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Financing the Future: Examining the Fiscal Landscape of California Public Transit in the Wake of the Pandemic

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16. Abstract

California and its regional and local governments have invested heavily in public transit over the past half-century to provide an alternative to driving, ease traffic congestion, reduce emissions, slow climate change, steer new development, and provide mobility for those without. As a result, bus service has improved and expanded, and many parts of the state's metropolitan areas are now served by rail transit.

Yet today, many of the state's transit systems are struggling operationally and financially. Ridership began eroding in the half-decade leading up to 2020 and plummeted at the start of the COVID-19 pandemic. Three federal pandemic relief bills provided a critical lifeline to keep struggling transit systems afloat early on, but these funds are running out. Meanwhile, operating costs have risen, ridership and fare revenues have only partially returned, and some transit systems face "fiscal cliffs," where they will need substantial new infusions of funding, substantial cuts in costs and service, or some combination of the two.

Against this backdrop, this report examines the current state of California transit finance: why ridership and fare revenues are down and their prospects for recovery; what lessons the successful federal relief bills provide; why commuter-oriented systems are struggling financially much more than those that primarily service transit-reliant riders; and what the financial managers at transit systems have done to cope with this turbulent time and how they see their future financial prospects.

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The University of California Institute of Transportation Studies (UC ITS) is a network of faculty, research and administrative staff, and students dedicated to advancing the state of the art in transportation engineering, planning, and policy for the people of California. Established by the Legislature in 1947, ITS has branches at UC Berkeley, UC Davis, UC Irvine, and UCLA.

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The UCLA Institute of Transportation Studies acknowledges the Gabrielino/Tongva peoples as the traditional land caretakers of Tovaangar (the Los Angeles basin and So. Channel Islands). As a land grant institution, we pay our respects to the Honuukvetam (Ancestors), ‘Ahiihirom (Elders) and ‘Eyoohiinkem (our relatives/relations) past, present and emerging.

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Contents

1. Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic was a seismic event in transit operations and finance. As transit is both a means of commuting to work and itself a public space, riders had two reasons not to ride, amid shifts to working from home and fears of the highly contagious disease. Ridership plummeted, especially among California commuters, whose share of trips by transit was more than halved (Transit App, 2020; Qi et al., 2021; and U.S. Census Bureau, 2019a, 2021a). Revenues plunged alongside riders, prompting public officials and transit managers to grapple with a suddenly uncertain future for transit.

While agency managers faced many challenges, including frequently shifting health guidance and labor shortages, the grimmest early pandemic financial forecasts did not come to pass in most places. That the doomsday scenarios did not materialize is thanks to the fiscal relief provided by three enormous federal stimulus bills that kept most transit agencies—both in California and across the nation—from scrapping service or even shutting down entirely. The stimulus support, which unusually for federal funds could go to operations as well as capital expenditures, stabilized agency finances, prevented layoffs, maintained service, and dramatically changed the makeup of transit operating revenues in the state.

However, by 2023, some agencies were spending down the last of their relief funds and were once again contemplating severe financial shortfalls, as ridership recovered very slowly following the early 2020 crash and remained especially depressed at commuter-focused systems. In the San Francisco Bay Area, worst-case scenarios developed by regional and agency planners involve service cuts of a quarter in San Francisco and other severe cuts on regional rail (Cano, 2022, 2023 and Kamisher, 2022). While this potential “fiscal cliff” may have been forestalled since it was first anticipated (Harrison, 2021), many transit agencies and advocates in California now see it looming again and are lobbying for relief funding from the state and against budget cuts to transit operations support (Angst, 2023; Mai-Duc, 2023; Kamal, 2023; Walters, 2023; Weiskopf, 2023; and Levin, 2023).

Against this backdrop, this report offers a comprehensive analysis of what happened to the finances of California transit agencies during the pandemic, to inform policy decisions amid the uncertainty of future transit demand and finance coming out of it. For context, we introduce details concerning pandemic ridership and workforce trends. We discuss how agencies responded with public health measures and service changes and what the initial effects and shortfalls looked like. We present in detail what effects the substantial stimulus funding bills had on transit systems and how these effects varied across regions, agency sizes, and agency types. We also present data on the surprising resiliency of local options sales tax revenues that bolstered transit in the counties that had such measures in place. We find, amidst variation across agencies, that some systems are particularly struggling financially. Finally, we conclude with a “snapshot” of current transit fiscal forecasts and discuss their implications for the future.

Our findings are based on a mix of data and methods that include an analysis of financial data, surveys of both U.S. and California transit agency managers, and interviews with California transit managers who oversee finance and budgeting. This mixed-method approach allows us to present trends with context and to identify the important causes of concern at outlier agencies, such as those that have struggled financially despite stimulus funding. Though the stimulus bills proved successful by and large, financial stability post-pandemic in the transit industry is far from assured.

2. How We Conducted This Research

2.1. Methods Overview

To investigate the many pandemic-related and pandemic-recovery financial challenges facing California's public transit operators, we gathered data and information from an array of sources and employed a variety of methods to analyze them. To get the full picture across all systems, including systems outside of California for comparison, we analyzed data from the Federal Transit Administration's (FTA's) National Transit Database (NTD) and data on the federal stimulus bills and on local option sales taxes in California. To gather information from transit agencies themselves, we conducted two surveys, at different points in the pandemic, each with a national sample and a California oversample. We also interviewed relevant staff at a selection of California transit agencies. Finally, we supplemented these sources with media articles, industry reports, and academic studies. We discuss these data and methods in turn below.

2.2. Financial Data Informed Trends Analysis

We analyzed financial, ridership, and service data from the NTD, including operating expenditures, capital expenditures, fare revenues, boardings, and vehicle revenue hours, by agency, mode, and state. We adjusted all NTD dollar values to 2021 dollars. We group modes into rail, bus, and demand response (paratransit, microtransit, etc.) (FTA, 2022b; Wasserman and Taylor, 2021; and Bureau of Labor Statistics, 2022a).

Like companies and other government departments, transit agencies report financial data by fiscal year, which does not align with the calendar year. In the most recent NTD annual data release, 97 percent of California agencies structured their fiscal years from July 1 of the previous calendar year to June 30, which is also how we define "fiscal year" in this report.[1] Fiscal Year (FY) 2021 thus ran from July 1, 2020 to June 30, 2021. In our NTD analyses, we compare Fiscal Year 2019, the last full fiscal year prior to the pandemic, to Fiscal Year 2021, the first full fiscal year after the onset of the pandemic and the latest fiscal year of available NTD data at the time of our analysis. As Fiscal Year 2020 spanned the start of the pandemic and because the NTD does not provide monthly financial data, we mainly use the fiscal years before and after instead (FTA, 2022b and Wasserman and Taylor, 2021).

To explore the effects of the federal stimulus bills on transit systems, we gathered and analyzed stimulus distribution data from the FTA and from the four most populous metropolitan planning organizations (MPOs) in California and/or the county transportation commissions within them. We found these data, as well as qualitative descriptions of the ways in which different regions divided stimulus funds between agencies, from board agendas, websites, and correspondence with staff (FTA, 2021c, 2021e, 2021h, 2022e; SBCTA staffer, 2021; LA Metro

1. The NTD gives financial data by "report year": the set of individual agencies' fiscal years that end in a given calendar year. Because almost all agencies in California have the same fiscal year, we use "fiscal year" in place of "report year" in this report (FTA, 2022b and Wasserman and Taylor, 2021).

staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; and SACOG staffer, 2021).[2]

To examine trends in local option sales tax (LOST) revenues for transit, we analyzed monthly revenue data from the California Department of Tax and Fee Administration (CDTFA) (2022). We multiplied total monthly allocations for these taxes by the percent of each measure dedicated to transit, drawn from the UCLA Institute of Transportation Studies (ITS) (2021) database of LOST measures. CDTFA collects sales taxes from across the state and then distributes it a few months later. We report totals by the month revenues were disbursed; CDTFA does not provide data about when revenues were generated. We report LOST revenue in nominal dollars. We compare LOST revenues by county to pre-pandemic county median income, unemployment, and sectoral employment figures from the U.S. Census Bureau (2019a, 2019b) and California Economic Development Department (EDD) (2023).

2.3. Surveys Explained Effects, Repercussions

We conducted two national surveys, with California oversamples, of transit agencies, the first in the late summer and early fall of 2020 and the second in the late fall/winter of 2021/2022 (representing, to our knowledge, the only multi-wave financial survey of transit agencies during the pandemic). In order to get a national perspective to compare to California, each of these two survey waves had two samples: a U.S. sample and a California oversample (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

For the national surveys, we created a stratified random sample of 200 transit agencies in the U.S., drawn from the NTD. We selected these 200 agencies from the 1,657 standard general public transit systems in the NTD (excluding private providers, tribes, universities, agencies on aging, and assets) in the then-most-recent year of data (Fiscal Year 2018) (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023). From these, we delineated a sampling frame using a random number generator that fit both of the following criteria (subject to rounding):

1. We selected agencies to address the asymmetry between agency numbers and boardings. In the full NTD dataset, the smallest 80 percent of agencies accounted for just two percent of boardings, while the largest eight agencies accounted for nearly 60 percent of boardings. Thus, to ensure both small agencies (of which there are many) and their boardings (of which there are few) as well as large agencies (few) and their riders (many) were represented in the survey, we divided the agencies into seven strata by a combination of numbers of agencies and boardings (See **Table 1**). Our goal in stratifying our sampling frame in this way was to ensure agencies of all sizes were represented in the survey and to avoid the likelihood that the few large agencies might have been crowded out by the many small agencies (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

2. While NTD analysis elsewhere in the report uses Fiscal Year 2019 for pre-pandemic figures, in stimulus analysis sections, we use Fiscal Year 2018 NTD numbers, as the later two stimulus bills used that year as their baseline in determining allocations (FTA, 2021a, 2021g), except where noted.

Table 1. National Survey Sample Stratification by Agency Counts and Agency Ridership

Stratum	Fiscal Year 2018 Boardings	Total U.S. Transit Agencies	Target Agencies in Sampling Frame
1	> 500 mil.	1	1
2	225-500 mil.	7	7
3	75-225 mil.	14	12
4	25-75 mil.	22	15
5	10-25 mil.	45	25
6	1-10 mil.	237	60
7	< 1 mil.	1,331	80

Supplemental data source: FTA, 2022b

2. The national sampling frame was also stratified geographically by FTA region. But just as boardings are asymmetrically distributed across agencies, so too are agencies and boardings asymmetrically distributed across regions. To again achieve a balance, we created a score for each region, three-fourths of which was the region's share of all U.S. agencies and one-fourth of which was the region's share of U.S. transit boardings. We selected the sampling frame such that the number of selected agencies from each region was proportionate to that score (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

Given the huge asymmetry in ridership between the nation's largest and smallest agencies, as well as geographic differences, the aim of this procedure was to create a sample representative of both U.S. transit *ridership* and U.S. transit *systems*, to a fair degree each (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

For the California oversample, we sent the survey to all member agencies of the California Transit Association (CTA) (85% of the state's agencies) and all member agencies of the California Association for Coordinated Transportation (CALACT) (an industry group for the state's smaller, rural, and paratransit systems). The California oversample therefore contained a greater share of small agencies, as, unlike the national survey, we did not conduct any selection procedures by ridership (Siddiq, Wasserman, and Taylor, 2022).

For both samples, we identified staff contacts at each agency from online searches of agency websites, employee directories, and documents; from American Public Transportation Association (APTA) and other industry contact lists like CTA and CALACT; and from communications with staff themselves. Where available, we sent the survey to planning, finance, and operations staff at each agency, as identified by job title; for smaller agencies or those with less information available online, we sent the survey to general management. We invited each of the identified staff to fill out the survey themselves or to collaborate with or send it to others in their agency with the best knowledge of the issues asked about in it, allowing only one response per agency. The first wave of this survey, which focused on the onset of the pandemic and transit agency responses to it, was open from August 2020 through early October of 2020. The second wave of the survey, which focused more explicitly on financial

issues, was open from November 2021 to January 2022. Respondents were eligible to receive a gift card for completing the survey (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

In both national surveys, we coincidentally received 56 responses out of 200 solicitations (See **Figure 1**), for a response rate of 28 percent. From our California oversample, we received 32 responses in 2020 and 44 in 2021/2022 (See **Figure 2**). Among respondents, 17 agencies overlapped between the national and California surveys in summer/fall 2020, and 20 in fall 2021/winter 2022 (Siddiq, Wasserman, and Taylor, 2022; Siddiq et al., 2023; and Speroni, Taylor, and Hwang, 2023). As not all submitted surveys contained responses to all of the questions posed, we note the total number of respondents for each question in the results section.

The first wave of the survey covered a wide array of topics, including service planning, operations, labor, public health, equity, performance measurements and crowding data, and communications (See Speroni, Taylor, and Hwang (2023) for more on the non-finance findings from this first wave). In the second wave, the questionnaire asked about ways the pandemic affected agency finances, fare revenues and policies, and longer-term planning, as well as changes to transit service and operations made because of the pandemic's budgetary effects or with implications for agency budgets (Siddiq et al., 2023).

We compare the findings of the two waves of the survey through repeated cross-sectional comparisons (of the U.S. and California each)—samples from the population of transit agencies at two periods of time—and longitudinal comparisons for the 29 national-sample and 17 California-oversample agencies[3] that responded to both iterations of the survey. In these two ways, we compare summer/fall 2020, before vaccinations for COVID-19 became available, to fall 2021/winter 2022, after vaccinations but during the Omicron variant wave, two very different points in the pandemic (Siddiq, Wasserman, and Taylor, 2022; Siddiq et al., 2023; and Speroni, Taylor, and Hwang, 2023).

We examine how the repercussions of the pandemic varied across systems with respect to their pre-pandemic ridership, farebox recovery ratios, and the modes they operate. In order to do so, we complement our survey results with additional data from the NTD on Fiscal Year 2019 boardings, fares, and operating expenses, where available (FTA, 2022b). We also use the data from our survey to analyze patterns by the modes of transit service operated by agencies (Siddiq, Wasserman, and Taylor, 2022 and Siddiq et al., 2023). We only note our findings by mode, ridership, and farebox recovery for select survey questions where warranted.

While we sought a representative sample for our national survey and while our sampling frame in California practically represents a census of the state's transit systems, we cannot be certain that our results accurately reflect the experiences at all transit agencies. For example, it is possible that staff at agencies experiencing more pandemic-induced change might have been more likely to complete our surveys than those whose operations were affected less. On the other hand, it may be that staff at agencies struggling more with the effects of the pandemic might be less likely to respond, even if anonymously, out of a reluctance to dwell on their agency's struggles or a lack of available time to respond. In addition, it could be that those who did respond were more likely to portray an overly positive situation and outlook for their agency. As the history of cost forecasting of transit projects by industry professionals shows, any attempt to predict the fiscal future of transit needs to tread carefully (Flyvbjerg, Holm, and Buhl, 2002). Nonetheless, those working with transit budgets daily have a particularly acute sense of their systems' strengths, weaknesses, and needs, and surveying them about topics

3. This is one higher than the number in Siddiq, Wasserman, and Taylor (2022), because we include here one agency that submitted a response in fall 2021/winter 2022 but responded to very few questions.

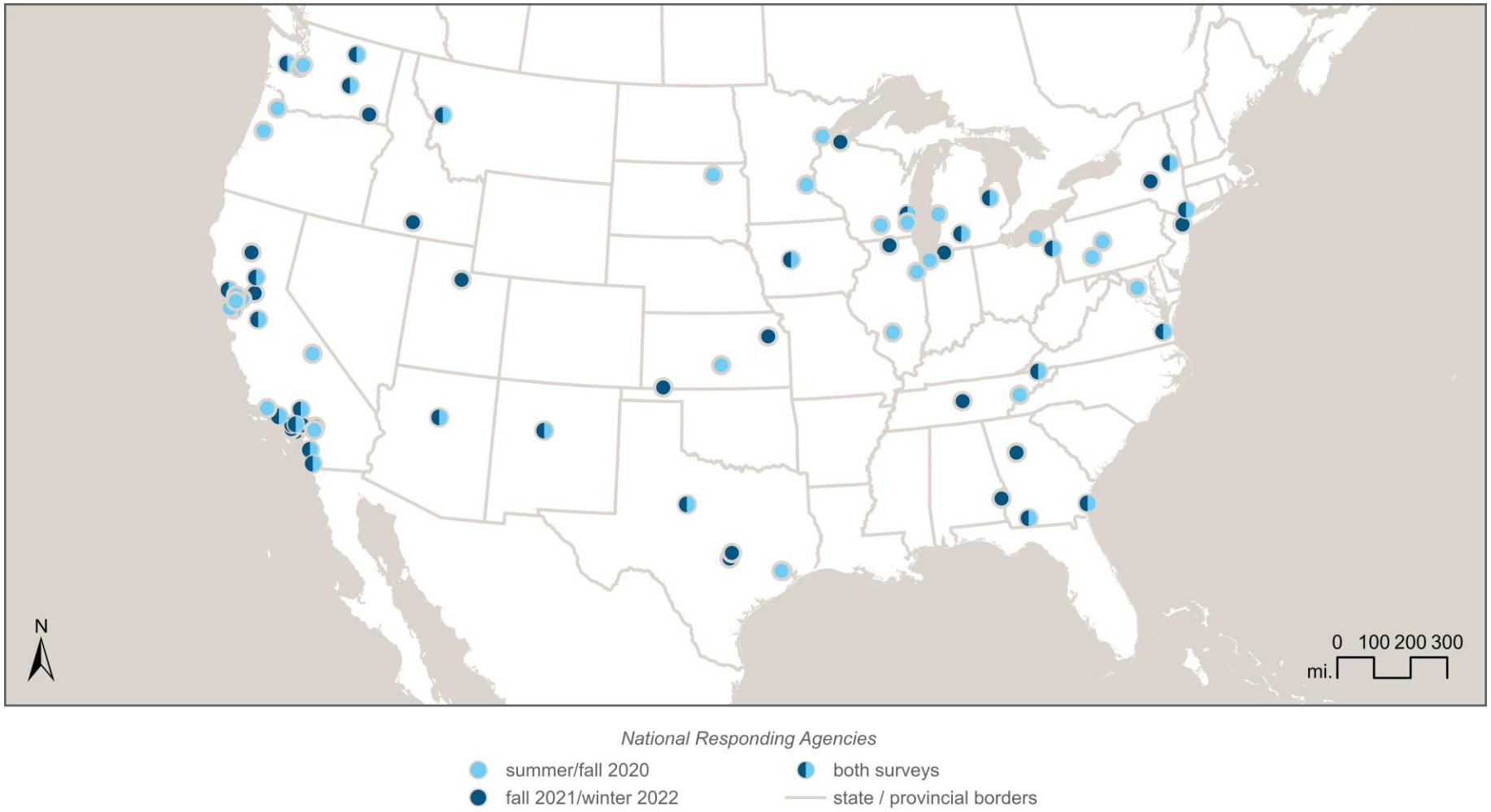

Figure 1. Responding Agencies, National Survey

Supplemental data sources: Hudson, 2017 and Esri, 2023

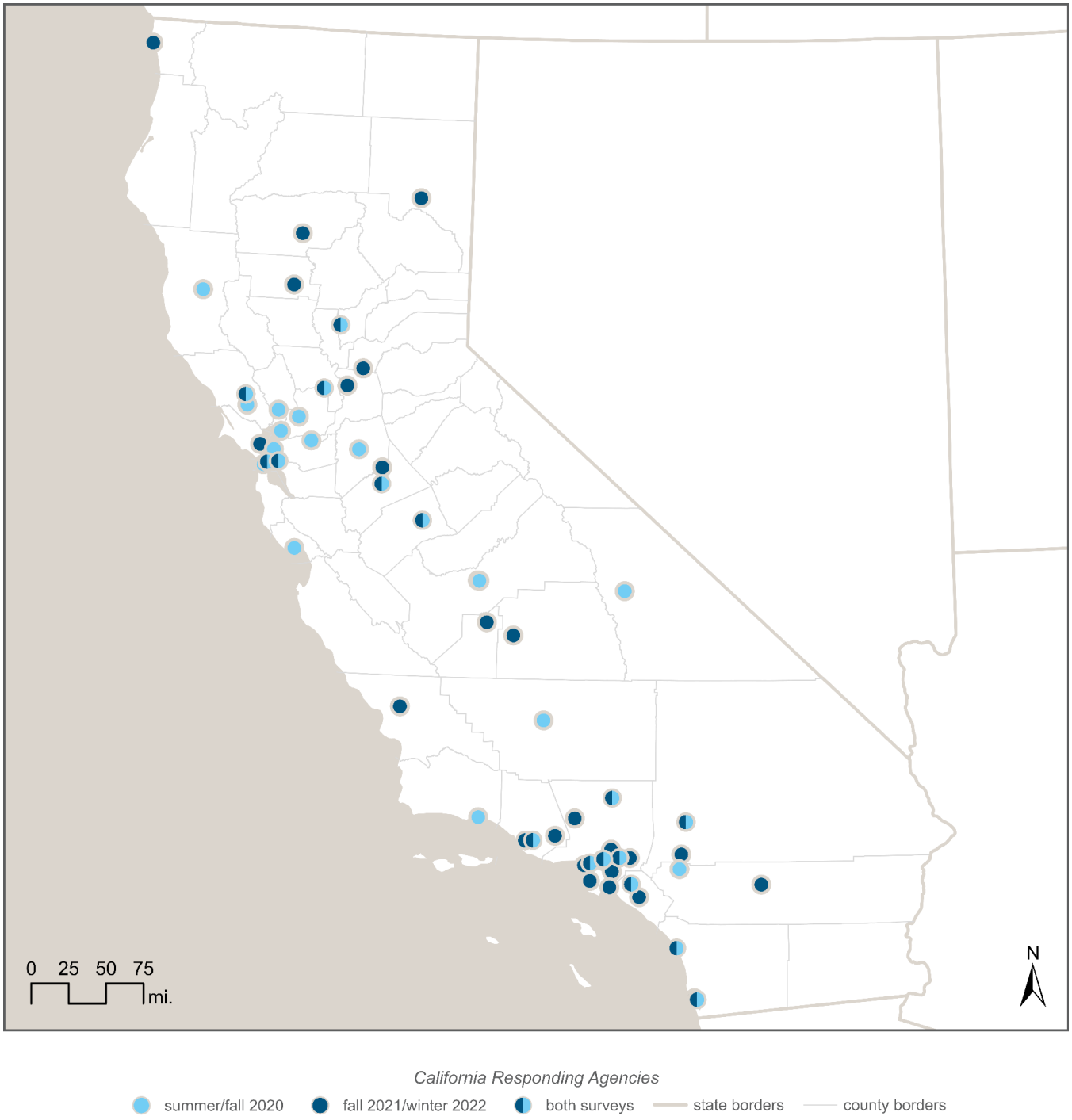

Figure 2. Responding Agencies, California Survey

Supplemental data sources: Hudson, 2017; California Open Data, 2019; and Esri, 2023

such as their plans for future operating expenditures, capital investments, fare policies, and the like can reveal coming trends in ways that budget documents cannot (Siddiq et al., 2023).

2.4. Staff Interviews Provided Insight into Agency Responses

In concert, we conducted semi-structured interviews focusing on transit operations and finance with 32 staff members at 21 transit agencies, large and small, across California. Semi-structured interviews have previously been used in transportation research to gather qualitative, affective, and experiential data that offers depth, nuance, and a more open-ended exploration of ideas not possible in most quantitative research. Our interview sample, although small in absolute size, is larger than other analyses of transit agency finances that also employed semi-structured interviews (Neog and Brown, 2022; Yoh, Taylor, and Gahbauer, 2016; and Zhou, 2016). We used a variable-oriented cross-case approach (Babbie, 2014) in which we structured our interviews specifically to elicit information about factors that affected our main variable of interest (transit operations and finance during and coming out of the COVID-19 pandemic) and then used the results to compare and contrast factors reported by interviewees at different agencies (H. King, Wasserman, and Taylor, 2023).

Our interview sample consisted of 40 California transit agencies in California. From the NTD, we selected the 20 largest agencies in the state by ridership in the last year fully prior to the pandemic (Fiscal Year 2019) (FTA, 2022b). We also randomly selected another 20 smaller California transit agencies that report to the NTD. This sampling strategy ensured that both large and small transit agencies were represented. Both the sample and the 21 agencies that ultimately participated in the interviews covered all major regions of the state. The range of agencies' sizes, modes operated, operating environments, and revenue sources varied significantly across our interview sample, and thus offer insights on the fiscal state of transit systems in California (H. King, Wasserman, and Taylor, 2023).

After we selected agencies to contact, we invited at minimum both the general manager/chief executive officer and the chief financial officer/head of finance at each agency to an interview. We gathered contact information for agency staff from online searches, CTA and APTA contact lists, and past UCLA ITS research projects, as well as from professional contacts of members of the project team. Interviews ranged in number of attendees, from one to five at each interview. At minimum, the general-manager-equivalent or a staffer in financial leadership for each agency was present to represent each agency. One to three members of the research team attended each interview. From the sample of 40, we interviewed 32 staff at 21 agencies (including one that submitted a written response) between December 2021 and May 2022, for a response rate of 53 percent. We began each interview by inquiring about the state of each agency's finances and operations at the start of the COVID-19 pandemic, and from there each interview touched on particular topics that emerged organically to encourage conversation and elaboration among those interviewed. These topics included: ridership changes related to the pandemic, each agency's experience with federal COVID-19 stimulus funds, and each agency's experimentation with fare policies in recent years (H. King, Wasserman, and Taylor, 2023). We found, for the most part, remarkable similarities in responses across agencies, though with a few notable differences; we highlight both in this analysis.

The project team conducted all of the interviews via Zoom. While we worked off of an interview guide to cover a fixed set of topics (including, among others, the immediate effects of the pandemic in spring 2020; the stimulus bills; budgetary, workforce, and service responses as the pandemic continued; capital projects; and fare policies), the semi-structured nature of the interviews allowed the interviews to be flexible in allowing follow-up questions about topics or issues raised in a particular interview (H. King, Wasserman, and Taylor, 2023).

While we have every reason to believe that the 32 staff who took the time to speak with us were candid in their responses and assessments, it is possible that, as in the surveys, some may have been inclined to cast their agency in the best possible light. Conversely, those interviewed might have told us what they think we may have wanted to hear, though we were careful to present our interviews as information gathering not driven by some particular hypothesis or *a priori* position. Finally, we note that we spoke with senior agency staff in leadership positions, particularly as they relate to agency finances (H. King, Wasserman, and Taylor, 2023). Thus, our characterization of their views reflect those of agency leaders, not governing board members, rank-and-file workers, or riders, and our interview findings should be interpreted in this light.

3. Transit's Operating Context

3.1. Subsidies Cover Most Operating Costs

Transit systems in California and across the U.S. draw on a wide range of revenue sources, consisting of both income and direct subsidies. Broadly, income is revenue collected from willing buyers for goods or services rendered, while subsidies are revenues provided by some entity, usually public, to help underwrite the cost of a public good or service. Transit's most direct and obvious source of income comes from fares paid by riders, though transit agencies also collect additional income from providing charter bus services, selling space for advertising or vending, and so on. Meanwhile, transit subsidies most often come from federal, state, and local governments to cover the cost of operations not met by fares and other income, as well as to pay for almost all capital projects (construction of new stations, stops, track, etc.; procurements of new vehicles; major overhauls and renovations; equipment and facilities projects, etc.). In the fiscal year before the pandemic, U.S. transit agencies paid for their day-to-day operations as follows: 34 percent from directly generated income such as fares; 35 percent from municipal, county, and regional government subsidies; 23 percent from state subsidies; and eight percent from federal government subsidies (For the breakdown in California, see Section 6.5). Systems funded capital projects from a 45 percent local and regional subsidy, 23 percent state subsidy, and 32 percent federal subsidy (For the breakdown in California, see Section 6.8) (Dickens, 2021 and Wasserman, Rios, et al., 2022).[4]

3.2. Downward-trending Transit Ridership Plunged during a Pandemic

While the ridership drop at the start of the COVID-19 pandemic was unprecedented, public transit in California and the U.S. had been in the midst of years of patronage declines beforehand. Over the past three decades, total transit trips in the state and trips per capita bounced up and down (See **Figure 3**). However, ridership peaked just prior to the Great Recession, never fully recovered in the first half of the 2010s (especially per capita), and mostly fell in the half-decade prior to the COVID-19 pandemic. This slide came despite a healthy economy; major factors behind it include increased automobile access and use across California (Taylor et al., 2020; Schouten, Blumenberg, and Taylor, 2021; Manville, Taylor, and Blumenberg, 2018; and Manville et al., 2023) and, in the Bay Area in particular, growing separation of jobs and housing (Blumenberg et al., 2020 and Blumenberg and King, 2021). For this reason, a return to a pre-pandemic "normal" alone would not put the industry on solid ground (H. King, Wasserman, and Taylor, 2023).

