

CORRIDOR CROSSINGS STRATEGY

SAFETY ENHANCEMENT
AND ELIMINATION PROGRAMS
INITIATION REPORT

March 2026 Draft



LETTER FROM THE EXECUTIVE DIRECTOR

Dear Valued Corridor Partners:

I am pleased to share the Draft Corridor Crossings Strategy (CCS) Safety Enhancement and Elimination Programs Initiation Report. Initiated at the request of corridor jurisdictions as an outcome of Caltrain's Business Plan, this Report concludes the multi-year effort to develop a shared vision and corridor-wide, programmatic approach to funding and delivery with two proposed programs: the Safety Enhancement Program and the Elimination Program. The CCS provides a corridor-wide framework for improving safety, reducing conflicts between road and rail traffic, and supporting the long-term growth and modernization of Caltrain's operations.

Many corridor jurisdictions have expressed a strong desire to separate at-grade crossings to improve safety, connectivity, and access. Caltrain recognizes grade separations are important to enhance public safety, enabling multimodal transportation, regional mobility, and accommodating future service expansion.

However, today's market realities must also be carefully considered. Capital project costs have reached record highs amid a shifting construction environment. Post-pandemic factors and inflationary pressures are driving cascading impacts on labor and procurement costs.

In response to these changing conditions and to address immediate safety risks, the CCS prioritizes closures and safety enhancements—delivering significant safety improvement projects that offer greater overall benefits relative to cost. These safety enhancements will be implemented while Caltrain, jurisdictions, counties, and regional transportation agencies continue planning and advancing longer-term grade separation solutions.

The CCS outlines a tiered implementation strategy supported by dedicated program teams, and data-driven program sequence lists to guide priorities, resource allocation, and coordination. Its success depends on continued partnership with our corridor jurisdictions and transportation agencies to deliver safe, reliable service for the communities we serve.

We welcome your continued feedback to ensure the CCS reflects both local and regional priorities and strengthens our shared commitment to a unified, corridor-wide strategy.

Thank you for your ongoing partnership and commitment to safety.

Sincerely,

Michelle Bouchard
Executive Director, Caltrain



ACKNOWLEDGMENTS

The Corridor Crossings Strategy and development of the programs was made possible through the collaboration and dedication of:

- Peninsula Corridor Joint Powers Board
- San Francisco County Transportation Authority
- San Francisco Municipal Transportation Agency
- San Mateo County Transportation Authority
- Santa Clara Valley Transportation Authority
- Metropolitan Transportation Commission
- California High-Speed Rail Authority (CHSRA)
- Members of Caltrain's Local Policy Maker Group
- City/County Staff Coordination Group



TABLE OF CONTENTS

Letter from the Executive Director	ii	4. CCS Programs Sequence Lists	15
Acknowledgments	iii	4.1: Crossing Sequencing Framework	16
List of Acronyms	vi	4.2: Sequence Lists	20
How This Document is Organized	vii	5. Delivery of Sequence Lists	31
Executive Summary	x	5.1: Safety Enhancement Program	32
1. Introduction	1	5.2: Elimination Program.....	34
2. CCS Programs Structure	5	5.3: Preliminary Project ROM Costs	36
2.1: CCS Goals.....	6	6. Next Steps	37
2.2: CCS Programs	7	6.1: Caltrain Board Actions.....	39
2.3: CCS Programs Organization.....	9	6.2: Caltrain Staff Actions	39
2.4: CCS Programs Components.....	9		
3. CCS Programs Activities	11		
3.1: Overarching CCS Programs Support Activities	12		
3.2: Technical Analysis Activities	13		
3.3: Program Support for Safety Enhancement Program	13		
3.4: Program Support for Elimination Program.....	14		

LIST OF FIGURES

Figure A: Program Organization.....	xiv
Figure 1: Crossing Safety Enhancement Sequencing Framework.....	16
Figure 2: Closure Types.....	19
Figure 3: Safety Enhancement Program Sequence List.....	22
Figure 4: Elimination Program Sequence List.....	23

LIST OF TABLES

Table A: Safety Enhancement Program Group Description and Activities.....	xi
Table B: Elimination Program Group Description and Activities.....	xii
Table C: Safety Enhancement and Elimination Program Groups.....	xv
Table 1: Safety Enhancement Crossing Assessment Evaluation Criteria.....	17
Table 2: Elimination Crossing Assessment Evaluation Criteria.....	18
Table 3: Funding Groups.....	18
Table 4: CCS Programs Sequence Lists.....	24
Table 5: Safety Enhancement Program – Group 1.....	26
Table 6: Safety Enhancement Program – Group 2.....	27
Table 7: Safety Enhancement Program – Group 3.....	27
Table 8: Safety Enhancement Program – Group 4.....	28
Table 9: Elimination Program – Group A.....	29
Table 10: Elimination Program – Group B.....	29
Table 11: Elimination Program – Group C.....	29
Table 12: Elimination Program – Group D.....	30
Table 13: Safety Enhancement Program Delivery Timeframe.....	32
Table 14: Safety Enhancement Program Group Description and Activities.....	33
Table 15: Sample Elimination Program Delivery Timeframe.....	34
Table 16: Elimination Program Group Description and Activities.....	35
Table 17: Safety Enhancement Program ROM Costs.....	36

APPENDICES

Appendix A: Identified Projects

Appendix B: Safety Enhancement Program Methodology

Appendix C: Elimination Program Methodology

Appendix D: Crossing Database

LIST OF ACRONYMS

AADT	Annual Average Daily Traffic	GPS	Global Positioning System
ADA	The Americans with Disabilities Act	HSR	High-Speed Rail
AREMA	American Railway Engineering and Maintenance of Way Association	ICE	Independent Cost Estimating
CCS	Corridor Crossing Strategy	LPA	Locally Preferred Alternative
CCTV	Closed-Circuit Television	MOU	Memorandum of Understanding
CEJST	Climate and Economic Justice Screening Tool	MTC	Metropolitan Transportation Commission
CHSRA	California High-Speed Rail Authority	MUTCD	Manual on Uniform Traffic Control Devices
CIP	Capital Improvement Plan	PSR	Project Study Report
CPUC	California Public Utilities Commission	PTC	Positive Train Control
DAC	Disadvantaged Communities	TA	Transportation Authority
DEC	Design, environmental, and construction management	UPRR	Union Pacific Railroad
EIR	Environmental Impact Report	USDOT	United States Department of Transportation
EIS	Environmental Impact Statement	V/C	Volume-to-Capacity
ESC	Caltrain Executive Steering Committee		
FRA	Federal Railroad Administration		
GCHA	Grade Crossing Hazard Analysis		
GDT	Gate Downtime		
GO	General Order		

HOW THIS DOCUMENT IS ORGANIZED

This document provides an overview of Corridor Crossings Strategy (CCS) programs including the funding priorities for crossing safety enhancement projects and elimination projects (grade separations and closures) along the Caltrain corridor.



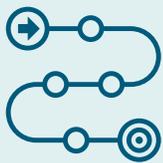
Document Structure

- ▶ **Chapter 1 - Introduction:** Describes the overall programs - their development and purpose.
- ▶ **Chapter 2 - CCS Programs Structure:** How the CCS programs are organized and structured – their elements and guiding principles during operations.
- ▶ **Chapter 3 - CCS Programs Support Activities:** Outlines the program-wide activities
- ▶ **Chapter 4 - CCS Programs Sequence Lists:** Summarizes the methodology used to evaluate and sequence crossings and identify funding priorities.
- ▶ **Chapter 5 - Delivery of Sequence Lists:** Summarizes the funding and implementation activities to deliver projects in the sequence lists.
- ▶ **Chapter 6 - Next Steps:** Describes the ongoing and future activities in managing and updating the CCS programs.

FROM STRATEGY TO CCS PROGRAMS

The Corridor Crossings Strategy (CCS) was identified as part of the Caltrain Business Plan as an effort necessary to enhance the current grade separation process and develop corridor-wide alignment on how to deliver crossing improvements (at-grade and grade separations) together. The current implementation of crossing improvements is on a project-by-project basis, largely dependent on which jurisdiction can secure project funding first.

Through close collaboration with corridor partners, including corridor jurisdictions and transportation authorities (TAs), Caltrain established and documented the shared understanding of existing challenges, corridor-wide needs, and opportunities for more coordinated planning and delivery. The CCS programs, described in this report, establish the structure to the coordinated, corridor-wide and programmatic approach to all crossing improvements—at-grade and grade separated improvements.



The CCS process and key deliverables listed below represent the building blocks that informed the programs. Since their release, Caltrain and its partners have significantly advanced the analysis, sequencing, and implementation planning reflected in this CCS Programs Initiation Report. Each of the previous documents captured an evolving understanding of corridor needs, and collectively set the stage for the data-driven, implementation-focused approach that now defines the programs. During the CCS development, the overall funding climate for grade separation projects became more competitive and coupled with the increase in capital infrastructure costs has resulted in refinement of the program focus. This report represents the refined focus and next phase: **two corridor-wide programs implementing intermediate and long-term solutions, supported by a data-driven sequencing that guides the corridor's resources allocation and enables project delivery efficiencies.**



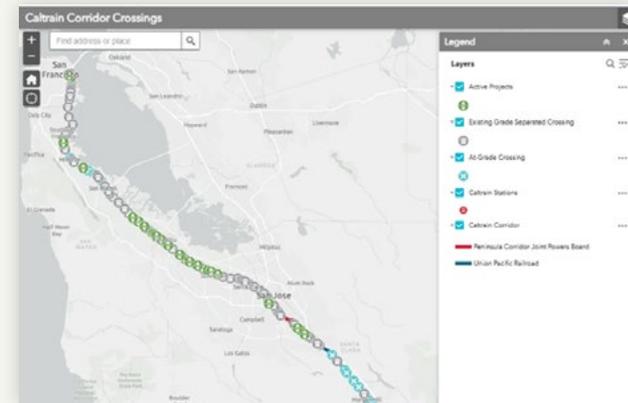
Initiation and Discovery Phase

Caltrain developed a baseline understanding of the corridor and its challenges through data collection, corridor partner interviews, and peer agency reviews.

KEY DELIVERABLES:

➤ **Project Website with Interactive Crossing Map**

Caltrain published an interactive map online that provides a corridor-wide view of the crossing types, railroad ownership, and identified grade separation and closure project descriptions.



➤ **Program Strategy Phase I Report**

The Program Strategy Phase I Report documented Caltrain and the corridor partners' initial findings.





Scenario-Based Assessment

Caltrain evaluated three delivery approaches to address the corridor’s need for crossing improvements: Independent Project, Coordinated Projects, and Centralized Delivery. The Program Strategy Phase II Report highlights the potential opportunities and efficiencies of each approach.

KEY DELIVERABLES:

► Program Strategy Phase II Report

An outline of Caltrain’s proposed approach and components for future delivery – reflective of corridor discussions and an agreement in principle on the strategy approach (Coordinated Program Approach).



Corridor Crossings Strategy: Safety Enhancement and Elimination Programs

A new structure and methodology to sequence projects, defines tools and practices to support delivery, and outlines how Caltrain and corridor jurisdictions can coordinate to implement crossing improvements effectively.

