

San Francisquito Creek Joint Powers Authority

# SAFER Bay Project

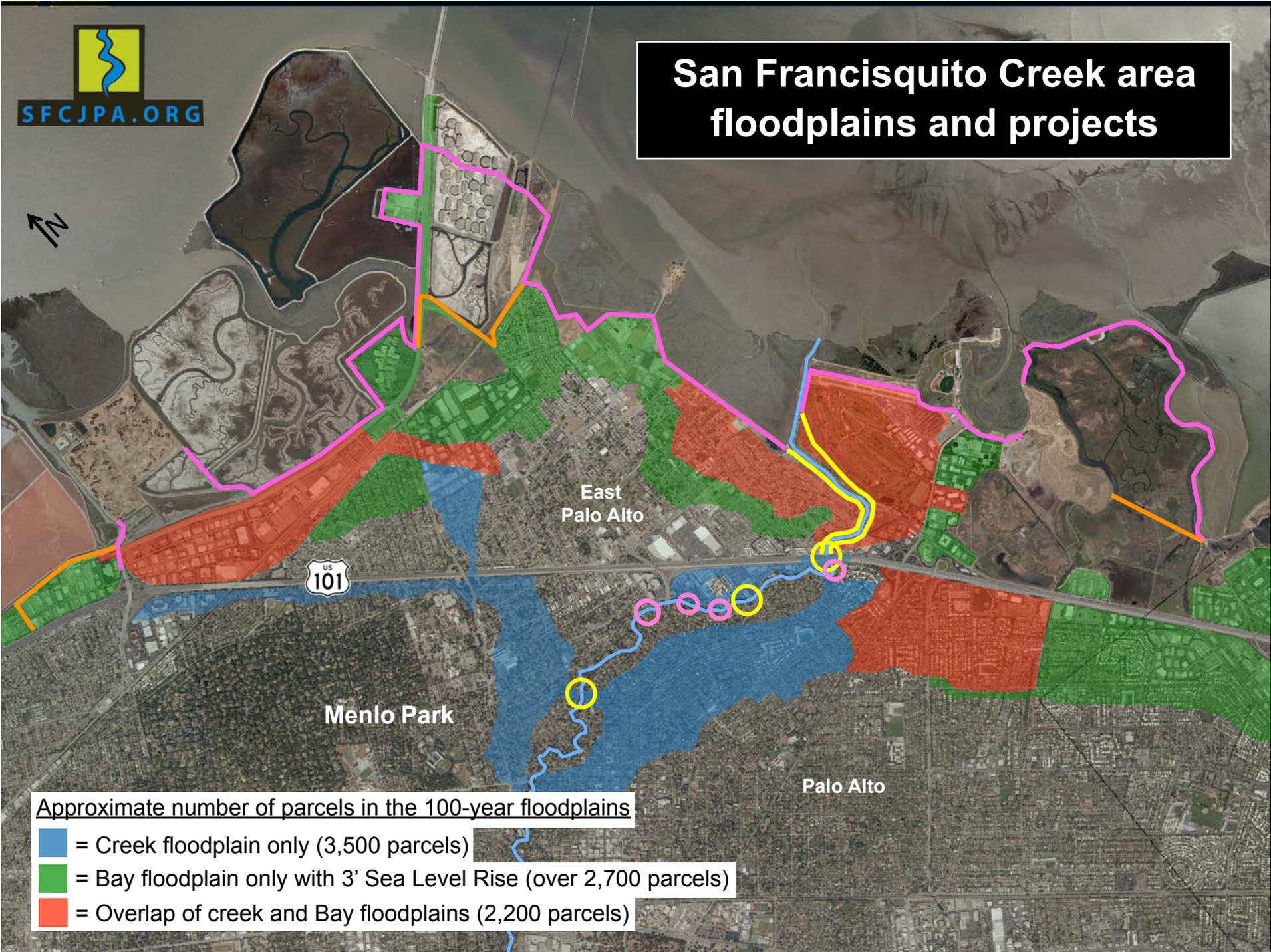
BCDC Bay Fill Policies Working Group 12.15.16



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Len Materman, Executive Director

# San Francisquito Creek area floodplains and projects



**Approximate number of parcels in the 100-year floodplains**

-  = Creek floodplain only (3,500 parcels)
-  = Bay floodplain only with 3' Sea Level Rise (over 2,700 parcels)
-  = Overlap of creek and Bay floodplains (2,200 parcels)



January 2015 king tide

*The Almanac*  
THE HOMETOWN NEWSPAPER FOR MENLO PARK, ATHERTON, PORTOLA VALLEY AND WOODSIDE

MARCH 5, 2014 | VOL. 49 NO. 26  WWW.THEALMANACONLINE.COM

# STEMMING THE TIDE

Local agency steps up to tackle threat of rising bayside water



North of Hwy. 84  
near Dumbarton Bridge





# LIDAR of the mid-Peninsula

S.F. Bay

East Palo Alto

Menlo Park

Palo Alto



100-year tide (11')  
+ 2' freeboard  
+ 3' SLR

At least 13' now,  
Enable 16'

### Elevation

-  = <13'
-  = 13-15.9'
-  = >15.9'





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## SAFER Bay Project

Protect 5,000 properties & major infrastructure,  
restore marshes, connect communities through trails

Two counties and three cities.

11 miles of shoreline with 11 reaches that include 24 options.

Each alternative includes all reaches and only one option per reach.

Construction may occur in two phases (1 FEMA floodplain, 2 SLR) and may be geographically or temporally separable.



# SAFER Bay Project Objectives

- Reduce risk of coastal flooding and remove properties from FEMA 100-year floodplain (including freeboard) and 3 feet of Sea Level Rise.

Minimum design elevation (1% SWL only)		
Elevation <sup>2</sup> or Height	Existing Conditions	Considering 3 ft of SLR
1% SWL elevation (100-year tidal floodplain) <sup>1</sup>	11.0 ft	14.0 ft
Required freeboard above the SWL	2.0 ft	2.0 ft
<b>Minimum design elevation<sup>3</sup></b>	<b>13.0 ft</b>	<b>16.0 ft</b>

- Utilize marshes for flood protection in a way that restores and sustains marsh habitat in coordination regional efforts.
- Expand opportunities for recreation and community connectivity in coordination with regional and local efforts.
- Minimize future maintenance requirements.
- Create partnerships with entities whose assets could be protected.
- Ensure objectives can be met regardless of neighboring action/inaction.



