

Surveying the Financial Conditions of California's Public Transit Operators: An Early to Mid-Pandemic Comparison

Fariba Siddiq, Graduate Student Researcher,
Jacob L. Wasserman, Research Project Manager,
Brian D. Taylor, Ph.D., FAICP, Professor of Urban Planning and Public
Policy, UCLA Luskin School of Public Affairs and Director,
UCLA Institute of Transportation Studies

June 2022

Technical Report Documentation Page

1. Report No. UC-ITS-RIMI-4B-01		2. Government Accession No. N/A		3. Recipient's Catalog No. N/A	
4. Title and Subtitle Surveying the Financial Conditions of California's Public Transit Operators: An Early to Mid-pandemic Comparison				5. Report Date June 2022	
				6. Performing Organization Code UCLA ITS	
7. Author(s) Fariba Siddiq, https://orcid.org/0000-0002-0361-6594 ; Jacob L. Wasserman, https://orcid.org/0000-0003-2212-5798 ; Brian D. Taylor, https://orcid.org/0000-0002-1037-2751				8. Performing Organization Report No. UCLA ITS-LA2117a	
9. Performing Organization Name and Address UCLA Institute of Transportation Studies 337 Charles E. Young Drive East Public Affairs Building 3320 Los Angeles, CA 90095-1656				10. Work Unit No. N/A	
				11. Contract or Grant No. UC-ITS-RIMI-4B	
12. Sponsoring Agency Name and Address The University of California Institute of Transportation Studies www.ucits.org				13. Type of Report and Period Covered Final Report (October 2021 – June 2022)	
				14. Sponsoring Agency Code UC ITS	
15. Supplementary Notes DOI: 10.17610/T6ZG6V					
16. Abstract Initially, the COVID-19 pandemic threatened to inflict severe and lasting damage to public transit in California. However, thanks to federal financial relief from three stimulus bills and stronger-than-expected bounce-back of tax revenues from state and local sources, transit agencies in 2022 have avoided that abyss—but still face an uncertain financial future. To explore the financial effects of the pandemic on California transit and agencies' responses to it, we conducted a survey of transit agency staff in late fall 2021 and early winter 2022. While nearly all of the systems surveyed reported moderate to substantial increases in federal funding during the pandemic, nearly three-quarters said that they expect some financial shortfalls once federal pandemic relief funding expires. Despite the loss of fare revenues, most respondents told us that fiscal shortfalls were not affecting their service presently, though neither are most systems contemplating moving to blanket fare-free transit over the longer run. While finances generally are not hampering service, labor issues are: most surveyed agencies reported difficulty filling open positions, which, on some systems, is limiting service delivery.					
17. Key Words transportation finance, COVID-19, transit, stimulus			18. Distribution Statement no restrictions		
19. Security Classification (of this report) unclassified		20. Security Classification (of this page) unclassified		21. No. of Pages 22	21. Price N/A

About the UC Institute of Transportation Studies

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.

The California Resilient and Innovative Mobility Initiative

The California Resilient and Innovative Mobility Initiative (RIMI) serves as a living laboratory—bringing together university experts from across the four UC ITS campuses, policymakers, public agencies, industry stakeholders, and community leaders—to inform the state transportation system’s immediate COVID-19 response and recovery needs, while establishing a long-term vision and pathway for directing innovative mobility to develop sustainable and resilient transportation in California. RIMI is organized around three core research pillars: Carbon Neutral Transportation, Emerging Transportation Technology, and Public Transit and Shared Mobility. Equity and high-road jobs serve as cross-cutting themes that are integrated across the three pillars.

Acknowledgments

This study was made possible through funding received by the Resilient and Innovative Mobility Initiative from the State of California through a one-time General Fund allocation included in the 2021 State Budget Act and by the University of California Institute of Transportation Studies from the State of California through the Public Transportation Account and the Road Repair and Accountability Act of 2017 (Senate Bill 1). The authors would like to thank the State of California for its support of university-based research and especially for the funding received for this project. The authors would also like to thank all of the transit operator staff who took the time to answer our survey questions.

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), ‘Ahihirom (Elders) and ‘Eyoohiinkem (our relatives/relations) past, present and emerging.

Disclaimer

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This document is disseminated under the sponsorship of the State of California in the interest of information exchange. The State of California assumes no liability for the contents or use thereof. Nor does the content necessarily reflect the official views or policies of the State of California. This report does not constitute a standard, specification, or regulation.

Surveying the Financial Conditions of California's Public Transit Operators: An Early to Mid-Pandemic Comparison

Fariba Siddiq, Graduate Student Researcher,
Jacob L. Wasserman, Research Project Manager,
Brian D. Taylor, Ph.D., FAICP, Professor of Urban Planning and Public Policy, UCLA Luskin School of Public Affairs and Director,
UCLA Institute of Transportation Studies

June 2022

Table

of

Contents

Table of Contents

Introduction	2
Methods	2
Findings	4
Funding Sources and Fares	4
Effects on Service and Capital Projects.....	8
Conclusion	12
References	13

List of Figures

- Figure 1. Locations of Responding California Transit Agencies 3
- Figure 2. Subsidies during the Pandemic, as Compared to before the Pandemic 4
- Figure 3. “Do You Anticipate Financial Shortfalls at Your Agency once Federal Pandemic Relief Funding Expires?”..... 5
- Figure 4. Changes to General Fare Policy: Repeated Cross-sectional Comparison 7
- Figure 5. Changes to General Fare Policy: Longitudinal Comparison of Changes over Time at 16 Agencies 7
- Figure 6. Pandemic Service Reponses, Either Current or Rescinded, Winter 2021/2022 8
- Figure 7. “Are Financial Shortfalls Affecting Your Current Service?": Repeated Cross-sectional Comparison 10
- Figure 8. “Are Financial Shortfalls Affecting Your Current Service?": Longitudinal Comparison of Changes over Time at 16 Agencies 10
- Figure 9. Has the Pandemic Affected Longer-term Capital Planning?: Repeated Cross-sectional Comparison.... 11
- Figure 10. Has the Pandemic Affected Longer-term Capital Planning?: Longitudinal Comparison of Changes over Time at 16 Agencies 11

Contents

Introduction

Initially, the Coronavirus Disease 2019 (COVID-19) pandemic threatened to inflict severe and lasting damage to public transit agencies in California, potentially laying off workers; shuttering lines for months, if not permanently; stranding essential workers who depend on transit; and even bankrupting some transit systems. However, thanks to federal financial relief from three stimulus bills and stronger-than-expected bounce-back of tax revenues from state and local sources, transit agencies in 2022 have avoided that abyss—but still face an uncertain financial future. Meanwhile, operational challenges and, increasingly, workforce issues have hampered returns to regular service, as ridership recovers only slowly, each potentially affecting transit budgets.

