

# San Francisco Creek Bridge

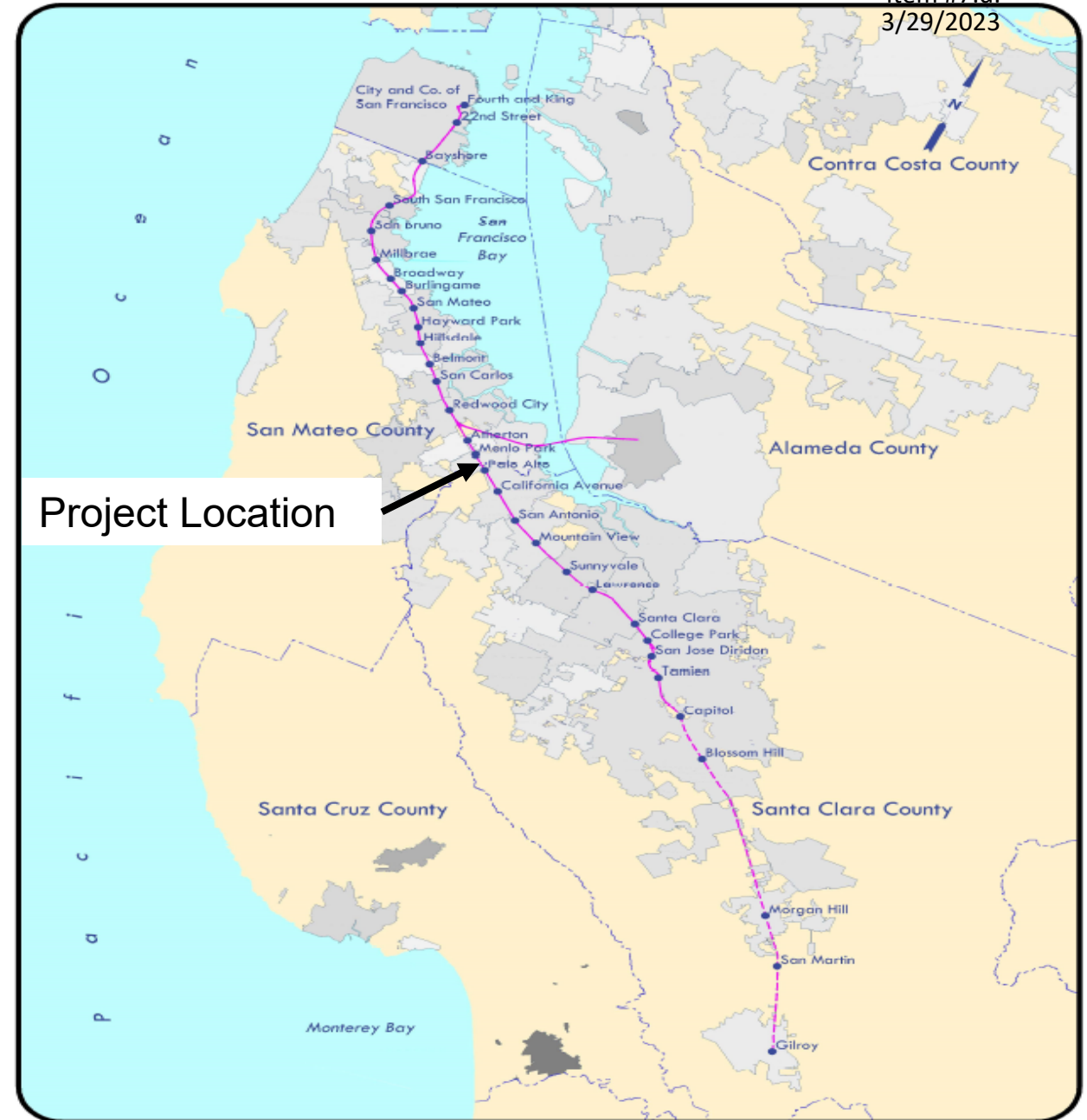
# Emergency North Embankment Restoration



