



Valley Water

Clean Water • Healthy Environment • Flood Protection





Palo Alto Flood Basin Tide Gate Structure Replacement

June 24th, 2020 Virtual Public Meeting
Project website: www.valleywater.org/pafbtidegates

Meeting Agenda

✓ **5:30 PM** – Introduction – Melanie Richardson

Zoom Webinar Orientation – Albert Le

✓ **5:35 PM** – Welcoming – Director Gary Kremen

✓ **5:40 PM** – Project Presentation by Roger Narsim, Robert Yamane,
& Alex Hunt

✓ **6:10 PM** – Question & Answer Session

Presenters



Gary Kremen

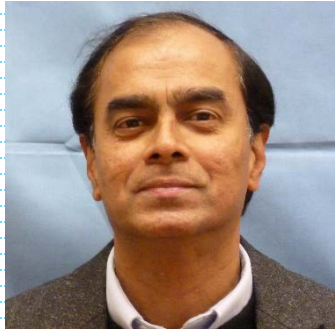
Valley Water Board Director

District 7



Melanie Richardson, P.E.

Chief Operating Officer



**Roger Narsim, P.E., P.L.S.,
Assoc. DBIA**

Capital Engineering Manager



**Robert Yamane, P.E.,
QSD/QSP**

Associate Civil Engineer



Alex Hunt

Associate Environmental Planner



Albert Le

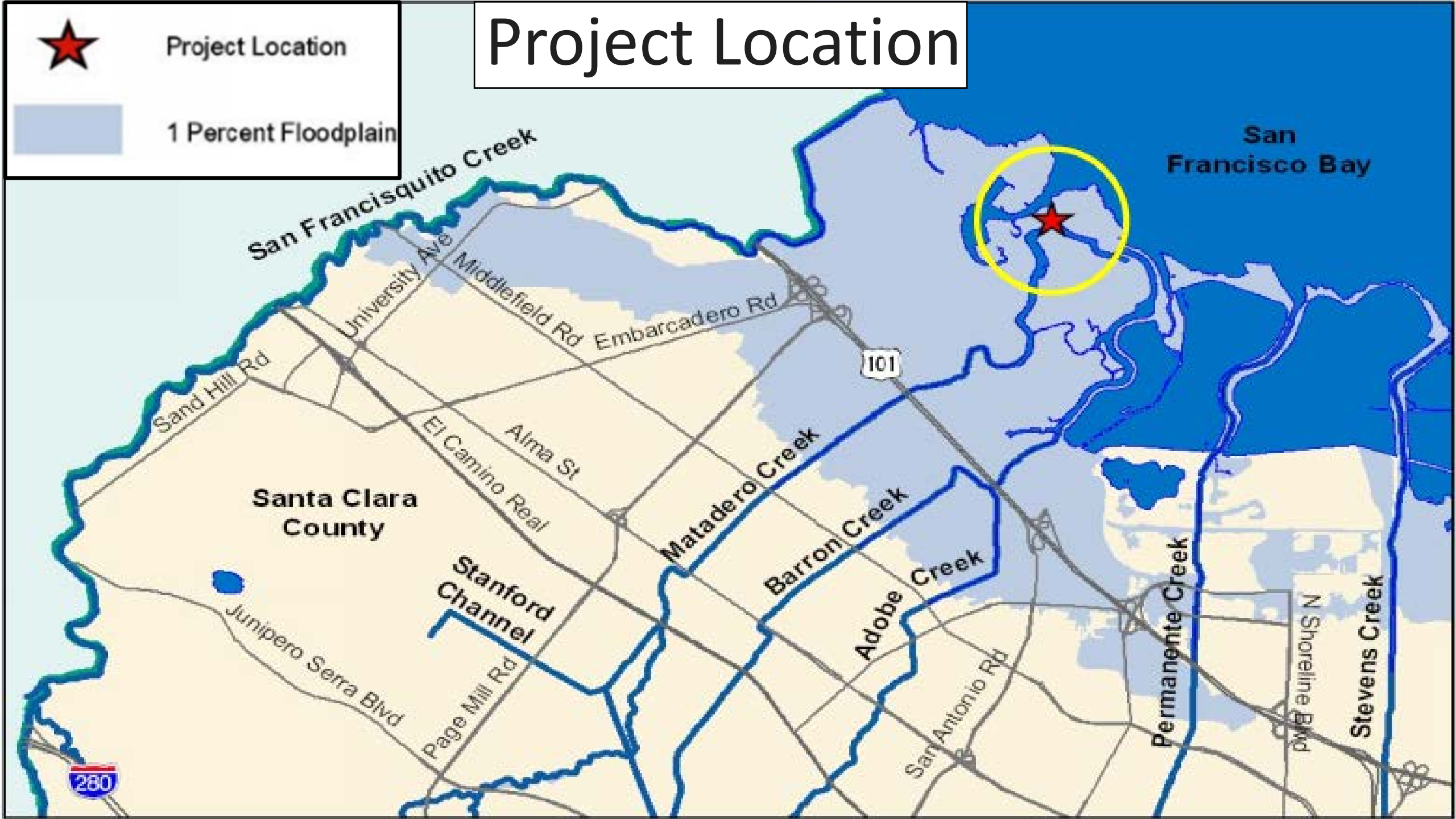
Public Information Representative



Project Location

1 Percent Floodplain

Project Location





Palo Alto Flood Basin Tide Gate Structure Project Location

San Francisco Bay

San Francisquito Creek

Palo Alto Duck Pond

Palo Alto Flood Basin

Mayfield Slough

Matadero Creek

HWY 101

Barron Creek

Coast Casey Pump Station

Permanente Creek

Adobe Creek

Shoreline Lake

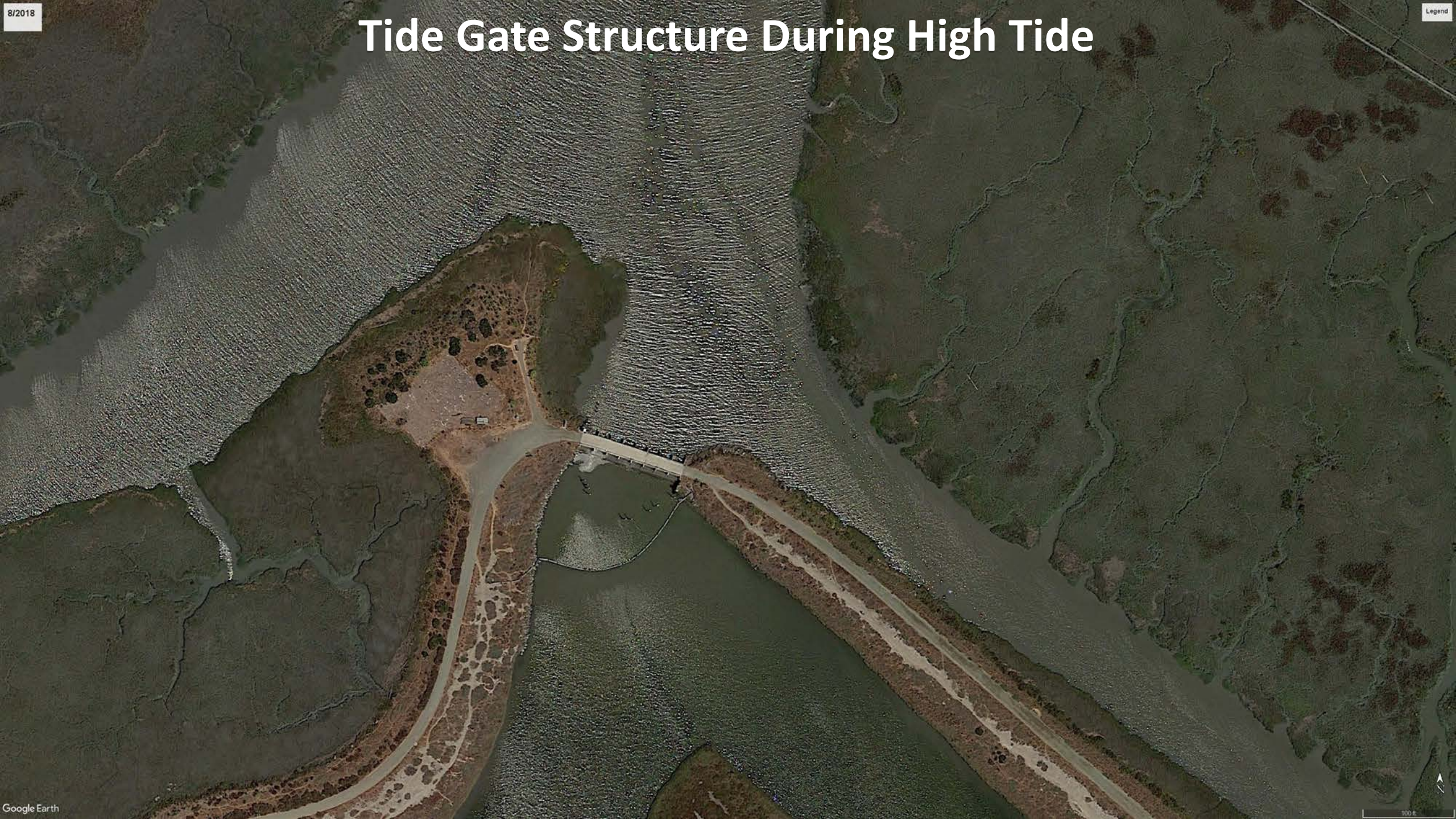
Virtual tour to tide gate structure along Adobe Creek Loop Trail