To explore the financial effects of the pandemic on California transit and agencies' responses to it, we conducted a detailed survey of transit agency staff at transit systems throughout the U.S., with an oversample in California. This resource paper summarizes the key findings of the survey among our oversample of California respondents. This snapshot of transit agencies' financial conditions and outlook demonstrates the far from catastrophic yet uneasy place of transit in the Golden State today.

Methods

Our 44-question survey asked about ways the pandemic affected agency finances, ways that fare revenues and policies changed during the pandemic, and ways that the pandemic changed transit service and operations because of or with implications for agency budgets. We sent the survey to staff at every transit agency member of the California Transit Association, which represents 85 transit agencies across the state, and every transit agency in the California Association for Coordinated Transportation, which represents smaller and rural California agencies. We obtained staff contact information from both organizations, from online searches of agency websites and documents, and from communications with staff themselves. We instructed 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. The survey was open from November 2021 to January 2022. We received 44 responses from California (See **Figure 1**); as some were not fully completed, we note the total number of respondents for each question below. Along with this California sample of agencies, we conducted a stratified random national survey in parallel, whose results are forthcoming. In this paper, we give statistics and findings only from within California.

In the survey, we included a number of questions previously asked of California transit agencies in Speroni, Taylor, and Hwang (forthcoming), an analysis of transit service in the first year of the pandemic. Their survey was open from September to October 2020, prior to the approval and availability of COVID-19 vaccinations and just before the late fall 2020/early winter 2021 spike in cases (Cowan, 2021 and Allen et al., 2022). We can thus make both a repeated cross-sectional comparison—samples from the population of California transit agencies at two periods of time—and a longitudinal comparison for the particular agencies that responded to both iterations of the survey. In these two ways, we can compare fall 2020 to winter 2021/2022, two very different points in the pandemic. Beyond this, our recent survey focused in more detail on finance in particular, adding questions not in the prior survey, as well as questions about emerging issues like labor.



Responding Agencies

- 1 agency
- multiple agencies in the same city
- state borders

Figure 1. Locations of Responding California Transit Agencies

Supplemental data source: Hudson, 2017

Findings

Funding Sources and Fares

First, the survey responses revealed the importance of federal operating support for California transit agencies during the pandemic. The three federal stimulus packages—the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020, the Coronavirus Response and Relief Supplemental Appropriation (CRRSA) Act in December 2020, and the American Rescue Plan (ARP) Act in March 2021—provided California transit agencies over \$9.8 billion, with very few restrictions on spending it (FTA, 2021a, 2021b, 2021c, 2021d, 2021e; USDOT, 2021; and Wasserman et al., 2022). As we documented in Southern California (Wasserman et al., 2022), the stimulus funds proved a godsend for transit operators, filling holes in other revenue sources and providing stability in an extraordinarily difficult time for the industry.

The survey confirmed the vital role of the federal stimulus bills in particular. Most agencies (41 out of 44) received federal stimulus funds. Because the vast majority of pre-pandemic federal funding for transit went to capital projects, the stimulus bills' addition of operating funds on top of that both deepened and broadened federal transit support (Wasserman et al., 2022). As a result, **75 percent of those who responded to this question reported that their agency received more federal subsidies during the pandemic than the year before the pandemic** (n = 39)—26 percent “somewhat more” and 49 percent “much more” (See **Figure 2**). Compared to other funding sources, **federal subsidies stood out in the survey as the only category with consistently reported increases.**

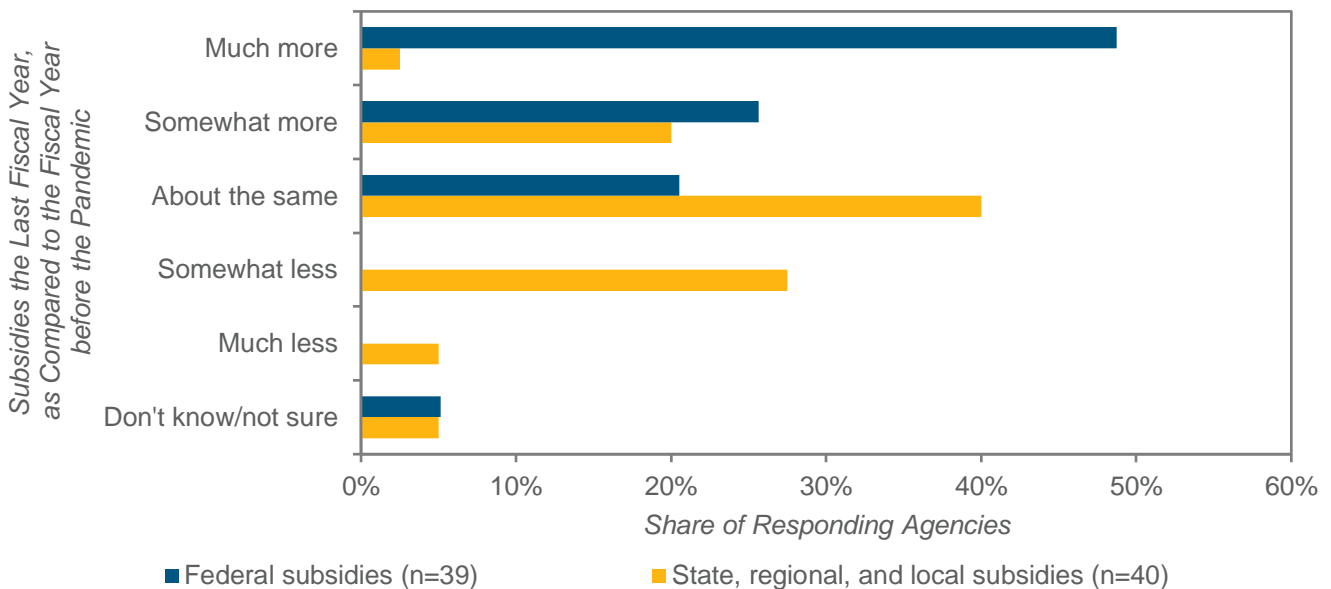


Figure 2. Subsidies during the Pandemic, as Compared to before the Pandemic

Note: Respondents that skipped each question are excluded.

