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Options for the Future of State Funding for Transit Operations in California

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Informing the Future of the Transportation Development Act

February 2023

UCLA Institute of Transportation Studies

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The Institute of Transportation Studies at UCLA 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.

White Paper

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Executive Summary

California supports transit with operating subsidies through Transportation Development Act (TDA) funding. However, these subsidies are not directly linked to an agency's performance, and they do not provide transit agencies with any direct incentive to improve performance, efficiency, or effectiveness other than to avoid a (seldom enforced) financial penalty. TDA funding is often uncoordinated within regions, and its disbursement is not well aligned with the state's contemporary social, economic, and environmental goals for transit. Moreover, for transit to be effective at meeting any of these goals, it needs riders above all else—and while the TDA is an important source of operating revenue for agencies across the state, the TDA does not directly support agency actions that increase ridership. On the contrary, the TDA's funding eligibility threshold requirements (the "farebox recovery ratio" and CPI cost escalation cap) at times gives transit managers an incentive to *cut* service.

By restructuring how TDA funds are paid, the state can more effectively shape what transit service is provided in service of state goals. Accordingly, this brief outlines five ideas for doing this:

1. **Remove the punitive "farebox ratio" funding eligibility requirement.** The farebox ratio, i.e., a measure of what share of revenues comes from passenger fares, was outdated even before the era of the pandemic and recovery when many operators were struggling, due to its misalignment with many contemporary state goals for transit.

2. **Update transit performance assessments.** The TDA has no performance or ridership goals and some of its stipulations are based on outdated references to geographies. Updating the TDA to assess transit agencies based on their local ridership "market" and service quality could help to improve ridership.

3. **Use subsidies as incentives.** Current state funding does not provide clear incentives to improve performance, efficiency, or effectiveness, other than to avoid a (rarely enforced) penalty. Some additional requirements motivate cost containment, but likely deter performance improvements as well. Providing subsidies on a per-trip basis, as is done in some European countries, or expanding existing user-side subsidy programs would provide stronger incentives for agencies to increase ridership.

4. **Disburse funds using Regional Transportation Planning Agency (RTPA) expertise.** The TDA's current State Transit Assistance (STA) funding is uncoordinated across regions and not aligned with state goals. Disbursing funds through the RTPAs (or MPOs, as appropriate) would facilitate more coordinated planning of transit service and enable RTPAs to align state spending with Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCS).

5. **Add a new TDA fund.** A new Sustainable Transit Fund (STF) could simplify the necessary transition from a reliance on diesel sales tax revenues to support transit operations (through the existing STA). The STF could be funded initially by a portion of the quarter-cent sales tax revenue currently collected for the TDA's Local Transportation Fund (LTF). Later, the STF could be funded through road user charges, the Greenhouse Gas Reduction Fund, or regionally through VMT mitigation banks.

1.0 Introduction

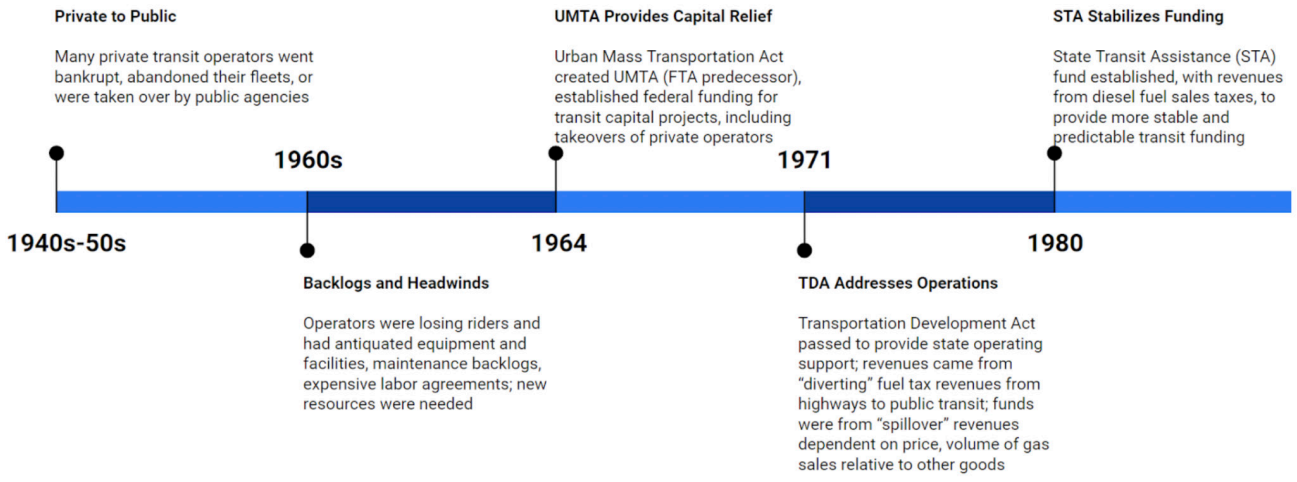
The ground beneath California's transit systems is shifting. Land use policies, long hostile to transit, are changing to encourage development patterns in which transit can work better. Demand for transit, many years in decline, is emerging from the pandemic in a new guise. Funding daily operations remains a challenge for many operators, and amidst this flux, officials are grappling with how state subsidies of transit should evolve.

