



Train Horn Noise Status Update

June 20, 2023

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Senior Engineer
Public Works

AGENDA

- Train Horn Noise Background
- Current Operations at Crossings
- Federal Regulations Regarding Train Quiet Zones
- City Staff's Progress Toward Train Quiet Zone Establishment
- Recommended Next Steps



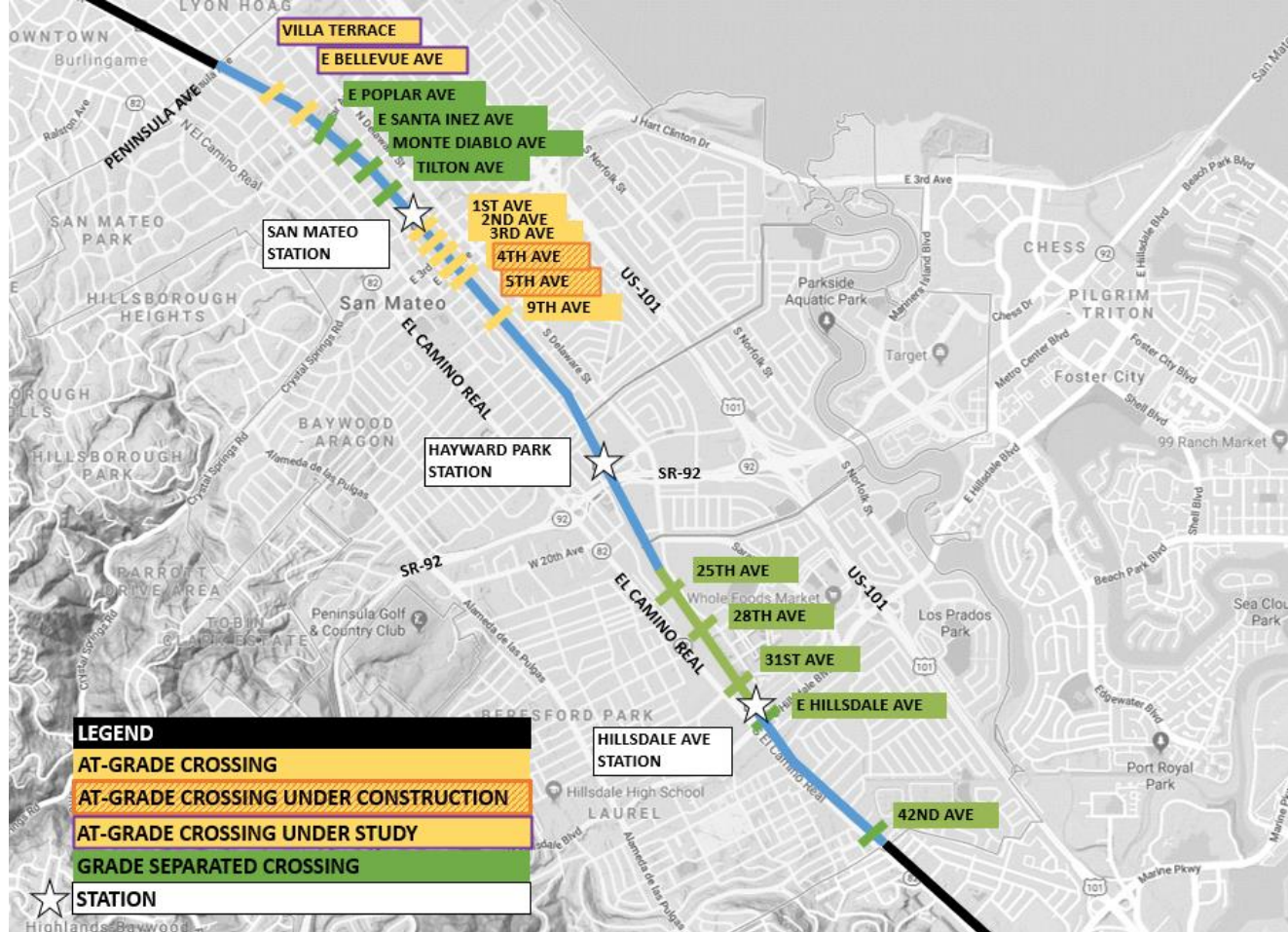
Safety First



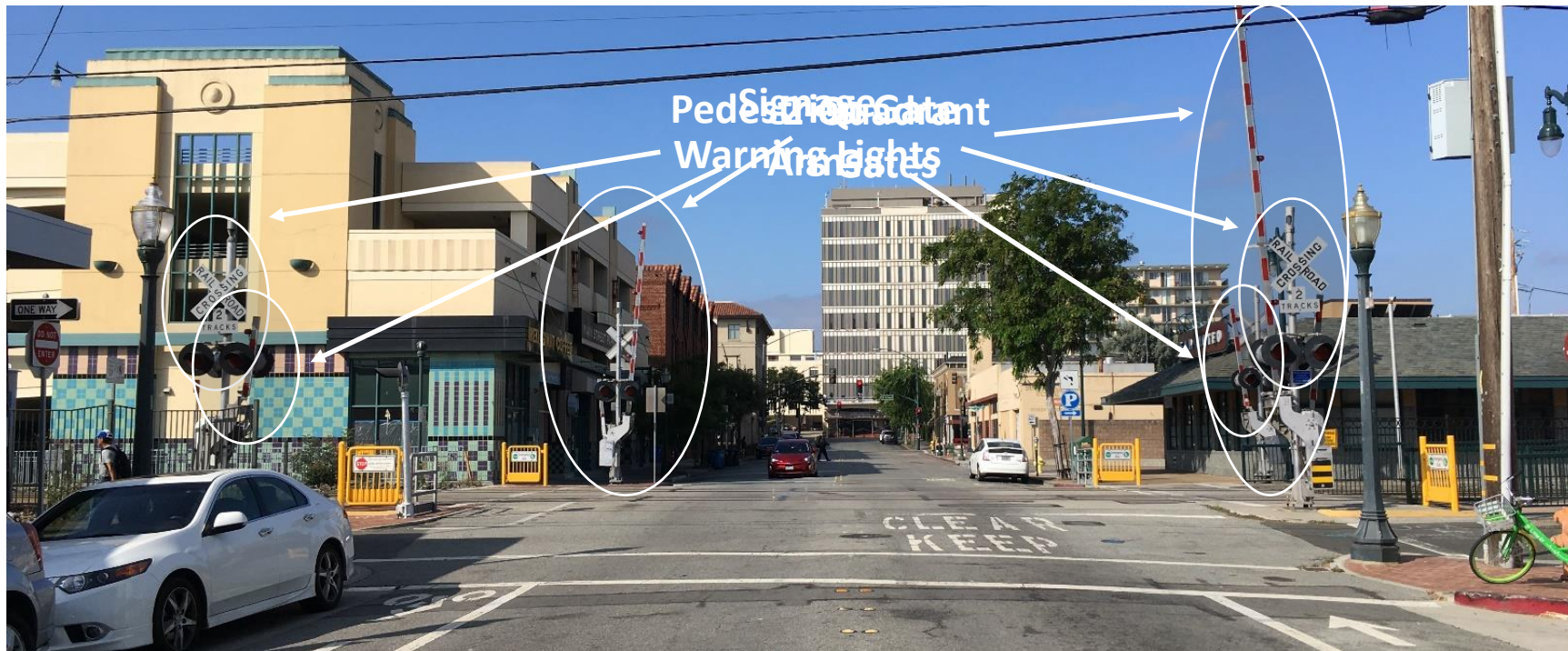
Quality of Life

Train Crossings Challenges

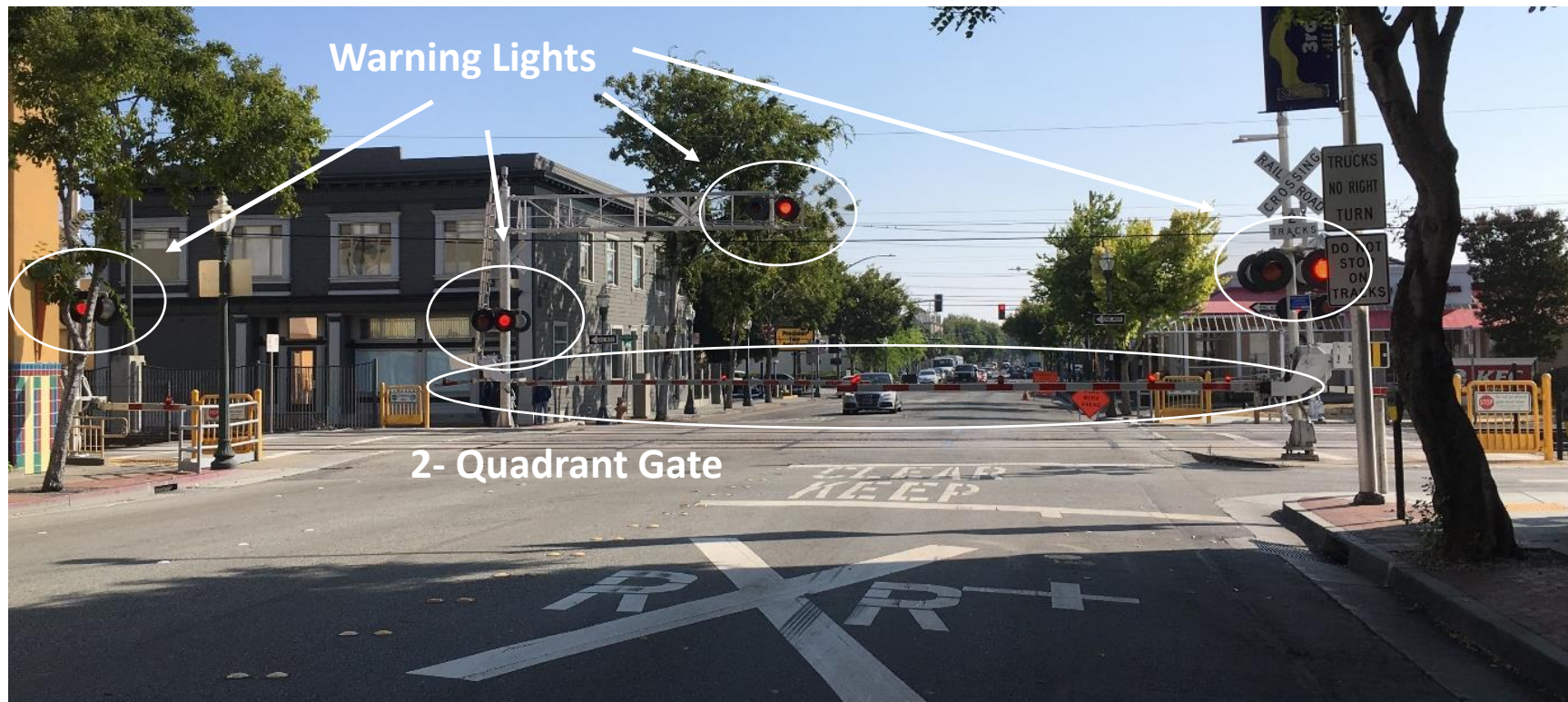




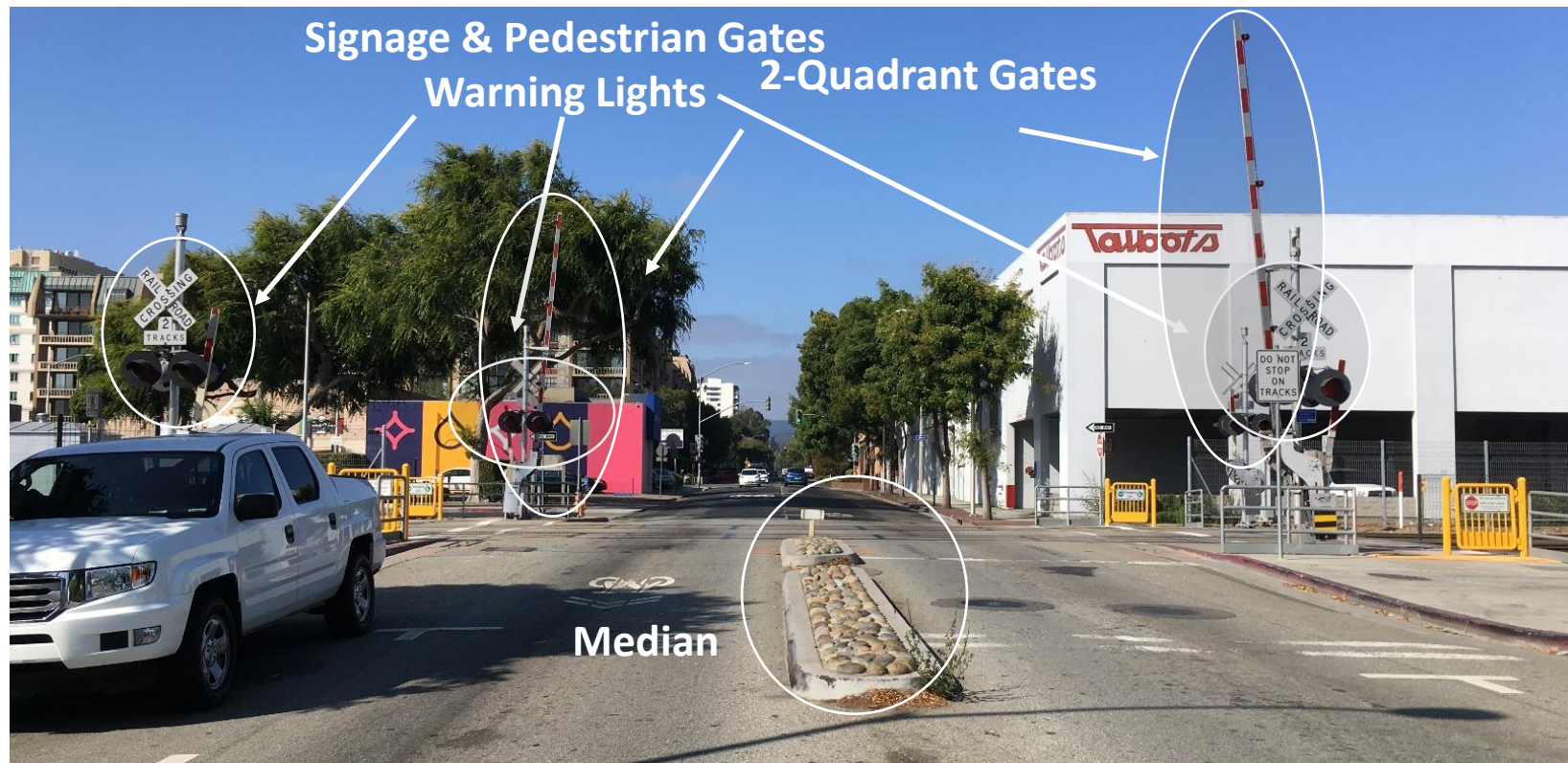
Current Operations



Current Operations



Current Operations



Train Horn Noise Regulations

- Federal Railroad Administration (FRA) – governance
- Train Horn Rule in Code of Federal Regulations
 - Train horns are a safety precaution and warning device required by the FRA at all at-grade crossings, occupied station platforms, construction zones, and other situations.
- Exception
 - Municipalities can establish a “Quiet Zone” to restrict the use of train horns when *approaching at-grade crossings* if certain safety improvements are made so as not to increase the risk of collisions.