# SAFER Bay Project Constraints

- **Cost**
- **Utility infrastructure**
- **Viewshed**
- **Tidal marsh wetlands**
- **Endangered species habitat**
- **Roads, trails & flight path**
- **Interior (stormwater) drainage**
- **Property within and adjacent to levee alignment**
- **Hazardous waste and landfill sites**





**Public Draft Feasibility Report**

# SAFER Bay Project

Strategy to Advance  
Flood protection, Ecosystems and  
Recreation along San Francisco Bay

East Palo Alto and Menlo Park

(Task Order 1)

October 2016

**Available at [sfcjpa.org](http://sfcjpa.org)**

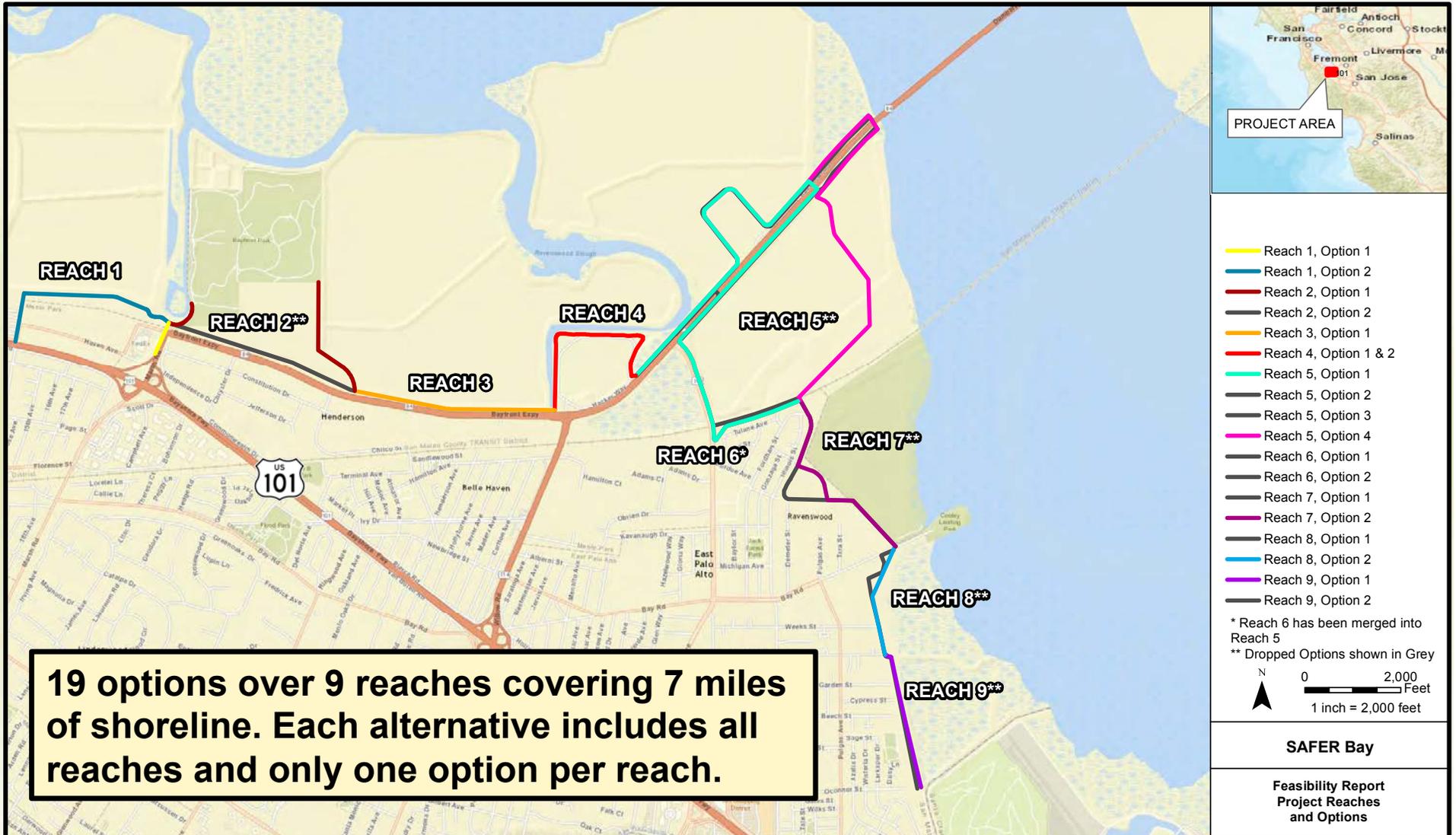


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San Francisquito Creek  
Joint Powers Authority

615 B Menlo Avenue  
Menlo Park, CA 94025

# SAFER Bay Public Draft Feasibility Report for EPA & MP





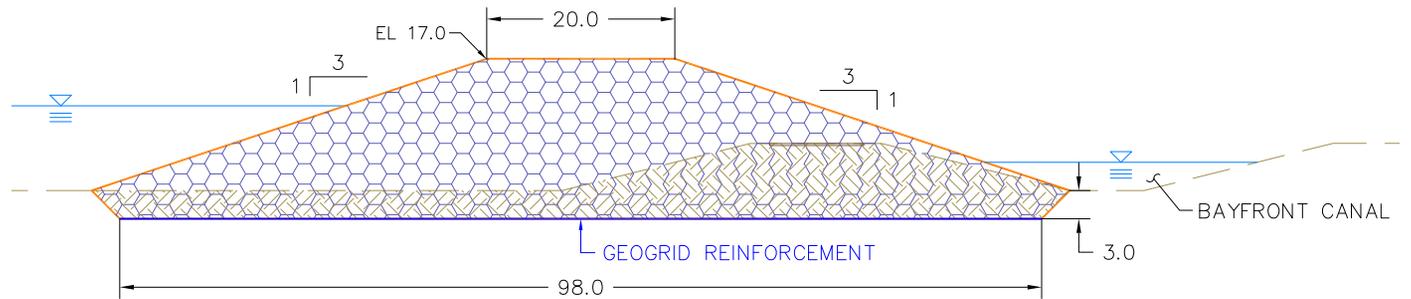
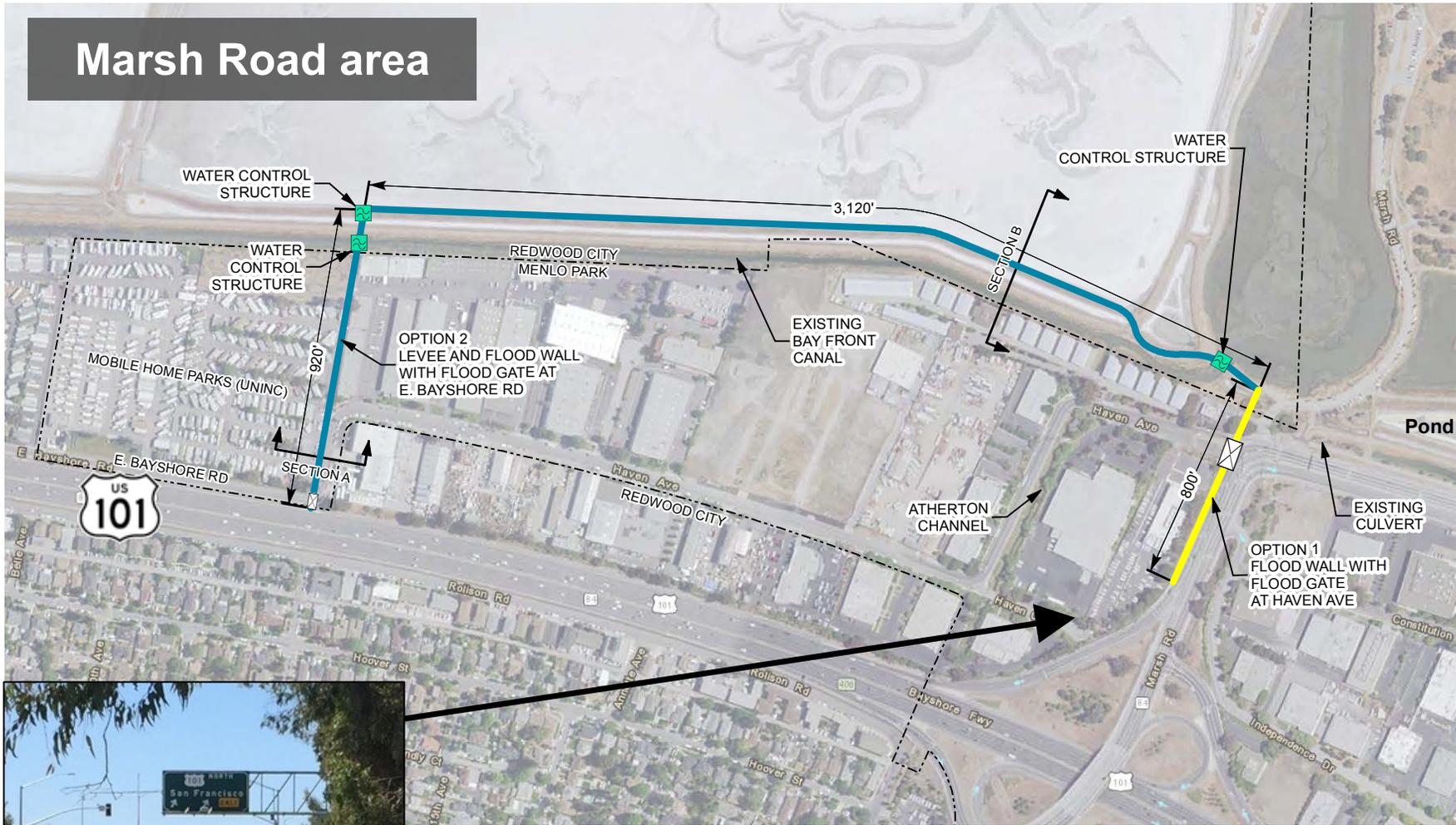
## **SAFER: Screening options and evaluating alternatives**

