Colma Creek Flood Control Zone Channel Improvement Project

San Mateo County Flood and Sea Level Rise Resiliency District &
County of San Mateo Department of Public Works

Property Owner Outreach Meeting: March 17, 2020

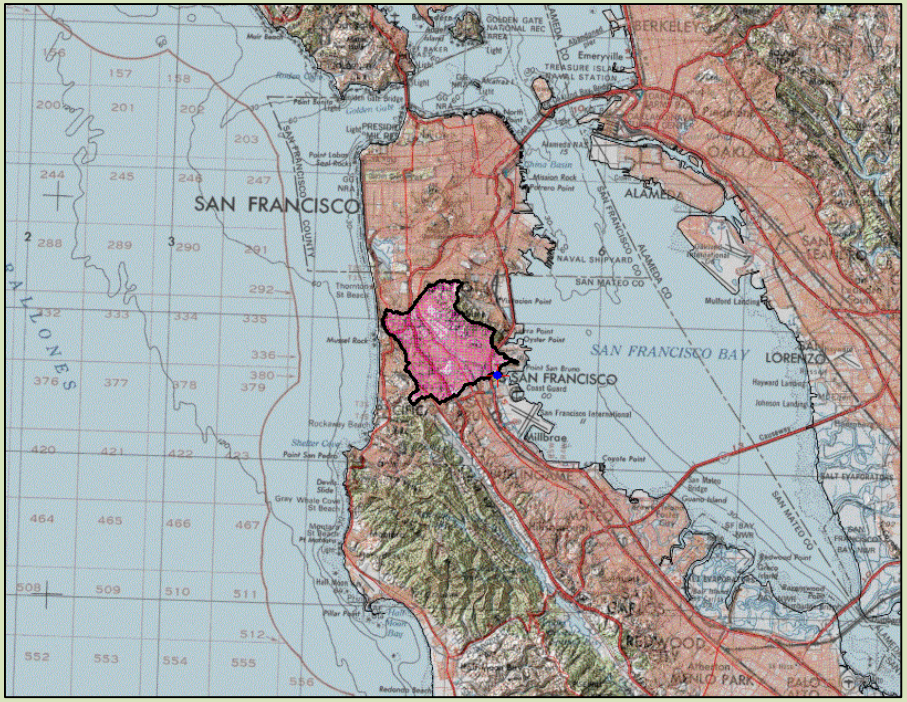
Meeting Agenda

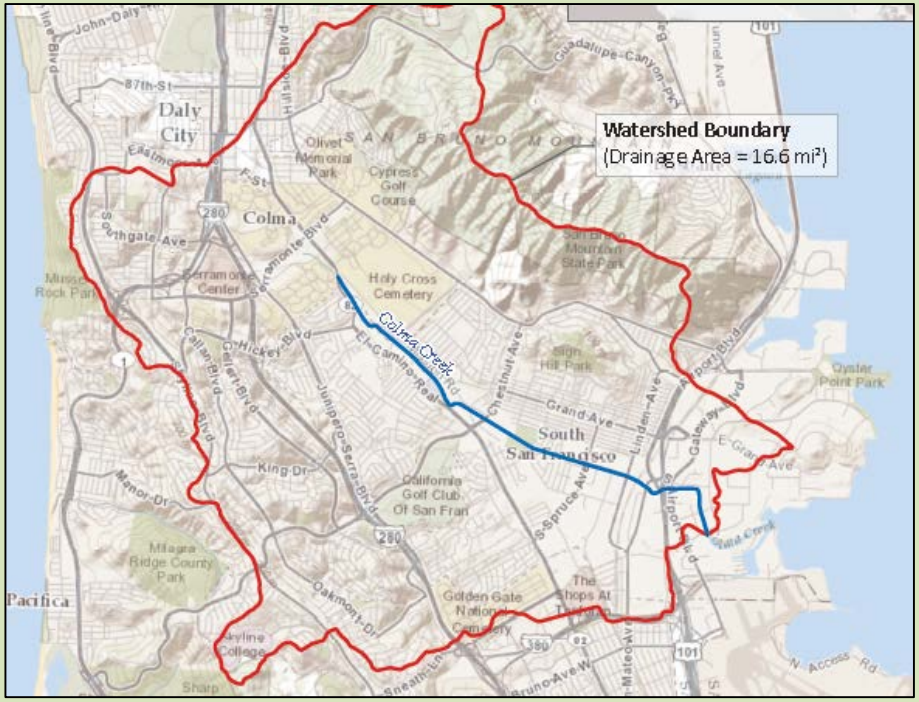
Colma Creek Flood Control Zone Channel Improvement Project
Property Owner Outreach Meeting: March 17, 2020