KEY DELIVERABLES:

► **This Document:** Documents the program’s guiding principles, structures, priorities, costs, and implementation steps.



Corridor Crossings Delivery Guide

The guide was developed in response to direct corridor partner feedback. Completed in collaboration with corridor partners, the guide is meant to clearly define the processes, procedures, roles, and responsibilities for grade separation and closure projects.

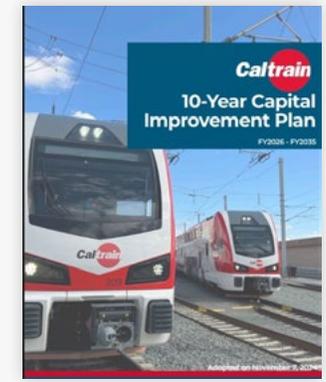


Note: Delivery Guide will be updated to reflect both programs, revised processes and agreed-upon parties roles and responsibilities.



Caltrain Capital Improvement Plan (CIP)

Anticipated capital funding needs for the safety enhancement program and elimination program will help inform the “Provide a Safe and Secure Railroad” and “Partner with Local Communities” strategic initiatives, respectively.



EXECUTIVE SUMMARY

The Corridor Crossings Strategy (CCS) Safety Enhancement Program and Elimination Program establish the structure for sequencing and delivering at-grade crossing safety enhancements and elimination projects along the Caltrain corridor. The CCS is designed to improve safety, mobility and connectivity by reducing conflicts between road and rail traffic in the near-term through the implementation of safety enhancements and closures, and long-term through elimination projects.

Why It Matters



Safe, Accessible Corridor: Corridor partners have a shared goal of enhancing safety and improving connections for everyone who lives, works, and travels on, along, and through the Caltrain corridor.



Stronger Together: Aligning corridor partners under one coordinated framework enables to plan and deliver more effectively – speaking as one corridor to achieve safety, mobility, and community benefit goals.



Local Benefits: Coordinated corridor approach helps corridor partners invest resources into projects that yield early benefits, creating meaningful quality-of-life improvements sooner.



Strategic and Transparent Funding Decisions: With constrained funding at all levels, a corridor-wide program ensures that every dollar is directed where it delivers the greatest safety, mobility, and community benefit. Through a data-driven and transparent process, partners can make difficult but necessary tradeoffs to prioritize projects that are most competitive for external funding and deliver the highest public value.



Efficient and Accountable Delivery:

A unified program structure with clear visibility of project status and progress fosters coordination, consistency, and accountability across all corridor partners.

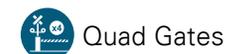
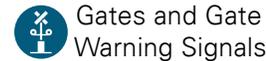
The CCS Programs

Safety Enhancement Program: Near-term quick-build upgrades to improve conditions at all crossings along Caltrain-owned corridor. The program excludes crossings on UPRR-owned right-of-way, as Caltrain does not have delivery authority.

★ **Baseline Safety Enhancements:** Set of improvements to be implemented at all crossings in the next few years upon funding availability.



★ **Advanced Safety Enhancements:** Array of improvements to be applied individually or coupled on a crossing-by-crossing basis upon additional analysis of crossing needs.



Elimination Program:

★ **Closures:** Where the road is closed on both sides of the railroad. May include at-grade or new bicycle and pedestrian undercrossing to accommodate active transportation routes.

★ **Grade Separations:** Where the roadway and the railroad do not cross each other, and the railroad is either above or below the roadway. Includes all grade separations corridor jurisdictions identified or initiated.



Programs Sequence Lists

Scoring Safety Enhancements Projects

Advanced safety enhancement projects are scored based on safety needs, using criteria such as the number of fatal rail incidents, fatal/severe street incidents, and the ratio of total street incidents to average daily traffic. The crossings are then sorted into four funding groups (1 through 4), based on their scores. The list will be updated on an annual basis.

Scoring Elimination Projects

The 19 identified elimination projects are given a score between 0 and 23 based on evaluation criteria that assess each project’s benefits and readiness. Elimination projects are then sorted into four funding groups (A, B, C and D) based on their scores. Group A represents the most advanced and worthy projects. Projects are scored based on the latest known information and will receive an updated score as they reach the end of each phase and every year, when the list is updated.

Oversight and Delivery of Sequence Lists

The CCS programs will be implemented by integrated, cross-functional teams that standardize designs, reduce redundancies, leverage economies of scale,

and pursue innovative delivery methods that streamline construction and minimize service disruptions. This coordinated structure enables faster, more consistent, and more cost-effective project delivery across the corridor.

Oversight will be strengthened through a new Funding and Policy Oversight group composed of Caltrain, corridor cities, and transportation authorities, ensuring transparency and shared accountability. That group will get quarterly updates through established communication processes and will directly guide the safety enhancement and elimination program strategies.

Together, this governance and delivery model represents a step-change for the corridor—bringing partners into one coordinated system to deliver safety and mobility improvements more efficiently than ever before.

Caltrain is committed to prioritizing closures over safety enhancement and other elimination projects as they provide the most safety benefits for the lowest project cost and are amongst the fastest projects to implement.

Table A below describes activities Caltrain will perform that are specific to each advanced safety enhancement group. Overall, Caltrain will lead the delivery of the safety enhancement program and the development of the funding strategy to support delivery.

Table A: Safety Enhancement Program Group Description and Activities

Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
Baseline safety enhancements will be deployed across all Caltrain crossings.			
Group 1	Design and construct safety enhancements to address highest priority safety crossings.	<ul style="list-style-type: none"> Caltrain will collaborate with corridor partners to identify funding sources and funding opportunities. Caltrain will complete GO-88B applications and CPUC coordination/approvals. 	<ul style="list-style-type: none"> Caltrain will design and construct safety enhancements.
Group 2	Advance design of safety enhancements to address next highest priority safety crossings.	<ul style="list-style-type: none"> Caltrain will collaborate with corridor partners to identify funding sources and funding opportunities. Caltrain will complete GO-88B applications and CPUC coordination/approvals. 	<ul style="list-style-type: none"> Caltrain will collect and monitor annual safety trends. Caltrain will design safety enhancements. Caltrain will advance Group 2 projects into construction when Group 1 is constructed, and funding is secured.
Group 3	Monitor annual safety trends for crossings with low safety indicators.	<ul style="list-style-type: none"> Caltrain will identify and track future funding opportunities. 	<ul style="list-style-type: none"> Caltrain will collect and monitor annual safety trends. Caltrain will advance Group 3 projects into design when Group 2 advances and funding is secured.
Group 4	Monitor annual safety trends for crossings with lowest safety indicators.	<ul style="list-style-type: none"> Caltrain will identify and track future funding opportunities. 	<ul style="list-style-type: none"> Caltrain will collect and monitor annual safety trends.

Table B below outlines specific objectives and provides examples of actions Caltrain will perform for each elimination funding group. Overall, Caltrain will work with TAs and cities to ensure the benefits of the integrated team approach are realized at all levels of the Program Organization Structure (see **Figure A**). **Caltrain will take a leadership role on grade-separation and bike/ped crossing projects at the beginning of conceptual design** after the city has performed the initiation phase of the project. Caltrain will partner with and support the city while it leads the initiation phase of the project. On the funding side, Caltrain will lead project funding strategy and advocacy - in partnership with the city and TA – as well as funding application and administration of **construction funds**. Caltrain always requires an agreement to participate in project advancement.

Table B: Elimination Program Group Description and Activities

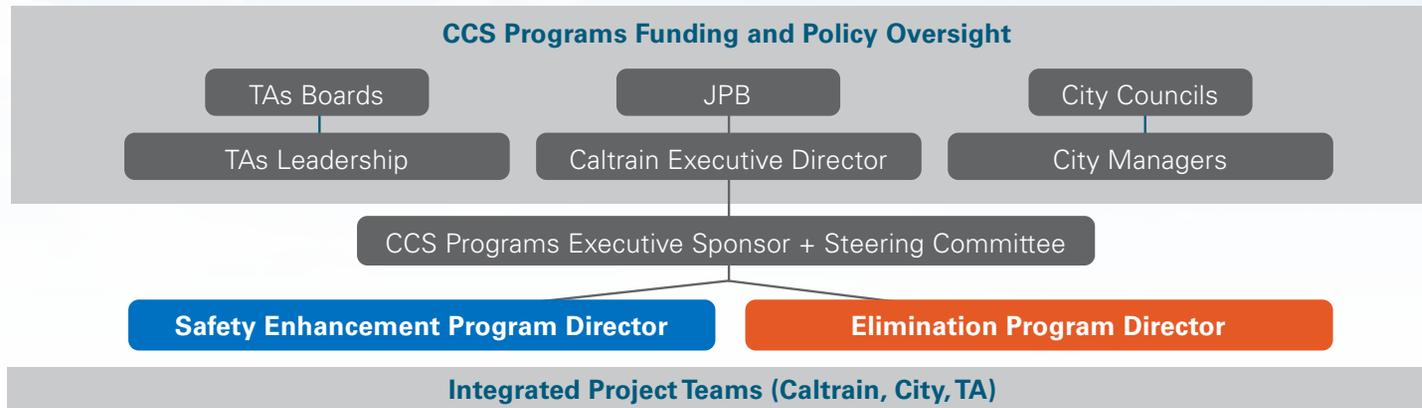
Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
Group A	Advance projects through construction .	<ul style="list-style-type: none"> • Caltrain will lead grant application and administration of construction funds. • Caltrain will lead project funding strategy and advocacy with Corridor Partners. Caltrain will coordinate with corridor partners to apply for funds for construction. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency from design through construction and project closeout. • Caltrain, the City and TA will enter into an agreement that defines roles and responsibilities for all phases of project delivery. The agreement will also address roles and responsibilities for maintaining the new and/or modified assets. • Caltrain will lead and manage preconstruction work, advance design to be shovel ready. • Caltrain will lead construction planning and track access workshops with Rail Operations and define project construction work windows and access constraints. • Caltrain will manage early work activities (i.e., construction packages, utilities relocation and right-of-way acquisitions). • Caltrain will perform cost estimate update at 65% design and negotiate with CMGC for Construction Guarantee Maximum Price (GMP) when project closes to final design.
Group B	Advance projects through final design .	<ul style="list-style-type: none"> • Caltrain will collaborate with corridor partners to identify and apply for funds to complete design. • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency. • Caltrain will manage the Designer, finalize preferred alternative and complete value engineering to advance design. • Caltrain will lead the environmental clearance (CEQA and NEPA). • Caltrain will identify early work activities (utilities relocation and right-of-way acquisitions). • Caltrain will perform construction and project cost estimate at 35% design and 65% design. • Caltrain will lead constructability workshop with the Designer and Rail Operations. • Caltrain will perform risk-based alternative delivery workshop and recommend preferred delivery method.

Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
Group C	Advance through preliminary engineering and environmental clearance.	<ul style="list-style-type: none"> • Caltrain will support funding applications for design funds. • Caltrain will NOT support funding applications that compete with Groups A and B or extend beyond design funding. • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency. • Caltrain will work with corridor partners to define scope of project. • Caltrain will work with Corridor Partner and manage concept design and develop design alternatives for more cost-effective solutions given constrained funding environment.
Group D	Advise project to explore viable and feasible alternative solutions.	<ul style="list-style-type: none"> • Caltrain will support funding application for planning funds. • Caltrain will not support funding applications that compete with Groups A-C or extend beyond planning • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will take a leadership role at the beginning of conceptual design, after the city has performed the initiation phase of the project. • Caltrain and the City will enter into an agreement that defines roles and responsibilities for the entire pre-construction project delivery cycle. The agreement will also address the funding strategy for the project. • Caltrain will partner with the city while it performs the initiation phase.

CCS Programs Oversight

The CCS programs oversight incorporates the following components agreed upon by Caltrain and the corridor partners:

Figure A: Program Organization



-  **CCS Programs Funding and Policy Oversight:** Boards and Councils of Caltrain, transportation authorities, and corridor jurisdictions will focus on transparency and accountability.
-  **CCS Programs Executive Sponsor + Steering Committee:** Caltrain will designate an executive sponsor responsible for overseeing both the safety enhancement and elimination programs. The executive sponsor will be supported by a steering committee consisting of corridor partner and Caltrain executives.
-  **Elimination Program Project Level Change Management Committee (CMB):** A management oversight committee to approve major changes to a project that have significant impacts on project cost, schedule and outcome. The CMB members are representatives from corridor partners to ensure transparency, effective decision-making, and accountability. The CMB charter will define guiding principles and rules of engagement.
-  **CCS Programs Directors:** The CCS Programs call for the designation of dedicated Caltrain in-house programs directors responsible for streamlining the delivery of crossing improvements and ensuring accountability and transparency to corridor partners. The programs directors will proactively identify, document, and manage risks, facilitate program improvement from past experiences, and identify potential program changes.
-  **Integrated Project Teams:** The programs directors will designate individual Project Managers to manage the delivery of safety enhancement and elimination projects. Project teams will be funded through each individual project's budget.

CCS Programs Components

-  **CCS Programs Support Activities:** Foundational tasks that improve coordination and delivery, which will be managed by Caltrain program teams. Examples of such activities include analysis of corridor construction capacity and efficient ways to package and bundle projects, identification of funding opportunities and administration of grant funding.
-  **Programs Sequence Lists (Sequence Lists):** The CCS programs maintain the corridor data supporting the assessment of projects, and update the advanced safety enhancement program and elimination program sequence lists.
-  **Delivery of Sequence Lists** – Planning, design, and construction implementation activities are performed to deliver the funding priorities under safety enhancement, elimination, and closure projects.

Table C: Safety Enhancement and Elimination Program Groups

City	Crossing	Safety Enhancement Program		Elimination Program Group
		Baseline	Advanced Group	
San Francisco	Mission Bay Drive	+	1	C
	16th Street	+	2	C
South San Francisco	Linden Avenue	+	4	B
San Bruno	Scott Street	+	1	B
Millbrae	Center Street	+	4	--
	Santa Paula Ped Crossing	+	4	--
Burlingame	Broadway*	+	1	A
	Morrell Avenue Pedestrian Crossing	+	No advanced enhancements proposed.	
	Oak Grove Avenue	+	4	--
	North Lane	+	2	--
	Howard Avenue	+	4	--
	Bayswater Avenue	+	3	--
	Peninsula Avenue	+	4	--
San Mateo	Villa Terrace**	Closure is fully funded		
	Bellevue Avenue**	Closure planned		
	1st Avenue	+	4	D
	2nd Avenue	+	4	D
	3rd Avenue	+	4	D
	4th Avenue**	+	4	D
	5th Avenue**	+	4	D
	9th Avenue	+	4	D
Redwood City	Whipple Avenue	+	3	C
	Brewster Avenue	+	1	C
	Broadway/ Marshall Street	+	3	C
	Maple Street	+	4	C
	Main Street	+	1	C
	Chestnut Street	+	4	C

City	Crossing	Safety Enhancement Program		Elimination Program Group
		Baseline	Advanced Group	
Atherton	Fair Oaks Lane	+	4	--
	Watkins Avenue*	+	No advanced enhancements proposed.	
Menlo Park	Encinal Avenue	+	4	D
	Glenwood Avenue	+	4	D
	Oak Grove Avenue**	+	3	D
	Ravenswood Avenue**	+	4	D
	Middle Avenue Bike/Ped Undercrossing	No existing At-Grade Crossing		B
Palo Alto	Palo Alto Avenue*/**	+	4	D
	Churchill Avenue*/**	+	1	B
	East Meadow Drive*/**	+	1	B
	Charleston Road*/**	+	2	B
	South Palo Alto Bike/Ped Crossing	No existing At-Grade Crossing		D
Mountain View	Rengstorff Avenue	+	1	A
	Castro Street*	Closure is fully funded		
Sunnyvale	Bernardo Avenue Undercrossing	No existing At-Grade Crossing		C
	Mary Avenue	+	3	C
	Sunnyvale Avenue	+	4	C
Santa Clara	Benton Street and Brokaw Road Grade Separation	No existing At-Grade Crossing		D
San Jose	Auzerais Avenue	+	4	D
	Virginia Street	+	4	D

* Denotes crossings with identified safety enhancement projects led by Caltrain (completed or ongoing).

** Denotes crossings with identified at-grade projects led by the local jurisdiction (ongoing).

The projects are ranked by score, but their advancement and delivery may vary due to funding opportunities and availability, TA and City capacity and support, and delivery efficiency opportunities. The program teams will coordinate closely with TA and city staff to determine specific project advancement timelines.

Caltrain's Role and Partner Collaboration

- ★ **Closure:** Caltrain will lead delivery of closure projects in partnership with corridor jurisdictions.
- ★ **Safety Enhancement Program:** Caltrain will lead delivery of all safety enhancement projects in partnership with corridor jurisdictions.
- ★ **Elimination Program:** Caltrain will take a leadership role on grade-separation and bike/ped crossing projects as early as possible, referred to as "the beginning of conceptual design," but after the city has performed their initiation phase. Caltrain will administer grant funding in the pre-construction phase. Caltrain will lead funding applications and administration of construction funds.

Next Steps

To advance the CCS programs, key actions by the Caltrain Board and staff are outlined to support implementation, ensure alignment with priorities, and activate essential resources and partnerships.

Caltrain Board Actions

- ✓ **Annual Board Review:** The Board should plan to review the CCS sequencing process and sequence lists annually, or sooner if substantive changes occur. Substantive changes may include:
 - ✓ A safety enhancement project moving up or down by two or more funding priority groups.
 - ✓ An elimination project moving up or down one or more funding priority groups.

Caltrain Staff Actions

- ✓ Update the Corridor Crossings Delivery Guide.
- ✓ Continue to organize the safety enhancement and elimination program teams.
- ✓ Quarterly updates to TA executive leadership and staff, the Local Policy Makers Group, city managers and staff, and City/County Staff Coordinating Group.
- ✓ In conjunction with TAs and select cities, create the Ad-Hoc Funding Subcommittee to address the funding strategy and advocacy to close funding gaps.

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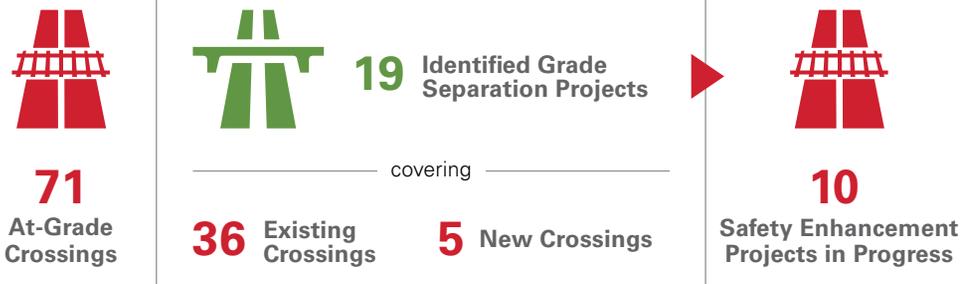
INTRODUCTION





1 INTRODUCTION

The Corridor Crossings Strategy (CCS) provides a comprehensive framework for improving safety, reducing conflicts between road and rail traffic, and supporting the long-term growth and modernization of Caltrain operations by at-grade crossing safety enhancements and elimination projects along the corridor.



The Caltrain corridor includes 71 at-grade crossings, with 19 identified grade separation projects and ten identified safety at-grade crossing projects in progress. The grade separation projects cover 36 existing crossings and 5 new crossings and are currently at various stages of development (see **Appendix A**). These projects currently compete for limited funding, resources, and construction windows on an active, electrified railroad, making it difficult for corridor jurisdictions to realize their ambitious grade separation goals.

Many corridor cities seek to separate at-grade crossings to improve safety, connectivity, and access. Caltrain recognizes grade separations as essential to enhancing public safety, enabling multimodal transportation, supporting regional mobility, and accommodating future service expansion.

To address these challenges, the CCS programs introduce a new organizational structure and delivery tools to better align and prioritize corridor investments. The strategy balances cost-effective near-term safety enhancements, large-scale grade separations, and targeted closures. The established Programs Sequence Lists (Sequence Lists) guide strategic resource allocation and streamlined project delivery.



The CCS programs also build on several initiatives developed in partnership with corridor jurisdictions. Through this collaborative effort, Caltrain and its partners created a shared vision and corridor-wide strategy, outlined in the Corridor Crossings Program Strategy Report Part II. This approach fosters a “one corridor” voice for state and federal funding advocacy by aligning local goals with a coordinated program of implementation strategies.

This Programs Initiation Report:

- ★ Documents the methodology and assessment criteria used to develop the sequence lists;
- ★ Outlines Caltrain’s initial delivery-enhancing activities;
- ★ Provides a timeline for programs updates;
- ★ Documents the scale of investments needed to delivery each program funding group;
- ★ Identifies potential funding sources for crossing projects.



The Corridor Crossings Strategy (CCS)



The safety enhancement and elimination programs are the outcome of the Corridor Crossings Strategy (CCS) effort that took place between 2022 and 2025. It is the result of an extensive and iterative process of analyses and corridor partner engagement between Caltrain, transportation authorities, corridor jurisdictions and other key corridor partners.



The CCS programs present a new corridor-wide programmatic strategy for delivering crossing improvements along the corridor. The CCS programs identify funding priorities for safety enhancement and elimination projects documented in the programs sequence lists. Funding priorities will be reviewed and updated annually to continue inform one voice and strategy for the corridor and reflect updated feasibility, funding availability, and delivery considerations.



HILLSDALE STATION



2

CCS PROGRAMS STRUCTURE





2

CCS PROGRAMS STRUCTURE

The CCS programs reflect a shift in how Caltrain and its corridor partners approach strategic planning, funding coordination, and delivery for safety enhancement and elimination projects. The Program Strategy Phase II report provides more detailed information on how the corridor identified the coordinated approach.

This shift includes dedicated program teams, corridor-wide activities to streamline delivery, and tools such as the sequence lists to guide prioritization and resource allocation.

2.1: CCS Goals



Safe, Accessible Corridor: Corridor partners have a shared goal of enhancing safety and improving connections for everyone who lives, works, and travels on, along, and through the Caltrain corridor.