# San Francisquito Creek Bridge

# Emergency North Embankment Restoration

# Project Location



# Geographic Location Overview



# San Francisquito Creek Bridge Winter Storm Events

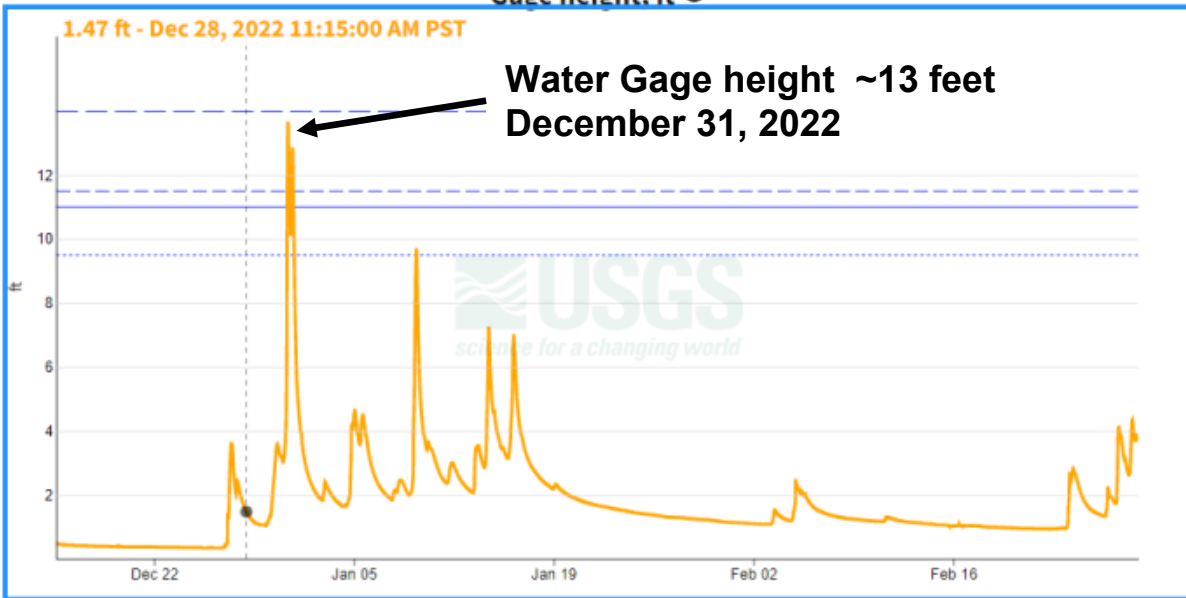
7 days  30 days  1 year

- using graph zoom -

## San Francisquito C a Stanford University CA

December 15, 2022 - February 28, 2023

Gage height. ft



Current: — Provisional  
Action stage - - - 9.5 ft  
Minor flood stage — 11 ft  
Moderate flood stage - - 11.5 ft  
Major flood stage — 14 ft



<https://waterdata.usgs.gov/monitoring-location/11164500/#parameterCode=00065&startDT=2022-12-01&endDT=2023-03-10>

# San Francisquito Creek Bridge

## South Embankment

### Post-storm site inspection **South Embankment:**

- Creek water elevation **has receded** after the storm event and measures 25-feet below the bridge soffit
- South bank below the railroad bridge bearings has **concrete wall** providing protection for both the abutment and **historic Palo Alto Tree**
- **Moderate scour** has been observed at the toe of the concrete wall due to high water velocity



# San Francisquito Creek Bridge

## North Embankment Scour

### Post-storm site inspection **North Embankment:**

- North bank abutment slope protection below **Caltrain's railroad bridge** has been **severely scoured** and **undermined** to a near vertical condition
- The adjacent slope embankment and large diameter **tree root mats** are showing signs of significant **erosion** and **scour**
- Current conditions **exceed 1.5 to 1** maximum for soil slope stability
- Soil will continue to **erode** and become **unstable** without mitigation