Video showing 360 degree view from the Tide Gate Structure.



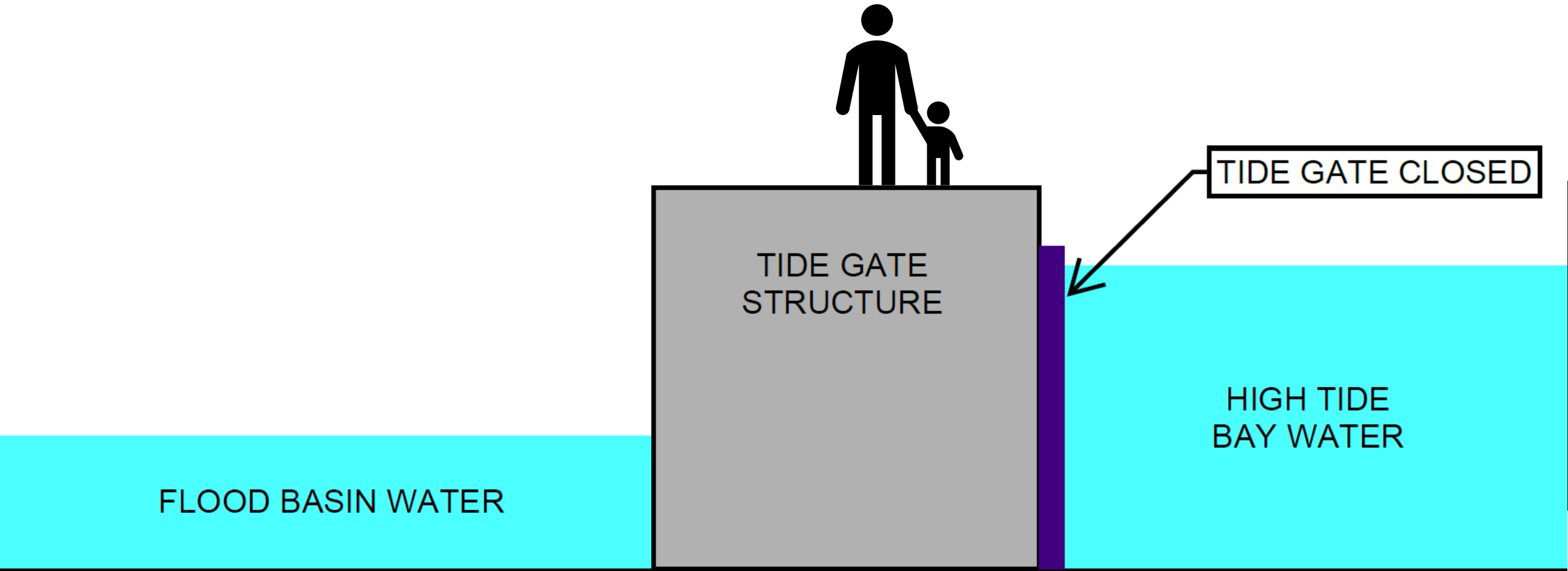
Tide Gate Structure During High Tide



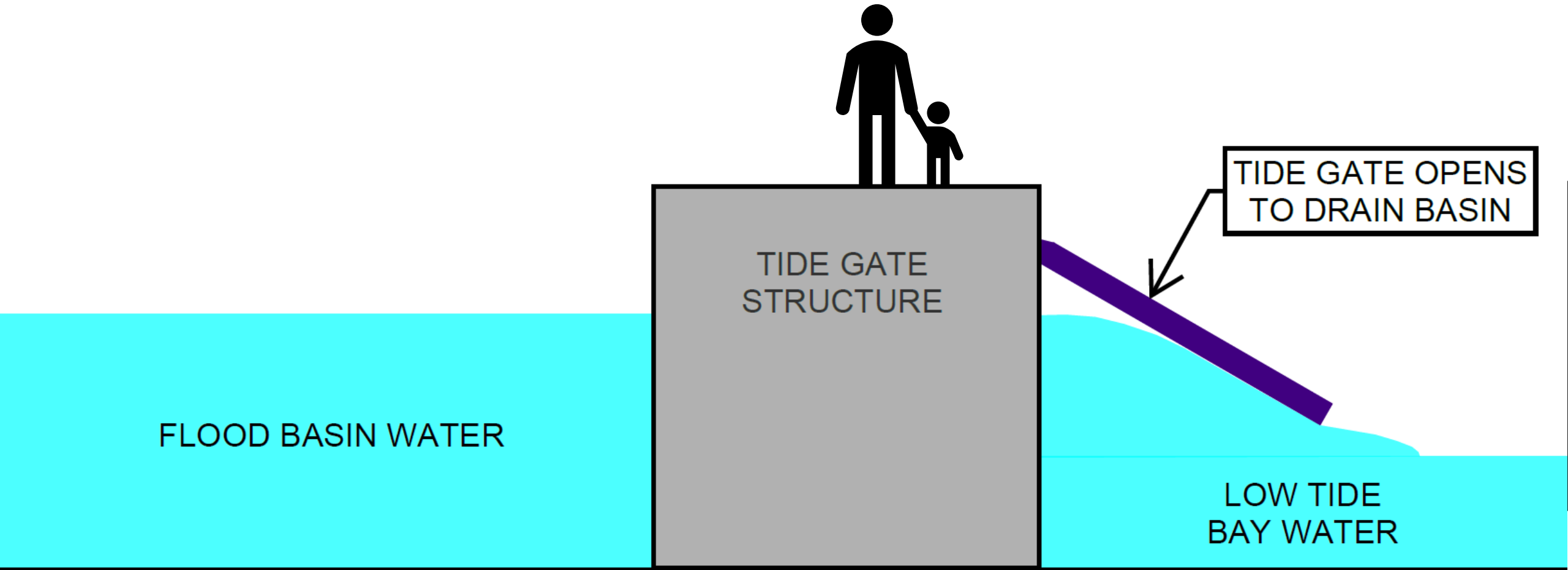
Tide Gate Structure During Low Tide



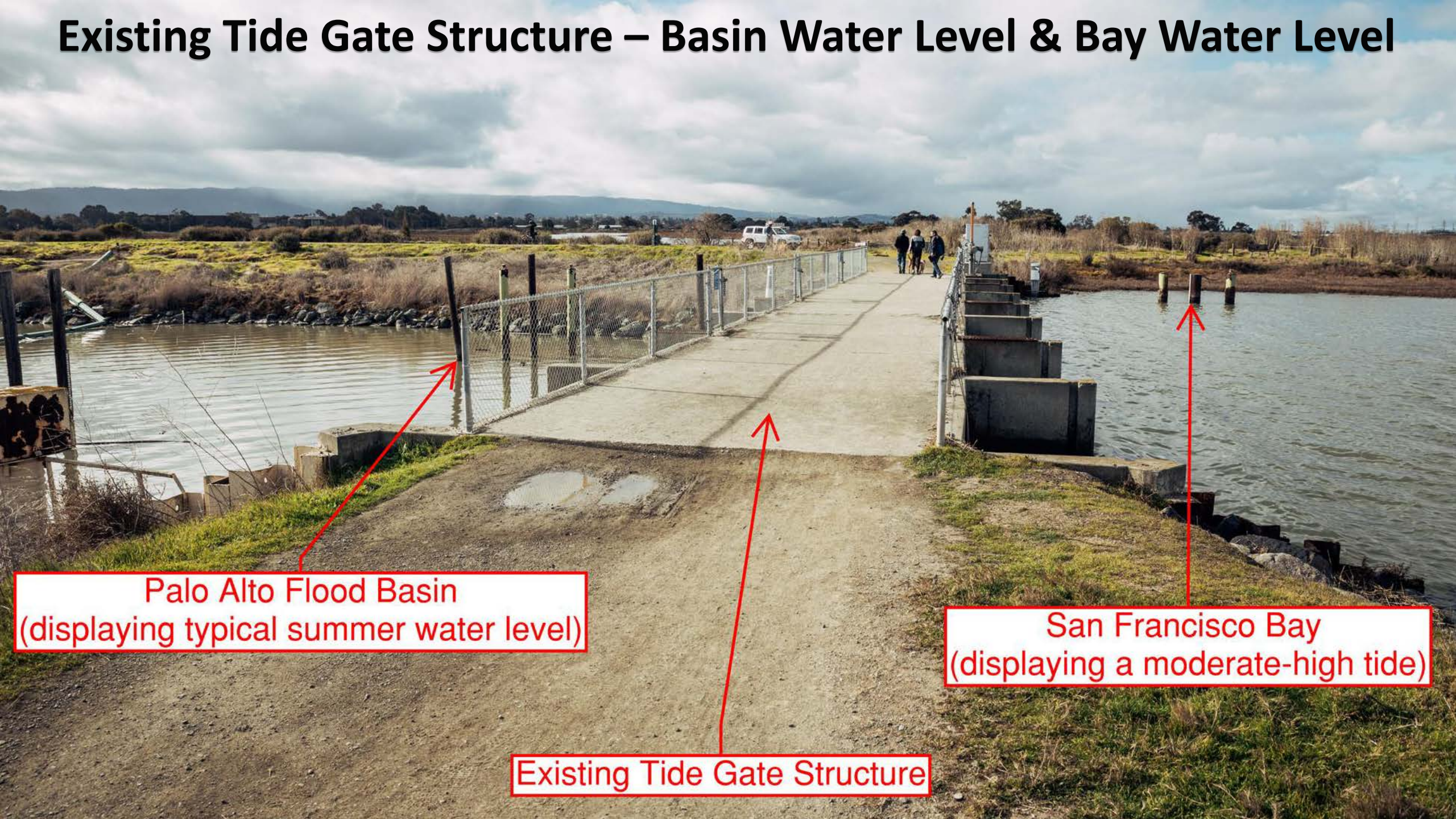
How Does the Tide Gate Work?



How Does the Tide Gate Work?



Existing Tide Gate Structure – Basin Water Level & Bay Water Level



Palo Alto Flood Basin
(displaying typical summer water level)

San Francisco Bay
(displaying a moderate-high tide)

Existing Tide Gate Structure

Background



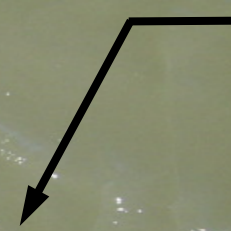
- Tide gate structure constructed in 1957 by Santa Clara County Flood Control & Water Conservation District, Santa Clara County, and City of Palo Alto
- Palo Alto Flood Basin (PAFB) controls water levels for Adobe, Barron, and Matadero creeks
- The PAFB levees and tide gate structure protect against coastal flooding.

Recent Timeline

- **2011** – Significant seepage under tide gate structure discovered
- **2012** – Seepage worsened. Emergency seepage repairs performed.
