



June 8, 2026

Commissioner Matthew Baker
California Public Utilities Commission

RE: Agenda Item 15 (#24193) - Grade-Separation Priority List FY 26-27

Commissioner Baker,

Californians for Electric Rail (CER) is a membership organization of rail and transit advocates throughout California dedicated to modernizing California's rail service and infrastructure to improve mobility and decrease emissions.

CPUC has a specific regulatory role under Streets and Highways Code section 190 in developing a grade separation priority list under state law. In turn the CPUC establishes criteria for prioritizing grade separations.

It is increasingly clear that California's grade separation program is broken. First, the costs for grade separations are spiraling beyond construction inflation indices and domestic peers. Peer states in the Western United States range between \$25m - \$130m (2026 dollars). By contrast California grade separations in the FY 26-27 Priority List have costs that range between \$40m - \$700m (2026 dollars) - with many projects over the \$100m threshold. Comparing costs within California over time we have identified that the top ten FY 06-07 Priority List projects - nearly all which were built - have a cost range of \$30m - \$150m (2026 dollars).

To make matters worse, the state's annual \$15m contribution to cost sharing has been frozen for over 30 years. If this figure had kept pace with inflation there would be \$40m annually for grade separation investment. This means that California is falling further behind in its purchasing power for this infrastructure each year.

Finally, in corridors with high levels of rail traffic and crossings, projects are being planned in a siloed manner that contributes to construction scope complexity and schedule challenges that drive further cost escalation.

An analysis of cost, investment and planning issues is enclosed as **Attachment A**.

CER writes to the CPUC because of its role in funding and prioritizing this work and its role in regulating rail safety. Without a serious re-think in how grade separations are planned, funded and delivered, the goal of eliminating the 10,000 grade crossings in California recedes from possibility.

We do not expect change to come locally. Each agency will necessarily prioritize its short term goals to advance separation of its particular crossing. That's why it's important for the CPUC and the Legislature to assert leadership of more structural changes to grade separation program design.

What is to be done?

First, the CPUC should modify the scope of the proceeding to allow a meaningful analysis of the effectiveness of the grade separation program, including the growth of costs, devolution of planning, fractured planning and design standards, the costs of bundling non-grade separation projects, private railroad cooperation and the value of statutory investment over time. Alternatively, if the current proceeding is determined to be an undesirable procedural vehicle, we encourage you to open quasi-legislative rulemaking to fully consider these critical issues implicating the very foundational assumptions of the program and invite participation from an appropriately broad swath of experts.

Second, as part of the investigation or rule-making the CPUC should investigate the best practices elsewhere in North America or even other developed countries beyond our shores that have been able to close crossings at a greater pace for less money.

Third, as part of the investigation or rule-making the CPUC should engage transit costs researchers, Caltrans and other planning, engineering and project delivery public bodies to identify ways to centralize grade separation capacities in support of operators and local governments. We shouldn't expect every community to suddenly transform itself into a body with planning and project delivery expertise.

Fourth, the CPUC should engage the Administration, the Legislature, and local governments to have an honest discussion about what is necessary to get the grade separation program back on track. CER is willing to work with CPUC and its staff to develop recommendations.

CER understands that the CPUC has many other challenges. The first step to addressing this critical safety challenge is an open dialogue about the status quo. Thus we request a meeting with your staff to discuss the grade separation program and CPUC's role in achieving these program goals.

We thank you for your consideration and look forward to working with you on finding cost effective ways to streamline the delivery of critical safety infrastructure for California communities.

Sincerely,
Adriana Rizzo,
Californians for Electric Rail

Enclosure
CC
President Reynolds
Commissioner Harada
Commissioner Douglas

Commissioner Houck
Leuwam Tesfair
S. Pat Tsen
Matt Ames
Erin Rodriguez

Attachment A

Cost Analysis

When we look outside of California, we see that other states with grade separation programs have much lower costs than California. Colorado, which has a Public Utilities Commission that regulates rail crossings and funds removals, has costs ranging from \$30m - \$130m. The State of Washington grade separations cost between \$25m-\$50m. Oregon costs are about \$30m - \$120m. The 2026-2027 Priority List has costs that range between \$40m - \$700m - with many projects over the \$100m threshold.

You may rightly note that California has higher land costs, labor costs, and different regulatory regimes compared to these other Western states.