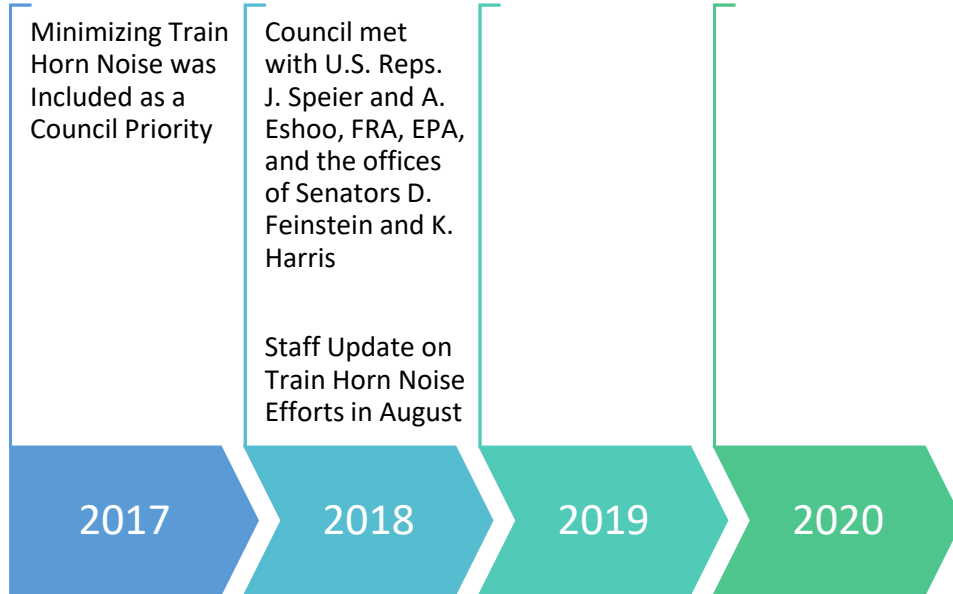


Establishment of a “Quiet Zone”



- Council Priority: Minimize impacts to residents from train horn noise at City at-grade crossings
- Only local governments may establish a “Quiet Zone”
- Train horn restriction is not applicable:
 - At Caltrain stations, rail yards and construction zones
 - During emergencies
 - With regards to locomotive bells at crossings

Timeline of Staff Efforts





4 Quadrant Gates



Medians



Crossing Closures

Supplementary Safety Measures (SSMs)

Quiet Zone Qualification Approach

Risk Based Approach

- Reduce the risk of collision by installing SSMs at selected at-grade crossings
- Lower the calculated “Risk Index”



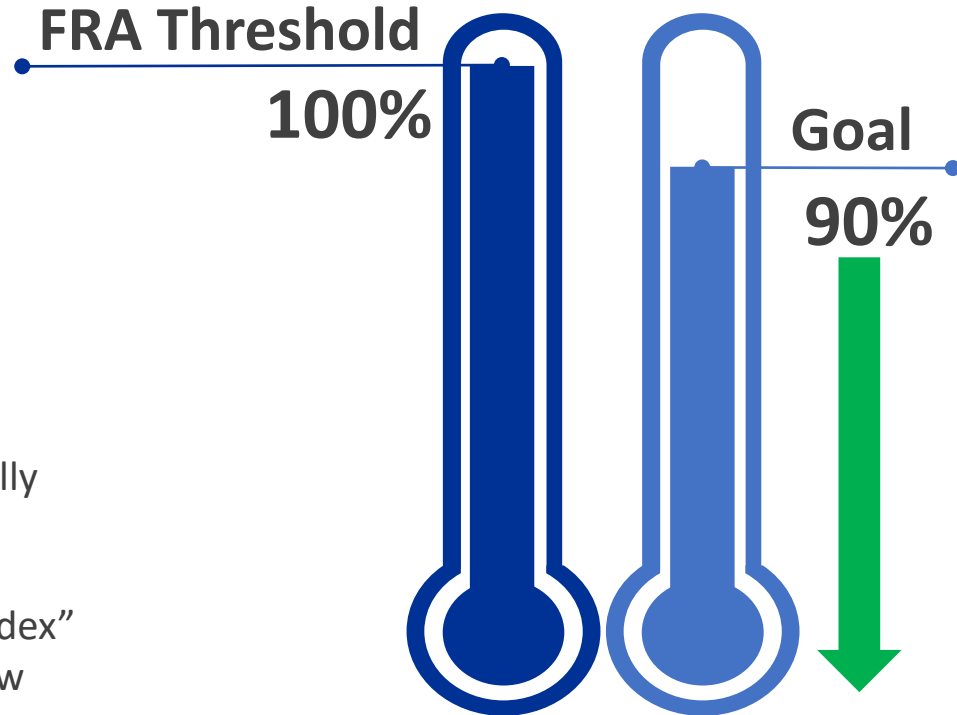
FRA Threshold

- Based on traffic patterns, rail traffic, collisions history and changes annually



City's Goal

- Achieving and maintaining a “Risk Index” of 90% of the FRA Threshold or below



4th and 5th Ave Railroad Grade Crossings Projects

- California Public Utilities Commission (CPUC) providing 100% funding under Railroad-Highway Grade Crossing Program “Section 130”
- Qualifying SSMs - progress toward “Quiet Zone” qualification