Ridership is changing, too. Transit patronage has been in broad decline since 2014 (Manville et al., 2018; Manville, Taylor, et al., 2022). Moreover, the two markets transit serves—people who have few or no other means of mobility and people who choose to travel by transit because parking at their destination is difficult or and/or expensive (Manville et al., 2018)—have become only more distinct during the Covid-19 pandemic. These changes in transit's operating landscape prompt questions: what types of services and in what areas does transit need to operate to serve evolving needs? What mission makes sense for transit to have, when cars are getting cleaner, and downtown commutes may return slowly if at all?

What transit will look like in the future depends on how it is funded now. Funding can lead planning (Taylor, 2000), especially in setting the agenda for agencies to follow. How transit is funded, therefore, is at least as important as the level at which transit is funded.

This brief focuses on the Transportation Development Act (TDA) because of its historical importance (illustrated in Figure 1) and because of its significance in being the state's primary method of supporting transit operations. The TDA was established in 1971 in response to a need for operating subsidies for local operators, arising from the fact that federal funding support (established in the 1964 Urban Mass Transportation Act) funded capital improvements only. The TDA's original Local Transportation Fund (LTF) formed the basis of state funding for transit and other transportation projects and programs. A subsequent amendment in 1980 added the State Transit Assistance (STA) fund to stabilize funding available to transit operators. The STA, funded by diesel fuel taxes, remains the state's largest dedicated source of funding for transit operations.

Figure 1: Summary Timeline of TDA's Context



2.0 The State of Transit

As important as funding is for shaping transit service delivery, California's current transit funding structures have changed little even as public policy and the transit industry have changed a lot. Many programs that fund transit pre-date current state aspirations for the mode and are not well aligned with contemporary state goals, such as reducing vehicle miles traveled (VMT) and greenhouse gas emissions (GHGs) (Gahbauer et al., 2021). While cost-effectiveness was a major focus in the 1970s and embedded into the state funding program requirements of that era, today's operating context is different: California's transit agencies require much more operating subsidy today than was envisioned then. Moreover, program requirements for funding eligibility are increasingly problematic and even counterproductive. The TDA, for example, includes punitive threshold requirements for funding eligibility, meaning that the state can withhold funding from struggling agencies causing them – and their riders – further distress (Gahbauer et al., 2019), though in practice this harsh penalty is seldom enforced. Although populations and mobility patterns have changed since the TDA was enacted in 1971 and are changing still, the TDA and related programs still base many of their eligibility conditions on static geographic territories, specifically counties and their populations in 1970. This outdated geographic basis, combined with formula-driven funding, has had the unintended effect of allowing some agencies to claim funding in perpetuity, without any consistent, comprehensive performance assessment. It is also possible this geographic basis explains the proliferation of transit agencies, which have increased in number dramatically, such that three of California's four largest regions have fewer people per transit agency than the national average for regions of one million people or more (See Appendix).

At the time of the TDA's passage, state funding and fares were the primary sources of operating revenue for transit; now the largest primary revenue source is local: local-option sales taxes, or LOSTs. It is possible that the rigidity of the TDA's allocation rules has contributed to localities' (largely successful) search for more (and more flexible) revenue sources. A UCLA Institute of Transportation Studies survey of state transit managers found that those from counties without a LOST reported finding it more difficult or much more difficult to meet TDA requirements – because locally-generated revenues can count toward the TDA farebox recovery requirement (Gahbauer et al., 2019). This suggests that local funding makes it easier to meet state funding requirements, which suggests that the TDA encourages greater local funding. While this meets the original goals of the TDA's authors–to encourage local funding contributions–today, it limits the state's influence over transit.

Current transit funding across all levels of government tends to favor capital over operating expenditures. Decades of transit funding policies, particularly at the federal level, have focused on funding the capital costs of transit: new tracks, new vehicles, new facilities. As an emergency measure, 2020 and 2021 federal funding augmentations did support operations briefly during the pandemic and staved off fiscal collapse on many systems, but otherwise operating funds have lagged relative to capital funds over the decades, leaving some systems with new equipment that they cannot afford to operate. More significantly, a capital focus has led to many years of building expensive fixed-route rail transit systems that are difficult to adapt to shifting travel patterns, such as those we are witnessing post-pandemic. The state's funding of operations has largely been a response to the need arising from a federal focus on capital subsidies over operating expenditures. As pandemic-related federal operating support is gradually spent down, local agencies would benefit from more state support of operations in the newer, higher-cost operating post-pandemic operating environment. The state would also likely benefit from increasing support to local agencies by gaining more influence over the type and quantity of service that is provided to state residents.

As new patterns of mobility emerge in the pandemic recovery, and in the wake of the state's significant policy action to increase transit-adjacent housing and encourage transit-conducive land uses, new travel patterns and potentially new levels of demand for transit will emerge for which many transit systems may be ill-prepared. The TDA has long favored suburban transit systems with low per-capita ridership over higher per-capita ridership central city service (Taylor, 1991), an example of how funding can shape how and where service is provided. Without the flexibility to fund service where it's needed, and in a context of subsidy programs that favor capital over operating expenditures, transit agencies are likely to increasingly struggle to meet the mobility needs of travelers.