1. Introductions
2. Project Location and Background
3. Project Overview and Alternatives
4. Feedback and Comments

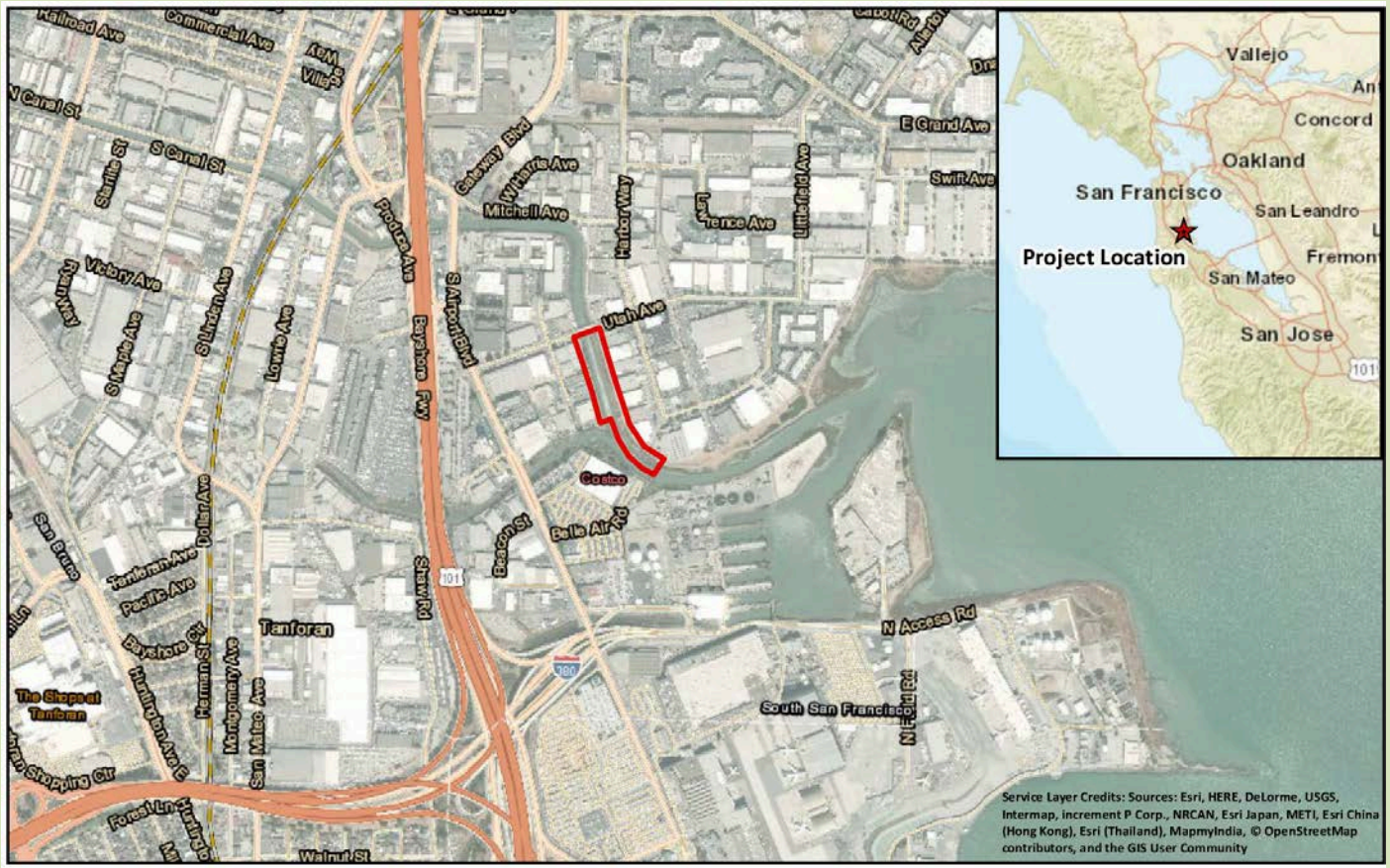
Colma Creek Flood Control Zone Setting

Formed in 1963





Project Location and Background



Project Vicinity

Colma Creek Flood Control Channel Improvement Project - Utah Avenue to Navigable Slough

South San Francisco, San Mateo County, California

Legend

Project Location

0 0.2 0.4 Miles

N

Background – Past Flooding

Harley Davidson Dealership parking lot

Looking toward Harley Davidson Dealership parking lot

Parking lot on west side of channel (close to Utah Ave)

From parking lot on west side of channel looking north toward Utah Ave

Background – Past Flooding

Parking lot on west side of channel (close to Utah Ave)

Parking lot on west side of channel (close to Utah Ave)

San Francisco Bay Trail pedestrian bridge – downstream end of project reach

Project Purpose and Overview