	City Portion	Caltrain Portion
Scope	<ul style="list-style-type: none">• Pavement resurfacing and traffic striping• ADA-complaint curb ramps• Pedestrian level lighting along 5th Ave	<ul style="list-style-type: none">• Install 4-quadrant gates at 4th Ave and 5th Avenue• Upgraded signal houses• Traffic and pedestrian striping in Caltrans ROW
Budget	\$1.5 million	\$5.5 million
Current Phase	Construction Phase	Bid & Award Phase
Anticipated Completion	Fall 2023	Fall 2024

Updated Scenarios for Quiet Zone Qualification

Scenarios	Risk Index % of Threshold	Estimated Costs	Anticipated Quiet Zone Enactment Date
Current Conditions with 4th and 5th Ave Railroad Grade Crossings Projects	121%	N/A	N/A

Updated Scenarios for Quiet Zone Qualification

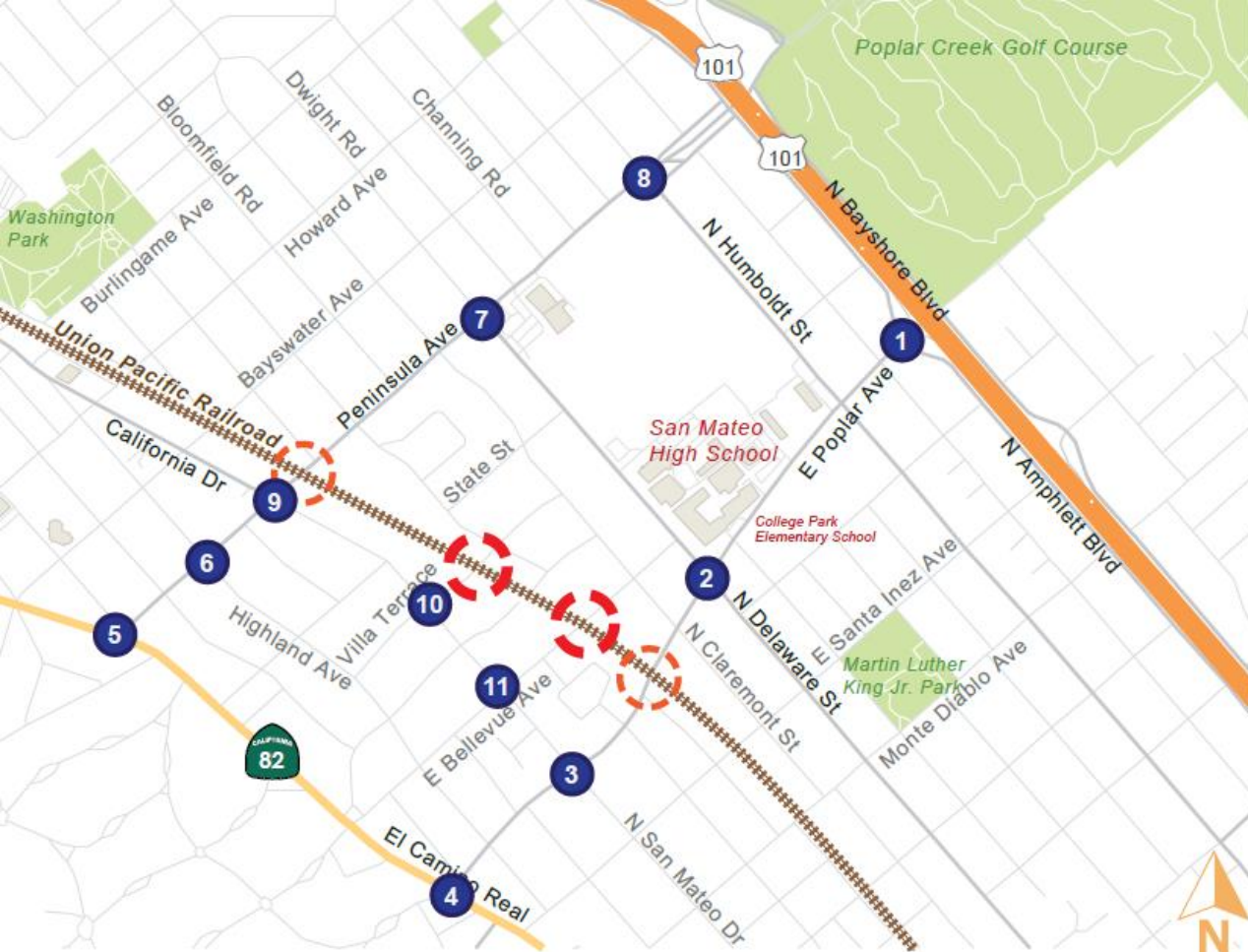
Scenarios	Risk Index % of Threshold	Estimated Costs	Anticipated Quiet Zone Enactment Date
Current Conditions with 4th and 5th Ave Railroad Grade Crossings Projects	121%	N/A	N/A
A) 4-Quad gates at all 8 at-grade crossings	38%	\$21.0 million	Beyond 2027
B) Add 4-Quad gates at Villa Terrace	98%	\$3.5 million	2027
C) Add 4-Quad gates at E. Bellevue Ave	111%	\$3.5 million	N/A
D) Add 4-Quad gates at Villa Ter & E. Bellevue Ave	87%	\$7 million	2027

