

Broadway Grade Separation Project

Summary for Community Meeting #2

September 16, 2015



AECOM

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apex
STRATEGIES

**Broadway Grade Separation Study
Community Meeting #2
September 16, 2015
Meeting Summary Report**

The City of Burlingame hosted the second of three community meetings for the public to learn about the new Broadway Grade Separation Study. The meeting was held on September 16, 2015 from 6:30 to 8:30 p.m. in the Lane Community Room at the Burlingame Public Library, 480 Primrose Road in Burlingame.

Photo 1 – Meeting Introduction and Agenda



After a brief introduction by the meeting facilitator who also reviewed the meeting agenda and introduced the project team and elected officials, the City's Mayor Nagel welcomed the community members. She highlighted the safety and congestion relief context for the project and explained the funding expectations and process. She introduced the Public Works Director who gave a brief history of the project and the purpose of the Study effort. He introduced the Burlingame Police Chief and Fire Chief who both gave brief presentations regarding the need for reliable access across the railroad tracks. Following his remarks, the facilitator reviewed the agenda and format for the evening and introduced the AECOM Project Manager who presented the project alternatives utilizing a PowerPoint presentation (See Attachment A). At the conclusion of the presentation, the audience had approximately fifteen minutes of general questions with the project team and then adjourned to the five interactive stations for discussions regarding project alternatives and the evaluation matrix. Then after a half hour the group was reassembled for a station report out and the facilitator closed with next steps and a review of the schedule, there were additional questions asked of the team prior to adjournment. The general questions and the answers provided at the meeting are captured below.

The station discussions were conducted by project team staff at maps and boards around the perimeter of the room (See Attachment B). There were five stations that reported out. The questions, concerns, suggestions and comments are summarized below.

Photo 2 - Open Discussion after Presentation



The meeting was noticed through “e blasts” from the Burlingame staff to the broad city “e blast” distribution list and special distribution to attendees of the first meeting. The notice was also posted on the city website (See Attachment C). Approximately 80% said they received the email notice. No other notifications were noted.

When the attendees arrived they were asked to sign in to become part of a database for notification of future meetings (See Attachment D).

Approximately 20 people attended the meeting. One local business owner identified himself as such the remainder of the attendees indicated they were project neighbors. No one indicated they were a commuter who rides Caltrain.

The questions received during the general session question period are as follows the answers given are shown:

Question	Response
General	
Will the Toyon Drive crossing access be eliminated?	This is the pedestrian access also referred to as Morrell Avenue pedestrian crossing. Alternatives that are selected for more evaluation and further consideration will also evaluate the impacts to this pedestrian crossing.

Question	Response
Will the Oak Grove crossing be eliminated?	The crossing will not be impacted for Alternatives A, B, C and D. It would be impacted under Alternatives E and F.
There is funding from Cap and Trade that is being given to Caltrain. Can it pay for this project?	This money has been given to Caltrain and it is not anticipated this project would receive any of the funds.
How will this project relate to potential projects up and down the corridor?	This project is a stand-alone project. There is limited funding for grade separations along the corridor and only three are likely to see funds. The City of San Mateo has some projects ahead of this one. It is hoped that this project would be the third one in line for funding.
This project is expected to last at least thirty years, there will be many right-of-way changes in that time. If we are planning for today's right-of-way uses, how will it impact what can happen? It sets the tone for what can happen. Taking into account today's businesses' impact during construction may be overweighting this criteria and setting up the wrong alternative.	<p>Any alternative that is advanced for further study would also need to look at planned uses and projects when evaluating designs.</p> <p>Construction impacts and length of construction are one of the evaluation criteria considered in the alternative analysis.</p>
Can you clarify where berms and landscaping might be?	There are limited opportunities for berms and landscaping in each Alternative. However, there are more opportunities under Alternatives A and B due to their hybrid nature.
Is the design being considered in the traffic study?	A traffic study of the three intersections along Broadway has been conducted for current traffic and projected traffic in 2040. For future projections in 2040, the study looked at the "no build" option and a grade separation option with left-turn lane improvements. These were presented in the presentation.
Can Oak Grove stay in Alternatives A and B?	Yes.
Please explain how the gas stations could remain in Alternatives A and B.	The differential elevations in Alternatives A and B could be addressed by re-grading the driveways as was done in other hybrid-type grade separations, such as Holly Street and El Camino Real in San Carlos.

Question	Response
	Refinements to the railroad profile for Alternatives A & B will be considered in the next (preliminary engineering and environmental study) phase to further minimize impacts to not only the gas stations, but other adjacent business and residential driveways.
It would be helpful to have better visuals.	Comment noted. Visual simulations will be developed for the next meeting on a selected alternative.
Who decides which alternative moves forward?	The City Council.
At what point do the alternatives with fatal flaws get dropped?	At the next Council presentation the ones that do not look promising could be dropped. By the end of the study, the goal is to have a preferred alternative that will be advanced into the preliminary engineering and environmental study phase.
Is the new sewer at Oak Grove in the cost estimate as the project moves forward?	Any impacts to utilities will be considered in design development and the cost estimates.

The report outs from the stations discussions were given by project members and these community notes and comments taken on flip charts are identified below.

Question	Response
Alternatives A and B Stations	
The community is sensitive to impacting adjacent at-grade crossings... at Oak Grove, for example.	Comment noted. One advantage to Alternatives A and B is that they do not impact the Oak Grove Avenue at-grade crossing.
Does Burlingame have a strategy for future alternatives and future grade separations?	Funding is limited for grade separations along the Caltrain corridor. The grade separation at Broadway is best positioned for funding at this time.
View from Carolan up Broadway—What would be the view with these Alternatives?	Comment noted. Visual simulations will be developed for the next meeting on a selected alternative.
What is the noise difference of the trains now versus raised or depressed?	Noise measurements at the site were conducted to measure current noise and they were presented at the first