- **Multiple options were developed in each project reach (or area).**
- **Each option was screened for how well it satisfies project objectives or violates constraints.**
- **Remaining options in each reach were then combined into four project-wide alternatives (low cost, habitat, recreation, and combination of objectives or “optimized alternative”) that maximize key objectives.**
- **Alternatives were then scored against four factors: construction cost and constructability, ecosystem restoration, operation and maintenance, and recreation.**
- **The optimized alternative ranked highest.**

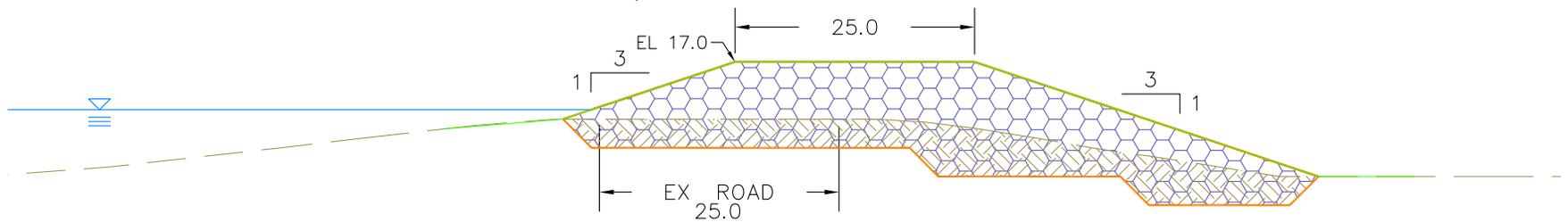
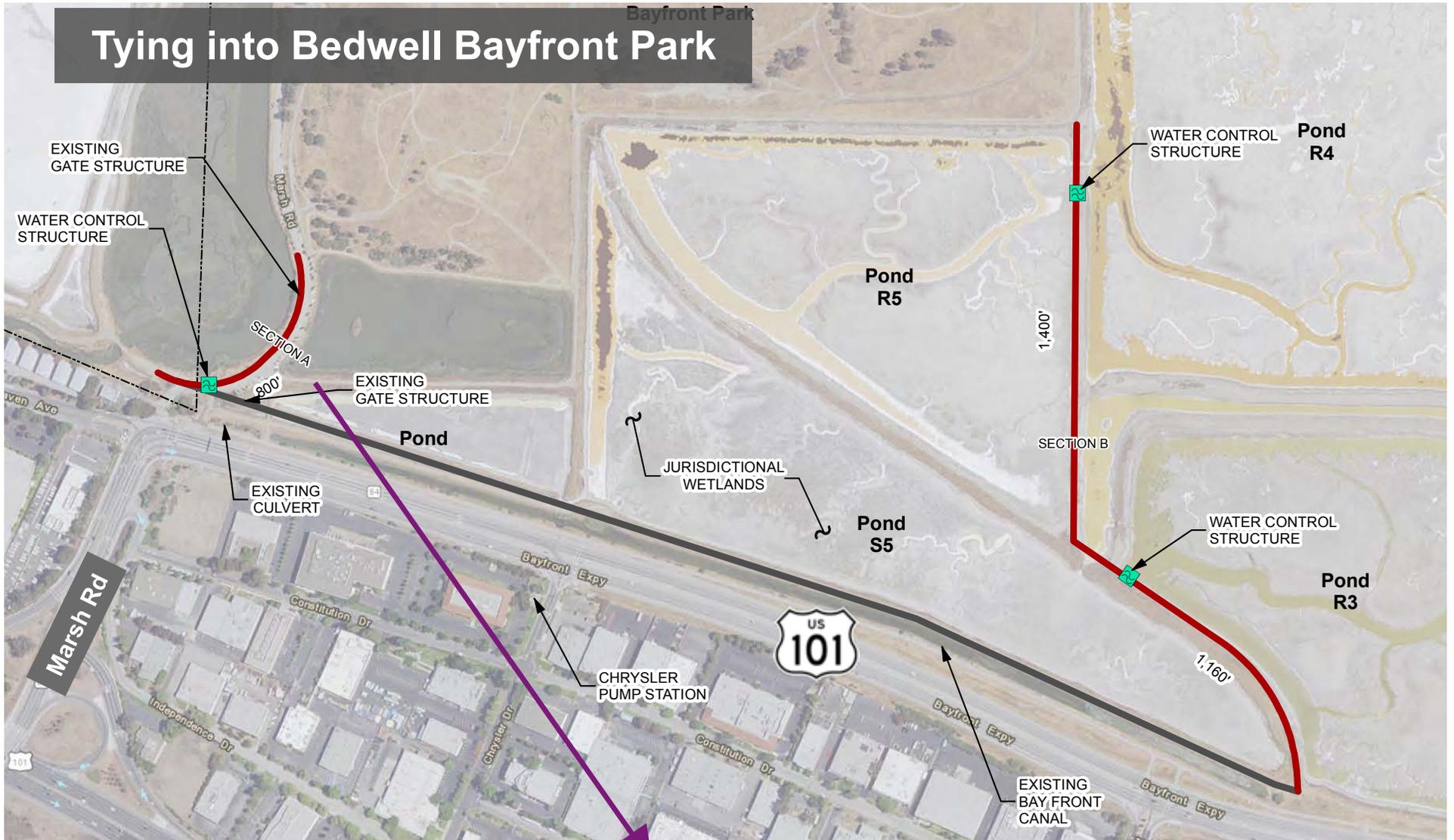
Feasibility Scoring Matrix and Calculation				Low Cost	Restoration	Recreation	Optimized
Evaluation Factor	Wt %	Considerations	Wt%	Alt 1	Alt 2	Alt 3	Alt 4
Construction Cost and Constructability	30%	Construction Cost	50%	2.6	2.0	2.0	2.5
		Lifecycle Cost	5%	4.4	3.9	3.9	4.3
		Construction Schedule	5%	3.0	2.8	2.8	2.9
		Construction Considerations and Access	20%	3.6	3.8	3.8	3.6
		Real Estate Acquisition	20%	3.0	3.0	3.0	3.0
				3.0	2.7	2.7	2.9
Operation and Maintenance	20%	O&M Cost	30%	4.4	3.9	3.9	4.3
		Debris and Sediment Management	30%	4.3	3.8	3.8	4.1
		Passive/Active	20%	3.3	3.3	3.3	3.3
		Flood Fighting Accessibility	20%	3.1	2.6	2.6	2.9
				3.9	3.5	3.5	3.7
Restoration	30%	Acres of Enhanced Tidal Marsh Habitat	40%	1.5	1.8	1.8	1.8
		Interagency Coordination	20%	3.0	3.4	3.4	3.1
		Potential Impacts/Mitigation Requirements	40%	4.1	4.5	4.5	4.6
				2.9	3.2	3.2	3.2
Recreation	20%	Bay Trail	50%	2.3	2.3	2.3	2.4
		Interpretive/Viewing	50%	3.3	3.6	3.6	3.4
				2.8	2.9	2.9	2.9
<b>Total Alternative Score</b>	<b>100%</b>			<b>3.1</b>	<b>3.0</b>	<b>3.0</b>	<b>3.2</b>
				<b>Overall Ranking Order:      2                  3                  3                  1</b>			