4. For more background on transit finance in California, see Wasserman, Rios, et al. (2022).

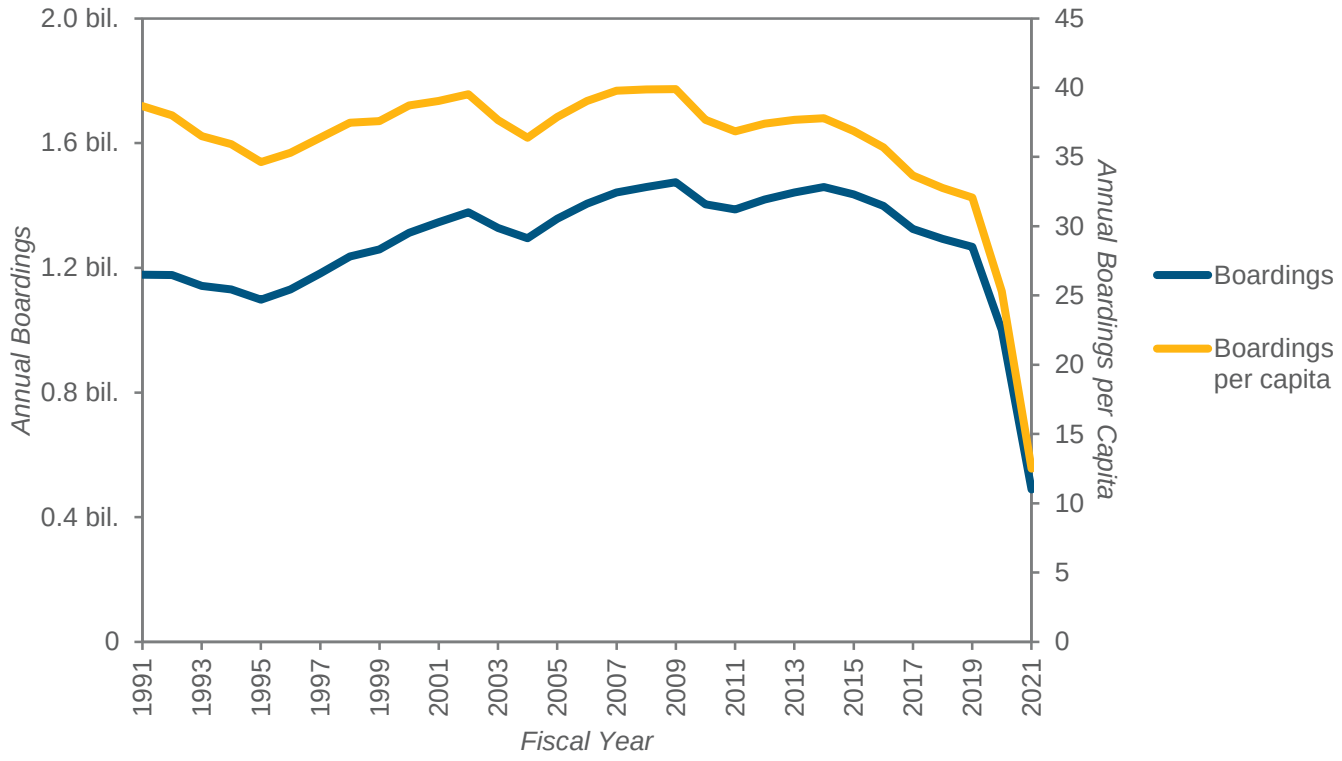

Figure 3. Annual Ridership on California Transit over Time

Data sources: FTA, 2022b and U.S. Census Bureau, 2020, 2022

At the onset of the pandemic, transit ridership collapsed across the U.S. (and, indeed, around much of the globe). More so than other modes, transit ridership cratered at the start of the COVID-19 pandemic and has been slow to recover thereafter. Ridership in both the U.S. as a whole and in California declined precipitously in response to stay-at-home orders/travel and employment restrictions, as well as fear of virus transmission while riding transit. Boardings across the nation and the state each bottomed out in April 2020 at less than a quarter of January 2020 numbers. Despite public health restrictions being gradually lifted and vaccines and treatments becoming widely available, ridership only gradually and unevenly recovered. Monthly boardings in 2022 hovered around 60 to 75 percent of pre-pandemic numbers, with both total trips and trips on most agencies at the end of 2022 still well below pre-pandemic levels (See **Figure 4**) (FTA, 2022b; Siddiq et al., 2023; H. King, Wasserman, and Taylor, 2023; and Apple Maps, 2022).

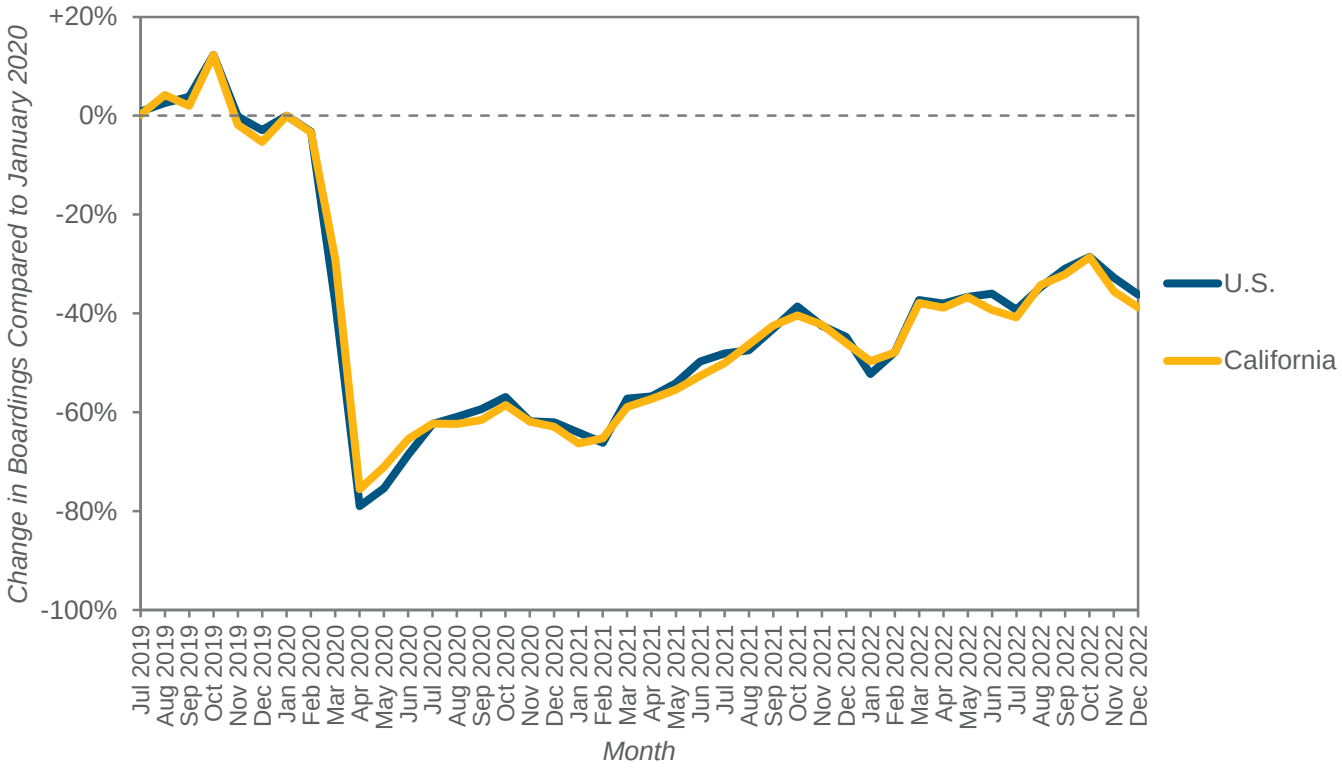

Figure 4. Change in Transit Use during the COVID-19 Pandemic

Note: California monthly ridership excludes and U.S. monthly ridership estimates ridership on very small and rural agencies.

Data source: FTA, 2022b

Those who continued to ride public transit during the early periods of the pandemic were disproportionately poorer, women, and essential workers and less likely white or Asian. Metropolitan areas with higher median household incomes, more college-educated residents, higher employment rates, and greater shares of Asian residents were more likely to have deeper losses in ridership than other areas. Commuter-oriented lines and systems, in particular, had steeper and more sustained ridership declines than other transit systems, given the increasing trend of remote and hybrid work during the pandemic (especially among higher-income workers and commuters). According to American Community Survey estimates, the share of California workers commuting to work on transit as their most regular mode fell by more than half, from 5.2 percent in 2019 to 2.1 percent in 2021 (Paul and Taylor, 2022; Transit App, 2020; TransitCenter, 2020a; Qi et al., 2021; Calvert and Vielkind, 2022; McGeehan, 2021; Siddiq et al., 2023; and U.S. Census Bureau, 2019a, 2021a).

As a result, rail ridership fell more precipitously than bus boardings in the state (See **Figure 5**). In April 2020, California bus ridership fell 72 percent from its pre-pandemic baseline—quite a drop itself, but less than rail's decline of 84 percent. Thereafter, bus trips recovered faster, with ridership relative to its baseline outpacing rail's relative ridership each month by around 20 percentage points. Trips on demand response transit largely paralleled trends on buses, though at a much smaller scale (FTA, 2022b).

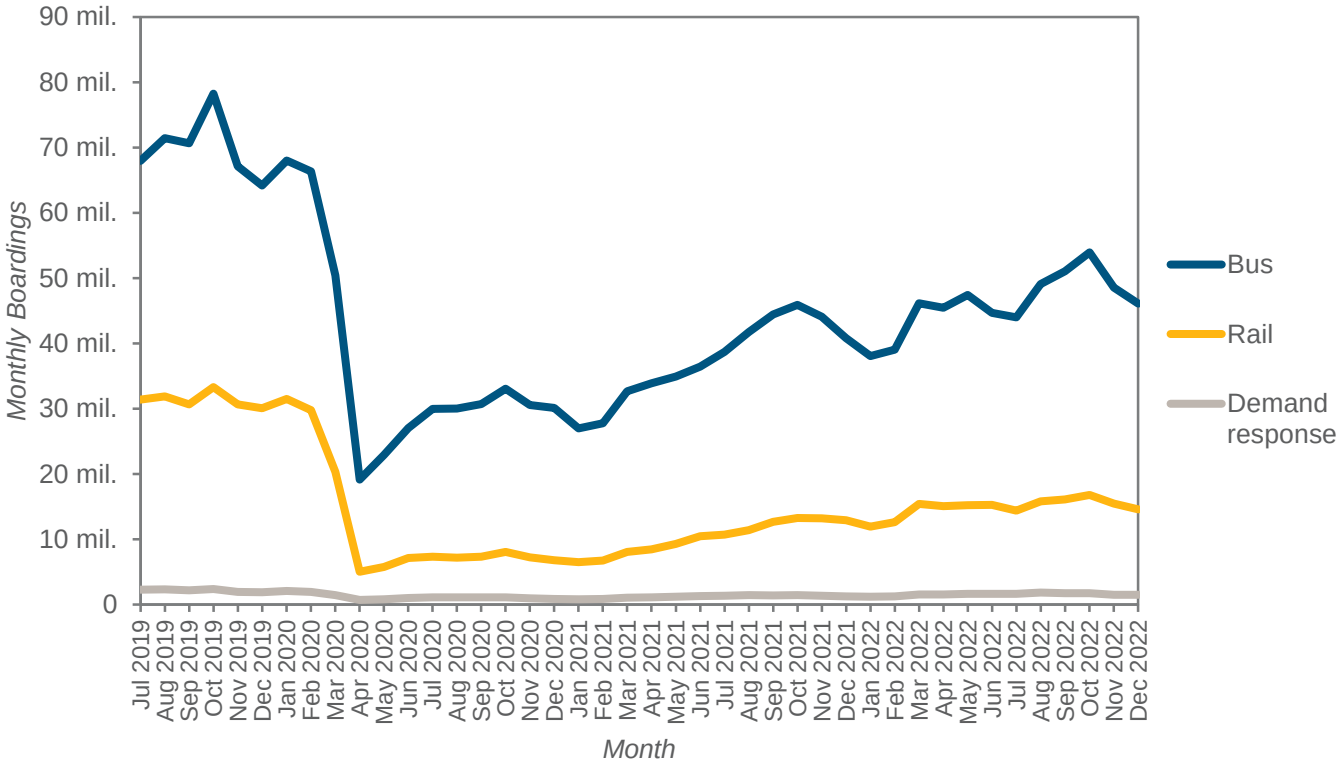

Figure 5. Transit Use by Mode in California during the COVID-19 Pandemic

Note: Monthly ridership excludes ridership on very small and rural agencies.

Data source: FTA, 2022b

3.3. Transit Agencies Faced New Workforce Challenges

As agencies struggled with ridership, they also faced workforce challenges. Early on, illness, quarantines after exposure, leave to care for sick loved ones, and leave for childcare as some childcare options closed all kept many bus and rail operators from going to work. Though federal funds largely prevented layoffs (discussed in Section 6.3), many front-line staff still left during the pandemic for reasons other than agency fiscal shortfalls. Some workers voluntarily retired or went on voluntary furlough due to health concerns, and some agencies implemented salary or hiring freezes and offered early retirement options and buyouts that pushed or pulled workers out and depressed new hiring. In addition, private-sector transport companies with whom public agencies contract for service, particularly for paratransit services, saw job losses from service cuts (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Nonetheless, many agencies avoided layoffs and furloughs altogether. When service cuts led to agencies having more operators on staff than required for their service, some sent their operators to extra training or assigned them to other duties to keep them employed (Wasserman, Rios, et al., 2022).

3.4. The Pandemic Imposed Health-related Measures and Costs

The sudden onset of the pandemic in early 2020 necessitated urgent action to make transit vehicles and facilities as safe as possible. Transit agencies quickly adopted recommended health-related measures, such as regular, intensive vehicle cleaning; improved ventilation and air filtration; masking requirements; blocking off some seats to allow for distancing; eliminating fares, fare enforcement, and/or cash transactions for ticket sales (discussed in Section 4.3); enforcing social distancing through vehicle capacity restrictions and rear-door only boarding and alighting (to minimize contact with vehicle operators); and physical barriers between operators and passengers. Many of these measures were later relaxed with increased understanding of the virus and how it spreads, but the capital and operating costs of maintaining some pandemic-related improvements and services have persisted on many systems (Speroni, Taylor, and Hwang, 2023 and Siddiq et al., 2023). Nearly all of these measures increased transit agency costs, depressed revenues, or both.

4. Transit Agencies' Response to the Pandemic

4.1. Transit Agencies Adjusted Service Frequently

The most immediate response to the pandemic for most transit agencies was to cut or at least adjust their service. Across the country, these service cuts most affected those with limited or no access to cars, who rely on transit for their day-to-day mobility needs, and who are disproportionately low-income, immigrants, and people of color (Begley et al., 2022 and He et al., 2022). Compared to Fiscal Year 2019, California transit agencies ran 26 percent fewer revenue-hours of service in Fiscal Year 2021. Bus service fell 19 percent and rail service 29 percent, with demand-response transit seeing a larger 43 percent drop (FTA, 2022b).

While these cuts impeded the mobility of many travelers—any level of service cuts hurt many riders who depended on transit—agencies did cut service less than their ridership fell (See **Figure 4**). To some degree, this sustained a lifeline to those reliant on transit throughout the pandemic. As one transit manager we interviewed for this study said, "even though there wasn't the ridership to justify the level of service we had on the street, it just seemed like the right thing to do." These reductions in service allowed agencies to save funds, especially as demand for that service fell dramatically.

Our survey also conducted for this study and interviews demonstrate that these service responses lasted far beyond the initial weeks of the pandemic. In our fall 2021/winter 2022 survey, about half (49%) of responding agencies nationally (n = 45) and four in ten of responding agencies in California (n = 38) reported that their service (on their most patronized pre-pandemic mode) in November 2021, more than a year and a half into the pandemic, was still somewhat or significantly lower than prior to the pandemic (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022).

Faced with numerous pandemic challenges and uncertainties, transit agencies reported adjusting their service patterns more often and more substantially than before the pandemic. Thirty-six percent of agencies in our national 2021/2022 survey modified their service much more frequently on their most patronized mode since the onset of the pandemic, and another 36 percent reported adjusting service somewhat more frequently (n = 45). In California, similar shares reported the same: 39 percent much more frequently and 29 percent somewhat more (n = 38). In terms of the magnitude of those service changes, 31 percent of U.S. agencies (n = 45) and 34 percent of California systems (n = 38) responded that the pandemic made those adjustments substantially larger in scale; with another 40 percent nationally and 29 percent in the Golden State reporting that the pandemic affected the scale of their service changes to some extent (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022).

To adapt to changing rider demand, labor shortages, and financial shortfalls, transit agencies adopted various strategies, such as adjusting off-peak weekday service hours both up and down, adding capacity through new contracted services, expanding or contracting geographic service area coverage, increasing or decreasing service headways, eliminating and/or consolidating lines/routes, changing peak-hour weekday service hours, and moving to traditional Saturday or Sunday service on all days. Among these, changing service headways/frequency, peak-hour weekday service hours, and off-peak weekday service hours were the most common strategies adopted by

U.S. (n = 44) and California (n = 35) agencies (See **Figures 6** and **7**) (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022).

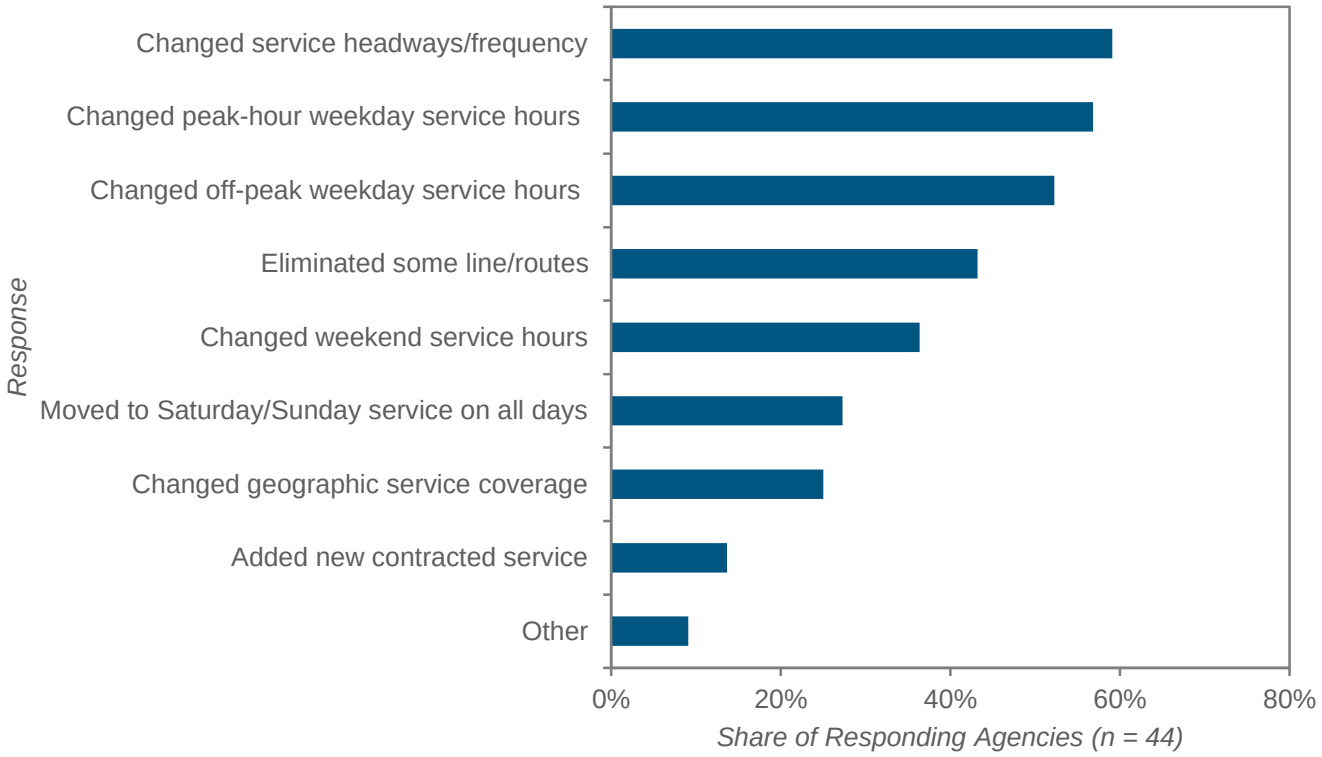

Figure 6. Pandemic Service Responses, Either Current or Rescinded: National Survey, Fall 2021/Winter 2022

Note: Respondents that skipped the question are excluded.

Across our interviews, some reported service cuts focused on coverage, and others on frequencies. Some agencies eliminated service entirely for some period of time, such as on Sundays; many others reduced service on Saturday and/or Sunday. Other agencies focused reductions on particular types of services, such as commuter-focused routes or on regional-serving (rather than local-serving) services. For demand-responsive paratransit services, service changes frequently meant shifting from shared rides to single rides for public health reasons. Many of these service reductions were implemented almost “overnight” in response to changing conditions (H. King, Wasserman, and Taylor, 2023).

Service reductions in response to declining demand typically focused on fixed-route, fixed-schedule services rather than paratransit services for the elderly and those with disabilities. Commuter-focused services were a particularly common target for service reductions during the height of the pandemic, and, as of the winter of 2021-2022, many commuter services were still operating at reduced service levels or have been eliminated entirely. Agencies were more limited in their ability to reduce paratransit services in response to declining revenues because transit agencies are mandated under the Americans with Disabilities Act to provide paratransit service within three quarters of a mile of fixed-route transit lines (H. King, Wasserman, and Taylor, 2023).

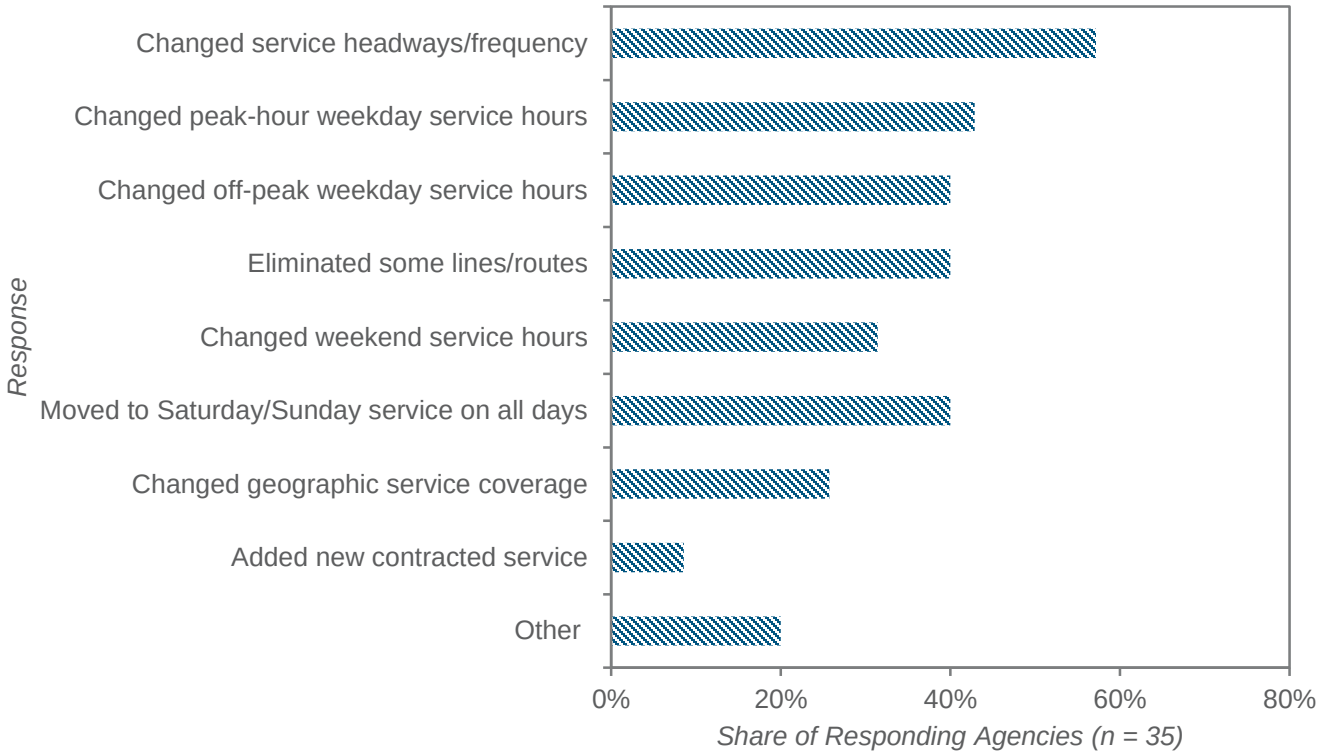

Figure 7. Pandemic Service Responses, Either Current or Rescinded: California Survey, Fall 2021/Winter 2022

Note: Respondents that skipped the question are excluded.

Transit ridership has recovered notably, though far from completely, since the early days of the pandemic in 2020. But patronage remains well below pre-pandemic levels on most systems, as of writing (See **Figure 4**). Given this, many agencies restored or mostly restored service in an effort to better serve their current riders and lure back more. But others still operate at reduced levels, particularly agencies that previously served large numbers of commuters. Most of the agencies with whom we spoke reported having restored service at least partially in anticipation of ridership returning, although we did speak with staff at one agency who reported largely restoring service in response to increased ridership. Agencies have timed service restorations to coincide with the operations of major businesses and other activity generators. For example, the Anaheim Transportation Network timed its service restorations to coincide with the reopening of Disneyland, a major trip generator for the agency (discussed further in Section 6.7). Other agencies added back service to coincide with school reopenings (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

4.2. Budgets Steered Service Decisions Early in the Pandemic, Less So Later

To what degree were the service changes discussed in Section 4.1 and the overall service cuts driven by financial exigencies? Of course, completely untangling related issues like labor and public health from finance is

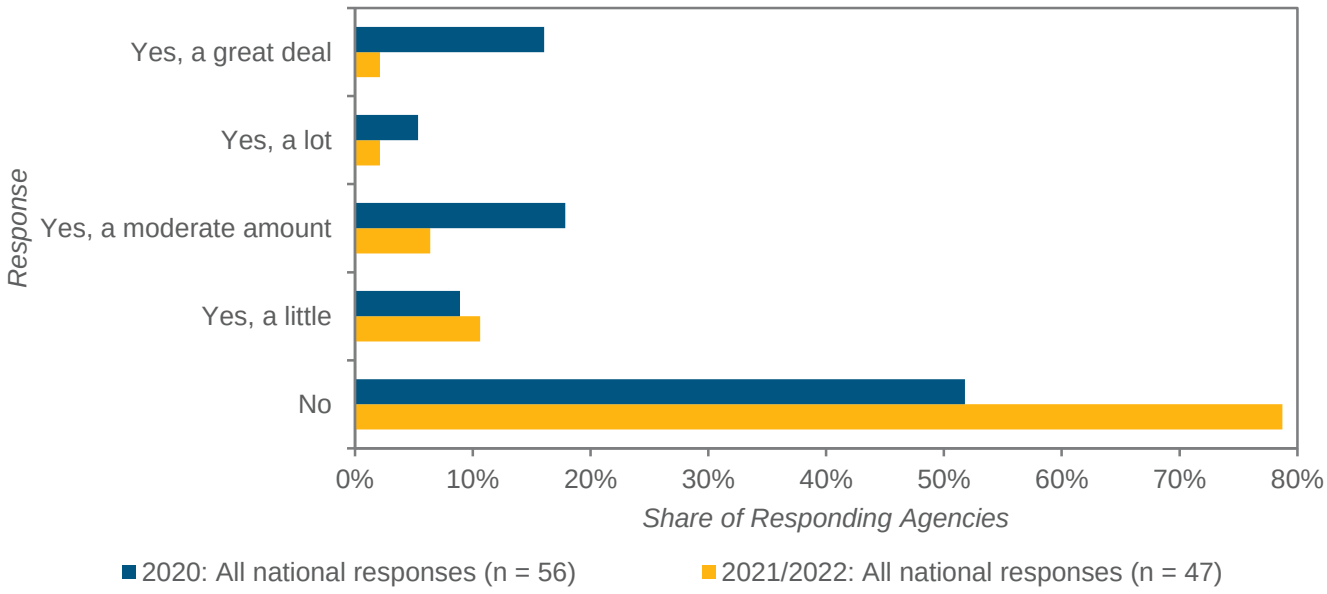

Figure 8. "Are Financial Shortfalls Affecting Your Current Service?": National Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

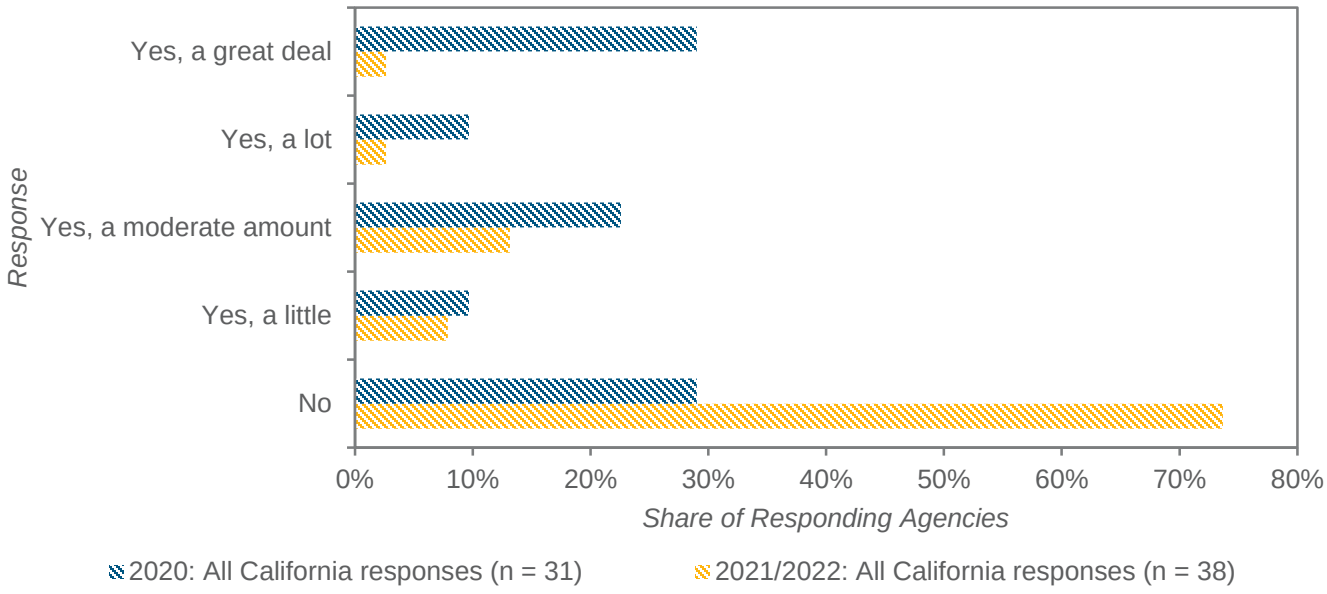

Figure 9. "Are Financial Shortfalls Affecting Your Current Service?": California Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

impossible, but we found a marked shift in the degree to which budgets steered transit service decisions as the pandemic wore on. In our earlier summer/fall 2020 survey, nearly half of the responding agencies nationally (n = 56) and 71 percent in California (n = 31) told us that financial shortfalls were affecting their service—more than moderately so for 21 percent nationally and 39 percent in California (See **Figures 8** and **9**) (Siddiq et al., 2023; Siddiq, Wasserman, and Taylor, 2022; and Speroni, Taylor, and Hwang, 2023). With ridership still near nadirs due to business closures, fear of infection, and public health orders, agencies were still grappling with sharp declines in fare revenue at the time of the first survey. At that moment, only one of the three federal stimulus bills had passed, and the degree to which subsidies from other levels of government would recover was not yet clear.