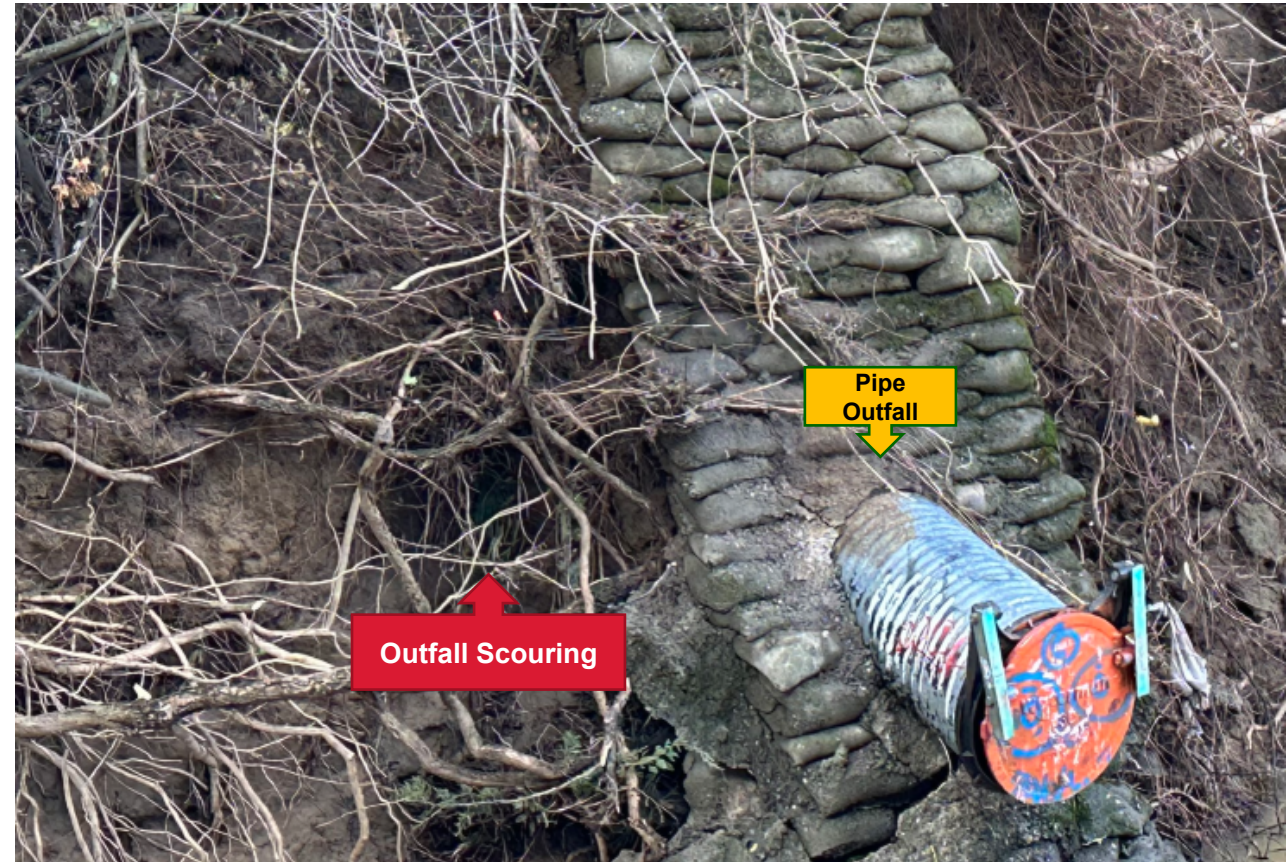


# San Francisquito Creek

## Outfall Embankment Scour

### Post-storm site inspection North Embankment:

- Nearby storm **drainpipe outfall** from Palo Alto Park has also experienced **severe scour** and **embankment erosion**
- Outfall slope cement bags protection has **lost** supporting soil compromising the **structural integrity**