2.1 Looking Forward

Perhaps the biggest fiscal issue facing California transit operators in the coming decades is that State environmental policy seeks to reduce and eventually eliminate the underlying fuel behind the state's largest dedicated funding source for transit. The State Transit Assistance (STA) fund, a major source of operating funds for state transit operators, is funded by taxes on the sale of diesel fuel, which will steadily decline as the sale of new diesel trucks will be phased out completely by 2045. While the total amount of funding from STA constitutes just three percent of total (capital and operating) transit revenues, STA funds support operations at a level amounting to roughly 70% of all passenger fare income in 2021. To maintain service levels without STA funding, agencies would need to increase fares substantially, which would reduce ridership. Moreover, the STA is the state's largest single funding source dedicated to public transit. (The TDA Local Transportation Fund is much larger, but funds both transit and non-transit projects). In recent years, most transit revenues have come from federal sources, a pandemic-prompted reversal of decades of dwindling shares of federal funding. In the second pandemic year of 2021, nearly 47 percent of all transit revenues were from federal sources (California State Controller's Office, n.d.). While the mix of future funding is uncertain, the erosion of STA's funding source is guaranteed by enacted state regulation that will phase out diesel engines. The depletion of STA funding for transit leaves open a question of what involvement the state will have in directing funds to transit and affecting their use.

3.0 Transit Operator Challenges

3.1 Funding

Reliable, goal-directed funding is important for better transit planning and improved transit service, but it is not enough. A well-funded transit system accomplishes little if people do not ride it. Increasing ridership, therefore, is critical. Yet, many transit operators are struggling to attract riders coming out of the pandemic. Many operators are hamstrung by unclear, absent, or even conflicting goals—is their purpose to provide cost-effective high-frequency transit on high-ridership corridors, or to provide baseline service across a sprawling geography where riders are scarce but where voters want transit and/or where those few riders have few or no other means of travel? Many goals—social, economic, and environmental—are assigned to transit, but there is no consensus on transit's central purpose (Manville et al., 2018). These multiple and broad goals mean transit's strategy is unfocused and sometimes conflicting (Taylor and Morris, 2015). Moreover, even as changing rider demographics mean that serving people with no other means of transport is more important than ever, particularly coming out of the pandemic, few transit operators explicitly acknowledge that serving disadvantaged populations is a core purpose, and they instead adopt diffuse goals and deploy service that tend to appeal to to voters and not riders (Taylor and Morris, 2015).

Current funding structures are also problematic for transit agencies. The TDA makes its STA and LTF funding contingent on agencies' achieving a certain share of revenue through fares, known as the "farebox recovery ratio" (although it is not, technically, a ratio). Failing to meet this threshold metric means agencies could have STA and LTF funds withheld, and thereby face disastrous budget shortfalls causing drastic service cuts. This TDA "death penalty" (Taylor, 1995) has consequences that are so severe that it is seldom used, pointing both to the goal conflict in the metric (i.e., it is not in the state's interest for a transit agency to fail) and the importance of reliable state funding. Instead, the legislature has added numerous exceptions over the years, defanging the draconian penalty, but leaving the TDA without a clear performance incentive.

3.2 COVID-19 Impacts and Recovery

The Covid-19 pandemic has also brought the farebox recovery ratio into focus; many of the state's commuter-oriented transit systems, which historically had the highest recovery ratios, now face the largest financial challenges as their ridership recovers more slowly than systems with higher shares of carless riders. With the rise of working from home, downtown commuters have been especially slow to return to transit, while those working in service occupations and with lower incomes have been quicker to return to riding (Wasserman et al., 2022; Epstein et al., 2022). This is a reversal of pre-pandemic transit trends in California, where commute trips into and out of major downtowns, and in particular downtown San Francisco on BART, were robust, while off-peak and suburban ridership was falling. Together, these pre- and post-pandemic shifts in rider demand have meant that the existing TDA and its emphasis on cost-effectiveness may not serve the state's goal of serving transit's shifting markets. While cost-effectiveness is certainly important, on its own it could–in the circumstances of the pandemic recovery–reduce what service is actually provided, further depressing the ridership that transit needs in order to be effective by *any* measure.

3.3 Transit's growing responsibility for land use changes

While many of the challenges the transit industry faces are daunting, a bright spot is in the state's recent and proposed land use policy reforms. Land use is a major factor that affects transit ridership, but which most transit agencies cannot control. Recent state legislation to standardize zoning and development bonuses among the state's 482 cities and 58 counties has strengthened the connection between frequent transit service and the development potential of land near this "high quality" service. State policies that will have a positive effect on transit's effectiveness include those that increase the use of by-right approvals of transit-oriented communities similar to Los Angeles' (Manville, Gray, et al., 2022), abolish single-family zoning (Manville et al., 2020), and abolish parking requirements that increase the cost of housing, underwrite the cost of driving, and undermine the utility of transit (Manville et al., 2013). In general, policies that discourage giving more land over to parking and driving (Manville, 2017) are favorable to improving transit ridership and effectiveness. At the same time, recent laws that trigger density bonuses and development streamlining in proximity to transit service place new demands for transit's success in supporting the economic and environmental goals of statewide housing provision and affordability.

4.0 Possible Paths Forward

The state of transit in 2022 represents a duality: recently enacted and currently debated land use and transportation policy changes will likely lead to increased ridership demand in the future. Yet, ridership growth following the pandemic collapse in 2020 is anemic and the major stimulus funding that sustains transit agencies is gradually evaporating. Funding criteria designed in the 1970s to incentivize cost-effectiveness are less relevant to, and predate, the current context in which ridership is simultaneously emphasized in state climate policy and suppressed by the pandemic and its aftermath.