Agency finances had less of an effect on service as the pandemic wore on, however. By the time of our second survey in late 2021/early 2022, only one in five U.S. respondents (n = 47) and one in four California systems (n = 38) reported that their services were being affected by financial shortfalls (See **Figures 8** and **9**). Longitudinal comparisons of responses from agencies that completed both surveys offer similar insights (See **Figures 10** and **11**). Though labor issues (discussed in Section 7.3), COVID-19 infections, supply chain problems, and more caused transit policymakers to cut or adjust service in 2022, severe budgetary constraints were no longer a primary factor in service decisions for most transit systems (Siddiq et al., 2023; Siddiq, Wasserman, and Taylor, 2022; and Wasserman, Rios, et al., 2022).

The effects of financial shortfalls on agencies' services varied based on agency characteristics. In our national survey, systems with higher pre-pandemic farebox recovery ratios reported service being particularly affected by agency finances. The agencies that responded that financial shortfalls were affecting their current services "a great deal" in our fall 2021/winter 2022 national survey had an average pre-pandemic farebox recovery ratio of 32 percent, while agencies whose services were not affected by financial shortfalls had average pre-pandemic farebox ratios of just 12 percent (Siddiq et al., 2023 and FTA, 2022b).

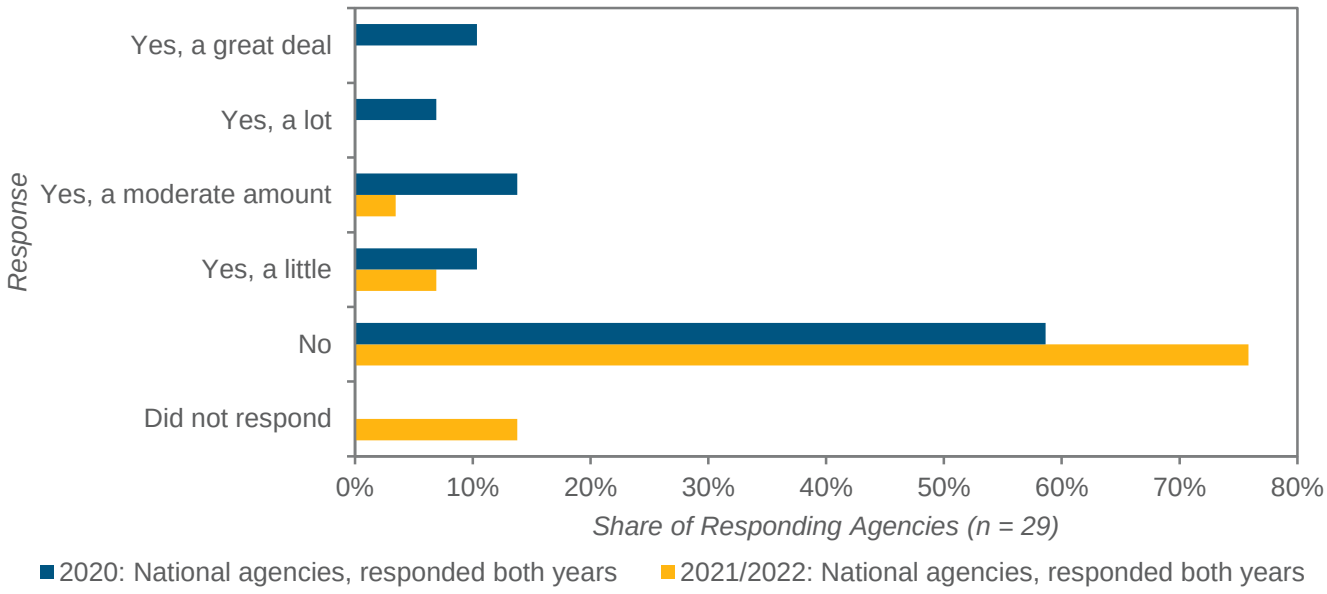

Figure 10. "Are Financial Shortfalls Affecting Your Current Service?": Comparison of Changes over Time at 29 Agencies Nationally that Responded to Both of Our Surveys

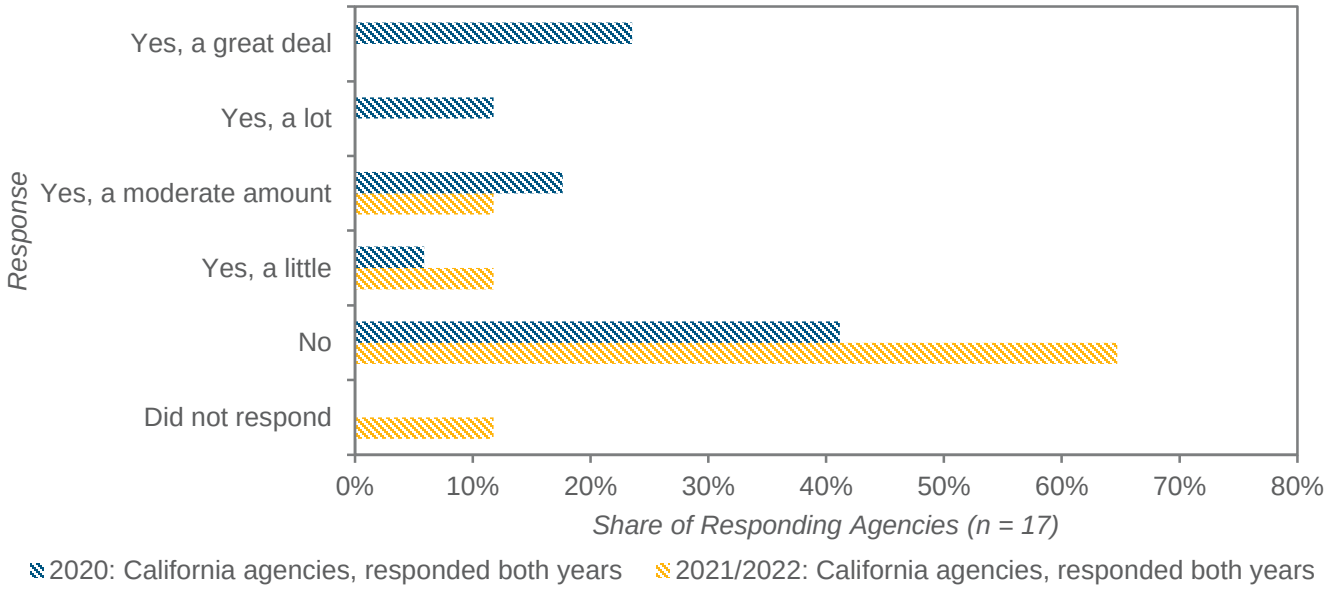

Figure 11. "Are Financial Shortfalls Affecting Your Current Service?": Comparison of Changes over Time at 17 California Agencies that Responded to Both of Our Surveys

4.3. Fares Policies and Responses to Fare Revenue Declines

Along with changes in service, many transit agencies changed how—and even if—they collected fares early in the pandemic. Along with falling ridership, these suspensions contributed to the huge decreases in fare revenues described in Section 5.4. But though the fare policies of many systems changed during the early stages of the pandemic, this dramatic shift has largely been reversed.

Many agencies eliminated fares or at least fare enforcement as a public health strategy. According to interviewees, eliminating fare payment supported efforts to reduce disease spread by reducing physical contact with payment equipment and close encounters with other queuing riders and with vehicle operators and station agents. It also allowed for rear-door boarding on some systems, which increased the spacing of riders on board vehicles and the separation between them and operators. In our national survey, 65 percent of surveyed agencies suspended formal fare collection and 18 percent stopped enforcing fare requirements (adopting an "honor system" model) for at least some portion of the pandemic. In our California sample (which included more small agencies), a lower share suspended fares, 48 percent, and 23 percent paused fare enforcement at some point (Because federal regulations mandate paratransit fares be no more than twice fixed-route fares, an honor system on fixed-route transit with a formal fare still on the books allowed charging for paratransit fares, while a full fare suspension would not have.) (H. King, Wasserman, and Taylor, 2023; Siddiq et al., 2023; Siddiq, Wasserman, and Taylor, 2022; and FTA, n.d.-a).

However, by fall 2021/winter 2022, most of these fare suspensions had ended. Nationally, fully two-thirds (66%) of responding agencies reported collecting fares as they had before the pandemic in fall 2021/winter 2022 (n = 50), compared to just over a third (37%) in summer/fall 2020 (n = 51) (See **Figure 12**).This varied little by mode: 80 percent of bus-operating agencies (n = 46), 90 percent of rail-operating agencies (n = 10), and 83 percent of paratransit-operating agencies (n = 42) reported a return to full fare collection by fall 2021/winter 2022. In our California survey, very similar shares reported the same pattern of returning to pre-pandemic fare collection policies (See **Figure 13**). And in both the U.S. and California surveys, we confirmed this change over time by noting shifts among the set of agencies that responded to both survey waves (See **Figures 14** and **15**) (Siddiq et al., 2023; Siddiq, Wasserman, and Taylor, 2022; and Speroni, Taylor, and Hwang, 2023).

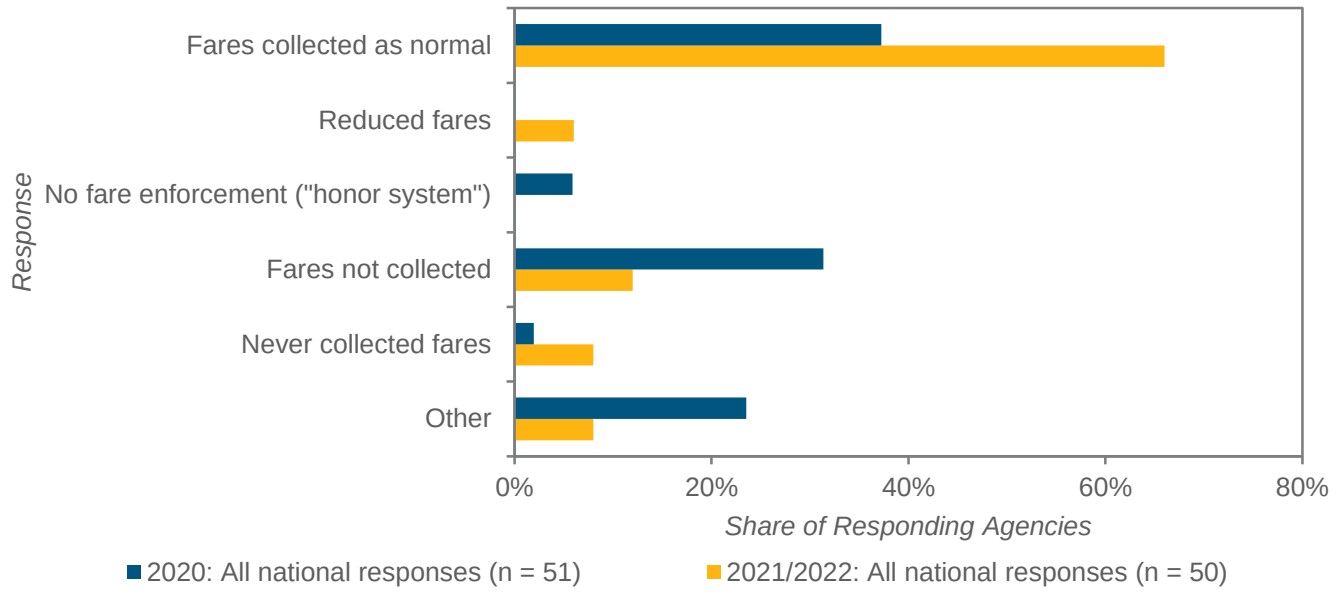

Figure 12. Changes to General Fare Policy: National Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

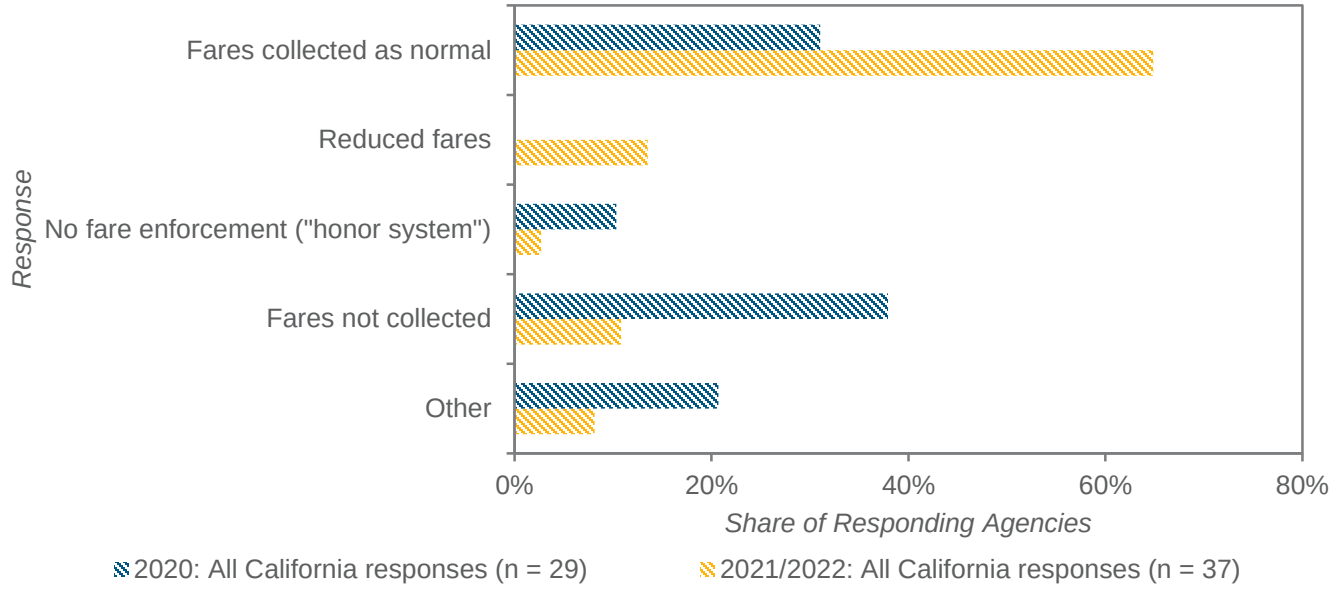

Figure 13. Changes to General Fare Policy: California Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

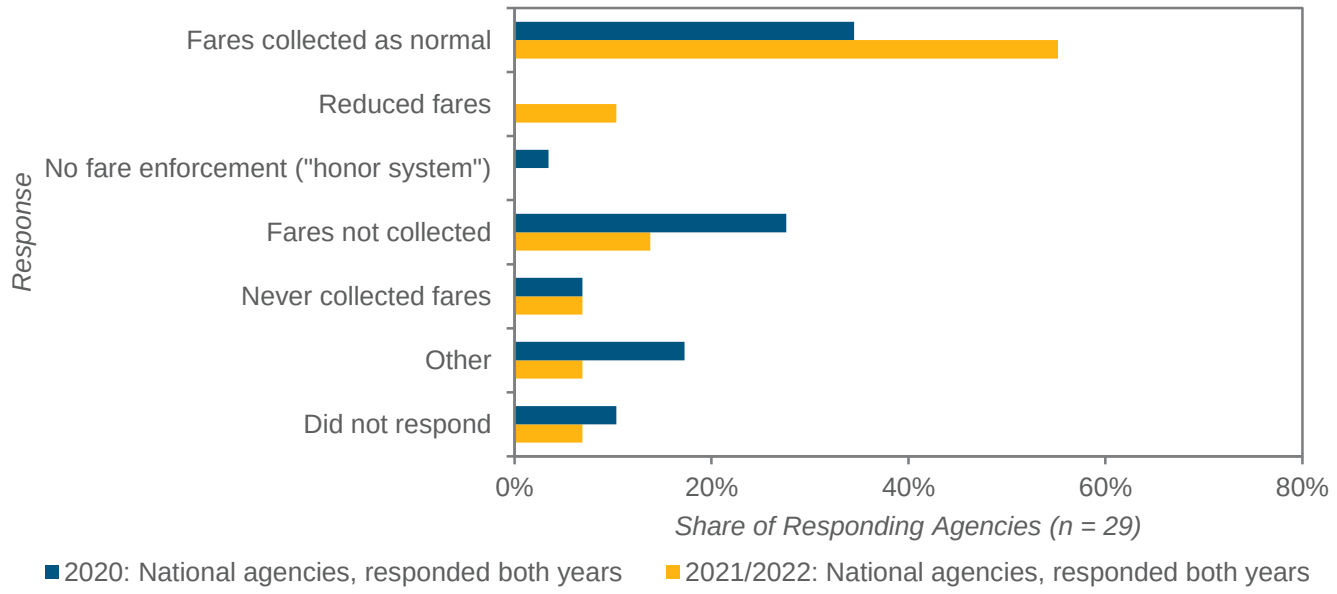

Figure 14. Changes to General Fare Policy: Comparison of Changes over Time at 29 Agencies Nationally that Responded to Both of Our Surveys

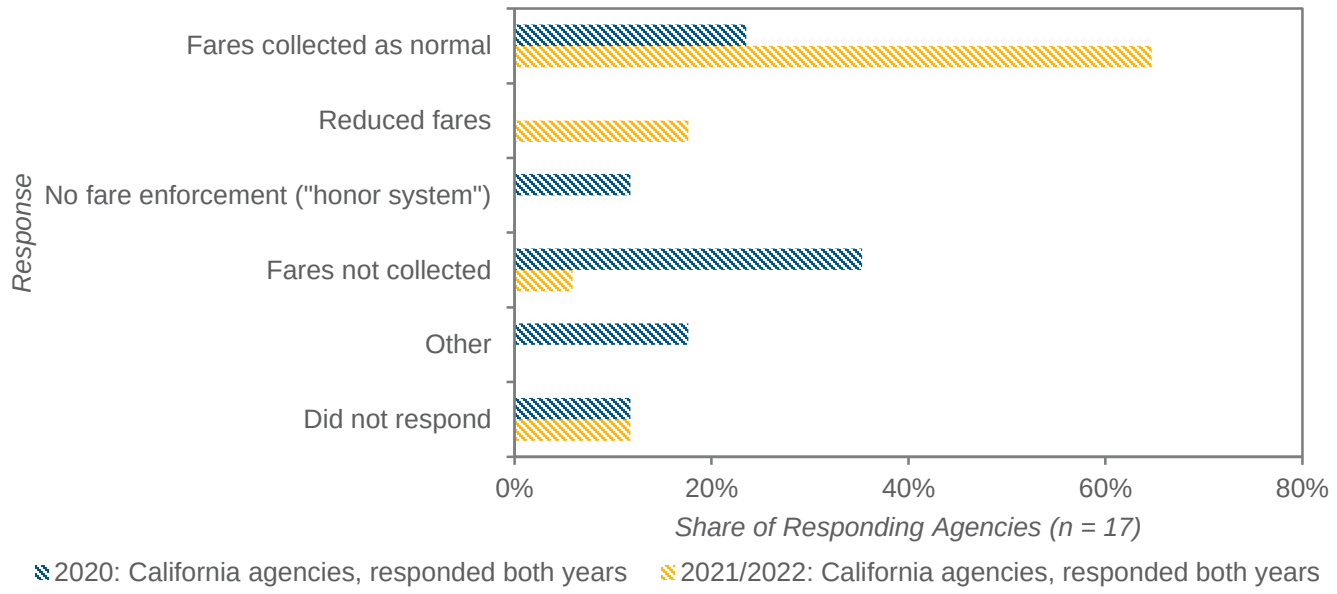

Figure 15. Changes to General Fare Policy: Comparison of Changes over Time at 17 California Agencies that Responded to Both of Our Surveys

The substantial majority of agencies that returned to their pre-pandemic fare policies in the national survey tended to be larger by annual ridership and more dependent on fare revenues pre-pandemic than the minority of systems that, as of the second survey, were still operating under modified fare policies (See **Table 2**) (Siddiq et al., 2023 and FTA, 2022b). However, skewed by the state's largest operator, the Los Angeles County Metropolitan Transportation Authority (LA Metro), which was not enforcing fares at the time, the reverse was true in the California sample in fall 2021/winter 2022 (FTA, 2022b).

Table 2. Fare Policies and Associated Agency Ridership and Farebox Recovery Ratio, National Survey

November 2021 Fare Policy	Average Pre-pandemic Annual Ridership	Average Pre-pandemic Farebox Recovery Ratio
No change from pre-pandemic	116.3 mil.	16%
Fares reduced	4.3 mil.	6%
Fares not collected	3.5 mil.	9%

Supplemental data source: FTA, 2022b

4.4. Capital Project Delivery Was Delayed at Some Agencies, Accelerated at Others

Generally, the pandemic's early effects on the finances and logistics of transit capital projects resembled those on transit's operations, but lessened relatively quickly over time. Specifically, construction and rehabilitation projects revived quickly (faster than operations), though procurement projects were slower to rebound; we discuss these below.

Nationally, transit capital project delivery improved between summer/fall 2020 and fall 2021/winter 2022. In our 2020 U.S. survey, about half of respondents had capital projects delayed due to the pandemic (n = 49), while by fall 2021/winter 2022, only three in ten had (n = 45). A much larger share of U.S. agencies in the fall 2021/winter 2022 survey told us that their capital projects were unaffected (49%) (See **Figure 16**). This pattern did not vary by the modes the agencies operate. Forty-seven percent of agencies that operate buses (n = 43), 43 percent that operate rail (n = 7), and 54 that operate paratransit (n = 39) in our 2021/2022 national sample reported that their capital projects were unaffected (Siddiq et al., 2023 and Speroni, Taylor, and Hwang, 2023).

Among agencies that responded to both surveys, about 20 percent shifted from being uncertain about the effects of the pandemic on their capital projects or having projects delayed during 2020 to having their projects underway or accelerated by fall 2021/winter 2022 (n = 29) (See **Figure 17**) (Siddiq et al., 2023).

In contrast to our findings that operating shortfalls affected service more at large, high farebox-recovery systems, longer-term capital planning at larger agencies nationally was less likely to have been disrupted by the pandemic. The 16 percent of U.S. respondents whose capital planning remained "relatively unaffected" in fall 2021/winter 2022 because projects were already underway were larger, on average, with an average annual pre-pandemic ridership of 57 million and with a modest average farebox recovery ratio of 14 percent. Meanwhile, the 31 percent of responding U.S. systems with delayed projects in 2021/2022 had an average annual pre-pandemic patronage

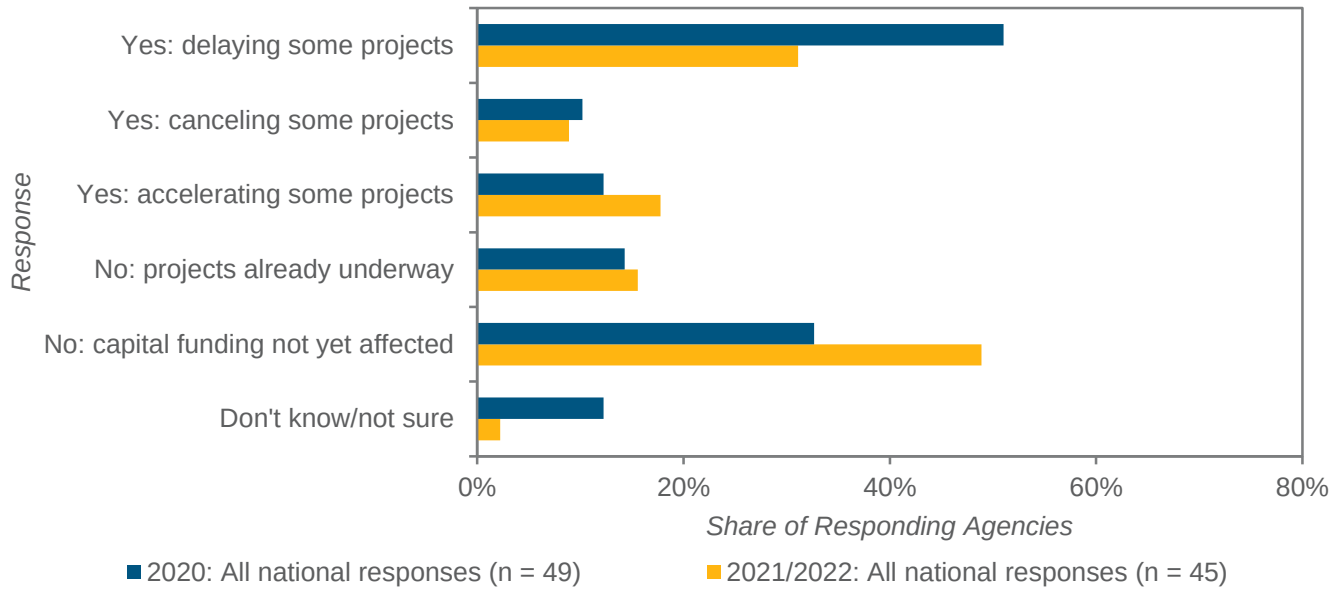

Figure 16. Has the Pandemic Affected Longer-term Capital Planning?: National Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

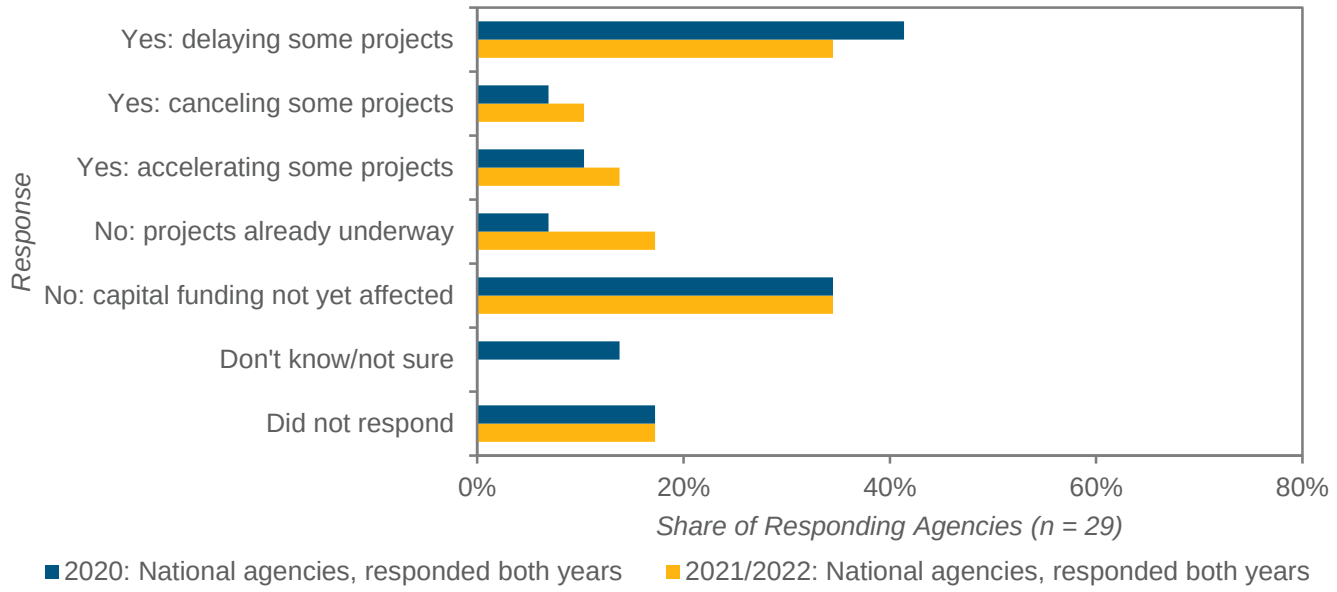

Figure 17. Has the Pandemic Affected Longer-term Capital Planning?: Comparison of Changes over Time at 29 Agencies Nationally that Responded to Both of Our Surveys

of 11 million and a farebox an even lower recovery ratio of 10 percent, and agencies that had projects canceled (9%) averaged fewer than one million annual boardings and a farebox recovery ratio of just five percent (See **Figure 18**) (Siddiq et al., 2023 and FTA, 2022b). In short, larger U.S. agencies' capital planning was less affected than medium agencies and medium agencies were less affected than smaller agencies.

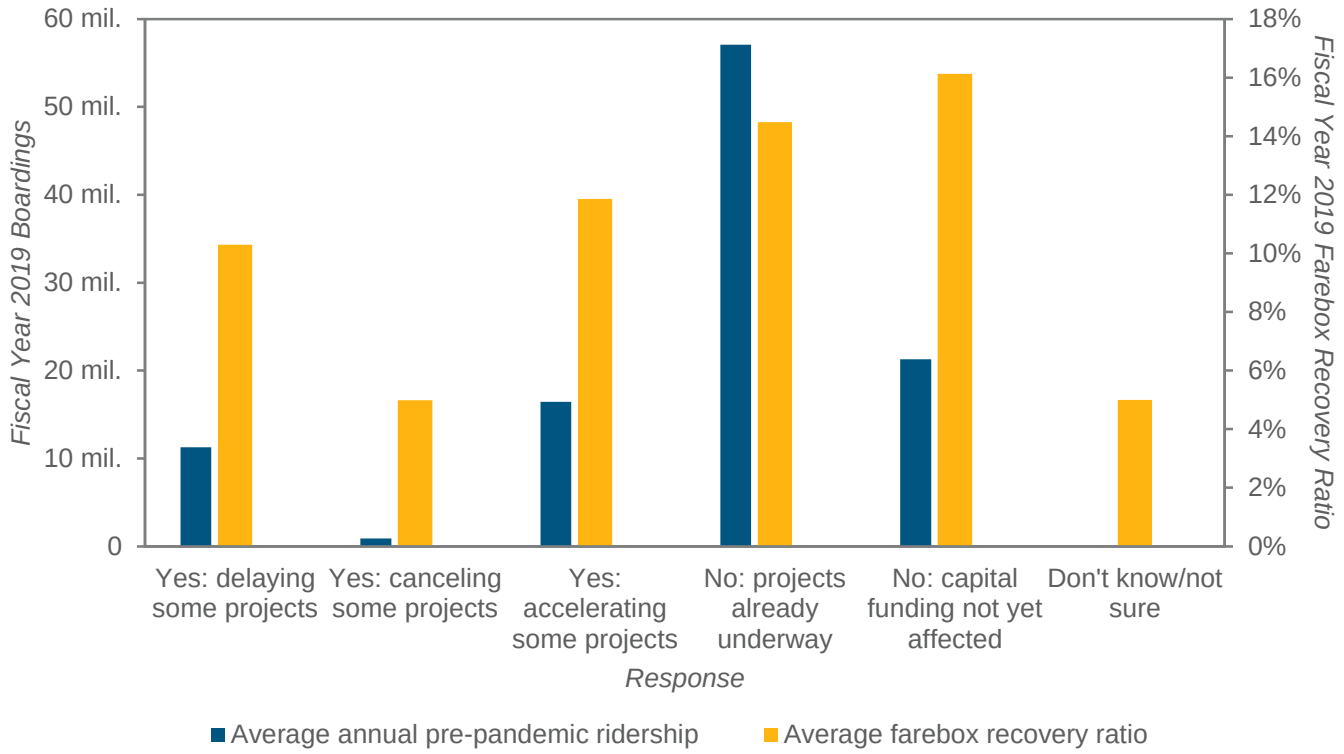

Figure 18. Has the Pandemic Affected Longer-term Capital Planning?: Fall 2021/Winter 2022, Associated Pre-pandemic National Average Agency Ridership and Farebox Recovery Ratio

Supplemental data source: FTA, 2022b

In California, the pandemic had slightly less of an initial effect on capital planning: one in three surveyed agencies in our California sample had delayed and/or canceled capital projects in summer/fall 2020 (n = 27). By fall 2021/winter 2022, 76 percent of respondents in the state reported that their projects were largely unaffected (n = 37) (See **Figure 19**). The set of California agencies that responded to both survey waves concurred, with a shift towards projects getting underway or back on track (See **Figure 20**) (Siddiq, Wasserman, and Taylor, 2022). We did not observe a clear pattern in California among agency responses by their farebox recovery ratios (FTA, 2022b).

