	Funding Shortfall	$ 6,995,758	$ 13,199,544	$ 76,368,790
C	SR 41/SR 168/SR 180	Added Capacity for Safe Connection Between State Routes	New Braided Ramps	$ 29,981,821	$ 56,569,474	$ 132,938,265
D	Willow Avenue	Barstow to Copper	Complete to 6 Lane Divided//retrofit bike paths	$ 13,991,517	$ 26,399,088	$ 159,337,353
E	Temperance Avenue	Bullard to Shepherd	Widen to 4 Lane Divided	$ 5,996,364	$ 11,313,895	$ 170,651,247
F	Ventura Blvd.	SR 41 to SR 99	Widen to 4 Lane Divided	$ 5,000,000	$ 9,428,246	$ 180,079,493
G	SR 99	Monterey Avenue	Bridge improvement/Improved acess to downtown from West Fresno	$ 1,000,000	$ 1,885,649	$ 181,965,142
H	California Avenue	Ventura to West	Widen to 4 Lane Divided	$ 7,995,152	$ 15,085,193	$ 197,050,335
I	Peach Avenue	SR 180 to Jensen Avenue	Widen to 4 Lane Divided	$ 24,984,851	$ 47,141,229	$ 244,191,564
J	SR 41	SB Aux. Lane, Tulare to "O"	Widen/Aux. Lanes and Improve On & Off Ramps	$ 3,000,000	$ 5,656,947	$ 249,848,511
K	Herndon Avenue	SR 99 to DeWolf	Complete to 6 Lane Divided/retrofit bike paths	$ 30,000,000	$ 56,569,474	$ 306,417,986
L	Shaw	Sunnyside - McCall	Complete to 6 Lane divided traffic signal upgrades, grade crossing	$ 31,580,852	$ 59,586,513	$ 366,004,499
M	SR 99	North & Cedar Avenue	Improve Interchange	$ 24,984,851	$ 47,141,229	$ 413,145,727
N	Veteran's Boulevard	Herndon to Grantland	Connection and grade separation	$ 60,000,000	$ 113,138,949	$ 526,284,676
			Urban Tier 1 Total		**$ 526,284,676**	

Figure 24. Fresno Measure C (2006) Tier 2 Urban Projects

MEASURE "C" EXTENSION EXPENDITURE PLAN

REGIONAL TRANSPORTATION FUNDING PROGRAM - URBAN TIER 2

URBAN AREA PROJECTS ASSUMING ALLOCATION OF 50% OF REGIONAL TRANSPORTATION FUNDING PROGRAM FUNDS

(In the event all of the Tier 1 projects are fully funded and there are remaining Measure "C" funds, those remaining funds would be used for Tier 2 projects. The Tier 2 projects are not listed in any priority order and the funding order would be at the discretion of Fresno COG and the Fresno County Transportation Authority.)

Project Identifier	Project Name	Project Limits	Project Description	Uninflated Costs	Inflated Costs *1	Cumulative Inflated Costs
Tier 2 Projects						
AA	SR 99	Stanislaus & Tuolumne (Dntn Access)	Improve On & Off Ramps	$ 7,995,152	$ 15,085,193	$ 541,369,869
BB	SR 41	"O" St. to Herndon	Widen/Aux. Lanes and Improve On & Off Ramps	$ 162,000,000	$ 305,475,161	$ 846,845,030
CC	Friant Road	Shepherd to Copper	Widen to 6 Lane Divided	$ 9,993,940	$ 18,856,491	$ 865,701,521
DD	SR 99	Shaw Avenue	Improve Interchange	$ 34,978,792	$ 65,997,720	$ 931,699,241
EE	Traffic Synchronization	Selected Regionally Significant Corridors	Signal Synchronization (Coordination of Traffic Signals) in Clovis & Fresno	$ 24,984,851	$ 47,141,229	$ 978,840,469
FF	Herndon Avenue	DeWolf to McCall	Widen to 4 Lane Divided	$ 5,796,485	$ 10,936,765	$ 989,777,234
GG	SR 99	Fresno to Clinton	Add North & Southbound Auxillary Lanes	$ 59,963,643	$ 113,138,949	$ 1,102,916,183
HH	Shields Avenue	Blackstone Avenue	Add Dual Left Turn Lanes to the Intersection	$ 1,998,788	$ 3,771,298	$ 1,106,687,481
II	Shields Avenue	SR 99	New Overcrossing	$ 59,963,643	$ 113,138,949	$ 1,219,826,430
JJ	McCall Avenue	Griffith to Shaw	Widen to 6 Lane Divided	$ 10,993,334	$ 20,742,141	$ 1,240,568,570
KK	Shepherd Avenue	Cedar to SR 168	Widen to 4 Lane Divided	$ 15,490,608	$ 29,227,562	$ 1,269,796,132
LL	SR 41	McKinley to Shields	Add North and Southbound Auxillary Lanes	$ 9,993,940	$ 18,856,491	$ 1,288,652,624
MM	SR 99	Ashlan to Madera County Line	Widen to 6 Lane Freeway	$ 29,981,821	$ 56,569,474	$ 1,345,222,098
NN	Traffic Management Center	Caltrans		$ 9,993,940	$ 18,856,491	$ 1,364,078,589
OO	Minnewawa	Shepherd to Copper	Complete to 4 lanes	$ 34,978,792	$ 65,997,720	$ 1,430,076,309
			Urban Tier 2 Total		**$ 903,791,634**	
			Urban Projects Total		**$ 1,430,076,309**	

The figures above show how urban projects proposed in the expenditure plan for Fresno County's 2006 Measure C are divided into priority tiers. The second-tier projects will only be built if additional Measure C revenue remains after the first tier projects are completed. Opponents of the measure make clear their skepticism of the promises in the expenditure plan's tiering:

> *There's a map showing new projects to be bought with your sales tax dollars. But read the fine print. Only half the map's road improvements will be built. And most will be built with $500 Million of state and federal gas taxes our local governments receive without Measure C.*

With respect to prioritizing maintenance versus new construction, both supporters and opponents of Sacramento Measure B (2016) also debated temporal equity issues surrounding a proposed "Fix it First" policy that ostensibly prioritized repairs and maintenance over new capital projects. Supporters of the measure argued:

> *Measure B requires cities and the county to "Fix it First", which means they must fill potholes, repave streets and fix bridges before they can spend more money on new freeway or transit projects. Measure B requires 75% of all funds to be used for "Fix it First" repair and maintenance work during the first five years. Measure B will bring aging streets and roads up to modern standards that serve all users, including bicyclists, families and school children, and transit riders.*

While opponents were far more skeptical about whether the "Fix it First" policy would have any teeth in the face of public officials who wanted to fund popular new projects:

> *What proponents won't tell you is that there's already a half-cent sales tax, Measure A, that raises a gusher of revenue for roads/transit: $109 Million last year, $659 Million since 2009 and will generate $3 to $4 Billion through 2039. Our roads are in poor shape because Measure A funds are spent mostly on new construction while maintenance is badly neglected. Measure B will double the transportation tax but won't fix the problem- it compounds it. Measure B is cleverly crafted by politicians to give the misleading impression that it will fix our roads. In fact, the "Fix It First" promise lasts only 5 years and can be waived by the politicians at any time. Measure B expenditures are heavily weighted towards big-budget construction projects that will enrich politically- connected contractors but won't fix our roads.*

Temporal equity issues expand beyond explicitly prioritizing certain projects to encompass issues of accountability. LOST measure proponents must convince voters that they will deliver the projects they promise in the expenditure plan. This can be a hard sell, as illustrated by arguments against Placer County's Measure M (2016):

> *The Ballot Summary and Argument in Favor list a grab bag of popular transportation projects that may never be constructed, even if we vote to raise our taxes again. Don't be fooled into thinking that a vote for Measure M will magically produce*

enough money to pay for everything on their list. Their own figures show those projects will cost more than Measure M will produce! They [the Placer County Transportation Planning Agency] are hoping to obtain funds from other sources, but we expect them to come back asking for another tax increase.

Accountability issues are particularly prominent in counties that have a previously enacted a LOST. Proponents frequently point to popular projects funded all or in part be the current/previous LOST in arguing for the new measure. Opponents, by contrast, tend to point out unmet promises from previous measures. For example, the ballot arguments in opposition to Fresno's Measure C (2006) and Sacramento's Measure B directly claim that previous measures did not live up to their promises. Given these debates over accountability, the project tiering (discussed above) could be a way for LOST measure backers to insulate themselves from future allegations of not delivering on their promises.

Ballot arguments have also debated whether expenditures will reflect the needs of residents across the entire county in question over the life of the measure. As discussed below, Santa Barbara Measure D (2006) and Measure A (2008) divided investments between the northern and southern portions of the County, readjusting investment in the 2008 measure to distribute revenues equally between these two areas. Despite this, opponents of the measure argued that the "population will change over time so dividing it north and south 50/50 may not hold over twenty years." Similar regional distributions include divisions between urban and rural expenditures in Fresno Measure C (2006), and between eastern and western Merced County in Measure V (2016).

CASES IN POINT: ARGUING FOR EQUITY IN LOS ANGELES AND SANTA BARBARA

Los Angeles Measures J (2012) and M (2016)

Due to Los Angeles County's size and diversity, its officials have expended substantial effort to balance and distribute the benefits of LOST measures in order to maximize their likelihood of passing. By the same token, the county's spatial and socioeconomic diversity has given opponents many opportunities to claim potential inequities in the various expenditure plans. Equity arguments arose in Los Angeles' two most recent measures: Measure J (2012) and Measure M (2016). Measure J (2012) proposed a 30-year extension of the existing 30-year, half-cent sales tax imposed under the successful Measure R (2008); had it passed, Measure J would have allowed LA Metro, southern California's largest public transit operator, to borrow against future Measure J revenues to expedite the construction of several planned rail transit lines and other projects. Most of the proposed Measure J expenditures focused on accelerating projects that had long been part of the Regional Transportation Plan, but were planned or repeatedly postponed due to lack of funding.