Alternatives		Options by Reach								
	Reach	1	2	3	4	5	6 <sup>2</sup>	7	8	9
1	Lowest Cost	Op 1	Op 1	Op 1	Op 1	Op 1	X	Op 2	Op 2	Op 1
2	Restoration <sup>1</sup>	Op 2	Op 1	Op 1	Op 2	Op 4	X	Op 2	Op 2	Op 1
3	Recreation	Op 2	Op 1	Op 1	Op 2	Op 4	X	Op 2	Op 2	Op 1
4	Optimized	Op 1	Op 1	Op 1	Op 2	Op 4	X	Op 2	Op 2	Op 1

# Marsh Road area



# Tying into Bedwell Bayfront Park



# North of Hwy. 84





Pond R3

RAVENSWOOD SLOUGH

1,760'

OPTION 1 FLOODWALL  
OPTION 2 LEVEE

1,540'

SECTION

Facebook Campus

Willow Rd  
1699  
5995

Hacker Way

Bayfront Expy

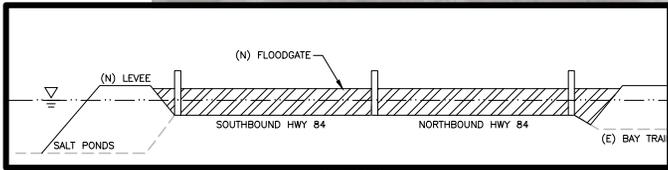
Hacker Way

940'