- **2017** – Tide Gate Structure concrete repairs were attempted but unsuccessful
- **2018** – Capital project goal changed to “structure replacement”
- **2018 & 2019** – Data gathering & modeling
- **2020** – Preliminary design ongoing

2012 Seepage Photo

Vortex at Bay Side



W:122°06'03.69"
N:037°27'20.59"

2012 Seepage Photo



Water bubbling up in the Basin

Tide Gate Structure Current Condition

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Spalled concrete and corroded reinforcement steel



Existing Tide Gates



Tide Gate Structure Current Condition



Conceptual Options

- A. No action
- B. Replace tide gate structure in existing location (SAFER Bay Option 1)
- C. Replace tide gate structure adjacent to existing tide gate on levee (SAFER Bay Option 1)
- D. Replace tide gate structure in new location further east along levee (SAFER Bay Option 1)
- E. Remove tide gate structure and build up inner levees & flood walls along Matadero, Barron, and Adobe Creeks (SAFER Bay Option 2)
- F. Replace tide gate structure nearby on new alignment (SAFER Bay Option 1)



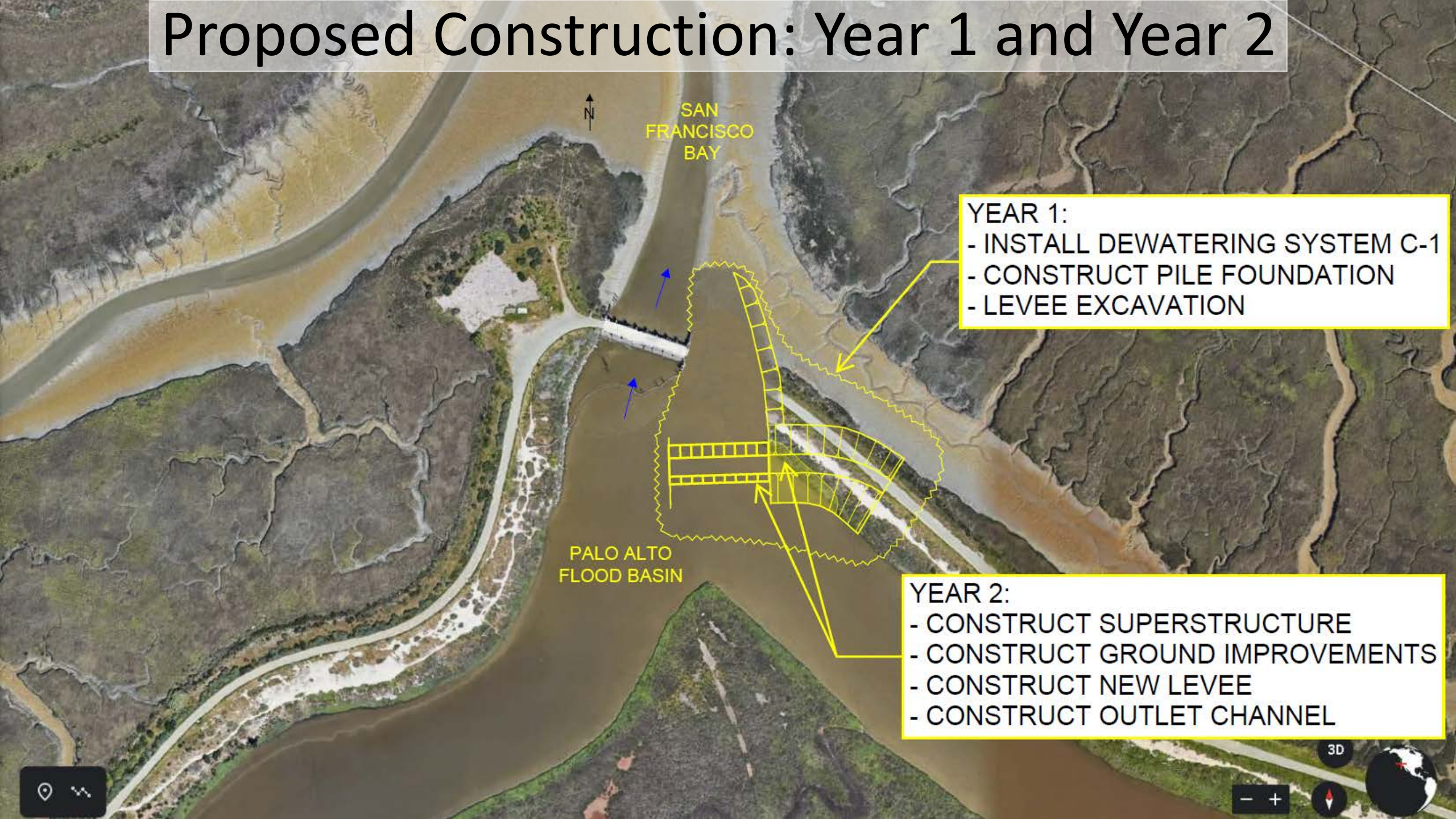
Option A: “No Action”