Stronger Together: Aligning corridor partners under one coordinated framework enables to plan and deliver more effectively – speaking as one corridor to achieve safety, mobility, and community benefit goals.



Local Benefits: Coordinated corridor approach helps corridor partners invest resources into projects that yield early benefits, creating meaningful quality-of-life improvements sooner.



Strategic and Transparent Funding Decisions: With constrained funding at all levels, a corridor-wide program ensures that every dollar is directed where it delivers the greatest safety, mobility, and community benefit. Through a data-driven and transparent process, partners can make difficult but necessary tradeoffs to prioritize projects that are most competitive for external funding and deliver the highest public value.



Efficient and Accountable Delivery: A unified program structure with clear visibility of project status and progress fosters coordination, consistency, and accountability across all corridor partners.

2.2: CCS Programs

The CCS is focused on the following programs:

Safety Enhancement Program:

These projects identify the entire suite of improvements that could be implemented at all at-grade crossings on the Caltrain-owned corridor. These enhancements are quick-built solutions that minimize design and construction time while responding to urgent community needs and investing towards safety.



Improvements include at-grade safety, security, mobility and operational solutions implemented at the existing track and roadway elevation.

- ★ **Baseline Safety Enhancements:** A subset of the safety enhancement projects to be delivered at all Caltrain at-grade crossings within the near-term to address immediate safety needs. This work will build upon the successful results that followed the installation of solar lane markers, delineators and city traffic timing adjustment at Broadway (Burlingame) and Churchill Avenue (Palo Alto).
- ★ **Advanced Safety Enhancements:** The additional at-grade improvements are proposed based on the GCHA recommendation, site-specific needs and geometry. They can be applied individually or in combination at all Caltrain at-grade crossings. These improvements may consist of intrusion detection & monitoring, lighting, fencing, gate warning signals, median installation/roadway channelization, concrete works, drainage, and quad gates.

Elimination Program

- ★ **Closures:** Where the road is closed on both sides of the railroad. May include at-grade or new bicycle and pedestrian undercrossing to accommodate active transportation routes



- ★ **Grade Separations:** Where the roadway and the railroad do not cross each other, and the railroad is either above or below the roadway. Includes all grade separations corridor jurisdictions identified or initiated.

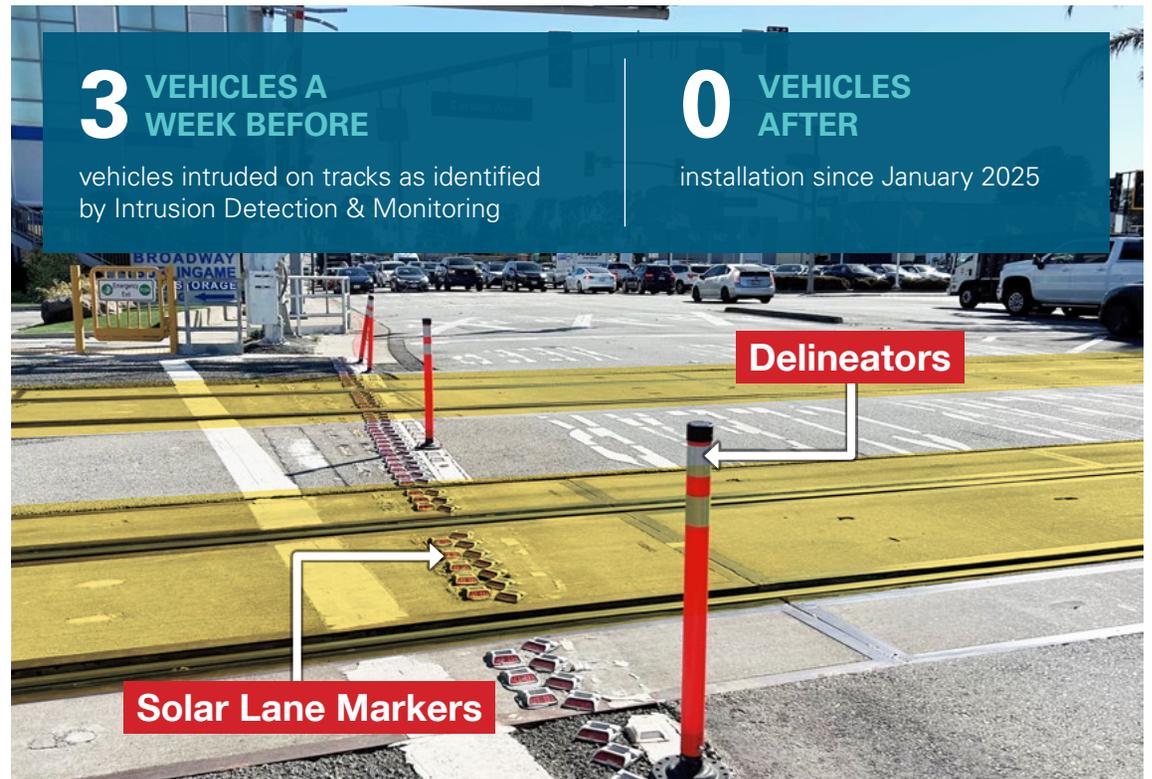
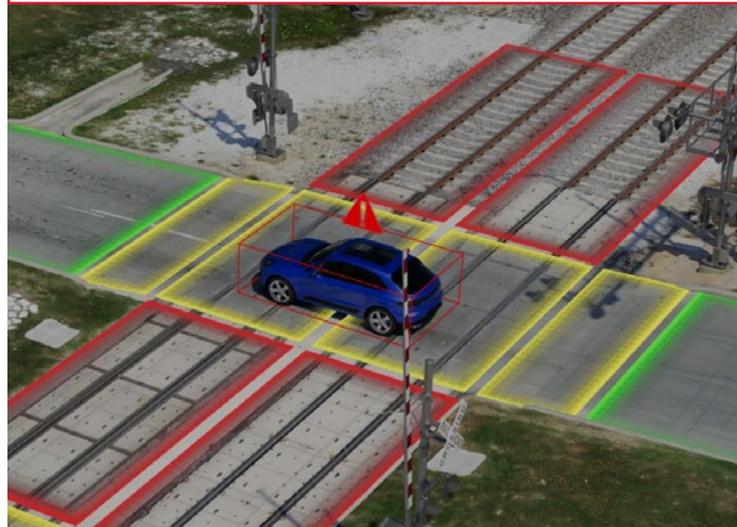


Success Story: Broadway Burlingame Crossing

In early 2025, Caltrain installed solar lane markers, delineators and a pilot Intrusion Detection & Monitoring system at Broadway in Burlingame in conjunction with the city adjusting adjacent traffic signal timing. The crossing monitoring system, enabled by the CCTV cameras that were installed, showed that the solar lane markers and delineators installed at the crossing resulted in a reduction of vehicle intrusions on the track. Caltrain and the City of Burlingame used the CCTV cameras to identify excessive queuing and as a result, modify traffic signal pre-emption times. These traffic signal timing adjustments allowed for more effective clearance of vehicle queuing on and around the railroad tracks and traffic control. As such, solar lane markers, delineators, and traffic signal modification have been included in the suite of baseline safety enhancements for all crossings. In addition to the physical improvements installed (illustrated below), Caltrain worked with GPS navigation companies to enhance audio and visual cues at the crossing to guide drivers to go past train tracks before turning.



Caltrain is deploying **Intrusion Detection & Monitoring** learning software that uses a combination of LiDAR and cameras to observe crossings and send alerts to operations about potential hazards to mitigate collisions.



2.3: CCS Programs Organization

The CCS is organized into the following components:

 **CCS Programs Funding and Policy Oversight:** The CCS programs will be a joint effort between Caltrain, the TAs, and corridor jurisdictions to ensure fiscal transparency and maintain accountability—protecting the funding and resources necessary to implement the CCS Programs. The Peninsula Corridor Joint Powers Board (Board)/Caltrain, transportation authorities boards, and corridor jurisdictions councils will focus on transparency and accountability.

 **CCS Programs Executive Sponsor + Steering Committee:** Caltrain will designate an executive sponsor responsible for overseeing both the safety enhancement and elimination programs. The executive sponsor will be supported by a steering committee consisting of corridor partner and Caltrain executives.

 **Elimination Program Project Level Change Management Committee (CMB):** A management oversight committee to approve major changes to a project that have significant impacts on project cost, schedule and outcome. The CMB members are representatives from corridor partners to ensure transparency, effective decision-making, and accountability. The CMB charter will define guiding principles and rules of engagement.

 **CCS Programs Directors:** The CCS calls for the designation of dedicated Caltrain in-house programs directors responsible for streamlining the delivery of crossing improvements and ensuring accountability to corridor partners. The programs directors will proactively identify, document, and manage risks, facilitate program improvement from past experiences, and identify potential program changes.

 **Integrated Project Teams:** The programs directors will designate project managers to oversee and manage the delivery of individual projects with a team of dedicated multi-disciplinary Caltrain staff (Safety, Design and Construction, Environmental, Government and Communities Affairs, and others), the TAs, and the corridor jurisdictions. Project teams delivery will be funded through each individual project's budget. The integrated project teams will report to their respective program director. The teams will build upon Caltrain's ongoing efforts to streamline, optimize, and implement corridor funding priorities within the constraints of available resources. Lessons learned from the electrification program and previous grade crossing projects will be leveraged to minimize disruptions and enhance delivery efficiency.

2.4: CCS Programs Components

 **CCS Programs Support Activities:** Foundational tasks that improve coordination and delivery, which will be managed by the program team. Examples of the activities include maintenance of a publicly accessible corridor database, analysis of corridor construction capacity and efficient ways to package and bundle projects, identify opportunities and administer grant funding.

 **Programs Sequence Lists (Sequence Lists):** The CCS programs develop, maintain, and update crossing sequence lists that identify the sequencing for the safety enhancement and elimination projects.

 **Delivery of Sequence Lists** – Planning, design, and construction implementation activities are performed to deliver the funding priorities under safety enhancement, elimination, and closure projects.

- **Safety Enhancement Scoring** – The advanced safety enhancement projects are scored based on safety needs, using criteria such as the number of fatal rail incidents, fatal/severe street incidents, and the ratio of total street incidents to average daily traffic. The crossings are then sorted into four funding groups (1 through 4), based on their scores. The four groups structure provides the basis for Caltrain to efficiently sequence project implementation, ensuring funding and resources are directed toward projects that address the highest safety risks and deliver the greatest immediate benefits. The sequence list will be updated on an annual basis.
- **Closures** – To address immediate safety concerns, Caltrain will prioritize the delivery of closures as the highest priority above safety enhancements and elimination projects.
- **Elimination Scoring** – The 19 elimination projects receive a score between 0 and 23 based on 20 evaluation criteria that assess each project's worthiness and readiness. Elimination projects are then sorted into four funding groups (A, B, C and D) based on their scores. Group A represents the most advanced and worthy projects. Caltrain will work with the TAs and corridor partners to update the sequence lists on a yearly basis or sooner, when substantial changes occur. The elimination program team will work with the TAs and corridor partners to update the sequence lists on a yearly basis or sooner, when substantial changes occur.