# San Francisquito Creek

## Pedestrian Bridge Embankment Scour

### Post-storm site inspection North Embankment:

- Palo Alto Park's **pedestrian bridge** abutment slope protection has also been **severely scoured** and **undermined** to a near vertical condition
- Current conditions **exceed 1.5 to 1** maximum for soil slope stability
- Soil will continue to **erode** and become **unstable** without mitigation
- Caltrain will continue to coordinate with **Palo Alto** and **Menlo Park** regarding post storm conditions

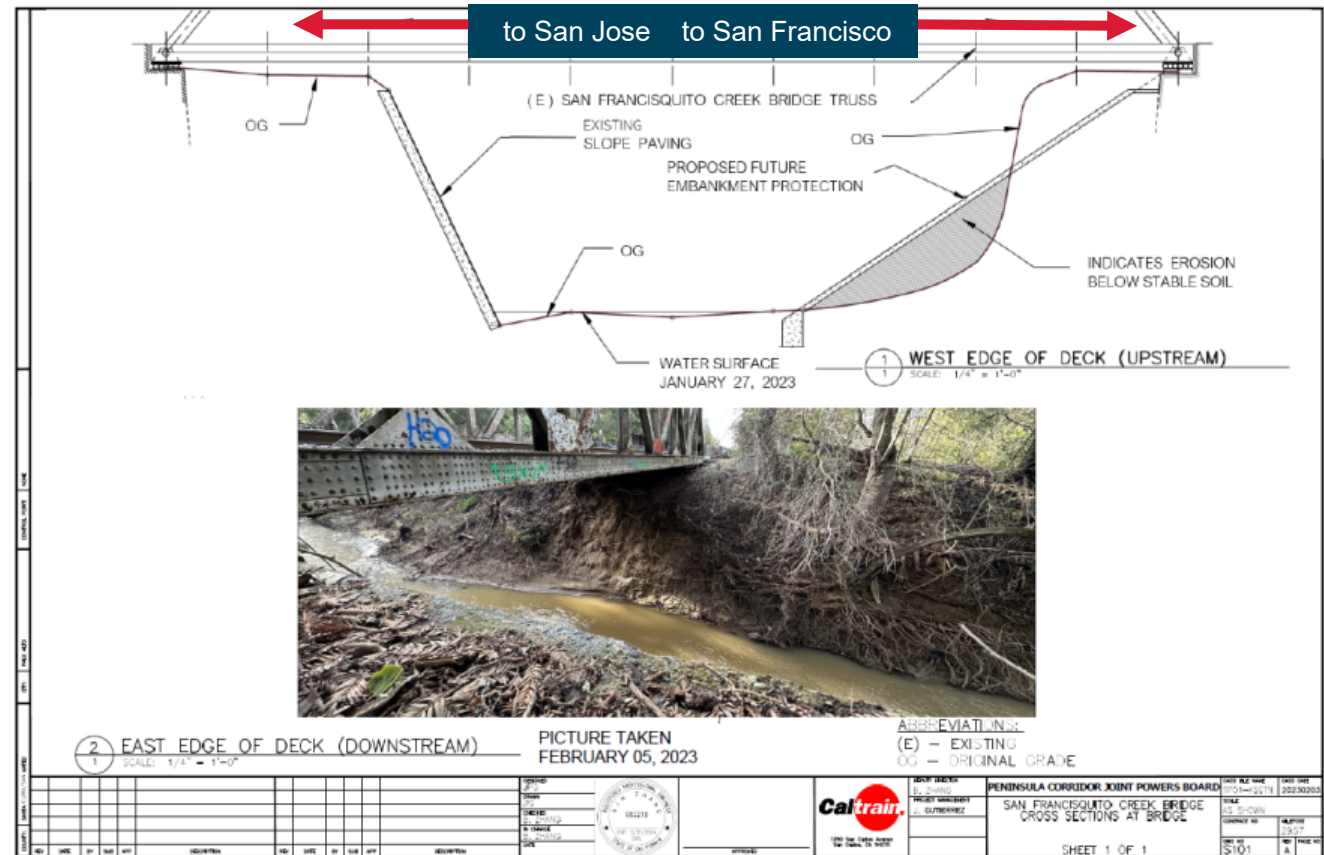