Supporters argued that Measure J was a "countywide plan" that accelerated projects already approved by voters under Measure R. Perhaps not surprisingly, Metro's implied need for additional Measure J funding to deliver projects already promised in previous approved LOST measures raised accountability objections from opponents that Metro had not, and would not, deliver what it promised. Measure J opponents explicitly linked geographic and income inequity issues in their arguments. They argued that the expenditure plan proposed in the measure prioritized large capital projects (i.e., Metro rail expansion) that would benefit wealthy communities at the expense of poorer communities burdened by the additional tax (see Figure 25). They argued that the proposed investments were not aligned with population distribution, as the San Fernando Valley represented 37 percent of the county's population but would only receive 13 percent of expenditures from the LOST-generated revenues. Opponents also raised issues of temporal equity, arguing that local return "disenfranchises growing cities and unincorporated communities + by tying funding to frozen 2004 population levels," and would reduce the proportion of funding received per capita in cities experiencing above-average population growth. Opponents also argued that some residents "will be paying taxes until 2069 that will never be invested in their communities," referring to the measure as "a blank check that our kids and grandkids will pay for the next 60 years."

Figure 25. Los Angeles Metro Measure J (2012) Map of Project Accelerations Proposed

Source: LA Metro (n.d.)

Measure J ultimately failed (having received 66.11% of the vote), and Los Angeles officials put another LOST measure, Measure M, on the ballot in 2016. Measure M was a permanent sales tax increase of half-cent (referred to as a "no sunset" LOST measure). The measure's expenditure plan included a tiering of projects over the next 30 years, with opportunities for reevaluating the project list at ten-year intervals. Measure M expenditures prioritized rail infrastructure and local roads funding over funding for highway improvements, which prompted opponents to lament that highway improvements were not slated to be completed for decades. Figure 26 shows the map of projects proposed in Measure M.

Figure 26. Los Angeles Measure M (2016) Project Map

Source: LA Metro (2017)

Opponents objected to the prioritization of rail projects on multiple equity grounds, arguing:

> *Measure M postpones transportation projects for blue collar neighborhoods – but projects for affluent communities move to the front of the line. MTA has a poor record of safety and a history of prioritizing wealthy communities, violating civil rights, and disenfranchising the poor and people of color who need effective transit the most.*

They further drew attention to the burden of a sales tax on low income residents, stating that "Measure M taxes people who cannot afford it, spreads social and racial injustice and makes discrimination worse."

The arguments raised by opponents to both Los Angeles measure drew attention to multiple types of equity issues and employed complex arguments, showing how equity issues are often intertwined in practice. Opponents' equity arguments notwithstanding, Measure M passed in 2016 with 71 percent of the vote.

Santa Barbara Measures D (2006) and A (2008)

The success of Santa Barbara Measure A in 2008, following the failure of Santa Barbara Measure D in 2006, demonstrates the geographic balancing act measure proponents must perfect in order to pass a LOST. Measure D's failure has been partially attributed to an inequitable distribution of revenues between the Northern and Southern areas of the county. The Los Padres National Forest and the Santa Ynez Mountain range divide the rural northern portion of the County from the wealthy, more urban part of the county that stretches along the coastline and surrounds the city of Santa Barbara. Figure 27 shows the level of support for the measure in each census tract relative to the countywide average (54%). Areas with above average support for the measure are green, while areas that had below average support are purple. Darker shades indicate a larger deviation from average voter support.

While many intertwined issues can determine the success of a measure, local newspapers described the measure as "a victim of chronic animosities between the county's fiscally conservative North and its tax-and-spend South" (Welsh 2008). The main flashpoint for these concerns was the large portion of measure revenues dedicated to non-automobile modes that would primarily benefit south-county residents (Meagher 2008). Measure D dedicated 50 percent of revenues to local return and 50 percent to regional projects. Over 64 percent of the regional program (32% of the total expenditures) was dedicated to "alternatives to the automobile" (Santa Barbara County Association of Governments 2006, 2), including $42 million for bike lanes and $126 million for a proposed commuter rail system that would run along the coast (Meagher 2008). The geographic distribution of support for the measure in Figure 27 shows that there was greater support of the measure in census tracts closer to the location of these planned investments. Likewise, this case demonstrates how modal funding choices and geographic equity concerns are often related.

After the defeat of Measure D, proponents revised their expenditure plan and tried again. In 2008, proponents placed Measure A on the ballot, with an expenditure plan that was geared towards assuaging concerns over geographic equity. The regional program was reduced to a single project, widening the 101 Freeway, which accounted for 13 percent of planned expenditures. The rest of the measure was split evenly between investment in the Northern and Southern areas of the County, and was marketed as such. Local return was increased from 50 percent to 70 percent of measure revenues. Measure A passed with 79 percent of the vote. Figure 28 below shows the level of support for the measure for each census tract in the relative to the average level of support countywide. Comparing Figure 27 and Figure 28, one can see that the redistribution of expenditures increased overall support for the measure and also reduced the geographic variability of measure support. Support was still strongest along the coast and weaker in the remainder of the county, but the difference between levels of support was greatly reduced. In short, these two figures illustrate how increased attention to geographic equity concerns contributed to the success of Measure A in Santa Barbara.

Figure 27. Santa Barbara County Voter Support for Measure D, 2006

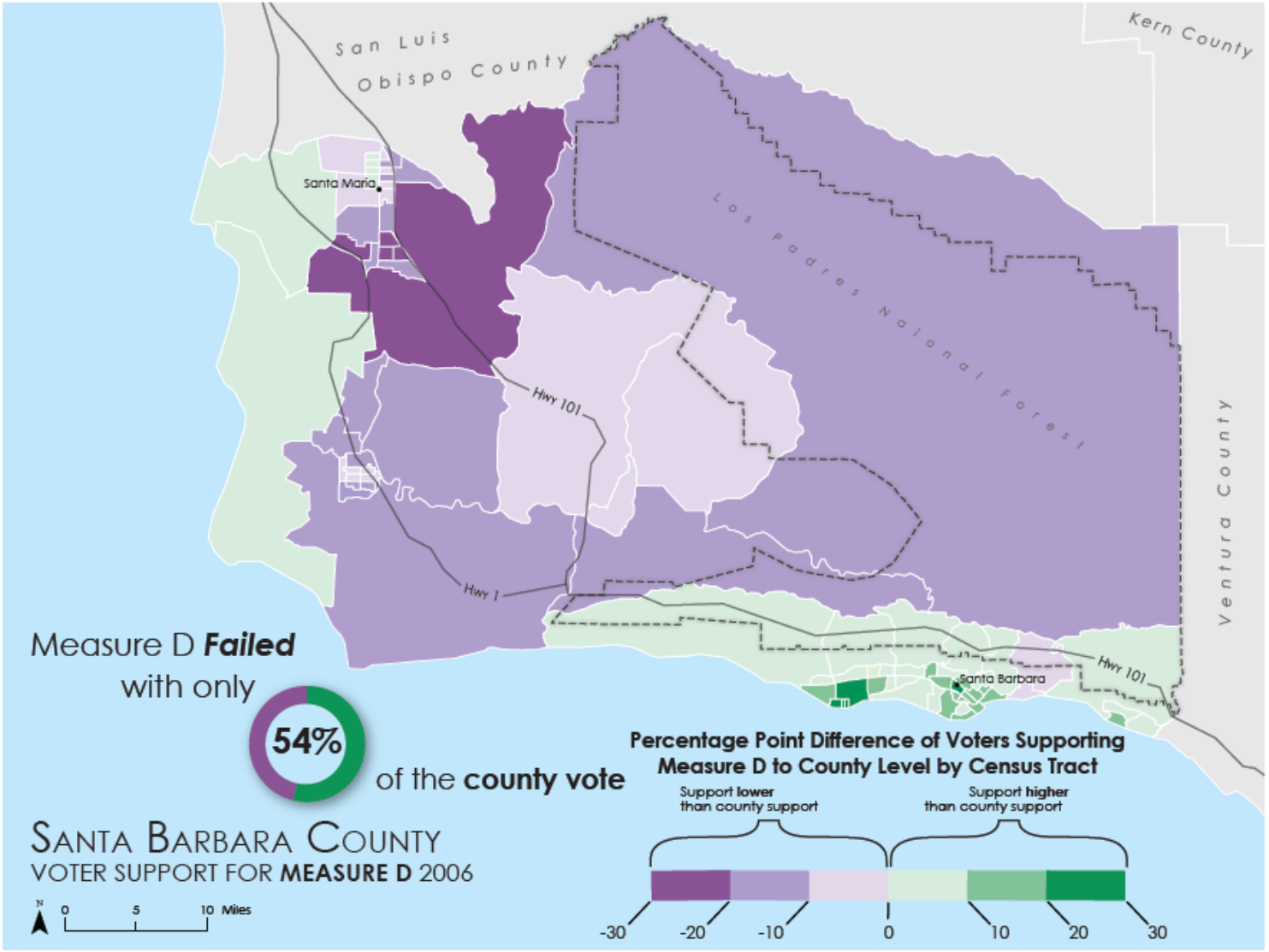
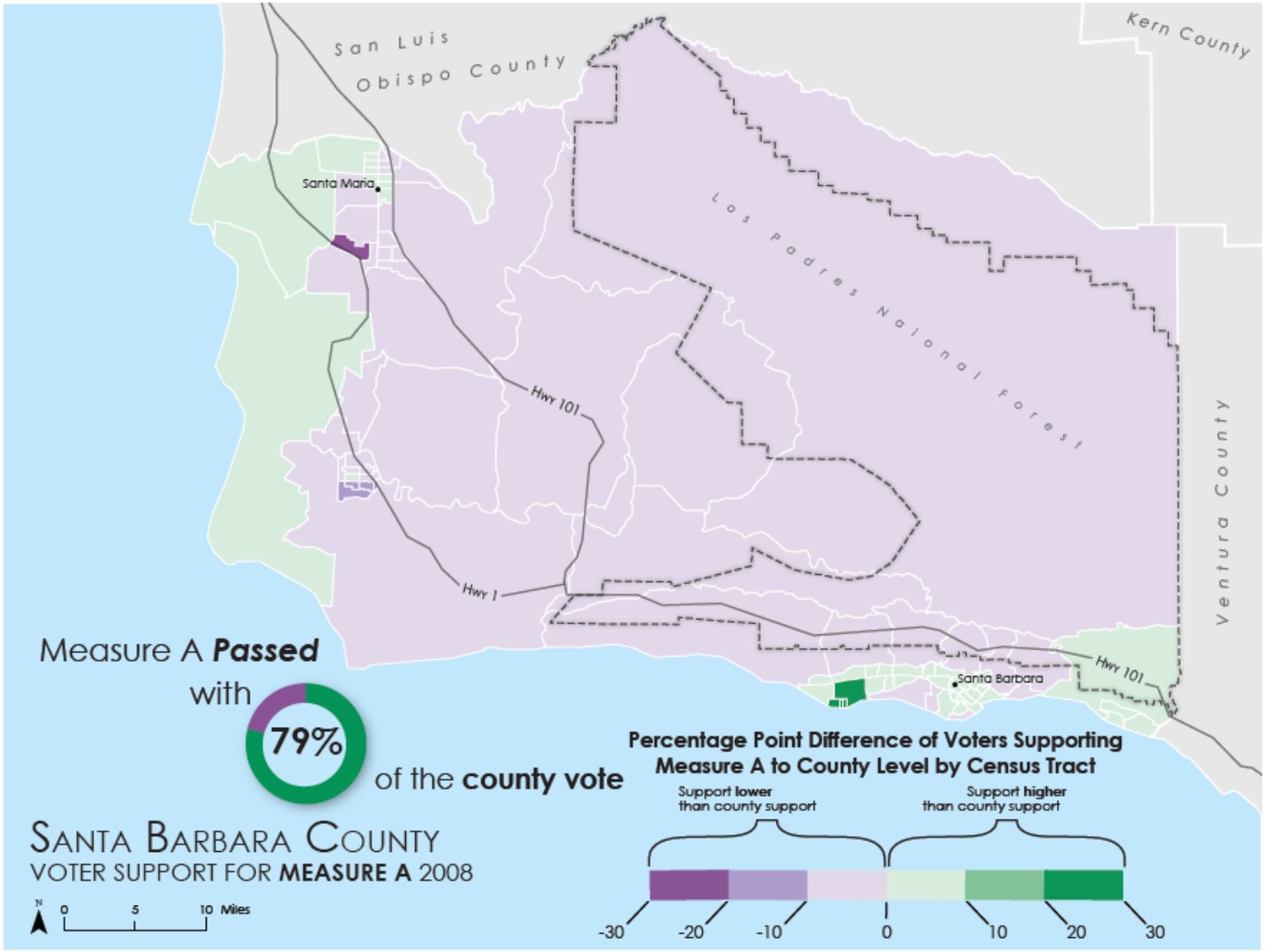