Among its other flexible provisions, the stimulus funding has few restrictions on when it can be spent. Of agencies that responded to this question (n = 39), while about 20 percent anticipate that their funds will be fully spent in Fiscal Year (FY) 2021-2022 (July 1, 2021-June 30, 2022), another 34 percent foresee their federal stimulus lasting into next fiscal year, FY 2022-2023 (July 1, 2022-June 30, 2023). Twenty percent anticipate that the funds will not yet be fully spent even at the end of next fiscal year. **The pandemic federal stimulus funds will thus be supporting transit in the Golden State for at least another year.**

In comparison, state, regional, and local government subsidies remained about the same (40%) or somewhat less (28%) for most agencies (n = 40) compared to the year before the pandemic (See **Figure 2**). On one hand, this further highlights the central role of the federal stimulus in comparison. On the other hand, the fact that these other funding sources did not completely collapse shows the resilience of state and local government tax revenues during the pandemic. After facing initially dire predictions of sharp budget cuts and layoffs (King et al., 2021, forthcoming; Dadayan, 2020; and LA Metro, 2020), these governments in California recovered relatively quickly, thanks to a rapidly rebounding economy and other federal stimulus support for them too. In California, local option sales taxes proved particularly resilient (King et al., 2021, forthcoming). Thus supported, the state and localities could continue to transfer funds to transit.

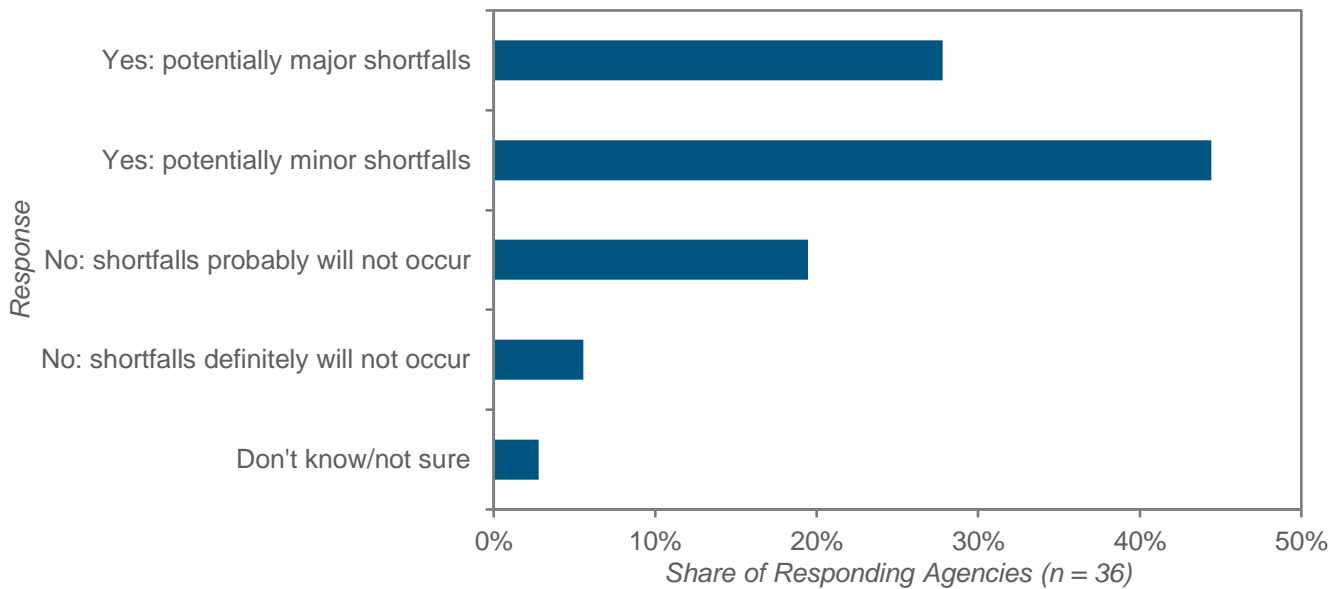


Figure 3. “Do You Anticipate Financial Shortfalls at Your Agency once Federal Pandemic Relief Funding Expires?”

Note: Respondents that skipped the question are excluded.

This relatively rosy fiscal picture, though, faded when respondents were asked about the future. When asked about their budgets after spending down their federal stimulus funds, **most agencies (72%) anticipate some financial shortfalls once federal pandemic relief funding expires**. Forty-four percent foresee minor shortfalls, while 28 percent forecast major shortfalls (n = 36) (See **Figure 3**). As we found interviewing Southern California transit agencies for a recent report on transit finance there, agency staff statewide anticipate ridership (and hence fares) returning slowly and unevenly, as emergency support from all levels of government fades and as costs of labor, materials, etc. continue to rise. The stimulus may have provided a bridge to keep agencies from falling off a fiscal cliff, but agency staff do not see that bridge having a gentle off-ramp on the other side.

The one major revenue category that has performed worst is fares. On top of ridership (and thus fare payments) falling dramatically during the pandemic, 48 percent of surveyed California agencies suspended fares and 23 percent stopped fare enforcement for at least some period. However, **most of these fare suspensions have now ended**. Sixty-five percent of agencies surveyed in winter 2021/2022 reported collecting fares as normal (n = 37), compared to just 31 percent in fall 2020 (n = 29) (See **Figure 4**). The same trend has occurred among the 16 agencies that responded to both surveys, with most now collecting fares (See **Figure 5**).

After this unplanned experiment in fareless transit, **most surveyed agencies are not considering continuing fare-free policies**. Only eight percent (n = 36) of responding agencies reported that they are considering going fare-free on an ongoing basis. A few agencies have already settled on changes to fare policy moving forward: nine percent have decided to continue operating on an “honor system” without fare enforcement and 17 percent to reduce their fares, while just three percent plan to increase their fares above pre-pandemic rates.