Question	Response
	community meeting. Additional noise studies would be conducted as part of the environmental and preliminary engineering phase on alternative(s) that are recommended for further consideration. Whether the rail or roadway is elevated, there are mitigation measures that could be implemented to reduce noise.
What is the difference on the view of the electrical poles and other elements between the elevated and depressed alternatives?	Comment noted. Visual simulations will be developed for the next meeting on a selected alternative.
Is there an opportunity to place other pedestrian crossings while doing this project?	Yes there are opportunities but funding is limited. Alternative A would require underpass type crossings and Alternative B would require overpass structures above the overhead catenary poles and wires.
What is the height of the catenary (Caltrain electrical system) poles?	Approximately 25 feet, measured from the top of the rail.
Follow up question: If the catenary poles are 25 feet high, how can the grade depression for the railroad be only 18 feet?	The 25-foot pole height is relative to the rail elevation. Example 1: If the rail is depressed 18 feet below existing ground, the top of the pole will be 7 feet above existing ground. Example 2: If the rail is elevated 5 feet above existing ground, the top of the pole will be 30 feet above existing ground.
How will the view be from Juanita Avenue looking at the railroad?	Comment noted. Visual simulations will be developed for the next meeting on a selected alternative.
Any thought of improving traffic situation at Oak Grove crossing because of projected traffic? (This question is related to traffic information presented at the previous meeting)	Traffic improvements could be evaluated at this location with design refinement of alternative(s).
How will pedestrian access be maintained at Morrell Avenue?	In Alternative A, a pedestrian undercrossing could be a feasible

Question	Response
	solution. For Alternative B, a pedestrian bridge over the proposed overhead catenary poles and wires would be required but would be more expensive and complex.
Please explain the ways in which this project may limit any future projects in the area or nearby roads and overcrossings.	<p>Alternatives A, B, C & D leave the options open at future crossings, such as Oak Grove Avenue. Alternatives E & F limit these options.</p> <p>For example, Alternative E would likely force a design that has the roadway over the railroad for a future grade separation at Oak Grove.</p>
How will this project hold up/what will we do in the “worst case” scenario (aka flooding and power outages)?	Alternative A is one of the alternatives that best addresses the issues associated with drainage and maintaining and/or improving the drainage patterns across the railroad corridor.
Explain the ways the project will affect the surrounding traffic.	<p>The grade separation project would not increase traffic capacity along Broadway but would improve efficiency.</p> <p>Traffic studies that could be conducted in the next stage of the project with a preferred alternative could evaluate a larger traffic model and include surrounding projects to evaluate potential changes in traffic patterns.</p>
Alternatives C and D Stations	
It would be desirable for this project to include a dedicated bike lane on California Avenue.	This comment is seen as relating to any alternative chosen. There is an opportunity to create better bike access with this project along Broadway. Bike lanes and other improvements on California would likely be studied as a separate project just as the City is currently planning to make improvements along Carolan.
Alternatives E and F Station	
For Alternative F, why is the maximum fill height north of Broadway and not at Broadway?	There are plans to have a train station just south of Broadway. Caltrain requires that the railroad profile be on a constant grade of less than 1% through

Question	Response
	the station. This pushes the vertical curve to the north and thus, forces the crest (high point) of the curve to be well north of Broadway.
Why is the Railroad operations control point a fatal flaw?	The control point south of Millbrae Station is used to regulate the movement of trains from one track to another. If the existing control point is impacted, it would require relocation elsewhere in the project limits that would allow Caltrain to maintain their operations in a safe and prudent manner. Due to tight geometric constraints, there is insufficient room to provide the required space for a control point within the limits of the project should the existing one be impacted. Additionally, the control point cannot be moved any closer to Millbrae station as the existing curvature of the track south of Millbrae Station excludes this option. Lastly, there is insufficient room to construct the temporary tracks required to maintain Caltrain operations should the railroad mainline impacts encroach into the control point.
Matrix Station	
From an aesthetics point of view, depressing the railroad seems to be more desirable. As a result, Alternative A should be orange and Alternative B should be yellow.	Comment noted.
Interested in seeing real life examples of Alternative B	The project team will attempt to show some "Alternative B" examples for the third meeting. Alternative B is harder to find examples of because most of the grade separations along the existing Caltrain corridor are similar to Alternative A.

Photo 3 - Discussion of Alternatives A & B



Attachments:

Attachment A – PowerPoint Presentation

Meeting summary distributed by AECOM and Apex Strategies on September 25, 2015.

Welcome

Broadway Grade Separation Study Community Meeting September 16, 2015

Broadway Grade Separation Study



Agenda

40-45 minutes

Process / Poll Group on how they heard about meeting – Eileen

Welcome - introduce elected officials - Syed

Brief Introduction - address relationship between BGS and HSR - Syed

Technical Presentation - Etty

- Project Purpose – Why are we here?
- Project Definitions
- Project Area
- Existing Conditions
 - Existing railroad conditions (divides City today) and issues
 - Existing traffic conditions and projected traffic conditions
 - Existing drainage conditions and issues flooding
 - Existing emergency response conditions and issues
 - Insert for Police Chief and Fire Chief to talk briefly on issues with emergency response time
 - Existing Operational Constraints
 - No revenue shutdown of railroad
 - No closure of roadway traffic
- Alternatives
 - Line Diagram - Cost Footprint of alternatives (ranges)
 - Review of Alternatives that **WILL NOT** be carried forward
 - Explain issues that preclude these alternative
 - Review of Alternatives that **WILL** be carried forward
- Alternative Matrix – summary of alternatives – direct to stations

Explanation of Station Breakouts – Eileen

20-25 minutes

Community has time to visit stations and ask questions at each station – have post boards next to stations for comments

10-15 minutes

Meeting Summary – Report out from Each Station – Eileen

Schedule & Next Steps - Eileen

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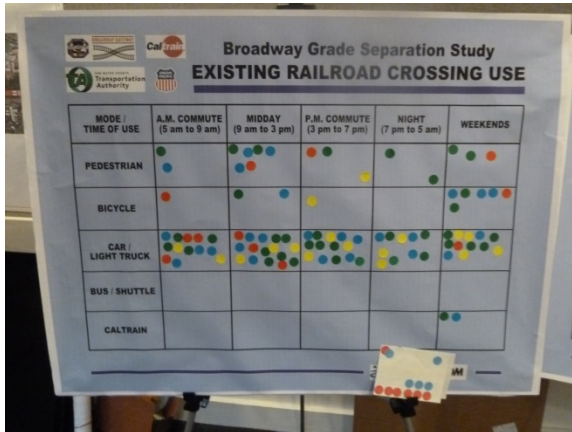


Project Area



Community Meeting

March 11, 2015



Broadway Grade Separation Study



Why Are We Here?