- 63-year old structure: structural & hydraulic deficiencies
- Maintenance is problematic and costly
- Seismic vulnerabilities
- Leaking tide gates
- Spalled concrete and corroded steel reinforcement
- No adaptation for future Sea Level Rise
- Regular coastal flooding from a failed tide gate structure could flood approximately 400 to 700 parcels and Highway 101
- A failed tide gate structure would close the trail indefinitely

Proposed Project: Option F

- Continued coastal and creek flood protection
- Continued protection of existing basin habitat
- Construction: 4 Years (Sept. 1st – Jan. 31st)
- Accommodate 2' of future Sea Level Rise
- Temporary trail closure for 41 months
- New tide gate structure 5 feet higher than existing structure
- New tide gates and sluice gate will be more efficient than existing gates for improved operations & maintenance
- Reduced frequency of maintenance
- Project preliminary cost estimate – \$33 Million

Proposed Construction: Year 1 and Year 2



SAN FRANCISCO BAY

PALO ALTO FLOOD BASIN

- YEAR 1:**
- INSTALL DEWATERING SYSTEM C-1
 - CONSTRUCT PILE FOUNDATION
 - LEVEE EXCAVATION

- YEAR 2:**
- CONSTRUCT SUPERSTRUCTURE
 - CONSTRUCT GROUND IMPROVEMENTS
 - CONSTRUCT NEW LEVEE
 - CONSTRUCT OUTLET CHANNEL



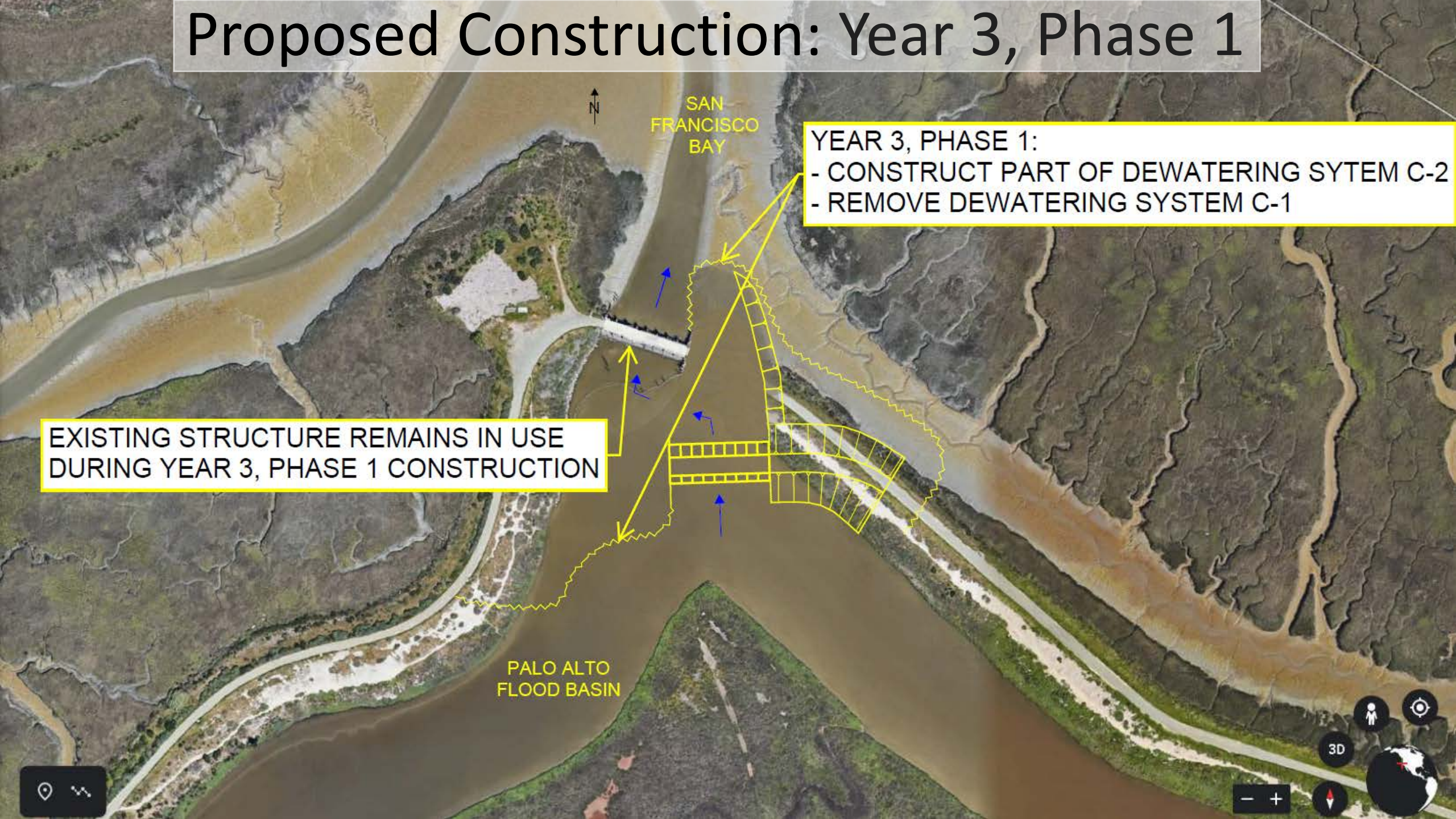
Proposed Construction: Year 3, Phase 1

SAN FRANCISCO BAY

YEAR 3, PHASE 1:
- CONSTRUCT PART OF DEWATERING SYTEM C-2
- REMOVE DEWATERING SYSTEM C-1

EXISTING STRUCTURE REMAINS IN USE DURING YEAR 3, PHASE 1 CONSTRUCTION

PALO ALTO FLOOD BASIN



Proposed Construction: Year 3, Phase 2

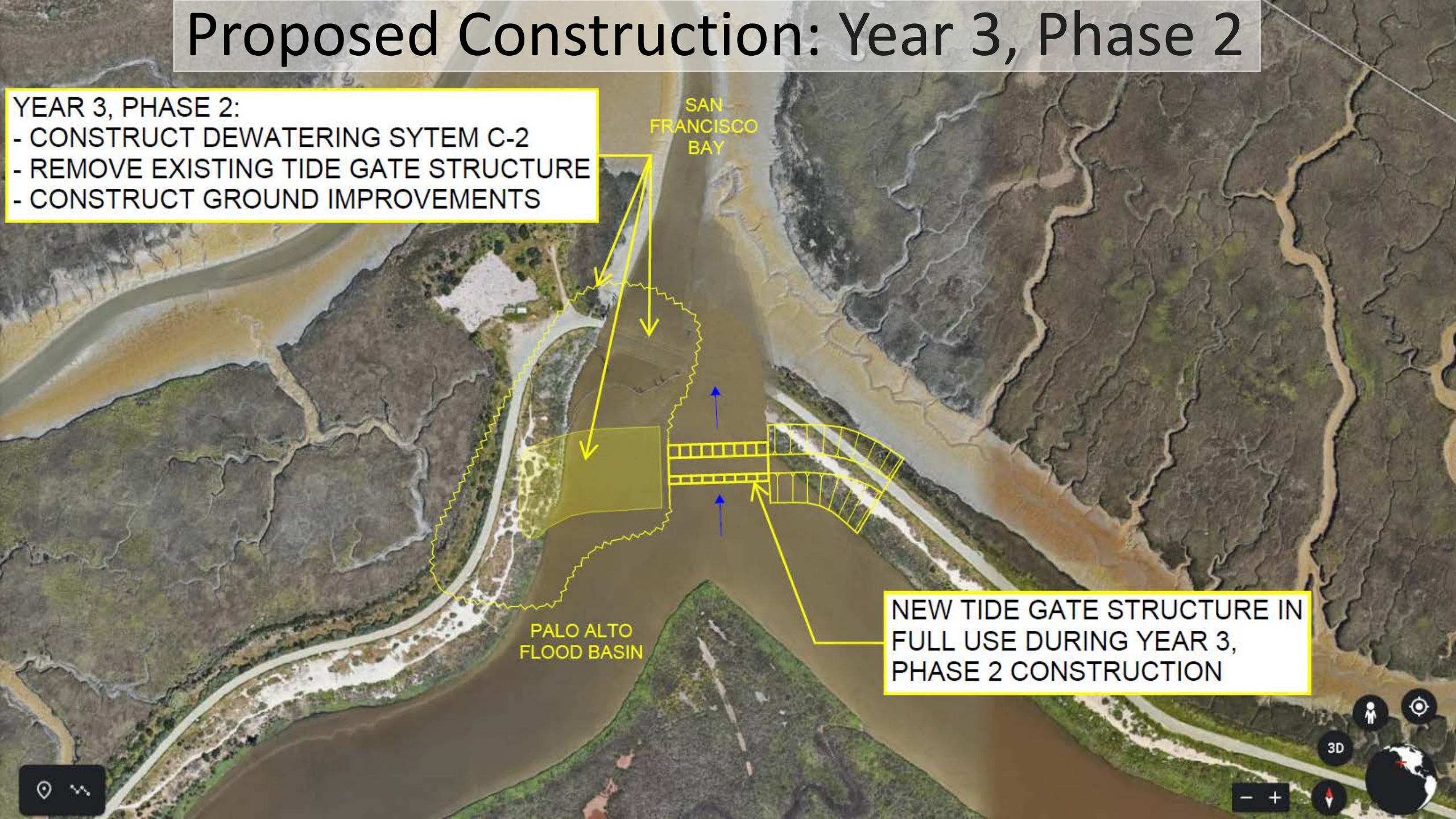
YEAR 3, PHASE 2:

- CONSTRUCT DEWATERING SYSTEM C-2
- REMOVE EXISTING TIDE GATE STRUCTURE
- CONSTRUCT GROUND IMPROVEMENTS

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PALO ALTO FLOOD BASIN

NEW TIDE GATE STRUCTURE IN FULL USE DURING YEAR 3, PHASE 2 CONSTRUCTION

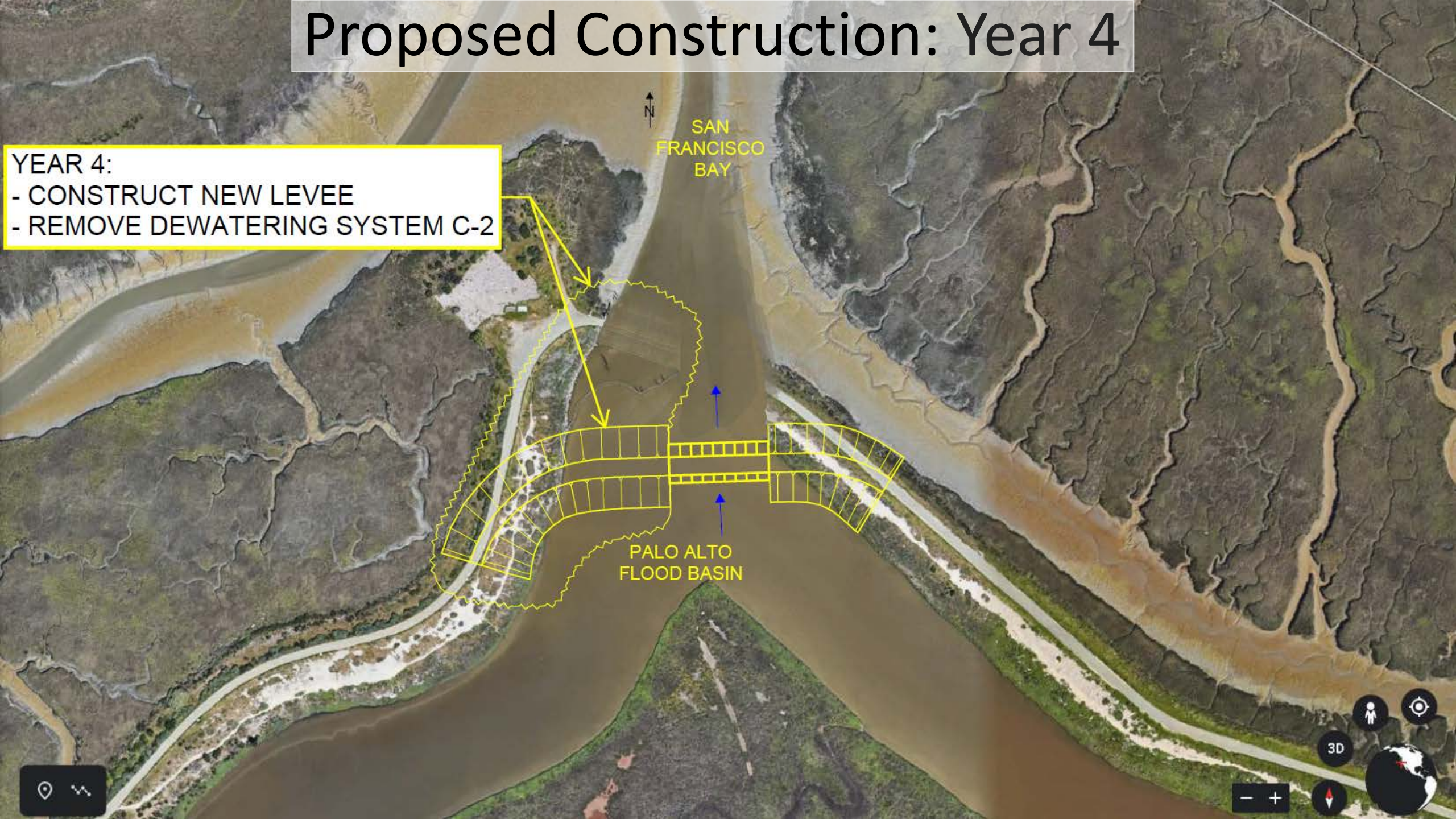


Proposed Construction: Year 4

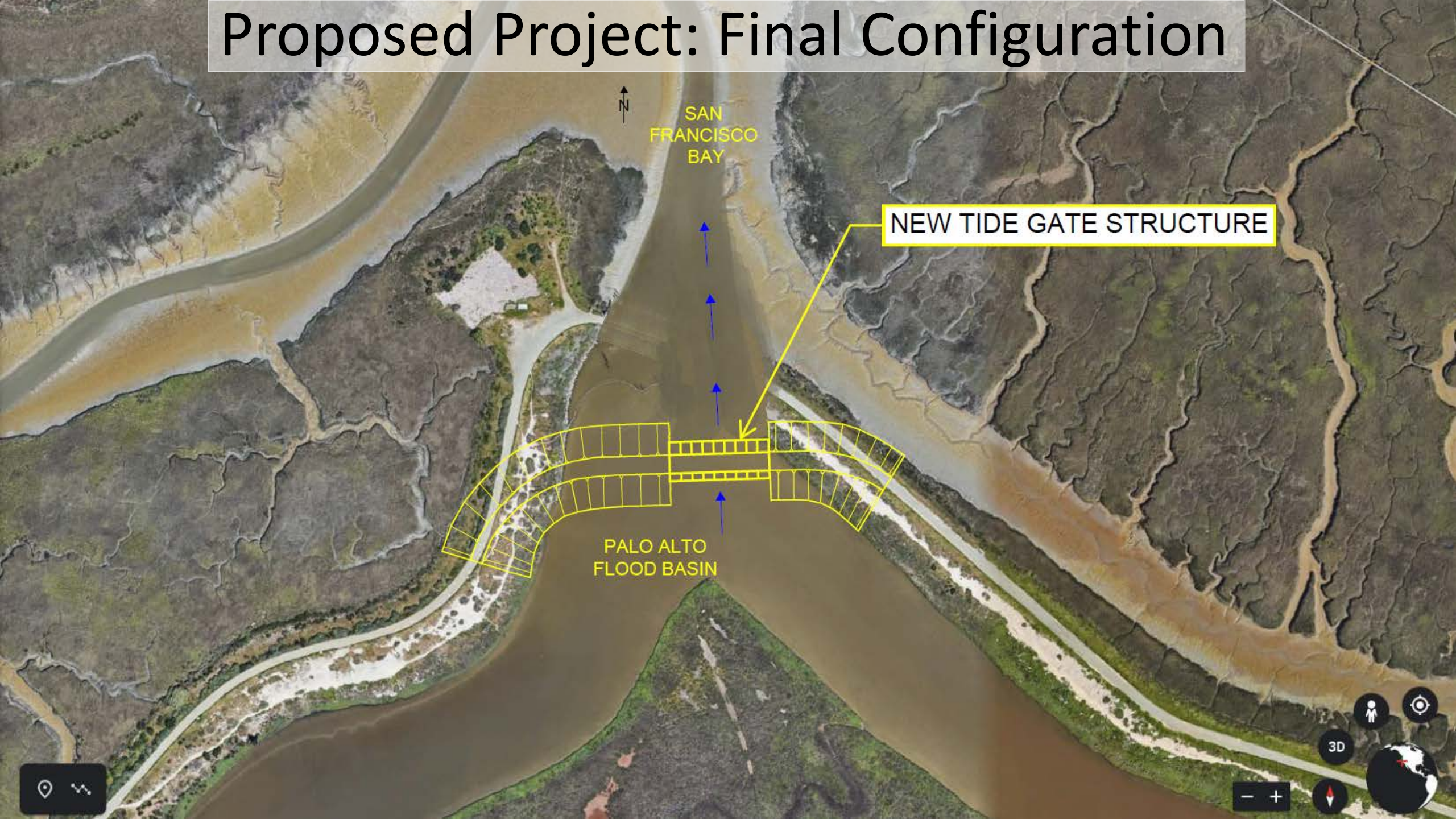
- YEAR 4:
- CONSTRUCT NEW LEVEE
 - REMOVE DEWATERING SYSTEM C-2

SAN FRANCISCO BAY

PALO ALTO FLOOD BASIN



Proposed Project: Final Configuration

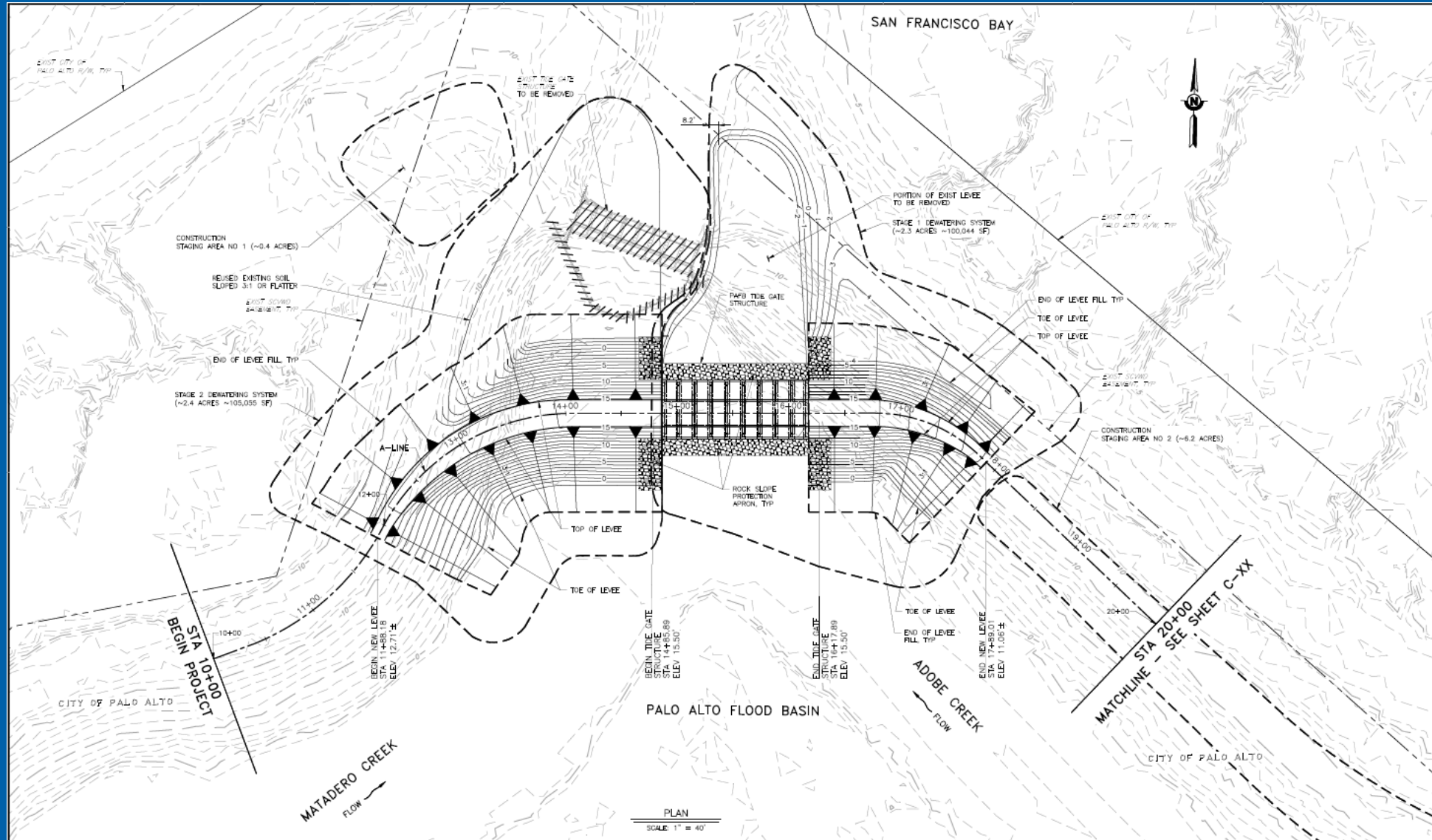


SAN FRANCISCO BAY

NEW TIDE GATE STRUCTURE

PALO ALTO FLOOD BASIN

Proposed Project – Plan View

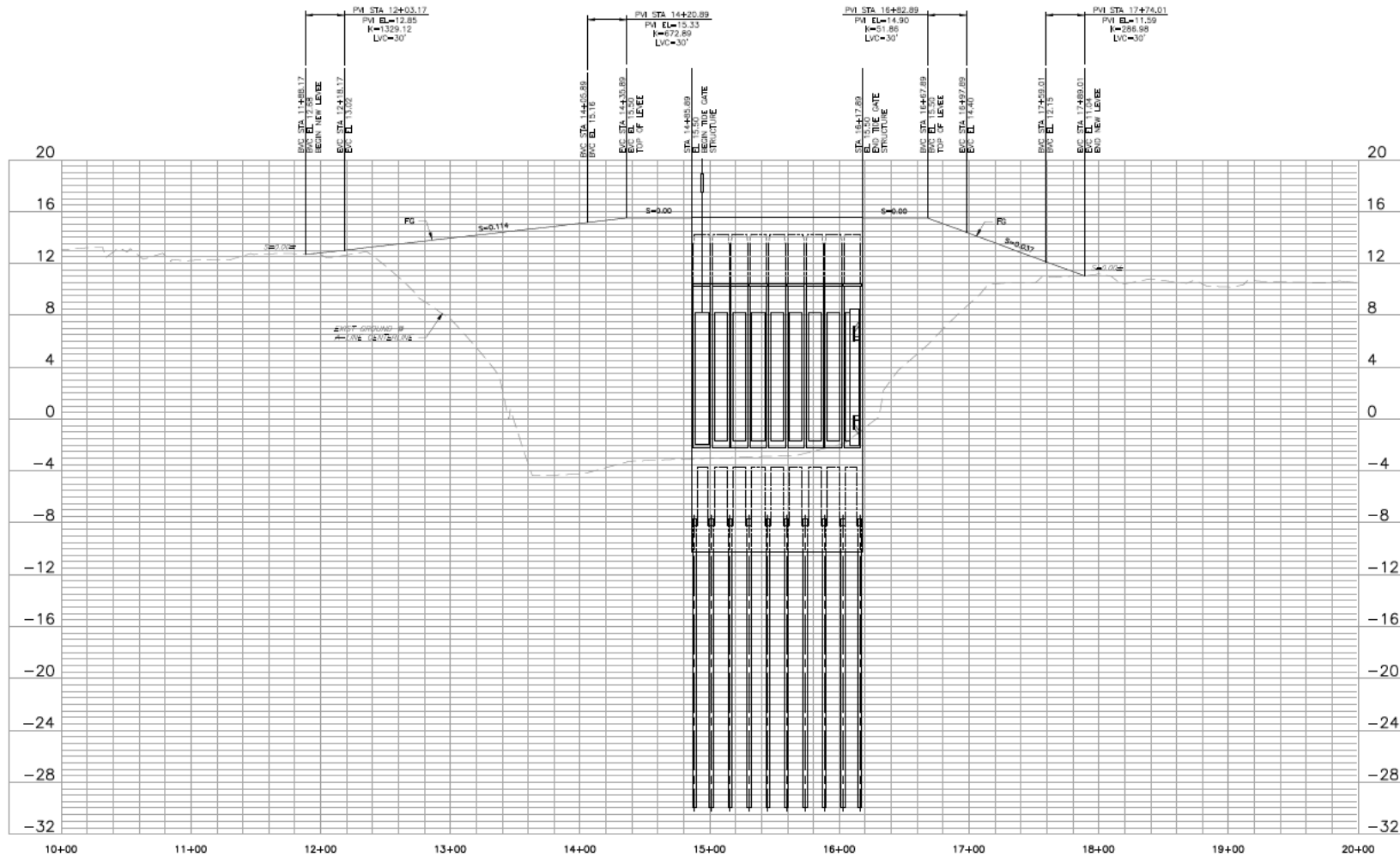


PLAN
SCALE: 1" = 40'

| | | | | | | | | | | |