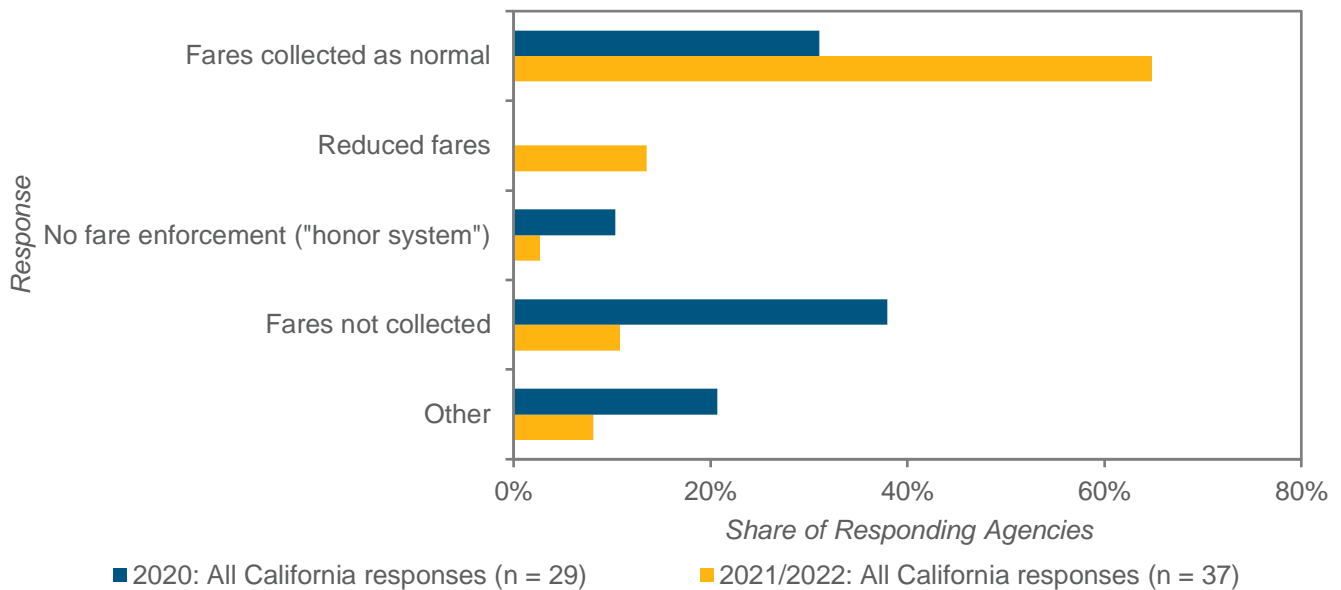


Figure 4. Changes to General Fare Policy: Repeated Cross-sectional Comparison

Note: Respondents each year that skipped the question are excluded.

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

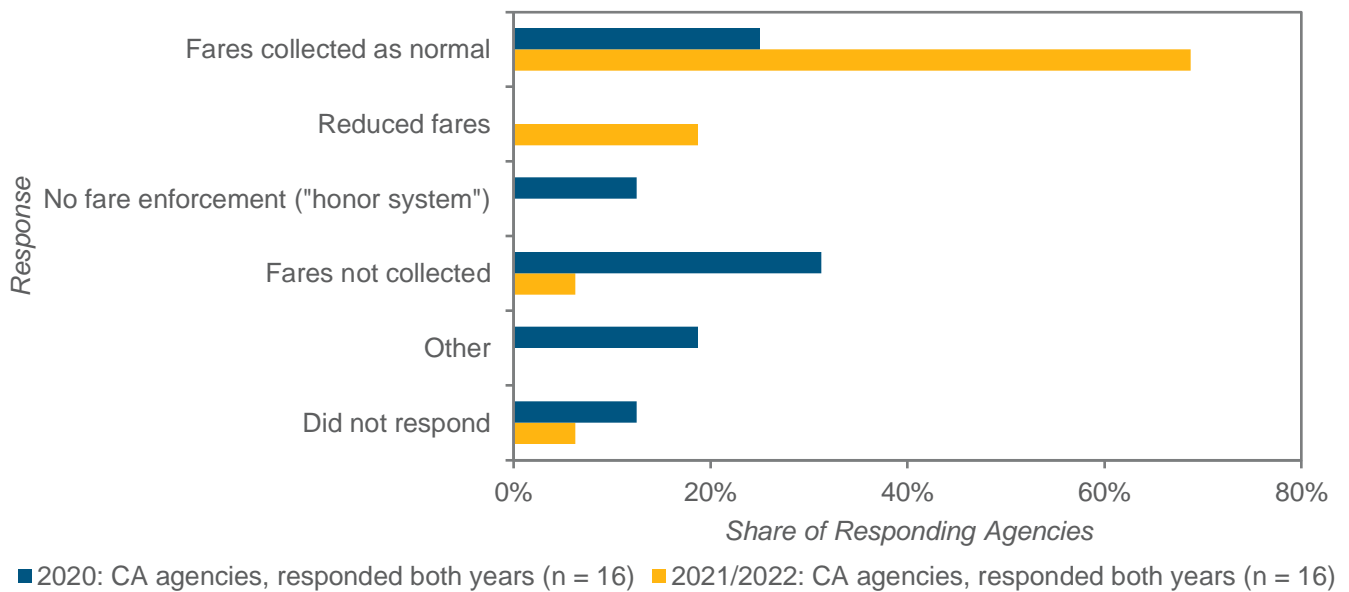


Figure 5. Changes to General Fare Policy: Longitudinal Comparison of Changes over Time at 16 Agencies

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

Effects on Service and Capital Projects

Through the ups and downs of transit finance over the past two years, transit service quantity and quality also changed. For context, **COVID-19 disrupted service for many transit agencies in California, though perhaps not as much as feared.** In our survey, 15 out of 38 agencies that answered this question responded that their service decreased somewhat or significantly on their most heavily patronized mode, compared to pre-pandemic service. Agencies adopted a variety of responses to depressed ridership and public health concerns (See **Figure 6**). For one, the uncertainties of the pandemic caused 68 percent of agencies to adjust their service delivery more frequently than before the pandemic (n = 38) and 63 percent to adjust service more substantially (n = 38), on their most patronized mode. Other common particular strategies, adopted for at least some period during the pandemic even if later rescinded, included adjusting headways (57%), changing peak-hour weekday service hours (43%), and moving to a Saturday or Sunday service pattern for all days (40%) (n = 35).