Caltrain's Role and Partner Collaboration

- ★ **Closure:** Caltrain will lead delivery of closure projects in partnership with corridor jurisdictions.
- ★ **Safety Enhancement Program:** Caltrain will lead delivery of all safety enhancement projects in partnership with corridor jurisdictions.
- ★ **Elimination Program:** Caltrain will take a leadership role on grade-separation and bike/ped crossing projects as early as possible, referred to as "the beginning of conceptual design," but after the city has performed their initiation phase. Caltrain will administer grant funding in the pre-construction phase. Caltrain will lead funding applications and administration of construction funds.

3

CCS PROGRAMS ACTIVITIES





3 CCS PROGRAMS ACTIVITIES



The CCS identifies activities that support overall operations and the delivery of both the safety enhancement and elimination programs. These activities enable Caltrain, in collaboration with TAs and corridor jurisdictions, to strategically plan and implement funding priorities, engage key corridor partners and build consensus, and track and document deliverables and outcomes to preserve project history and lessons learned. **The implementation of these activities depends on direction from the CCS Programs Funding and Policy Oversight group and funding availability.**

3.1: Overarching CCS Programs Support Activities

Overarching program support activities.

- ★ **Programs Directors and Management Support:** Direct resources, strategic planning and alignment, risk management, and corridor partner engagement for support activities, closure, safety enhancement, and elimination projects and maintain program documentation, track progress of support activities, and facilitate internal and external communications between Caltrain, TAs and corridor jurisdictions. Caltrain will conduct quarterly reviews to assess and adjust staffing and resource allocation to ensure efficient program delivery.

★ **Maintenance of Corridor Database to Support Crossing Assessments and Funding Applications:** Regularly collect and update crossing data in a centralized database to maintain accurate and accessible information—such as crossing infrastructure and conditions, safety incidents, traffic volume, demographic and socioeconomic data, and ongoing or planned improvements—to streamline assessments, support analysis efforts and strengthen funding applications.

★ **Corridor-Wide Funding Strategy:** Work with project managers to update cost estimates and advance funding priorities. Caltrain will collaborate with the TAs and corridor jurisdictions to identify opportunities and assist in submitting or submit funding applications depending on the program and phase of a given project.

★ **CCS Update:** The program team will work with the corridor partners to review and assess the overall program structure, components, and activities to be responsive to changing corridor conditions.

3.2: Technical Analysis Activities

The following technical analysis activities are to be implemented once funding is secured.

★ **Corridor Construction Analysis:** Conduct multiple technical studies to analyze construction activities and staging (annual), evaluate the corridor's construction capacity (every 4 years), and strategically schedule, bundle, and phase projects (biennial) to optimize construction work windows, facilitate more efficient project execution and corridor performance, and minimize disruptions to Caltrain service.

★ **Priorities Assessment:** Review and adjustment of program priorities based on current needs, resources, and strategic objectives.

3.3: Program Support for Safety Enhancement Program

The following program support activities have been identified to support delivery of the safety enhancement program:

★ **Safety Enhancement Technical Oversight/Management:** Safety enhancement program director to allocate resources, manage risks, engage corridor partners, and oversee corridor-wide improvement packages for support activities and safety enhancement projects.

★ **Assessment Support Activities:** Perform evaluations and analyses to identify and assess safety risks and concerns at crossings (e.g., Hazard Assessment Analysis); standardize assessments, forms, and documentation (e.g., GO 88-B forms, field reviews) to support the delivery process of safety enhancement projects; and provide data-driven justifications for proposed safety enhancements and the identification of high-risk crossings in future CCS updates.

★ **CPUC Coordination Activities:** Optimize common workflows across multiple crossings with the CPUC for safety enhancement projects, including reporting project progress, addressing regulatory requirements, obtaining approvals, executing key CPUC processes (GO 88-B forms), and consolidating diagnostic meetings and reviews with the CPUC.

★ **Corridor-wide Baseline Safety Enhancements:** Complete the delivery (approvals, design and construction) of solar lane markers, delineators, pavement markings/signage/hatching, and city traffic timing adjustment for all Caltrain crossings along the corridor.

3.4: Program Support for Elimination Program

The following program support activities have been identified to support the delivery of the elimination program:

- ★ **Closure Management:** Caltrain staff to allocate resources, manage risks, and coordinate with corridor partners to implement closure projects.
- ★ **Elimination Projects Technical Oversight/Management:** Caltrain staff to direct resources, risk management, and corridor partner engagement for support activities and elimination projects.
- ★ **Industry/Contract Research and Sounding Board:** Caltrain staff to host a series of meetings or workshops with contractors and industry representatives to conduct market research, gather insights and feedback, and explore innovative delivery techniques to inform cost estimating efforts and improve the delivery of elimination projects.
- ★ **Elimination Program Project Level Change Management Committee (CMB):** A management oversight committee to approve major changes to a project that have significant impacts on project cost, schedule and outcome. The CMB members are representatives from corridor partners to ensure transparency, effective decision-making, and accountability. The CMB charter will define guiding principles and rules of engagement.
- ★ **Grant Funding Administration:** Caltrain staff to manage state and federal grants that a project receives during the pre-construction phase. Caltrain to apply for and manage grants for projects during construction phase.



4

CCS PROGRAMS SEQUENCE LISTS





4

CCS PROGRAMS SEQUENCE LISTS

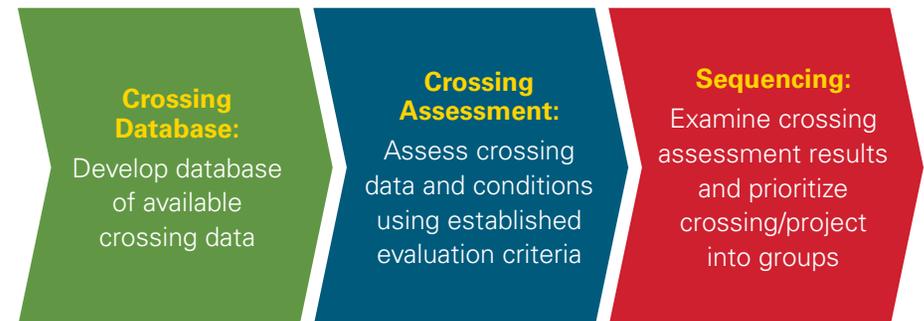
4.1: Crossing Sequencing Framework

The crossing sequencing process helps determine the corridor’s funding priorities for safety enhancement and elimination projects. It ensures that resources and investments are directed toward the most critical and funding-ready projects, promoting strategic decision making and effective use of staff time. This approach enhances staff efficiency, builds consensus on project timelines, and should guide the corridor’s funding priorities moving forward.

This section describes the methodology used to sequence safety enhancement and elimination projects. The process includes compiling a comprehensive crossing database, scoring crossings based on crossing assessment, and assigning each crossing to a project group. While the overall framework applies to both project types, the criteria and methodology differ between enhancement and elimination projects to reflect their distinct objectives and project maturity.

Figure 1 illustrates the prioritization framework used for safety enhancement and elimination projects. For safety enhancement, the analysis includes all crossings along the Caltrain corridor. In contrast, the elimination project framework focuses only on identified projects, as these have already received investments of time and financial resources toward advancing the projects.

Figure 1: Crossing Safety Enhancement Sequencing Framework



4.1.1: Crossing Database

The crossing database gathers readily available information about current conditions for each corridor crossing. Data includes crossing location details, distance to other crossings, rail crossing incidents, population, and crossing mode types, which are further detailed in **Appendix D**. For both safety enhancement and elimination projects, the crossing database serves as the foundational dataset, ensuring that prioritization is guided by both qualitative and quantitative data that is readily available for all crossings.

4.1.2: Crossing Assessment

The crossing assessment uses data from the crossing database, applying both quantitative and qualitative evaluation criteria to identify high-priority locations and assess their improvement needs. The assessment informs the assignment of crossings into funding groups for both advanced safety enhancement projects and elimination projects.

Evaluation criteria align with the strategy goals, Safe and Equitable Mobility, Equitable Community Benefits, Cost Efficiencies and Reliable Funding, Implementable Program, and Maximize Rail Corridor Utility, as well as with the requirements of relevant grant funding opportunities—helping ensure that high-priority projects are also competitive candidates for external funding. **Table 1** and **Table 2** list criteria used for advanced safety enhancement and elimination projects, respectively.

Notably, evaluation criteria differ by project type:

- **Advanced Safety enhancement projects** prioritize crossings based on safety risk. The four funding priority groups structure provides the basis for Caltrain to efficiently sequence project implementation, ensuring funding and resources are directed toward projects that address the highest safety risks and deliver the greatest immediate benefits.
- **Elimination projects** are assessed in alignment with broader corridor objectives defined in the CCS, and receive a score based on evaluation criteria that assess each project’s worthiness and readiness. Projects are scored based on the latest known information and will receive an updated score when substantial changes occur.

Table 1: Safety Enhancement Crossing Assessment Evaluation Criteria

Evaluation Criteria	Factors	Scoring (Max Score = 5)
 Rail Incidents	Fatal Rail Incidents <ul style="list-style-type: none"> • Total number of rail incidents that resulted in at least 1 fatality (2017-2023) 	Fatal Rail Incidents (Score of up to 2) <ul style="list-style-type: none"> • 2 or more incidents = 2 • 1 incident = 1 • No incident = 0
	Total Rail Incidents <ul style="list-style-type: none"> • Total number of rail incidents at a crossing (2017-2023) 	Total Rail Incidents (Score of up to 1) <ul style="list-style-type: none"> • Rail incident occurred = 1 • No incident = 0
	FRA Accident Prediction System <ul style="list-style-type: none"> • Predicted accident rank 	Predicted accident rank (Score of up to 1) <ul style="list-style-type: none"> • Crossing rank is in top 3 = 1
 Street Incident - Annual Average Daily Traffic (AADT) Ratio	Street Incident - AADT Ratio <ul style="list-style-type: none"> • Street incidents (2017-2023) • Ratio = Total street incidents per 1,000 adjusted AADT • Identify crossings with a high number of street incidents and low AADT 	Street Incident - AADT Ratio (Score of up to 1) <ul style="list-style-type: none"> • Caltrain Crossings: Ratio equal to or greater than 0.84 (75th percentile excluding 0 street incidents) = 1 • UP Crossings: Ratio equal to or greater than 2.65 (75th percentile excluding 0 street incidents) = 1

Table 2: Elimination Crossing Assessment Evaluation Criteria

Goal	Evaluation Criteria		Scoring (Max Score = 23)
 Safe and Equitable Mobility	<ul style="list-style-type: none"> Fatal Rail Incidents (Non-Intentional Only) Fatal/Severe Street Incidents Bike AND Pedestrian Access 	<ul style="list-style-type: none"> Total Street Incidents per 1,000 Adjusted AADT Gate Downtime Growth \geq 75% 	<ul style="list-style-type: none"> Up to 1 point per criteria Score of up to 5
 Equity Priority Community Benefits	<ul style="list-style-type: none"> Within 0.5 Miles of a School Within Equity Priority Community Within EnviroScreen Disadvantaged Community 	<ul style="list-style-type: none"> Within Climate and Economic Justice Census Tract Within Persistent Poverty Census Tract 	<ul style="list-style-type: none"> Up to 1 point per criteria Score of up to 5
 Cost Efficiencies & Reliable Funding Implementable Program	<ul style="list-style-type: none"> Proximity and Funding: Within 0.3 Miles of Another Crossing Dedicated Local/County Funding Dedicated State/Federal Funding 	<ul style="list-style-type: none"> Identified project phase Locally Preferred Alternative Environmental Clearance Closure 	<ul style="list-style-type: none"> Up to 1 point per criteria Up to 3 points for phase Score of up to 9
 Maximize Rail Corridor Utility	<ul style="list-style-type: none"> Fatal Rail Incidents (Including Intentional) Identified in a 4-Track segment Identified in a 4-Track segment needed for Caltrain Adopted Service Vision 		<ul style="list-style-type: none"> Up to 2 points for fatalities Up to 1 point for 4-track Score of up to 4

The funding groups provide the structure that the corridor was missing to sequence funding allocation and funding applications. Finally, they guide funding and implementation activities that Caltrain will perform on elimination projects. **Table 3** lists the funding group objectives and score brackets for both the safety enhancement and elimination projects.