- ❖ Improve Traffic Circulation/Mobility
 - ✓ Reducing Traffic Delays
 - ✓ Alleviate Traffic Congestion (Existing and Projected Peak Hour)
 - ✓ Improve Traffic Flow across Railroad Crossing
- ❖ Increase Public Safety (vehicular, bicycle, and pedestrian)
 - ✓ Improve Pedestrian and Bicycle Access
- ❖ Offer an Opportunity for a Gateway treatment to Broadway

Broadway Grade Separation Study



Project Definitions

What is an “at-grade crossing”?

Also known as a “railroad crossing”... a location where a roadway and sidewalk cross railroad tracks at grade (same level as the street). Drop-down gates and red flashing lights are used to stop traffic when a train approaches.

What is a “grade separation”?

A bridge that allows the public to travel under (or over) the railroad or a railroad to travel under (or over) the roadway.

What are the benefits of a grade separation?

- Eliminates pedestrian, bicyclist and motor vehicle conflicts with the railroad... this eliminates the potential for accidents and makes it safer for everyone.
- Reduces traffic congestion... traffic does not have to stop each time a train passes.
- Safer Facility + Less Congestion = ***Higher Quality of Life***

Broadway Grade Separation Study



Project Area



Broadway Grade Separation Study

Major Constraints

- Millbrae Station to the north
- Burlingame Station to the south
- Highway 101 to the east
- Downtown Broadway Commercial District to the west

Existing Traffic Delays

Existing [2015] Delay			
Intersection	Weekday AM	Weekday PM	Weekend (Midday)
	Delay* (sec)	Delay* (sec)	Delay* (sec)
Broadway/US 101 Off-Ramp/ Rollins Road	65	243	153
Broadway/ Carolán Avenue	26	21	23
Broadway/ California Drive	68	60	69

* Average delay per vehicle

Broadway Grade Separation Study



2040 Traffic Delays without Grade Separation

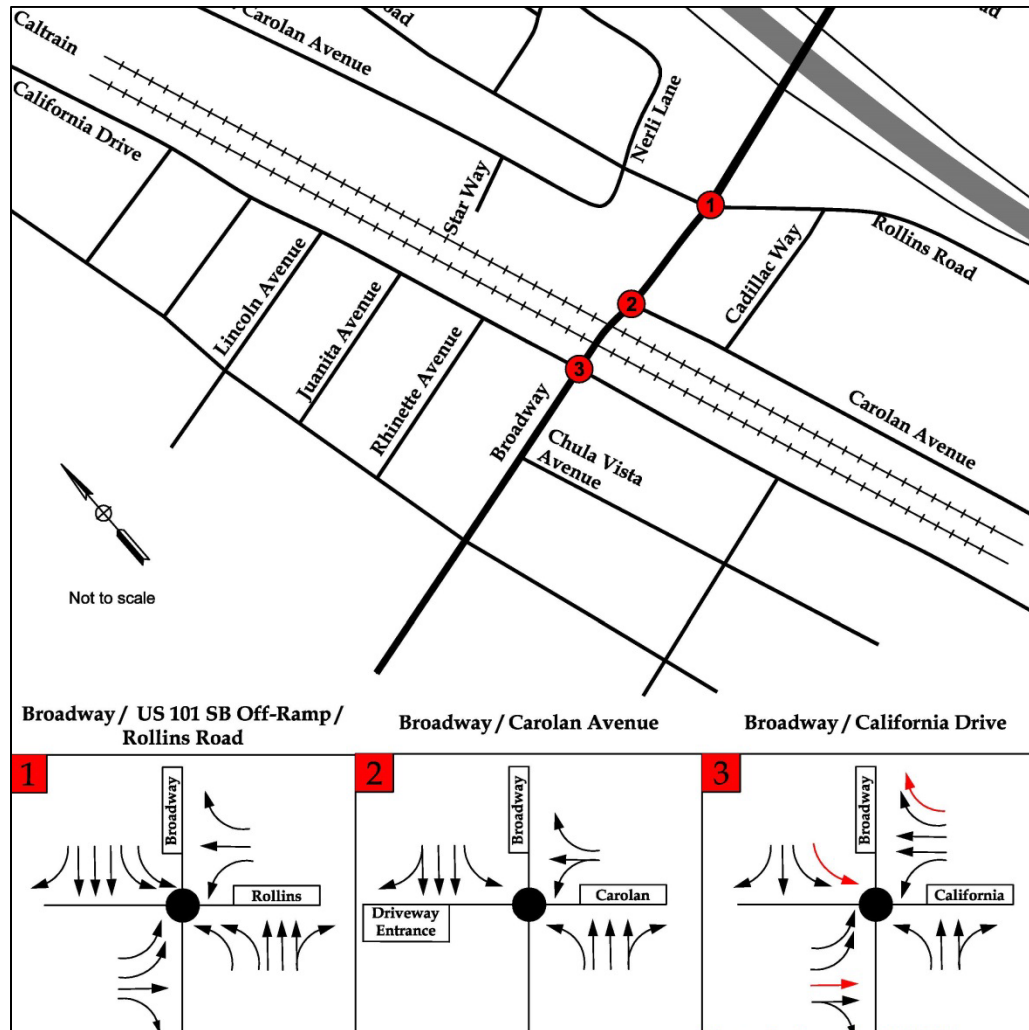
Future [2040] Delay			
Intersection	Weekday AM	Weekday PM	Weekend (Midday)
	Delay* (sec)	Delay* (sec)	Delay* (sec)
Broadway/US 101 Off-Ramp/ Rollins Road	249	744	381
Broadway/ Carolyn Avenue	207	37	38
Broadway/ California Drive	550	452	431

* Average delay per vehicle

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Grade Separation Improvements



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2040 Traffic Delays with Grade Separation

Future [2040] Delay			
Intersection	Weekday AM	Weekday PM	Weekend (Midday)
	Delay* (sec)	Delay* (sec)	Delay* (sec)
Broadway/US 101 Off-Ramp/ Rollins Road	37	48	24
Broadway/ Carolán Avenue	43	22	15
Broadway/ California Drive	38	41	33

* Average delay per vehicle

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Travel Time Savings

- Future Caltrain Service increase weekday trains from 92 to 114 trains
- Future High Speed Rail to increase trains
- Average gate down time of 40 seconds during weekdays and 140 seconds on weekends

