

CITY OF LARKSPUR

BON AIR BRIDGE REPLACEMENT PROJECT

PRESENTED BY

Mary Grace Houlihan
Larkspur Public Works Director

DATE

May 21, 2015



BON AIR BRIDGE



EXISTING CONDITION



WHY REPLACE THE BRIDGE?

- The Bridge is structurally deficient
- Improve access and safety for pedestrians and bicyclists
 - Multi-use paths,
 - dedicated Bike Lanes
 - Barrier separation



WHAT ARE PROJECT CONSTRAINTS?



- Emergency Access
- Key Corridor
- Connectivity to trails
- No long term closure

PROJECT HISTORY

- 1958 – Original Bridge was built
 - 1970 - Major foundation repair due to damage from channel dredging
 - 1994 - walkway widening and a seismic retrofit
 - 2000 – Caltrans inspections showed crumbling at several support locations. Further inspections in 2003 revealed severe deterioration of concrete, including visible cracks on some supports, and poor deck conditions.
 - 2002 - The City applied for and received funding through the Highway Bridge Replacement Grant to replace the Bon Air Bridge.
 - 2005 - A new replacement bridge was determined to be the most cost-effective measure to ensure continued unrestricted access for all modes of travel over the bridge.
 - 2012 - Temporary supports were added to stabilize the structure.
-

PROJECT HISTORY (CON'T)

- 2012 - Both California Environmental Quality Act and National Environmental Protection Act certifications were completed for the project
 - Permits have been obtained through RWQCB, US Fish & Wildlife, National Marine Fisheries, Army Corps of Engineers and California Fish and Wildlife
 - State Lands Lease executed April 23, 2015
 - BCDC Hearing and vote today, May 21, 2015 [*final regulatory approval*]
 - Design has been completed
 - Contractor prequalification has been completed
-

PROJECT HISTORY (CON'T)

- The final design for the bridge is the result of an extensive public outreach process and in 2008 the City Council approved the conceptual design for the new bridge.



VIEW FROM AUTO LOOKING NORTHEAST • BON AIR BRIDGE
LARKSPUR, CALIF.

WHAT IS THE PROJECT?

- Replacement of Bon Air Bridge with a wider, seismically safe & structurally competent new bridge
 - Within sensitive environmental context
 - Relocation of Existing Utilities
 - AT&T facility to be permanently relocated under the creek
 - PG&E temporarily over the creek and ultimately within the bridge
 - MMWD (water) to be relocated within the bridge
 - Comcast to be relocated within the bridge
-

WHAT IS THE PROJECT? (CON'T)

- Permanent features include
 - Barrier-protected multi-use path
 - Downcast nighttime lighting, meeting International Dark Sky standards
 - Seismic Monitoring
 - Larger, fewer piles improve hydraulic efficiency of the creek
-

WHAT IS THE PROJECT? (CON'T)

- Temporary features include:
 - Trestles on either side to facilitate construction and allow the bridge to remain open throughout construction
 - Cofferdams to confine pier work minimizing impacts to fish
 - PG&E aerial to ensure continued electric service to the region during construction
-

Environmental Constraints

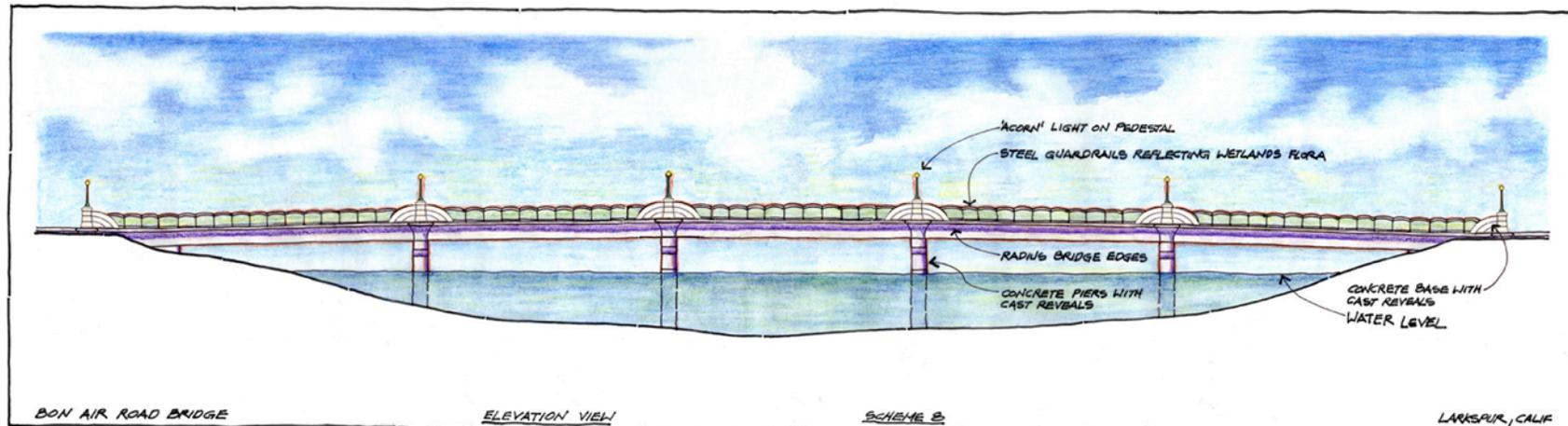
Preservation and monitoring of fourteen regulated species addressed in NMFS & USFWS Biological Opinions:

- California Clapper Rail and Black Rail
- Central California Coast Steelhead and Coho Salmon
- North American Green Sturgeon
- Western Pond Turtle
- Northern Harrier
- White-tailed Kite
- Short-eared Owl
- San Francisco Common Yellowthroat
- Samuels (San Pablo) Song Sparrow
- Western Red Bat and Pallid Bat
- Salt Marsh Harvest Mouse



Design Considerations

- Minimizing Foundation supports
 - Less debris accumulation
 - Less physical obstruction
- Incorporated utilities
 - Less exposure to waterway users
- Precast deck system
- Staged Construction
- Minimize pile driving



Design Considerations

- Dark Sky respectful lighting
- See through railings
- Safety barriers between pedestrians and vehicles
- Incorporation of epoxy coating, bearings pads and vertical restrainers to increase the bridge resilience to flooding and sea- level rise

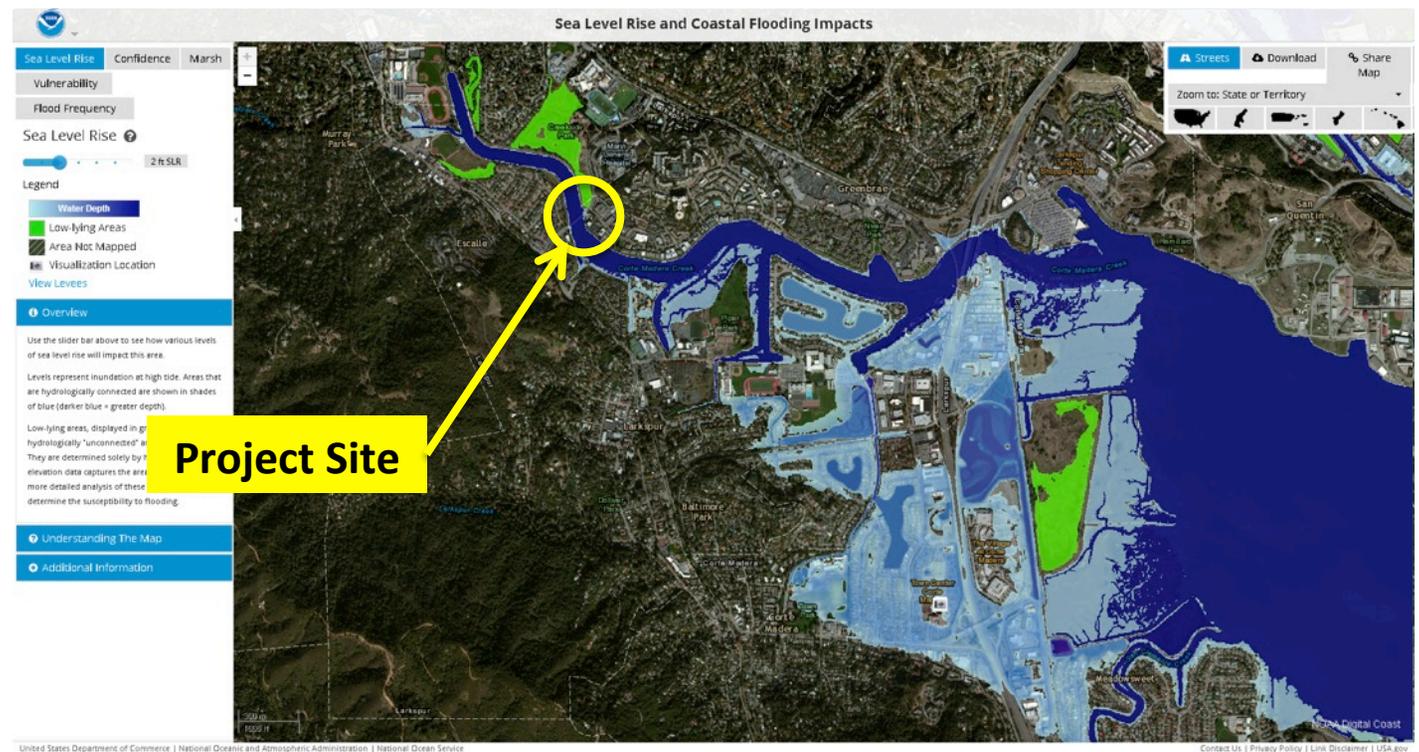


Construction Considerations

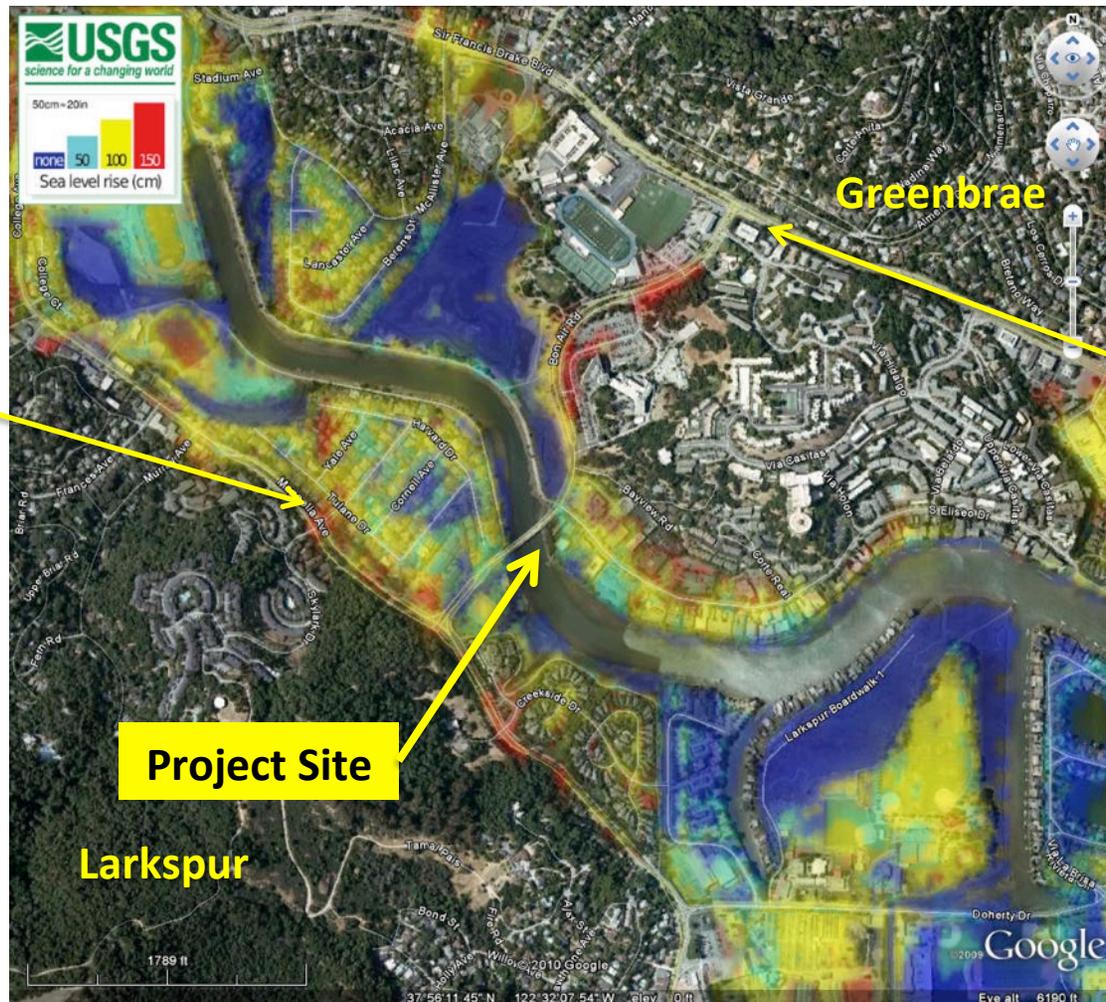
- Constraints on in water work
 - Restrictions on construction during Clapper Rail mating/breeding season
 - Environmental training and monitoring during construction
 - Implementation of Frac-out drilling contingency plan
 - Implementation of SWPPP and SWPPP monitoring
 - Vibration Monitoring
 - Noise Monitoring
-