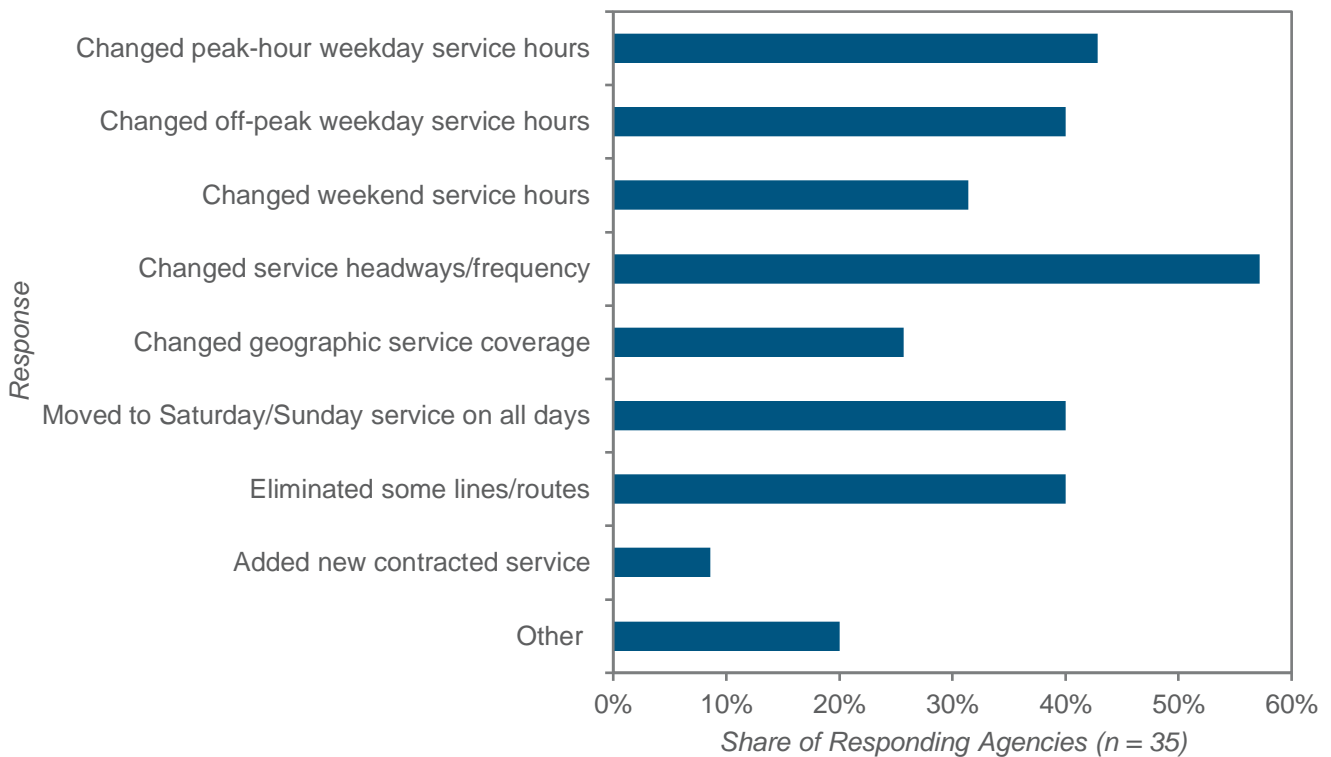


Figure 6. Pandemic Service Responses, Either Current or Rescinded, Winter 2021/2022

Note: Respondents that skipped the question are excluded.

These service responses, though, are decreasingly a result of agency finances. This represents a notable shift from the earlier months of the pandemic, when perceived financial conditions were severely affecting service levels (See **Figure 7**). In the fall 2020 survey, 71 percent of responding agencies (n = 31) reported financial shortfalls affecting their service, with 39 percent responding that service was affected more than a moderate amount (Speroni, Taylor, and Hwang, forthcoming). But with fare revenues slowly rebounding and the latter two federal stimulus bills passed, our winter 2021/2022 survey found much less of a fiscal effect on service than before. **In the more recent survey, 74 percent of the respondents said that budgetary shortfalls were not**

affecting service (n = 38). The same trend holds among the particular agencies that responded to both surveys (the longitudinal comparison) (See **Figure 8**). While other obstacles remain to service restoration—such as labor shortages, discussed below—dollars are generally not one of them.

The effect of the pandemic on capital planning has also lessened over time. A third of agencies that responded in the 2020 survey (n = 27) reported capital projects canceled and/or delayed due to the pandemic's effects, while another 22 percent reported *accelerated* capital projects (Speroni, Taylor, and Hwang, forthcoming). Among other reasons, lower traffic and ridership in the early months of the pandemic made disruptive streets and transit capital projects easier to schedule and execute, as we heard in our interviews with Southern California transit managers as part of related research. But in our winter 2021/2022 survey, 76 percent of responding agencies (n = 37) stated that their transit capital projects have remained relatively unaffected by the pandemic (See **Figure 9**). The longitudinal comparison between the same agencies over time confirms this (See **Figure 10**). Agencies that previously reported delayed or accelerated projects more recently report that these projects are now underway, generally back on schedule.

While finances generally are not hampering service, operations, and capital projects, labor issues are. In line with trends across the country, **most surveyed agencies reported having difficulty filling open positions.** Sixty-three percent of the respondents in our 2021/2022 survey (n = 38) reported that they are having great difficulty filling open roles, including bus and train operators and mechanics, and another 24 percent note that they are having some difficulty. After two years of often difficult working conditions, “push” factors such as vehicle operators not wanting to get sick, enforce public health protocols, or conduct other stressful customer interactions on the job are leading employees to leave and potential recruits to shy away from transit. Broader economic trends and competition from other industries like trucking (which tend to be nimbler in raising wages and offering other incentives) have also become “pull” factors drawing workers elsewhere (Wasserman et al., 2022).