Description	Average Annual Impact	Average Annual Benefit
Travel Time Savings	680,000 hrs.	\$7,730,000
Fuel Savings	395,000 gal.	\$805,000
TOTAL		\$8,535,000

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Air Quality Benefits

- Reduction in fuel use reduces greenhouse gas (GHG) emissions and criteria air pollutants (CAP)
- CAP include nitrogen oxides (NO_x), sulfur dioxides (SO_x), particulate matter (PM) and volatile organic compounds (VOCs)

Description	Average Annual Impact	Average Annual Benefit
GHG Emission Reduction	4,736,000 lbs.	\$85,000
CAP Emission Reduction	22,000 lbs.	\$31,000
TOTAL		\$116,000

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Safety Benefits

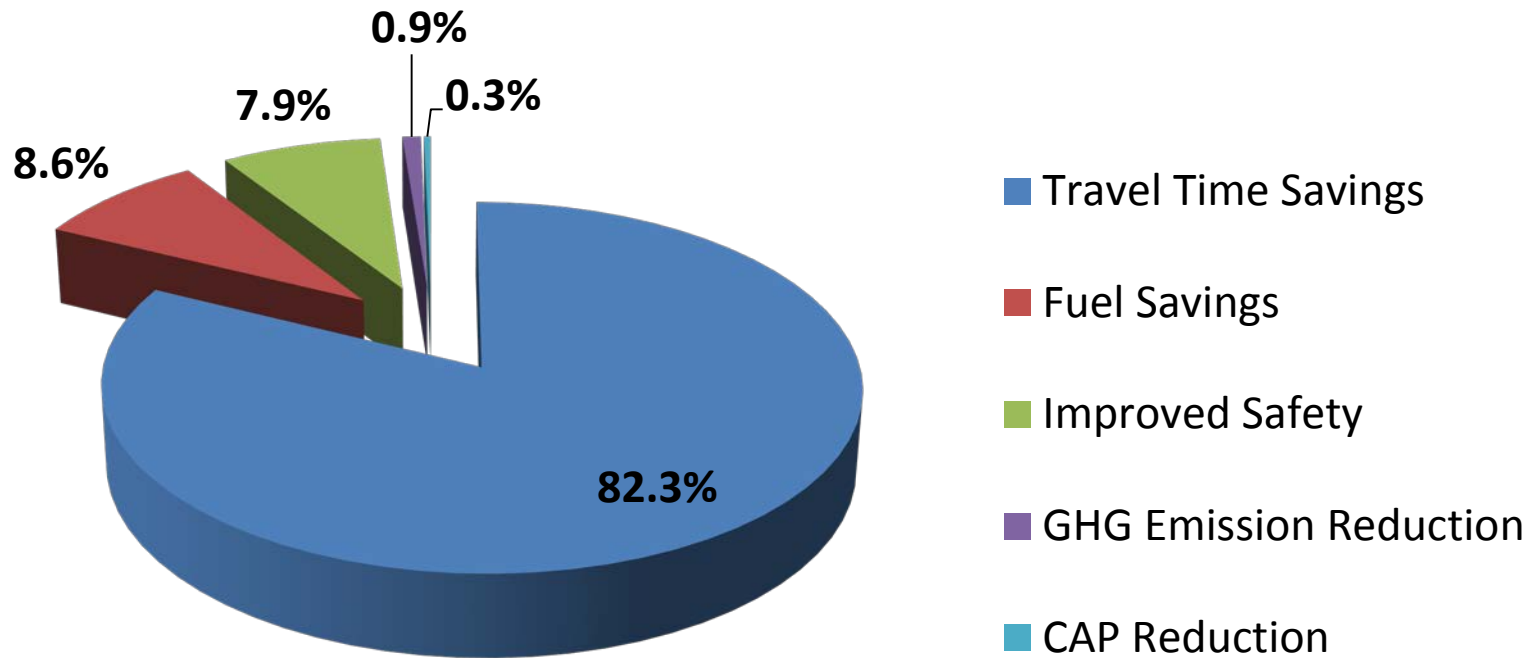
Currently an average of 23 accidents per year at the Broadway intersections adjacent to the railroad

- Reduce accidents (potential benefit of \$743,000 annually)
- Improve pedestrian and bicycle travel conditions
- Improve emergency response and access routes

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Distribution of Quantified Benefits



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Community Benefits

- Reliability Public Safety Improvement
- Improved Traffic Management
- Encourage pedestrian and bicycle use
- Encourage Broadway Station use