CLIMATE CHANGE

- SEA LEVEL RISE
- ADAPTIVE MANAGEMENT PLAN



Sea Level Rise



- Current
- 20 inches SLR
- 39 inches SLR
- 60 inches SLR

Sir Francis Drake Blvd

Sources: USGS (Noah Knowles) and Google Earth

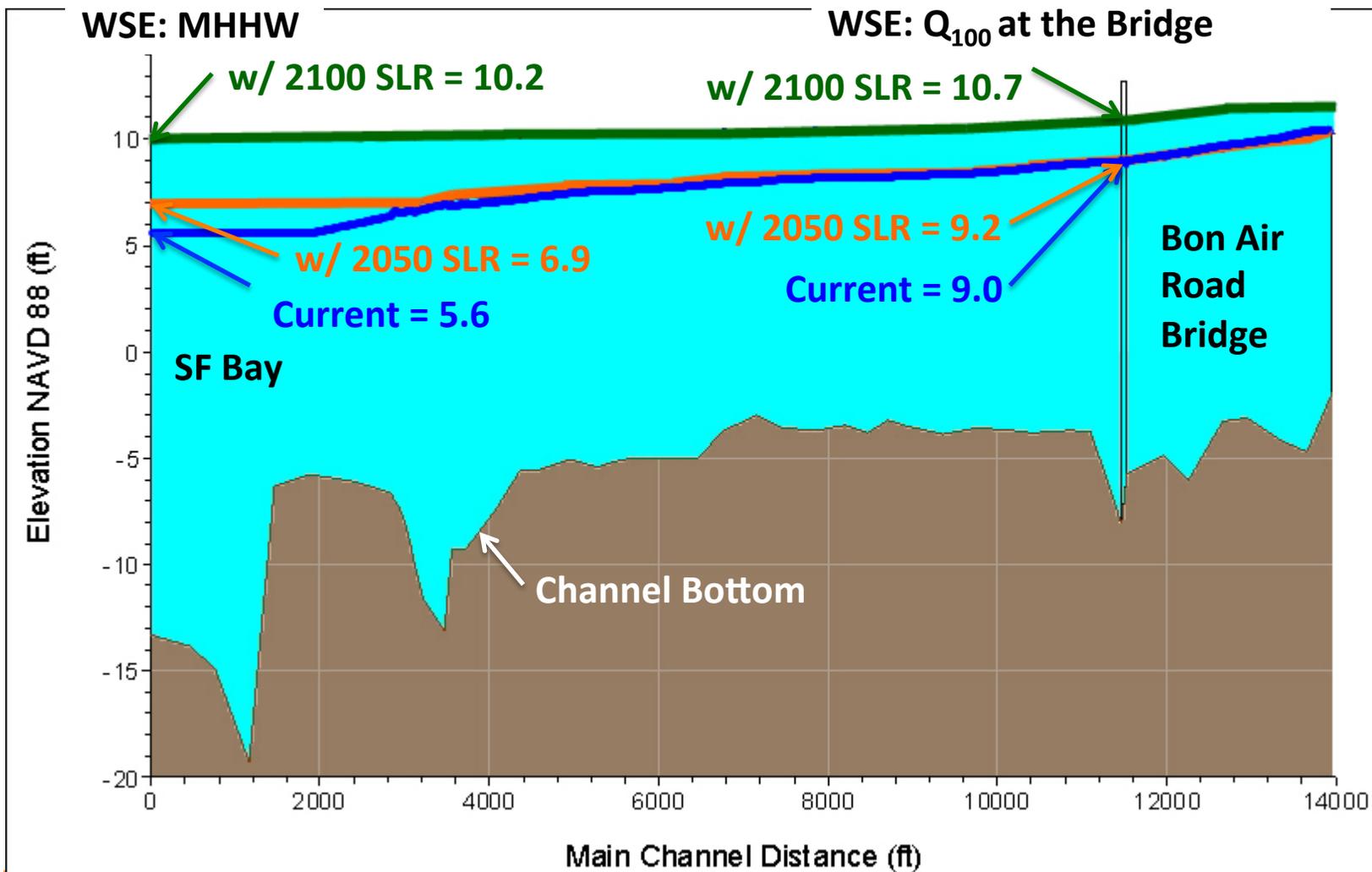
Magnolia Ave

Project Site

Larkspur

Greenbrae

Sea Level Rise

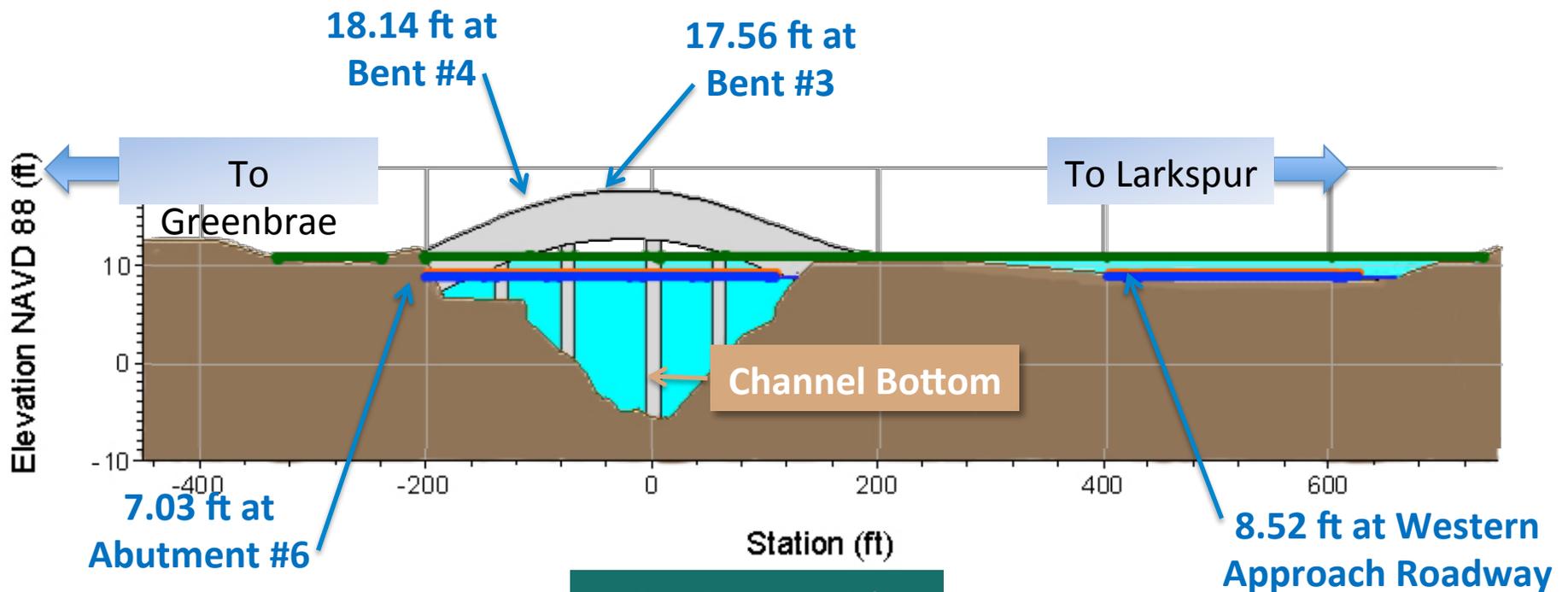


Sea Level Rise

WATER ELEVATION COMPARISON at BRIDGE

Location	Top of Deck Elevation (ft NAVD 88)	Soffit Elevation (ft NAVD 88)	Q100 + MHHW (ft NAVD 88)	Q100 + MHHW + 16" SLR (2050) (ft NAVD 88)	Q100 + MHHW + 55" SLR (2100) (ft NAVD 88)
Abutment #1	13.05	7.55	9.0	9.2	10.7
Bent #2	14.70	9.20	9.0	9.2	10.7
Bent #3	17.56	12.06	9.0	9.2	10.7
Bent #4	18.14	12.64	9.0	9.2	10.7
Bent #5	16.26	10.76	9.0	9.2	10.7
Abutment #6	12.53	7.03	9.0	9.2	10.7