|-----|------------------------------|------|-------------------------|--|-----------------|---------------------------|-----------------------------------|--|---------------|----------------|
| REV | DESCRIPTION | DATE | APPR | REFERENCE INFORMATION AND NOTES | DATE | ENGINEERING CERTIFICATION | SANTA CLARA VALLEY WATER DISTRICT | PROJECT NAME AND SHEET DESCRIPTION: | SCALE | PROJECT NUMBER |
| | | | | | MAY 2020 | | | | AS SHOWN | 10394001 |
| | 60% PLAN JUNE 2020 | | | TIN SURFACE COMPILED FROM: AERIAL SURVEYS PROVIDED BY 350 AERIAL SURVEYS BATHYMETRIC SURVEYS, PROVIDED BY FOTH-CLE ENGINEERING GROUND SURVEYS BY SCOWD LAND SURVEYING & MAPPING UNIT SURVEYS PERFORMED IN JANUARY-FEBRUARY 2019. | DESIGN | | | PALO ALTO TIDE GATE STRUCTURE REPLACEMENT PROJECT | VERIFY SCALES | SHEET CODE: |
| | | | VERTICAL DATUM: NAVD 88 | R. YAMANE | | | 0 | | C-01 | |
| | | | | DRAWN | S. KAROGLU | | | | 1" | SHEET NUMBER: |
| | | | | CHECKED | | | | | 4" | 3 OF XXX |
| | | | | XXXX | PROJECT DWG/REV | DATE | | PLAN | | |



Proposed Project – Profile

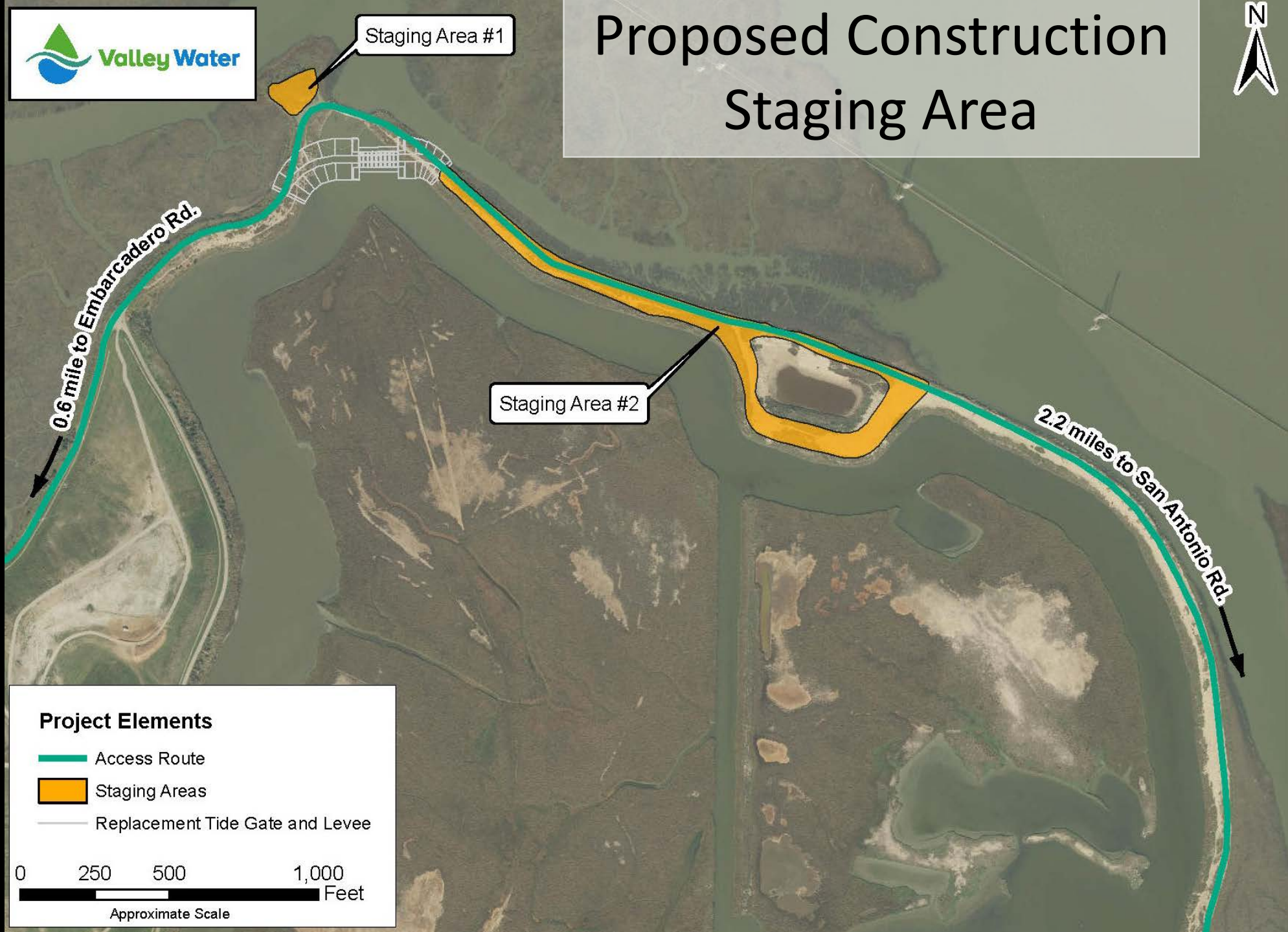


PROFILE
 HORIZ: 1" = 40'
 VERT: 1" = 4'




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| | | | | | DESIGN R. YAMANE | | | PROFILE | VERIFY SCALES | SHEET CODE: |
| | | | | | DRAWN S. KAROLLOU | | | A-LINE STA 11+88.17 TO 17+89.01 | 0 = 1" 1" = 40' | C-02 |
| | | | | | CHECKED XXXX | | | BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | SHEET NUMBER: XX OF XXX | |