Some agencies in each sample reported that the pandemic allowed them to *accelerate* their capital projects (18% nationally, 22% in California in fall 2021/winter 2022) (See **Figures 16**-**20**) (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022). In our national survey, these few agencies were generally small and medium-sized (Siddiq et al., 2023 and FTA, 2022b). Interviewees suggested that construction projects could be sped up due to less traffic on roads for a period, more down time for maintenance of vehicles due to service cuts, less disruption to travelers due to lower ridership, etc. (H. King, Wasserman, and Taylor, 2023).

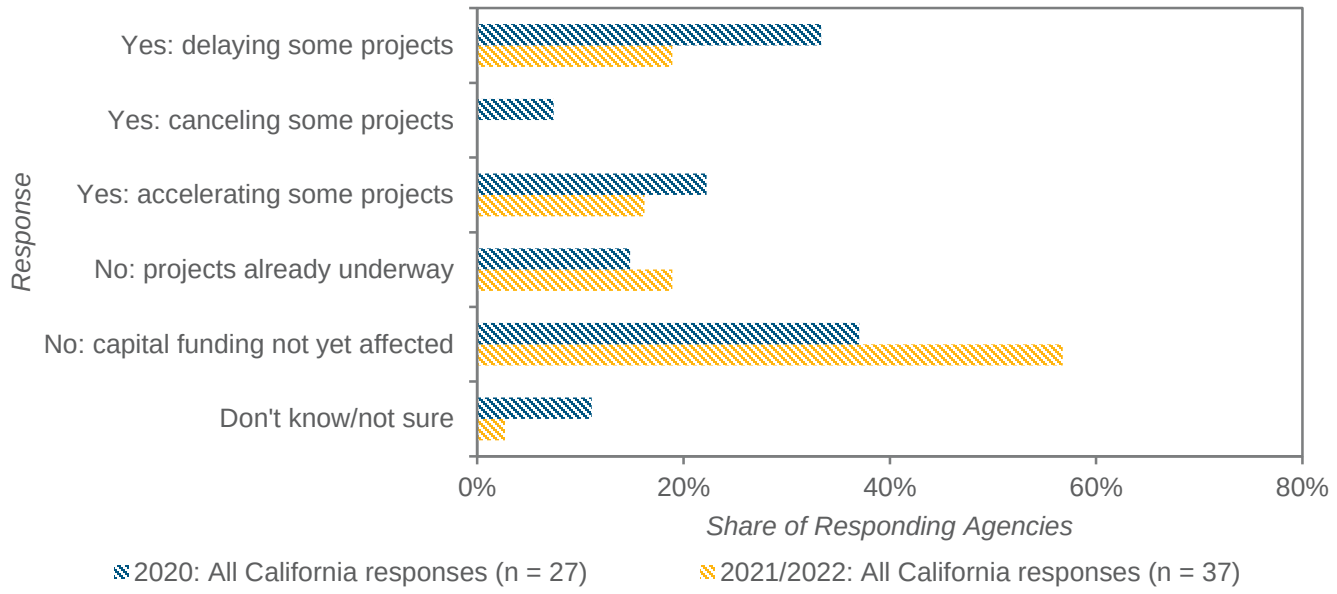

Figure 19. Has the Pandemic Affected Longer-term Capital Planning?: California Repeated Cross-sectional Comparison

Note: Respondents that skipped the question in each survey wave are excluded.

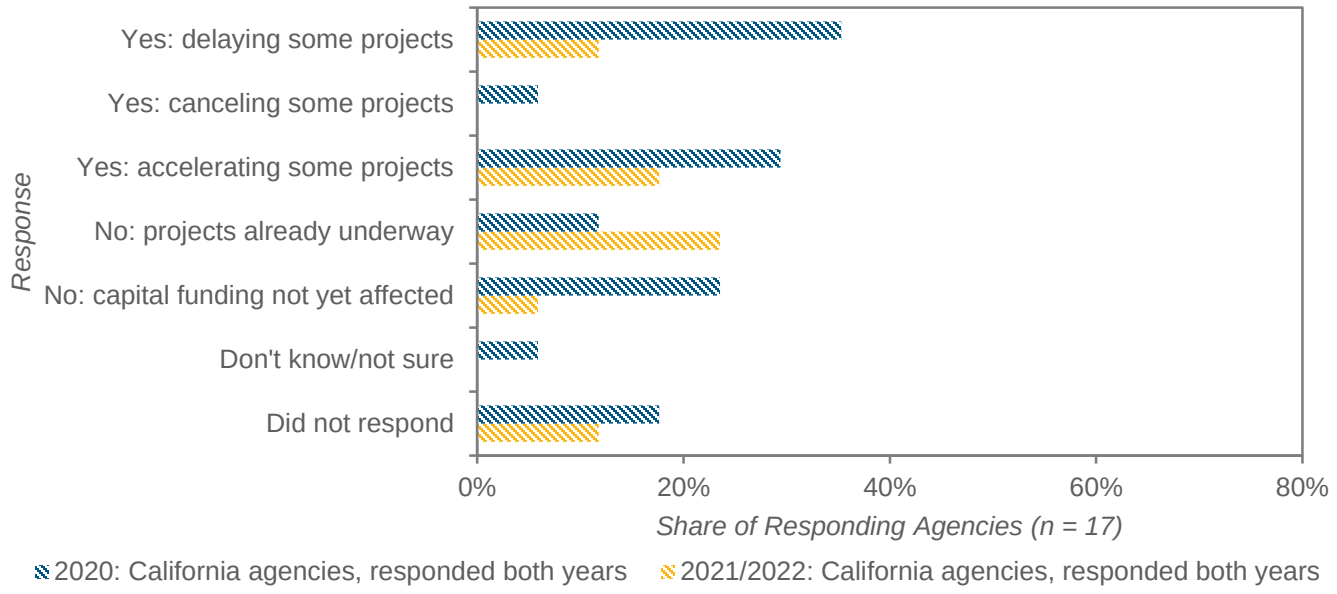

Figure 20. Has the Pandemic Affected Longer-term Capital Planning?: Comparison of Changes over Time at 17 California Agencies that Responded to Both of Our Surveys

5. What Happened to Funding?

5.1. A Legislative Rescue Arrived Swiftly

With the pandemic wreaking havoc on ridership and forcing transit systems to implement public health, service, and capital planning changes, transit agency finances in 2020 were in peril in both the short and medium term. Atop the early, dramatic changes to transit demand and operations, the costs of transit delivery and the sources of transit funding both were in turmoil at the start of the pandemic. State and local revenues for transit, collected from sales taxes, fuel taxes, and other tax instruments, wavered or at least threatened to waver. We discuss each of these aspects of the crisis in turn in the sections below. But collectively, they merited a national response that, at least temporarily, changed the relationship between the federal government and local transit agencies.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed. This stimulus bill touched on many realms of the U.S. economy, labor market, and health care system, including direct payments of around $1,200 to most Americans. After an initial battle for advocates to get transit included in the bill, U.S. agencies received $25 billion in operating relief (on top of long-established federal capital funding that continued to flow throughout the pandemic). Agencies used these funds to retain workers and stave off severe service cuts. But by July 2020, analysts foresaw the funds running out by the end of the calendar year in the ten most transit-using regions of the country (Smaller agencies, receiving more stimulus finding proportionally, were in a better position.) (Bureau of Transportation Statistics, n.d.; FTA, 2021b; Still and Shapiro, 2021; Teale, 2020; and TransitCenter, 2020b).

Signed into law on December 27, 2020, the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act (perhaps best known for providing $600 checks to Americans) sent another $14 billion to U.S. transit agencies. For reasons described further below, however, fewer agencies received CRRSA funds than CARES funds. Nonetheless, the operating support in the CARES and CRRSA Acts together added up to around half of all transit operating expenditures in the U.S. in 2018. Still, agency managers worried that CRRSA would not extend their budgetary solvency for that much longer, given that costs were remaining high and ridership low (Bureau of Transportation Statistics, n.d.; FTA, 2021g; Still and Shapiro, 2021; Mallett and Goldman, 2020; and Bliss, 2020). With a new administration taking office in 2021 and prioritizing further pandemic relief, President Biden signed the American Rescue Plan (ARP) Act on March 11 of that year, the third and final stimulus bill. Along with $1,400 individual payments, the ARP Act gave U.S. transit systems $31 billion (Bureau of Transportation Statistics, n.d.; USDOT, 2021; and Still and Shapiro, 2021).

Altogether, the three stimulus bills provided U.S. and California transit agencies with an invaluable lifeline, allowing them to continue to provide mobility services during a time of crisis to essential workers, low-income travelers, and others most dependent on transit. They changed the federal role in transit in the U.S., funding much of the operations when previously (and subsequently, it would turn out) capital projects were the primary focus of federal transit funding (Taylor, 2017). However, these funds are soon to be spent down across the state and, while President Biden has proposed to ease the restrictions on using federal transit capital funding for operations, no new federal operating subsidies are currently in the offing (Zukowski, 2023 and Davis, 2023).

5.2. The Initial Outlook Was Bleak

Initially, the pandemic prompted dire financial forecasts for the state's transit systems. Atop fare revenue declines, transit agency staff foresaw drops in other revenue sources, as the spring 2020 economic slowdown threatened tax revenues and as local, state, and federal governments stood poised to tighten their belts significantly. Among the transportation funding scenarios developed by Agrawal et al. (2020), the most pessimistic plotted major fees and taxes that support transportation depressed until at least 2040. At LA Metro, a finance staffer we interviewed recalled loss projections of $1.8 billion over two years. Beyond just transportation, states across the U.S. were staring down annual budgetary losses of $200 billion (Dadayan, 2020). While the economy and transit subsidies generally bounced back fare more quickly and robustly than these worst-case scenarios, transit agency planners had to reckon with these forecasts at the time.

As with most of U.S. society, the pandemic largely caught transit agencies unawares. None of the transit managers with whom we spoke reported anticipating or having contingency plans for rider and fare revenue losses of the magnitude they experienced early in the pandemic. And although many agencies expected some form of emergency federal support to be provided, before Congress passed the stimulus bills, that support was by no means guaranteed (especially the second and third bills). The potential impacts of the pandemic on local non-fare sources of revenue were also uncertain. Early in the pandemic, the high level of uncertainty over fare revenues, local sources of operating funds, and federal assistance was a serious issue for most agencies. The uncertainty contributed to what one interviewee described as an "existential crisis," and most found themselves in crisis response mode early on in the pandemic. Even after the formal approval of the CARES Act in the first month of the pandemic, many transit managers remained concerned with and took steps to maintain sufficient liquidity to fund ongoing operational needs, as relief funds were not immediately available to agencies upon passage. For many agencies, this included dipping into operating reserves. Most non-fare sources of transit revenues began to bounce back after a sharp dip in the spring of 2020, as the partially-closed economy roared back to life. The exact amount of funds agencies would receive from these other revenue sources was, however, an additional source of uncertainty in Fiscal Year 2021 but less so thereafter (H. King, Wasserman, and Taylor, 2023).

5.3. Both Costs and Subsidies Rose

While the most severe predictions of revenue shortfalls did not come to pass, service did become more expensive to provide. The average vehicle-hour of revenue service in California increased in cost by 18 percent between Fiscal Year 2019 and Fiscal Year 2021 (See **Table 3**). With workers off sick, caring for sick relatives, or leaving altogether, many agencies relied more on overtime pay for remaining workers to supply each hour of service. Meanwhile, more stringent cleaning procedures, the purchase and distribution of personal protective equipment, and other sanitation measures and COVID-19 protocols added to costs (discussed further in Section 3.4), as did wage increases and bonuses (discussed further in Section 7.3) (FTA, 2022b; Bureau of Labor Statistics, 2022a; and H. King, Wasserman, and Taylor, 2023). Finally, at agencies that cut service, many overhead costs (back-office staff such as human resources, mechanics, equipment, etc.) stayed the same or only slightly decreased; divided over fewer hours of service, these fixed operating costs contributed to higher costs for each hour of remaining service. Service changes therefore did not proportionally save as much money as they cut hours.

Compared to the state's 18 percent increase in total transit costs between FY 2019 and FY 2021, the cost of a vehicle-hour of bus service rose slightly less and the cost of a vehicle-hour of rail service slightly more. Demand-

Table 3. Changes in Inflation-adjusted Cost-efficiency of California Transit Service

Mode	Cost per Vehicle Revenue Hour, Fiscal Year 2019	Cost per Vehicle Revenue Hour, Fiscal Year 2021	Change in Cost per Vehicle Revenue Hour, Fiscal Year 2019-Fiscal Year 2021
Bus	$161.58	$183.10	+13%
Rail	$418.81	$498.68	+19%
Demand response	$78.52	$105.22	+34%
Total	**$179.67**	**$211.54**	**+18%**

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

response transit had a more dramatic change: a vehicle-hour of demand-response service increased by 34 percent (See **Table 3**) (FTA, 2022b and Bureau of Labor Statistics, 2022a).

At the same time that costs of service increased, ridership fell. Because ridership fell much more than service was cut, the metric of operating subsidies per boarding spiked. This effectiveness measurement—operating costs less fare revenues, all divided by unlinked passenger trips—is commonly used to show how much an agency spends on each ride above the fare paid.[5] In California overall, the subsidy per transit trip nearly tripled between Fiscal Year 2019 and 2021, rising from $5 to almost $14 every boarding (See **Table 4**). With fare collection commonly suspended (discussed further in Section 4.3) and remaining riders more likely to qualify for discounted low-income fares (described in Section 7.4), revenues fell (See **Figure 21**) amid the rising costs. While bus operating

Table 4. Changes in Inflation-adjusted Operating Subsidies per Boarding on California Transit

Mode	Subsidy per Boarding, Fiscal Year 2019	Subsidy per Boarding, Fiscal Year 2021	Change in Subsidy per Boarding, Fiscal Year 2019-Fiscal Year 2021
Bus	$4.84	$11.28	+133%
Rail	$4.01	$20.92	+422%
Demand response	$22.90	$36.22	+58%
Total	**$4.99**	**$13.94**	**+180%**

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

5. This measure does not include capital expenses. When amortized into the subsidy calculation, the full subsidy per boarding of a transit trip is even higher, especially for rail transit (Taylor et al., 2020).

subsidies per boarding more than doubled over the same period, per-rider rail operating subsidies (less than per-rider bus subsidies in FY 2019) skyrocketed to nearly $21, more than quintupling as ridership plummeted (See **Figure 5**). Already expensive demand-response services became more subsidized per rider (FTA, 2022b and Bureau of Labor Statistics, 2022a), as protocols at the height of the pandemic cut the number of shared rides of paratransit, in favor of more costly individual rides. This change, discussed further in Section 4.1, simultaneously increased costs while reducing capacity (H. King, Wasserman, and Taylor, 2023).

5.4. Fare Revenue Dropped

The pandemic slashed fare revenues. In our survey and in NTD data, fare revenues suffered the starkest and most direct negative effects of the pandemic of any funding category. Through both falling ridership (See **Figure 4**) and fare suspensions (discussed in Section 4.3), California agencies collected 80 percent less fare revenue in Fiscal Year 2021 than in Fiscal Year 2019. **Figure 21** shows these dramatic losses: 77 percent on buses, 84 percent on rail, and $1.5 billion in total. Since the end of Fiscal Year 2021, most agencies have returned to their pre-pandemic policies for non-targeted, non-discounted fares, as our survey found (see Section 4.3), but depressed fare revenues remained common across the industry due to lagging ridership (and, potentially, to greater implementation of targeted fare discounts and passes (See Section 7.4)). In our national survey, all of the responding agencies that collected fares prior to the pandemic reported a decline in fare revenue and farebox recovery ratio in fall 2021/winter 2022 compared to before the pandemic; all but two California respondents

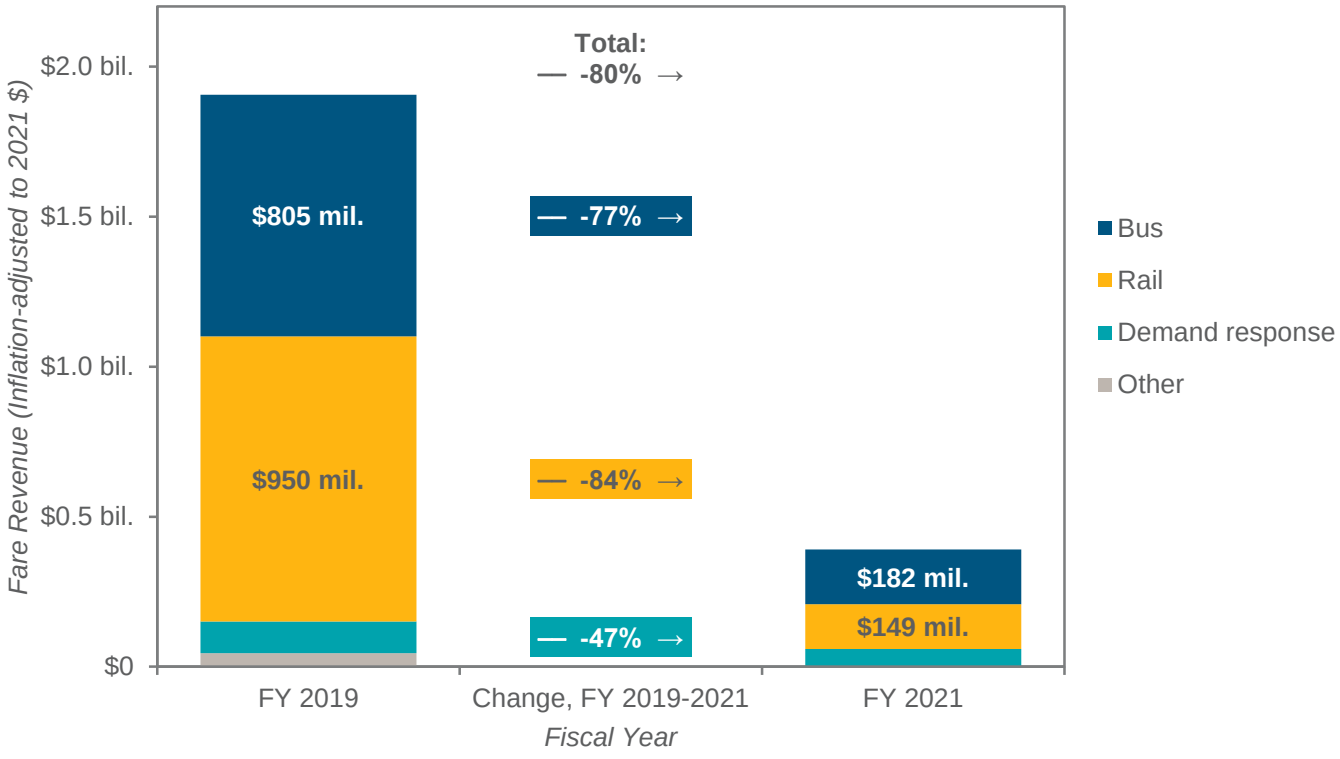

Figure 21. Transit Fare Revenues in California by Mode

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

reported the same (save two that reported no change). Indeed, across all funding categories in the survey, fare revenues suffered the starkest and most direct negative effects of the pandemic (FTA, 2022b; Bureau of Labor Statistics, 2022a; and Siddiq et al., 2023).

Agencies of all sizes and in all regions lost significant shares of their fare revenues. Of the 181 agencies in California in the NTD that collected any fares both years, 79 percent earned less than half of their Fiscal Year 2019 fare revenue in Fiscal Year 2021. Every agency with more than 10 million annual pre-pandemic boardings lost over half its fare revenues, and every agency with more than 4 million lost more than 35 percent. Long Beach Transit, the City of Los Angeles Department of Transportation (LADOT), and the San Francisco Municipal Transportation Agency (SFMTA) each lost more than 90 percent of their fare revenues, with the state's largest system by ridership, LA Metro, faring just a fraction of a percentage point better. While smaller agencies also experienced large losses, they tended to depend less on fare revenues before the pandemic than larger agencies. Their pandemic fare losses as a share of their operating expenses tended to be less, thus denting their budgets less severely (FTA, 2022b and Bureau of Labor Statistics, 2022a).

5.5. Operating Expenditures Contracted

Put together, how did these trends affect overall operating budgets? Though the cost of each hour of service went up, total operating expenditures fell, on average. With service costlier and demand lower, agencies saved money

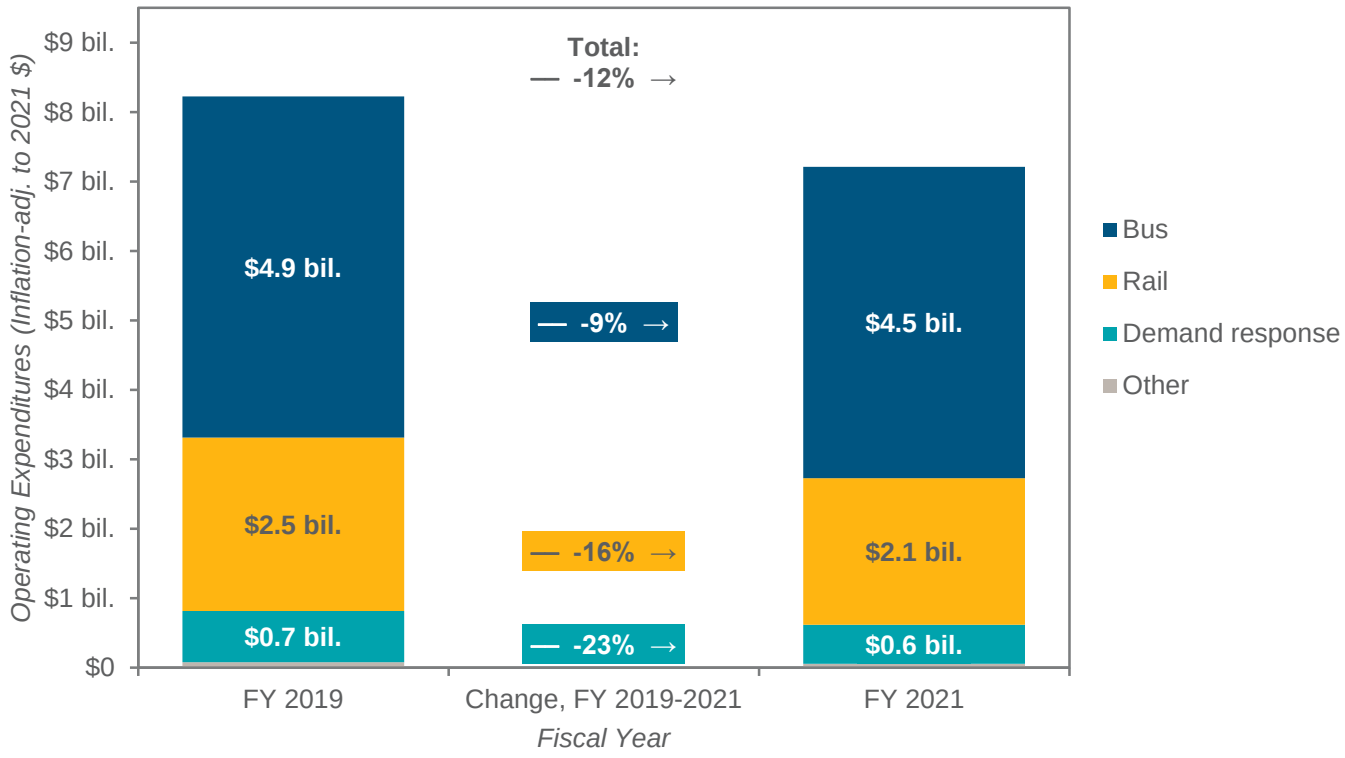

Figure 22. Transit Operating Expenditures in California by Mode

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

by cutting service (discussed in Section 4.1), as well as, in many cases, freezing new hiring and taking other workforce steps (discussed in Section 3.3). These and other cost-cutting measures led to a 12 percent reduction (just over $1 billion) in operating expenditures, adjusting for inflation, between Fiscal Years 2019 and 2021. Bus operating expenses fell nine percent, while rail operating costs dropped 16 percent (See **Figure 22**) (FTA, 2022b and Bureau of Labor Statistics, 2022a).

6. What Effects Did Pandemic Funding Changes Have on Transit?

6.1. Federal Stimulus Funding Bailed Out Transit

The three federal stimulus bills gave California transit systems a critical lifeline when they most needed it. The CARES, CRRSA, and ARP Acts, whose legislative history is described in Section 5.1, collectively provided $10.4 billion of relief funds to California transit agencies. This emergency federal assistance was vital and successful in addressing many of the immediate operational challenges facing transit agencies at the height of the COVID-19 pandemic (FTA, 2021c, 2021e, 2021h, 2022e and H. King, Wasserman, and Taylor, 2023).

The FTA, which distributed and administered the transit funding in the three stimulus bills, gave agencies extraordinary flexibility in using these funds. **Table 5** outlines the details of each bill. With this new flexibility, agencies could use funds on any operational or payroll expense or on capital projects if they did not furlough employees. Not only did the bills represent an unprecedented level of support for transit operations from the federal government, but unlike most federal capital funding, the pandemic relief funds did not require a local match (FTA, 2021a, 2021b, 2021d, 2021f, 2021g and Wasserman, Rios, et al., 2022).

Urbanized Area Formula Funds (§ 5307) made up the bulk of the bills' funding. The FTA allocated these dollars by urbanized area (Census-defined areas of contiguous development, which do not necessarily correspond to political boundaries). Metropolitan planning organizations (MPOs), the bodies ordinarily tasked with long-range regional planning and distributing federal transportation capital funds, were responsible for dispersing stimulus funds to transit agencies in urbanized areas within their region. CARES Act funds were split between urbanized areas by the same formula used for pre-pandemic urban transit capital funding, which factors in levels of transit service, population, and population density. The CRRSA and ARP Acts added the requirement that urbanized areas generally not exceed 75 percent and 132 percent in combined stimulus funding, respectively, of the pre-pandemic operating expenses of all area agencies, using Fiscal Year 2018 as the baseline (See **Table 5**). Each bill also included funds for rural and tribal transit (§ 5311) and paratransit for older and disabled travelers (§ 5310), among other programs (FTA, 2021a, 2021b, 2021d, 2021f, 2021g, n.d.-b; SCAG Transportation Committee, 2021; U.S. Census Bureau, 2021b; and Wasserman, Rios, et al., 2022).

Not every agency qualified for funding every bill. Because of the size of the CARES Act and the vagaries of its distribution formula, some urbanized areas exceeded 75 percent of their pre-pandemic operating expenses in CARES funds alone. Agencies in these areas therefore did not get any CRRSA funds, though they did not have to forfeit their surplus funds. They became eligible for additional funding from the ARP Act once it lifted the cap to 132 percent (See **Table 5**). The ARP Act also included a competitive round of additional assistance, with winners announced in March 2022, a year after the bill's passage (SCAG Transportation Committee, 2021; LA Metro staffer, 2021; SBCTA staffer, 2021; FTA, 2022a, 2022e; and Wasserman, Rios, et al., 2022).

Table 5. Details of Transit Funding in the Federal COVID-19 Stimulus Bills

Stimulus Bill	Date Passed	Fund Expiration	National Total for Transit	Eligible Uses	Additional Regulations and Notes
Coronavirus Aid, Relief, and Economic Security (CARES) Act	Mar. 2020	never	$24.9 bil.	Operating and capital expenses for responding to COVID-19	No local match required
Coronavirus Response and Relief Supplemental Appropriation (CRRSA) Act	Dec. 2020	never	$14.0 bil.	"To the maximum extent possible," payroll and operational needs prioritized Any other use related to COVID-19 preparedness and response allowed if no employees furloughed	No local match required Urbanized Area funding: Combined CARES and CRRSA funds in a given urbanized area cannot exceed 75% of the area's FY 2018 NTD operating costs Rural funding: Combined CARES and CRRSA funds in a given state cannot exceed 125% of the state's FY 2018 rural NTD operating costs
American Rescue Plan (ARP) Act	Mar. 2021	must be obligated by Sept. 30, 2024 and spent by Sept. 30, 2029	$30.5 bil.	Payroll and operational needs prioritized Any other use related to COVID-19 preparedness and response allowed if no employees furloughed	No local match required Urbanized Area funding: Combined CARES, CRRSA, and ARP funds in a given urbanized area cannot exceed 132% of the area's FY 2018 NTD operating costs (unless the area's CARES funds were already above 132%, in which case the area can receive an additional 25% of its FY 2018 NTD operating costs) Rural funding: States that received at least 150% of FY 2018 rural NTD operating costs from CARES can receive another 5% from ARP. States that received 140%-150% from CARES can receive another 10% from ARP. States below 140% could receive another 20% from ARP. Supplemental competitive round of Additional Assistance funding in Mar. 2022

Adapted from: Wasserman, Rios, et al., 2022

Data sources: FTA, 2021a, 2021b, 2021d, 2021f, 2021g

6.2. California and Its Major Regions Fared Well in Stimulus Funding

California received much aid from the stimulus bills. Transit systems in the Golden State took in 15.4 percent of the nation's combined transit stimulus dollars, while the state is home to only 11.9 percent of the U.S. population, 12.8 percent of pre-pandemic Fiscal Year 2019 transit boardings, and 11.0 percent of Fiscal Year 2021 transit boardings. The state fared even better in the competitive ARP Additional Assistance allocation, scoring 28.7 percent of the granted funds (FTA, 2021c, 2021e, 2021h, 2022b, 2022e and U.S. Census Bureau, 2020).