Figure 28. Santa Barbara County Voter Support for Measure A, 2008



BALLOT ARGUMENT TEXTUAL ANALYSIS FINDINGS

One way to systematically analyze the views of and debates about LOSTs for transportation is to examine the language used in debating their merits. To build on the ballot argument quotations presented above, we more systematically evaluated the text used in ballot arguments using specially designed software for this purpose. This software allows us to, among many other things, build "word clouds" that summarize the frequency of terms used in graphical form. These work clouds, and our interpretations of them, are presented and discussed in turn below.

All Ballot Arguments

Figure 29 displays the relative frequencies of the most often used words in LOST ballot arguments,[21] while Figure 30 and Figure 31 compare the frequency of words used in supporting and opposing arguments to investigate whether there is a demonstrable difference in substance or tone between supporters' and opponents' arguments. This textual analysis shows that equity concerns play a relatively minor explicit role in the ballot arguments, compared with other with other issues and concerns. Congestion and traffic are the most commonly used transportation-related words, and are raised frequently by both supporters and opponents of measures. Viewed holistically, the most common issue raised in the ballot arguments may be whether and to what extent the funds raised by the LOST measure will be effectively deployed to alleviate traffic in the county in question.

The word "local" is, of course, the first word in "Local Option Sales Tax," and perhaps, not surprisingly, one of the most frequently used words in ballot arguments. LOSTs came about as part of the devolution of transportation funding. Currently, local funding is required to match many grants of federal and state transportation funds, and the term "matching" appears frequently in ballot argument text as well. The geographic scale of the "local" appears most often to refer to the county vis-a-vis the state. But the word "local" is also used in reference to sub-geographies of counties, such as to note that measure revenue will relieve congestion or repair streets at a city or even neighborhood level. But the use of the term "local" differs between LOST supporters and opponents: while supporters used the term 135 times in the 37 ballot arguments we examined, it was mentioned only 26 times by opponents. Other asymmetrically common words in supporting arguments are "repair" and "potholes," as proponents commonly stress the levels of funding dedicated to local road maintenance.

The term "accountability" features prominently in both supporting and opposing arguments. Supporters often stress the accountability safeguards in place to ensure that revenues are distributed as stated in the expenditure plan, while opponents frequently attack the strength of these safeguards. Accountability is also discussed in terms of whether a measure-sponsoring agency has delivered on past promises, including those under previously enacted LOST measures. Along these lines, "promised" appears 35 times in opposing arguments, as compared to just nine times in supporting arguments.

[21] Note that some of these terms are conceptually similar, which mean that the ideas conveyed by similar terms may be more common than the size of any of the individual terms would suggest. For example, while transportation engineers may distinguish "highway" from "freeway," they appear to be used interchangeably in the ballot arguments analyzed here.

Table 15 below shows the most frequently used words by modal category. As discussed above, automobile-oriented concerns such as traffic and congestion feature most prominently in LOST measure ballot arguments, appearing 1,161 times. But if we look at words that indicate modal funding categories, local road repair and maintenance are used most frequently (474 times). Words pertaining to transit (383) were used slightly more than words related exclusively to highways (332). Words pertaining to bicycle and pedestrian infrastructure were used the least frequently (117), though in a much greater proportion to then their comparative share of funding in expenditure plans would suggest.

Table 15. Words Use in Ballot Arguments by Modal Category

Automobile Infrastructure	**1,161**
Highway	332
Local Roads	474
Cars/Driving	355
Transit	**383**
Bike/pedestrian	**117**

Figure 29. Frequency of Words Used in All Ballot Arguments

Figure 30. Words Appearing Most Frequently in Arguments Urging a Vote in Favor of a Measure

Figure 31. Words Appearing Most Frequently in Arguments Urging a Vote Against a Measure

DISCUSSION

How Often is Each of the Five Types of Equity Raised in Ballot Arguments?

We find that equity rarely features prominently in ballot arguments; instead most arguments focus on whether the projects planned under the measure will reduce congestion. Although it is rarely the most prominent issue, equity issues do frequently appear—either explicitly or implicitly. Thirty-two of the 37 measures (86%) for which we reviewed the ballot arguments directly mention or allude to equity questions. Appendix C. List of Ballot Arguments shows the measures that raised equity concerns in ballot arguments, as well as the frequency and type of equity arguments raised in each measure.

We find that some equity issues are raised more frequently than others. Modal funding equity is the most frequently raised equity topic. This is likely because LOST expenditure plans are increasingly comprised of lists of projects with corresponding funding amounts. Such lists cast funding allocations across modes in sharp relief and form the basis for arguments over the funding of one mode relative to another. In addition, many expenditure plans summarize the overall modal funding breakdown of the measure, which makes it that much easier for proponents and opponents to debate, for example, the funding of buses versus rail, or public transit versus highways.

Previous research has documented that a geographically balanced distribution of expenditures is critical to the success of a proposed measure, and several measure failures have been attributed to a lack of geographic equity (Hannay and Wachs 2007, Haas et al. 2000). Despite this apparent importance, we do not find significant attention devoted to geographic equity in ballot arguments. First, although 28 measures mention geographic equity (Table 10), most of these references are made by supporters arguing that all areas of the county will benefit, and concerns over geographic inequity are raised only nine times in all ballot measures (Table 12). How can we square this apparent primacy of geographic equity in the literature with the dearth of complaints over geographic inequity in the ballot arguments? One possible interpretation is that the central importance of geographic equity to the success of LOST measures has become "conventional wisdom" among those crafting ballot measures, such that the issue is largely addressed before the measures ever appear on the ballot. Also, given that our analysis focuses on more recent LOST measures (see Appendix C. List of Ballot Arguments), we may have excluded from our analysis earlier measures that engendered more contentious geographic debates.

Secondly, references to local return are infrequent considering that a(n often substantial) portion of almost every measure's revenue is slated to be returned to cities. For this research, we only categorized arguments that directly addressed flexible funds returned to the cities as "local return," and did not include arguments that discussed funding for local road improvements (since local road funding may not be distributed through each city). It is possible the people crafting ballot argument language prefer to focus on the benefits of local return (mostly, funding for local roads repair and maintenance) than the financial mechanism used to fund these benefits.

Income equity issues are mentioned in the ballot arguments for twelve measures, ten of which directly state how measures will affect lower-income residents and two of which specifically characterize seniors as low-income residents. As discussed in the literature review, sales taxes are regressive with respect to income, with lower-income residents typically paying a larger share of their income on these taxes than middle- and upper-income people. We analyzed the regressivity of six case study LOST measures in Chapter V. Burdened by the Ballot Box: Tax Burdens Imposed by California LOST Measures, and found them all to be highly regressive, as predicted by the literature. Yet, only two measures (Placer County Measure M (2016) and Contra Costa Measure X (2016)) addressed potential income inequity issues in the ballot arguments by saying that sales tax finance hurts low-income residents the most.

We also find that temporal equity concerns are raised with some (7) LOST measures. For the purposes of our analysis, we defined temporal equity concerns as debates over the timing of proposed expenditure plan projects—though this may not capture all the temporal equity issues inherent to

these measures. For example, temporal equity issues may also encompass project tiering, future reprogramming flexibility through the use of amendments, and accountability issues that result from previous measures not delivering what promised. Such issues are frequently raised with respect to LOSTs, though less often in ballot arguments.

We Find No Link Between Ballot Arguments that Raise Equity Issues and Measure Passage Rates

We do not find any obvious connection between equity debates in ballot arguments and whether the measure passed or failed. The most salient aspect of this finding is that inequity rhetoric does not necessarily dissuade voters. Further, we find that equity concerns often arise that pit one class of equity against another. For example, geographic equity may be achieved by providing a high level of local return at the expense of providing transit fare subsidies to all county residents. Similarly, every measure expenditure plan makes choices to distribute funding among multiple transportation modes.[22] Because there are inevitably winners and losers in the distribution of limited resources in all the measures, it is perhaps not surprising that virtually all LOST measures engender at least some modal equity debates.