Project Purpose - Alleviate flooding effects to adjacent lands and structures, including commercial and industrial properties, at the downstream end of Colma Creek.

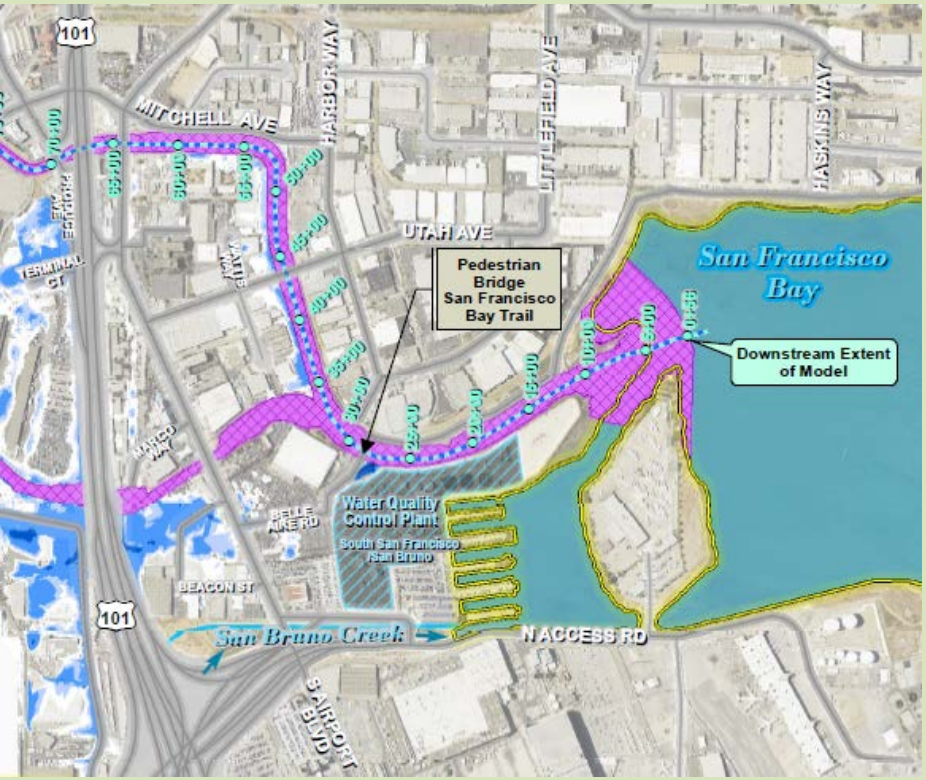
Project Objectives -

- Comply with or exceed Flood Control Zone's design criteria by conveying 50-year flow with 2' of freeboard.
- Ensure improvements meet FEMA's certification requirements.
- Meet FEMA's Hazard Mitigation Grant Program funding ($3 million) requirements by addressing increased flooding hazards due to sea level rise (for 40 years) by:
  - Conveying 100-year storm event under 100-year tidal and year 2060 sea level rise projections of 2.13 feet.
- Replace culverts conveying flow to Colma Creek flood control channel to restore their function, meet design standards, and regulate tidal water inflow.
- Ensure compatibility with other regional projects focused on addressing flood protection and sea level rise effects along Colma Creek.