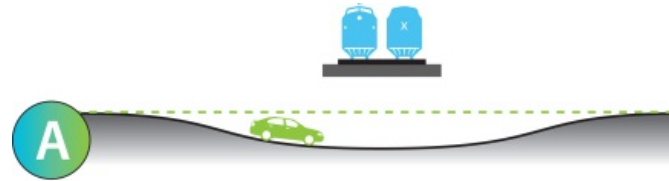
Broadway Grade Separation Study



Alternatives A and B

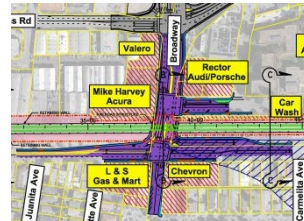
Cost Range

\$210M to \$260M

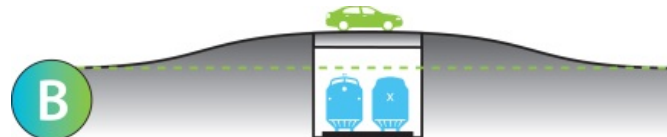


ALTERNATIVE A
RAIL ELEVATED / ROADWAY DEPRESSED

Rollins & Hwy 101 Interchange



Downtown Broadway Commercial District



ALTERNATIVE B
RAIL DEPRESSED / ROADWAY ELEVATED

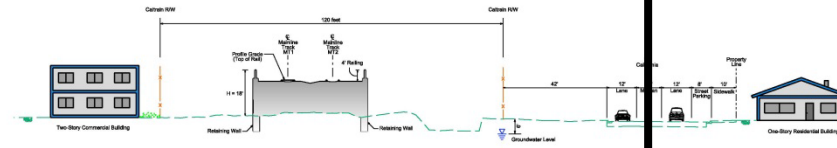
\$330M to \$400M

Broadway Grade Separation Study



Alternative A

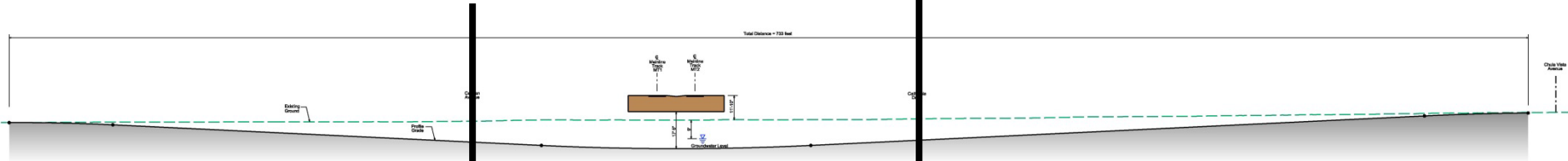
California



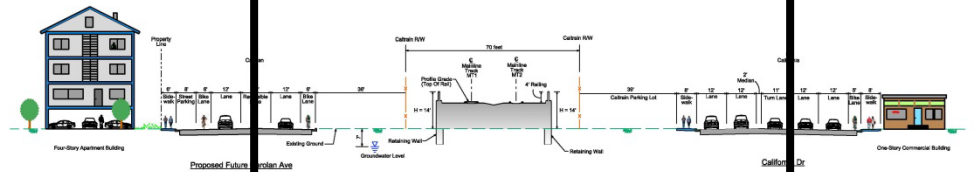
Groundwater 8' Below Ground

Carolan

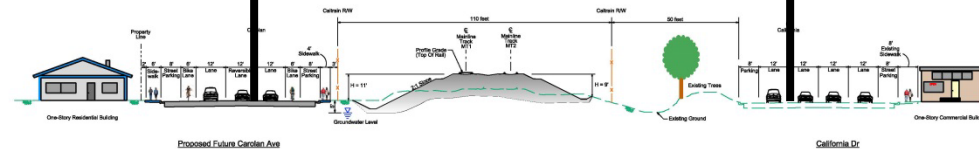
CROSS SECTION A-A AT LINCOLN
LOOKING SOUTH TOWARDS BURLINGAME



CROSS SECTION B-B AT BROADWAY
LOOKING SOUTH TOWARDS BURLINGAME



CROSS SECTION C-C AT
NORTH PARK APARTMENTS
LOOKING SOUTH TOWARDS BURLINGAME STATION



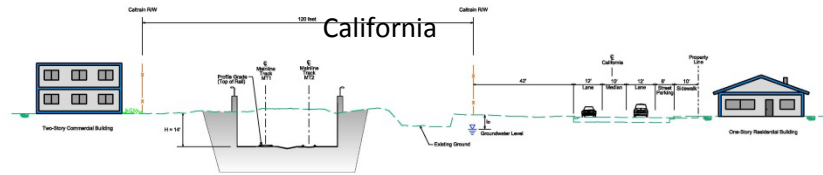
CROSS SECTION D-D AT
CAROLAN AVE AND TOYON DR INTERSECTION
LOOKING SOUTH TOWARDS BURLINGAME STATION