It bears repeating that we only consider here what was stated in the ballot arguments, and we do not evaluate the veracity (or coherence) of the arguments, such as whether they accurately represent the expenditure plans. As discussed in the literature review, the success of a proposed measure is dependent on many factors, some of which are specific to what the measure provides (such as a geographically balanced distribution of funding). But the literature also suggests that most factors that influence success are external to the measure's features, including economic conditions, voter turnout, the number and type of other measures on the ballot, other candidates on the ballot, as well as factors. Thus, even if the ballot argument rhetoric reflects serious equity concerns with the measure, the evidence on passage rates suggests that their ultimate influence on passage rates are less obvious.

Argumentation and Debate

The language of supporting arguments

We observed in our analysis a rhetorical divide between the ways in which supporters and opponents of measures confront potential equity issues of LOSTs. Supporting arguments speak only in praise of how measures will provide funding that meets the many transportation needs of county residents. Supporters typically touch upon equity issues only to preemptively posit that equity issues are well-addressed, particularly with how the revenues will be distributed. This is often done subtly, and certain words or phrases can be found in many supporting arguments: "affordable" is used to preempt concerns about income equity; "local" is used to signal a fair geographical distribution; "balance" and "choice" preface discussions of funding distributions among competing modes; and the word "every" is frequently used to present the measure as inclusive from all perspectives of equity.

[22] This is true even if the expenditure plan funds only transit (Santa Clara Measure B, 2008) or road improvements (Humboldt County Measure U, 2016).

However, these preemptive equity signals appear in only a minority of supporting ballot arguments, which, again, are heavily dominated by lists of projects the measure will fund. After all, why would supporters of a measure, whose argument is presented first in the ballot pamphlet, broach potential equity issues? Supporters can respond (if they choose) in the rebuttal arguments, though frequently they do not, opting instead to ignore criticisms by opponents in favor of simply reiterating the initial supporting arguments. For these reasons, we use the term "general equity" to describe most supporting arguments that present themselves as equitable without specifying any tradeoffs necessary to achieve an equitable balance of expenditures.

Rhetoric versus statistics in arguments

Our analysis reveals two distinct rhetorical strategies used in ballot argument equity discussions. Some discussions of equity attempt to persuade voters with statistics and claims regarding probably policy outcomes. This is particularly evident in discussions over modal funding equity, where opponents frequently point to the mismatch between modal funding and modal usage distributions. Ballot arguments also frequently discuss whether a measure's benefits are distributed fairly according to the geographic distribution and density of the county population.

Other ballot arguments take a more visceral, rhetorical approach, appealing to the emotions or specific group identities of voters. This duality is most evident in discussions of modal funding equity, where for every opposition argument based on statistics, there is another that is disdainful about transit. Bus transport in particular draws the ire of measure opponents, while rail transit is frequently dismissed as an expensive means of providing transportation for the wealthy. Measure supporters also use rhetorical cues to garner support for measures, for example by noting their benefits for disadvantaged groups, such as seniors and the disabled, to whom most voters are sympathetic.

Interplay Between Differing Conceptions of Equity

We also find a lively interaction among equity issues inherent to the provision of transportation services. As discussed in the literature review, there are many conceptions of equity; for this project, we focused on five types of equity that appeared prominently in the literature or emerged from our analysis. Investment choices can reveal multiple equity concerns, which are illustrated perhaps most vividly in debates over the investment of a large share of revenues in a single large-scale capital project. For example, dedicating a substantial proportion of revenues to a major highway expansion can raise concerns because every resident pays the sales tax but 1) the investment does not benefit county residents who do not use the highway, 2) funding highways at the expense of public transit penalizes low-income residents who cannot afford a car, and 3) the investment does not benefit those who choose or would choose to use transit.

As discussed above, measure expenditure plans are always a balancing act, and the most equitable outcome may not be the one that results in the greatest probability that a measure will pass. Measure-sponsoring agencies have grown increasingly sophisticated, and typically use focus groups to test expenditure plans and maximize their general appeal to voters (Crabbe et al. 2005). While measure proponents typically seek to assuage concerns by returning flexible funds to local jurisdictions, it is almost always the case that supermajority support is predicated on some groups or locations receiving less than what they consider their "fair share." For example, the most recent Los Angeles LOST, Measure M (2016), was successful in implementing a permanent half-cent sales tax

over the noisy protestations of South Bay cities that felt slighted by the expenditure plan (Nelson 2016).

Place Specificity Guides Debates Over Investment

Another key finding of this research is that ballot arguments, and the expenditure plans over which they argue, are contextually dependent on a county's transportation system and travel patterns, as well as local political economy. Counties are particularly varied in their transit systems and needs, where they play central roles in urban counties like San Francisco and Los Angeles, but minor (or less) roles in rural and agricultural counties. Perhaps of any equity dimension, modal equity is the most difficult to generalize or find patterns in due to its high level of place specificity.

The types of arguments raised in a measure are influenced by whether the county is urban, suburban, or rural. The more urban the county, the more likely it is to have larger transit systems that include rail. This results in a high variation in equity debates in more urban settings, reflecting more modes among which to divide money. For example, only counties in the Bay Area debate the merits and modal equity implications of providing ferry services. Suburban counties are likely to focus debates about funding transit modes at the expense of automobile infrastructure, and are more likely to include negative rhetoric towards transit investment. Furthermore, transit debates in suburban counties often center on funding commuter rail that provides transportation to job centers in more urban counties, as in Orange and Santa Barbara Counties. In these situations, rail investment can lead to concerns not only over modal equity, but income and geographic equity as well. Rural counties are less likely to debate modal equity, as they are less likely to have transit. In dedicating more funding to automobile infrastructure, rural counties are more likely to frame geographic equity debates between funding regional or local road projects (Crabbe et al. 2005).

Additionally, the ballot arguments in rural counties often do not raise any of the equity issues we discuss in this research. Instead they often focus on whether the county is receiving its fair share of state gas tax revenues and whether this funding is being properly invested by county transportation agencies. In these counties, supporters ask not what the expenditure plan for the sales tax measure should look like, but whether their needs warrant an increase in sales tax at all. For example, supporters of San Luis Obispo Measure J (2016) argued that a LOST would prevent:

> *"state and federal politicians from getting their hands on these funds. This measure specifically dedicates all funds raised to transportation and related projects in San Luis Obispo County…We can't count on the State Legislature to listen and act when it comes to smaller counties like San Luis Obispo. The Legislature has failed to make road improvements and repairs a priority for places like San Luis Obispo, instead sending our dollars to big cities like Los Angeles."*

Opponents maintained the efforts should be directed at lobbying the state to dedicate more funding to smaller counties instead of spending taxpayer dollars on projects such as high-speed rail.

A Deeper Look at Modal Funding Equity

As noted above, debates over modal funding are the most frequently raised equity issue in the ballot measure arguments we reviewed. Most common are arguments that the proposed distribution of

funding among modes is inequitable because it is out of proportion with the use of that mode. As Appendix B. Modal Balances shows, public transit is disproportionately funded compared with its usage, while automobile infrastructure tends to receive proportionally fewer funds relative to its usage. There are many possible reasons why LOST expenditure plans tend to disproportionately fund public transit, but time and resource limitations do not allow us to explore them here. It may be that funding of an array of modes is a symbolic ("something for everybody") tactic to increase the odds of passage; it may reflect the aspirations of project sponsors to work toward a less auto-dependent county, and/or it may reflect the realities of transit project matching requirements (United States Government Accountability Office (US GAO) 2003). Alternatively, it may simply be that disproportionate funding of public transit is a concession to equity concerns: the arguments for multiple measures make the connection between special interest population groups (such as low income residents, seniors, disabled, and students) and the need for transit access. It may also be a combination of these things.

Rail transit investment is frequently targeted by LOST opponents for raising a variety of inherently intertwined equity concerns. Rail is a spatially-fixed transit mode that cannot easily be adapted to spatial changes in population or travel patterns over time, and which requires substantial capital investments in addition to operations and maintenance funding. Citing the relatively low percentage of total trips taken by rail in most counties that have rail transit, opponents in many counties have argued that significant ongoing subsidies are or would be necessary for rail passengers such that the benefits of rail transit do not outweigh the costs. While some point to buses as a comparatively inexpensive alternative to rail transit, it is not clear whether such arguments are based in a genuine desire to see more LOST revenues go to bus service or whether such arguments are more tactical and made to shift proposed rail expenditures to streets and highways investments.

The notion of "aspirational" investments in trains, buses, bikeways, and sidewalks puts LOST measures squarely in the context of long-term transportation planning. As such, these investments illustrate the need for measure proponents to be mindful of temporal equity issues over the long life of the sales tax. While opponents tend to argue for investments that reflect current travel patterns and population distributions, it is important to consider how these both might change over time, and how these changes are interrelated. Opponents often express concern about financially burdening future generations with sales taxes to pay for old projects; yet, the political science literature suggests that most voters are not motivated by long-term considerations, but rather the near-term effects of the proposed (Jacobs 2011).

VII. CONCLUSION

This report examined several dimensions of equity among LOSTs in California between 1976 and 2016. To understand how these dimensions of equity are manifest in the crafting of LOST measure expenditure plans, in the debating of a measure's merits and fairness, we adopted a mixed methods approach to this research. We drew on both quantitative analyses of measure, financial, voter, and demographic data, as well as qualitative analyses of theories of equity and the language used to debate it.

This report is comprised of five analytic chapters, each of which adopts a different approach to analyzing LOST equity:

- A comprehensive review of the literature
- A comprehensive descriptive history of LOSTs in California
- An empirical analysis of income/expenditure regressivity of a sample of California LOSTs
- A detailed analysis of LOST ballot arguments in California, with a focus on debates over equity

We summarize the findings of each of these in turn below.

COMPREHENSIVE LITERATURE REVIEW

Equity is a critically important concept in public policy, but is less clearly defined than the concepts of efficiency and efficacy. Equity is about fairness or justice in the distribution of resources, services, or burdens, and thus is a more normative concept than equality. While these distributions can often be measured objectively, whether they are considered fair or just is subjective.