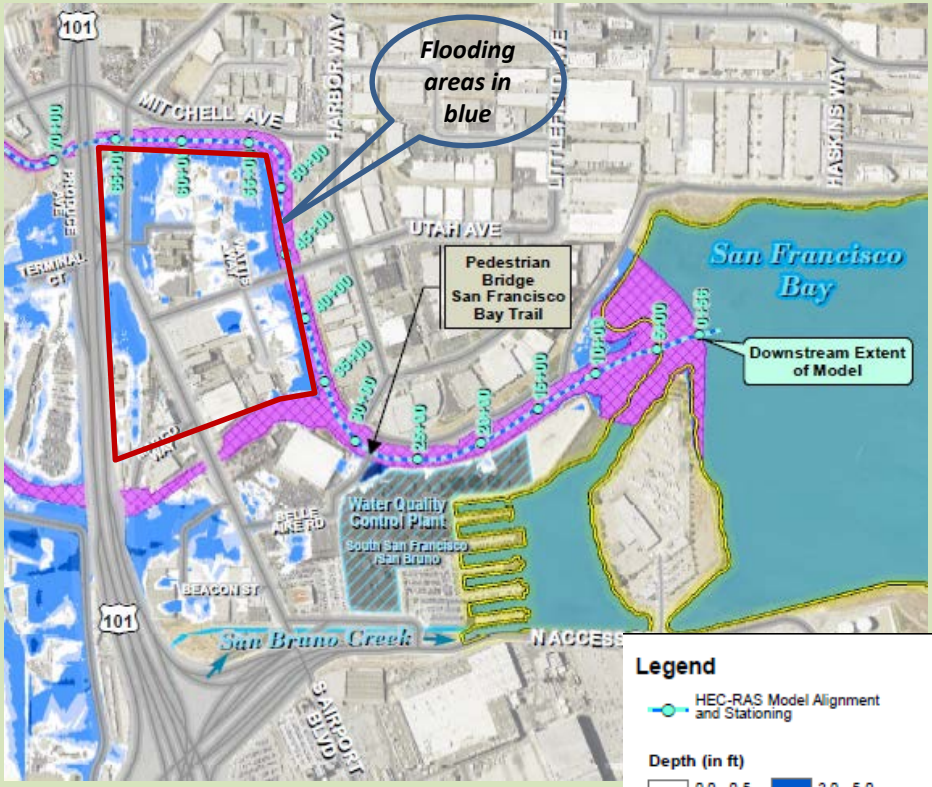
Hydraulic Modeling Results

No Project Inundation Extent –100-Year 12-hr Event Current State, 100-Year 12-hr Event with Sea Level Rise