Table 3: Funding Groups

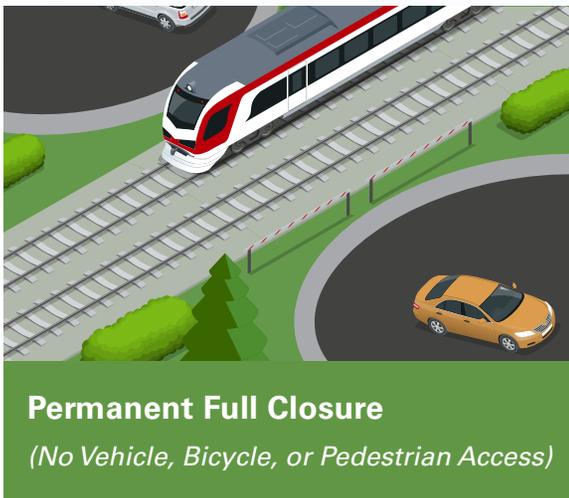
Safety Enhancement		Elimination	
Baseline safety enhancements will be deployed across all Caltrain crossings.		A	<i>Score of 12 or Higher</i> Advance projects through construction .
1	<i>Score of 3 or Higher</i> Design and construct safety enhancements to address highest priority safety crossings.	B	<i>Score of 9 to 11</i> Advance projects through final design .
2	<i>Score of 2</i> Advance design of safety enhancements to address next highest priority safety crossings.	C	<i>Score of 7 to 8</i> Advance through preliminary engineering and environmental clearance .
3	<i>Score of 1</i> Monitor annual safety trends for crossings with low safety indicators.	D	<i>Score of 6 or less</i> Advise project to explore viable and feasible alternative solutions .
4	<i>Score of 0</i> Monitor annual safety trends for crossings with lowest safety indicators.		

4.1.3: Crossing Closures

Caltrain will collaborate with TAs and corridor jurisdictions to identify opportunities along the corridor where closures, whether vehicular-only closures or full permanent closures, can be pursued and implemented. Compared to grade separation projects, closures can often be delivered more quickly and cost effectively, while providing similar benefits to such as enhanced safety and reduced modal conflicts. **Figure 2** illustrates the types of closures.

If a jurisdiction is interested in implementing a closure, Caltrain will prioritize this project above all other safety enhancement and elimination projects, as they are near-term implementable solutions that can address critical safety concerns.

Figure 2: Closure Types



4.2: Sequence Lists

The programs sequence lists complement Caltrain’s CIP by providing an updated and prioritized inventory of crossing projects. Future updates to the sequence lists will be incorporated into the CIP to ensure alignment and continuity.

Figure 3 and **Figure 4** illustrate the sequence lists for safety enhancement and elimination programs, respectively. Some crossings may appear in both project categories, with safety enhancements implemented first while elimination projects continue advancing through planning, design, and delivery phases. **Appendix B** describes the methodology and scoring for sequencing the safety enhancement program and **Appendix C** does the same for the elimination program.

For projects within the Union Pacific Railroad (UPRR) portion of the corridor, Caltrain’s involvement will be limited to operations, construction, and maintenance as an operator on UPRR right-of-way. As a result, no safety enhancement projects were identified for this section of the corridor and Caltrain’s involvement in elimination projects will be limited. Nevertheless, **Appendices B** and **C** include evaluations and scores for each crossing in the UPRR corridor, using the same prioritization framework applied to both safety enhancement and elimination projects.



On November 7, 2024, Caltrain adopted the CIP, an aspirational roadmap that guides capital investments over the next decade.

The CIP outlines a portfolio of capital projects and programs, organized under seven Strategic Initiatives. As part of its initial CIP development, Caltrain established a prioritization framework focused exclusively on Caltrain-initiated projects. Safety enhancement projects already underway were prioritized alongside other initiatives under the Strategic Initiatives to *“Partner with Local Communities”* and *“Provide a Safe and Secured Railroad”*.