But as you shown below, the cost of grade separations has gone up considerably in California over three decades - this is especially true in the Bay Area.

Below you can see the growth in costs of completed grade separations in San Mateo County between 1994 and 2021.

Crossings (City)	Date Completed	San Mateo County TA	Federal	State	Local	Total
Oyster Point (South San Francisco)	1994	\$11.0		\$6.9	\$6.3	\$24.2
Millbrae Ave. (Millbrae)	1996	\$13.3		\$9.8	\$0.9	\$24.0
Ralston/Harbor/Holly (Belmont and San Carlos)	2000	\$60.7		\$35.3	\$3.6	\$99.6
Brittan/ Howard (San Carlos)	1995	\$11.3		\$8.7	\$3.0	\$23.0
Jefferson Ave. (Redwood City)	1999	\$8.1		\$5.5	\$0.6	\$14.2
Fifth Ave. (North Fair Oaks)	1995	\$10.1		\$5.0	\$1.9	\$17.0
San Bruno/ San Mateo / Angus (San Bruno)	2014	\$101.8	\$6.6	\$56.0	\$0.75	\$165.1
25th Ave (San Mateo) (Under Construction)	2021	\$74.0		\$94.0	\$12.0	\$180.0
TOTAL		\$290.3		\$221.2	\$28.3	\$547.1

A true apples to apples comparison would require looking at the scope of each grade separation. A grade crossing at an angle or involving multiple roads is expected to cost more than a simple perpendicular crossing. But it is clear that a single grade separation in San Mateo County in the 1990s cost about \$20m, or \$39m in 2026 dollars.

But as you can see a significant jump in costs occurred starting in 2000 with a three intersection project in Belmont and San Carlos costing \$99m or 5x as much as a single crossing removal in the mid-1990s. The next project, triple crossing removal in San Bruno in 2014 cost \$165m and was built during a time of low inflation. Finally by 2021 a single crossing removal in San Mateo cost 9x of what a single crossing removal in the mid 1990s in the same county and on the same railroad.

A few notes:

- This has occurred during a time when CPUC Section 190 criteria has remained static. Meaning that the CPUC has not changed its criteria to promote more complex projects.
- These projects occurred prior to Caltrain electrification so they do not include de-energization and energization costs for a shoo-fly track.

- The projects built after 1999 were planned and designed in a period of Southern Pacific/Union Pacific ownership. Subsequent projects were planned and designed by local governments and Caltrain.

Looking ahead Peninsula grade separations (excluding the mega-project for Pennsylvania Avenue) are forecasted to cost between \$200m - \$900m. To be fair, many of these grade separations are batched into two or three removals. But even straightforward single crossing removals in Sunnyvale are expected to now cost 5-8x as mid-1990s projects. With electrification and additional service, we expect some additional costs to be imposed by these projects. But the data is clear that Peninsula projects were escalating significantly prior to electrification.

Sequence: Elimination Projects				
Groups	Project	City	Score*	Estimate Project Cost (2024) (Committed Funds)
Closures	Closure of Villa Terrace, San Mateo	San Mateo	/	
	Closure of Castro Street, Mountain View	Mountain View	/	
A Construction	Rengstorff Grade Separation Project	Mountain View	13	\$400 - \$500 M (\$294 M*)
	Broadway Burlingame Grade Separation	Burlingame	12	\$600 - \$700 M (\$258 M)
B Final design	Connecting Palo Alto: Churchill, Meadow, and Charleston	Palo Alto	10.7	\$600 - \$1,000 M (\$44 M*)
	South Linden Avenue and Scott Street Grade Separation	South San Francisco / San Bruno	9.5	\$300 - \$400 M (\$13 M)
C Advance through PE and env. clearance	Middle Avenue Bike/Ped New Undercrossing	Menlo Park	9	\$50 - \$65M (\$21.8 M)
	Redwood City Grade Separation Study	Redwood City	8.8	\$800 - \$950 M (\$13.7 M)
	Mary Avenue Grade Separation	Sunnyvale	8	\$200 - \$700 M (\$25 M*)
	Sunnyvale Avenue Grade Separation	Sunnyvale	8	\$100 - \$200 M (*)
	Bernardo Avenue Bike/Ped New Undercrossing	Sunnyvale	8	\$50 - \$100 M (\$21 M)
	Castro Street Grade Separation Project	Mountain View	8	\$100 - \$200 M
D Evaluate Alternatives	Pennsylvania Avenue Extension (Mission Bay Drive, 16 th St)	San Francisco	7.5	\$2,500 M (\$2.5 M)
	Menlo Park Grade Separation	Menlo Park	6	Group D does not include estimated project costs due to these projects being in the early project development phases. * Total available 2016 Measure B Caltrain Grade Separation Program funds to be allocated by percentage: 25% to City of Sunnyvale, 25% to City of MV and 50% to City of Palo Alto.
	San Mateo Grade Separation	San Mateo	4.2	
	Benton Brookway Grade Separation Study	San Jose	4	
	Diridon Area Projects	San Jose	4	
	Southern San Jose Grade Separation	San Jose	4	
	South Palo Alto New Bike/Ped Crossing	Palo Alto	4	
	Morgan Hill Grade Separation	Morgan Hill	3.5	
	Palo Alto Avenue Grade Separation	Palo Alto	2	