Table 6 breaks down these funds by region. Most of the state's funds went to Greater Los Angeles and the Bay Area. As shown in **Table 7**, the Bay Area received a very large amount of funds per capita—but it was also the region of the state with by far the most pre-pandemic transit use per capita and is home to some of the most fare-dependent, hardest hit transit systems. By share of pre-pandemic operating expenses covered, the regions look much more similar, with the San Diego region on top. Finally, by share of annual fare losses covered, the Sacramento region did best and the Bay Area worst. The Bay Area benefited most from the discretionary ARP Additional Assistance round, without which the region would have only received 132 percent of its annual pre-pandemic operating expenses in stimulus funds (FTA, 2021c, 2021e, 2021h, 2022b, 2022e; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; SACOG staffer, 2021; and U.S. Census Bureau, 2020).

Table 6. Federal Pandemic Relief Funding for California Transit Agencies, by Region

	CARES	CRRSA	ARP		Total
			Initial Allocation	Additional Assistance (Competitive)	
Greater Los Angeles	$1,616.8 mil.	$968.6 mil.	$1,794.9 mil.	$84.5 mil.	$4,464.7 mil.
San Francisco Bay Area	$1,288.4 mil.	$987.0 mil.	$1,676.8 mil.	$535.7 mil.	$4,488.0 mil.
San Diego region	$316.6 mil.	$2.6 mil.	$258.1 mil.	$0	$577.3 mil.
Sacramento region	$134.5 mil.	$42.9 mil.	$120.2 mil.	$0	$297.6 mil.
Rest of the state	$381.8 mil.	$95.2 mil.	$126.9 mil.	$12.4 mil.	$616.2 mil.
California total	**$3,738.1 mil.**	**$2,096.2 mil.**	**$3,976.9 mil.**	**$632.6 mil.**	**$10,443.8 mil.**

Data sources: FTA, 2021c, 2021e, 2021h, 2022e; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; and SACOG staffer, 2021

Table 7. Breakdown of Federal Pandemic Relief Funding for Transit Agencies by California Region

	Combined Stimulus Funding per Capita	Share of Annual Pre-pandemic Operating Expenses Covered by Combined Stimulus Funding	Share of Annual Fare Revenue Losses Covered by Combined Stimulus Funding
Greater Los Angeles	$237	135%	977%
San Francisco Bay Area	$578	149%	538%
San Diego region	$175	150%	991%
Sacramento region	$115	127%	1,469%

Note: Population from 2020, pre-pandemic operating expenses from Fiscal Year 2018, annual fare revenue losses comparing Fiscal Year 2021 and Fiscal Year 2019

Data sources: FTA, 2021c, 2021e, 2021h, 2022b, 2022e; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; SACOG staffer, 2021; and U.S. Census Bureau, 2020

6.3. Many California Transit Agencies "Couldn't Have Survived" without Federal Pandemic Relief Funds

To take a step back, with some variability across regions, the stimulus bills supplied more than a year's worth of operating expenses to transit agencies (See **Table 7**). In the face of a crisis of transit operations and finance, federal stimulus dollars provided much-needed support and stability. Federal operating funds were essential to the financial health of transit agencies during the pandemic by helping them, according to one interviewee, "ameliorate the damage" wrought by COVID-19. Many of the interviewees were explicit in calling out the pivotal role played by these federal pandemic relief funds. Indeed, during the earliest months of the pandemic, most non-fare revenue sources dropped as well, which were backfilled by federal pandemic relief funding (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022). This allowed transit agencies to "hunker down" and "watch what was happening over time" rather than respond hastily to conditions likely to change soon regardless (H. King, Wasserman, and Taylor, 2023).

What if the stimulus bills had not passed? Reflecting on this hypothetical, interviewees suggested their agency might have cut service much more severely than actually occurred. As one interviewee told us, "Without federal stimulus funds, [our agency] would have had to cut routes." Another at an agency that did make some service reductions noted, "We would have, at that time, been talking about permanent service cuts, not temporary." Federal funds in this way allowed agencies to avoid what that interviewee described as a "death spiral" of reduced service leading to declining fare revenues leading to more reductions in service. Agencies that merely furloughed workers may very well have laid them off without stimulus funds to keep personnel budgets afloat. These service and workforce cuts, in turn, would have harmed those most dependent on transit. Descriptions of the importance

of the federal funding ranged from helping agencies avoid “real difficulty” to the claim by a senior-level staff member at a large transit agency that they simply “couldn’t have survived” without the federal pandemic relief funds. In short, federal emergency funds allowed transit agencies to keep operating through the worst of the pandemic (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Federal funds were particularly important in mitigating layoffs, furloughs, and service cuts early in the pandemic (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022). For agencies, the federal pandemic relief funds came with requirements and expectations that preventing layoffs was a high priority (See **Table 5**) (H. King, Wasserman, and Taylor, 2023). Given that labor constitutes the majority of operating costs for most transit agencies (Dickens, 2021), “the first thing” the federal funds were used for at most agencies was preventing layoffs, per interviewees (H. King, Wasserman, and Taylor, 2023).

In sum, the federal pandemic relief funds proved to be a critical component of California transit finance during the pandemic. While allowed to use their funds for a wide variety of purposes, agencies tended to spend their funds on basic operational costs, especially labor expenses. Federal dollars covered sick leave used by many front-line workers and overtime for others who covered their shifts. They enabled a number of agencies to retain vehicle operators even when service cuts meant that they were not needed out on routes; agencies had them clean vehicles, attend trainings, or, for older or more vulnerable employees, just stay home. The funds supported routine maintenance and overhead as well as expenses specific to COVID-19, such as hiring new cleaning crews, obtaining and distributing personal protective equipment, testing workers for COVID-19, and, in one case, providing on-site meals so that workers did not risk further disease exposure eating at restaurants. As some agencies exceeded their annual operating needs in stimulus funding alone, they were able to put some stimulus funds into reserves or use them towards capital projects (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

6.4. Stimulus Fund Distribution Varied Based on Agency Size, Type, and Area

Within a few parameters, the federal government generally left the division of funds among agencies within an urbanized area to MPOs. As a result, MPOs divided stimulus funds among agencies in myriad ways. This is because the rules in **Table 5** applied to *urbanized areas*, not *transit agencies*. For example, under the final ARP cap, each urbanized area could only receive up to 132 percent of its agencies’ combined pre-pandemic operating expenses. But if there were multiple transit agencies in the same urbanized area, an MPO could choose not to apply this restriction to individual agencies when allocating the funds among them (FTA, 2021a, 2021d and Wasserman, Rios, et al., 2022).

This made distributing funds to transit agencies in small, outlying urbanized areas a relatively simple affair, as, in many cases, only one transit agency served the urbanized area. For instance, the Napa Valley Transportation Authority (NVTA) is the only system in the Napa Urbanized Area and therefore received all of the area’s funds from the three federal bills for which it was eligible. This made budgetary planning much easier there than at peer agencies, even comparably sized ones, in larger urbanized areas, according to NVTA staff interviewed.

In larger urbanized areas, though, distribution became far more complicated, as transit agencies within a given urbanized area competed with one another in lobbying their MPOs for what the agencies saw as their fair share of federal pandemic relief funding. Indeed, MPOs across the state considered, adopted, or combined various methods for distributing the funds among their transit claimants (SBCTA staffer, 2021; LA Metro staffer, 2021;

OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; SACOG staffer, 2021; and Wasserman, Rios, et al., 2022). These allocation methods included:

- By pre-pandemic operating expenses
- By ridership, pre-pandemic or during the pandemic
- By population in the service area
- By predicted or actual losses from other revenue sources
- By the pre-established formulas, such as the formula used to distribute transit capital funds
- By share of state transit operating funds received

Each method favored and disfavored certain types of agencies. For instance, dividing stimulus funds proportionate to revenue losses gave relatively more stimulus dollars to agencies with high pre-pandemic farebox recovery ratios (and thus larger gaps in their budget due to pandemic fare losses). Dividing by pre-pandemic operating expenses, however, was arguably more in line with the spirit of the CRRSA and ARP Acts, which used that method to divide funds across urbanized areas (Wasserman, Rios, et al., 2022).

Not only did MPOs across the state differ in which method they chose—the Southern California Association of Governments (SCAG) in the Greater Los Angeles region even devolved the choice to county transportation commissions—but in many cases, these rules shifted over the course of the three stimulus bills. In making such changes, some MPOs unevenly distributed funds from a later bill, such that the overall distributions across all bills agreed with the new methodology. MPOs also could and did withhold a share of the funds for themselves for regional planning (SANDAG staffer, 2021; SACOG staffer, 2021; MTC staffer, 2021; RCTC staffer, 2021; SBCTA staffer, 2021; VCTC staffer, 2021; LA Metro staffer, 2021; and Wasserman, Rios, et al., 2022).

Appendix A describes in detail the method used in each region for each bill (SACOG staffer, 2021; SANDAG staffer, 2021; MTC staffer, 2021; RCTC staffer, 2021; SBCTA staffer, 2021; VCTC staffer, 2021; LA Metro staffer, 2021; and Wasserman, Rios, et al., 2022). But broadly speaking, major regions used the following methods:

- In the Sacramento region, the Sacramento Area Council of Governments (SACOG) drew on a previously established pre-pandemic formula for federal funds.
- In San Diego, the San Diego Association of Governments (SANDAG) split most of its funds proportionate to population in the service areas of its two largest systems.
- In the Bay Area, each stimulus bill had a different, complex formula combining multiple of the above methods but based largely on revenue losses.
- In Greater Los Angeles, the Ventura County Transportation Commission (VCTC) and Orange County Transportation Authority (OCTA) adapted the pre-pandemic federal capital formula, the Riverside County Transportation Commission (RCTC) and San Bernardino County Transportation Authority (SBCTA) ultimately distributed funds proportionate to pre-pandemic operating expenses, and Los Angeles County split up funds proportionate to losses in a set of other revenue streams.

Each of these methods came with wrinkles. In Los Angeles County, many small agencies are not eligible to claim certain federal, state, and local revenue sources, under pre-established rules. Because the stimulus distribution was based in part on losses in these sources, those small systems received lower shares of stimulus funds than their peers elsewhere and less than they would have under other methods. In the Sacramento region and the Bay Area, meanwhile, parts of some of the bills were set aside and divided through a discretionary process. In the Bay Area, funds from each bill were also split into two phases, with the second correcting for differences between predicted and actual calculated need. The Metropolitan Transportation Commission (MTC), the Bay Area MPO,

also established an “equity adjustment,” under which agencies that carried more very low-income riders received a bonus share of stimulus funds (LA Metro staffer, 2021; Pomona Valley Transportation Authority, 2021; Sparks, 2022; SACOG staffer, 2021; MTC staffer, 2021; and Wasserman, Rios, et al., 2022).

These distribution decisions were the product of political negotiations—often conducted quickly and without the benefit of hindsight. The committees and subcommittees of MPOs and county transportation commissions that determined these formulas are typically composed of local elected officials, who may serve a dual role overseeing their own municipal or sub-regional transportation agency. In Los Angeles County, the set of small agencies that received relatively low shares of stimulus funds organized themselves into the Alliance of Local Transit Operators to lobby for more funding or supplemental grants (Sparks, 2022 and Wasserman, Rios, et al., 2022). “It was all inside baseball,” asserted one member of the Alliance. Even in San Joaquin County in the Central Valley, where there are only a handful of transit systems, an interviewee recalled negotiations between agencies and the MPO over changing the distribution formula. Nonetheless, the promise of a large pot of additional, much-needed funds, divided such that every agency received at least a fair bit of support, reduced tension. “That was kind of the political calculation,” recalled an interviewee.

Figures 23 and **24** plot the result of all of these different formulae. As compared to annual pre-pandemic operating expenses, agencies across the state’s four major regions received roughly comparable amounts of stimulus funds—with the notable exception of small agencies in Los Angeles County, for reasons described above (For more details, see Appendix A) (See **Figure 23**). Outside of Los Angeles County, in these four regions two thirds of agencies received between 75 percent and 200 percent of their annual pre-pandemic operating costs. And in interviews with agency staff beyond Los Angeles County, those at smaller agencies tended to report a greater share of their needs met by federal stimulus dollars, though this experience varied, sometimes substantially. Over all of the agencies in **Figure 23**, however, the median transit system received only 72 percent of its pre-pandemic operating expenses (FTA, 2022b; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; SACOG staffer, 2021; and H. King, Wasserman, and Taylor, 2023).

In **Figure 24**, all but one agency received more in combined stimulus funds than it lost in annual fare revenues, comparing Fiscal Year 2021 to Fiscal Year 2019 (These fare data from the NTD do not account for losses in other revenue sources, but neither do they account for gains in revenues sources like sales taxes.). Here, no region or set of agencies particularly stands out. Obscured slightly by the logarithmic scale on the axes, the median agency in **Figure 24** received over nine times as much in stimulus funds as it lost in annual fares (FTA, 2022b; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; and SACOG staffer, 2021).

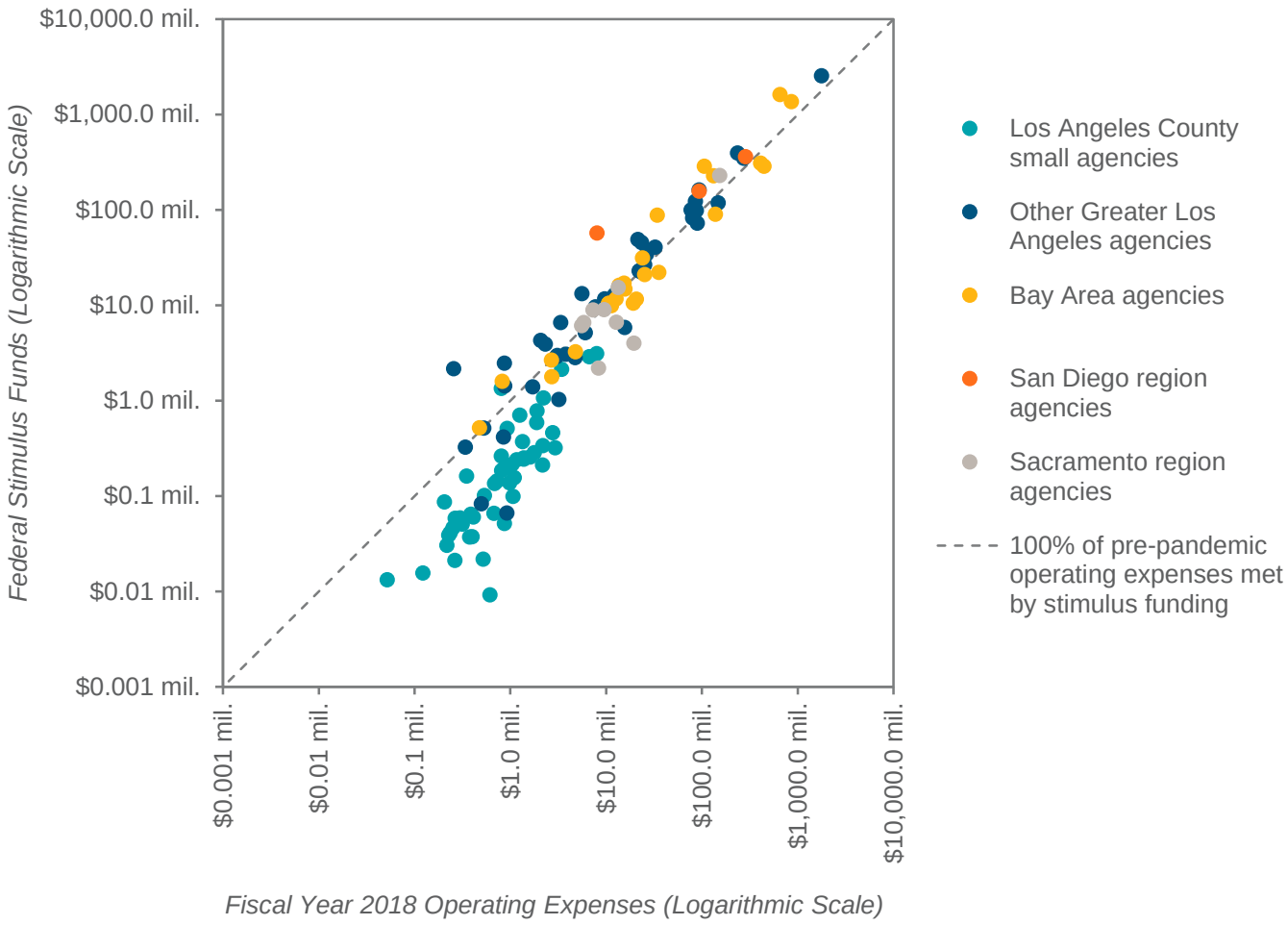

Figure 23. Pre-pandemic Operating Expenses versus Combined Federal Stimulus Funding

Data sources: FTA, 2022b; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; and SACOG staffer, 2021

Despite (or perhaps because of) the competition among some agencies for federal relief funds, regional coordination between agencies and with MPOs on service and finances deepened during the pandemic. In some cases, this coordination literally paid off: agencies cooperated to increase their collective leverage during negotiations with federal authorities over pots of discretionary stimulus funds, and some agencies not entitled to federal funding before the pandemic were able to work together to successfully negotiate with their MPO for additional funds from non-federal sources. Looking towards the future, this collaboration has led transit agencies in at least one large region to discuss proposals for generating new regional sources of transit funding (H. King, Wasserman, and Taylor, 2023).

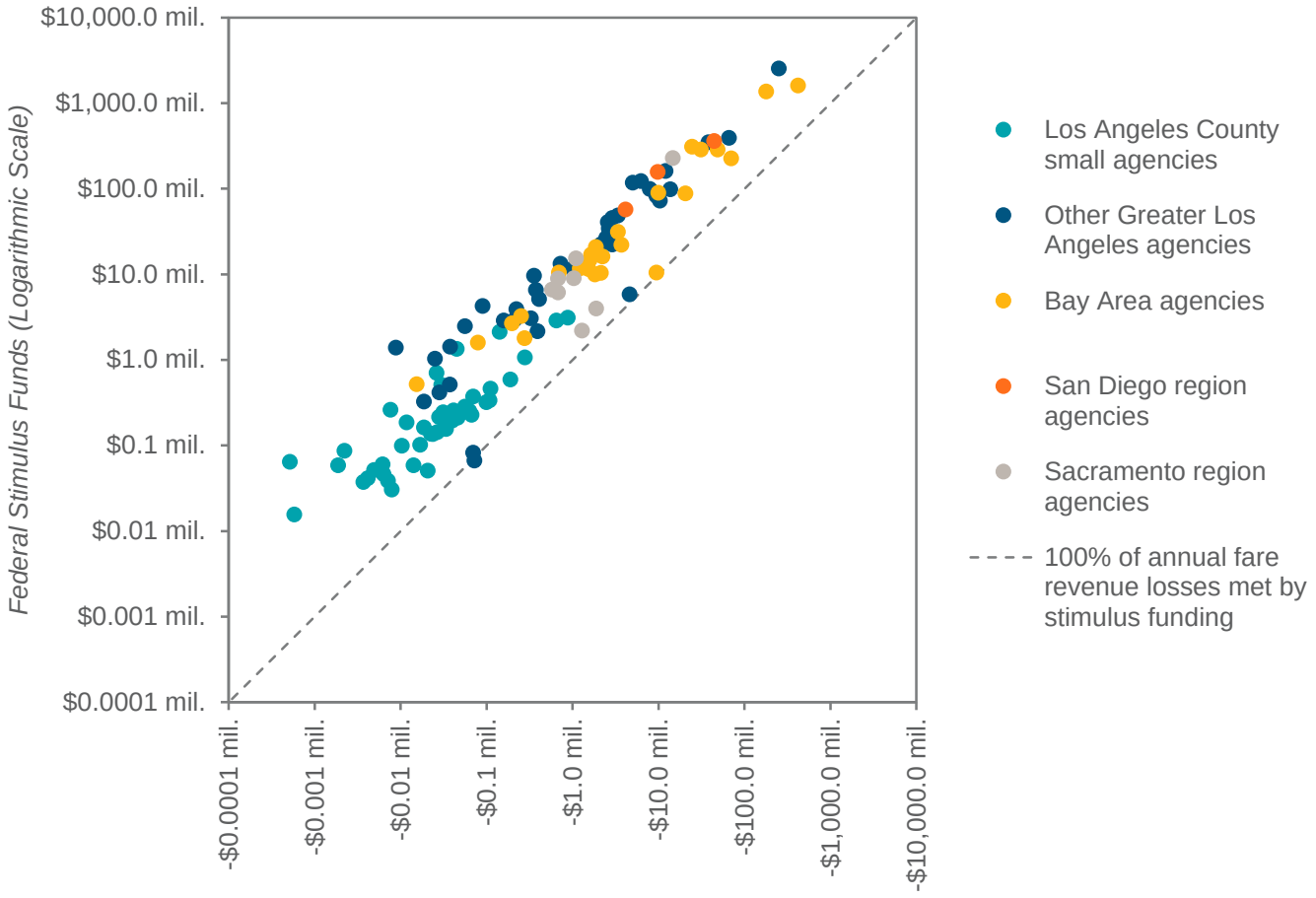

Figure 24. Fare Revenue Losses versus Combined Federal Stimulus Funding

Note: Excludes agencies with no fare revenue in either fiscal year or with fare revenue gains

Data sources: FTA, 2022b; SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; MTC staffer, 2021; SANDAG staffer, 2021; and SACOG staffer, 2021

6.5. Stimulus Bills Radically Transformed the Composition of Operating Budgets

The stimulus bills dramatically changed the composition of agencies' operating budget funding sources. In Fiscal Year 2019, federal funding covered just 10 percent of transit operating costs in the state, mainly in the form of federal formula capital funds that supported the operations of small and rural systems. This limited federal support for operations represented decades of funding precedent (Taylor, 2017). But with stimulus funds disbursed, the federal share of Fiscal Year 2021 operations jumped to 44 percent (See **Figure 25**). While total operating expenditures fell (discussed in Section 5.5), this unprecedented increase in federal support staunched agencies'

losses and made up for much of the drop in local revenues and especially fares (See **Figure 21**) (FTA, 2022b and Bureau of Labor Statistics, 2022a).

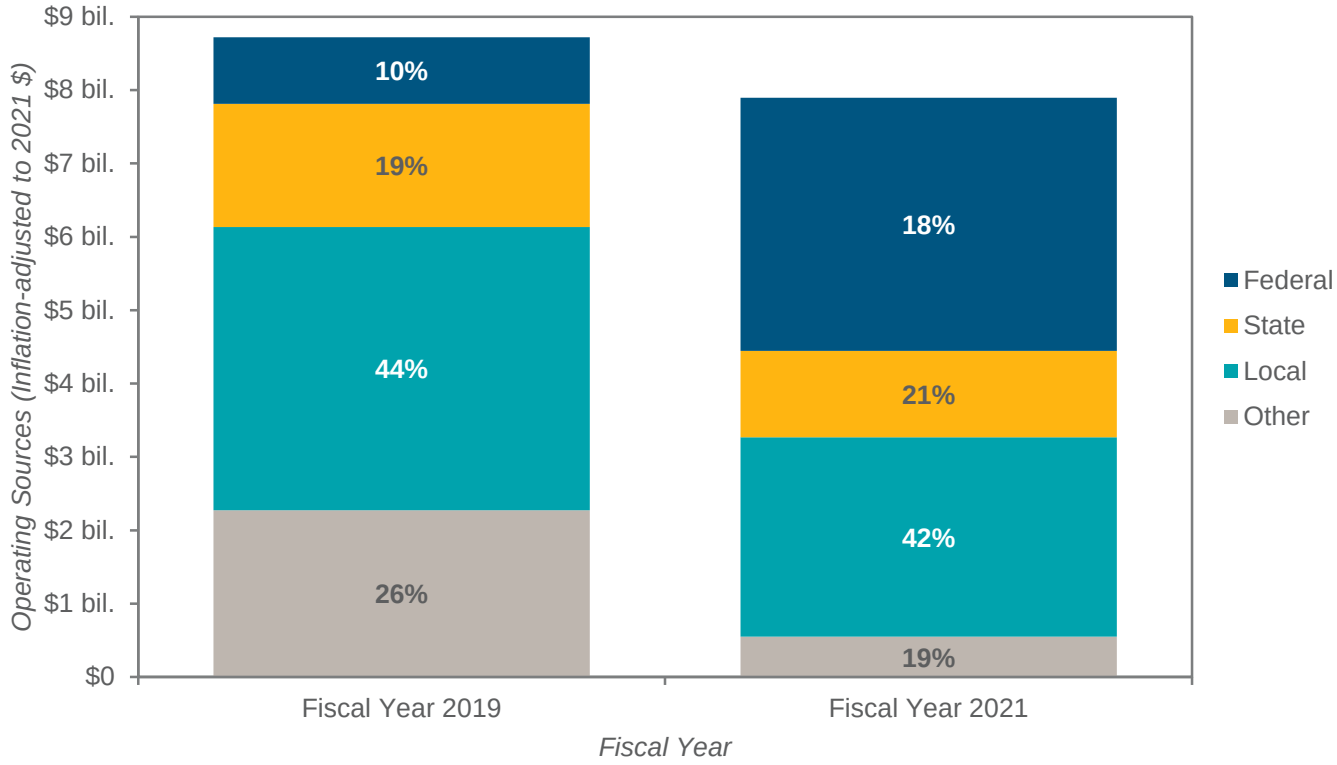

Figure 25. Transit Operating Expenditures in California by Source of Funds

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

Our national survey responses confirm this sea change and reveal the critical importance of federal operating funds for U.S. transit agencies during the pandemic. A remarkable 83 percent of responding agencies nationwide reported receiving more federal subsidies during the pandemic than the year before the pandemic—64 percent "much more" (n = 53). State, regional, or local subsidies, by contrast, either remained roughly the same or were lower in November 2021 than the year before the pandemic, for most agencies (See **Figure 26**) (Siddiq et al., 2023).

Larger agencies by pre-pandemic ridership, in particular, nationally reported receiving "much more" federal subsidies during the pandemic than prior: in our national survey, the agencies that received "much more" in federal subsidies in 2021 than before the pandemic had an average annual ridership of 119 million, those that received "somewhat more" carried 4.2 million, and those that received "about the same" had an average of just 1.5 million. However, growth in federal subsidies occurred across all modes: 61 percent of responding agencies across the U.S. that operate bus services (n = 51), 70 percent of agencies operating rail services (n = 10), and 65 percent of agencies operating paratransit services (n = 46) reported receiving "much more" in federal subsidies in 2021 (Siddiq et al., 2023 and FTA, 2022b).

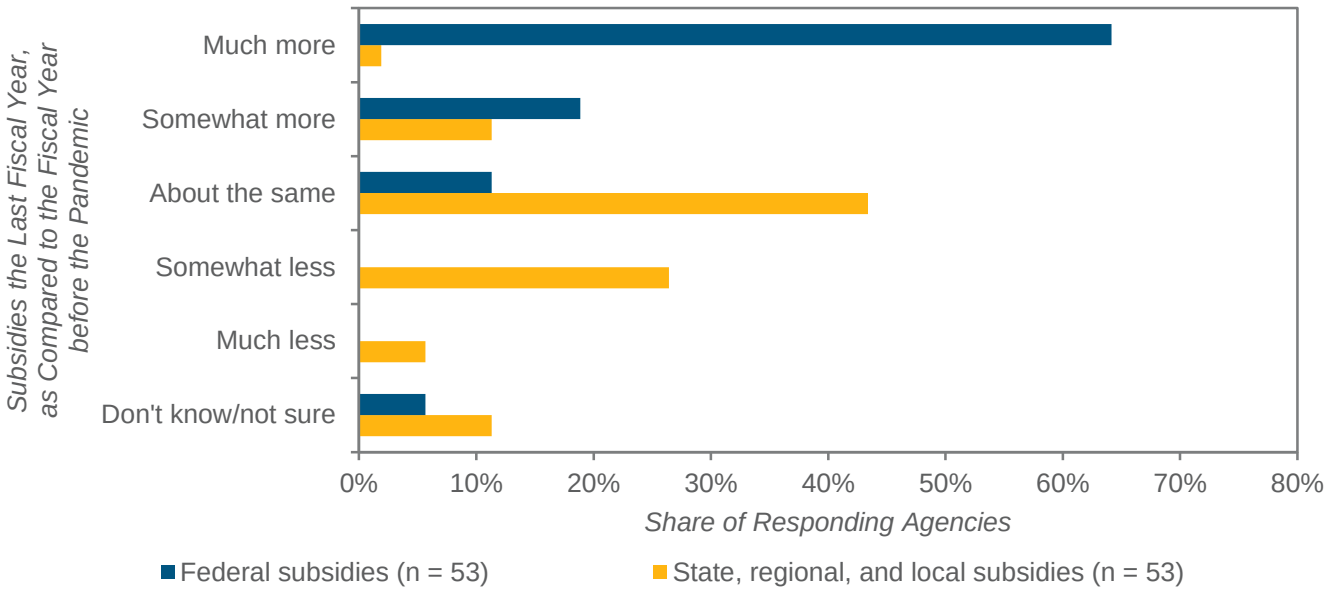

Figure 26. Subsidies during the Pandemic, as Compared to before the Pandemic: National Survey, Fall 2021/Winter 2022

Note: Respondents that skipped each question are excluded.