Figure 3: Safety Enhancement Program Sequence List

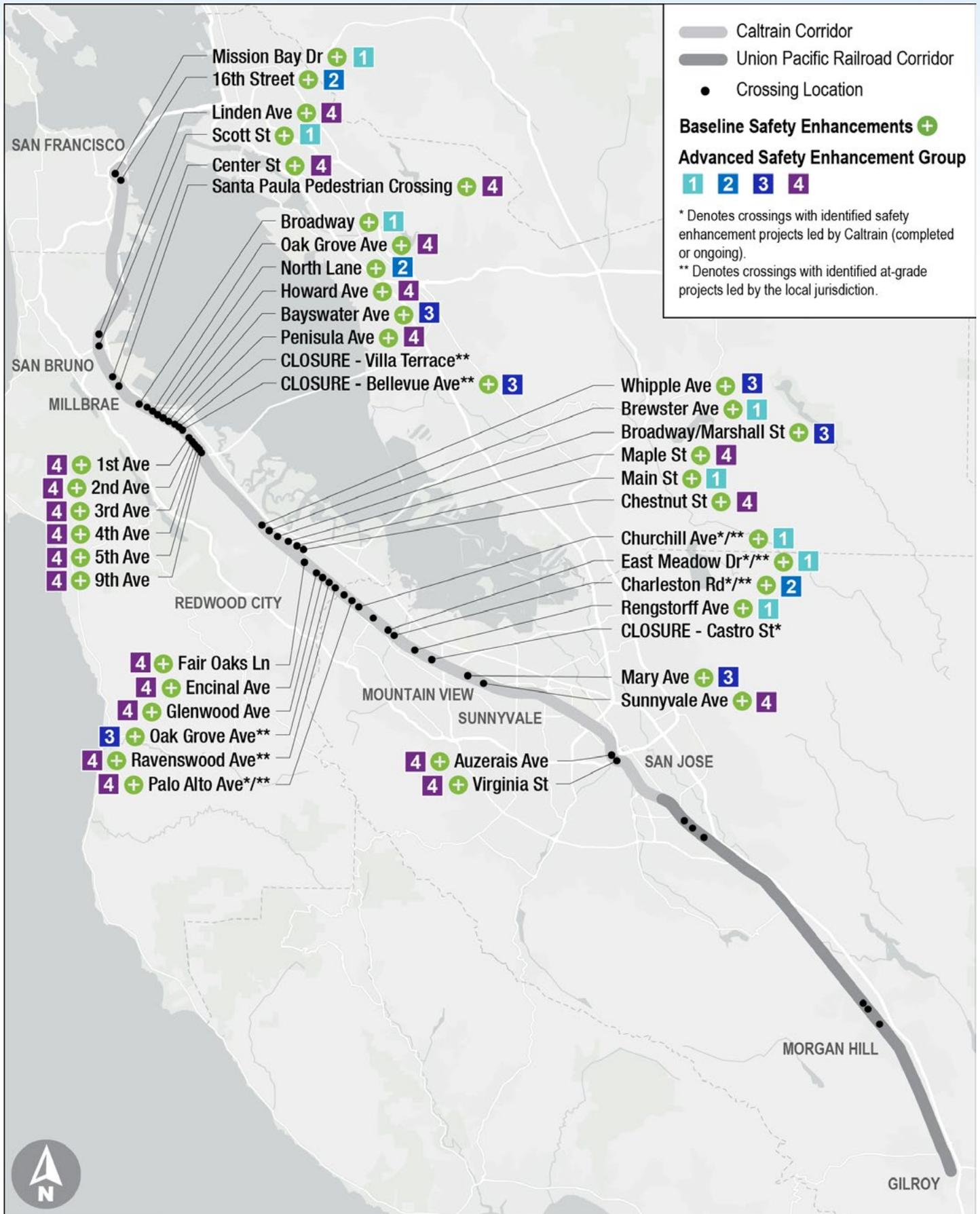


Figure 4: Elimination Program Sequence List

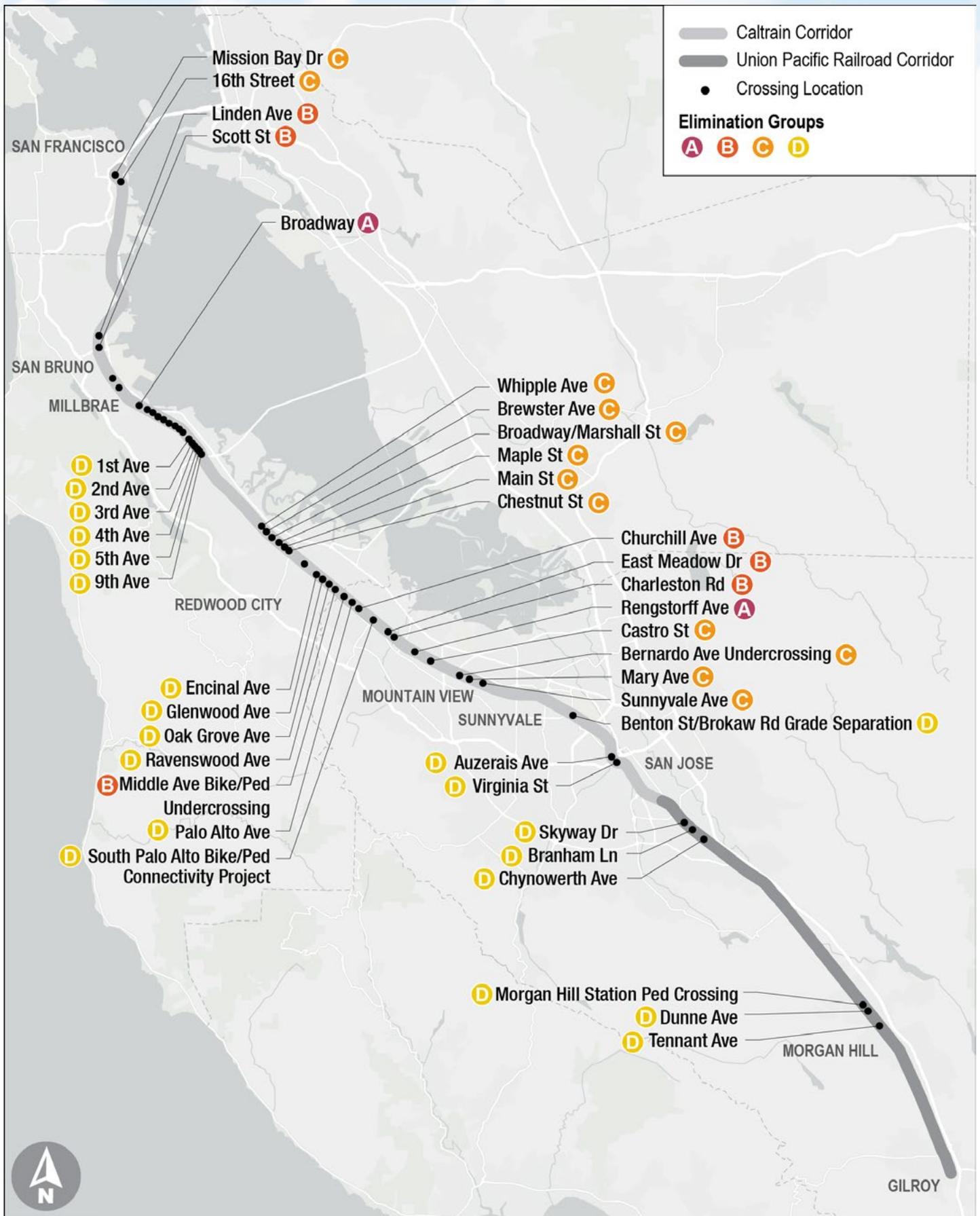


Table 4: CCS Programs Sequence Lists

City	Crossing	Safety Enhancement Program		Elimination Program Group
		Baseline	Advanced Group	
San Francisco	Mission Bay Drive	+	1	C
	16th Street	+	2	C
South San Francisco	Linden Avenue	+	4	B
San Bruno	Scott Street	+	1	B
Millbrae	Center Street	+	4	--
	Santa Paula Ped Crossing	+	4	--
Burlingame	Broadway*	+	1	A
	Morrell Avenue Pedestrian Crossing	+	No advanced enhancements proposed.	
	Oak Grove Avenue	+	4	--
	North Lane	+	2	--
	Howard Avenue	+	4	--
	Bayswater Avenue	+	3	--
	Peninsula Avenue	+	4	--
San Mateo	Villa Terrace**	Closure is fully funded		
	Bellevue Avenue**	Closure planned		
	1st Avenue	+	4	D
	2nd Avenue	+	4	D
	3rd Avenue	+	4	D
	4th Avenue**	+	4	D
	5th Avenue**	+	4	D
	9th Avenue	+	4	D
Redwood City	Whipple Avenue	+	3	C
	Brewster Avenue	+	1	C
	Broadway/ Marshall Street	+	3	C
	Maple Street	+	4	C
	Main Street	+	1	C
	Chestnut Street	+	4	C
Atherton	Fair Oaks Lane	+	4	--
	Watkins Avenue*	+	No advanced enhancements proposed.	

City	Crossing	Safety Enhancement Program		Elimination Program Group
		Baseline	Advanced Group	
Menlo Park	Encinal Avenue	+	4	D
	Glenwood Avenue	+	4	D
	Oak Grove Avenue**	+	3	D
	Ravenswood Avenue**	+	4	D
	Middle Avenue Bike/Ped Undercrossing	No existing At-Grade Crossing		B
Palo Alto	Palo Alto Avenue*/**	+	4	D
	Churchill Avenue*/**	+	1	B
	East Meadow Drive*/**	+	1	B
	Charleston Road*/**	+	2	B
	South Palo Alto Bike/Ped Crossing	No existing At-Grade Crossing		D
Mountain View	Rengstorff Avenue	+	1	A
	Castro Street*	Closure is fully funded		C
Sunnyvale	Bernardo Avenue Undercrossing	No existing At-Grade Crossing		C
	Mary Avenue	+	3	C
	Sunnyvale Avenue	+	4	C
Santa Clara	Benton Street and Brokaw Road Grade Separation	No existing At-Grade Crossing		D
San Jose	Auzerais Avenue	+	4	D
	Virginia Street	+	4	D

Notes:

1. Safety Enhancement Projects are prioritized from Group 1 (crossings with the highest number of fatal/severe railroad and/or street incidents) through Group 4 (crossings with little or no fatal/severe railroad and/or street incidents). Elimination Projects are prioritized from Group A (projects that scored the highest in the crossing assessment) through Group D (projects that scored the lowest in the crossing assessment).

*** Denotes crossings with identified safety enhancement projects led by Caltrain (completed or ongoing).**

**** Denotes crossings with identified at-grade projects led by the local jurisdiction (ongoing).**

Safety Enhancement and Elimination Programs Sequencing

Table 5 through **Table 8** present the safety enhancement projects by funding group, while **Table 9** through **Table 12** display elimination projects by funding group.

The safety enhancement types proposed for each crossing are preliminary proposals meant to be a starting point for funding conversations. These are mitigation measures identified as part of the last Grade Crossing Hazard Analysis. The GCHA is being updated in 2026 and will serve as the basis for advanced safety enhancement scopes. Caltrain will engage with the local jurisdictions and follow the CPUC GO-88B process for improvements each crossing.

¹ This will be updated in 2026.

+ Denotes proposed Grade Crossing Hazard Analysis (GCHA) safety enhancements.

* Denotes crossings with identified safety enhancement projects led by Caltrain (completed or ongoing). Information as of March 2026.

** Denotes crossings with identified at-grade projects led by the local jurisdiction (ongoing). Information as of March 2026.

Enhancement Types

The CCS suite of enhancement types sets Caltrain’s intention to be a leader in Rail Safety. Caltrain intends to pilot new technologies and strategies and if recommended by internal and external stakeholders, those elements will be formally incorporated into the Caltrain Standards for Grade Crossings. All enhancement types will be considered as potential mitigation measures in the next GCHA update. This GCHA will determine which advanced safety enhancement types need to be implemented at each location based on the hazards that require specific mitigation measures.

● Baseline Safety Enhancements ● Advanced Safety Enhancements

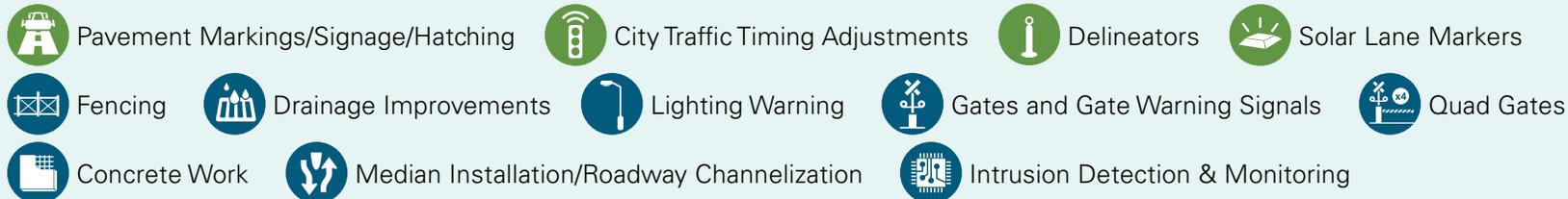


Table 5: Safety Enhancement Program – Group 1

County	City	Crossing	Safety Enhancements ¹										
Santa Clara	Mountain View	Castro Street*	Closure is fully funded										
San Mateo	San Mateo	Villa Terrace**	Closure is fully funded										
San Mateo	San Mateo	Bellevue Avenue**	Closure planned										
San Francisco	San Francisco	Mission Bay Drive		+				+	+	+			
San Mateo	San Bruno	Scott Street		+				+				+	

County	City	Crossing	Safety Enhancements ¹											
														
San Mateo	Burlingame	Broadway*		+										
San Mateo	Redwood City	Brewster Avenue		+				+	+	+				
San Mateo	Redwood City	Main Street		+				+						
Santa Clara	Palo Alto	Churchill Avenue*/**		+				+						
Santa Clara	Palo Alto	East Meadow Drive*/**		+					+					
Santa Clara	Mountain View	Rengstorff Avenue		+										

Table 6: Safety Enhancement Program – Group 2

County	City	Crossing	Safety Enhancements ¹											
														
San Francisco	San Francisco	16th Street		+										
San Mateo	Burlingame	North Lane		+				+	+	+	+			
Santa Clara	Palo Alto	Charleston Road*/**		+				+						

Table 7: Safety Enhancement Program – Group 3

County	City	Crossing	Safety Enhancements ¹											
														
San Mateo	Burlingame	Bayswater Avenue		+				+	+	+	+			
San Mateo	San Mateo	Bellevue Avenue**		+				+	+	+	+			
San Mateo	Redwood City	Whipple Avenue		+										
San Mateo	Redwood City	Broadway/ Marshall Street		+										
San Mateo	Menlo Park	Oak Grove Avenue**		+					+	+				
Santa Clara	Sunnyvale	Mary Avenue		+										



Table 9: Elimination Program – Group A

County	City	Elimination Projects	Estimated Project Cost
Santa Clara	Mountain View	Rengstorff Grade Separation Project	\$400 – \$500 M
San Mateo	Burlingame	Broadway Burlingame Grade Separation	\$600 - \$700 M

Notes: Information as of March 2026. Crossings without an active elimination project are not included in the Elimination Groups. Newly identified projects will be assigned to their appropriate Priority Group once identified. The range of total estimated project costs is determined based on the most recent publicly available project cost information from the cities and/or Caltrain. These project costs vary in year of development and will be updated as individual projects continue to progress.

Table 10: Elimination Program – Group B

County	City	Elimination Projects	Estimated Project Cost
Santa Clara	Palo Alto	Connecting Palo Alto (Churchill, Meadow, and Charleston)	\$600 - \$1,000 M
San Mateo	San Bruno	South Linden Avenue and Scott Street Grade Separation	\$300 - \$400 M
San Mateo	Menlo Park	Middle Avenue Undercrossing	\$50 - \$65M

Notes: Information as of March 2026. Crossings without an active elimination project are not included in the Elimination Groups. Newly identified projects will be assigned to their appropriate Priority Group once identified. The range of total estimated project costs is determined based on the most recent publicly available project cost information from the cities and/or Caltrain. These project costs vary in year of development and will be updated as individual projects continue to progress.

Table 11: Elimination Program – Group C

County	City	Elimination Projects	Estimated Project Cost
San Mateo	Redwood City	Redwood City Grade Separation Study	\$800 - \$950 M
Santa Clara	Sunnyvale	Mary Avenue Grade Separation	\$200 - \$700 M
Santa Clara	Sunnyvale	Sunnyvale Avenue Grade Separation	\$100 - \$200 M
Santa Clara	Sunnyvale	Bernardo Avenue Undercrossing	\$50 - \$100 M
Santa Clara	Mountain View	Castro Street Grade Separation	\$100 M - \$200 M
San Francisco	San Francisco	Pennsylvania Avenue Extension	\$2,500 M

Notes: Information as of March 2026. Crossings without an active elimination project are not included in the Elimination Groups. Newly identified projects will be assigned to their appropriate Priority Group once identified. The range of total estimated project costs is determined based on the most recent publicly available project cost information from the cities and/or Caltrain. These project costs vary in year of development and will be updated as individual projects continue to progress.