Such issues appear to have continued or worsened since our winter 2021/2022 survey. Compared to our result of 87 percent of agencies having difficulty filling positions in California from November 2021-January 2022, 92 percent of agencies nationally reported having difficulty hiring in a survey by the American Public Transportation Association (APTA), whose findings were released in March 2022. APTA also found that two thirds of agencies are having difficulty retaining employees and 71 percent have had to cut service or delay service increases as a result of workforce issues (Dickens, 2022). These stark survey findings bolster reports of labor shortages stymying service restoration at agencies across the state (Wasserman et al., 2022).

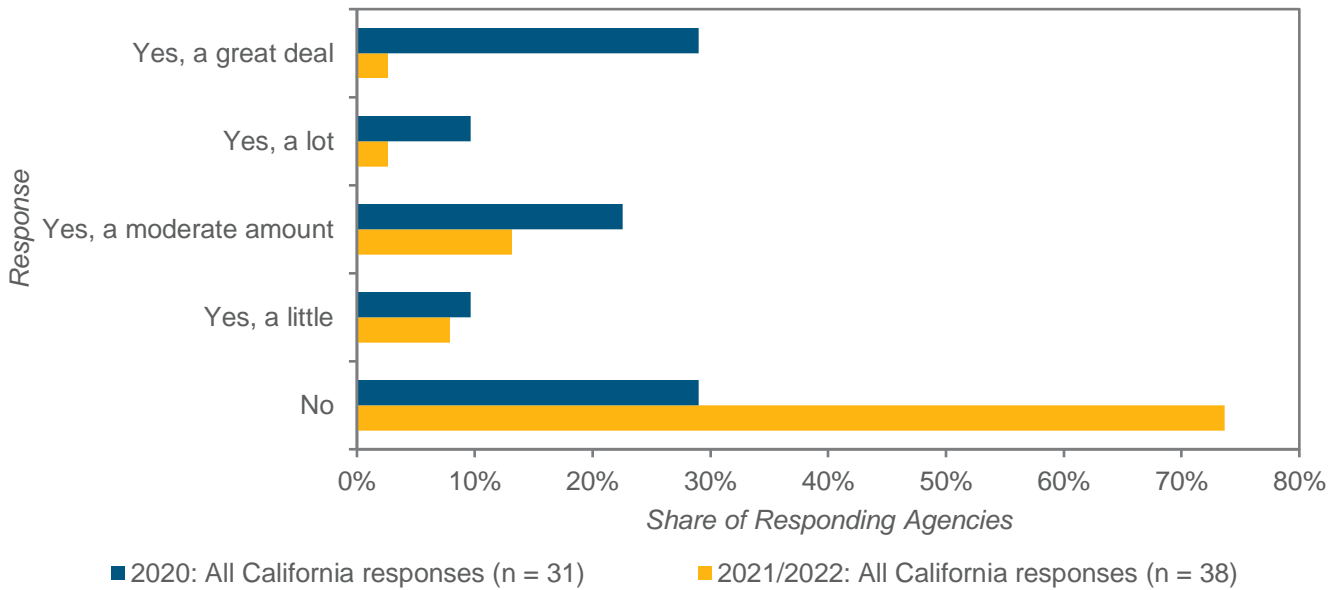


Figure 7. “Are Financial Shortfalls Affecting Your Current Service?”: Repeated Cross-sectional Comparison

Note: Respondents each year that skipped the question are excluded.

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

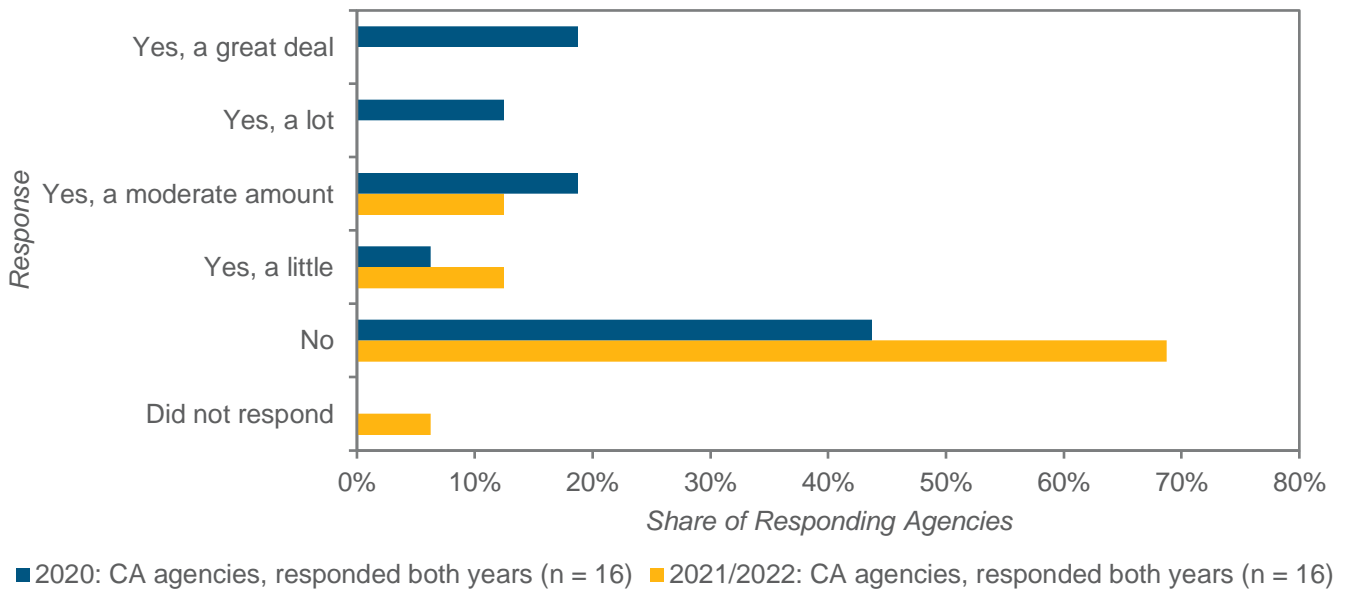


Figure 8. “Are Financial Shortfalls Affecting Your Current Service?”: Longitudinal Comparison of Changes over Time at 16 Agencies