Updating the policy and legislation that governs state transit funding could help make expenditures more effective and better aligned with the state's goals of VMT and GHG reduction, which transit can achieve only through increased ridership. Some measures that could bolster transit performance include: removing the TDA's farebox ratio requirement, matching performance metrics to transit market contexts, disbursing TDA funds through regional transportation planning agencies (RTPAs), replacing the STA funding source, using subsidies as incentives, adjusting allocations based on new performance requirements, and adding a new TDA fund. These are discussed in detail below.

4.1 Remove counterproductive threshold requirements

Amending the TDA to suspend the use of the "farebox ratio" and the Consumer Price Index (CPI) cap eligibility requirements would reduce uncertainty over future funding to transit operations struggling to regain riders, and would increase managerial flexibility to improve and increase transit service.

While the farebox ratio is simple to calculate and is a useful summary indicator of both efficiency and effectiveness (Gahbauer et al., 2019), what, exactly, it signals is unclear as it is a composite metric. An agency's farebox ratio could be low because of high costs, low ridership (and low revenue), or some combination of the two; but it is not possible to make this important determination without more information than the metric provides (Gahbauer et al., 2019).

An even bigger problem with the farebox ratio and other "threshold" requirements like it, such as the TDA's CPI cost escalation cap requirement, is that they offer little incentive for performing better than the given threshold. On the contrary, such thresholds can even constrain decisions that would otherwise provide more transit service and/or generate more ridership. Especially when potential penalties are involved, these threshold requirements give transit managers a strong incentive to take measures (such as cutting service upon which some riders may depend) in order to improve the ratio of operating revenues to operating costs (Gahbauer et al., 2019).

This "managing to the measure" response is rational but can result in outcomes contrary to the purpose of the TDA and the state's goals to provide more transit in order to reduce vehicle miles traveled and greenhouse gas emissions. The farebox ratio threshold and CPI cost escalation limit are no longer suited to transit's current operating context or the state's contemporary goals.

No other state with similar transit environments uses a single threshold requirement like California's farebox ratio to determine eligibility for funding; California's CPI cost escalation limit is similarly unique. Most states instead use performance measures (and also system characteristics) for assessment only, and not for determining funding eligibility (Gahbauer et al., 2019).

4.2 Update transit performance assessments

4.2.1 Match performance metrics to transit market challenges and opportunities

The TDA's original focus was on controlling costs while providing operating support to transit agencies. Both its structural and performance requirements and subsequent incremental legislative fixes reflect an acknowledgment that transit operating conditions vary significantly across the state, and the historical distinction has been, effectively, between urban and rural (or low-population) areas.

A contemporary distinction is that transit serves both transit-oriented areas (urban agglomerations) and auto-oriented (and more "transit-hostile") areas for those who cannot travel by personal vehicle. Directly accounting for these particular "market" conditions, and corresponding opportunities for operators' to increase ridership, would result in greater productivity of the state's transit systems.

Currently, in transit-oriented markets (which are predominantly urban), transit service tends to be relatively service-effective: most of the state's transit ridership is in these systems. But high operating costs on these (mostly) older, larger systems can inhibit efforts to improve ridership by adding service. In such contexts, assessing systems with an emphasis on *cost-efficiency* (i.e., the cost of operating an hour of service) grounds would provide incentives for agencies to manage their costs so as to be able to provide more service with available funding.

Cost-efficiency measures inputs to outputs: For example, the cost of operating an hour of transit service

Service-effectiveness measures outputs to consumption: For example, passenger boardings per service hour

Cost-effectiveness combines these two to measure inputs to consumption: For example, operating cost per passenger boarding

In the state's more auto-oriented markets, transit operators tend to be relatively cost-efficient, in that they have lower operating costs but serve fewer riders. In this context, assessing systems with an emphasis on *service-effectiveness* (i.e., passenger boardings per service hour) will motivate operators to improve ridership by changing service hours, routes, and fares to better match local demand. Agencies might also implement fare programs with schools and other institutions, and even work with municipalities on improving land use around transit in order to increase the relative attractiveness of transit service.

The current "farebox recovery ratio" is a cost-effectiveness metric currently applied as "one size fits all" in the TDA. As transit has two divergent and context-sensitive goals —efficiency in transit-oriented markets and effectiveness in transit-dependent ones —tailoring metrics to match these market opportunities would likely result in managerial actions that would eventually increase ridership.

Performance metrics matter because in many cases they are not used only to measure performance; they serve as *de facto* goals that affect outcomes (Gahbauer et al., 2019). In other words, "what you measure is what you get" (Kaplan and Norton, 1992). This is especially true in cases where transit managers must make decisions in organizations that have no goals or goals that are too broad or undefined to be of aid. Research shows that this describes many transit operators (Dajani and Gilbert, 1978; Sheth et al., 2007; Taylor and Morris, 2015; Yoh et al., 2016).

Effectiveness metrics include passengers per revenue-vehicle hour or passengers per revenue-vehicle mile. Efficiency metrics include operating cost per revenue hour, operating cost per revenue mile, or operating cost per vehicle trip. Table 1 below outlines some of the common metrics used in transportation management and their advantages and limitations. As the table shows, metrics have different implicit goals, which makes some metrics better for use in some areas than others.