Sea Level Rise



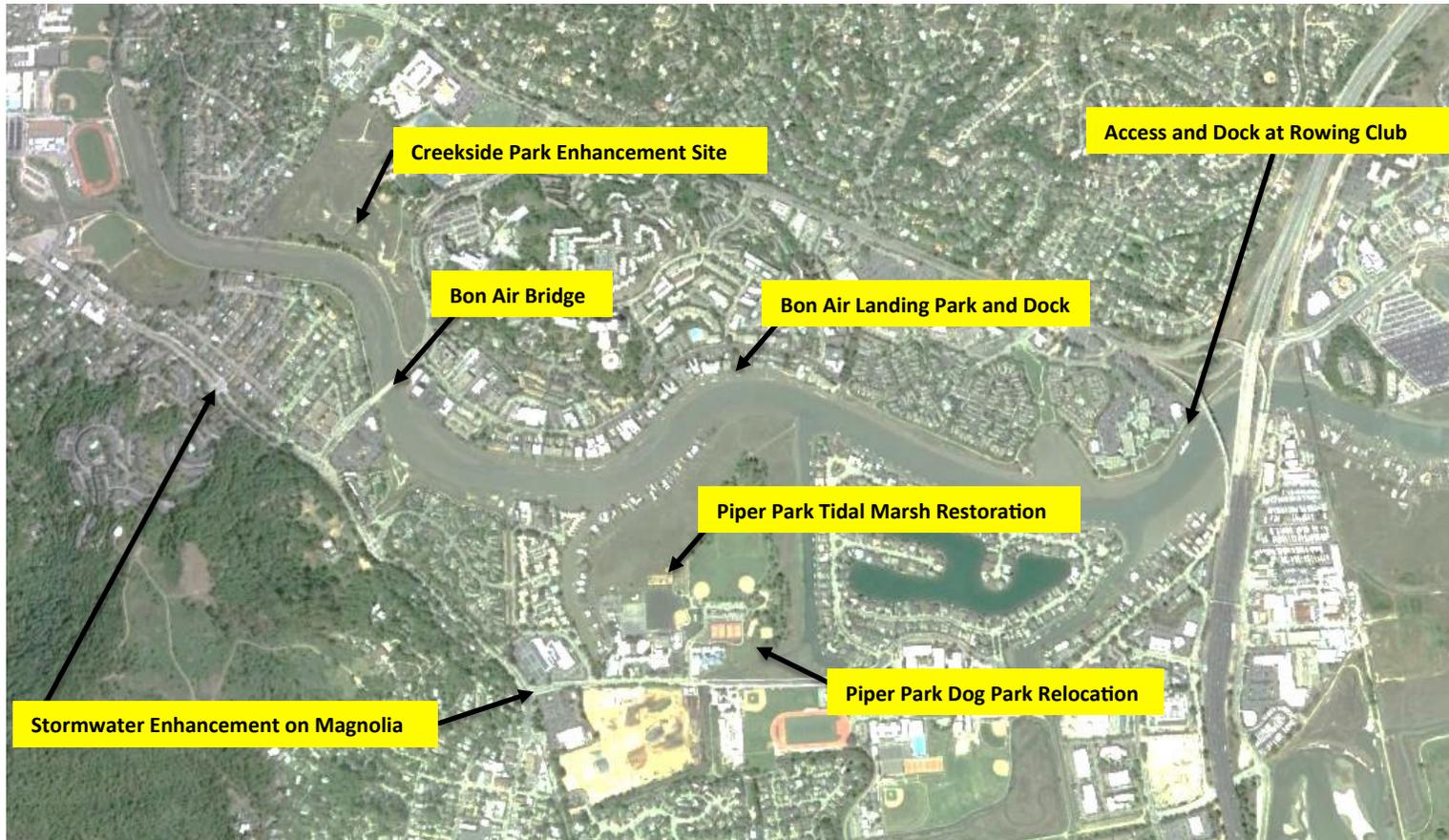
WSE: Q_{100} at Bridge

w/ 2100 SLR = 10.7

w/ 2050 SLR = 9.2

Current = 9.0

OFFSITE MITIGATIONS

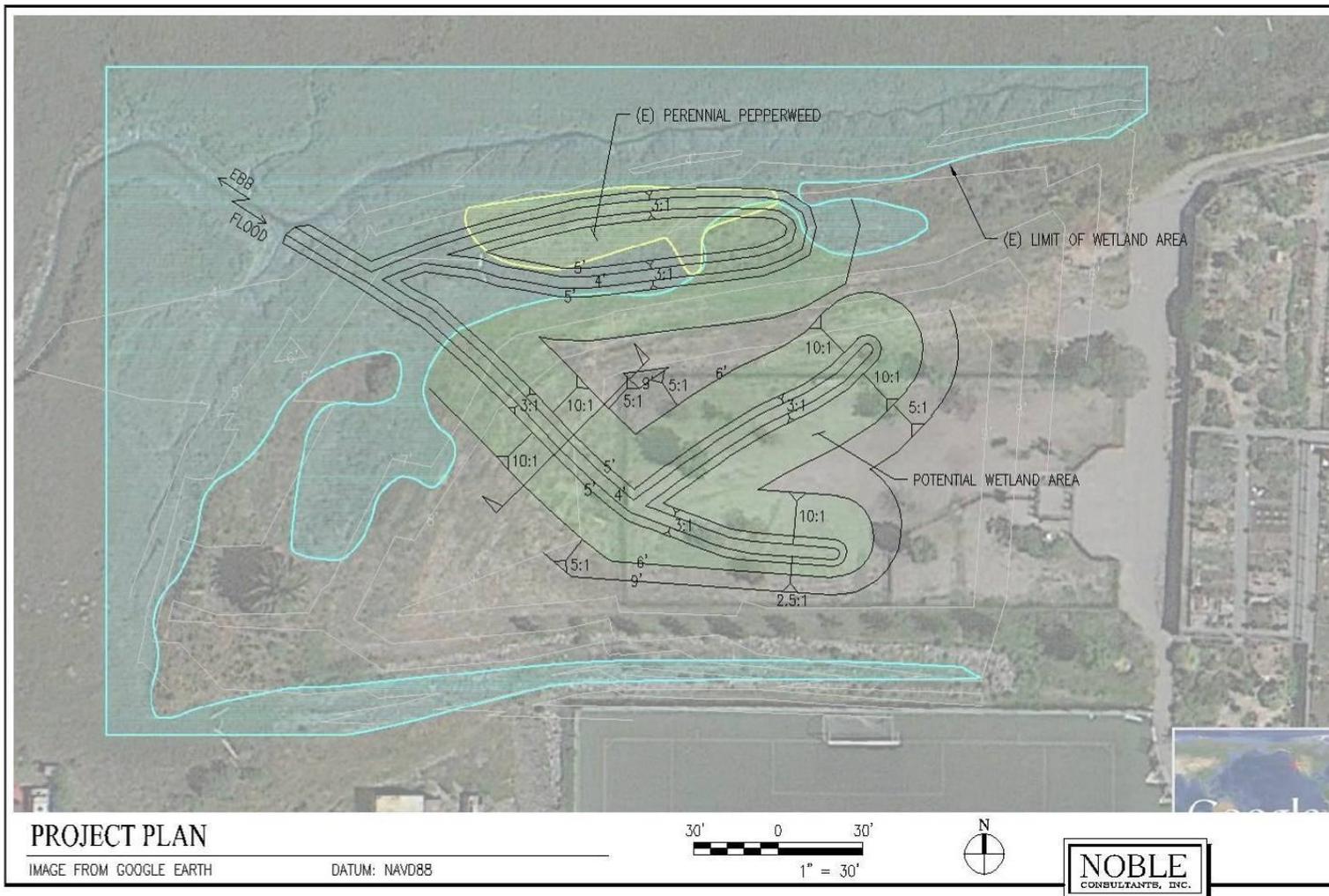


Tidal Marsh Restoration and Dog Park Relocation at Piper Park



MITIGATION ISSUES

Piper Park



Access and Dock Improvements at Bon Air Landing Park

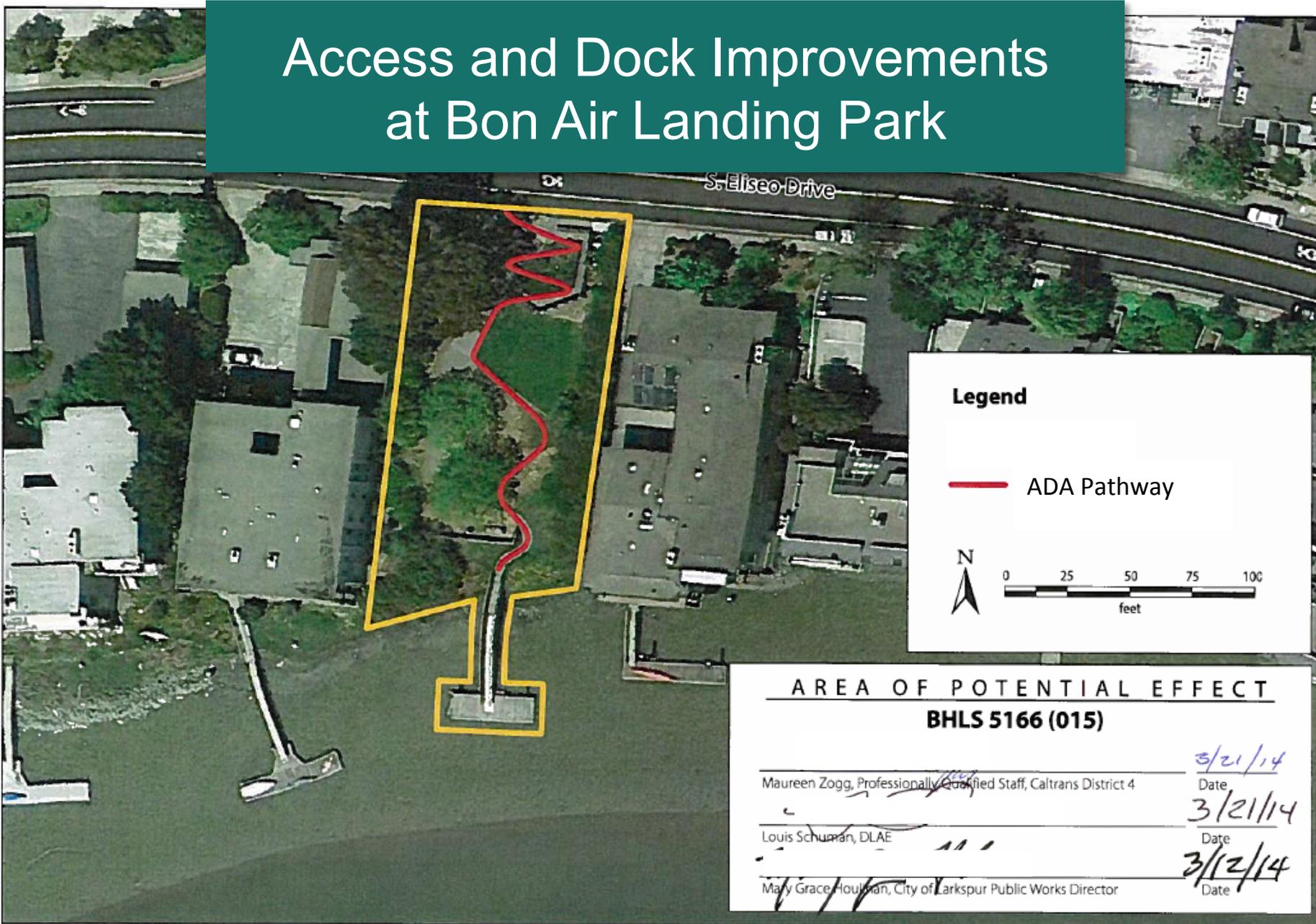


Figure 4
Supplemental Area of Potential Effect for the Public Dock at Bon Air Landing Park

Access and Dock Improvements at Marin Rowing Club

Legend

— ADA Pathway



AREA OF POTENTIAL EFFECT

BHLS 5166 (015)

Maureen Zogg, Professionally Qualified Staff, Caltrans District 4

3/21/14
Date

Louis Schuman, DLA/E

3/21/14
Date

Mary Grace Houlman, City of Livermore Public Works Director

3/12/14
Date



Figure 5
Supplemental Area of Potential Effect for the Public Dock at Marin Rowing Club

