Grade Separation Overview

LPMG
August 25, 2016

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

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

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 affects 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
Burlingame, Broadway

Rendering developed as part of the public outreach process

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
## 25th Ave Cost / Funding Plan

<table>
<thead>
<tr>
<th>Phase</th>
<th>Funding Source</th>
<th>Cost</th>
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<tbody>
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<td>Measure A</td>
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<td>Funded</td>
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<td>Total</td>
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## 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 affects 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