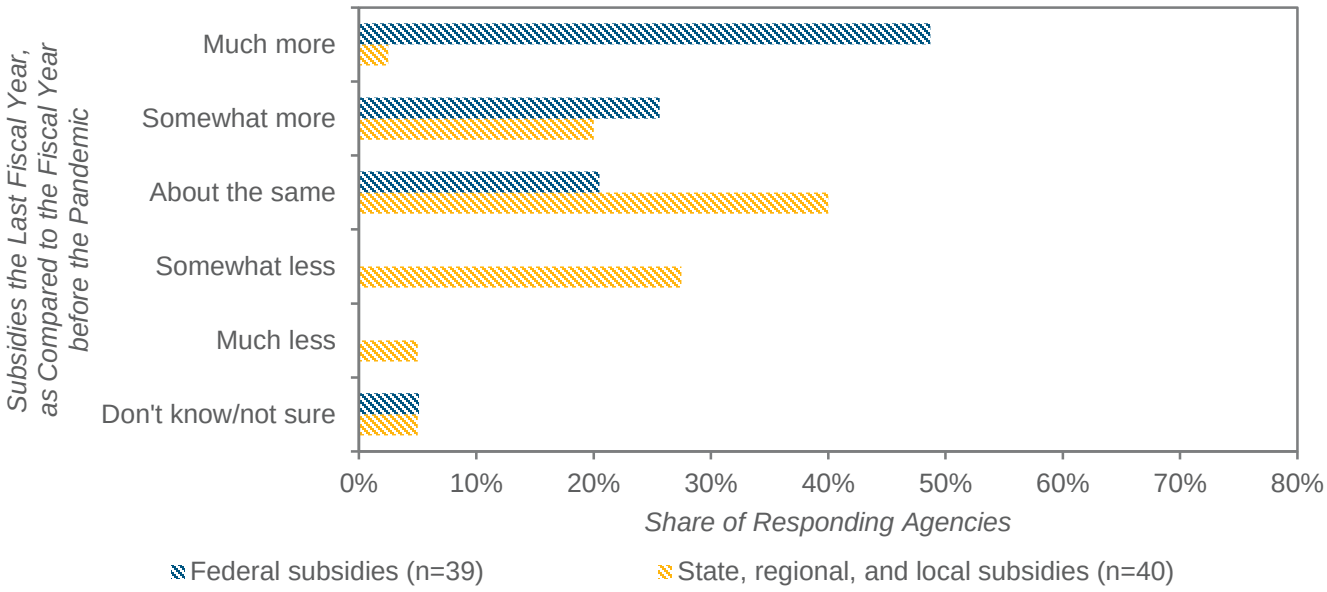

Figure 27. Subsidies during the Pandemic, as Compared to before the Pandemic: California Survey, Fall 2021/Winter 2022

Note: Respondents that skipped each question are excluded.

We found similar results in our California sample. Three quarters of respondents in the Golden State reported an increase in federal subsidies during the pandemic (49% “much more” and 26% “somewhat more”). Again, federal funding outpaced other sources in its growth during the pandemic (See **Figure 27**) (Siddiq, Wasserman, and Taylor, 2022).

Systems in California with higher pre-pandemic farebox recovery ratios reported receiving more federal subsidies during the pandemic than the year before (though the national survey responses do not clearly follow this trend). Agencies in the state that responded that they received “much more” in federal subsidies had an average ratio of 24 percent, those that received “somewhat more” had an average ratio of 15 percent, and those that received “about the same” had a ratio of 11 percent (FTA, 2022b).

6.6. Local Option Sales Tax Revenues for Transit Mostly Bounced Back

For all the doom and gloom of fare losses, funding sources other than fare revenues and federal pandemic funding have largely returned to normal for most transit agencies in the state, as of writing. Here, we focus on one such key revenue source, local option sales taxes.

Voter-approved LOSTs are a mainstay of California transit funding. At least 25 California counties, home to about nine out of ten Californians, had transportation LOSTs in effect as of February 2023. LOSTs are an increase in the sales tax on most retail purchases, whose proceeds are used to fund transportation projects. LOSTs have proven popular with voters, who are often willing to accept a small incremental increase in the local sales tax to build and operate a list of popular transportation projects and services. Given frequent voter support for the measures, they have proven popular with transportation agencies as well, as inflation-adjusted federal fuel tax receipts per vehicle-mile traveled have declined (H. King et al., 2021, 2023; Hess and Lombardi, 2005; Lederman et al., 2018; and Wachs, 2009). The share of revenues of each LOST dedicated to public transit (as opposed to roadway maintenance and expansion, active transportation safety improvements, etc.) varies by county and by measure, from zero to 100 percent of the funds (UCLA ITS, 2021). In the analysis that follows, we consider only LOST revenues earmarked for public transit.

As the global economy was partially shut down in the early months of the pandemic, sales tax revenue forecasts in California were uniformly dismal. With the possibility of a deep recession and drop in (taxed) consumer spending, particularly for services, interviewees worried that sales tax losses would force significant service cuts (H. King, Wasserman, and Taylor, 2023). Indeed, in the first months of the pandemic, revenues did decline: a 38.7% loss between revenues disbursed in May 2020 compared with January 2020 and a 78.9% loss between (an unusually high amount disbursed in) February 2020 and May 2020 (See **Figure 28**) (CDTFA, 2022 and UCLA ITS, 2021).[6] The California Department of Tax and Fee Administration (CDTFA) disburses revenues to counties a few months after their collection (and counties to transit agencies thereafter), so there was a bit of lag between the start of the pandemic and declining LOST revenue disbursements to transit agencies. However, agency finance staff reported in our interviews that they anticipated declining LOST disbursements in their planning as sales tax collections slowed early on. In some cases, interviewees suggested that the early loss of sales tax

6. Among LOSTs in effect during the entire study period

revenues affected their agencies more than fare revenue losses, as sales taxes constituted such a large percentage of their funding (H. King, Wasserman, and Taylor, 2023).

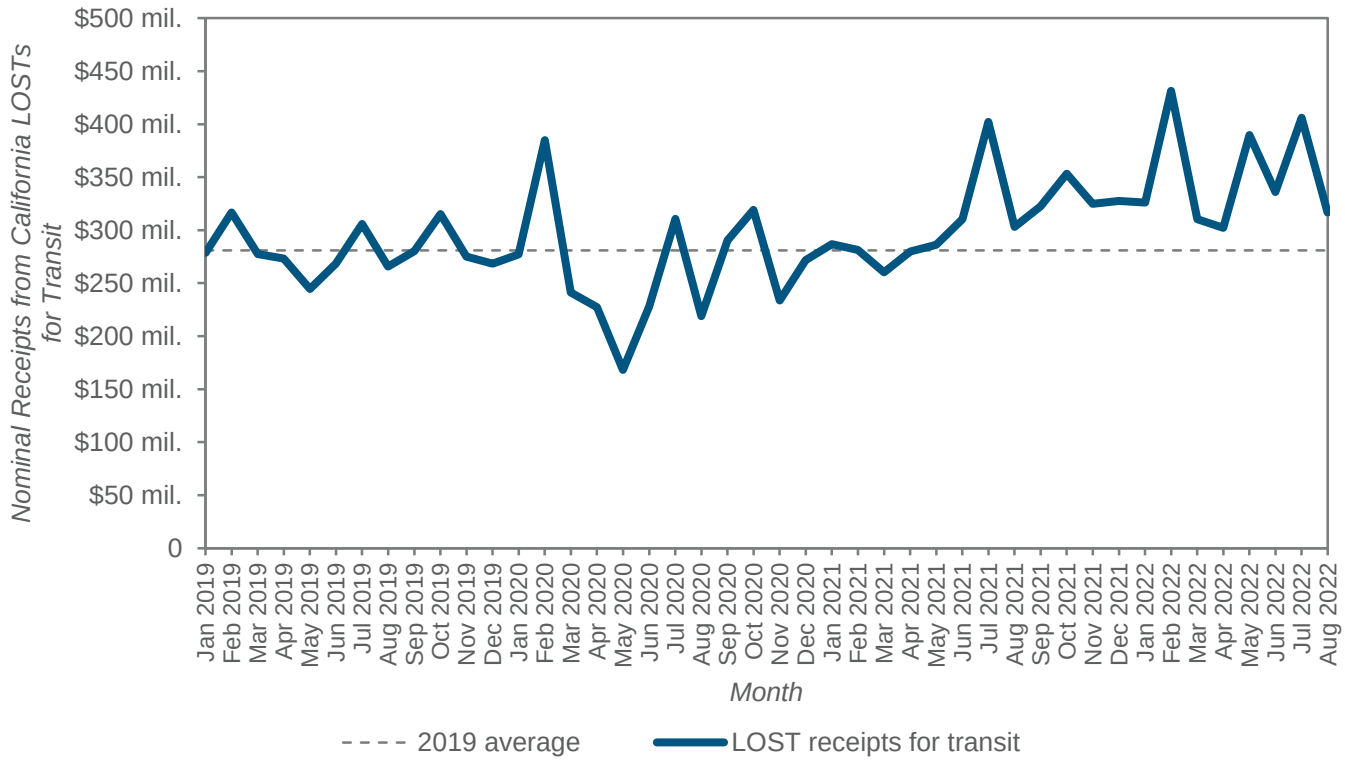

Figure 28. Revenues Dedicated to Transit from Continuously Collected LOSTs, 2019-2022

Note: Only measures which were in effect from January 2019 onward are included.

Data sources: CDTFA, 2022 and UCLA ITS, 2021

Yet retail sales and the LOSTs they fund recovered far more quickly and robustly than most analysts predicted. After the initial decline in the first two quarters of 2020, LOST revenues for California transit rebounded, supported by direct federal assistance to many households, a general recovery of spending, especially for goods, and the taxation of online sales. In the second half of 2020 and first half of 2021, LOST revenues returned to and fluctuated roughly around pre-pandemic levels (CDTFA, 2022 and UCLA ITS, 2021), with no noticeable correlation between county COVID-19 case rates or public health restrictions and LOST receipts (H. King et al., 2021, 2023). By the second half of 2021 into 2022, nominal LOST revenues generally began to exceed pre-pandemic averages, in some months and counties quite substantially (See **Figure 28**). The statewide total for continuously collected LOSTs grew a remarkable 23 percent from January-December 2019 to July 2021-June 2022 (CDTFA, 2022 and UCLA ITS, 2021), far more than the rate of inflation, which was nine percent between the middle of each period (Bureau of Labor Statistics, 2022b). Sales tax receipts in Fiscal Year 2022 continued to be robust for many agencies and exceeded the financially conservative projections by those agencies before the pandemic, according to interviewees. For at least some agencies, LOST revenues in addition to federal stimulus funds were enough to offset fare and other losses. LOST windfalls allowed some transit agencies to put some

LOST revenues in reserve, per interviewees, aiming to allow pre-pandemic levels of service to continue even if fares and ridership remained sluggish for several years (H. King, Wasserman, and Taylor, 2023).

While topline LOST revenues for transit recovered well across the state, we did find variation across counties (See Appendix B). On the x-axis, **Figure 29** plots changes in LOST revenues disbursed by county from April 2019 to April 2020. Consistent with the idea that public health restrictions on individual and firm activities dampened sales tax receipts in the short term, all counties saw lower LOST revenues over that period, of approximately ten to 20 percent. San Bernardino County in Southern California was the best-performing county (-3.2%), while rural Imperial County experienced the most significant revenue declines (-47.9%) (CDTFA, 2022 and UCLA ITS, 2021).

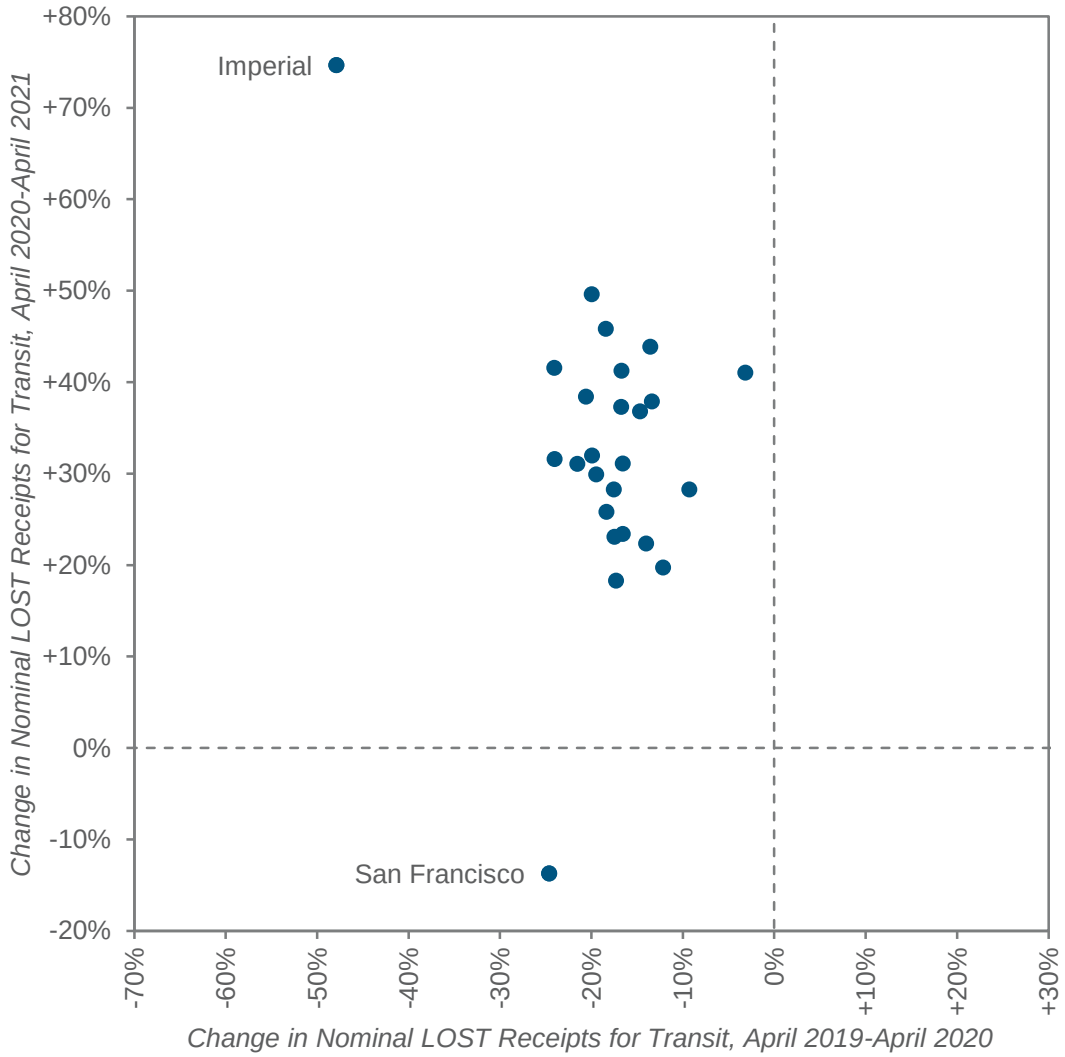

Figure 29. Change in LOST Revenues for Transit by County, April 2019 to April 2020 versus April 2020 to April 2021

Note: Only measures which were in effect from January 2019 onward are included.

Data sources: CDTFA, 2022 and UCLA ITS, 2021

The y-axis in **Figure 29** plots changes in LOST revenues disbursed by county from April 2020 to April 2021. Happily for counties and their transit agencies, LOST revenues dedicated to transit increased in all counties—except San Francisco, where revenues were nearly 14 percent lower in April 2021 than in April 2020. All other counties experienced moderate to large (most between 15 and 50%) increases (See Appendix B). These year-over-year changes in revenues resulted in counties other than Imperial and San Francisco receiving 20 percent more transit LOST revenues on average in April 2021 than in April 2019 (CDTFA, 2022 and UCLA ITS, 2021).

We examined whether there was a relationship between the share of LOST revenues dropped at the start of the pandemic to the share of LOST revenues gained after the pandemic's first year. The simple linear correlation

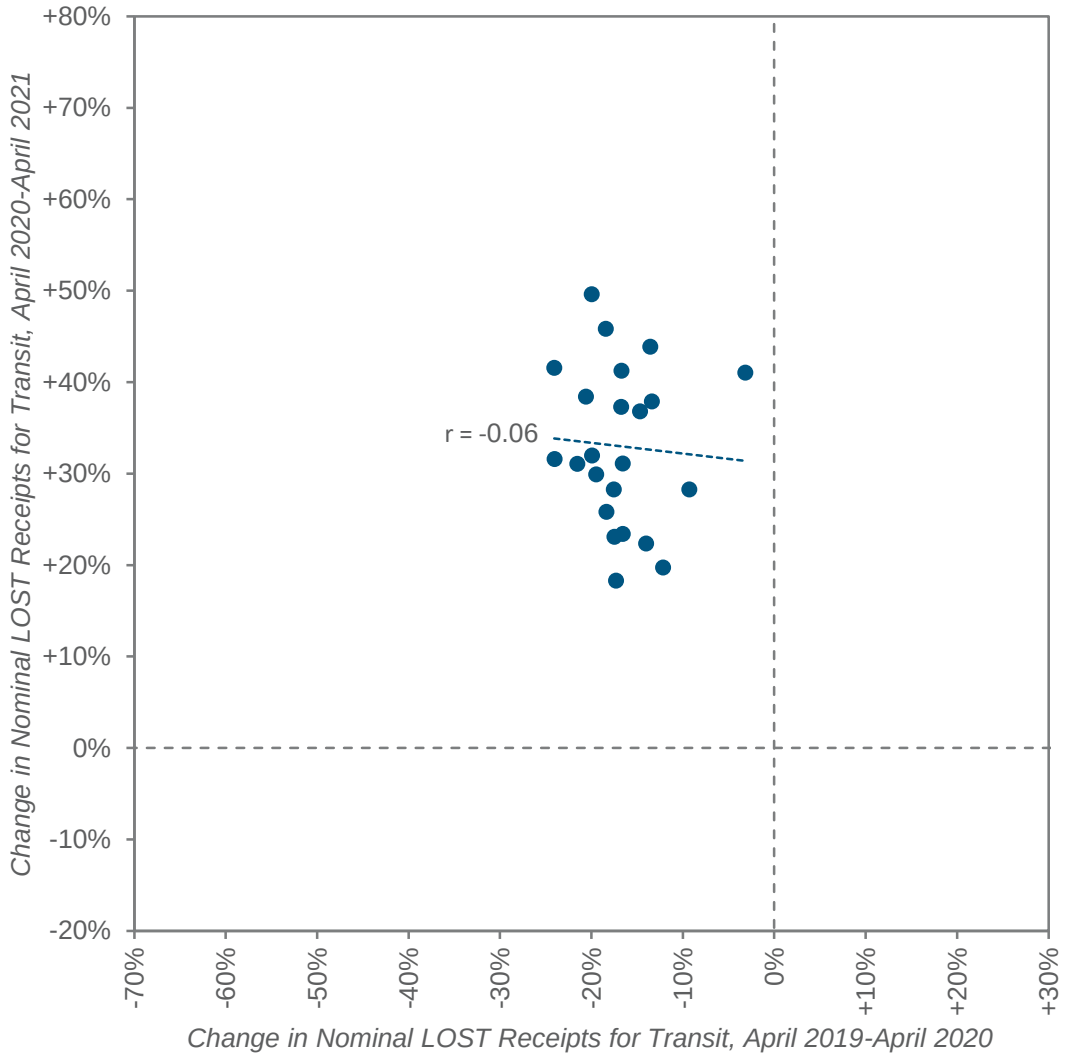

Figure 30. Change in LOST Revenues for Transit by County, April 2019 to April 2020 versus April 2020 to April 2021, Excluding Outliers

Note: Only measures which were in effect from January 2019 onward are included.

Data sources: CDTFA, 2022 and UCLA ITS, 2021

between the two measures in **Figure 29** is -0.35, which would indicate a moderate negative relationship. However, this relationship is almost entirely driven by outlier values in Imperial and San Francisco Counties. If these two counties are removed, the simple linear relationship falls to -0.06, which indicates an extremely weak negative relationship, one that is barely distinguishable from no relationship at all (See **Figure 30**). In other words, we found no relationship between counties where LOSTs fell precipitously at the start of the pandemic and counties where they recovered either strongly or weakly thereafter.

With respect to the two county outliers, the total amount of LOST revenues generated for transit in rural Imperial County during the two study periods was small, on the order of tens of thousands of dollars per month. Relatively small fluctuations in absolute revenues generated from Imperial's Measure M thus translated into high percentage changes. The volume of LOST revenues generated for transit was substantially higher—on the order of millions of dollars per month—in San Francisco County (CDTFA, 2022 and UCLA ITS, 2021). LOST revenues changes there during the study period were high in both absolute and relative terms because of the unique economic geography of the Bay Area. San Francisco County is the state's geographically smallest and daytime host to the greatest share of in-commuters relative to residents (Blumenberg and King, 2021), many of whom instead worked from home for months after the onset of the pandemic (or have converted to permanently doing so), resulting in a substantial decline in taxable purchases in the county. LOST revenues there plummeted as the pandemic decimated commercial activity in the dense downtown area generating the bulk of the county's LOST revenues. Indeed, San Francisco's downtown has recovered particularly poorly, with stubbornly high office vacancy rates (J. King, 2022). Of 62 downtowns examined in a January 2023 analysis, San Francisco's ranked lowest by share of pre-pandemic activity, as measured by cell-phone geospatial data of visits to points of interest (Chapple et al., 2023).

We next explored what other factors might correlate with changes in LOST revenues for transit by county. We examined simple relationships between LOST revenue changes (from April 2019 to April 2020 and from April 2020 to April 2021) and pre-pandemic unemployment, median income, and share of employment by industry for all of the counties with transit LOSTs (U.S. Census Bureau, 2019a, 2019b and California EDD, 2023). These factors have a strong conceptual relationship to the generation of LOST revenues. Higher unemployment should dampen LOST revenues because unemployed workers have less disposable income to spend on taxable purchases, while higher incomes should increase LOST revenues for the opposite reason. We elected to examine the percentage of each county's workforce employed in three industries—Information; Professional, Scientific, and Technical Services; and Arts, Entertainment, and Recreation (delineated at the two-digit North American Industry Classification System (NAICS) code level)—within which we assumed a higher-than-normal share of workers converted to working from home or lost employment altogether at the start of the pandemic.

However, we found no obvious relationships between these factors and LOST revenue trends. This is perhaps at least partially due to the county-level scale of the data, our examination of broad NAICS codes rather than a more refined level of industrial groupings, and the lack of (at the time of our analysis) more recent data on these potential correlates over the course of the pandemic. The total number of observations in our population is also very small, which raises the possibility that random fluctuations in observed values may erroneously appear to be importantly influential. While our earlier research, comparing all transportation LOST revenues for the entirety of 2019 versus 2020, found notable correlations with some of these factors (H. King et al., 2021, 2023), our analyses here of only LOST *transit* revenues at the start of the pandemic (April 2019 versus April 2020) and after a subsequent year of recovery (April 2020 versus April 2021)—tell a less revealing story. Statistical properties of the underlying data aside, the lack of a simple relationship between LOST revenue trends at the start of the pandemic and in its first year (See **Figure 30**) implies that the factors driving sales tax revenue losses early on were not the same as the factors driving sales tax revenue rebounds as the pandemic wore on. From all of this, we can

conclude that LOSTs have played a pivotal role in transit agency finances in the wake of the COVID-19 pandemic, even if the exact conceptual and empirical mechanisms linking transit revenues from LOSTs to the effects of the pandemic remain elusive.

6.7. "A Near-death Experience": Not All Agencies Fared Well

While the sections above describe how most agencies we interviewed and surveyed have generally weathered the pandemic and its financial effects, we found a few notable exceptions. Despite significant new operating support from the federal stimulus bills, a few agencies either closed almost fully early on or suffered severe financial distress that threatened the agency's ability to operate. While these profiled agencies weathered especially difficult financial and operating circumstances, the fact that they too survived the worst of the pandemic and are regaining riders is also notable.

In Southern California, the Anaheim Transportation Network (ATN) did end up shuttering most of its service for a time. ATN, which unusually for a transit system is a nonprofit corporation, operates Anaheim Resort Transportation buses around Disneyland and the area's other hotels, stadiums, etc., as well as a downtown Anaheim microtransit service. After the region's major attractions closed or emptied at the start of the pandemic, with tourism grinding to a halt, ATN stopped operating most of its routes. A few lines for local travelers continued as on-demand service. With a pre-pandemic farebox recovery ratio of 85 percent and much of the rest of the system's operating budget supported by special district assessments on hotels and attractions, ATN had a budget especially vulnerable to the travel and tourism effects of the pandemic. ATN paused fare collection on its remaining service, suspended its special assessments on businesses (many of which were themselves in financial danger), implemented layoffs and furloughs, and slowed its capital project delivery. However, when the Disneyland Resort reopened in April 2021, ATN began to restore service, returning to fare collection that June. Even with over a year of skeleton service, though, ATN stayed in operation and was able to restore service thanks to funds from the three stimulus bills and a forgivable loan from the federal Paycheck Protection Program (PPP) as a nonprofit entity. So even an agency arguably among the worst positioned in the country for the pandemic was able to survive and restart relatively unscathed thanks to relief funding (Wasserman, Rios, et al., 2022).

In the Bay Area—one of the regions with the steepest pandemic-induced transit ridership losses (Cano, 2021)—two major rail systems that once relied heavily on fare revenues also bore the brunt of the pandemic. Primarily but not exclusively focused on shuttling commuters into and out of downtown San Francisco, Bay Area Rapid Transit (BART) functions as a subway system in the central cities of San Francisco, Oakland, and Berkeley but also serves as *de facto* commuter rail on its long branches into the East Bay suburbs (Wasserman and Taylor, forthcoming). Caltrain, a conventional commuter rail service operated by the Peninsula Corridor Joint Powers Board, connects downtown San Francisco to Silicon Valley and San José to the south.

Transit systems such as BART and Caltrain that served large shares of commuters and generated large rates of farebox return prior to the pandemic faced the double whammy of severely reduced ridership and the loss of many high-income, fare-paying riders. In general, smaller systems with much lower farebox recovery rates faced a much lower opportunity cost of reduced ridership, and their base of low-income, very consistent transit users returned faster and more fully. By contrast, larger, farebox-dependent systems that formerly generated large rates of farebox recovery experienced (both relatively and absolutely) a much more precipitous decline in transit revenues stemming from COVID-19—like BART and Caltrain. Most of the agencies we interviewed fall into the category of agencies with largely low-income riders who rely on transit for mobility. But for these two Northern

California rail agencies, pandemic-induced ridership declines presented and continue to present a much greater existential threat to their ability to maintain service and survive financially.

Prior to the pandemic, both BART and Caltrain collected over 70 percent of their operating expenses in fares. This performance placed both agencies among the best-performing in the U.S. by farebox recovery ratio. These high levels of farebox return stemmed largely from the geography of transit service in the Bay region—both systems provide service into and out of job-rich San Francisco and San José. Many of the commuters working in these areas have high-wage jobs, and parking at worksites is often scarce and expensive. Prior to the pandemic, these factors translated into many high-wage commuters traveling to work on BART and Caltrain; with peak-period commuters on BART, at least, likely having higher average incomes than Bay Area drivers (FTA, 2022b and Dubner, 2022).

The beginning of the COVID-19 pandemic decimated ridership on both systems in large part because many commuters began working remotely; the number of "essential workers" that continued to commute into a physical worksite was low on both systems. Both agencies initially curtailed service significantly in response to this lowered demand. Caltrain in particular concentrated cuts on express rather than local service; even so, it was unable to reduce service as much as its planners may have sought to due to service agreements with surrounding municipalities. These service cuts lowered costs less than the pandemic had reduced ridership, although in BART's case, service cuts allowed capital project delivery to be accelerated in some cases, with tracks more often empty. Caltrain also benefited from the existence of a large number of corporate subscription fare passes, purchased in bulk ahead of time by employers. These passes constituted "something like 80 or 90 percent" of fare revenues at certain points during 2020, according to staff interviewed, and were a financial "lifeline" for the agency.

For both agencies, non-fare sources of local revenues provided an important supplement to fares. Each benefited and continues to benefit from financial contributions from local governments, but this funding is relatively modest and is not guaranteed. However, though BART has received dedicated sales and property tax revenues for decades, Caltrain did not. In dire straits, Caltrain placed Measure RR, a one eighth percent sales tax effective in San Francisco, San Mateo, and Santa Clara Counties, on the ballot in November 2020. An interviewed Caltrain staff person recalled thinking after it passed, "It might not be pretty, but we're going to survive…[It was] definitely a sort of story of a near-death experience." Dedicated local tax revenues and federal emergency funds, alongside a smaller volume of funds directly from local governments, together helped compensate for decimated farebox returns.

Since the worst of the COVID-19 pandemic, service on both systems has largely been restored and ridership (and farebox revenues) on both systems have recovered somewhat but still lag "well behind other commuted-oriented" peer agencies. Caltrain staff reported that they expect farebox revenues to remain under pre-pandemic levels for the foreseeable future. As a result, both agencies face significant financial uncertainty moving forward.

Both BART and Caltrain leaned heavily on federal emergency spending to fill gaps in operating revenue stemming from COVID-19, but these were three one-time infusions and, as of writing, are running out. Their future ridership trends are difficult to predict. If ridership improves, particularly among high-income commuters, both agencies will see budgetary improvement with the restoration of farebox revenues. If, however, ridership continues to lag, the agencies may find themselves in a financially and operationally untenable situation. Caltrain officials predict that without increased ridership the system will "maybe barely" generate revenues sufficient to cover operating costs. BART's financial performance will similarly hang on how ridership patterns continue to

evolve. As a result of all of this uncertainty, the agencies face significant fiscal insecurity moving forward. This uncertainty makes it "real[ly] hard" for the agencies to engage in long-term service planning.

Both Caltrain and BART demonstrate how COVID-19 turned the comparative transit finance situation of commuter-oriented, high-farebox-ratio systems upside-down and underscore the importance of dependable sources of operating revenues during times of reduced ridership demand. Such agencies may also benefit from corporate and other bulk fare purchase programs that contractually guarantee a known level of fare revenues.