Drainage Improvements on Magnolia

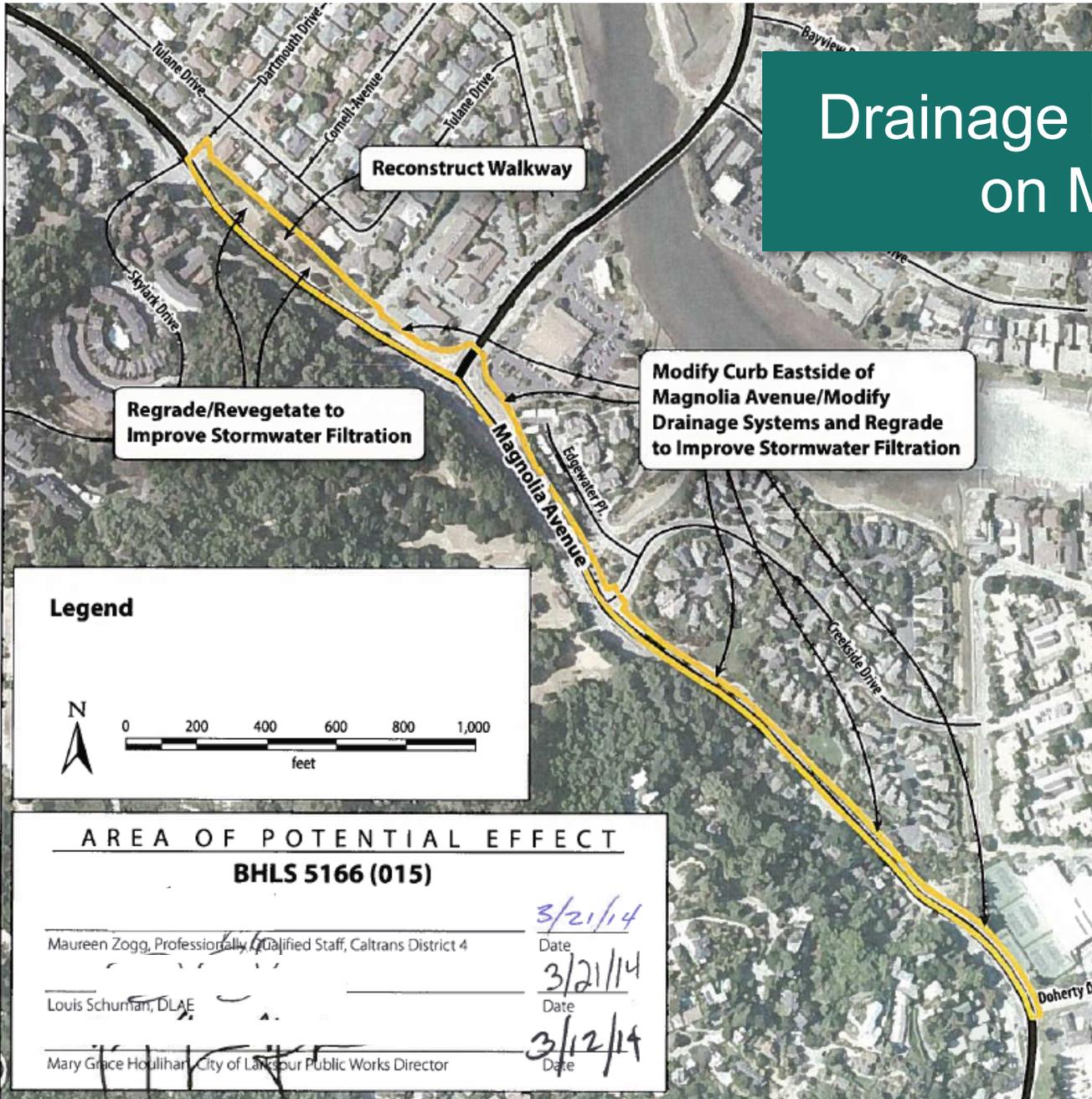


Figure 6
Supplemental Area of Potential Effect for Offsite Stormwater Enhancement

SCHEDULE

- **Summer 2015**
Relocate AT&T; temporary relocate PG&E
 - **Summer 2015/Spring 2016**
Install temporary trestles, demolish upstream portion of existing bridge, abutment construction, utility & right-of-way work north and south of the bridge
 - **Fall 2016/Winter 2017**
Construct upstream side of new bridge
-

SCHEDULE (CON'T)

- **February 2017**
Move traffic to new upstream bridge (no bike lanes, one extra wide multi-use path)
- **July 2017/January 2019**
Demolish remaining bridge, construct new downstream half
- **January 2019**
Open to full traffic
- **Spring/Summer 2019**
Complete restoration and removal of trestles



OFFSITE PUBLIC ACCESS & MITIGATION SCHEDULE

- RFP consultant complete –
 - Contract authorization June 3
 - Design
 - June 2015-December 2015
 - BCDC permit submittal for docks
 - Fall 2015
 - BCDC permit submittal for Marsh Restoration
 - Winter 2015
 - Construction Bid for storm water improvements & Dog Park relocation
 - Late Fall 2015
 - Construction storm water improvements & Dog Park relocation
 - Winter 2015-Summer 2016
 - Construction Bid for Docks
 - Spring 2016 (pending BCDC approval)
 - Construction Docks
 - Summer 2016
 - Construction Bid for Marsh Restoration
 - Late Spring 2016 (pending BCDC approval)
 - Construction Marsh Restoration
 - Late Summer/Fall 2016
-

PUBLIC OUTREACH

- Regular Council Presentation Updates
 - Neighborhood and Business community meetings held from September, 2014 to May, 2015
 - Project Website –
 - bonairbridge.com opened in September 2014
 - Public Outreach signs with closure updates to be placed on main trail and on Magnolia Ave Late May 2015
-

QUESTIONS