Proposed Construction Staging Area



Project Elements

-  Access Route
-  Staging Areas
-  Replacement Tide Gate and Levee

0 250 500 1,000 Feet

Approximate Scale

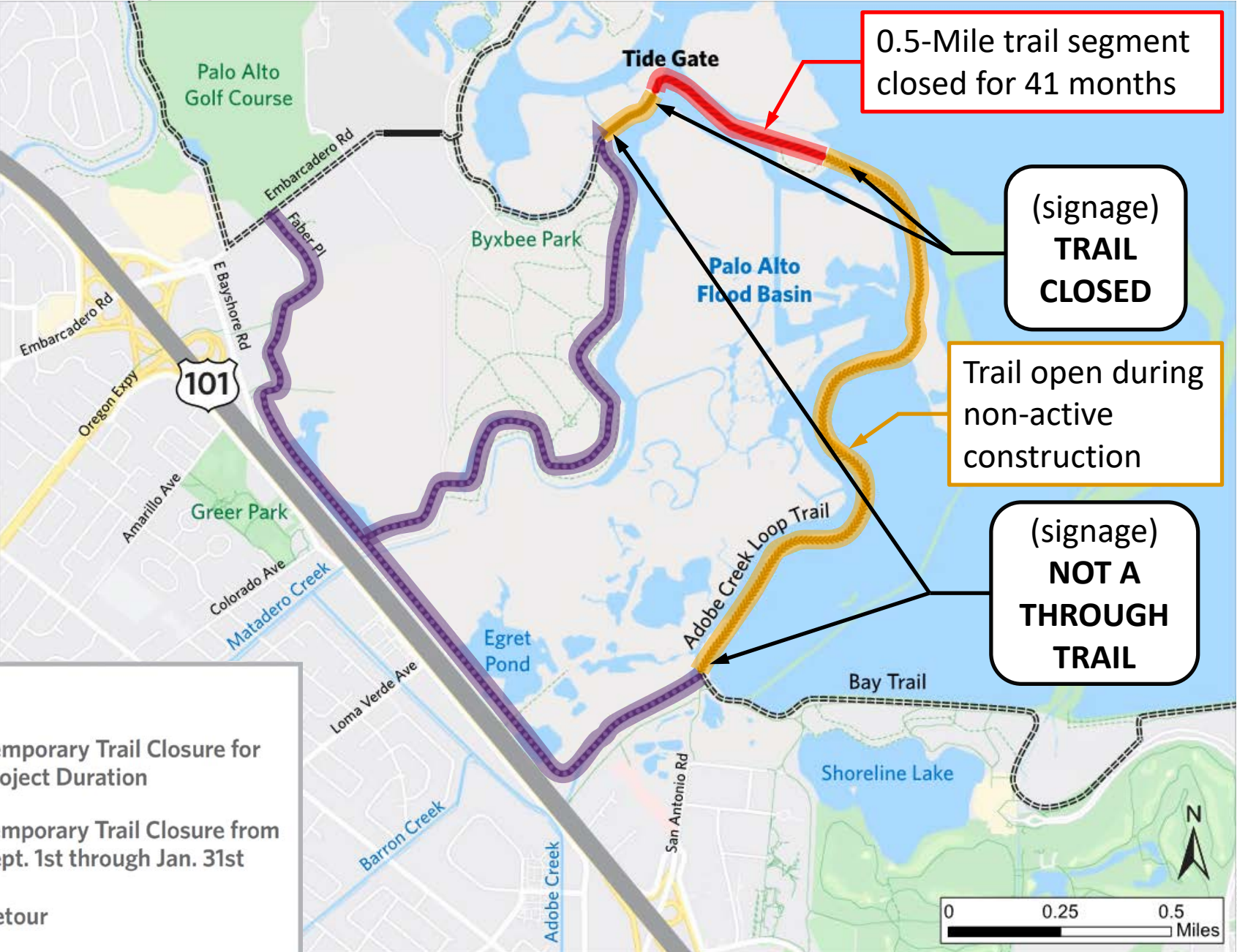
Potential Construction Traffic Routes



Potential Construction Traffic Routes



Proposed Trail Closure and Detour



Tentative Target Project Schedule



Summer 2020: Complete Planning Phase



Summer 2020: Release Draft CEQA MND for Public Comment



Spring 2021: Complete 100% Design



Spring 2021: Obtain Environmental Permits



Summer 2021: Advertise/Award Contract



Fall 2021: Start Construction

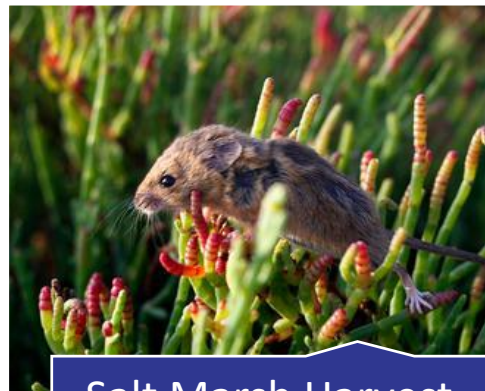


Early 2025: Finish Construction

Environmental Resources

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- Unique setting along the Bay
- Sensitive fish and wildlife species
- Salt marsh, Bay, and PAFB habitat
- Adobe Creek Loop Trail/San Francisco Bay Trail
- Byxbee Park and Palo Alto Baylands Access



Salt Marsh Harvest Mouse



Longfin Smelt



Burrowing Owl

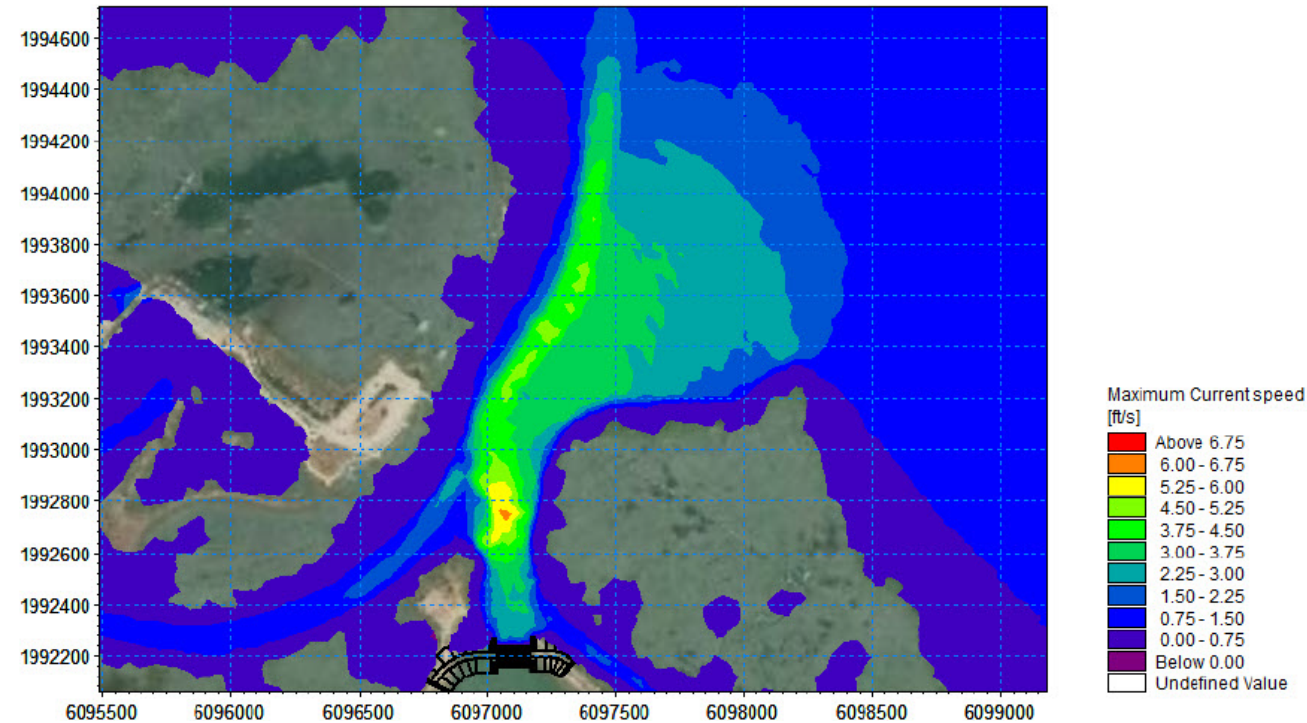


Ridgway's Rail

Minimizing Environmental Impacts

36

- Schedule work outside Ridgway's rail nesting season
- Alternatives review to avoid and minimize impacts
 - Reduce construction duration
 - Avoid impacts to Hook's Island
 - Minimize trail closure
- Best Management Practices



Mitigating Environmental Impacts

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- Develop appropriate mitigation measures
 - Protected species surveys, monitoring, and avoidance
 - Fish exclusion and relocation prior to dewatering
 - Compensate for wetlands impacts



Environmental Review and Permitting

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- **CEQA – Mitigated Negative Declaration**
 - Draft MND planned for release this summer for public comment
- **Environmental Permits**



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QUESTIONS