Theories of distributional justice offer two main principles with which to evaluate equity: (1) the *benefits received* principle argues that people should pay proportionally based on the benefits they receive, while (2) the *ability-to-pay* principle holds that those who can pay more should pay more, regardless of benefits; in other words, the rich should pay more than the poor because they can afford to do so. Policy choices regarding both the "unit of analysis" of the collection or distribution of costs/benefits (individuals, groups or geographic areas) and the logic of that collection or distribution (based on fortune, merit, or need) influence definitions and findings related to equity (Taylor and Norton 2009). Because equity can be assessed from multiple viewpoints and according to different distributional logic, the same policy may be viewed as equitable from one perspective but not from another (Transportation Research Board 2011).

LOSTs have been evaluated from the perspectives of multiple disciplines, including transportation planning, public finance, and political science. Most LOST studies in the planning literature focus largely on factors influencing the passage or failure of LOST ballot measures. Though sales taxes are universally viewed as income regressive, people often perceive transportation sales taxes as "fair" for several reasons. First, sales taxes encourage horizontal equity within income groups to the extent that groups with similar incomes have similar expenditure patterns. Second, by taxing expenditures as opposed to income, sales taxes are perceived to be a better proxy than property or income taxes for a person's "ability to pay." Third, sales taxes capture revenues from people who do not necessarily live in the jurisdiction, but use the county's transportation infrastructure. Fourth, some argue that

LOSTs are a more equitable source of transportation funding than fuel taxes because users of non-automobile modes (transit users, bicyclists, pedestrians) also pay to directly fund infrastructure (Goldman and Wachs 2003). Studies that evaluate the equity implications of transportation LOSTs often focus on geographic equity as a crucial element of successful measures. Finally, the mix of projects across transportation modes is another equity perspective by which LOSTs are frequently evaluated.

A HISTORY OF LOCAL OPTION SALES TAXES

While conventional wisdom holds that voters do not like to tax themselves, LOST measures have proven to be remarkably popular with California voters. A total of 76 measures have been put before the voters since the first LOST passed in 1976, with 63 percent of them (48 measures) being approved; 14 measures were on the 2016 ballot alone, four of which were in counties that had never before considered such a measure.

The clear majority (93%) of LOSTs are "termed" measures that are enacted for some fixed period (20 years is common) and then expire or "sunset"; just seven percent are in perpetuity, i.e., permanent. The amount of the added levies in the measures range from $0.00125 per dollar (one-eighth cent) to $0.01 per dollar (one cent) but most are $0.005 per dollar (half-cent).

While each of the LOST expenditure plans examined for this study was unique in some way, most tend to program the largest portion of expenditures to road projects, followed by public transit projects—with suburban and rural counties earmarking a higher share of revenue for roads, and urban counties devoting larger shares to transit. Calculating the exact modal breakdown in the expenditure plans is not easy, because a share of funds (and sometimes a substantial share) is slated for "local return," which typically leaves the expenditure of the funds up to local discretion at some future date. Our best estimate is that about three-fifths of all LOST expenditures go to roads projects (34% for local roads, and 27% for highways, on average). An average of 31 percent of LOST expenditures are allocated to public transit projects (though, again, these vary substantially from measure to measure), and about 8 percent is dedicated to benefitting specific groups such as projects for the elderly and disabled, bicycle and pedestrian facilities, and safe routes to school programs.

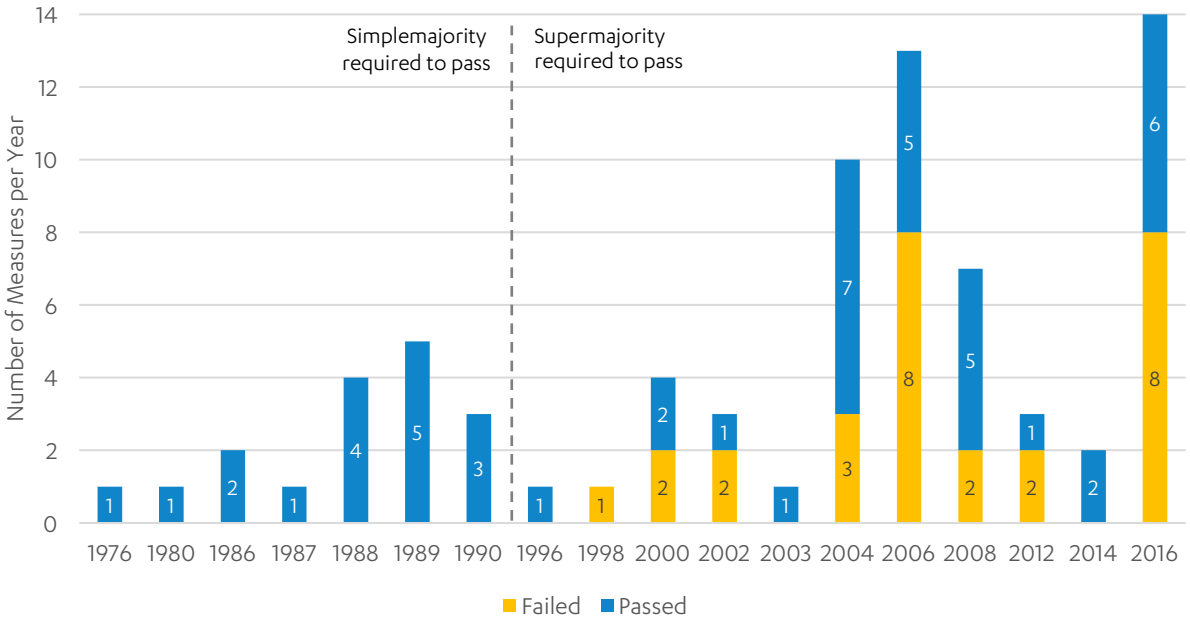
Since 1976, nearly nine out of ten LOST measures (68 of 76, or 89%) put before the voters have received most the votes cast. One would be hard pressed to find a more popular mechanism for garnering popular support to raise taxes. Despite being beholden to a supermajority (two-thirds) passage requirement since 1995, the rate of LOSTs' passage has increased over time.

Between 2003 and 2016, of 50 LOST measures that appeared on California ballots:

- 8 of the 50 (16%) failed to garner a simple majority of the votes cast
- 15 of the 50 (30%) received a simple majority of votes in favor, but not a supermajority
- 27 of the 50 (54%) received supermajority support and were enacted

Figure 32 below displays the number of LOST measures in each election, and the number of these measures passed into law by the voters.

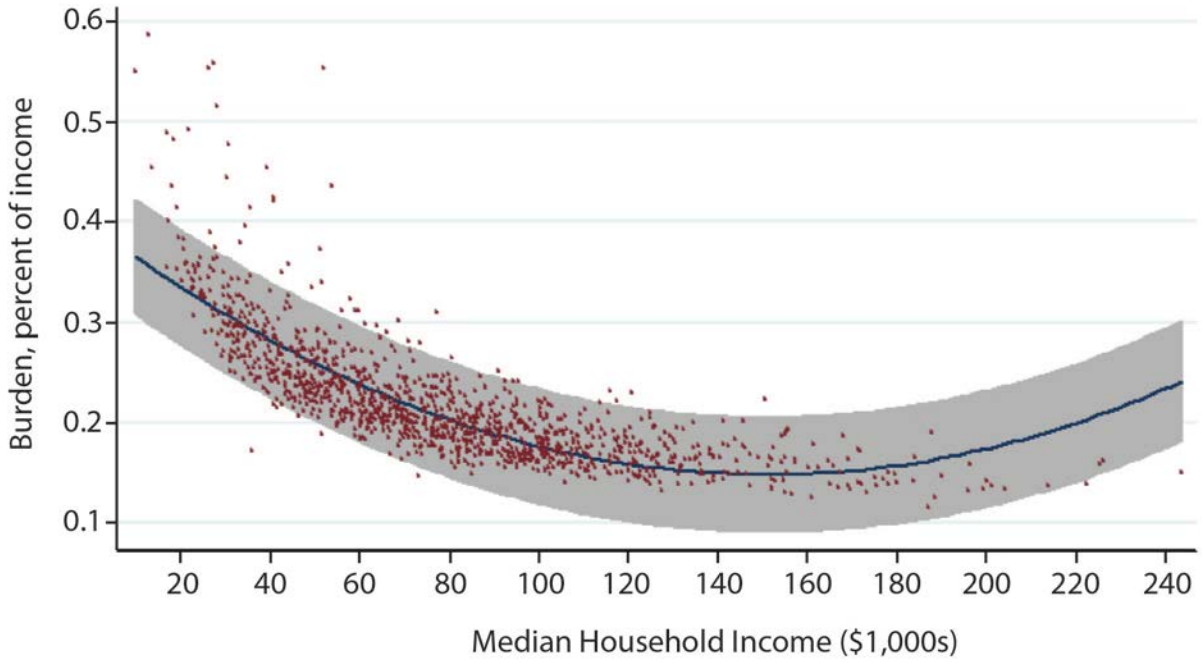
Figure 32. Number of Passed and Failed Measures Over Time



EMPIRICAL ANALYSIS OF LOST INCOME/EXPENDITURE REGRESSIVITY

Our examination of LOST equity included a detailed analysis of six case studies chosen to represent a diverse cross-section of these measures—in Fresno, Madera, Orange, Santa Barbara, and Santa Clara counties. Using precinct-level voting data, U.S. Census data, and data from the Consumer Expenditure Survey (CES) for these six LOST counties, we compared the tax burden across income groups and found that LOSTs in California are indeed regressive, as previous research on sales taxes would predict. Specifically, we observed a negative correlation, between median household incomes and average sales tax burden across our sample ranging from -0.59 to -0.76; the distribution of this relationship is shown in Figure 33.

Figure 33. LOST Tax Burden with Respect to Household Income



ANALYSIS OF LOST BALLOT ARGUMENTS

Finally, to systematically analyze how these measures are presented to and debated before voters, we analyzed the ballot text and arguments (pro and con) presented to voters for 37 of 76 LOST measures. We summarized the language in the ballots arguments analyzed in the "word cloud" shown in Figure 34.

Figure 34. Frequency of Words Used in All 37 Pro and Con Ballot Arguments

We find that equity issues do frequently appear in ballot arguments. Thirty-two of the 37 measures analyzed (86%) either directly mention or allude to equity questions. Table 16 summarizes the number of ballot arguments that raise each type of equity concern.