Table 1: Types of performance measures, their goals, advantages, and limitations

Metric type	Metric example	Implicit Goal(s)	Advantages	Limitations
Cost-efficiency	Operating cost per revenue hour	Reduce costs*	Useful in both financial and service planning	Favors high labor productivity in dense, congested areas; does not track use
	Operating cost per revenue mile			Favors high labor productivity and faster vehicle speeds; does not track use
	Operating cost per vehicle trip			Favors high labor productivity and shorter routes; does not track use
Service-effectiveness	Passengers per revenue-vehicle hour	Increase ridership; reduce poorly patronized service	Useful for service planning; emphasizes what matters to riders	Favors high ridership; does not track costs
	Passengers per revenue-vehicle mile	Increase ridership; reduce low-ridership route miles/segments	Useful for service planning	Favors high ridership and fast vehicle speeds; does not track costs
Cost-effectiveness	Farebox recovery ratio	Reduce costs; increase fares; increase ridership	Commonly used; easy to calculate	Combines both cost-efficiency and service-effectiveness into a single measure; difficult to deconstruct and interpret

(Adapted from Gahbauer et al., 2019)

Because *what* is measured matters, so recommending specific performance measures to replace the farebox ratio would require further study. Possibilities for further consideration for study and pilot projects (in addition to the ones mentioned above) include vehicle performance and rider/worker perception metrics.

Past research suggests that regardless of what metrics are used to inform discretionary funding, they should be structured as incentives, not standards or "thresholds" to avoid them becoming *de facto* goals and managing to the minimum.

4.2.2 Incorporate service quality into transit performance metrics

Vehicle performance metrics report on service quality and reliability, such as average wait time at a bus stop or rail station, or on-time performance.

User survey metrics include mystery traveler surveys, customer satisfaction surveys, and driver assessments. These metrics are used effectively in other countries and serve as the basis for bonuses awarded to contracted operators (TransitCenter, 2017). While collecting the necessary data involves more effort than the calculation of a farebox ratio, the data addressest what matters most: the quality of service as perceived by the people who can best judge, and for whom it is provided—riders. It is worth noting that historical barriers to fielding surveys are much reduced by technology, which makes it possible for riders to take surveys with their phones or smartphones, and easier for surveyors to collect data (with in-field devices).

4.3 Use subsidies as incentives

The state supports transit with substantial subsidies through multiple programs. However, these subsidies generally do not incentivize improved transit performance, efficiency, or effectiveness, other than to avoid a (seldom enforced) severe penalty. By restructuring how TDA funds are allocated, the state can gain leverage on how these funds are actually used in practice, and more effectively shape what transit service is provided.

Ridership subsidies most directly support increasing ridership. A per boarding subsidy may be particularly effective because it is both a production subsidy and a consumption subsidy: it encourages agencies to provide more (and better) service (because each boarding results in a subsidy payment) and at the same time it may lower the price paid by the rider (if the funds substitute for fare revenues), thereby boosting demand.

4.3.1 Use direct per-trip subsidies

Direct per-trip subsidies, in which subsidies are awarded on a per-boarding basis, are used in Stockholm's transit system (TransitCenter, 2017). This model, called "Verified Passenger Boarding" gives transit operators the incentive to keep fares low (which increases ridership), find innovative ways to encourage demand (i.e., with fares that vary based on travel demand and/or time of day), provide more service in higher-demand areas (so as to generate more boardings), and to provide more service for shorter trips and where there is more demand. Subsidies could be set at an amount per agency based on that agency's historical or recent apportionment and ridership figures. Alternatively, the state could set statewide (or regional) per-rider subsidy amounts based on total state ridership figures and available funding. Ridership could be certified by RTPAs, and incentives (i.e., higher subsidy rates) could exist to encourage the use of automated passenger counting to streamline quick and accurate passenger counts.

With subsidies allocated based on ridership, transit agencies would have strong incentives to improve service to add boardings, which would directly align agency incentives with the state's goals of reducing VMT and GHG emissions by shifting trips to transit, all of which are achieved only through increased ridership. Per-boarding subsidies encourage shorter over longer trips. On longer-distance services, such as commuter rail, where fewer riders travel longer distances, direct per-passenger-mile subsidies might be used in place of per-boarding subsidies.

4.3.2 Expand user-side subsidies

User-side subsidies that direct subsidies to users. Current examples of such programs include discounted or free rides for students or low-income riders, though these programs tend to be funded by third parties (such as school districts, universities, or social service agencies) and administered locally. The state could consider funding "mobility wallets" to particular groups of riders (such as low-income riders on state support). A state-administered mobility wallet would have the advantage of reducing the burden on local agencies to administer and verify eligibility. Moreover, a state-administered wallet would give riders the flexibility to spend their transit funds at any agency across the state, rather than in one district. By putting funds in the users' pocket, agencies would have some incentive to provide the service that would attract paying customers. A state-funded "mobility wallet" could also set the stage for fully integrated payment systems across all transit agencies and bolster the effort of the California Integrated Travel Project (Cal-ITP) to develop a single system for collecting fares.

4.3.3 Adjust allocations based on new performance

Currently, the amounts of STA funding allocations are determined by area population and past-year operator revenues. There is no meaningful performance incentive involved in this allocation: operator revenues are a weak proxy for ridership since revenues can be relatively substantial if fares are high, even if the fare levels depress ridership. Worse, the current STA allocation schema penalizes systems with high-ridership and low fares.