100-Year Event



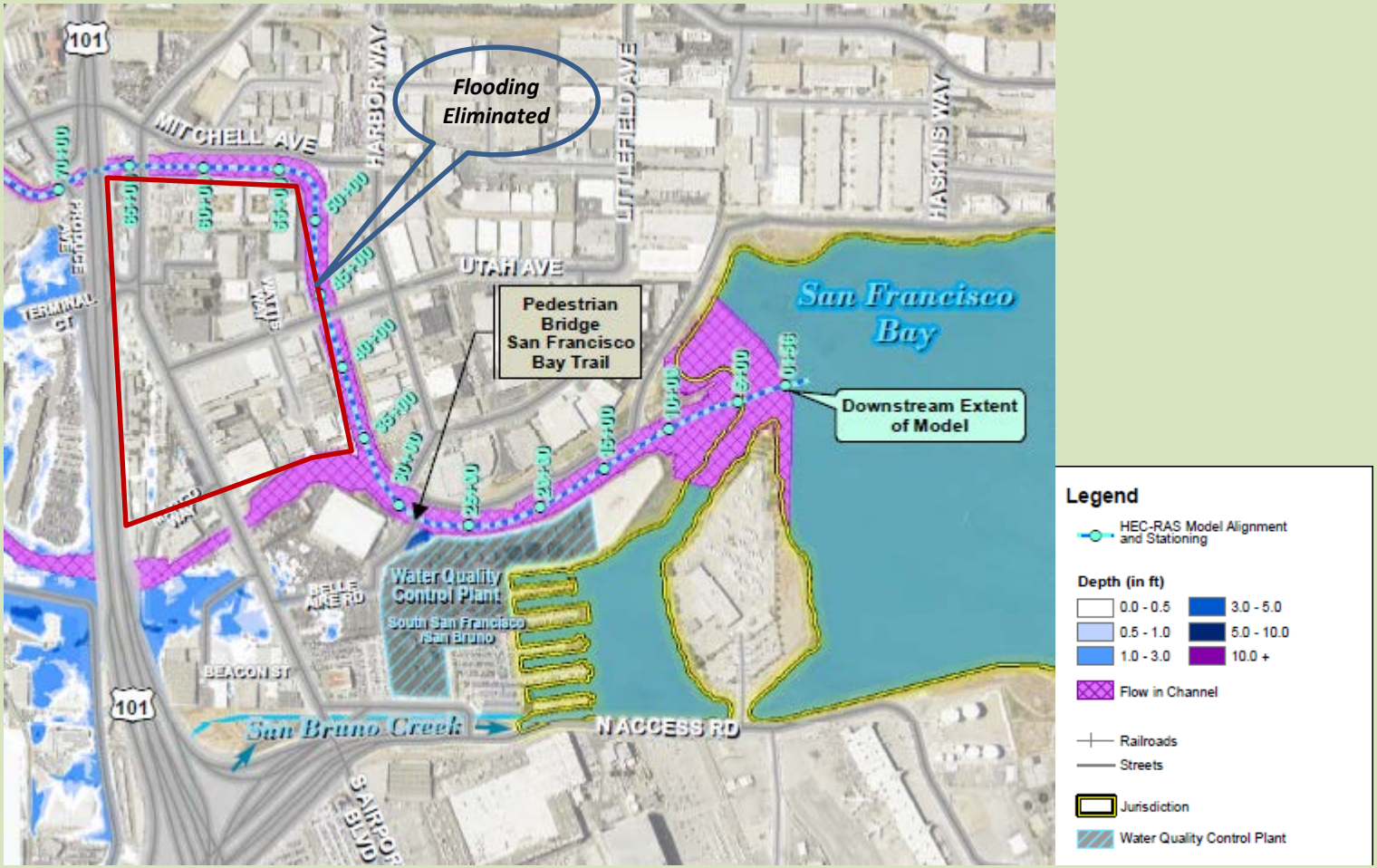
100-Year Event with Sea Level Rise



Source: County of San Mateo (2019). *Colma Creek Hydrology and Hydraulic Modeling Analysis*.

Hydraulic Modeling Results

Project Inundation Extent – 100-Year 12-hr Event, Current State, Utah Avenue-Navigable Slough Floodwall in Place



Source: County of San Mateo (2019). *Colma Creek Hydrology and Hydraulic Modeling Analysis*.