Table 16. Equity Argument Frequency in LOST Measures

Type of Equity	Number of Measures in which Equity is Debated
General Equity	29
Income Equity	14
Geographic Equity	28
Modal Equity	26
Temporal Equity	8

In addition to the frequency with which different types of equity arguments were raised, we observed a rhetorical divide between the ways that supporters and opponents of the measures address LOST equity issues. Supporting arguments speak in praise of measures' providing funding that meets the many transportation needs of county residents, and present the measures as equitable in general terms. Opponents, by contrast, are more likely to raise specific (modal, geographic, income, or temporal) equity concerns.

Modal Funding Equity

Aside from general discussions of promoting the fairness and equity of the proposed expenditure plan, modal funding equity is the most frequently debated equity topic. This is likely because LOST expenditure plans are increasingly comprised of lists of projects with corresponding funding amounts. Such lists cast funding allocations across modes in sharp relief and form the basis for arguments over the funding of one mode relative to another. Measure opponents frequently argue that the proposed distribution of funding among modes is inequitable because it is out of proportion with use of that mode. Because it is both geographically fixed and serves a relatively small share of trips in all but the most densely developed counties, rail transit investment is frequently targeted by measure opponents who complain that high construction costs will far exceed anticipated benefits.

Geographic Equity

Previous research has argued that a geographically balanced distribution of expenditures is critical to the success of a proposed measure, and indeed we observe some debates over the geographic distributions of expenditures in ballot arguments—these were more muted than we had expected, based on the literature. Why was geographic equity not front-and-center in most of the ballot arguments? It may be that geographic equity is understood to be so important a factor to the success of LOST measures that those crafting ballot measures often address it *before* the measure appears on the ballot. We were not able to test this hypothesis directly, however.

Income Equity

While much previous research has examined the income equity of sales taxes, this type of equity was mentioned in the ballot arguments for only 14 measures (38%), ten of which directly stated how measures will affect lower-income residents and two of which specifically characterized seniors as low-income residents. However, most of the income equity arguments centered on claims that expenditures from the proposed new tax would *benefit* disadvantaged groups by increasing affordability of transit; only two measures argued that the LOST would disproportionately *burden* low-income residents.

Some discussions of equity attempt to persuade voters by using statistics and claims about probable policy outcomes. Other ballot arguments take a more visceral, rhetorical approach, appealing to the emotions or specific group identities of voters. This duality is most evident in arguments critical of modal funding equity: for every opposition argument based on statistics, there is another that is disdainful about transit.

We also find a lively interaction among equity issues inherent to the provision of transportation services. Investment choices can reveal multiple equity concerns, which are illustrated perhaps most vividly in simultaneous debates over the geographic and modal equity implications of significant investments in a single large-scale capital project. Measure expenditure plans are always a balancing

act, and the most equitable outcome may not be the one that results in the largest probability that a measure will pass. Measure-sponsoring agencies have grown increasingly sophisticated in their use of focus groups to maximize the probability of measure passage, which affects equity outcomes as the political calculus of passage may not always align with the most equitable division of projects and tax spending.

Finally, while equity issues are frequently raised in the ballot arguments, it is important to note that these equity debates rarely feature prominently in ballot arguments. Instead, most of the arguments typically center on whether the projects proposed under the measure will *really* reduce traffic congestion as promised. Accordingly, we do not observe any obvious connections between equity debates in ballot arguments and whether the measure passed or failed. This is perhaps because, when they arise, equity concerns often pit one type of equity against another. Thus, while questions of equity are present in the 76 LOST measures analyzed for this study, they were not the driving force in shaping this now firmly-entrenched form of ballot box planning in California.

AVENUES FOR FURTHER RESEARCH

This analysis answers many questions, but also raises additional questions that warrant future investigation. First, how accurately do ballot arguments reflect the actual content of measure expenditure plans? Do ballot arguments that focus on potential geographic equity issues have more or less geographically balanced lists of projects and local return distributions than measures that underplay equity concerns?

Perhaps the most important topic for future research is our identification of potential temporal equity issues inherent in the long life of sales taxes enacted under LOSTs. Specifically, flexibility in expenditure plans can raise questions about whether equity issues tend to emerge down the road as changes to expenditures plans occur. Such flexibility may make much sense in that it allows officials to adapt to changing local conditions, but it also violates a central precept of LOST "ballot-box planning," where a voter can expect that what s/he sees in the ballot measure is what s/he will get.

One additional topic for further research is how well expenditure plans presented in the measure reflect actual project delivery over the life of the sales tax. It is possible that project implementation could differ from the LOST measure lists for a variety of reasons. Some projects may simply be delayed or changed due to financial or environmental permitting roadblocks. LOST ordinances are often crafted with varying degrees of flexibility, which enable planners to adjust projects to changing conditions over the typical 30-year sales tax lifespan. Some measures have automatic review periods after 10 or so years, while other ordinances have procedural mechanisms for an unlimited number of amendments. To form a complete picture of the equity implications of LOST measures, further research is needed into whether the projects that promise to deliver equity across our delineated dimensions are actually delivered.

APPENDICES

APPENDIX A. COMPLETE RECORDS OF CALIFORNIA LOST MEASURES

Administrative Data

County	Measure Name	Election Year	Pass/Fail	Measure Type	Tax Amount (cents)	Administering Agency
Alameda	B	1986	Pass	Original	0.5	Alameda County Transportation
Alameda	B	2000	Pass	Renewal/extension	0.5	
Alameda	B	1998	Fail	Renewal/extension	0.5	
Alameda	B1	2012	Fail	Renewal/extension	1	
Alameda	BB	2014	Pass	Renewal/extension	1	
Contra Costa	X	2016	Fail	Additive	0.5	Contra Costa Transportation Authority
Contra Costa	C	1988	Pass	Original	0.5	
Contra Costa	J	2004	Pass	Renewal/extension	0.5	
Fresno	C1	1986	Pass	Original	0.5	Fresno County Transportation Authority (FCTA)
Fresno	C extension	2006	Pass	Renewal/extension	0.5	
Fresno	C extension	2002	Fail	Renewal/extension	0.5	
Humboldt	U	2016	Fail	Original	0.5	Humboldt County Transportation Authority
Imperial	D	1989	Pass	Original	0.5	Imperial County Local Transportation Authority (LTA)
Imperial	D	2008	Pass	Renewal/extension	0.5	
Kern	I	2006	Fail	Original	0.5	Kern Transportation Authority District
Los Angeles	M	2016	Pass	Additive	0.5	LA Metro
Los Angeles	R	2008	Pass	Additive	0.5	
Los Angeles	C	1990	Pass	Additive	0.5	
Los Angeles	A	1980	Pass	Original	0.5	
Los Angeles	J	2012	Fail	Renewal/extension	0.5	
Madera	A	1989	Pass	Original	0.5	Madera County Transportation Authority
Madera	T	2006	Pass	Renewal/extension	0.5	
Marin	A	2004	Pass	Original	0.5	Transportation Authority of Marin
Marin/Sonoma	R	2006	Fail	Additive	0.25	Sonoma/Marin Area Rail Transit District
Marin/Sonoma	Q	2008	Pass	Additive	0.25	
Merced	V	2016	Pass	Original	0.5	Merced County Transportation Authority
Merced	G	2006	Fail	Original	0.5	
Monterey	X	2016	Pass	Additive	0.375	Transportation Agency for Monterey County
Monterey	Z	2008	Fail	Original	0.5	
Monterey	A	2006	Fail	Original	0.5	
Monterey	Q	2014	Pass	Original	0.125	Monterey-Salinas Transit
Napa	T	2012	Pass	Original	0.5	Napa Valley Transportation Authority
Napa	H	2006	Fail	Original	0.5	
Orange	M1	1990	Pass	Original	0.5	Orange County Transportation Authority
Orange	M2	2006	Pass	Renewal/extension	0.5	
Placer	M	2016	Fail	Original	0.5	Placer County Local Transportation Authority
Riverside	A1	1988	Pass	Original	0.5	Riverside County Transportation Commission
Riverside	A2	2002	Pass	Renewal/extension	0.5	
Sacramento	B	2016	Fail	Additive	0.5	
Sacramento	A1	1988	Pass	Original	0.5	Sacramento Transportation Authority
Sacramento	A2	2004	Pass	Renewal/extension	0.5	
San Benito	P	2016	Fail	Original	0.5	
San Bernardino	I	1989	Pass	Original	0.5	San Bernardino

San Bernardino	I2	2004	Pass	Renewal/extension	0.5	Association of Governments
San Diego	A	2016	Fail	Additive	0.5	SANDAG
San Diego	TransNet1	1987	Pass	Original	0.5	
San Diego	TransNet2 (A)	2004	Pass	Renewal/extension	0.5	
San Francisco	B	1989	Pass	Original	0.5	San Francisco County Transportation Authority
San Francisco	K	2003	Pass	Renewal/extension	0.5	
San Joaquin	K	1990	Pass	Original	0.5	The San Joaquin Council of Governments
San Joaquin	K	2006	Pass	Renewal/extension	0.5	
San Luis Obispo	J	2016	Fail	Original	0.5	San Luis Obispo Council of Governments
San Mateo	A1	1988	Pass	Original	0.5	San Mateo County
San Mateo	A2	2004	Pass	Renewal/extension	0.5	Transportation Authority
Santa Barbara	D	1989	Pass	Original	0.25	
Santa Barbara	A	2008	Pass	Renewal/extension	0.5	SBCAG
Santa Barbara	D	2006	Fail	Renewal/extension	0.75	
Santa Clara	B	2016	Pass	Additive	0.5	Santa Clara Valley
Santa Clara	B	2008	Pass	Additive	0.125	Transportation Agency
Santa Clara	A/B	1996	Pass	Additive	0.5	
Santa Clara	A1	1976	Pass	Original	0.5	
Santa Clara	A	2000	Pass	Renewal/extension	0.5	
Santa Cruz	J	2004	Fail	Original	0.5	Santa Cruz County
Santa Cruz	D	2016	Pass	Original	0.5	Regional Transportation Commission
Solano	H	2006	Fail	Original	0.5	Solano County
Solano	A	2004	Fail	Original	0.5	Transportation
Solano	E	2002	Fail	Original	0.5	Improvement Authority
Sonoma	M	2004	Pass	Original	0.25	Sonoma County
Sonoma	B	2000	Fail	Original	0.5	Transportation Authority
Sonoma	C	2000	Fail	Original	0.25	
Stanislaus	L	2016	Pass	Original	0.5	Stanislaus County Local
Stanislaus	K	2006	Fail	Original	0.5	Transportation Authority
Stanislaus	S	2008	Fail	Original	0.5	
Tulare	R	2006	Pass	Original	0.5	Tulare County Transportation Authority
Ventura	AA	2016	Fail	Original	0.5	Ventura County
Ventura	B	2004	Fail	Original	0.5	Transportation Commission