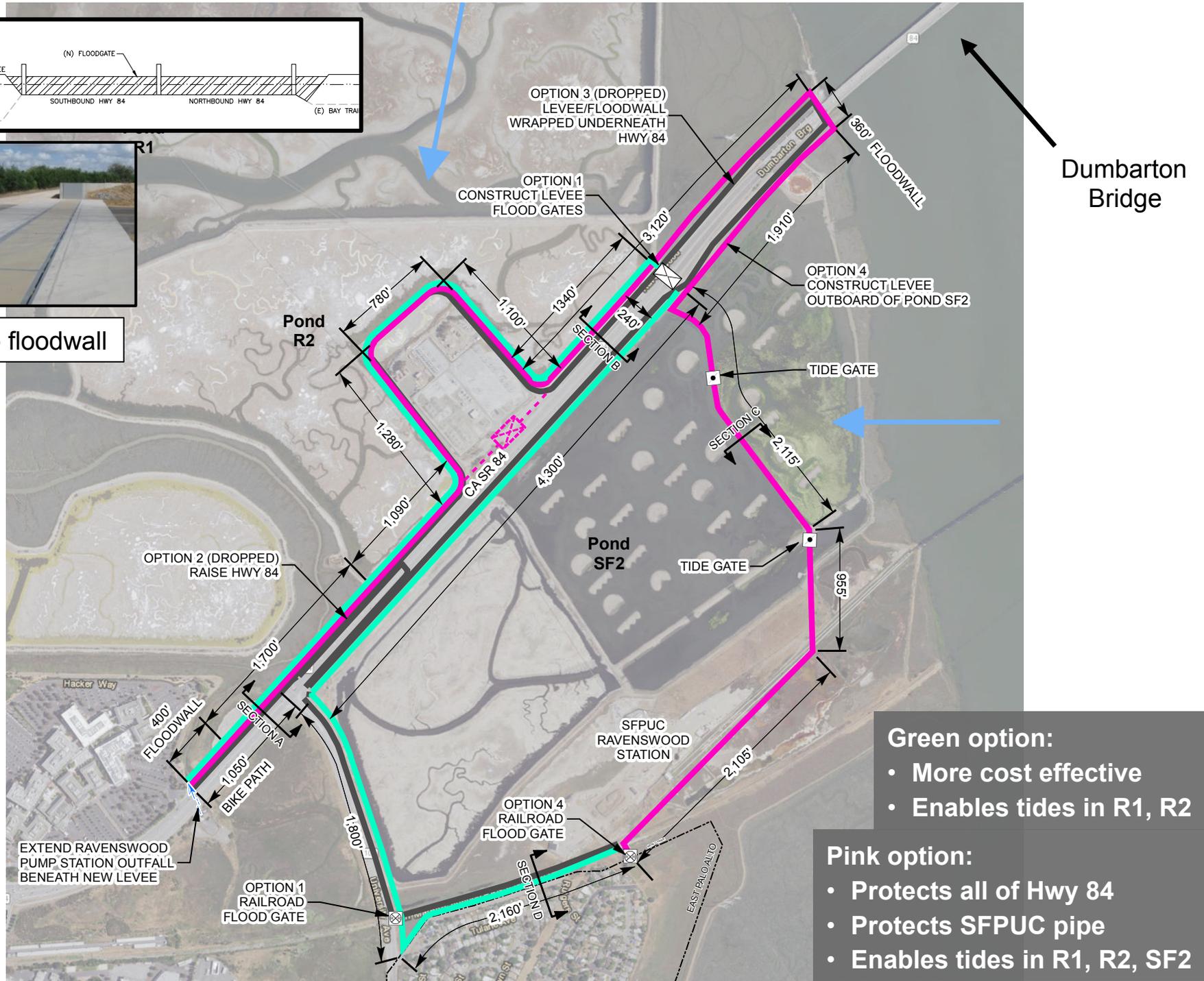
CALIFORNIA  
84

RAVENSWOOD PUMP STATION

Facebook HQ



Pop-up floodwall



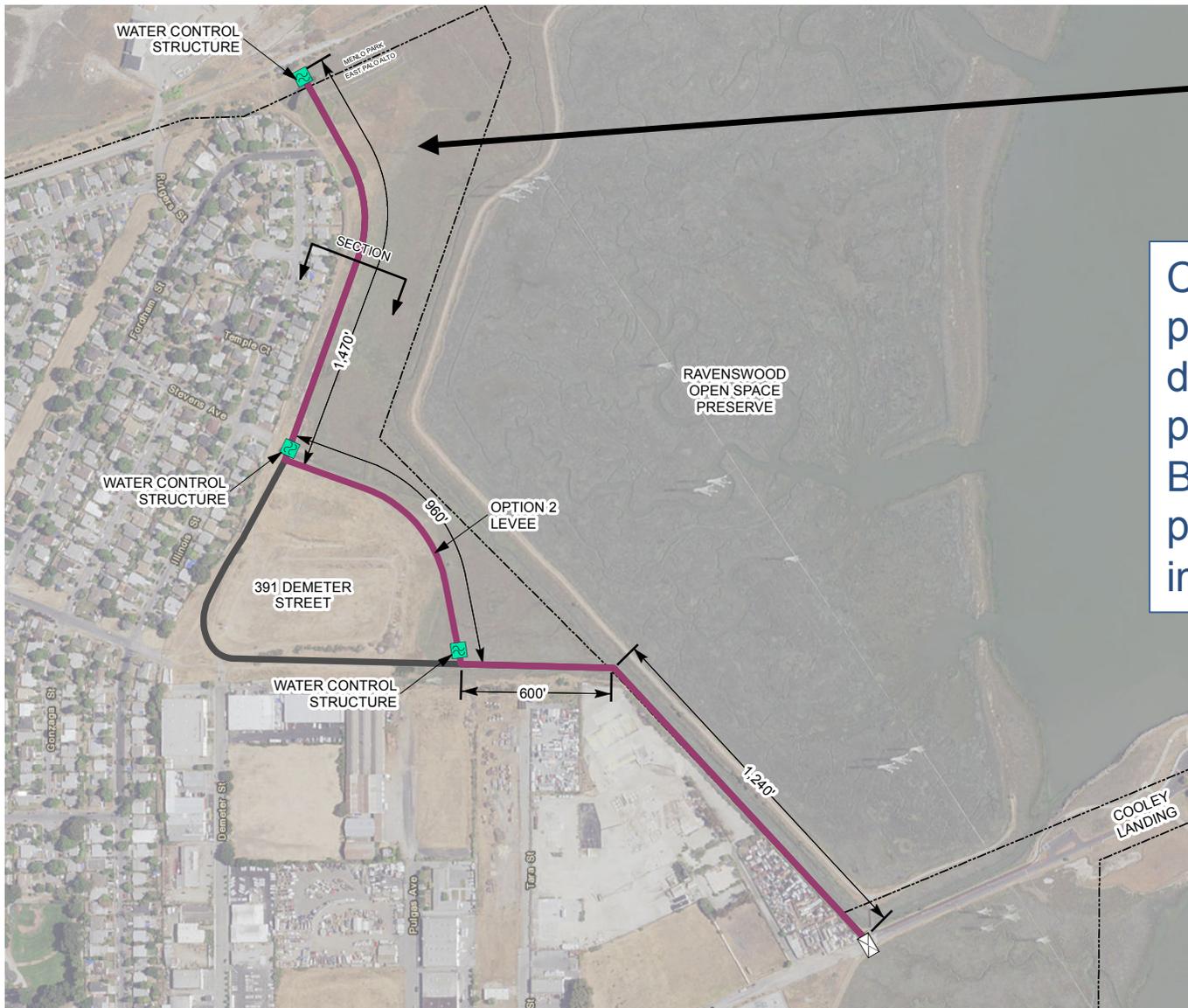
Dumbarton Bridge

**Green option:**

- More cost effective
- Enables tides in R1, R2

**Pink option:**

- Protects all of Hwy 84