Table 12: Elimination Program – Group D

County	City	Elimination Projects	Estimated Project Cost
San Mateo	Menlo Park	Menlo Park Grade Separation Project	TBD
San Mateo	San Mateo	San Mateo Grade Separation Project	TBD
Santa Clara	San Jose	Diridon Area Projects	TBD
Santa Clara	San Jose	Southern San Jose Grade Separation Project	TBD
Santa Clara	Palo Alto	South Palo Alto Bike/Ped Connectivity Project	TBD
Santa Clara	Santa Clara	Benton Brokaw	TBD
Santa Clara	Morgan Hill	Morgan Hill Grade Separation Project	TBD
Santa Clara	Palo Alto	Palo Alto Avenue Grade Separation Project	TBD

Notes: Information is current as of March 2026. Crossings without an active elimination project are not included in the Elimination Groups. Newly identified projects will be assigned to their appropriate Priority Group upon identification. Cost estimates are not included for projects in Group D as these projects have initiated and/or have an LPA.

5

DELIVERY OF SEQUENCE LISTS





5

DELIVERY OF SEQUENCE LISTS

The CCS programs focus on advancing funding priorities for safety enhancement projects (Groups 1 and 2), and elimination projects (Group A), and closures in parallel through design and construction. This section outlines the specific objectives and actions Caltrain will undertake to advance these priorities during the first four years of the CCS.

5.1: Safety Enhancement Program

5.1.1: Baseline Safety Enhancements

Caltrain will lead and manage the delivery of the baseline safety enhancements at all Caltrain crossings in the near-term pending available funding. The program team will coordinate and collaborate with the Caltrain Safety team on the Trespasser/Suicide Prevention Plan to help fund and implement these improvements.

5.1.2: Advanced Safety Enhancements

Caltrain will lead and manage the delivery of advanced safety enhancements in coordination with corridor jurisdictions. **Table 13** outlines the anticipated delivery timeframe by group. Caltrain aims to complete all 41 projects within a 12-year program window, following established funding priorities and beginning with funding priority Group 1 during the first four years. Achieving this timeline will depend on key factors such as staff capacity, resource availability, and the ability to secure necessary funding.

Table 13: Safety Enhancement Program Delivery Timeframe

Program Years	Funding Group
Years 1-4	Group 1
Years 3-5	Group 2
Years 4-7	Group 3
Years 6-12	Group 4

Caltrain will designate dedicated staff for successful delivery of the Safety Enhancement Program and allocate resources based on funding groups. **Table 14** summarizes Caltrain’s planned activities over the first four years to support the delivery of the funding groups. A biennial assessment of staffing and funding will be conducted as Group 1 projects enter the construction phase.

Table 14: Safety Enhancement Program Group Description and Activities

Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
Baseline safety enhancements will be deployed across all Caltrain crossings.			
Group 1	Design and construct safety enhancements to address highest priority safety crossings.	<ul style="list-style-type: none"> • Caltrain will collaborate with corridor partners to identify funding sources and funding opportunities. • Caltrain will complete GO-88B applications and CPUC coordination/approvals. 	<ul style="list-style-type: none"> • Caltrain will design and construct safety enhancements.
Group 2	Advance design of safety enhancements to address next highest priority safety crossings.	<ul style="list-style-type: none"> • Caltrain will collaborate with corridor partners to identify funding sources and funding opportunities. • Caltrain will complete GO-88B applications and CPUC coordination/approvals. 	<ul style="list-style-type: none"> • Caltrain will collect and monitor annual safety trends. • Caltrain will design safety enhancements. • Caltrain will advance Group 2 projects into construction when Group 1 is constructed, and funding is secured.
Group 3	Monitor annual safety trends for crossings with low safety indicators.	<ul style="list-style-type: none"> • Caltrain will identify and track future funding opportunities. 	<ul style="list-style-type: none"> • Caltrain will collect and monitor annual safety trends. • Caltrain will advance Group 3 projects into design when Group 2 advances and funding is secured.
Group 4	Monitor annual safety trends for crossings with lowest safety indicators.	<ul style="list-style-type: none"> • Caltrain will identify and track future funding opportunities. 	<ul style="list-style-type: none"> • Caltrain will collect and monitor annual safety trends.

5.2: Elimination Program

Caltrain will prioritize closure projects before all other projects and lead project funding/strategy and advocacy, in partnership with jurisdictions, to deliver these projects as quickly as possible.

Table 15 presents the anticipated delivery timeframe for elimination projects by group. Achieving these timelines will depend on Caltrain and corridor partners' continued alignment of priorities for CCS Programs.

Table 15: Sample Elimination Program Delivery Timeframe

Program Years	≤ 5 Years	10 Years	15 Years	≥ 20 Years
Group A	Seek Design and Construction Funding			
		Construct Projects		
Group B	Seek Design Funding			
	Finalize Project Designs			
		Seek Design and Construction Funding		
			Construct Projects	
Group C	Seek Project Development/Design Funding (Not to compete with Groups A or B)			
				Finalize Project Designs
				Seek Construction Funding
Group D	Seek Planning Funding			
	Select Project Locally Preferred Alternative (LPA)			

Notes: Project sponsors may pursue funding and advance projects on their own timeline until Caltrain assumes the role of lead agency. While Caltrain will not impede project progress, its priority will help secure funding and advocating for projects in Group A.

Table 16 below outlines specific objectives and provides examples of actions Caltrain will perform for each elimination funding group. Overall, Caltrain will work with TAs and cities to ensure the benefits of the integrated team approach are realized at all levels of the Program Organization Structure (see **Figure A**). Caltrain will take a leadership role on grade-separation and bike/ped crossing projects at the beginning of conceptual design and after the city has performed the initiation phase of the project. On the funding side, Caltrain will lead project funding strategy and advocacy - in partnership with the city and TA – as well as funding application and administration of construction funds.

Table 16: Elimination Program Group Description and Activities

Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
<p style="text-align: center;">Group A</p>	<p>Advance projects through construction.</p>	<ul style="list-style-type: none"> • Caltrain will lead grant application and administration of construction funds. • Caltrain will lead project funding strategy and advocacy with Corridor Partners. Caltrain will coordinate with corridor partners to apply for funds for construction. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency from design through construction and project closeout. • Caltrain, the City and TA will enter into an agreement that defines roles and responsibilities for all phases of project delivery. The agreement will also address roles and responsibilities for maintaining the new and/or modified assets. • Caltrain will lead and manage preconstruction work, advance design to be shovel ready. • Caltrain will lead construction planning and track access workshops with Rail Operations and define project construction work windows and access constraints. • Caltrain will manage early work activities (i.e., construction packages, utilities relocation and right-of-way acquisitions). • Caltrain will perform cost estimate update at 65% design and negotiate with CMGC for Construction Guarantee Maximum Price (GMP) when project closes to final design.
<p style="text-align: center;">Group B</p>	<p>Advance projects through final design.</p>	<ul style="list-style-type: none"> • Caltrain will collaborate with corridor partners to identify and apply for funds to complete design. • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency. • Caltrain will manage the Designer, finalize preferred alternative and complete value engineering to advance design. • Caltrain will lead the environmental clearance (CEQA and NEPA). • Caltrain will identify early work activities (utilities relocation and right-of-way acquisitions). • Caltrain will perform construction and project cost estimate at 35% design and 65% design. • Caltrain will lead constructability workshop with the Designer and Rail Operations. • Caltrain will perform risk-based alternative delivery workshop and recommend preferred delivery method.

Funding Group	Near-Term Objective	Funding Activities	Implementation Activities
Group C	Advance through preliminary engineering and environmental clearance.	<ul style="list-style-type: none"> • Caltrain will support funding applications for design funds. • Caltrain will NOT support funding applications that compete with Groups A and B or extend beyond design funding. • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will be the lead implementation agency. • Caltrain will work with corridor partners to define scope of project. • Caltrain will work with Corridor Partner and manage concept design and develop design alternatives for more cost-effective solutions given constrained funding environment.
Group D	Advise project to explore viable and feasible alternative solutions.	<ul style="list-style-type: none"> • Caltrain will support funding application for planning funds. • Caltrain will not support funding applications that compete with Groups A-C or extend beyond planning • Caltrain will lead administration of grants if it has a relationship with the funding entity and if Caltrain is an eligible recipient. 	<ul style="list-style-type: none"> • Caltrain will take a leadership role at the beginning of conceptual design, after the city has performed the initiation phase of the project. • Caltrain and the City will enter into an agreement that defines roles and responsibilities for the entire pre-construction project delivery cycle. The agreement will also address the funding strategy for the project. • Caltrain will partner with the city while it performs the initiation phase.

5.3: Preliminary Project ROM Costs

The estimated project ROM costs shown in **Table 17** assume all possible at-grade safety enhancements are implemented at each crossing based on each location specificity. As the CCS advances projects into their planning phase, the program team will confirm the scope of improvements for each crossing and will refine cost estimates.

Table 17: Safety Enhancement Program ROM Costs

Total Estimated Project Costs* (\$2026)	
Baseline Safety Enhancements	\$20 M
Advanced Safety Enhancements	\$180 M

**Preliminary rough order of magnitude costs include construction and soft costs.*

For Groups A-C, covering 12 projects, implementation costs are estimated to be between \$4 and \$10 billion. The elimination costs were identified from readily available project cost information provided by the project sponsor and/or Caltrain. Group D projects are in the initial planning stage and either do not have any cost estimates or have preliminary cost estimates that will likely change as the project is advanced and the project scope is refined.

6

NEXT STEPS





REDWOOD CITY
CLIMATE BEST BY GOVERNMENT BEST

Broadway →
← Arguello St

STOP
HERE ON
RED
←

DO NOT
STOP
ON
TRACKS

ARGUELLO PL

Caltrain

322



6

NEXT STEPS

To advance the CCS programs, key actions by the Caltrain Board and staff are outlined to support implementation, ensure alignment with priorities, and activate essential resources and partnerships.

6.1: Caltrain Board Actions

- ✓ **Annual Board Review:** The Board should plan to review the CCS sequencing process and sequence lists annually, or sooner if substantive changes occur. Substantive changes may include:
 - ✓ A safety enhancement project moving up or down by two or more funding priority groups.
 - ✓ An elimination project moving up or down one or more funding priority groups.

6.2: Caltrain Staff Actions

- ✓ Update the Corridor Crossings Delivery Guide.
- ✓ Continue to organize the safety enhancement and elimination program teams.
- ✓ Quarterly updates to TA executive leadership and staff, the Local Policy Makers Group, city managers and staff, and City/County Staff Coordinating Group.
- ✓ In conjunction with TAs and select cities, create the Ad-Hoc Funding Subcommittee to address the funding strategy and advocacy to close funding gaps.

Caltrain

← Buses Transit Connections ↑
Bike Station →

Hand Pumps
No Smoking
No Possession

tickets

tickets

tickets

tickets

Caltrain