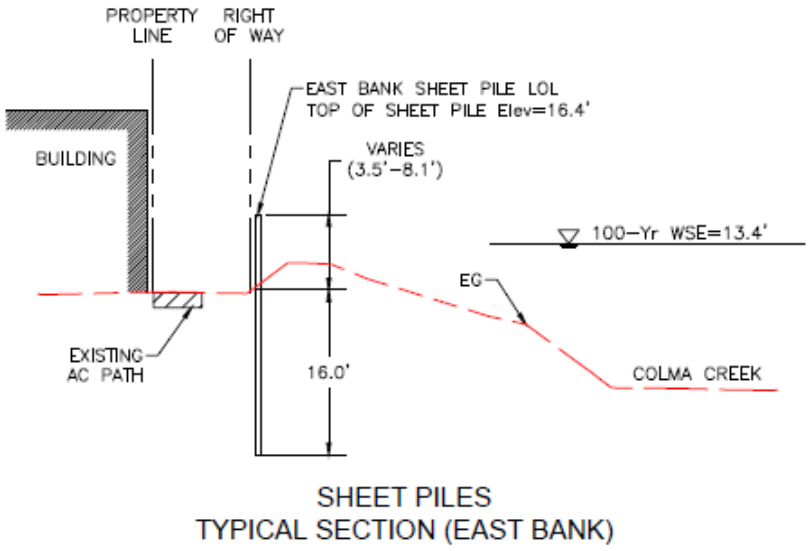
Project Alternatives

- Fiber reinforced (FRP) sheet pile walls (Preferred Project)
- Steel sheet pile walls
- Concrete sheet pile walls
- Earthen embankment

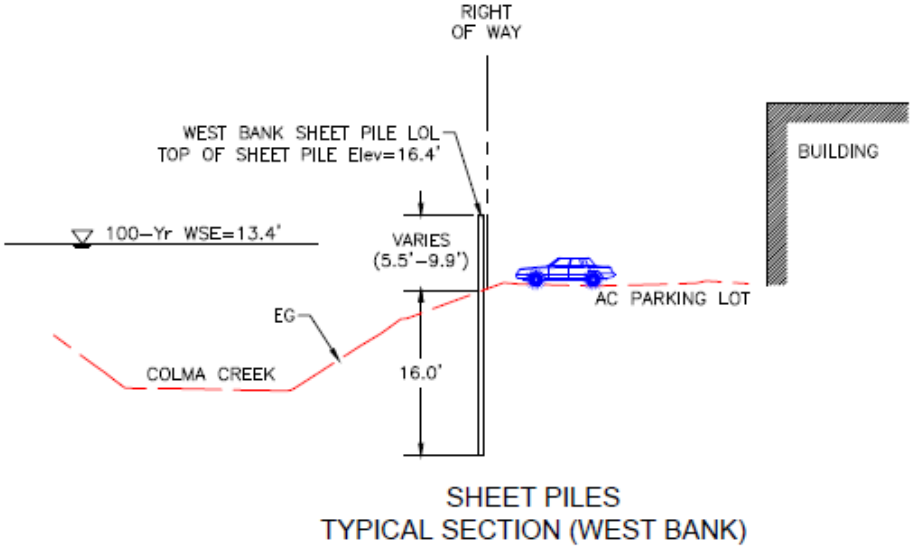
Project Overview – Preferred Project

- Fiber reinforced polymer (FRP) sheet pile walls
  - 820’ long wall on West side
  - 1,420’ long wall on East side
  - Wall Height:
    - West side – 8.8-9’ aboveground
    - East side – 4.7-6.8’ aboveground
  - 3 Access Gates –
    - One 4’ wide gate on West side
    - Two 12’ wide gate on East side
- Repair/replace 11 culverts with rock slope protection beneath outfalls
- Plexiglass wall along Utah Avenue bridge (downstream side) – 140’ long, 2.4’ aboveground

Sheet Pile Walls



SHEET PILES
TYPICAL SECTION (EAST BANK)



SHEET PILES
TYPICAL SECTION (WEST BANK)

Source: WRECO 2020

Comparison of Sheet Pile Wall Alternatives

Sheet Pile Wall Alternatives	Advantages	Disadvantages
FRP	Lightweight, long life span, cost-effective, retains existing habitat mitigation site, involves less noisy construction equipment	None
Steel	Lightweight	Susceptible to corrosion, greater construction and maintenance costs
Concrete	Require little maintenance	Heavier in weight, larger excavation footprint for foundation, eliminate existing habitat mitigation site, greater construction and mitigation costs