Temporal Factors

County	Measure Name	Number of Years	Permanent (yes/no)	Period	Measure Status
Alameda	B	15	No	1987-2002	Expired
Alameda	B	20	No	2002-2022	Current
Alameda	B	15	No	2002-2022	NA
Alameda	B1	Permanent	Yes	2012-	NA
Alameda	BB	23	No	2022-2045	Current
Contra Costa	X	30	No	2017-2047	NA
Contra Costa	C	20	No	1989-2009	Expired
Contra Costa	J	25	No	2009-2034	Current
Fresno	C1	20	No	1987-2007	Expired
Fresno	C extension	20	No	2007-2027	Current
Fresno	C extension	30	No	2002-2032	NA
Humboldt	U	20	No	2017-2037	NA
Imperial	D	20	No	1990-2010	Expired
Imperial	D	40	No	2010-2050	Current
Kern	I	20	No	2007-2027	NA
Los Angeles	M	Permanent	Yes	2017-	Current
Los Angeles	R	30	No	2009-2039	Current
Los Angeles	C	Permanent	Yes	1990-	Current
Los Angeles	A	Permanent	Yes	1980-	Current
Los Angeles	J	30	No	2039-2069	NA
Madera	A	15	No	1990-2005	Expired
Madera	T	20	No	2007-2027	Current
Marin	A	20	No	2005-2025	Current
Marin/Sonoma	R	20	No	2007-2027	NA
Marin/Sonoma	Q	20	No	2009-2029	NA
Merced	V	30	No	2017-2047	Current
Merced	G	30	No	2007-2037	NA
Monterey	X	30	No	2017-2047	Current
Monterey	Z	25	No	2009-2034	NA
Monterey	A	14	No	2007-2021	NA
Monterey	Q	15	No	2015-2030	Current
Napa	T	25	No	2018 - 2043	Current
Napa	H	30	No	2007-2037	NA
Orange	M1	20	No	1991-2011	Expired
Orange	M2	30	No	2011-2041	Current
Placer	M	30	No	2017-2047	NA
Riverside	A1	20	No	1999-2009	Expired
Riverside	A2	30	No	2009-2039	Current
Sacramento	B	30	No	2017-2037	NA
Sacramento	A1	20	No	1989-2009	Expired
Sacramento	A2	30	No	2009-2039	Current
San Benito	P	20	No	2017-2037	NA
San Bernardino	I	20	No	1990-2010	Expired
San Bernardino	I2	30	No	2010 - 2040	Current
San Diego	A	40	No	2017-2057	NA
San Diego	TransNet1	20	No	1988-2008	Expired
San Diego	TransNet2 (A)	40	No	2005-2045	Current
San Francisco	B	20	No	1989 - 2009	Expired
San Francisco	K	30	No	2003-2033	Current
San Joaquin	K	20	No	1990-2010	Expired
San Joaquin	K	30	No	2011 - 2041	Current
San Luis Obispo	J	9	No	2017-2026	NA
San Mateo	A1	20	No	1988-2008	Expired
San Mateo	A2	25	No	2008-2033	Current
Santa Barbara	D	20	No	1990-2010	Expired
Santa Barbara	A	30	No	2010-2040	Current

Santa Barbara	D	30	No	2006-2036	NA
Santa Clara	B	30	No	2016-2046	Current
Santa Clara	B	30	No	2011-2041	Current
Santa Clara	A/B	9	No	1997-2007	Expired
Santa Clara	A1	Permanent	Yes	1976-	Expired
Santa Clara	A	30	No	2006-2036	Current
Santa Cruz	J	30	No	2005-2035	NA
Santa Cruz	D	30	No	2016-2046	Current
Solano	H	30	No	2007-2037	NA
Solano	A	30	No	2005-2035	NA
Solano	E				NA
Sonoma	M	20	No	2005-2025	Current
Sonoma	B	8	No	2001-2009	NA
Sonoma	C	16	No	2001-2017	NA
Stanislaus	L	25	No	2017-2042	Current
Stanislaus	K	20	No	2007-2027	NA
Stanislaus	S	20	No	2009-2029	NA
Tulare	R	30	No	2007-2037	Current
Ventura	AA	30	No	2017-2047	NA
Ventura	B	30	No	2005-2035	NA

Financial Characteristics and Voter Support

County	Measure Name	Tax Amount (%)	% Voted For	Estimated Annual Revenue
Alameda	B	0.5	57%	$ 100,000,000
Alameda	B	0.5	82%	$ 70,000,000
Alameda	B	0.5	58%	$ 733,000,000
Alameda	B1	1	67%	$ 260,000,000
Alameda	BB	1	71%	$ 390,000,000
Contra Costa	X	0.5	63%	$ 97,000,000
Contra Costa	C	0.5	58%	$ 50,000,000
Contra Costa	J	0.5	71%	$ 100,000,000
Fresno	C1	0.5	58%	$ 34,800,000
Fresno	C extension	0.5	78%	$ 65,000,000
Fresno	C extension	0.5	54%	$ 16,066,667
Humboldt	U	0.5	49%	$ 10,000,000
Imperial	D	0.5	81%	$ 105,000,000
Imperial	D	0.5	84%	$ 15,000,000
Kern	I	0.5	56%	$ 50,000,000
Los Angeles	M	0.5	71%	$ 860,000,000
Los Angeles	R	0.5	68%	$ 1,333,333,333
Los Angeles	C	0.5	50%	$ 360,000,000
Los Angeles	A	0.5	54%	$ 210,000,000
Los Angeles	J	0.5	66%	$ 300,000,000
Madera	A	0.5	62%	
Madera	T	0.5	73%	$ 213,000,000
Marin	A	0.5	71%	$ 331,000,000
Marin/Sonoma	R	0.25	57%	
Marin/Sonoma	Q	0.25	70%	$ 45,000,000
Merced	V	0.5	71%	$ 450,000,000
Merced	G	0.5	61%	$ 15,500,000
Monterey	X	0.375	68%	$ 20,000,000
Monterey	Z	0.5	63%	$ 3,900,000
Monterey	A	0.5	57%	$ 2,500,000
Monterey	Q	0.125	73%	$ 7,000,000
Napa	T	0.5	75%	$ 300,000,000
Napa	H	0.5	52%	$ 17,900,000
Orange	M1	0.5	54%	$ 155,000,000
Orange	M2	0.5	70%	$ 393,300,000
Placer	M	0.5	64%	$ 53,000,000
Riverside	A1	0.5	79%	$ 35,000,000
Riverside	A2	0.5	69%	$ 153,333,333
Sacramento	B	0.5	34%	$ 120,000,000
Sacramento	A1	0.5	57%	$ 69,000,000
Sacramento	A2	0.5	75%	$ 156,666,667
San Benito	P	0.5	40%	$ 8,000,000
San Bernardino	I	0.5		$ 90,000,000
San Bernardino	I2	0.5	80%	$ 150,000,000
San Diego	A	0.5	42%	$ 308,000,000
San Diego	TransNet1	0.5	53%	$ 165,000,000
San Diego	TransNet2 (A)	0.5	67%	$ 350,000,000
San Francisco	B	0.5	66%	$ 248,000,000
San Francisco	K	0.5	75%	$ 78,333,333
San Joaquin	K	0.5	60%	$ 500,000,000
San Joaquin	K	0.5	78%	$ 85,066,667
San Luis Obispo	J	0.5	65%	$ 25,000,000
San Mateo	A1	0.5	62%	$ 804,000,000
San Mateo	A2	0.5	75%	$ 60,000,000
Santa Barbara	D	0.25	55%	$ 650,000,000
Santa Barbara	A	0.5	79%	$ 35,000,000

Santa Barbara	D	0.75	54%	$	52,500,000
Santa Clara	B	0.5	72%	$	208,333,333
Santa Clara	B	0.125	67%	$	22,000,000
Santa Clara	A/B	0.5	77%	$	122,000,000
Santa Clara	A1	0.5	55%		
Santa Clara	A	0.5	7000%	$	246,666,667
Santa Cruz	J	0.5	43%	$	19,233,333
Santa Cruz	D	0.5	68%	$	17,000,000
Solano	H	0.5	46%	$	53,333,333
Solano	A	0.5	64%	$	46,600,000
Solano	E	0.5	60%		
Sonoma	M	0.25	67%	$	20,000,000
Sonoma	B	0.5	59%	$	32,000,000
Sonoma	C	0.25	60%	$	21,700,000
Stanislaus	L	0.5	72%	$	38,000,000
Stanislaus	K	0.5	57%	$	34,000,000
Stanislaus	S	0.5	66%	$	35,000,000
Tulare	R	0.5	67%	$	652,000,000
Ventura	AA	0.5	42%	$	70,000,000
Ventura	B	0.5	40%	$	50,000,000