Updated Scenarios for Quiet Zone Qualification

Scenarios	Risk Index % of Threshold	Estimated Costs	Anticipated Quiet Zone Enactment Date	Evaluated in Traffic Study?
Current Conditions with 4th and 5th Ave Railroad Grade Crossings Projects	121%	N/A	N/A	Yes – as a baseline
A) 4-Quad gates at all 8 at-grade crossings	38%	\$21.0 million	Beyond 2027	
B) Add 4-Quad gates at Villa Terrace	98%	\$3.5 million	2027	
C) Add 4-Quad gates at E. Bellevue Ave	111%	\$3.5 million	N/A	
D) Add 4-Quad gates at Villa Ter & E. Bellevue Ave	87%	\$7 million	2027	
E) Add closure at Villa Terrace	93%	\$0.3 million	2025	Yes
F) Add closure at E. Bellevue Ave	112%	\$0.3 million	N/A	Yes
G) Add closure at Villa Ter & E. Bellevue Ave	81%	\$0.5 million	2025	Yes
H) Add closure at Villa Ter & medians at E. Bellevue Ave	83%	\$0.3 million	2025	Yes

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Traffic Study Alternatives

Existing Conditions:

Both at-grade crossings remain open

Alternative:

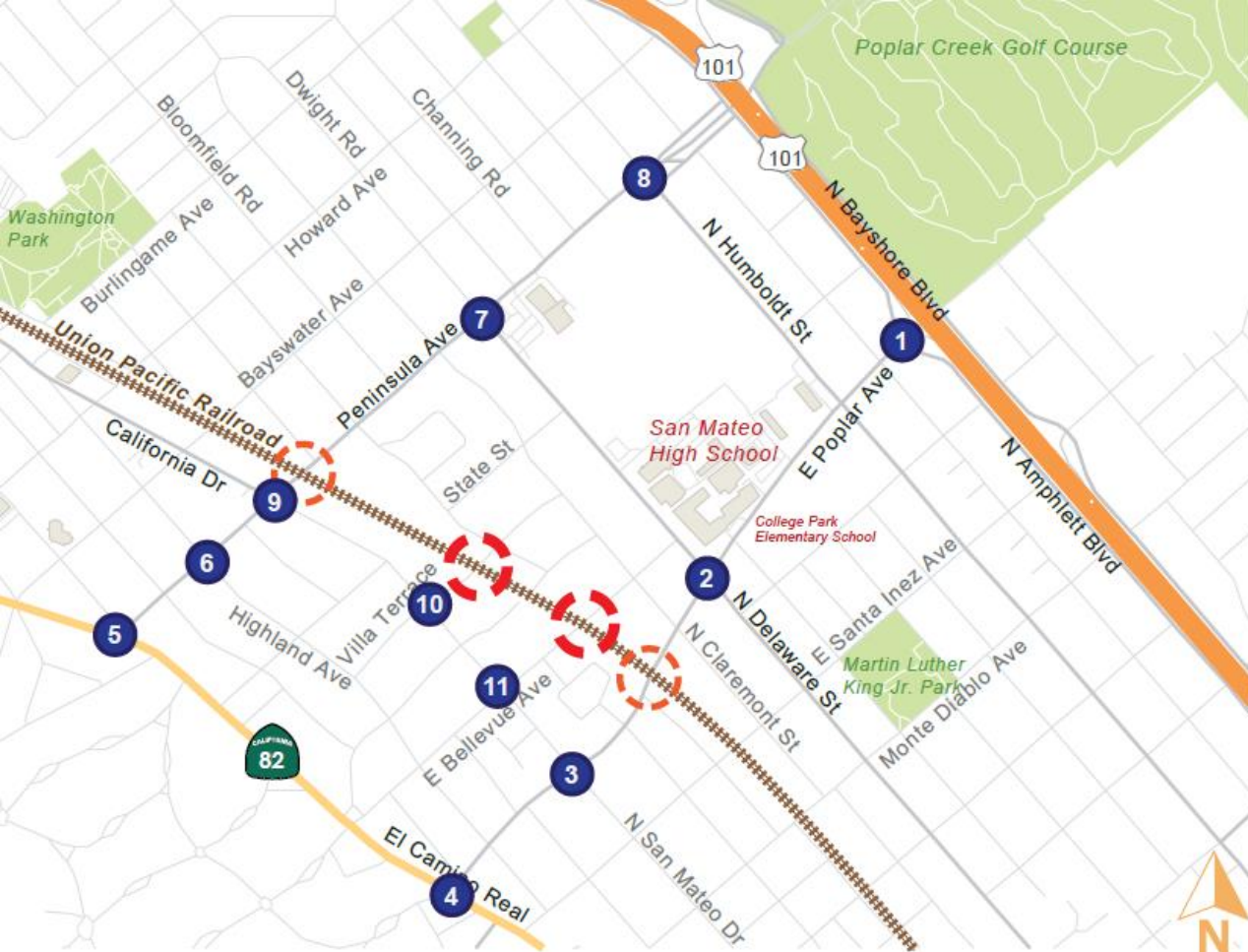
Close Villa Terrace & add medians at the E. Bellevue Ave Crossing