FRP Sheet Piles – Rendering on East Side

Source: WRECO 2019

FRP Sheet Piles – Rendering on West Side

Source: WRECO 2019

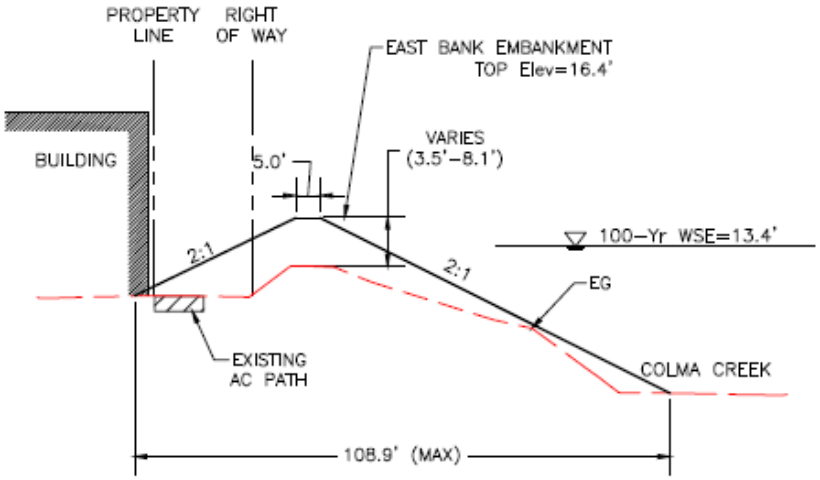
FRP Sheet Piles – Rendering on West Side Parking Lot

Source: WRECO 2019

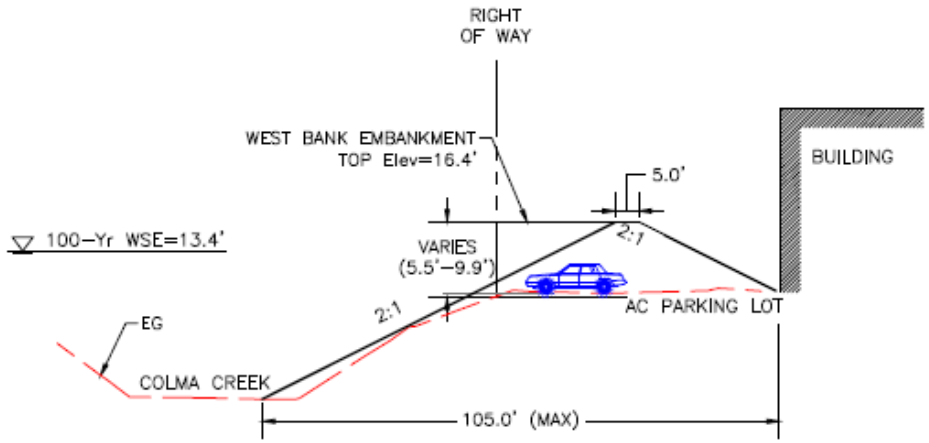
Plexiglass - Rendering at Utah Ave Bridge

Source: WRECO 2019

Earthen Embankment Alternative



EARTHEN EMBANKMENT
TYPICAL SECTION (EAST BANK)



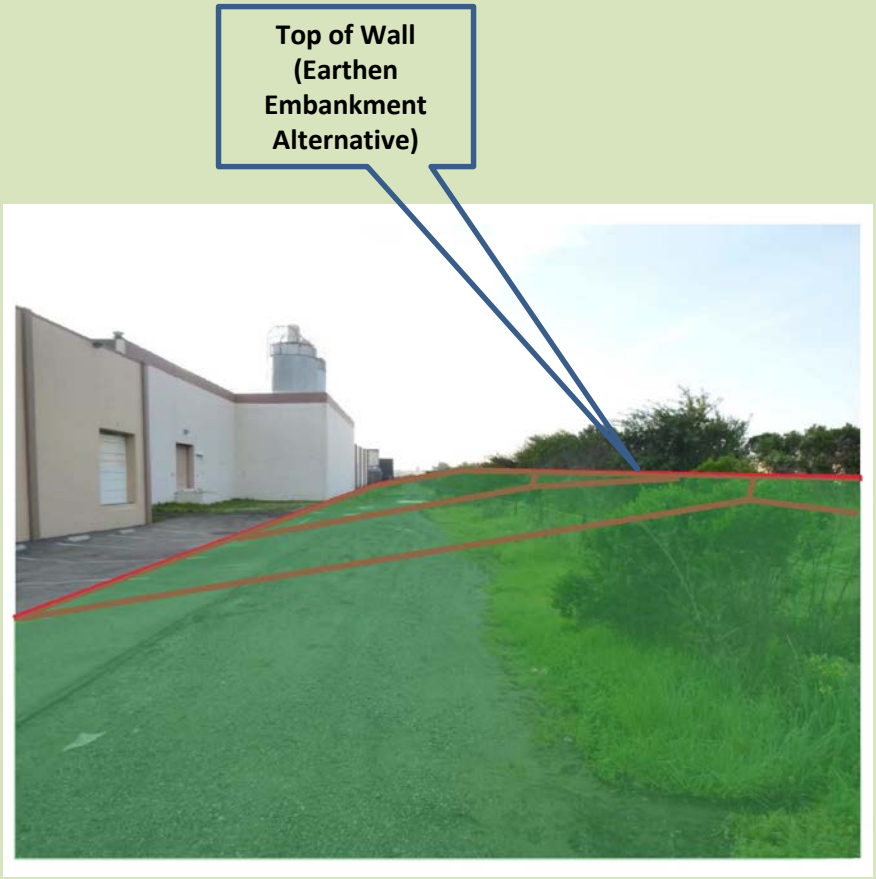
EARTHEN EMBANKMENT
TYPICAL SECTION (WEST BANK)