While agencies will continue to need a predictable baseline level of funding, some amount of additional funding could be adjusted up or down based on performance as measured by metrics that matter to riders and relate to ridership. For example, state funding could be allocated in part based on reliability, as determined by General Transit Feed Specification (GTFS)-Realtime tracking (and monitored by RTPAs or MPOs). "Bonus" allocations could also be based on the results of service quality as measured by user surveys and "mystery shoppers," methods commonly used by businesses everywhere and by many transit systems abroad (TransitCenter, 2017). State funding could also be used to encourage agency adoption of Cal-ITP integrated payment options, and real-time information systems that have been shown to significantly reduce the waiting burden for riders and improve ridership potential (Taylor et al., 2012).

4.4 Disburse funds using RTPA expertise

Currently, the state's major dedicated source of funding for public transit is the TDA's STA fund, and these funds are disbursed based on a statutory formula for population and previous year revenues. The STA specifies allowed uses broadly, and as long as operators meet the threshold "farebox ratio" eligibility requirement, allocate LTF funds first, and have operating costs in line with previous years', STA claimants receive funding with little subsequent oversight. There is no requirement that funds go to any specific service or project, or towards any specific goal as might be reflected, for example, in a Regional Transportation Plan/Sustainable Communities Strategy.

While funding flexibility gives managers the ability to respond quickly to changing needs, the state's interest in seeing that state funds are spent purchasing cost-effective transit service are weakly met with these criteria. Moreover, this method of funding disbursement can result in uncoordinated, and possibly duplicative service as multiple claimants can operate in a given area.

Changing the TDA to allow for the disbursement of STA funds through Regional Transportation Planning Agencies (RTPAs) would facilitate more coordinated planning across regions and enable RTPAs to align spending with the goals of their

Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCS), which incorporate state goals. In addition, taking advantage of RTPAs' technical expertise, centralizing funding, and long-range planning would enable transit agencies to focus on operations. This separation of direct day-to-day operations from long-range planning is a best practice in many leading European cities (TransitCenter, 2017). RTPAs could eventually function like mobility managers, responsible for matching demand with service through planning, funding direct operators, and/or contracting purchased transportation. With such a structure in place, it is even possible that operators could "bid" to provide service on routes and/or service areas, an increasingly common arrangement in European transit systems (TransitCenter, 2017).

If pursuing this option, the state and MPOs should provide programs and technical assistance to further develop RTPA expertise in regional transit service planning and coordination. RTPAs could also play a role in implementing the California Integrated Travel Program (Cal-ITP).

4.5 Add a new TDA fund

As cars and trucks on California's roadways shift away from using gasoline and diesel fuel, the state will need to find additional and/or alternative revenue sources to continue funding transportation projects and transit service. This is especially important in the case of the State Transit Assistance fund, which is the state's largest dedicated fund for transit operations and is funded entirely by sales taxes on diesel fuel.

Adding a new TDA fund could simplify the transition in revenue source from diesel sales tax to other sources. Establishing a new fund might also make other policy transitions easier, as it could ramp up as the STA diesel tax revenues wind down. This new fund could become the state's primary vehicle for supporting transit.

In contrast to the STA's allocations based on population and previous year revenue, a new Sustainable Transit Fund (STF) could be solely dedicated to transit operating subsidies in support of the state's sustainability and VMT-reduction goals. Initially, STF could be funded by a portion of the quarter-cent sales tax revenue currently collected entirely for the LTF. Later, STF could be funded through other sources such as regional VMT mitigation banks, road user charges, and the GHG Reduction Fund (GGRF) discussed below. In addition, the state could allocate some STF funds for RTPAs to distribute as "incentives" to agencies that exceed performance targets on "soft" service-related measures such as rider satisfaction, mystery shopping results, etc.

STF funding could be linked to verified ridership (or passenger miles), giving agencies an incentive to orient their operations around the service consumption (ridership) that matters most to the state and to the achievement of its transportation-related sustainability goals.

A new STF would allow the STA to gradually phase out as diesel fuel revenues decline. STA's statutory formula (50% by population and 50% by agency operating revenues) would continue to provide formula funds even to agencies that are not performing well. At the same time, the existing 50 percent allotment by operating revenue formula would "reward" agencies that do well and give all an incentive to bring in more revenue. As diesel fuel tax revenues gradually decline, agencies could adjust to the new incentives for receiving revenues through the STF.

4.5.1 Adopt a new revenue source

Possible revenue sources for the new STF include road user charges (RUC), the Greenhouse Gas Reduction Fund (GGRF), and VMT mitigation banks, discussed below.

Road user charges (RUCs) are a source of revenue that, like current gas and diesel fuel taxes, are collected in rough proportion to travel. In other words, people only pay RUCs when they are using state roadways, and the people who use them the most pay the most. RUCs can be assessed based on roadway access (like tolls) or by mileage as measured by transponder, or some regular interval of verified mileage reporting. To date, four states (California, Colorado, Hawai'i, and Washington) have or have had RUC pilot programs to test various methods for mileage reporting; 13 other states are actively studying RUC programs (RUC America, n.d.).

In addition to replacing the "use" tax on fuels with a use tax based on miles (or access), RUCs can be structured to advance various public policies (Taylor, 2006). Specifically, RUCs can be structured to account for the many costs that driving imposes on society: road damage (by axle weights), traffic congestion (by time and direction of travel), pollution (by emissions levels), and so on. Vulnerable and disadvantaged road users can be protected with familiar assistance programs, such as those used to provide "lifeline" utility rates (Manville, Pierce, et al., 2022).