# North Embankment Preliminary Erosion Mitigation

## Preliminary Erosion Mitigation:

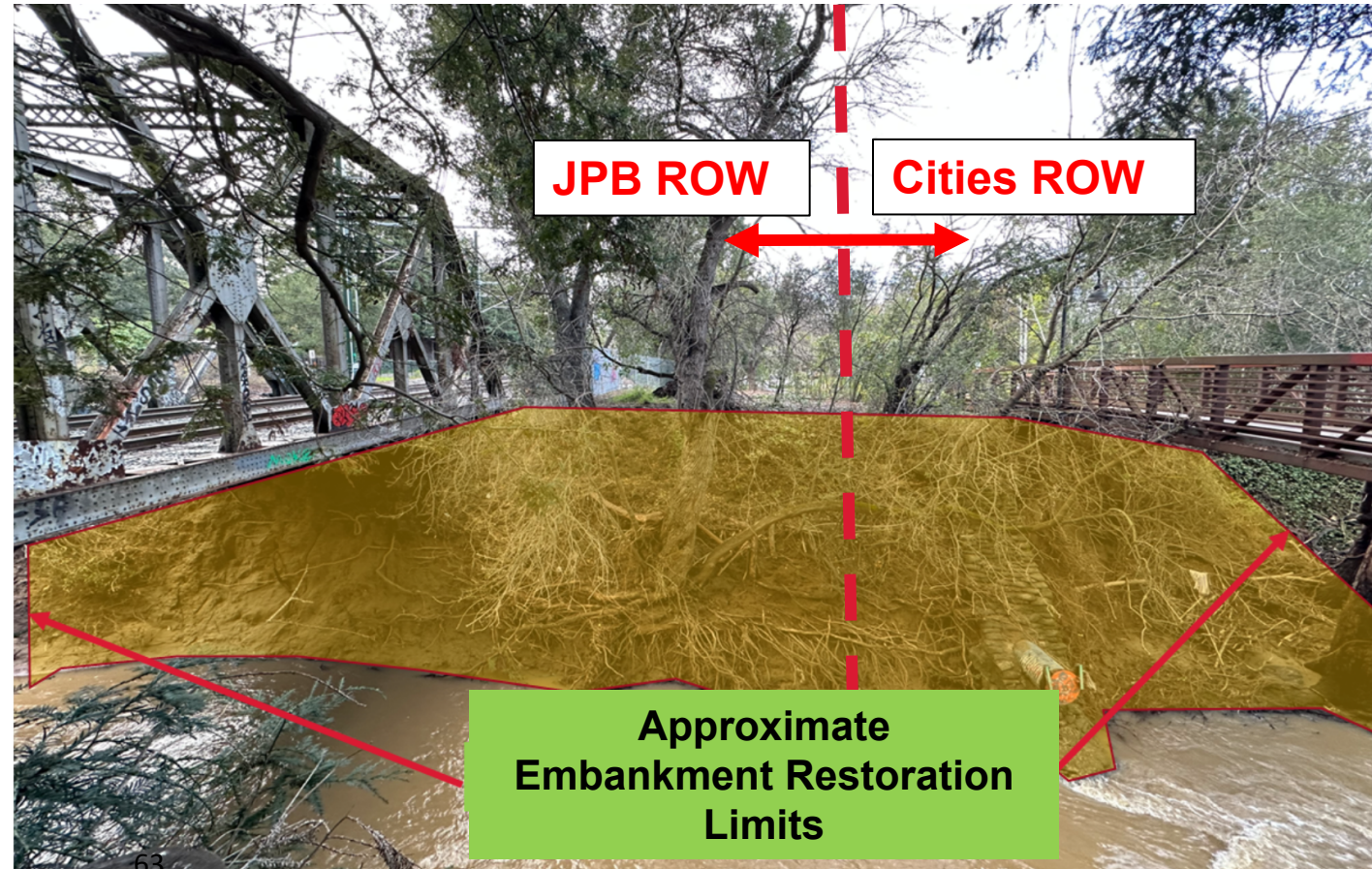
- **Railroad bridge** abutments must be **backfilled** to a minimum of 1.5 to 1 or greater to **provide soil slope stability**
- **Slope protection** measure required on top of the soil to reduce risk of erosion and future bridge embankment scour
- Caltrain working with existing on-call design bench teams to develop a **suitable restoration repair** for permitting agencies review and approval