- Protects SFPUC pipe
- Enables tides in R1, R2, SF2

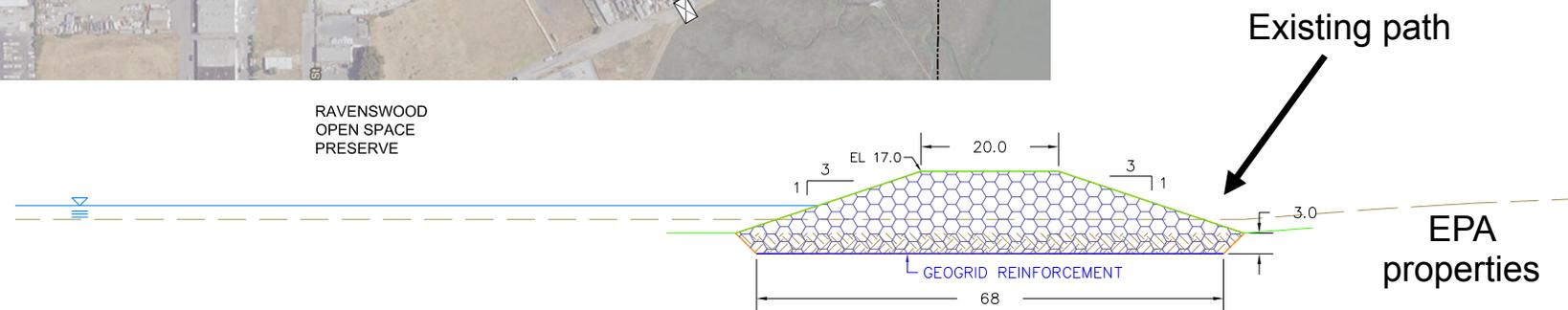


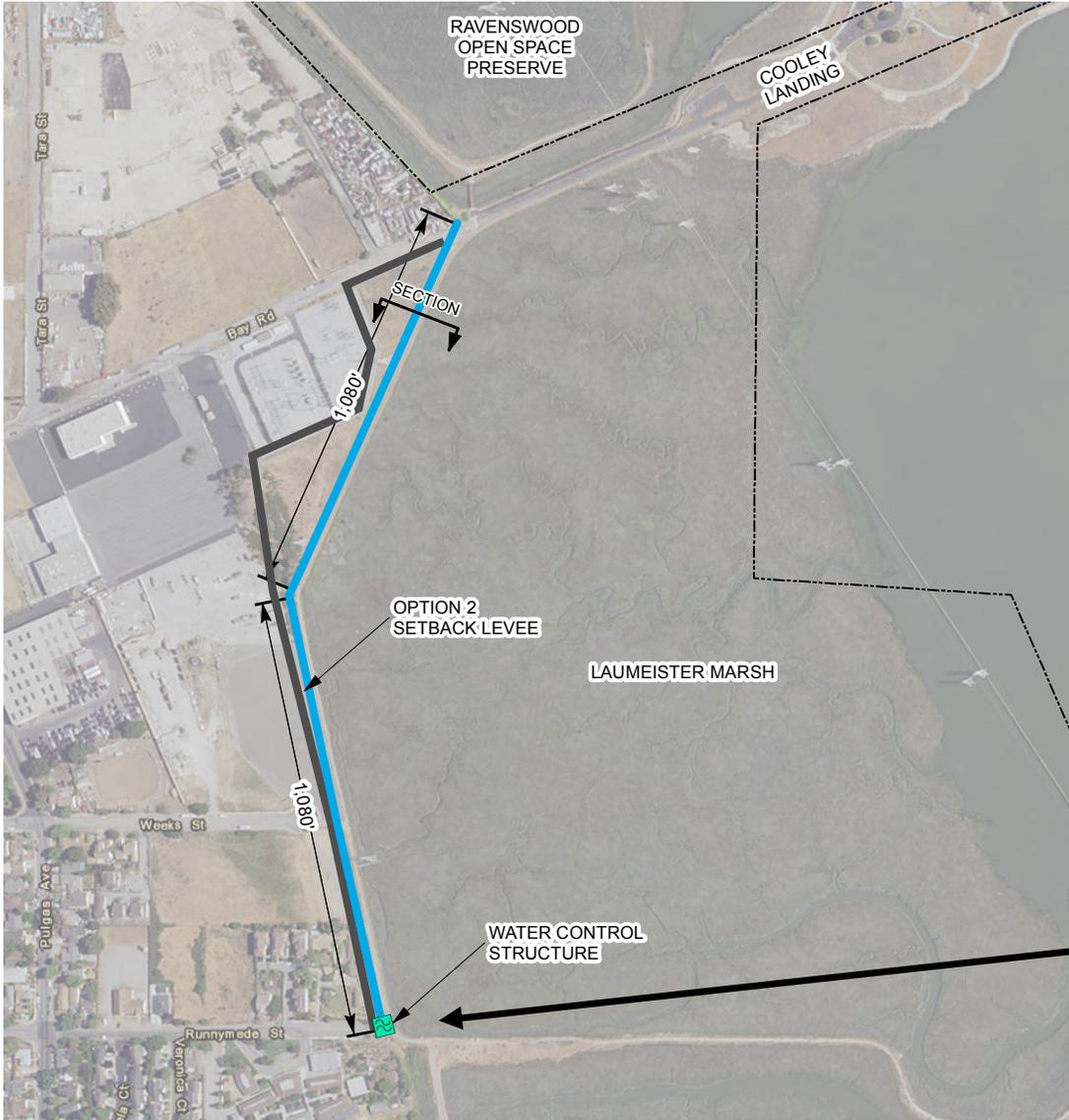
Fordham St.

Coordination with potential loop road, development of parcels north of Bay Road, and planned Bay Road improvements