By increasing the marginal cost of driving to account for the marginal social costs of driving, RUCs also motivate increased carpooling and alternatives to driving, like public transit.

Greenhouse Gas Reduction Fund (GGRF) revenues from the state's quarterly cap-and-trade auctions could be a replacement source for transit funding, especially at the state level. GGRF revenues could be "swapped in" to existing transportation funding program structures. A disadvantage of using GGRF revenues is that, without changes to those structures, GGRF revenues on their own would produce no improvement to the efficacy of transit funding, and their use would have no effect on the marginal demand for transit travel.

Vehicle miles traveled (VMT) mitigation banks offer a way to fund transit projects and operations at a regional level. VMT banks work by pricing impacts from VMT-increasing projects and using the revenues collected to fund VMT-reduction projects and programs elsewhere (Elkind et al., 2018). VMT banks can operate at a state or regional level, facilitating mitigation (or even a net reduction, depending on pricing) in VMT. While administrative costs present a challenge, VMT banks are flexible and could provide substantial funding for transit operations. It is also possible that the VMT bank could provide relatively stable funding year to year since mitigation fees can vary and could be adjusted. A downside of VMT banks is that, like the fuel tax that is dependent on burning gas or diesel fuel, revenues are dependent on building VMT-increasing projects somewhere, when doing so is contrary to state goals; the premise of the VMT bank rests on assuming that many of these projects would likely happen anyway. If true, VMT banks offer a way to mitigate those effects and provide a revenue stream for transit.

Table 2: Alternative funding sources to replace STA diesel fuel sales tax revenues

Alternative program funding source	Affects marginal travel demand?	Encourages transit use?	Domain
Road user charges	Yes	Possibly	Statewide
Regional VMT mitigation banks	No	Possibly	Regional
GHG Reduction Fund	No	No	Statewide

Because transit's economic, environmental, and social benefits flow from ridership, and travelers' access to destinations is the most important outcome that transit funding buys, the effects of a new revenue source on transit demand are relevant. Marginal changes in mode choice, or the factors influencing decisions about whether to drive, walk, or ride for the next trip, are critical, as they determine when transit use rises or falls in the years ahead.

4.5.2 Adjust Local Transportation Fund (LTF) accordingly

Currently, counties can spend TDA funds from the Local Transportation Fund (LTF) on streets and roads construction and rehabilitation if they certify that all "reasonable" public transit needs have been met. By taking transit out of the LTF, the state could determine what amount goes to non-transit local transportation projects, and what amount is set aside for transit (in the new STF fund).

Moreover, counties with populations over 500,000 (in the 1970 Census) cannot receive STA funds until they have allocated all their LTF apportionments. Since STF would replace the LTF for transit funding, this requirement could be removed.

5.0 Summary

Transit operators continue to face financial and operational challenges, particularly in the pandemic recovery, and the federal relief that sustained many agencies' operations during the pandemic is being phased out. The state's TDA supports transit operations, but without meaningful performance incentives or standards, and without reference to or alignment with the state's contemporary economic, social, and environmental goals for transit.

This brief's possible paths forward are goal-directed ideas centered on improving transit ridership by changing how the state funds transit.

Figure 2 provides an illustration of the current TDA framework, and Figure 3 illustrates how that framework would look with all of these ideas implemented.