<https://www.caltrain.com/media/36186/download>

Of course, the Peninsula represents the most complex challenge for grade separations in California given its tight urban geography and fast and frequent service pattern. Does this cost escalation hold for other parts of the state?

We compared the cost of thirteen 2006-2007 CPUC Priority Grade Separations - nearly all of which were built - to the estimated project costs for thirteen 2026-2027 CPUC Priority Grade Separations. It is important to note that projects in the 2026-2027 list at the conceptual stage are often undefined in terms of scope, schedule, utility relocations and other budget drivers. That means ultimate project costs could be higher or lower depending how the agencies fully define scope. Also a more detailed analysis will require further identification of base grade separation scope for each project.

2026-2027 Priority List				2006-2007 Priority List					
Location	Agency	Planning Status	Cost	Location	Agency	Scope	Status	Cost	2026 Cost
Broadway	Burlingame	Final Design	\$390m	Valley View Avenue	Santa Fe Springs		Built (2014)	\$75m (2014)	\$106m
								\$60m (2016)	\$84m
17th Street	Santa Ana (OCTA)	Conceptual	\$212m	Norwalk/Los Nietos	Santa Fe Springs		Preliminary Design	\$129m (2019)	\$139m
								\$40m (2008)	\$63m
Spruce	Riverside	Conceptual	\$70m	3rd Street	Riverside		Under Construction	\$93m (2026)	\$93m
Blackstone/Mc Kinley	Fresno	Conceptual	\$162m	Passons / Serapis	Pico Rivera		Built (2012)	\$43m (2010)	\$66m
	SSF / San Bruno	Preliminary	\$320m	Chicago Avenue	Riverside		Unbuilt	\$100m (2008)	\$153m
Linden/Scott	Sunnyvale	Conceptual	\$280-\$320m	Columbia	Riverside		Built (2011)	\$29m	\$44m
Mary	Kern County	Conceptual	>\$100m	Monte Vista	Montclair		Built (2019)	\$24m (2019)	\$31m
Olive Drive	Greater Bakersfield	Conceptual	>\$100m	Milliken	Ontario		Built (2017)	\$73m (2015)	\$100m
Morning Drive	Mountain View	Final Design	\$395m	San Bruno Ave	San Bruno		Built (2014)	\$165m	\$238m
Rengstroff	Rancho Cucamonga	Conceptual	>\$100m	Nogales	LA DPW		Built (2016)	\$82m (2016)	\$116m
Etiwanda	Bakersfield	Conceptual	\$40m	West Lane	San Joaquin		Unbuilt	\$47m (2022)	\$55m
Baker	Shafter	Conceptual	\$53m	San Canyon Lane	Irvine		Built (2014)	\$56m (2011)	\$84m
Cherry/Beech	Santa Ana	Final Design	>\$125m	El Segundo Drive	El Segundo		Built (2007)	\$19m (2006)	\$31m
Santa Ana Blvd									

After converting construction costs to 2026 dollars, it is clear that the 2006-2007 Priority List projects are more affordable.

- Slightly more than half of 2006-2007 projects cost less than \$100m in 2026 dollars; by contrast only three of 2026-2027 fall below that threshold.
- While we can expect 2026-2027 Peninsula projects to cost more due to complications with electrification, we still see costs for non-Peninsula projects outpacing inflation considerably with seven projects exceeding the \$100m threshold.
- The highest cost 2006-2007 project - a Peninsula project at San Bruno built at \$238m - is exceeded by four 2026-2027 projects - all Peninsula. Two of these Peninsula 2026-2027 projects cost 1.7x that of the San Bruno projects.