Modal Funding Split

County	Measure Name	Election Year	Highway	Transit	Bike/Ped	Senior/ Disabled	Safe Routes to School	Local Streets and Roads	Other	Local Return Percentage
Alameda	B	1986	49%	13%	0%	2%	0%	20%	0%	18%
Alameda	B	2000	17%	43%	6%	10%	0%	22%	0%	22%
Alameda	B	1998	20%	48%	5%	9%	0%	5%	0%	29%
Alameda	B1	2012	9%	48%	8%	0%	0%	30%	5%	20%
Alameda	BB	2014	9%	35%	8%	10%	2%	30%	5%	30%
Contra Costa	X	2016	21%	27%	4%	4%	2%	24%	16%	23%
Contra Costa	C	1988	42%	37%	0%	3%	0%	19%	1%	19%
Contra Costa	J	2004	26%	26%	2%	6%	5%	20%	8%	18%
Fresno	C1	1986								
Fresno	C extension	2006	30%	24%	4%	1%	0%	31%	11%	35%
Fresno	C extension	2002	45%	13%	4%	0%	0%	31%	6%	22%
Humboldt	U	2016	0%	0%	0%	0%	0%	100%	0%	100%
Imperial	D	1989	0%	0%	0%	0%	0%	95%	0%	95%
Imperial	D	2008	5%	2%	0%	0%	0%	95%	0%	97%
Kern	I	2006								
Los Angeles	M	2016	17%	62%	2%	2%	0%	0%	1%	16%
Los Angeles	R	2008	20%	62%	0%	0%	0%	0%	3%	15%
Los Angeles	C	1990	0%	80%	0%	0%	0%	20%	0%	20%
Los Angeles	A	1980	0%	75%	0%	0%	0%	25%	0%	25%
Los Angeles	J	2012	20%	62%	0%	0%	0%	0%	3%	15%
Madera	A	1989								
Madera	T	2006	51%	2%	0%	0%	0%	44%	0%	75%
Marin	A	2004	8%	55%	0%	9%	11%	27%	0%	13%
Marin/Sonoma	R	2006								
Marin/Sonoma	Q	2008								
Merced	V	2016	44%	5%	0%	0%	0%	40%	10%	50%
Merced	G	2006								
Monterey	X	2016	23%	7%	3%	3%	3%	60%	8%	60%
Monterey	Z	2008	50%	20%	3%	0%	0%	25%	2%	25%
Monterey	A	2006								
Monterey	Q	2014	0%	100%	0%	100%	0%	0%	0%	0%
Napa	T	2012	0%	0%	7%	0%	0%	92%		99%
Napa	H	2006								
Orange	M1	1990								
Orange	M2	2006	43%	35%	0%	0%	0%	32%	0%	18%
Placer	M	2016	45%	12%	5%	3%	0%	30%	76%	30%
Riverside	A1	1988								
Riverside	A2	2002	50%	15%	0%	3%	0%	35%	0%	35%
Sacramento	B	2016	9%	26%	0%	4%	0%	61%	0%	0%
Sacramento	A1	1988								
Sacramento	A2	2004	12%	38%	5%	5%	0%	38%	2%	38%
San Benito	P	2016	50%	0%	0%	0%	0%	50%	0%	30%
San Bernardino	I	1989								
San Bernardino	I2	2004	63%	10%	0%	8%	0%	20%	2%	20%
San Diego	A	2016	14%	39%	3%	0%	0%	30%	11%	24%
San Diego	TransNet1	1987								
San Diego	TransNet2 (A)	2004	42%	15%	0%	0%	0%	29%	0%	33%

San Francisco	B	1989	0%	69%	1%	8%	0%	30%	0%	N/A
San Francisco	K	2003	3%	66%	0%	9%	0%	25%	1%	N/A
San Joaquin	K	1990								
San Joaquin	K	2006	33%	28%	2%	0%	0%	35%	3%	35%
San Luis Obispo	J	2016	25%	10%	10%	3%	4%	55%	0%	55%
San Mateo	A1	1988	29%	49%	0%	3%	0%	20%	1%	20%
San Mateo	A2	2004	28%	30%	3%	4%	0%	23%	0%	23%
Santa Barbara	D	1989								
Santa Barbara	A	2008	24%	19%	2%	1%	1%	67%	6%	70%
Santa Barbara	D	2006	35%	27%	3%	1%	3%	40%	11%	50%
Santa Clara	B	2016	35%	37%	4%	0%	0%	19%	0%	0%
Santa Clara	B	2008	0%	100%	0%	0%	0%	0%	0%	0%
Santa Clara	A/B	1996								
Santa Clara	A1	1976								
Santa Clara	A	2000	0%	100%	0%	0%	0%	0%	0%	0%
Santa Cruz	J	2004	66%	2%	5%	4%	0%		4%	20%
Santa Cruz	D	2016	25%	28%	17%	20%	0%	30%	0%	30%
Solano	H	2006								
Solano	A	2004								
Solano	E	2002								
Sonoma	M	2004	60%	15%	4%	0%	0%	20%	0%	20%
Sonoma	B	2000								
Sonoma	C	2000								
Stanislaus	L	2016	28%	7%	5%	2%	0%	60%	0%	65%
Stanislaus	K	2006	58%	4%	0%	3%	0%	38%	0%	38%
Stanislaus	S	2008	49%	0%	0%	0%	0%	49%	0%	0%
Tulare	R	2006	50%	6%	7%	0%	0%	35%	1%	35%
Ventura	AA	2016	27%	12%	3%	1%	0%	50%	8%	50%
Ventura	B	2004	40%	20%	0%	0%	0%	40%	0%	40%

APPENDIX B. MODAL BALANCES

Rank	County	Year, Measure	Overall Car/ Transit Balance
1	Alameda	2012, B1	-0.002
2	San Bernardino	2004, I2	0.002
3	Santa Clara	2016, B	0.007
4	Santa Cruz	2016, D	0.008
5	Tulare	2006, R	-0.014
6	Merced	2016, V	-0.014
7	Placer	2016, M	-0.019
8	Ventura	2016, AA	-0.019
9	Fresno	2002, C	-0.020
10	San Diego	2004, A2	-0.023
11	Sacramento	2004, A2	-0.024
12	Stanislaus	2016, L	0.025
13	San Joaquin	2006, K	0.032
14	Napa	2012, T	0.032
15	Imperial	1989, D	0.035
16	San Luis Obispo	2016, J	0.049
17	Alameda	2000, BB	-0.052
18	Alameda	1986, BB	-0.052
19	San Diego	2016, A2	-0.053
20	Stanislaus	2008, S	0.055
21	Monterey	2016, X	0.056
22	Sacramento	2016, B	0.056
23	Marin	2004, A	0.059
24	Fresno	2006, C	-0.061
25	Madera	2006, T	0.064
26	San Benito	2016, P	0.066
27	Contra Costa	1988, C	0.070
28	Sonoma	2004, M	0.070
29	Stanislaus	2006, K	0.075
30	Los Angeles	2012, J	-0.078
31	Los Angeles	2008, R	-0.078
32	Riverside	2002, A2	0.083
33	San Mateo	1988, A1	0.086
34	San Mateo	2004, A2	-0.089
35	Ventura	2004, B	0.091
36	Santa Clara	2000, A	0.097
37	Santa Clara	2008, B	0.097
38	Los Angeles	1980, A	0.102
39	Los Angeles	1990, C	0.102
40	Imperial	2008, D	0.105
41	Monterey	2008, Z	0.106
42	Los Angeles	2016, M	-0.108
43	Alameda	2014, BB	-0.132
44	Santa Cruz	2004, J	-0.147
45	Monterey	2014, Q	0.156
46	Humboldt	2016, U	0.166
47	Santa Barbara	2006, D	0.169
48	San Francisco	2003, K	0.177
49	Contra Costa	2004, J	-0.186
50	Contra Costa	2016, X	-0.186
51	Orange	2006, M2	0.193
52	San Francisco	1989, B	0.231
53	Santa Barbara	2008, A	0.251

APPENDIX C. LIST OF BALLOT ARGUMENTS

County	Measure Name	Year	General Equity	Geographic Equity	Income Equity	Modal Equity	Temporal Equity
Alameda	Measure B1	2012	1	1	1	1	0
Alameda	Measure BB	2014	1	0	1	1	0
Contra Costa	Measure J	2004	1	1	1	1	0
Contra Costa	Measure X	2016	1	1	1	1	0
Fresno	Measure C	2002	1	1	0	1	0
Fresno	Measure C	2006	1	1	0	1	1
Humboldt	Measure U	2016	0	1	0	0	0
Los Angeles	Measure R	2008	1	1	1	1	1
Los Angeles	Measure J	2012	1	1	1	0	1
Los Angeles	Measure M	2016	1	1	1	1	1
Madera	Measure T	2006	1	1	0	0	0
Marin	Measure A	2004	0	1	0	0	0
Marin / Sonoma	Measure R	2006	0	0	1	1	0
Merced	Measure V	2016	1	0	0	0	0
Monterey	Measure Z	2008	1	1	0	0	0
Orange	Measure M2	2006	1	1	0	1	1
Placer	Measure M	2016	1	1	1	1	1
Sacramento	Measure B	2016	1	1	1	1	1
San Benito	Measure P	2016	1	1	0	0	0
San Diego	Measure A	2016	1	1	1	1	0
San Francisco	Proposition K	2003	1	1	0	1	0
San Joaquin	Measure K	2006	1	1	1	1	0
San Luis Obispo	Measure J	2016	0	0	0	0	0
San Mateo	Measure A1	1988	1	0	0	0	0
San Mateo	Measure A2	2004	1	1	0	1	0
Santa Barbara	Measure A	2008	1	1	1	1	1
Santa Clara	Measure B	2008	0	1	0	1	0
Santa Clara	Measure B	2016	1	1	0	1	0
Santa Cruz	Measure J	2004	1	1	0	1	0
Santa Cruz	Measure D	2016	1	0	0	1	0
Sonoma	Measure B	2000	0	0	0	0	0
Sonoma	Measure C	2000	1	0	0	1	0
Sonoma	Measure M	2004	1	1	0	1	0
Sonoma/Marin	Measure Q	2008	0	0	0	1	0
Stanislaus	Measure L	2016	1	1	1	1	0
Tulare	Measure R	2006	1	1	0	0	0
Ventura	Measure AA	2016	0	1	1	1	0
Total			29	27	11	26	7

APPENDIX D. BALLOT ARGUMENT CODING STRUCTURES

Methodology for coding ballot arguments is as follows:

1. Every quote was coded as made by either supporters or opponents of the measure.
2. Quotes were coded based on which of the four types of equity (income, geographic, modal, or temporal) was discussed.
3. If applicable, sub-codes were used to further identify specific re-occurring topics of debate in the measure ballot arguments. Sub-codes were only created if there was a relevant argument (for example, there was no argument over whether to fund bus service as opposed to bicycle infrastructure).

Ballot argument coding structure is as follows:

- Income Equity
- Geographic Equity
    - Local Return
    - Local Roads
    - Local Congestion
    - Urban vs. Rural Residents
    - Does Not Help Some Part of the County
    - Extra-County Residents
    - High- vs. Low-Income Residents
    - "Every Community"
- Modal Equity
    - Choice
    - Transit vs. Car
        - transit and car balance
        - car vs. transit general
        - car vs. rail
        - car vs. commuter rail
        - car vs. bike/pedestrian
    - Transit vs. Transit
        - bus vs. rail
        - ferry vs. BART
        - transit vs. commuter rail
        - transit capital vs. operations
- Temporal Equity
    - General
    - Tiering

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