Figure 2: Current TDA

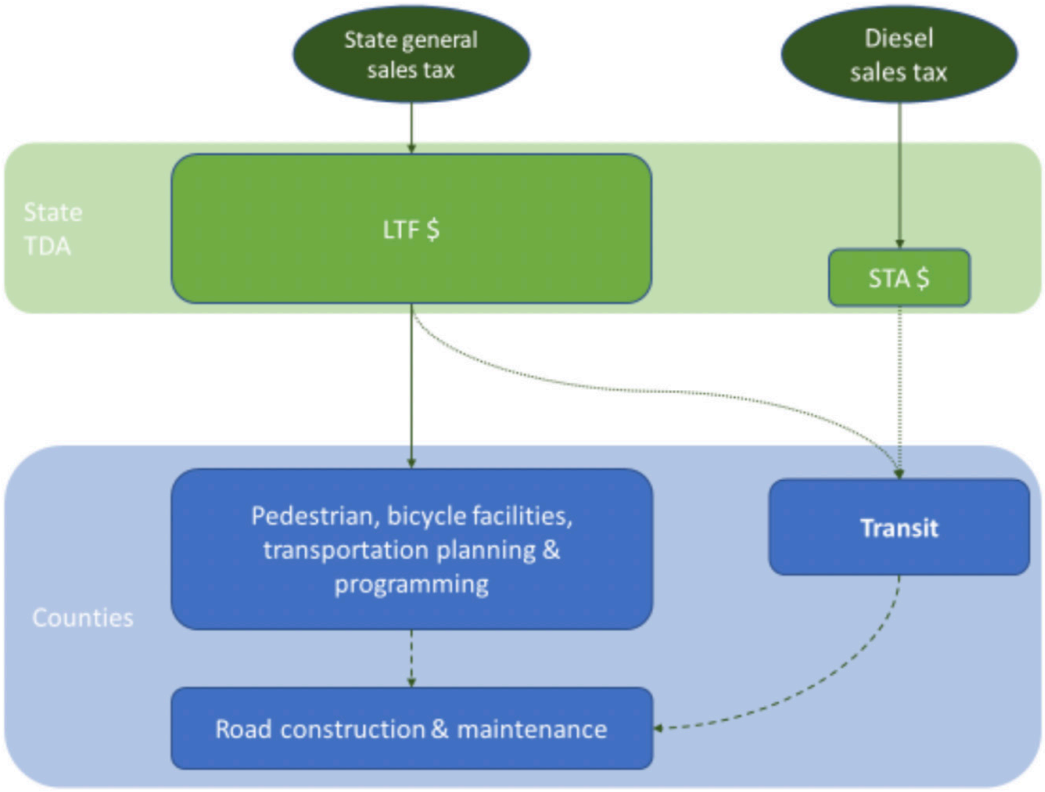
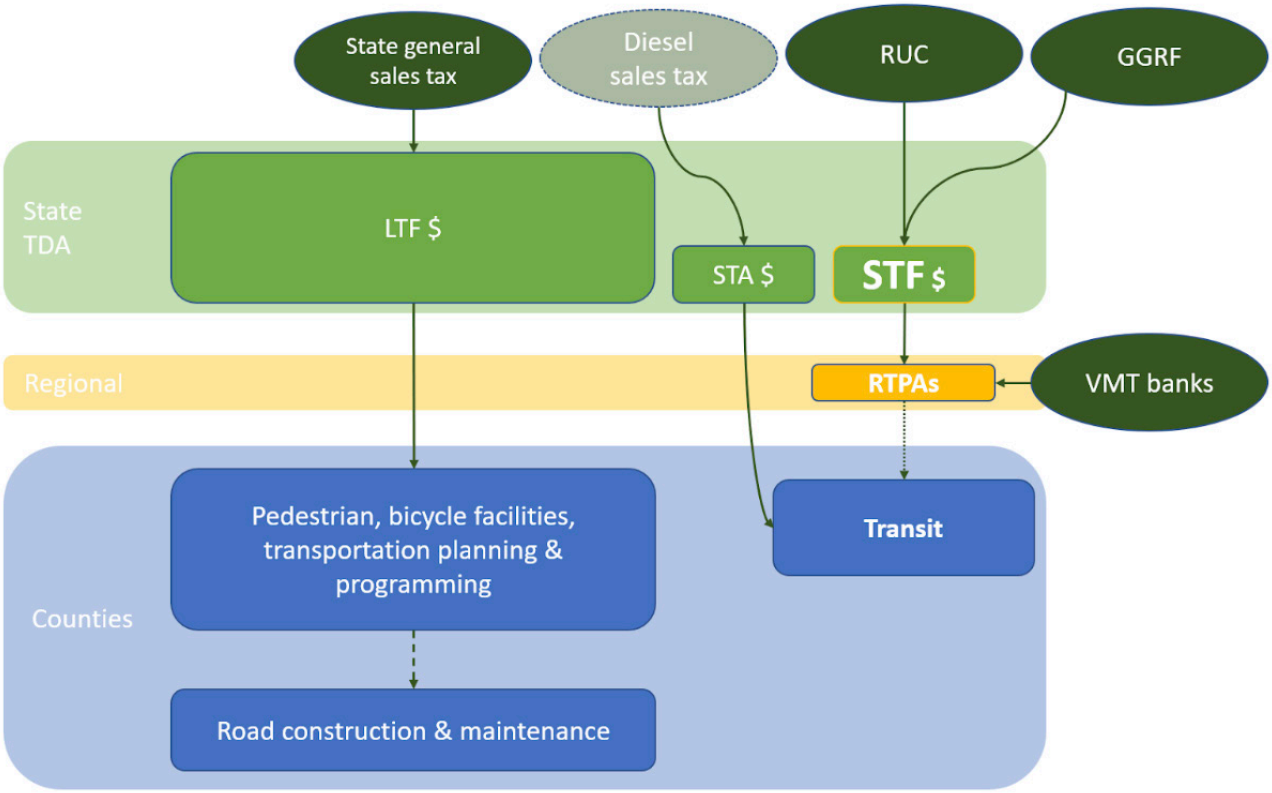


Figure 3: Future TDA with all proposed changes



Appendix

The average transit agency in the MTC, SCAG, or SACOG regions is serving fewer people than its national peer agencies in regions with a population of over 1 million people. Table A-1 below compares the average population served by agencies reporting to the Federal Transit Administration's National Transit Database in California MPOs versus regions nationwide. While fewer, larger agencies is not necessarily a better way to deliver transit service, large numbers of small transit operators in a region increases service coordination challenges and can be more confusing to riders. The relatively large number of transit agencies in California regions suggests that an increased regional or statewide role for inter-agency service planning and coordination is warranted.

Table A-1: Average population per transit agency in large California MPOs and non-California metropolitan areas

Percentile	MPO or Example UZA	Population per Agency
100% (Max)	Las Vegas, NV	1,886,011
85.4%	SANDAG	985,582
75%	St. Louis, MO-IL	707,979
50% (Median)	Columbus, OH	457,397
25%	Kansas City, MO-KS	308,317
21.0%	MTC	289,117
5.4%	SCAG	186,977
1.6%	SACOG	147,165
0% (Min)	San Juan, PR	102,302

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