



Grade Separation Overview

LPMG
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Grade Separation

- **At-grade Crossing** where a roadway and railroad intersect at the same level. Gates and red flashing lights are used to stop street traffic when a train approaches.
- **Grade Separation** physical separation between railroad tracks and a roadway. This could be done with a bridge that allows the train to traverse the rail corridor at a different height than the roadway (rail over/road under, road over/rail under, or a variation), or via closing the roadway at the railroad crossing.
- **Key Benefits**
 - *Improve Safety.* Eliminates pedestrian, bicyclist, and motor vehicle conflicts with the railroad, which eliminates potential for accidents.
 - *Improve Circulation.* All modes would not have to stop and wait each time a train passes.

Caltrain Corridor Crossings

- 54 Grade Separated ; 42 At-Grade



Typical Project Development Process

- Planning / Conceptual Engineering
 - Study project alternatives & develop preliminary cost estimates
 - Public outreach
- Environmental / Engineering Design
 - Complete Federal and/or State environmental clearances
 - Complete design to ensure design standard conformance
 - Public Outreach
- Construction
 - Secure full funding plan
 - Proceed with Construction
 - Public Outreach



Funding Source Examples

- Local
 - San Mateo County, Measure A (\$225M)
 - City Contributions
 - *Santa Clara County, Nov. Ballot Measure (\$700M)*
 - *San Francisco County, Nov. Ballot Measure*
- State
 - CA Public Utility Commission Sec. 190 Annual Budget (\$15M)
 - California High-Speed Rail Authority
 - Cap and Trade Programs
- Federal
 - Federal Railroad Administration in 2016 (\$25M)



Current Project Status

Crossing Name	City	Project Development Phase	Council Approved Plans	Funding	Caltrain Role
16th St/Mission Bay Blvd*	San Francisco	Planning	No	City	Technical/Operational Compliance
Linden Ave	South San Francisco	Planning	No	SMCTA	Project Management
Scott St	San Bruno	Planning	No	SMCTA	Project Management
Broadway	Burlingame	Ready for Environmental	Yes. Alternative selected (15% plans)	SMCTA	Technical/Operational Compliance
25th Ave	San Mateo	Ready for Construction	Yes	SMCTA, City, CPUC, HSR	Project Management
Ravenswood Ave, + others	Menlo Park	Planning	Council decision anticipated 2017	SMCTA, City	Technical/Operational Compliance
Alma St, Churchill Ave, East Meadow Dr, Charleston Rd	Palo Alto	Planning	No	City	Technical/Operational Compliance
Castro St	Mountain View	Planning	Yes	City	Technical/Operational Compliance
Mary Ave	Sunnyvale	Planning	No	City	Technical/Operational Compliance
Whipple, + TBD	Redwood City	Planning	No	TBD	TBD

* Part of the Railyard Alternatives and I-280 Boulevard Feasibility Study (RAB), includes elements for surface tracks, Caltrain 4th/King Railyard, and I-280

Project Examples

7

Burlingame, Broadway

- City leading the Project Development Process
 - Caltrain worked as integral part of the City-led project team
 - Caltrain provided guidance, requirements and input on operations for how each alternative effects the railroad
- Planning Study Funded by SMCTA
- Completed Project Study Report
 - Conceptual engineering and 15% engineering plans
- Studied 6 alternatives
 - Selected "hybrid" design rail over, road under design
- 3 Public Outreach Meetings and 2 Council Meetings
 - City Council selected preferred alternative
- Next Steps: Advance Engineering and Identify Funding Plan

8

Burlingame, Broadway



Rendering developed as part of the public outreach process

9

San Mateo, 25th Avenue

- City is the Project Sponsor
- Caltrain Serves as Technical Project Management for City
 - Caltrain team is the “consultant” for the City
 - Caltrain provides guidance, requirements and input on operations for how each alternative effects the railroad
- Grade Separate 25th Avenue to improve safety, development in the area, and improve traffic circulation
- Scope
 - Construct Grade Separation at 25th Ave
 - Elevate rail between Hillsdale Boulevard and Highway 92
 - Relocate Hillsdale Station north of existing station
 - Construct East-West connections at 28th and 31st Avenues
- Next Steps: Completion of Design for Bid Process and Finalizing Elements of Funding Plan

10

25th Ave Cost / Funding Plan

Phase	Funding Source				Cost
	Measure A	San Mateo	State Section 190	State HSR Prop 1A	
Funded					
Environmental	\$2.5M	\$1.0M	-	-	\$3.5M
Design	\$4.2M	\$3.0M	-	-	\$7.2M
ROW	\$2.0M	\$2.0M	-	-	\$4.0M
Proposed					
Construction / Contingency	\$65.3M	\$6.0M	\$10.0M	\$84.0M	\$165.3M
Total	\$74.0M	\$12.0M	\$10.0M	\$84.0M	\$180.0M

Grade Separation at 25th Ave



Construction: Summer 2017- Spring 2020

Mountain View, Castro Street

- City leading the Project Development Process
 - Caltrain worked as integral part of the City-led project team
 - Caltrain provided guidance, requirements and input on operations for how each alternative effects the railroad
- Current Phase is City Funded
- Four Alternatives Studied for Reconfiguration / Grade Separation
 - Based on previous work as well as new conceptual design
- June 2016, City Council Moving Forward w/ Alternatives that Contemplate Closure of Castro Crossing and Reroute of Roadway
- Next Steps: City Initiating Phase II that will Evaluate Alternatives for Improved Transit Center Facilities

Redirecting Traffic at Castro Street



Lessons Learned

- City takes proactive approach as Project Sponsor
- City leads the public process early on
- City and Caltrain work collaboratively throughout the life of the project to ensure project meets Caltrain's standards
- City secures a funding plan with Caltrain's support

Questions & Discussion