Clearly we have a cost problem in California. What then is driving the cost increases?

Siloed Planning

Grade separations historically have been driven politically by local governments but were planned, designed and managed by private railroads. Private railroads have lots of in-house capacity for this work and have a deep bench of contractors to do the work. At the same time, they have de-prioritized critical safety features like pedestrian and bike access in the planning of grade separations.

As California public agencies took more ROW into public ownership from private railroads in the 1990s, the in-house capacity to plan, design and manage these construction projects has been severely reduced. Instead operators, counties or cities are tasked with planning the work. In many cases this has meant more responsive planning to local safety and accessibility needs.

At the same time the new public agencies managing these projects often lack the capacity to plan, design and manage these projects. They turn to consultants to manage these projects on an ad hoc basis. The Transit Costs Project, Eno Transportation Center, Yale's Zach Liscow and other researchers have consistently found higher costs are associated with consultants compared to State DOT or other public sector planners and engineers. This is due to the optimism bias of consultants who are incentivized to please clients by overstating benefits and understating costs,

the use of bespoke standards and processes, poor principle/agent alignment and turnover within consultant-dominated agencies. Public sector planners and engineers by contrast can develop and refine standards and processes that help optimize for scope, schedule and budget as well as drive competition within the supplier market. Due to civil service protections they are also empowered to be more candid with project sponsors than consultants hoping for a program management contract extension.

Local governments also have an incentive to bundle grade separations into other improvements like roadway widening. Similarly they are more sensitive to issues like maintenance of traffic, construction phasing, temporary construction easements and permanent takes. As a result, projects have accumulated far more scope and schedule and as a consequence have a far higher budget. As an example the Mary Avenue grade separation, which is ranked #6 on the FY 26-27 Priority List, proposes to take at least six homes and two businesses for a jughandle road. This capacity increase is not necessary to address the grade crossing but the project sponsored has bundled into the project scope. This adds significant scope, schedule and budget.



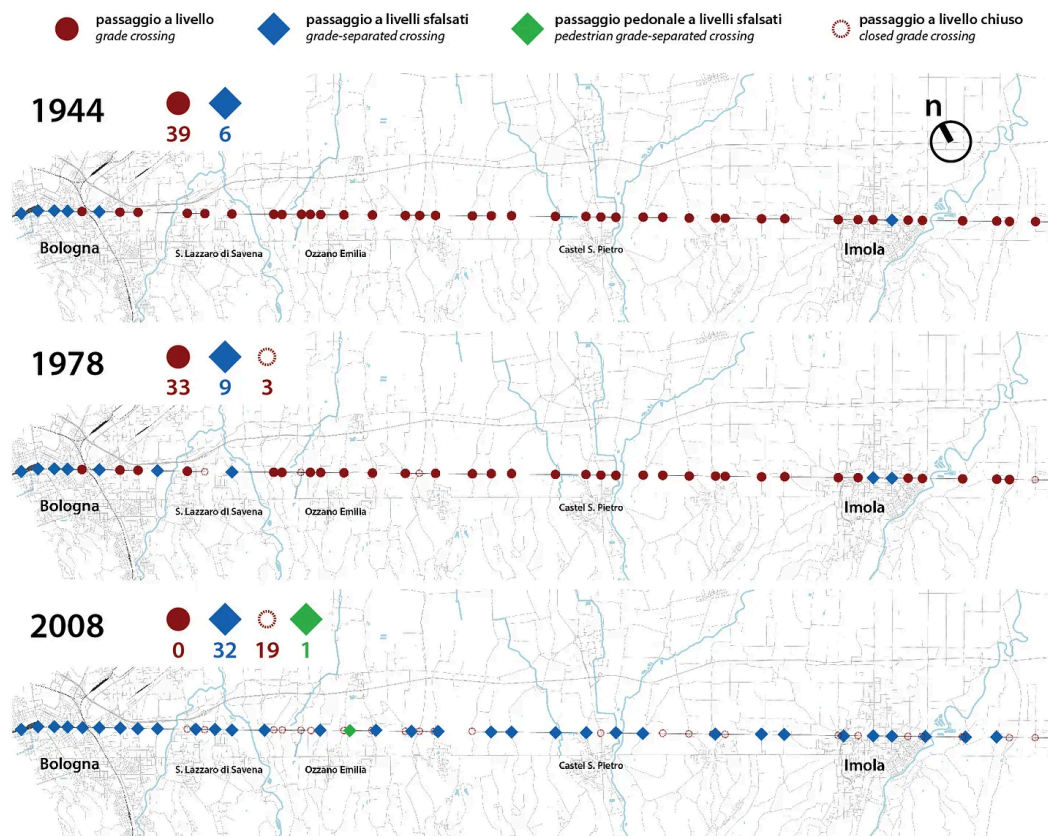
The second consequence of the devolved planning is that grade separations are planned in isolation. For a right-of-way that may extend 100 miles, each community has a separate timeline, priority, configuration, scope and needs. The extreme fragmentation of planning to each intersection raises the ultimate cost of grade crossing removal as more cost effective and less disruptive global solutions are sublimated to the parochial and short term need.