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

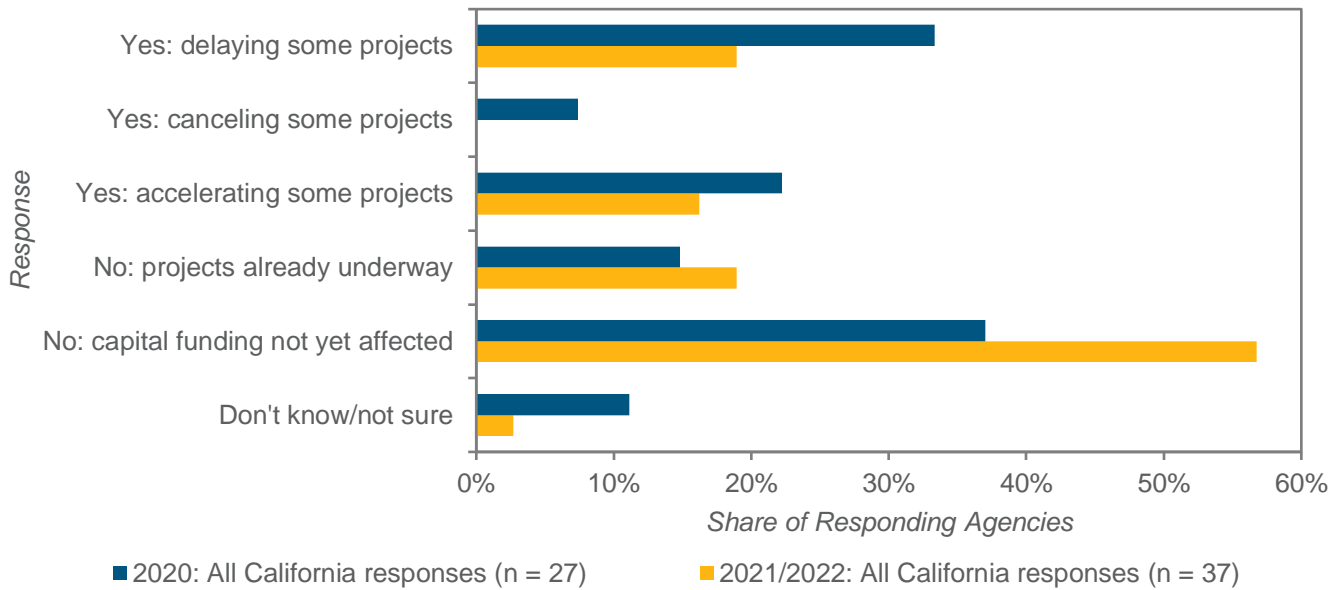


Figure 9. Has the Pandemic Affected Longer-term Capital Planning?: Repeated Cross-sectional Comparison

Note: Respondents each year that skipped the question are excluded.

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

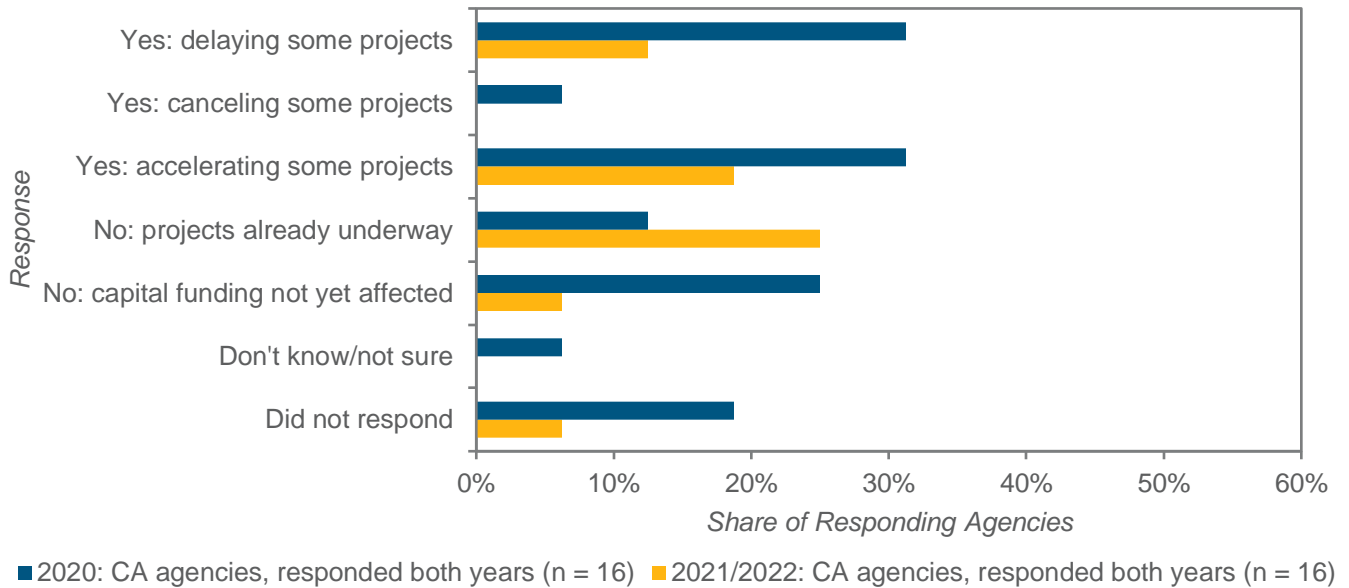


Figure 10. Has the Pandemic Affected Longer-term Capital Planning?: Longitudinal Comparison of Changes over Time at 16 Agencies

Supplemental data source: Speroni, Taylor, and Hwang, forthcoming

Conclusion

Our late fall 2021/early winter 2022 survey responses from 44 California transit operators finds that most California public transit agencies financially weathered the first two years of the COVID-19 pandemic, thanks in large part to two 2020 and one 2021 federal pandemic relief bills. Three-quarters of respondents reported that their agency received more federal subsidies during the pandemic than the year before the pandemic.

As the economy recovered substantially in the second half of 2020 and boomed in 2021, many of those surveyed reported being able to stretch their federal pandemic relief funds for at least another year. Looking ahead, however, nearly three-quarters (72%) of our respondents said that they foresee financial shortfalls once their federal pandemic relief funding has been spent.

The revenue source that has performed worst during the pandemic is fares. Nearly half (48%) of our survey respondents suspended fare collection early in the pandemic, and about another quarter (23%) ceased fare enforcement for at least a few months. While most of these fare suspensions have now ended, ridership and fare revenues remain depressed on most systems into 2022. While many transit advocates have called for expansion of fare-free transit, most surveyed agencies are not considering continuing or reinstating blanket fare-free policies.

