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How Can California Transit Agencies Build Rail Cheaper and Faster?

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Issue

Increasing Californians' access to and use of public transit is a key component of the state's strategy to reduce greenhouse gas emissions (GHG) from transportation, which is the single largest source of statewide emissions.¹ To achieve state targets of 40 percent GHG emission reduction below 1990 levels by 2030 and carbon neutrality by 2045, California leaders will need to support a range of affordable, efficient, and rider-friendly transit options—including local and regional rail networks—to replace personal vehicle use.²

However, rail transit projects in California and the U.S. are costly and slow to build. Most initial project budget estimates are expensive to begin with, and they often increase significantly after delays and cost overruns occur.³ This high-cost, slow-deployment pattern of rail transit investment risks depleting public funds available for new transit projects and the public trust necessary to ensure successful projects. With climate and urban design and livability goals demanding greater and more efficient public transit investment, what can state and local leaders do to improve project delivery in terms of cost and time? Researchers at the Center for Law, Energy and the Environment at UC Berkeley School of Law recently combined a cost baseline analysis with five California project case studies⁴ to identify the key sources of poor project delivery performance and strategies to overcome them. This brief provides highlights and key findings from this work with more information provided in the full report "Getting Back on Track: Policy Solutions to Improve California Rail Transit Projects" available at www.ucits.org/research-project/2021-22.

Key Research Findings

Rail transit projects in the U.S. are costlier on a per-kilometer basis than their international counterparts. A review of two global rail transit project databases confirms that U.S. projects underperform international cost averages, leading to less track laid per dollar spent (Table 1).

California projects generally follow U.S. trends, but some projects are significant outliers. California's recent rail transit projects do not significantly over- or underperform relative to U.S. averages, but a group of high-profile projects—as well as a slate of proposed projects—are significantly more expensive than their counterparts.

A range of contextual law and policy factors contribute to these trends. Transit experts have identified several issues that contribute to poor project delivery in California and the U.S., including fragmented jurisdictional and agency authority, multiple opportunities for opponents to delay or even halt projects, complex environmental review laws and associated litigation threats, station overdesign, and lack of agency megaproject expertise.

California rail projects face specific delays from the state's relative lack of megaproject experience and complex governance and permitting structures. Analysis of the five rail projects covering a cross-section of project types (light, heavy, and high-speed rail), alignments (tunneled, elevated, and at-grade), urban environments, and regional locations identified five core sources of delays and high costs: 1) lack of transit agency expertise and experience with megaproject delivery; 2) inadequate cross-agency and cross-jurisdiction

Case Study	Comparison to International Cost Expectation ⁵
San Diego Mid-Coast Corridor Trolley	3.3 times as expensive as expected on \$/km basis
San Francisco Central Subway	3.0 times as expensive as expected on \$/km basis
Los Angeles Purple Line Section 1	2.5 times as expensive as expected on \$/km basis
BART Berryessa Extension	1.7 times as expensive as expected on \$/km basis

Table 1. Comparison of Selected Case Study Costs/Time to International Projects

coordination; 3) time and cost of stakeholder outreach and involvement; 4) inefficient project planning, contracting, and delivery strategies that fail to identify total project costs and realistic timelines; and 5) excessive project design. These areas stand out as challenges against the backdrop of California’s particular mix of local control, multiple overlapping jurisdictional project authority, and extensive public review and stakeholder participation processes.

Policy Recommendations

California transit agency leaders can improve staff expertise, agency coordination, and procurement processes. Solutions include forming regional collaboratives to retain staff with megaproject expertise as internal consultants and contractors; exploring project-appropriate procurement strategies and employing staff with experience using them; granting master permitting authority for high-priority rail projects; and developing permanent structures for cross-agency communication.

California state leaders can mandate project performance standards and enhance local authority. Solutions include conditioning state funding to require local agencies to meet cost-per-rider or regional vehicle miles traveled (VMT) reduction targets; updating state law to authorize all transit agencies to deploy alternative project delivery methods that include early contractor involvement; and granting “master” permitting authority to agencies building regional megaprojects.

More Information

This policy brief is drawn from the report “Getting Back on Track: Policy Solutions to Improve California Rail Transit Projects” prepared by Ethan N. Elkind, Katie Segal, Ted Lamm, and Michael Maroulis of UC Berkeley School of Law. The report can be found at www.ucits.org/research-project/2021-22. For more information about findings presented in this brief, please contact Ethan N. Elkind at elkind@berkeley.edu.

¹CARB, *California Greenhouse Gas Emissions for 2000 to 2019: Trends for Emissions and Other Indicators* (July 28, 2021), available at https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf.

²SB 32 (Pavley, Chapter 249, Statutes of 2016) (40% emission reduction mandate), E.O. B-55-18 (Governor Edmund G. Brown, September 10, 2018) (carbon neutrality goal); CARB, *California’s 2017 Climate Change Scoping Plan* (November 2017), pp. 76-79 (detailing strategies and targets to reduce vehicle miles traveled and promote public transit in order to reduce GHG emissions), available at https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

³See, e.g., Romic Aevaz et al., Eno Center for Transportation, *Saving Time and Making Cents: A Blueprint for Building Transit Better* (July 2021), available at <https://projectdelivery.enotrans.org/wp-content/uploads/2021/07/Saving-Time-and-Making-Cents-A-Blueprint-for-Building-Transit-Better.pdf>.

⁴The case study projects included San Diego’s Mid-Coast Corridor Trolley, San Francisco’s Central Subway, Los Angeles’ Purple Line, San Jose’s BART Berryessa Extension, and the California High-Speed Rail project.

⁵Expectation is based on calculation of average project costs of completed international projects (in selected countries) of the same mode (heavy or light rail) and similar amounts of tunneling. For more detailed overview of analysis, please see the full report available at www.ucits.org/research-project/2021-22.

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