Broadway Grade Separation Study



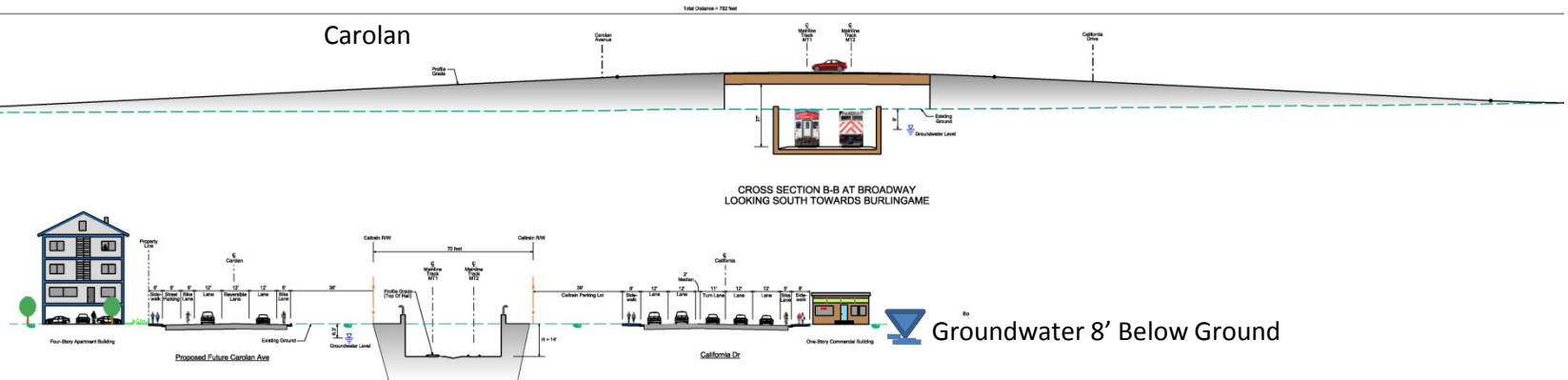


Alternative B

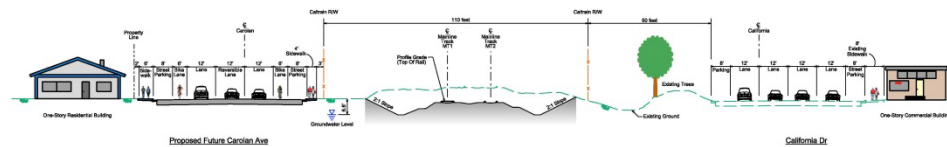


CROSS SECTION A-A AT LINCOLN
LOOKING SOUTH TOWARDS BURLINGAME

Carolan



CROSS SECTION C-C AT
NORTH PARK APARTMENTS
LOOKING SOUTH TOWARDS BURLINGAME STATION



Broadway Grade Separation Study



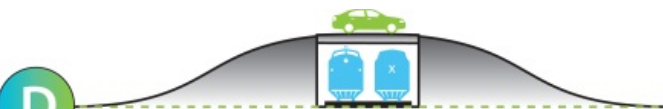
Alternatives C and D



C

ALTERNATIVE C
RAIL AT-GRADE / ROADWAY DEPRESSED

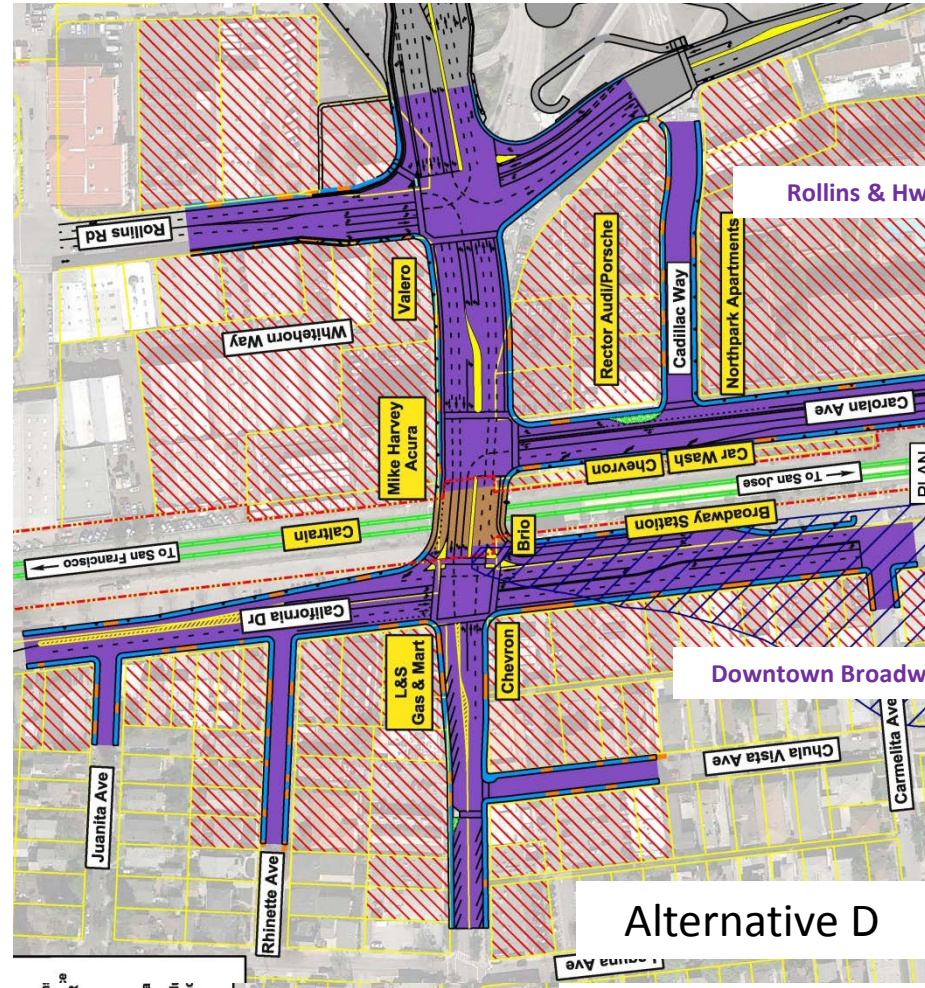
\$160M to \$250M



D

ALTERNATIVE D
RAIL AT-GRADE / ROADWAY ELEVATED

\$120M to \$210M



Rollins & Hwy 101 Interchange

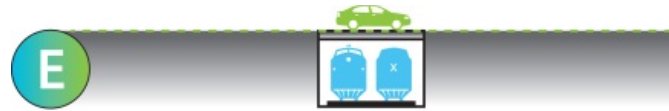
Downtown Broadway Commercial District

Alternative D

Broadway Grade Separation Study



Alternatives E and F

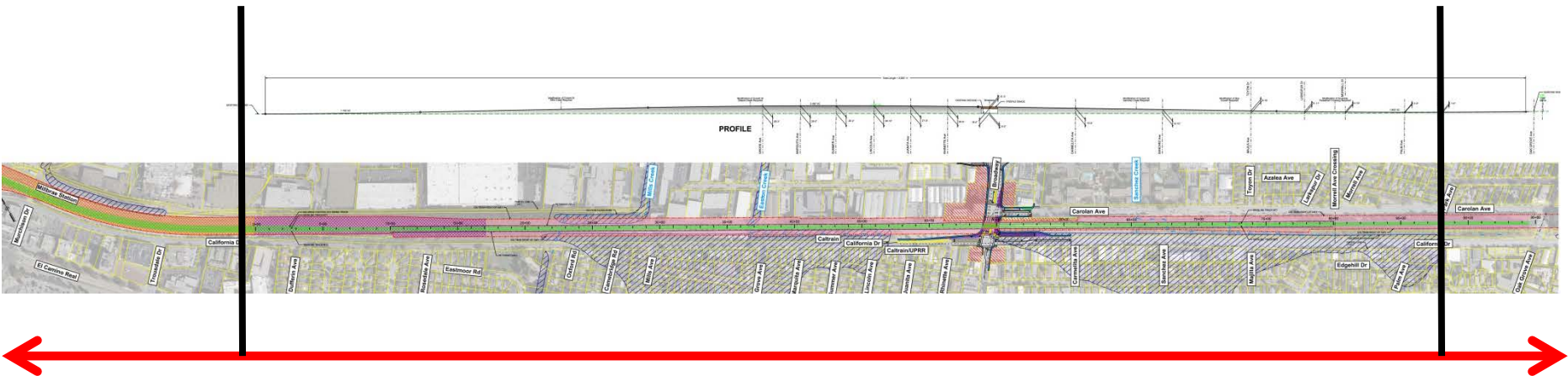


ALTERNATIVE E
RAIL DEPRESSED / ROADWAY AT-GRADE

\$500M to \$600M

Caltrain Operations
Millbrae Station

Caltrain Operations
Burlingame Station



ALTERNATIVE F
RAIL ELEVATED / ROADWAY AT-GRADE

\$180M to \$240M

Broadway Grade Separation Study

Impact Matrices

- Impacts grouped by category:
 - broader community
 - local and right-of-way
 - railroad operations
 - environmental sustainability

Impact Matrices





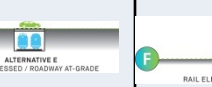

- Color coded rating system
- Ratings based on qualitative assessment and quantitative assessment (when possible).