# San Francisquito Creek Embankment Restoration Limits

## Project Restoration Limits:

- Approximate restoration **limits** from **east** of Caltrain's railroad bridge to **west** of Palo Alto's pedestrian bridge (shaded area)
- Embankment restoration **extent** and **method** subject to **hydraulic** modeling analysis and approval from the environmental **permitting agencies** and coordination with **adjacent property owners**



# Summary Schedule

Date	Activity
March 2023	Issue Work Directives for Design, environmental permitting, cost estimating, and construction management support
March 2023	Begin coordination with external stakeholders (on-going)
March 2023	Declare emergency and obtain authority to approve all plans and designs and enter agreement with Walsh Construction
April 2023	Develop preliminary design
April 2023	Submit for environmental permits
April 2023	Submit for permits to Jurisdictions Owners
May 2023	Final design
<b>*June to October 2023</b>	<b>Project channel construction</b>
December 2023	Project closeout

**\*Construction Creek Window is from June 1<sup>st</sup> through October 15<sup>th</sup>**

# Probable Construction Costs

Company	Grand Total Bid Price
*Engineer's Estimate	TBD
*Third Party Estimate	TBD
*Walsh Construction Company II, LLC, Concord, CA	TBD

\*Project team working to obtain an estimate of probable costs subject to approval by permitting agencies of proposed **restoration method and extent**



# Staff Actions Items Summary

- Worked with Legal and Contracts & Procurement to institute **emergency procurement procedures** given the urgent nature of the situation
- Prepared and issued Work Directives with existing on-call contracts to obtain resources for **cost estimating, design, environmental permitting, and construction management**
- Engage in **coordination meetings** with City of Palo Alto, City of Menlo Park, San Francisquito Creek JPA, Stanford, Valley Water, U.S. Army Corps of Engineers, Regional Water Quality Control Board, and the National Marine Fisheries Services to coordinate on **design and construction**, as well as obtain information on **necessary permits**
- Work with Caltrain staff to **identify contingency funds** for emergency repair work at the North Channel
- Working with Operations, Engineering, and Construction Management teams to **regularly monitor condition** of embankment especially following significant storm events

# Requested Board Actions

- **Declare that an emergency exists** due to erosion and scouring caused by recent winter storms
- Find that this emergency does not permit a delay resulting from a **formal solicitation for bid** and that immediate action is necessary to respond to the emergency
  - Code References
    - Public Contract Code section 22050 requires that the Board, by a **four-fifths vote**, make findings based on substantial evidence that the emergency will not permit delay resulting from a competitive solicitation of bids, and that action is necessary to respond to the emergency.
    - Public Contract Code section 1102 defines an emergency as “**sudden, unexpected occurrence that poses a clear and imminent danger, requiring immediate action** to prevent or mitigate the loss or impairment of life, health, property, or essential public services.”

# Requested Board Actions

- **Authorize emergency repairs**
- Delegate to the Executive Director, or designee, the authority to **approve all plans and or designs** with regard to the emergency repair
- Authorize the Executive Director, or designee, **to enter into a contract** with Walsh Construction Company II, LLC for emergency repairs
- Authorize Executive Director, or designee, **all other actions** required to respond to the emergency provided the Executive Director **reports such actions to the Board** at each **monthly** Board meeting until the emergency situation is resolved, with a **final report** to be made at the first Board meeting after the emergency is resolved

# Questions