To the south, the Southern California Regional Rail Authority (known popularly as Metrolink) had a more secure financial position throughout the pandemic than its commuter rail counterparts in Northern California. Metrolink, the commuter rail system in Southern California, operates as a joint powers authority, funded and governed by the five counties it serves. Metrolink staff reported that they typically work on a "zero-based budget," under which the agency projects fares and costs for each year and then receives subsidies for the balance from its member counties, as detailed in memoranda of understanding with each county. Like Caltrain, Metrolink was highly reliant on fare revenues and received relatively little in subsidies, compared to most other transit agencies. Though fares fell to near zero during the pandemic, the agency's structure and funding agreements provided a fiscal backstop. This assurance of county subsidies gave Metrolink a degree of financial security despite its proportionately substantial ridership losses. To be sure, had the region's overall transit revenue situation been worse, Metrolink may have had political difficulty securing its guaranteed funding from its five counties (Wasserman, Rios, et al., 2022). But with the stimulus funds, Metrolink did receive support from the counties and thereby avoided what would have otherwise been "quite draconian" service cuts (LA Metro staffer, 2021).

6.8. Capital Funding Generally Held Steady

While the survey findings above show that agencies were able to restore or even accelerate their capital project schedules during the pandemic (See Section 4.4 and **Figures 16**, **17**, **19**, and **20**), capital expenditures during the first year of the pandemic did fall slightly. Across California, capital expenditures dropped $293 million (or 6%) from Fiscal Year 2019 to Fiscal Year 2021, adjusting for inflation.[7] The decline was not evenly distributed across modes. Bus and demand-response transit saw drops of over a quarter in the first year of the pandemic, while rail capital projects incurred three percent more costs (See **Figure 31**). However, capital budgets tend to vary more year-to-year than operating budgets, as large projects incur one-time expenses in a given year, so we urge some caution interpreting this comparison. From Fiscal Year 2019 to Fiscal Year 2021, the decline in capital expenditures was half that of operating expenditures, in percentage terms (See **Figures 22** and **31**) (FTA, 2022b and Bureau of Labor Statistics, 2022a).

Interviewees offered some ideas behind the seeming discrepancy between the survey findings and the capital funding data. In some cases, the ability to speed up projects early in the pandemic reduced costs (H. King, Wasserman, and Taylor, 2023). In others, agencies delayed starting on new capital improvements in favor of finishing in-progress ones closer to schedule.

In general, however, capital funding proved steady. The sources of funds generally used for transit capital projects helps explain this stability. While federal transportation funding comes in large part from federal fuel tax

7. Capital expenditures in California in Fiscal Year 2020 were higher than in both Fiscal Year 2019 and Fiscal Year 2021, but we lack monthly financial data to tell whether that one-year spike was concentrated before or after the start of the pandemic in the U.S. (FTA, 2022b and Bureau of Labor Statistics, 2022a).

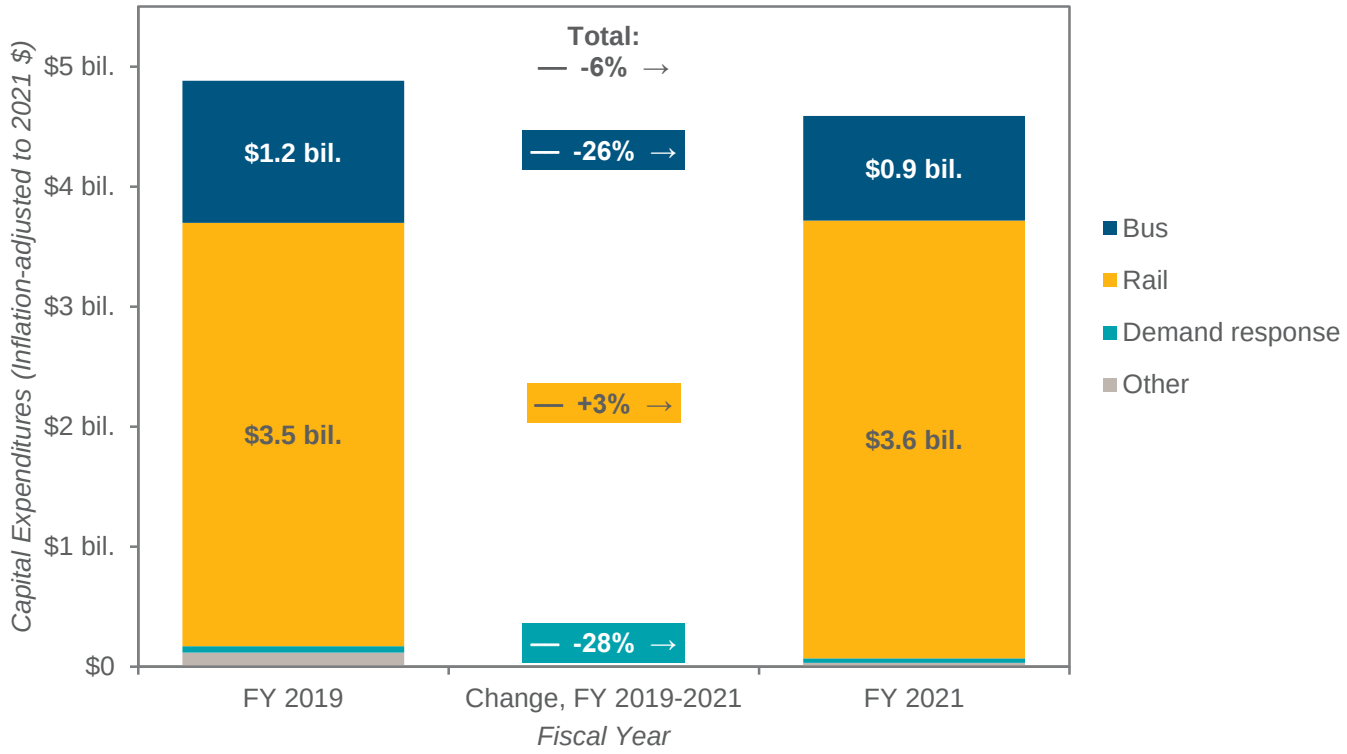

Figure 31. Transit Capital Expenditures in California by Mode

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

receipts, which vary, major federal transportation bills set five-year spending levels ahead of time and make up any fuel tax shortfalls from other revenues and (indirectly) increased federal debt. The types of state and local sources used for capital projects (including LOSTs, discussed in Section 6.6) are often more stable than those used for operations (FTA, 2022b and Bureau of Labor Statistics, 2022a). In turn, this allows agencies to program capital revenues into future years with some degree of certainty. Interviewees described having capital funds already programmed to cover the initial pandemic period of otherwise greater financial uncertainty.

Moreover, the amount and share of capital funding provided by the federal government to California transit systems rose during the pandemic, further stabilizing agency capital finances and long-term planning. While not nearly as drastic a change as on the operating side, the share of capital expenditures covered by federal funds rose from 29 percent in Fiscal Year 2019 to 37 percent in Fiscal Year 2021, thanks to a $257 million (18%) absolute increase (FTA, 2022b and Bureau of Labor Statistics, 2022a). Because, as described above, the three federal stimulus bills provided very flexible funds in amounts beyond some systems' annual operations needs, a few agencies opted to shift some of these dollars to capital projects as well; these projects were often pandemic-related, such as barriers around bus operators and heavy-duty filtration and sanitization systems (Wasserman, Rios, et al., 2022). Atop regular capital federal formula funding, such stimulus shifts cemented the rise in the federal share of total transit capital revenues. State and local revenue sources, meanwhile, saw a 17 and 13 percent decrease, respectively in the absolute amount of capital expenses covered (See **Figure 32**) (FTA, 2022b and Bureau of Labor Statistics, 2022a). The Infrastructure Investment and Jobs Act (IIJA) (discussed further

below), which went into effect after the latest NTD data from Fiscal Year 2021, potentially further increases the federal share in later years (Tankersley, 2021 and FTA, 2022b).

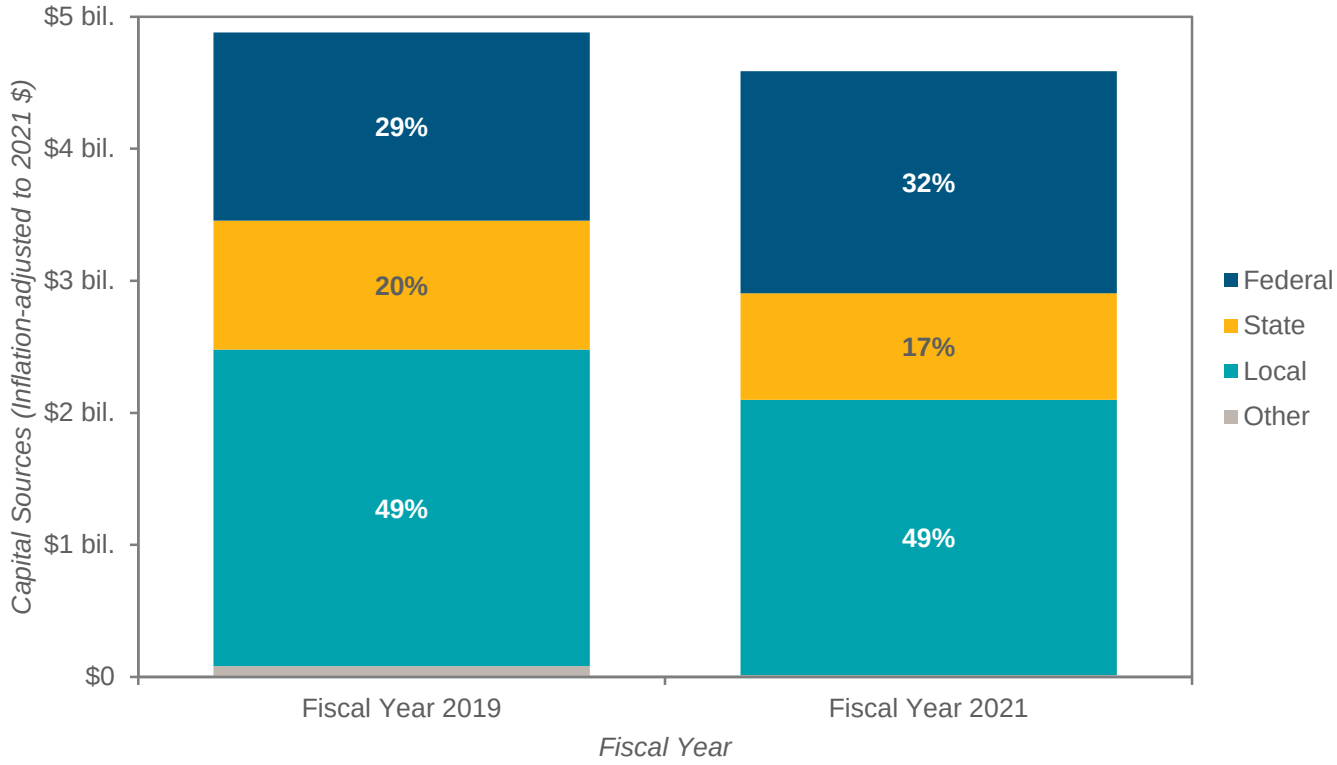

Figure 32. Transit Capital Expenditures in California by Source of Funds

Data sources: FTA, 2022b and Bureau of Labor Statistics, 2022a

Yet capital projects and finances did encounter issues during the pandemic, especially more recently. From the start, some capital projects faced delays and cost increases because they required multiple people to work in close proximity at a time when COVID-19-related work restrictions did not permit it. Others endured supply chain disruptions and material and equipment shortages, as the global economic bounce-back from the pandemic clogged shipping and production lines and as continued COVID-19 outbreaks stymied manufacturing. Though a few agencies interviewed reported avoiding these issues, a number of interviewees reported particular problems with bus procurements, as bus manufacturers encountered delays getting parts and assembling and sending out vehicles. The delivery of fare collection equipment, tires, and other vehicle parts and equipment also slowed. Interviewees likewise reported observing or foreseeing a hit to their capital budgets from inflation in the cost of materials and rising labor expenses at their suppliers and their construction contractors (H. King, Wasserman, and Taylor, 2023).

These factors have also contributed to concerns among our interviewees about meeting California's state-mandated transition to zero-emission-fuel vehicle fleets (though this state-specific requirement does not apply to paratransit services). Several of those interviewed reported financial or other difficulties in developing the needed facilities and infrastructure to electrify their fleets. One respondent told us that their agency had struggled with decisions about the costs and logistics of vehicles operating using different alternative fuels. Over the long run,

the agency decided it must transition to hydrogen fuel cell vehicles to meet its emissions targets, as battery electric vehicles do not have the range to cover all of their routes. But the costs of hydrogen-fuel-cell vehicles are currently very high, and they are much less readily available than battery electric vehicles. Stuck figuring out the details of fueling infrastructure, the interviewee's agency was as of our discussion unable to pilot alternative fuel vehicles (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Looking forward, the Infrastructure Investment and Jobs Act is providing new opportunities to fund capital projects. Also called the Bipartisan Infrastructure Bill, the $1.2 trillion act includes $108 billion for public transit (and more for intercity rail) over five years in its transportation reauthorization portion. This represents the largest nominal annual federal investment in transit, with increases of around 75 percent from the previous authorization. Unlike the stimulus bills, almost all of the transit funds are dedicated to capital projects (save for nudging up pre-existing operating support programs for small and rural transit agencies), and little has changed in the allocation formulas, local match requirements, and spending restrictions. On the upside, interviewees conveyed excitement about the additional improvements they could undertake with these new funds. Though the IIJA dollars themselves may not be that flexible, they allow some agencies to displace, save, or reprogram any leftover stimulus money, stretching these more versatile funds even longer. The IIJA also invests more in state of good repair and modernization projects, offering agencies support for long-deferred maintenance projects. On the other hand, an interviewee at a large system worried about the boost to discretionary grants in the IIJA, leaving formula funds with more modest increases. The most needed maintenance and upgrades may not be as competitive for such funds, judged against flashy new expansions (a long-standing problem in transportation funding). Given the uncertainty of any competitive application and the time the Biden administration or any future administrations need to develop their own grant priorities, the interviewee also foresaw difficulty and delays in capital planning. All in all, the IIJA offers agencies more money to address old and new capital concerns but largely doubles down on the established model of federal transportation investment (without, for instance, doing much to alter the ratio between highway and transit funding) (Tankersley, 2021; FTA, 2022c, 2022d; FHWA, 2022; White House, 2021; Bergal, 2022; H. King, Wasserman, and Taylor, 2023; Wasserman, Rios, et al., 2022; and Fitzgerald, 2021). It also does not address any coming fiscal cliff, which primarily threatens operating budgets instead (George, 2021).

7. Transit's Current Outlook

7.1. The Financial Lookahead Is Mixed

The financial prospects for the Golden State's transit agencies are mixed. On one hand, remarkable federal largesse has supported transit systems for much longer than the immediate crises during which they were passed. Depending on the bill (See **Table 5**), the relief funding has either no deadline or a very long-term one by when the funds must be obligated and spent. As of fall 2021/winter 2022, only six percent of national respondents reported that their agency had already spent down all of their federal pandemic stimulus funds, while the rest said that their funds were still being spent down or held in reserve (n = 53). Nearly a quarter of U.S. responding agencies indicated that their federal rescue funding would be fully expended during the (then-) current fiscal year ending in 2022, and another 40 percent foresaw it running out sometime during the 2022-2023 fiscal year. Around one in five planned for it to last beyond then. The outlook from our California oversample was similar: 20 percent foresaw funds being spent down in FY 2022, 34 percent in FY 2023, and 20 percent beyond then (n = 39) (Siddiq, Wasserman, and Taylor, 2022 and Siddiq et al., 2023). The pandemic federal stimulus funds thus not only helped keep transit budgets aloft during the first year of the pandemic, but will end up supporting transit for several years beyond the emergence of COVID-19.

Our interviews also showed that agencies varied in their strategies for spending or saving stimulus funds. In Southern California, for instance, two transit agencies reported socking away stimulus funds for up to five years of reserves, in anticipation of a coming fiscal cliff or continued depressed ridership, with one spending some on capital projects as well. However, a small transit agency outside of the state's major metropolitan areas reported political pressure from local elected officials and agency board members to spend down stimulus funds as quickly as possible, which staff has tried to do. With considerable political capital expended in assembling and delivering emergency funds for transit, some transit managers perceived a need for haste, in part because delays in spending funds would potentially increase perception among voters and politicians that those funds were not necessary (H. King, Wasserman, and Taylor, 2023).

Despite early pandemic fears of drastic cuts in state and local subsidies, due to the rapid economic rebound in the second half of 2020 and beyond, these fund sources have mostly returned to pre-pandemic levels (See **Figure 28**). The resilience of the state and local economies, especially as reflected in local option sales tax revenues (H. King et al., 2021, 2023), suggest that localities have considerable capacity to continue funding transit.

On the other hand, despite the unprecedented federal assistance and the quick recovery of most other funding sources, many transit agencies still face or anticipate a fiscal cliff, particularly among large commuter and/or rail systems serving central business districts, where travel demand has been slow to return. These formerly high farebox-recovery systems face the most substantial ongoing rider and fare revenue losses. Service cuts and fare increases have not proven sufficient to avert projected future losses at such agencies (Blumgart, 2022).

While substantial federal assistance helped transit agencies weather the initial and most profound crises early in the pandemic, financial uncertainties lie ahead. Indeed, federal emergency funds were three-time and not ongoing allocations. Many of the agencies interviewed had already expended or were about to expend all of their federal funds as of the winter of 2022. Even some of those agencies with substantial reserves of funding expected them to be expended in the next two or three fiscal years, though they differed from one another on the level of fiscal stress they expected to incur. And, as discussed in Section 6.8, the substantial new IIJA federal transit funding is

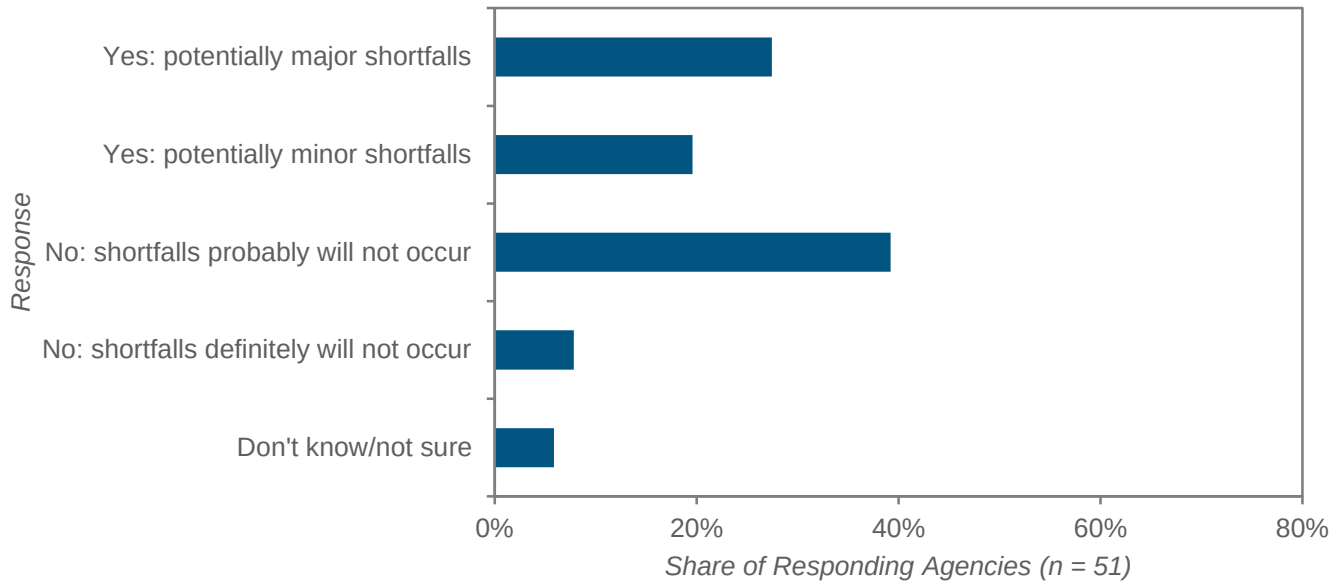

Figure 33. "Do You Anticipate Financial Shortfalls at Your Agency once Federal Pandemic Relief Funding Expires?": National Survey, Fall 2021/Winter 2022

Note: Respondents that skipped the question are excluded.

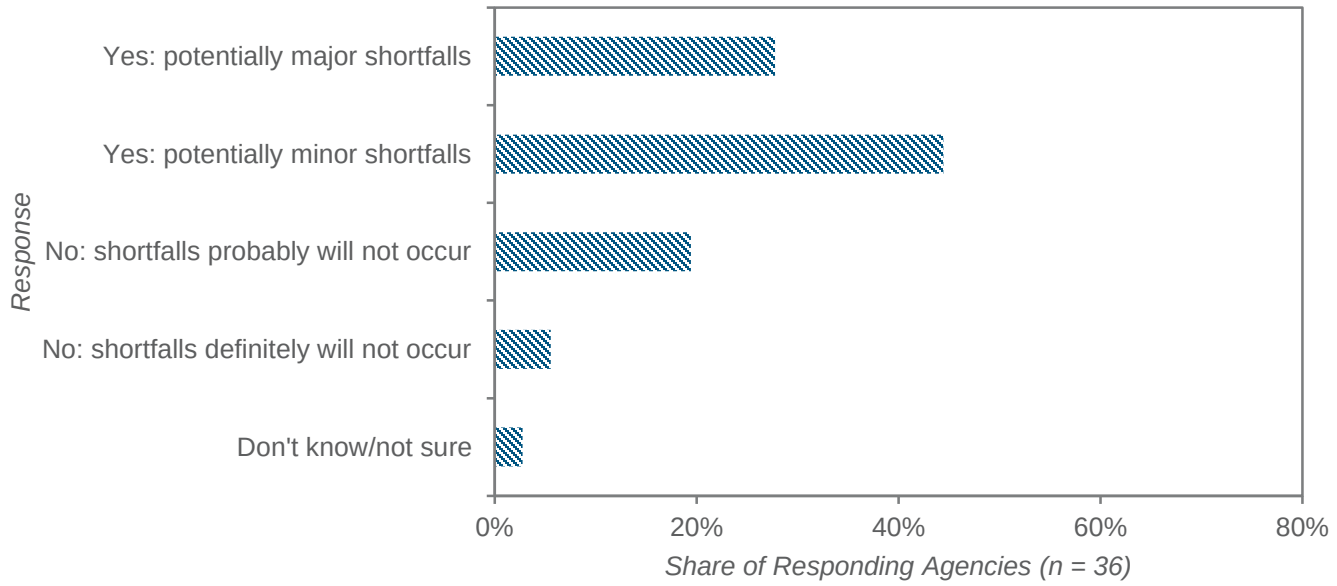

Figure 34. "Do You Anticipate Financial Shortfalls at Your Agency once Federal Pandemic Relief Funding Expires?": California Survey, Fall 2021/Winter 2022

Note: Respondents that skipped the question are excluded.

primarily limited to capital improvements that, unlike the stimulus bills, cannot be used for operating support (H. King, Wasserman, and Taylor, 2023 and Bergal, 2022).

For these reasons, many agency staff we interviewed professed varying levels of concern about their medium-term financial future, even with federal stimulus relief. Neatly divided, 47 percent in the national survey anticipated no financial shortfalls at when their federal funds are fully expended, while another 47 percent foresaw either minor or major financial shortfalls thereafter (n = 51) (See **Figure 33**) (Siddiq et al., 2023). The financial outlook among California transit systems was much more pessimistic than in our national sample: nearly three quarters of respondents in our California oversample anticipated shortfalls after federal stimulus funds are spent (44% minor shortfalls; 28% major) (n = 36) (See **Figure 34**) (Siddiq, Wasserman, and Taylor, 2022).

Systems in California and across the U.S. anticipating major deficits tended to be larger and to have had a higher farebox recovery ratio. In the national survey, agencies forecasting major deficits averaged 270 million passengers per year pre-pandemic and a 24 percent farebox recovery ratio, while U.S. respondents who told us that financial shortfalls "probably" or "definitely" will not occur had an average annual pre-pandemic ridership of just eight million and farebox recovery ratio of nine percent (Siddiq et al., 2023 and FTA, 2022b). California agencies anticipating major shortfalls also had an average farebox recovery ratio of 24 percent, anticipating minor shortfalls 17 percent, anticipating probably avoiding shortfalls 14 percent, and anticipating definitely avoiding them seven percent (FTA, 2022b).

Whatever the timing or degree of coming budgetary shortfalls, most respondents did not see budget problems affecting service in the near term. Perhaps bolstered by funds put into reserve or by a sense that shortfalls were further off, 46 percent of national respondents (n = 46) and 61 percent of California respondents (n=38) in fall 2021/winter 2022 told us that their agency's financial condition would not affect service provision in Fiscal Year 2023, and another 28 percent nationally and 21 in the state expected minor increases in services (Siddiq et al., 2023).

As demand gradually returns or at least stabilizes, a majority of national (58%) (n = 45) and California (55%) (n=38) respondents told us that they did not anticipate making permanent any of service changes brought about by the pandemic, such as those detailed in Section 4.1 and **Figures 6** and **7**. Those that did enact permanent service changes reported doing so mostly in response to longer-lasting shifts in passenger demand observed.

7.2. Future Transit Demand Is Uncertain, Complicating Service and Budgetary Planning

As agency's plan their service and budgets, they face many uncertainties. Future demand, the service needed to meet that demand, and revenues from fares and subsidies all remain very much in flux (H. King, Wasserman, and Taylor, 2023).

Disadvantaged travelers were among the last to leave and first to return to transit. Though many low-income transit riders reduced their use of transit or stopped altogether because of the pandemic, others, having few alternatives, largely returned in the months and now years after the start of the pandemic. Commuter and other higher-income riders, by contrast, have been slower to return, both because of health concerns and because of changing patterns of telecommuting. Higher-income riders have more travel alternatives and are also more likely to be employed in jobs that allow them to work from home, at least on some days. In short, because of the pandemic, many higher-income transit riders have become former, or at least less frequent, transit riders. For

many agencies, “once [commuter demand] dropped, it never came back.” Weekend and leisure transit trips have returned faster than commute trips, particularly to office centers (H. King, Wasserman, and Taylor, 2023).

At some agencies, loss of commute trips had a disproportionate effect on transit fare income, because commuters tend to pay higher-than-average fares because they travel longer distances, on average, and are less likely to qualify for various fare discounts. Some agencies also experienced decreases in corporate subscription fare passes bought by firms for their workforce. Because of this lagging commuter demand, systems previously serving large numbers of commuters to jobs in dense downtown areas (where parking is scarce and expensive) had higher farebox recovery rates pre-COVID-19 but have since struggled more. Conversely, agencies generating lower levels of farebox recovery pre-pandemic both had less to lose and tended to recover riders more than high-farebox-recovery systems (H. King, Wasserman, and Taylor, 2023). Indeed, a recurring theme in our interviews was the inversion of comparative ridership and farebox recovery trends between agencies since the beginning of the COVID-19 pandemic. Agencies that reported high levels of farebox recovery prior to the COVID-19 pandemic lost a larger portion of their operating revenues as a result of weakened ridership in the wake of the pandemic.

Uncertainty about future transit demand has made proactive service planning difficult. For instance, interviewees reported more difficulty making informed decisions about the sizes of new vehicles to purchase, routing and scheduling of lines, and longer-term agency goals (H. King, Wasserman, and Taylor, 2023). To adapt to a “new normal” of diminished and shifted rider demand, many transit agencies have begun to pursue various strategies to lure riders back, such as reducing or capping fares; redesigning routes; adjusting schedules and extending service during off-peak hours and weekends as traditional peak demand has shrunk; selling new two- or three-day-per-week passes targeted at people working hybrid schedules; offering riders various perks and rewards; and leasing out real estate (Bergal, 2021, 2022 and Woodhouse, 2022). The cost implications of these various changes and innovations vary considerably.

Future ridership demand will be strongly related to the extent that the impacts of the pandemic represent fundamental changes or temporary blips. How current ridership patterns (and therefore costs) will continue to evolve is an open question, according to many with whom we spoke. For a positive example, student ridership declined as schools closed early on and largely returned as schools reopened. However, even a return of pre-pandemic demand levels would not address longer-term structural issues causing ridership to erode in the years leading up to the pandemic, discussed in Section 3.2 (H. King, Wasserman, and Taylor, 2023).

However, if pandemic-related depression in rider demand proves enduring, both transit service and finance will need to be rethought. This may mean investing in different modes, vehicle types, or routes; it may also mean accepting lower baseline levels of farebox recovery. As interviewees relayed that demand modeling techniques are not sufficient, some agencies reported engaging in scenario planning that considers a variety of different futures (though most have not). It may well be that the very process of considering different transit futures will increase agencies’ capacities to quickly adapt to continued uncertainty in the years ahead (H. King, Wasserman, and Taylor, 2023).

7.3. Workforce Challenges Will Continue

In early 2022, finances were not the largest constraint on delivering service (See Section 4.2) and capital projects (See Section 6.8). Instead, our interviews and survey revealed that labor availability and workforce issues were. While the medium-term financial future for transit may be murky, a clear, overarching concern among transit

agencies across the U.S. and California in our second survey was not necessarily financial shortfalls but labor shortages. Since the start of the COVID-19 pandemic, agencies have had significant difficulty in attracting and retaining labor, particularly bus drivers, train operators, and mechanics.

Better than nine in ten (91%) agencies surveyed nationally (n = 45) and almost as many (87%) in California (n = 38) expressed concerns about filling in open positions, particularly for bus/train operators and mechanics. Over 70 percent of U.S. respondents and 63 percent in California indicated that they were having "great difficulty" in filling openings. This difficulty was common in our national sample among both unionized and non-unionized workforces and among agencies that directly employ their front-line workers and those that contract with private operators (which in turn employ workers) for service, though a slightly lower share, 55 percent, of the 11 U.S. agencies with a directly employed, non-unionized workforce reported "great difficulty" in filling positions (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022).

These survey findings confirm results from a February 2022 APTA survey, which found 92 percent of transit agencies nationally had difficulty hiring (for bus operators especially), and two thirds were also having trouble retaining employees (Dickens, 2022b). By November 2022, the situation had not improved: a Swiftly survey found 95 percent of agencies short on vehicle operators, with 65 percent short on maintenance staff. Three in ten reported severe understaffing, with at least one third of positions vacant, and 83 percent expected labor shortages to continue for a year or more (Swiftly, 2023).