Alternative:

Close both Villa Terrace & E. Bellevue Ave Crossings

Comparison of Traffic Study Alternatives

	Alternative	Alternative
Description	Close Villa Terrace & add medians at E. Bellevue Ave crossing	Close both Villa Terrace & E. Bellevue Ave Crossings
Risk Index	83%	81%
Traffic Circulation	Low Impact	High Impact
Pedestrians	Low Impact	High Impact
Bicyclists	Low Impact	High Impact
Construction Cost Estimate	\$150,000-\$250,000	\$300,000-\$500,000



Recommended Alternative

Existing Conditions:

Both at-grade crossings remain open

Alternative:

Close Villa Terrace & add medians at the E. Bellevue Ave Crossing

Alternative:

Close both Villa Terrace & E. Bellevue Ave Crossings

Outreach Goals



Educate the community on the benefits and challenges associated with City's efforts to establish a train "Quiet Zone"



Inform residents and businesses of upcoming changes to at-grade crossings at Villa Terrace & E. Bellevue Ave



Provide timely information to interested parties regarding train "Quiet Zone" efforts, SSMs projects status, and construction impacts

Target Audience

Renters/Owners

Businesses

Railroad
Stakeholders (FRA,
Caltrain, CPUC, Union
Pacific)

Motorists

Bicyclists/Pedestrians

Under-represented
neighborhoods and
low-income
households

Non-English speakers

Administrative Steps to Establish a “Quiet Zone”

Step 1

Meet with all required stakeholders:
Federal Railroad Administration, California Public Utilities
Commission, Caltrain, Union Pacific Railroad, etc.



Step 2

Issue a Notice of Intent (NOI) to establish a “Quiet Zone” to FRA and
all required stakeholders
Provide a 60-day comment period



Step 3

Respond to comments submitted by all required stakeholders
Implement modifications to crossings, as necessary



Step 4

Issue a Notice of Quiet Zone Establishment (NOQZE)

Schedule for Next Steps

Summer 23 | Fall 23 | Winter 24 | Spring 24 | Summer 24 | Fall 24 | Winter 25 | Mid 2025



Note: After Train Quiet Zone Establishment, staff will continue to monitor the “Risk Index” to ensure Train Quiet Zone is maintained

Council Direction and Feedback

- Staff's recommendation is to proceed with closure at Villa Terrace Ave and medians at E. Bellevue Ave at-grade crossings