Cooley Landing

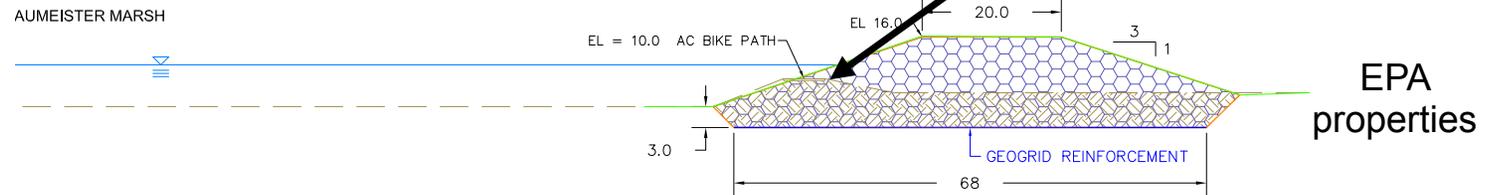
RAVENSWOOD OPEN SPACE PRESERVE

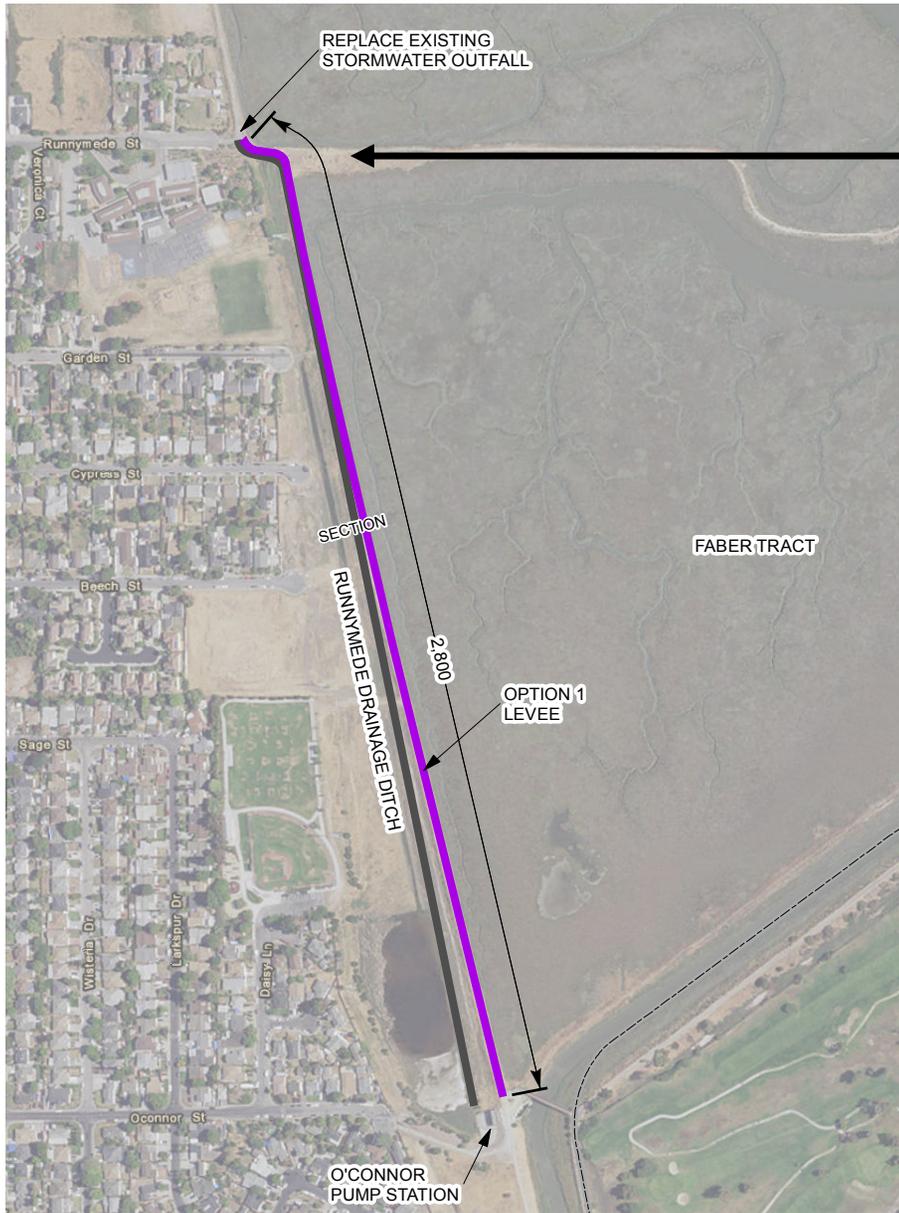




## Cooley Landing

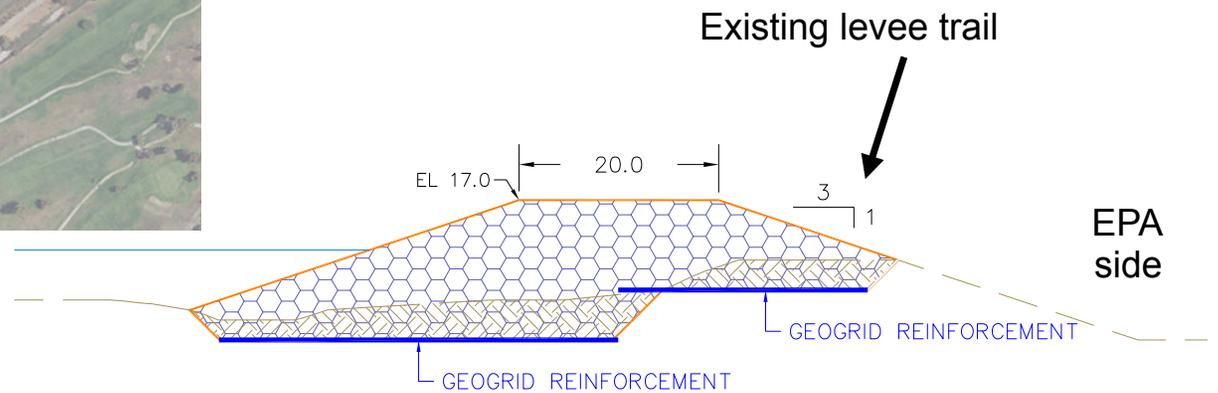
Coordination with development of parcels south of Bay Road and planned Bay Road improvements



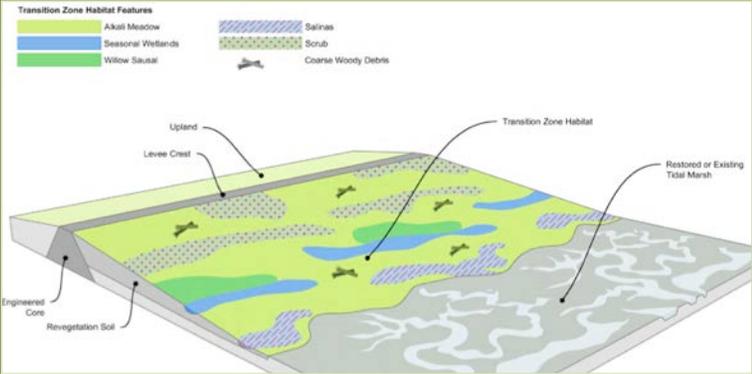


Runnymede St.

San Francisquito Creek

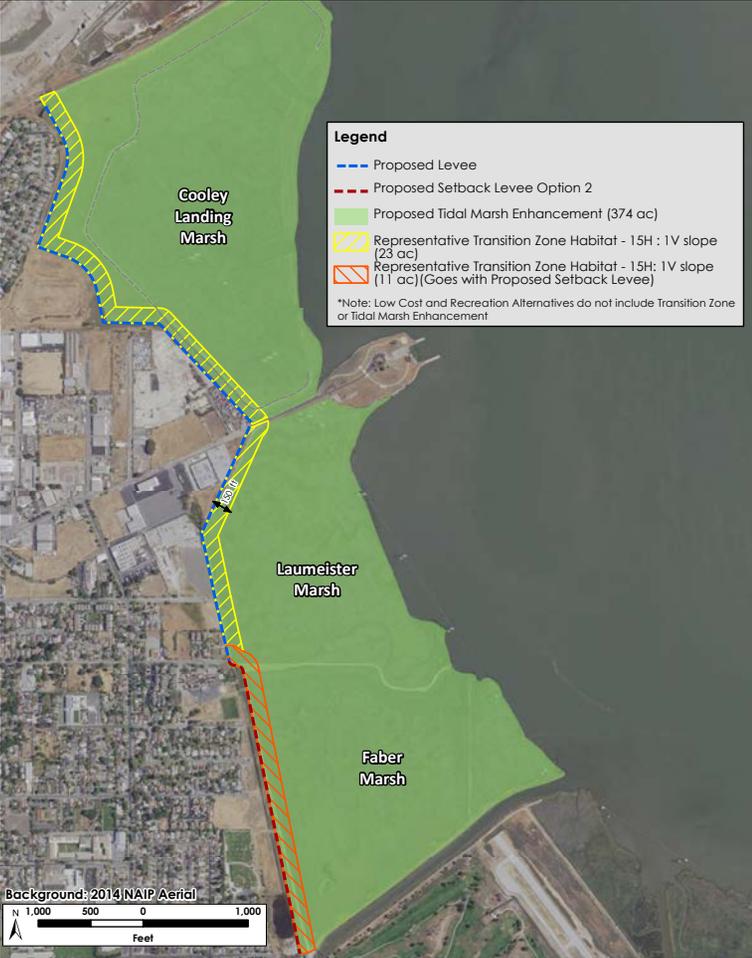
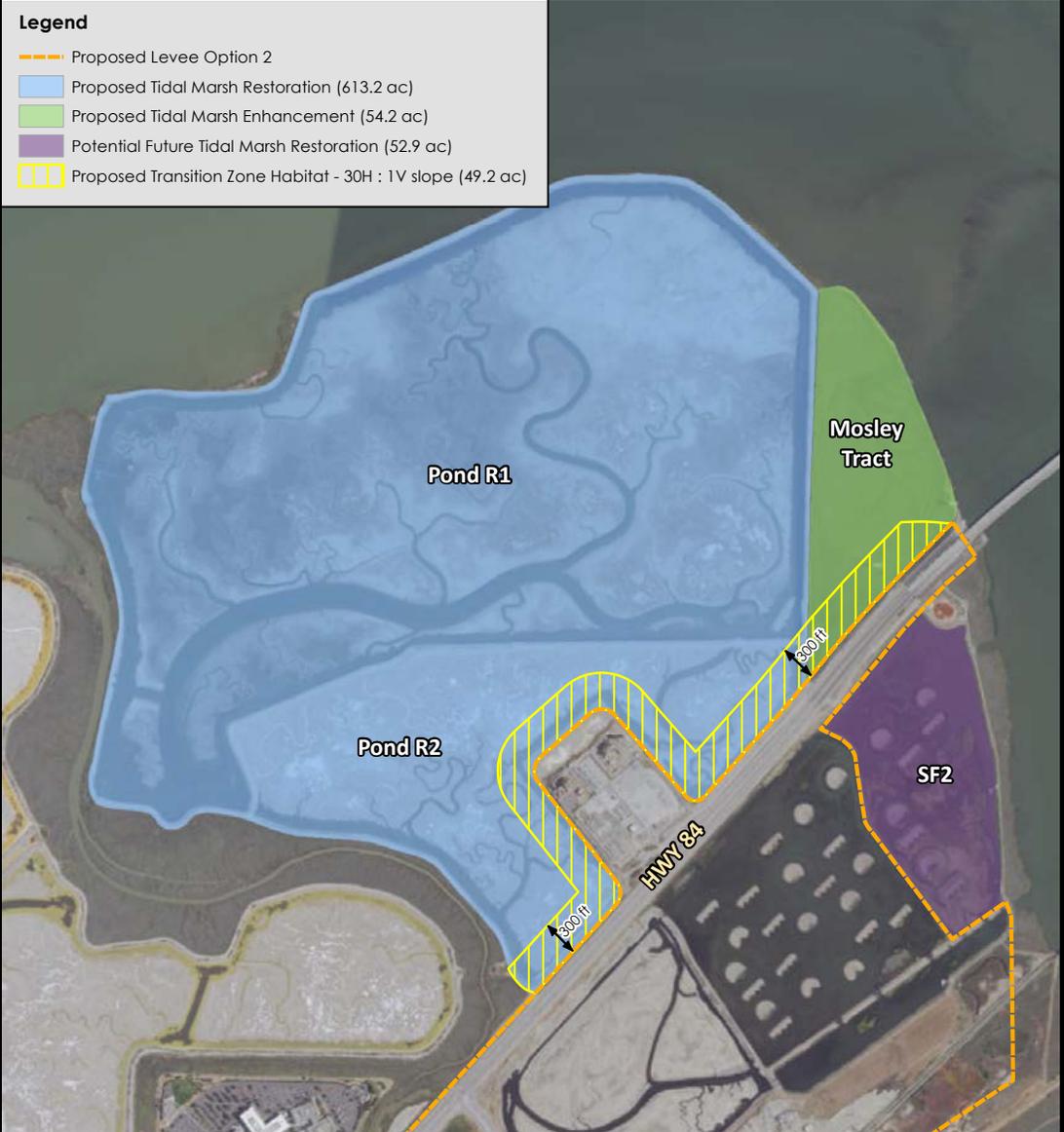