Labor issues in the transit sector are not new, but they have become particularly salient as agencies try to recover from the pandemic. Transit vehicle operators in particular have a tough job, working long hours, very often with last-minute scheduling and split-shifts, on an often strict seniority ladder. They must drive a large vehicle and manage the passengers within at the same time. Operators collect fares, give directions, de-escalate incidents, and help disabled passengers. Often lacking specific training, they must address the challenges posed by unhoused passengers or passengers in mental health distress. Operators risk confrontations, assaults, and repetitive strain injuries. The pandemic has accentuated or exacerbated many of these issues (Wasserman, Rios, et al., 2022). Enforcing changing fare requirements and mask mandates further added stresses (Siddiq et al., 2023 and Van Eyken, 2022). It is perhaps no wonder that seven of ten respondents to Swiftly's 2022 survey reported declining staff morale, up 15 percentage points from the year prior (Swiftly, 2023).

These labor issues have hampered service recovery. In 2022, APTA and Swiftly each found that 71 percent of responding agencies cut service or delayed planned service increases due to labor shortages (compared to 64 percent in Swiftly's 2021 survey) (Dickens, 2022b and Swiftly, 2023). Nearly every agency staffer with whom we spoke told us that labor issues have "absolutely" affected service. This includes both ad hoc cancellation of vehicle runs and formal cuts to routes and service or delays in restoring them (H. King, Wasserman, and Taylor, 2023). Labor shortages prevented LA Metro and the San Diego Metropolitan Transit System (MTS) from restoring service as planned or forced service cuts in 2022, despite funds available for service and rider demand justifying it (Fonseca, 2022; Linton, 2022b; Uranga, 2022; and Little, 2022). The same situation played out across the country (J. Walker, 2021; Cetoute, 2022; George, 2022; and Duncan, 2022).

During the height of the pandemic lockdowns when demand was at its nadir, agencies needed fewer personnel due to reduced service, so the challenge was to avoid laying off workers. Because of this, hiring slowed, quite logically. However, some interviewees told us that slow or delayed hiring in earlier months of the pandemic meant that when labor needs increased as businesses reopened, the economy roared back to life, and riders began to return, agencies fell behind in hiring. Formal hiring or wage freezes implemented earlier in the pandemic particularly hindered later labor recovery. Now, many transit agencies report competing for front-line staff with

other transit agencies, as well as trucking companies. We heard from our interviewees that transit agencies that were successful early on at avoiding layoffs or furloughs and that continued to fill vacant positions in the face of uncertain finances have been better able to weather the subsequent labor shortages (H. King, Wasserman, and Taylor, 2023 and Siddiq et al., 2023).

While issues in transit labor existed before the pandemic, they have been significantly exacerbated since. Labor shortages have resulted in agencies needing to pay drivers more overtime, to offer signing bonuses, and to increase wage rates, during contract negotiations or even mid-contract. For instance, LA Metro increased its starting wage on a pilot basis mid-contract, as they faced shortages that prevented service restoration. Even so, with current levels of inflation scheduled increases in wage rates are likely to be insufficient to compensate for rising costs, posing further challenges to recruiting and retaining labor. Vacancies have created a vicious cycle: to cover for vacant positions, LA Metro has increased its use of mandatory overtime on operators' scheduled days off, but this has further depressed morale and contributed to operators leaving the agency (H. King, Wasserman, and Taylor, 2023; Van Eyken, 2022; Linton, 2022b, 2022a; Cheung, 2022; and Fung, 2022).

Competitive pay and benefits are likely to remain an issue moving forward, in large part because some agencies, in the view of senior staff, offer wages that are "on the lower side," either remaining stagnant or increasing slower than inflation and cost of living, making those driver positions less competitive with comparable positions in the private sector. Other driving occupations such as trucking and deliveries, even if they pay less, may not require often taxing customer interactions and policing of customer behaviors nor as high a risk of disease transmission. The very high housing costs in many California cities compound this recruiting and retention problem (H. King, Wasserman, and Taylor, 2023; Siddiq et al., 2023; Van Eyken, 2022; and Perrero, 2022).

Some of those interviewed suggested that, in the long term, vehicle automation may reduce the demand for vehicle operators and in this way lower labor costs for agencies. The extent to which this occurs in practice will of course depend on many factors, including the development of autonomous vehicle technology, the extent to which labor is reduced rather than reallocated by agencies in response to vehicle technology, and how transit agencies' use of vehicle automation is influenced by labor rules negotiated with transit labor unions (H. King, Wasserman, and Taylor, 2023).

7.4. Few Agencies Are Going Fare-free

Our survey respondents reported adopting various strategies to cope with lost fare revenues (quantified in Section 5.4). Among national respondents, four out of five in fall 2021/winter 2022 sought and/or used additional federal, state, regional/local tax revenue sources to backfill for fare revenue losses (n = 30). Over a third (37%) cut service, and another 13 percent of agencies cut administrative or other costs, to help make up for lost fares (Siddiq et al., 2023).

After an unintentional experiment with fare-free transit for many agencies across the state (discussed in Section 4.3), most agencies surveyed not only have since returned to fare collection but also are not seriously considering universal fareless service in the near future. Only 14 percent of national survey respondents (n = 43) and eight percent in California (n = 36) reported considering such a change. Just 14 percent nationally and six percent in the state reported deciding on pursuing a fareless system, although online searches since then reveal that, as of writing, all of these agencies either continue to publicly characterize fare suspensions as temporary or have reinstated fares. Meanwhile, a few agencies in each survey report keeping their pandemic-adopted "honor

system" for fare payment, reducing fares from pre-pandemic levels, or even increasing fares from pre-pandemic levels (Siddiq et al., 2023 and Siddiq, Wasserman, and Taylor, 2022).

Interviewees highlighted two reasons why their agencies are not planning to eliminate fares permanently. First is the opportunity cost of foregone fare revenues, although these are at least partially offset by savings in fare collection and enforcement. As one interviewee surmised, eliminating fares or at least fare enforcement will not necessarily lead to significant reductions in labor costs related to fare sales, use, and enforcement if agencies choose to reallocate labor to other functions, perhaps in an effort to avoid laying off employees. In addition to reducing fare revenues, fare-free policies may increase ridership—a benefit for transit's climate and mobility goals, to be sure, but one which could conceivably increase costs of service provision if existing agency resources are insufficient to serve an increased demand where transit is already near capacity, such as during peak hours or on high-cost services (Though we note that current depressed ridership makes this less of a concern.). Interviewees collectively expressed the view that paratransit demand in particular would increase substantially if fares were eliminated, and that meeting this increased demand would entail untenable increases in operating costs (H. King, Wasserman, and Taylor, 2023). Nonetheless, we note that agencies are generally still maintaining a workforce and fleet scaled to pre-pandemic ridership, potentially leaving them slack capacity for more ridership, at least on fixed-route transit, at the moment.

For this reason, going completely fare-free is simply "not on the table" for many agencies. Whatever the merits and tradeoffs of general fare-free transit, few are considering it. Interviewees argued that agencies need a "sustainable" revenue source for fare-free transit to be a viable policy option, and systems by and large do not currently have such a revenue source. Because California agencies must meet minimum farebox recovery ratio requirements (in most cases) under the state's Transportation Development Act in order to be eligible for two of the most important state funds for operating support, agencies have a strong incentive to keep charging fares. Federal emergency funds allowed many agencies to eliminate fares during the worst stages of the pandemic, but moving forward, agencies would either need to increase subsidies to replace fare revenue losses, pare down service to reduce costs, or some combination of the two, which is likely to be politically fraught. Of current attempts to expand fare-free transit in programs targeted at particular subsets of riders, many are funded by a third party instead, such as a school system or college/university for their students. Indeed, education-related programs were also one of the more common types of targeted free-fare programs in place before the pandemic, and one that interviewees commonly mentioned expanding or considering expanding (H. King, Wasserman, and Taylor, 2023; Gahbauer et al., 2019; and Saphores, Shah, and Khatun, 2020).

Second, some interviewees asserted operational benefits of fares. Interviewees observed an increase in visible homelessness on transit vehicles during the pandemic and linked that to a lack of fare control. As Loukaitou-Sideris et al. (2021) note, few agencies take counts of unhoused riders, and it could be that, regardless of changes in actual counts, their *share* of ridership has changed, as housed riders left transit and unhoused riders thereby became more visible. Despite Wasserman, Loukaitou-Sideris, et al. (2022) not finding statistically significant differences in observed changes in homelessness on transit by surveyed agency staff and fare policies, a number of interviewees ascribed some ridership losses among housed riders to issues of homelessness. While interviewees expressed sympathy for unhoused travelers and noted that they took shelter on vehicles for lack of other options, they also asserted that their agencies' purpose and capacity is to move people to destinations, not shelter them (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Some staff also associated crime, drug use, and mental health issues on transit with removing fares—problems for both riders and vehicle operators, who faced altercations or worse on vehicles during the pandemic. Such

issues demonstrate the way in which gaps in the social safety net related to housing, healthcare, and employment, some of which were laid bare by the pandemic, can spill over onto public transit (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Examining the relationships above between fare control and antisocial or criminal behavior is beyond the scope of this report (and would involve untangling fare policy from the many other concurrent effects of the pandemic on society). But we note that many transit agency decision-makers themselves tended to see and mention such a link, without nearly as many mentions of benefits to fareless transit (such as ridership gains, reductions in citations and confrontations, racial and income equity implications, and dwell time improvements) (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022).

Transits systems in California are nevertheless expanding existing targeted discounted or free passes or adding new ones, for groups such as youth, students, and low-income travelers (H. King, Wasserman, and Taylor, 2023 and Wasserman, Rios, et al., 2022). This perhaps represents the most lasting effect of the pandemic on transit fare policy going forward, with full fare-free transit put back on the shelf for financial and operational reasons.

For better or worse, fare changes related to the pandemic represent a period of substantial experimentation (A. Walker, 2022). Prior to the pandemic, fare policy changes were typically incremental, entailing mostly small increases to keep up with rising costs. In addition to fare-free trials, other fare experimentation in the pandemic has included new forms of payment media, such as by enabling riders to pay through virtual tickets stored on their smartphones, as well as working towards regional integration of fare payment across different agencies. Other fare policies, such as group fares and dynamically priced fares, by contrast, were not discussed by any interviewees as strategies that agencies have implemented or have plans to implement.

8. Conclusion

8.1. With Stimulus in the Past, Transit Faces Challenges New and Old

A clear message from our interviews, surveys, and financial data analysis was that during the turbulent and uncertain period of the pandemic, the major public policy intervention of three federal stimulus bills *worked*. These funds protected the financial solvency of California's public transit systems and allowed them to continue to serve many of the state's most disadvantaged travelers. Agencies cut service much less than their patronage dropped and generally restored it faster than their patronage returned. Stimulus funds more than covered annual fare revenues losses at most agencies and exceeded or came close to a full year of operating budgets at many.

The fiscal challenges for transit agencies raised or exacerbated by COVID-19 also highlight how the distinct financing regimes for capital and operating expenses present distinct challenges coming out of the pandemic. Not only must agencies assemble needed levels of funding, the general lack of flexibility in the use of revenues earmarked for capital or operating expenditures limit their ability to respond to changing conditions as they emerge. Long-term capital needs and spending were largely unaffected by COVID-19. Operating expenses and spending, however, jumped up as ridership was falling down. Happily for transit agencies and pandemic riders, the federal emergency COVID-19 funds collapsed the distinction between operations and capital spending, offering them (albeit temporarily) flexibility in responding to the pandemic.

While federal transit subsidies have long favored expenditures on transit capital over operations, that long-standing policy was set aside during the pandemic, when flexible federal pandemic funds went almost entirely to support transit operations. While the old capital-first policies are back in place, the Biden administration's 2024 budget request calls for a change to FTA policy to allow $6.7 billion in formula grant funds to be shifted to operating support to assist the nation's largest transit operators address looming fiscal cliffs. While negotiations with Congress on this and the administration's larger proposal are just getting underway as we went to press (Zukowski, 2023 and Davis, 2023), if successful, this change could offer substantial mid-term relief for many of California's largest and most fiscally troubled transit systems.

Transit agencies continue to deal with diminished and unstable fare revenues and, in a few cases, volatile changes in other revenue sources. While conditions had stabilized considerably by early 2022 when we conducted our interviews and second survey wave, the uncertain future of transit demand, the service needed to meet that demand, and the funding to pay for it all remained very much in flux. And in 2023, as many agencies are spending down the last of their federal relief funds, transit systems across the U.S. are grappling with still-depressed ridership and emptier stations and vehicles, changing patterns of travel and employment, and problematic levels of crime and anti-social behaviors on board (Vielkind, 2023).

On top of this, transit managers must contend with structural issues that in many cases originated prior to the pandemic and have continued in it: rising private vehicle travel, due both to the rise of ridehail and increasing vehicle ownership, particularly among former frequent transit riders; the continued suburbanization of the population to car-friendly, transit-hostile environments (Taylor et al., 2020; Schouten, Blumenberg, and Taylor, 2021; Manville, Taylor, and Blumenberg, 2018; Manville et al., 2023; and Blumenberg and King, 2021); rider

concerns with the safety and quality of transit service; and persistent issues of labor availability and compensation.

The highest-farebox-recovery transit systems before the pandemic tended to be larger systems that carried large numbers of downtown commuters in addition to serving the general mobility needs of those without access to cars. These systems have tended to recover fewer of their riders as the pandemic has progressed and have incurred the proportionally greatest losses in fare revenues as a result. Such systems are most likely to face fiscal crises in the years ahead, especially as downtown activity remains depressed. In addition, the continued shrinkage in the role of fare revenues in transit agency finances point to a future where notions of user-fee finance are increasingly antiquated.

U.S. public transit systems stood, for the most part, on relatively solid fiscal ground in 2022, but the future is far from secure, especially for formerly high-ridership, high-farebox-recovery systems. Patronage on most systems remains lowered, those still riding are more likely low-income, people of color, and to have few or no household vehicles (Paul and Taylor, 2022), fare revenues are down, and workers are hard to find. Indeed, as noted by a few of those interviewed, the federal pandemic relief funding did not address longer-term issues related to labor availability, supply chain issues, or increases in the cost of transit service provision above the rate of inflation. While some of the pandemic-induced repercussions for transit are likely short-lived, surveys and data from transit agencies suggest that depressed ridership may well endure (Dickens, 2022a; Parker et al., 2021; and Shamshiripour et al., 2020).

Meanwhile, labor issues loom large over transit's recovery. Transit is a labor-intensive industry: about 70 percent of transit operations expenditures go to wages, salaries, and benefits (Dickens, 2021). Yet, though the pandemic surely worsened this situation, an industry-wide labor shortage has hampered the smooth delivery of transit service for years. Despite some agencies increasing wages and bonuses, our survey and interviews confirm recent reports of agencies not being able to attract sufficient operators to fill open positions, perhaps due as well to inflation and competition from other industries (George, 2021; Kamisher, 2021; and Van Eyken, 2022). While labor conditions and availability represent an operational concern, they often stem ultimately from budgetary decisions and agency finances.

8.2. The Pandemic Revealed Areas of Potential Innovation, Experimentation

Our interviews collectively suggest that one area ripe for innovation is fare policy. The pandemic demonstrated *en masse* that transit users and systems can adapt to different fare policies. In several ways, the pandemic showed the value of technology-enabled fare media that simultaneously make transit use easier, eliminate the costs of managing physical fare media, and reduce the potential for fare collection to serve as a disease vector. It was also a demonstration of how free- and reduced-fares are viable and frequently popular (albeit evidently more among riders more than transit agency personnel), if fare revenue losses can be backfilled by tax subsidies from other sources. Technological innovation will only continue to make innovation in fare policy and payment even easier, in no small part due to increasing the availability of real-time ridership data (Morrissey and Oke, 2022). Given these many changes, more research is needed on how fares and fare payments might be shifted (or eliminated) to attract riders to transit post-pandemic.

Even so, one of the institutional outcomes of the pandemic over the long term may be an increased awareness of the necessity and desirability of experimentation and flexibility in transit service provision. More generally, the

COVID-19 pandemic has demonstrated that transit serves “a need, not a want,” as one interviewee put it (H. King, Wasserman, and Taylor, 2023), and highlighted the reliance of low-income riders on transit service. The critical importance of serving the needs of those who remained riding buses and trains in the pandemic, who depend on public transit for basic mobility and who are more likely poor, immigrants, and/or people of color, was cast in the sharpest possible relief. The early public health travel restrictions underscored both the importance of transit in transporting essential workers and the significant social costs incurred by the most vulnerable among us when quality transit service is less available. This argues for minimum levels of transit service quality to ensure that the most vulnerable travelers can reach needed destinations in the months and years ahead.

8.3. Operating Support Will Remain Vital

While finances were not generally holding back service restoration at the time of our second survey wave, the relatively sanguine financial picture for public transit in 2022 does not necessarily hold for the future, particularly for certain operators. Our national survey respondents were evenly divided about their agency’s financial prospects once the federal pandemic funds are eventually exhausted, and our California respondents were more pessimistic. In general, managers at larger transit systems with higher pre-pandemic farebox recovery rates are more likely to see troubled fiscal waters on the horizon, while those at smaller, lower farebox recovery systems are more optimistic about the future.

The finding that formerly “high-performing,” high-farebox-recovery systems that long drew substantial shares of their operating revenues from fares now find themselves in more financially precarious positions than “lower-performing” systems that did not rely heavily on fare income poses a dilemma for policymakers. Should state, regional, and local operating subsidies be tied to transit systems’ abilities to attract paying customers, or should transit’s social service role of providing mobility for many of the most disadvantaged travelers (Taylor and Morris, 2015) irrespective of collected fare revenue be emphasized? Analyses prior to the pandemic suggest that a suite of efficiency and effectiveness metrics and peer-group comparisons, beyond farebox recovery ratio, would better align transit funding to the goals policymakers typically set for transit (Gahbauer et al., 2019).

8.4. Post-pandemic, Transit Faces Great Uncertainty

Together, **Figures 21** and **25** paint a picture of both the successes of the federal stimulus bills for transit and the worries of the industry at present. The massive, unprecedented increases in federal support for transit operations came at a crucial time and filled much of the hole left by losses in fares and other revenue sources. However, the state now faces a near future where 44 percent (amounting to $3.5 billion) of California transit operating expenses were covered by federal funds in Fiscal Year 2021, begins falling and eventually drops back to the pre-pandemic 10 percent share (under $1 billion) as the pandemic becomes endemic. Despite lagging demand, energy, equipment, and especially labor costs are up, while both ridership and associated fare revenues remain depressed. While state and local subsidies have mostly rebounded, they are falling behind rising costs. As a result, California transit agencies may be forced to cut service to reduce costs, and in doing so precipitate a vicious cycle of falling resources, service, and ridership.

All of these near-term financial concerns, in our view, are prompted by longer-term existential ones. Will rider demand and fare revenues remain depressed well into the future? Will new or increased federal, state, or local support step in to fill the gap? Will traditionally commuter-oriented systems, the hardest-hit by the pandemic, be able to adjust to a future where fewer people work in offices (but perhaps more live) in downtowns and other

major city centers? Will transit riders remain predominantly disadvantaged travelers? Is the era where farebox revenues constitute a substantial share of operating revenues drawing to a close? Will workers continue to leave or shy away from front-line transit jobs? The answers to these questions will collectively determine the financial future of public transit in the U.S. Unfortunately high levels of uncertainty as we write mean that these answers are likely to remain elusive for some time to come.

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Appendices

Appendix A. Details of Federal Stimulus Funding Distribution across Agencies

A.1. Greater Los Angeles

In Greater Los Angeles, SCAG devolved the authority to decide stimulus distributions to the five county transportation commissions within the region. Before doing so, SCAG stipulated that, like individual agencies, counties collectively had to abide by the CRRSA and ARP Act caps of 75 percent and 132 percent of pre-pandemic operating expenses, respectively, covered by stimulus funds. Because the two largest urbanized areas in the region span county lines, SCAG also allocated funds for those urbanized areas by the same formula used federally to divide dollars among urbanized areas. In turn, some regional agencies, like Metrolink commuter rail, received stimulus funds from multiple counties (SBCTA staffer, 2021; LA Metro staffer, 2021; OCTA staffer, 2021; RCTC staffer, 2021; VCTC staffer, 2021; SCAG Transportation Committee, 2021; and Wasserman, Rios, et al., 2022).

In Ventura and Orange Counties, the county transportation commission adapted the pre-pandemic federal formula for distribution of capital funds. However, as miles of rail service make up a significant component of that formula, Metrolink would have received an allocation that Ventura's commission decided was disproportionate. Their commission thus took the bulk of its own planning funding from Metrolink's share (VCTC staffer, 2021; OCTA staffer, 2021; and Wasserman, Rios, et al., 2022).

In San Bernardino County, the county transportation commission also applied the pre-pandemic capital formula to allocate CARES Act funds. The county transportation commission in Riverside County first apportioned CARES Act funding to agencies based on anticipated losses in other revenue sources. But in both counties, the commissions shifted to an allocation proportionate to agencies' pre-pandemic operating expenses for later bills. This required dividing ARP Act funds themselves somewhat unevenly, such that the total across all three bills was in line with the new method (SBCTA staffer, 2021; RCTC staffer, 2021; and Wasserman, Rios, et al., 2022).

In Los Angeles County, LA Metro serves as both a transit agency itself and as the county's transportation commission. Per state law and LA Metro rules, LA Metro and another 16 mostly larger "legacy" agencies are eligible to split major revenue sources such as federal capital funds, state operational dollars, and discretionary portions of county sales taxes. The other, mostly smaller and newer agencies in the county cannot claim those dollars and instead rely mainly on sales tax funds remitted to their municipalities and on fares (Michael Fajans and Associates, 2006; Pomona Valley Transportation Authority, 2021; Sparks, 2022; and Wasserman, Rios, et al., 2022).

LA Metro divided all three stimulus bills between agencies within an urbanized area by projected losses, first from sales taxes and then from other revenues like fares. Since the set of small agencies above were ineligible for the main revenue sources upon which this division was based, they received relatively little in stimulus funding. These systems are highlighted in **Figure 23** for their low shares of stimulus funding received relative to their pre-

pandemic operating expenses.[8] However, if LA Metro had used the pre-pandemic federal capital formula instead, these systems would have received nothing, as they are not federal claimants. Likewise, if the allocations are judged on a different metric—share of anticipated or actual sales tax revenues lost, in line with the distribution method actually used—LA Metro staff pointed out that these systems actually received proportionately more than larger agencies. They were also exempted from some pre-pandemic rules that would have limited their funds (LA Metro staffer, 2021; FTA, 2022b; and LA Metro, 2020). Nonetheless, an interviewee from a small Los Angeles County agency countered that the stimulus funds were a much larger and more needed pot of money than the types of sources these agencies relied upon before the pandemic, necessitating different rules. This discussion highlights the unique and potentially fraught role of LA Metro as both a recipient and distributor of transit funding and the unusually high number of small, overlapping agencies in the county.

See Wasserman, Rios, et al. (2022) for further discussion on this topic.

B.1. Sacramento Region

In the Sacramento urbanized area, SACOG has a memorandum of understanding with transit agencies in the region to distribute federal FTA § 5307 and § 5339 funds through an "earned share" performance-based methodology. This methodology establishes the percentage of funding allocated to each agency based on a combination of four factors: percentage of 2010 population (13% weight), percentage of Fiscal Year 2017 vehicle revenue hours (29% weight), percentage of Fiscal Year 2017 vehicle revenue miles (29% weight), and percentage of FY17 unlinked passenger trips (29% weight). This methodology was used to distribute all of CARES and CRRSA Act funds and 88 percent of ARP Act funds, with the remaining 12 percent set aside for near-future distribution on a discretionary basis. Under this method, Sacramento Regional Transit District received the lion's share of the stimulus funds. Outside the Sacramento urbanized area, systems received their allocations as cooperatively determined among these agencies and SACOG (SACOG staffer, 2021).

C.1. San Diego Region

Most stimulus funds received by SANDAG went to the region's two large agencies: MTS and North County Transit District (NCTD). CARES and ARP Act § 5307 funds were split 70 percent to MTS and 30 percent NCTD, roughly in line with the population in each agency's service area, and rural § 5311 grants were split 41 percent to MTS and 59 percent to NCTD. Funds from § 5310 for transit for older adults and travelers with disabilities were divided between SANDAG (10%) and the other small and paratransit agencies (90%) (SANDAG staffer, 2021).

D.1. San Francisco Bay Area

MTC distributed their CARES Act funds in two phases. In Phase 1, MTC distributed approximately 61 percent of § 5307 CARES Act funds with the goal of compensating for immediate and known losses, such as in fare and parking revenues, while reserving the remaining funds for Phase 2 to account for revenue losses from longer-term funding sources such as sales taxes. The methodology used in Phase 1 reflects the focus on compensating for

8. The "Los Angeles County small agencies" category here, in **Figures 23** and **24**, and in surrounding text includes Tier 2 operators (except one agency only partially in the Tier 2 category), voluntary reporter agencies, other special project agencies, and small paratransit services (LA Metro staffer, 2021).

immediate losses: after setting aside 1 percent for MTC operating assistance, the remaining funds were split equally into three portions allocated to individual agencies proportionally based on their shares of 1) budgeted Fiscal Year 2020 operating costs, 2) Fiscal Year 2021 State Transit Assistance revenue, and 3) budgeted Fiscal Year 2020 farebox revenue. To account for the relatively more limited resources available to small- and medium-sized systems, the distribution formula set a floor for these agencies such that they received an amount equal to at least 17 percent of their Fiscal Year 2020 operating costs (MTC staffer, 2021).

Phase 2 of CARES Act funding distribution aimed to fully backfill agencies' revenue losses through December 31, 2020. The allocated amounts in Phase 2 were the difference between Phase 1 allocation and the total projected revenue loss from March to December of 2020, scaled down by 9.87 percent to fit within the available CARES Act funding. An "equity adjustment" in this phase provided additional support for systems that served higher proportions of riders dependent on transit: 25 percent of an agency's projected revenue loss weighted by the share of very low-income riders among its ridership (defined as below $50,000 in annual household income) (MTC staffer, 2021).

MTC also distributed CRRSA Act funds in two phases. The first, called a "true up," compensated agencies that received less in CARES Act funding than they should have, due to inaccurate revenue loss forecasts. Five systems received a total of $180 million in this phase. Phase 2 first involved projecting the six-month revenue loss from January to June of 2021, calculated based on average monthly revenue losses from March to December 2020. For agencies that were overcompensated for their actual revenue losses in the CARES Act allocations, overages were deducted from the CRRSA Phase 2 allocations. This calculation did not include funding received from the CARES distribution equity adjustment. The Phase 2 allocation for each agency was then determined as the greater of the adjusted allocation amount from the above steps and five percent of the agency's Fiscal Year 2019 budget. The allocation was then scaled down so that the total was made equal to 75 percent of the funding available. MTC distributed the remaining 25 percent based on each agency's share of November 2020 ridership, in order to prioritize the needs of essential workers and others still riding transit during the pandemic.

MTC likewise gave out rural § 5311 funds from the CRRSA Act in two rounds: approximately $560,000 to fill earlier commitments to several agencies that were not eligible for § 5307 funds during the CARES Act allocation rounds and then the remainder divided among rural systems based on a formula that accounts for population living near transit stops and route-miles of service, with a set-aside for a call for projects.

Finally, the distribution methodology for ARP Act funding was similar to the previous two bills in its focus on needs, as measured by revenue losses. Agencies received an amount equal to 65 percent of their average monthly revenue loss from March 2020 through June 2021, multiplied by 12. Another focus was to restore service and ridership, so MTC also used ARP Act funding to provide an incentive to resume service levels, calculated as 95 percent of the difference between Fiscal Year 2019 and Fiscal Year 2021 vehicle revenue hours, multiplied by cost per vehicle revenue hour. As in CRRSA allocations, there was also adjustment to account for previous overcompensation, which again did not apply to CARES Act equity adjustment dollars. A floor of 15 percent of Fiscal Year 2019 operating costs was applied. Lastly, the calculated total allocation was again distributed in two tranches, with 60 percent distributed first, leaving some flexibility to reapportion the remainder of the funding based on actual service needs and more informed estimates of financial need. MTC also set aside 10 percent of ARP funding to address expected hardships or disparities, as well as to support specific recovery strategies and rectify previous miscalculations.

Appendix B. Changes in LOST Revenues by County

Table A. Change in LOST Receipts Dedicated to Transit by County

County or Special District	April 2019-April 2020		April 2020-April 2021	
	Change in Nominal LOST Receipts	Percentage Change in Nominal LOST Receipts	Change in Nominal LOST Receipts	Percentage Change in Nominal LOST Receipts
Alameda	-$1,804,750	-17.6%	$2,397,571	+28.3%
Contra Costa	-$330,762	-16.6%	$517,931	+31.1%
Fresno	-$279,596	-16.7%	$574,734	+41.3%
Imperial	-$14,438	-47.9%	$11,722	+74.7%
Los Angeles	-$29,774,912	-16.6%	$35,096,511	+23.4%
Madera	-$3,075	-18.4%	$6,236	+45.9%
Marin	-$311,748	-24.0%	$311,240	+31.6%
Merced	-$6,971	-9.3%	$19,212	+28.3%
Monterey	-$31,451	-20.6%	$46,606	+38.4%
Monterey/Salinas	-$188,273	-24.1%	$246,958	+41.6%
Orange	-$1,291,537	-18.4%	$1,483,039	+25.8%
Riverside	-$413,359	-16.7%	$767,136	+37.3%
Sacramento	-$544,109	-13.4%	$1,334,962	+37.9%
San Bernardino	-$287,203	-3.2%	$486,646	+41.1%
San Diego	-$2,229,106	-14.0%	$3,055,909	+22.4%
San Francisco	-$1,472,997	-24.6%	-$617,841	-13.7%
San Joaquin	-$208,551	-13.6%	$582,249	+43.9%

County or Special District	April 2019-April 2020		April 2020-April 2021	
	Change in Nominal LOST Receipts	Percentage Change in Nominal LOST Receipts	Change in Nominal LOST Receipts	Percentage Change in Nominal LOST Receipts
San Mateo	-$421,965	-17.5%	$459,907	+23.1%
Santa Barbara	-$61,043	-12.2%	$87,026	+19.7%
Santa Clara	-$5,905,494	-17.3%	$5,164,700	+18.3%
Santa Cruz	-$103,245	-19.9%	$132,729	+32.0%
Sonoma	-$64,470	-19.5%	$79,778	+29.9%
Sonoma/Marin	-$168,023	-21.5%	$190,380	+31.1%
Stanislaus	-$7,890	-14.7%	$16,899	+36.8%
Tulare	-$51,553	-20.0%	$102,424	+49.6%