Source: WRECO 2020

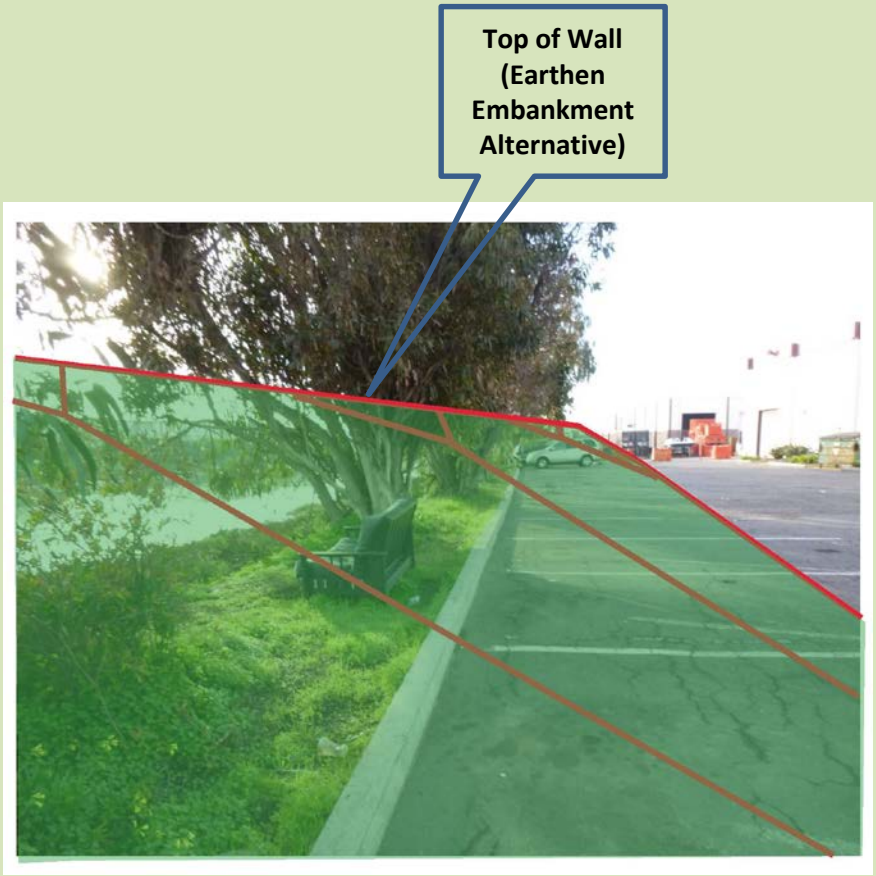
Earthen Embankment Alternative -
Approximate Dimensions at Utah Ave looking downstream

Source: WRECO 2020

Earthen Embankment Alternative -
Approximate Dimensions of Berm at Parking lot on West side of Channel and East Side of Channel



East Bank



West Bank

Source: WRECO 2020

Feedback and Comments

Horizon
WATER and ENVIRONMENT