Significant Improvement
Minimal Improvement
No Improvement
Minimal Impact
Moderate Impact
Severe Impact
Fatal Flaw

Broadway Grade Separation Study








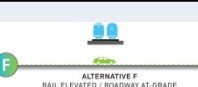
Broader Community Impacts

Alternative →	 ALTERNATIVE A RAIL ELEVATED / ROADWAY DEPRESSED	 ALTERNATIVE B RAIL DEPRESSED / ROADWAY ELEVATED	 ALTERNATIVE C RAIL AT-GRADE / ROADWAY DEPRESSED	 ALTERNATIVE D RAIL AT-GRADE / ROADWAY ELEVATED	 ALTERNATIVE E RAIL DEPRESSED / ROADWAY AT-GRADE	 ALTERNATIVE F RAIL ELEVATED / ROADWAY AT-GRADE
Safety						
Community Connectivity						
Fuel Use						
Reliability						
Traffic Delays (After Construction)						
Traffic Delays (During Construction)						
Aesthetics						
Overall Rating						

Broadway Grade Separation Study









Local & Right-of-Way Impacts

Alternative →						
Number of Properties Impacted						
Total Area of Impacted Parcels						
Traffic in Local Neighborhoods						
Flooding Potential (Post-Construction)						
Business Disruption (During Construction)						
Business Disruption (Post-Construction)						
Resident Disruption (During Construction)						
Existing Utility Infrastructure						
Groundwater Issues (Pump Station)						
Level of Noise						
Overall Rating						

Broadway Grade Separation Study







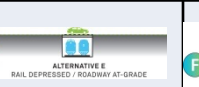

Railroad Operations Impacts

Alternative →	 ALTERNATIVE A RAIL ELEVATED / ROADWAY DEPRESSED	 ALTERNATIVE B RAIL DEPRESSED / ROADWAY ELEVATED	 ALTERNATIVE C RAIL AT-GRADE / ROADWAY DEPRESSED	 ALTERNATIVE D RAIL AT-GRADE / ROADWAY ELEVATED	 ALTERNATIVE E RAIL DEPRESSED / ROADWAY AT-GRADE	 ALTERNATIVE F RAIL ELEVATED / ROADWAY AT-GRADE
Service Outage During Construction						
Burlingame Station Closure						
Caltrain Operational Impacts						
Long Term Maintenance						
Accommodates Broadway Station						
Caltrain Electrification						
Accommodates HSR						
Existing Pedestrian Xing at Morrell						
Potential for Other Pedestrian Xings						
Overall Rating						

Broadway Grade Separation Study








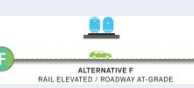
Environmental Impacts

Alternative →	 ALTERNATIVE A RAIL ELEVATED / ROADWAY DEPRESSED	 ALTERNATIVE B RAIL DEPRESSED / ROADWAY ELEVATED	 ALTERNATIVE C RAIL AT-GRADE / ROADWAY DEPRESSED	 ALTERNATIVE D RAIL AT-GRADE / ROADWAY ELEVATED	 ALTERNATIVE E RAIL DEPRESSED / ROADWAY AT-GRADE	 ALTERNATIVE F RAIL ELEVATED / ROADWAY AT-GRADE
Greenhouse Gas Emissions						
Criteria Air Pollutants						
Groundwater						
Eucalyptus Tree Removal						
Historic Buildings						
Overall Rating						

Broadway Grade Separation Study



Summary

Alternative →	 ALTERNATIVE A RAIL ELEVATED / ROADWAY DEPRESSED	 ALTERNATIVE B RAIL DEPRESSED / ROADWAY ELEVATED	 ALTERNATIVE C RAIL AT-GRADE / ROADWAY DEPRESSED	 ALTERNATIVE D RAIL AT-GRADE / ROADWAY ELEVATED	 ALTERNATIVE E RAIL DEPRESSED / ROADWAY AT-GRADE	 ALTERNATIVE F RAIL ELEVATED / ROADWAY AT-GRADE
Broader Community	Green	Green	Green	Green	Blue	Green
Local & Right-of-Way	Yellow	Yellow	Orange	Orange	White	Yellow
Railroad Operations	Yellow	Yellow	White	White	Red	Red
Environmental	White	White	Green	Green	Yellow	White
Cost	Yellow	Orange	Yellow	Yellow	Red	Yellow

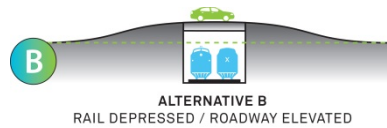
Broadway Grade Separation Study



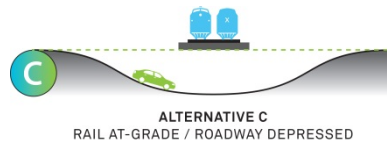
Alternatives



\$210M to \$260M



\$330M to \$400M



\$160M to \$250M



\$120M to \$210M



\$500M to \$600M



\$180M to \$240M

Alternatives to be
Evaluated Further

Alternatives with
Significant Constraints

Broadway Grade Separation Study

Stations Breakout

Alternative A

Alternative B

Alternatives C & D

Alternatives E & F

Emergency Response Access

Matrix

Example Grade Separations

For More Information:

Visit Us at: www.burlingame.org/broadwaygradesep

Email Us at: broadwaygradesep@burlingame.org

Broadway Grade Separation Study



Meeting Summary

Reporting back from stations

Next Steps:

- Refine Alternatives

Next meeting in **November 2015**

For More Information:

Visit Us at: www.burlingame.org/broadwaygradesep

Email Us at: broadwaygradesep@burlingame.org

Broadway Grade Separation Study



Thank you for Attending...

Broadway Grade Separation Study



Backup slides

- Not planned to be used

Estimated Annual Economic Benefits

Description	Average Annual Benefit (NPV)
Travel Time Savings	\$7,730,000
Fuel Savings	\$805,000
Improved Safety	\$743,000
GHG Emission Reduction	\$85,000
CAP Reduction	\$31,000
Total	\$9,394,000

Note: Net Present Value (NPV) based on a 3% discount rate applied to a 2025 to 2040 analysis period. Values rounded to the nearest thousand.