As an example, freight service has vertical grade limitations. In an ideal scenario any vertical profile changes would be minimal or gradual. By fragmenting planning of each level crossing removal to each intersection or city the costs of staying within those limitations are borne by each project - rather than planned sequentially and holistically. Construction methods and construction staging gets more complicated and schedules lengthen - creating a negative cycle of scope and schedule escalation. As an example, a trench or viaduct may be the most cost effective and least impactful solution to safe crossing of rail lines in a 3 mile section crossing three city boundaries. The hyper local planning and design process, however, precludes this as an option due to the incentives of crossing-specific planning and funding programs - rather than corridor or network-based planning and funding.

By contrast, developed countries elsewhere plan grade separations at the corridor level. Dr. Marco Chitti, University of Montreal, shows how Italy progressively removed its grade crossings:

In 1948, there were around 17,500 level crossings along the entire national rail network, mostly manually operated by a *casellante*, a railway employee living in a small house near the gate, the *casello*, sometimes operating a few contiguous gates via a system of ropes. In the following years, only a few of them were closed or replaced, but from 1958, the effort gained a bit more momentum, with a mix of grade separations on national roads, closures of low-traffic ones and upgrade of the remaining to automatic operations. By 1967, the number of at-grade crossings had gone down to 14,580. During the 1970s, automation was completed, and in the 1980s, the systematic effort to remove most level crossings on the main trunk lines finally took off thanks to a 10-y plan passed in 1983 by the Parliament, renewed in 1998. By 2000, the number of level crossings had been further reduced to 8,063, and it continued its descent to 4,072 in 2024.

La lunga modernizzazione - soppressione dei passaggi a livello lungo un tratto della ferrovia Adriatica *The Long Modernization - grade-crossing removal along a segment of the Adriatic railway line*



<https://marcochitti.substack.com/p/the-long-modernization-of-the-italian>

Recently Caltrain embarked on a Corridor Crossing Strategy to provide a baseline corridor understanding for grade crossing removal planning and design as well as prioritizations. Still the practice is extremely fractured and ad hoc relative to successful level crossing removal programs elsewhere.

Static Program Funding

In addition to the siloed planning, grade crossing removal in California has had static investment. In periods of low inflation between 1990 and 2020, this has not been an acute issue. With the post-COVID inflationary environment the resources available for grade crossing removal are rapidly losing their value.

The Section 130 annual investment of \$15m has been static since at least the early 1990s. At that time a grade separation cost between \$5-\$20m. With local and railroad matches, the Section 130 Program could fund 3-4 grade separations each year.

Adjusted for inflation from 1992 to 2026, the value of Section 130 would be \$35m. While clearly \$35m would not fully fund 3-4 grade separations given today's costs, it could fully fund at least two reasonably priced rural/suburban grade separations each year. \$15m alone might be able to fund one such grade separation. With that rate of investment and construction, California might close an additional 1% of grade separations within the next century.

In effect the declining value of the Section 130 Program has meant that the program that used to fund capital construction of grade separations is now one that primarily funds ROW activities or preliminary design.

As shown above, the cost data and planning devolution demonstrate that the growth in grade separation costs is not simply due to rising input prices. As discussed below, there are real changes California can make to rein in and reduce costs. But California must also restore the value of its grade separation investment if it wishes to seriously reduce the safety and operational costs of grade crossings.