# Restoration Opportunities



**Legend**

- Proposed Levee Option 2
- Proposed Tidal Marsh Restoration (613.2 ac)
- Proposed Tidal Marsh Enhancement (54.2 ac)
- Potential Future Tidal Marsh Restoration (52.9 ac)
- Proposed Transition Zone Habitat - 30H : 1V slope (49.2 ac)





# SAFER Bay's anticipated schedule

- **2016 – Jan. 2017: Engage stakeholders, public presentations**
- **February 2017: Select preferred alternative, begin EIR of alternatives and design preferred alternative**
- **Late 2017: Public Draft of EIR released**
- **Late 2018: Complete EIR & design**
- **January 2019: Apply for permits**
- **2019: Secure construction & maintenance funding**



# Agency and public input

- **City Council meetings**
- **League of Women Voters public meetings**
- **Public EIR Scoping meetings**
- **Public Draft EIR meetings**
- **City staff review of administrative drafts**
- **Salt Pond Restoration Project Management Team**
- **Meetings with regulatory agencies**
- **BCDC working group**



# SAFER Bay's SMC-side funding approach

## ***Diverse assets protected require diverse funding sources***

### **Planning and design funding as of Dec. 2016 (\$2,000,000)**

- State of CA (\$1.32M) – Dept. Water Resources, Coastal Conservancy
- Cities of East Palo Alto and Menlo Park
- U.S. Fish & Wildlife Service
- Facebook, Inc.

### **Construction funding (feasibility level est. \$90-116M) potential sources**

- State of California, federal government
- S.F. Bay Restoration Authority
- Private sector
- Special tax or assessment district
- Community-wide aggregated flood insurance

# A closer look at Palo Alto



San Francisquito Creek Joint Powers Authority

**Thank you**

BCDC Bay Fill Policies Working Group 12.15.16



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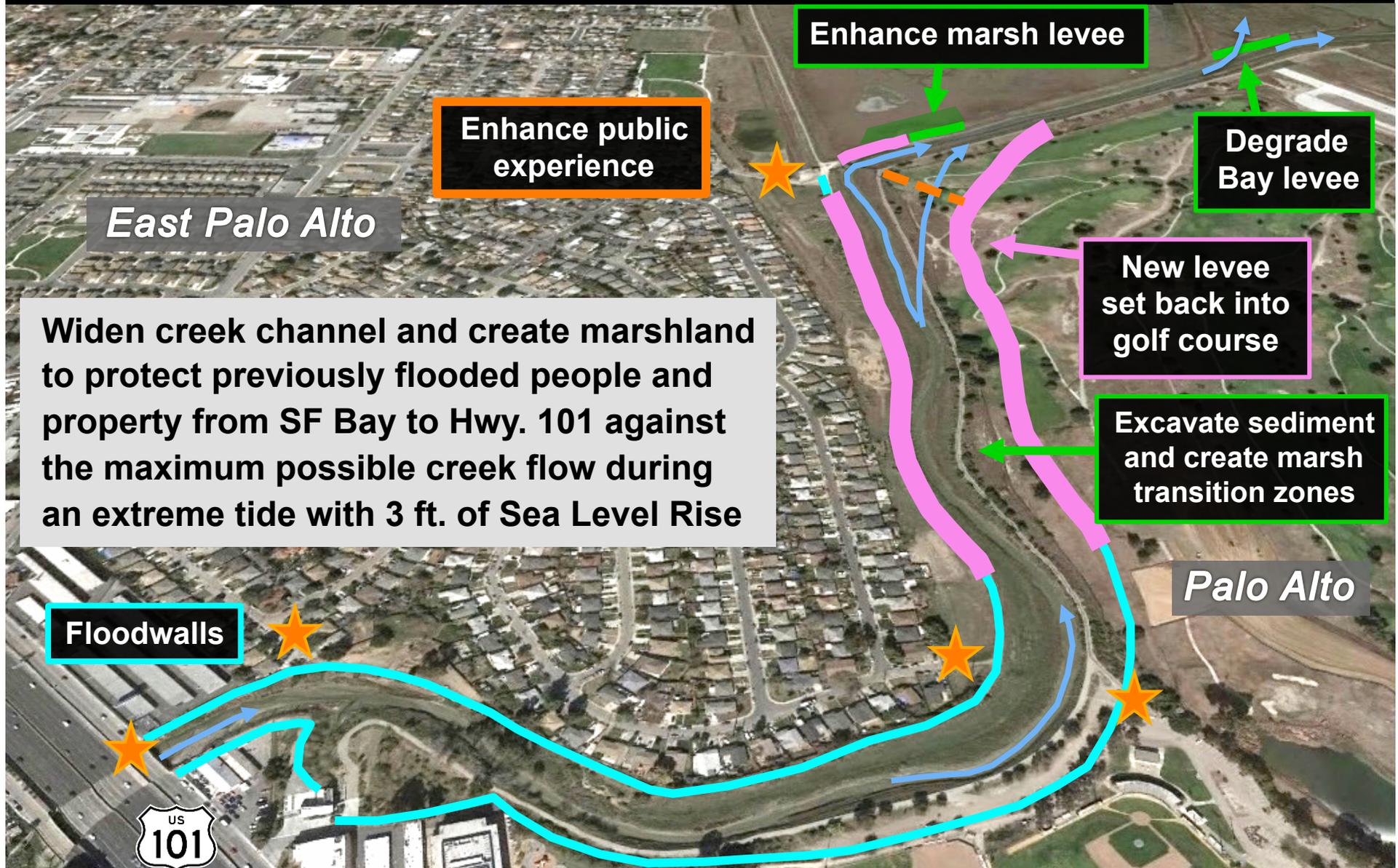
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# San Francisquito Creek divides and connects SAFER

## S.F. Bay-Highway 101 Project – Key Features & Benefits



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East Palo Alto

Enhance marsh levee

Enhance public experience

Degrade Bay levee

Widen creek channel and create marshland to protect previously flooded people and property from SF Bay to Hwy. 101 against the maximum possible creek flow during an extreme tide with 3 ft. of Sea Level Rise

New levee set back into golf course

Excavate sediment and create marsh transition zones

Palo Alto

Floodwalls



# Constraints of a project in the middle of SAFER

## *Restrictions on work due to endangered species*



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