Broadway Grade Separation Study



Accident Data

(Three year period: From 1/1/11 to 12/31/13)

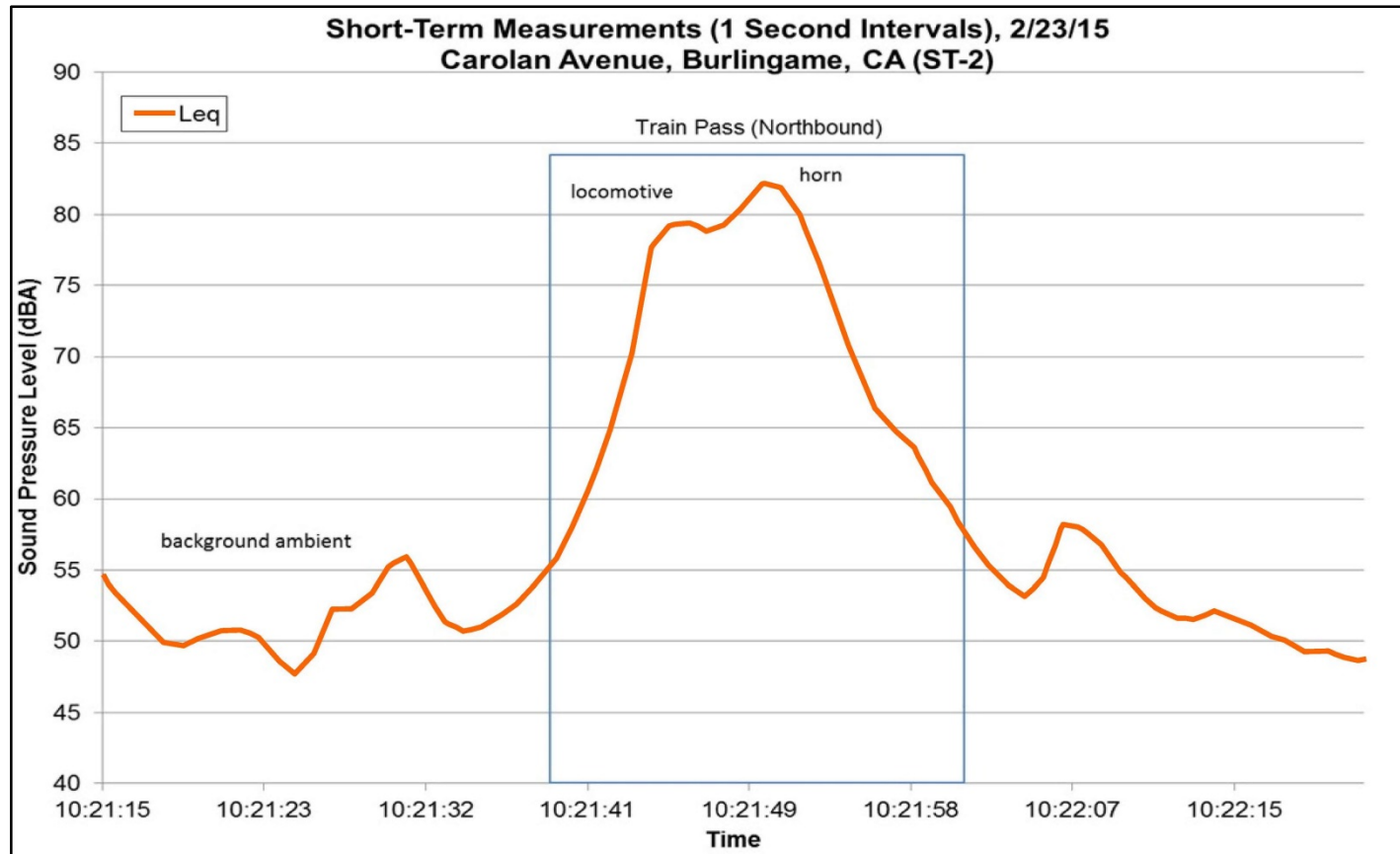
Number of Vehicle Accidents

Intersection	Primary Cause of Accident									
	Speeding	Unsafe/ Improper Turn	Unsafe Lane Change	DUI	Red Light Crossing	Unknown	Unsafe Backing/ Starting	Failure to Yield ROW	Driving Left of Double Yellow	Total
Broadway/ US 101 Off-Ramp/ Rollins Road	7	1	1	0	3	8	0	2	2	24
Broadway/ Carolan Avenue	2	0	2	3	0	4	0	0	0	11
Broadway/ California Drive	6	5	2	2	2	12	3	2	0	34

Broadway Grade Separation Study



Noise Measurements



Note: Measurements taken from Carolan Avenue, ¼ mile south of Broadway.

Broadway Grade Separation Study



Sample Grade Separations



Shellmound Street Overhead
Emeryville



Holly Street Underpass
San Carlos



Washington Blvd Overhead
Fremont



San Bruno Ave Underpass
San Bruno

Broadway Grade Separation Study



Weekday Train Traffic Current and Projected

Total Number of Trains (per Weekday[^])

	Northbound (NB)	Southbound (SB)	Total
Caltrain (2015)	AM: 20 PM: 26 Total: 46	AM: 20 PM: 26 Total: 46	AM: 40 PM: 52 Total: 92
Caltrain (2020 Projection #)	57	57	114
Caltrain + High Speed Rail (2030 Projection +)	53	53	106
Union Pacific	3	3	6

[^] Note: No trains stop at the Broadway Station during the week.

2020 Projected Values Based on Completion of the Peninsula Corridor Electrification Project (from FEIR, December 2014)
(Prototypical Schedule)

+ 2030 Projected Values Based on Blended Service and Completion of the High Speed Rail Project and 2014 CHSRA Business Plan

Broadway Grade Separation Study



Weekend Train Traffic Current and Projected

Total Number of Trains (per Weekend day)

	Northbound (NB)	Southbound (SB)	Total
Caltrain (2015)	AM: 5 (4) PM: 13 (12) Total*: 18 (16)	AM: 4 (4) PM: 14 (12) Total*: 18 (16)	AM: 9 (8) PM: 27 (24) Total*: 36 (32)
Caltrain (2020 Projection)	Total: 18 (16)	Total: 18 (16)	Total: 36 (32)
Caltrain + High Speed Rail (2030 Projection +)	Weekend numbers are unknown at this time		
Union Pacific	3	3	6
(xx) = Value in parentheses represents number of trains that stop at the Broadway Station * Numbers shown based on a Saturday schedule. There are four fewer trains on a Sunday (2 NB, 2 SB) + 2030 Projected Values Based on Blended Service and Completion of the High Speed Rail Project			

Broadway Grade Separation Study