Despite the loss of fare revenues on most systems, three-quarters (74%) of respondents told us that fiscal shortfalls were not affecting current service. In addition, while some respondents reported disruptions to capital planning early on, this effect has largely dissipated. Finally, while finances generally are not hampering service, labor issues are: most surveyed agencies reported difficulty in filling positions, a situation which, on some systems, is limiting service delivery.

Overall, California's public transit systems are, for the most part, on relatively solid fiscal ground presently, but the future is far from secure. Patronage on most systems remains depressed, fare revenues are down, and workers are hard to find.

References

- Allen, J., Almkhatar, S., Aufrichtig, A., Barnard, A., Bloch, M., Cahalan, S., Cai, W., Calderone, J., Collins, K., Conlen, M., Cook, L., Gianordoli, G., Harmon, A., Harris, R., Hassan, A., Huang, J., Issawi, D., Ivory, D., Lai, K., Lemonides, A., Lutz, E., McCann, A., Oppel, R., Patel, J., Saldanha, A., Semple, K., Seroussi, S., Shaver, J., Schoenfeld Walker, A., Singhvi, A., Smart, C., Smith, M., Sun, A., Taylor, R., Waananen Jones, L., Watkins, D., Williams, T., Wu, J., and Yourish, K. (2022, April 22). Tracking Coronavirus in California: Latest Map and Case Count. *New York Times*. Retrieved April 22, 2022, from <https://www.nytimes.com/interactive/2021/us/california-covid-cases.html>.
- Cowan, J. (2021, June 15). A Timeline of the Coronavirus in California Tuesday: As California Reopens, Here's a Look Back at What the State Has Endured. *New York Times*. Retrieved April 22, 2022, from <https://www.nytimes.com/2021/06/15/us/coronavirus-california-timeline.html>.
- Dadayan, L. (2020, July 1). COVID-19 Pandemic Could Slash 2020-21 State Revenues by \$200 Billion. *Tax Policy Center: Urban Institute and Brookings Institution*. Retrieved June 29, 2021, from <https://www.taxpolicycenter.org/taxvox/covid-19-pandemic-could-slash-2020-21-state-revenues-200-billion>.
- Dickens, M. (2022, March). *Workforce Shortages Impacting Public Transportation Recovery*. American Public Transportation Association. Retrieved April 27, 2022, from <https://www.apta.com/wp-content/uploads/APTA-SURVEY-BRIEF-Workforce-Shortages-March-2022.pdf>.
- FTA (2021a, February 19). Coronavirus Aid, Relief, and Economic Security (CARES) Act. *Federal Transit Administration*. Retrieved February 7, 2022, from <https://www.transit.dot.gov/cares-act>.
- FTA (2021b, April 13). American Rescue Plan Act Formula Apportionments by State. *Federal Transit Administration*. Retrieved April 22, 2022, from <https://www.transit.dot.gov/funding/american-rescue-plan-act-formula-apportionments-state>.
- FTA (2021c, May 6). CRRSAA Formula Apportionments by State. *Federal Transit Administration*. Retrieved April 22, 2022, from <https://www.transit.dot.gov/funding/grants/crrsaa-formula-apportionments-state>.
- FTA (2021d, August 24). Coronavirus Response and Relief Supplemental Appropriations Act of 2021. *Federal Transit Administration*. Retrieved February 7, 2022, from <https://www.transit.dot.gov/funding/grants/coronavirus-response-and-relief-supplemental-appropriations-act-2021>.
- FTA (2021e, August 27). CARES Act Formula Apportionments by State. Retrieved April 22, 2022, from <https://www.transit.dot.gov/funding/apportionments/cares-act-formula-apportionments-state>.
- Hudson, K. (2017, May 30). Political Boundaries (Area). *Homeland Infrastructure Foundation-Level Data (HIFLD)*. Retrieved November 18, 2020, from https://hifld-geoplatform.opendata.arcgis.com/datasets/bee7adfd918e4393995f64e155a1bbdf_0/.

- King, H., Amberg, N., Wasserman, J., Taylor, B., and Wachs, M. (2021, August 25). *All Is Not LOST: Tracking California's Local Option Sales Tax Revenues for Transportation during the Pandemic* (UC-ITS-2021-18). UCLA ITS. <https://doi.org/10.17610/T6SW39>.
- King, H., Amberg, N., Wasserman, J., Taylor, B., and Wachs, M. (forthcoming). LOST and Found: The Fall and Rise of Local Option Sales Taxes for Transportation in California amidst the Pandemic. In A. Loukaitou-Sideris, A. Bayen, G. Circella, and R. Jayakrishnan (Eds.), *Pandemic in the Metropolis: Transportation Impacts and Recovery*. Springer. https://doi.org/10.1007/978-3-031-00148-2_5.
- LA Metro (2020, May). *COVID-19 Loss and Mitigation: Metro Board of Director Update*. Retrieved February 10, 2022, from <http://metro.legistar1.com/metro/attachments/d969624a-ff0b-46da-8891-6898b1512ead.pdf>.
- Speroni, S., Taylor, B., and Hwang, Y. (forthcoming). Pandemic Transit: A National Look at the Shock, Adaptation, and Prospects for Recovery. In A. Loukaitou-Sideris, A. Bayen, G. Circella, and R. Jayakrishnan (Eds.), *Pandemic in the Metropolis: Transportation Impacts and Recovery*. Springer. https://doi.org/10.1007/978-3-031-00148-2_17.
- USDOT (2021, March 17). Fact Sheet: U.S. Department of Transportation Details the American Rescue Plan's Benefits for Transportation. *U.S. Department of Transportation*. Retrieved February 7, 2022, from <https://www.transportation.gov/briefing-room/fact-sheet-us-department-transportation-details-american-rescue-plans-benefits>.
- Wasserman, J., Rios, N., King, H., Siddiq, F., Bressette, B., and Taylor, B. (2022, February 28). *Transit(ory) Finance: The Past, Present, and Future Fiscal Effects of COVID-19 on Public Transit in Southern California* (UCLA ITS-LA2109a). UCLA ITS. <https://doi.org/10.17610/T60G65>.

