



Embarcadero-Potrero Electric Transmission Project

OCTOBER 16, 2014

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

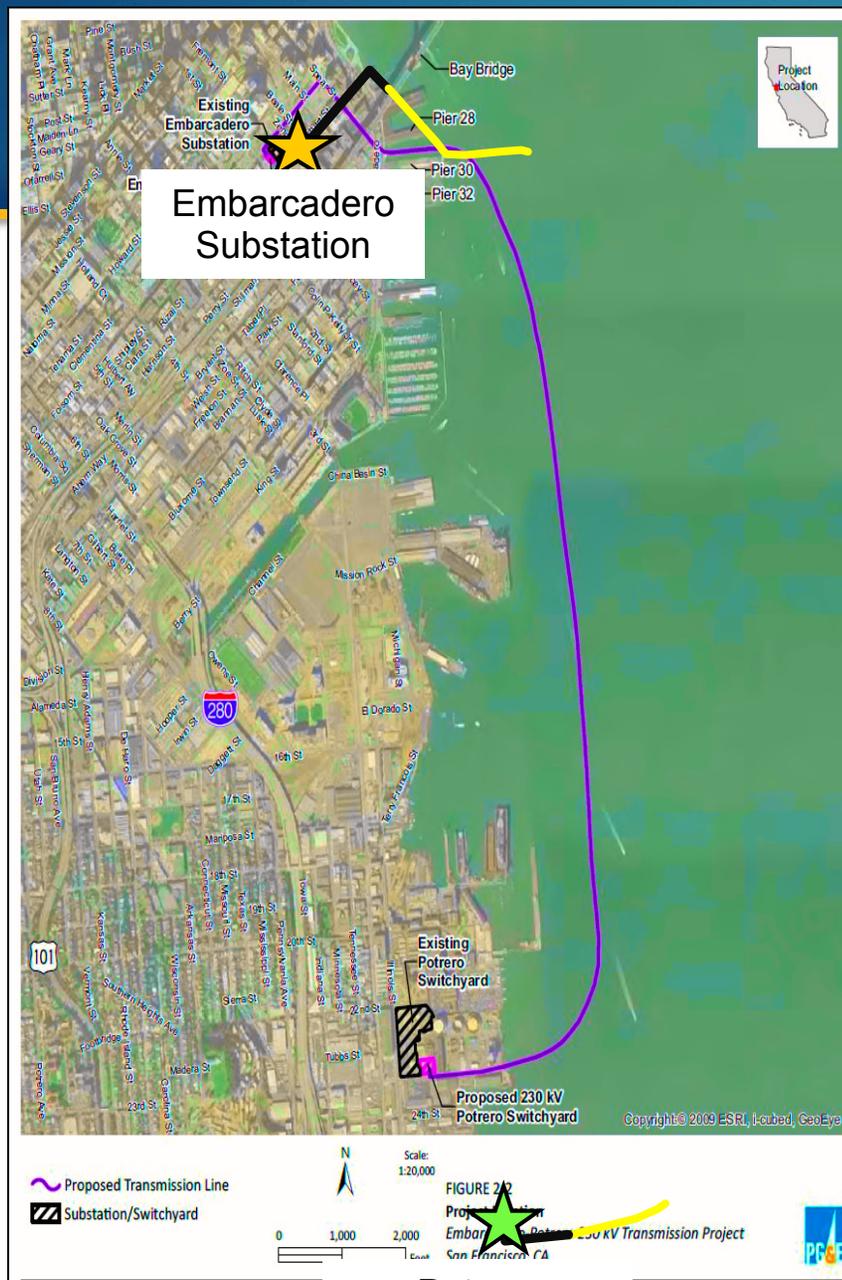


Purpose and Need – Critical City and County of SF Lifeline Project



- ★ Embarcadero Substation: Sole source of power to downtown SF
 - ▶ Served by two aging high voltage underground lines through highly liquefiable areas
 - ▶ Safety and Reliability: high consequences of prolonged disrupted service, i.e. earthquake
 - ▶ San Francisco Lifeline Council included Embarcadero-Potrero as a key project in planning efforts

Embarcadero Potrero 230 kV Project



Potrero
Switchyard

┌ Underground Line Trenched
in City Streets

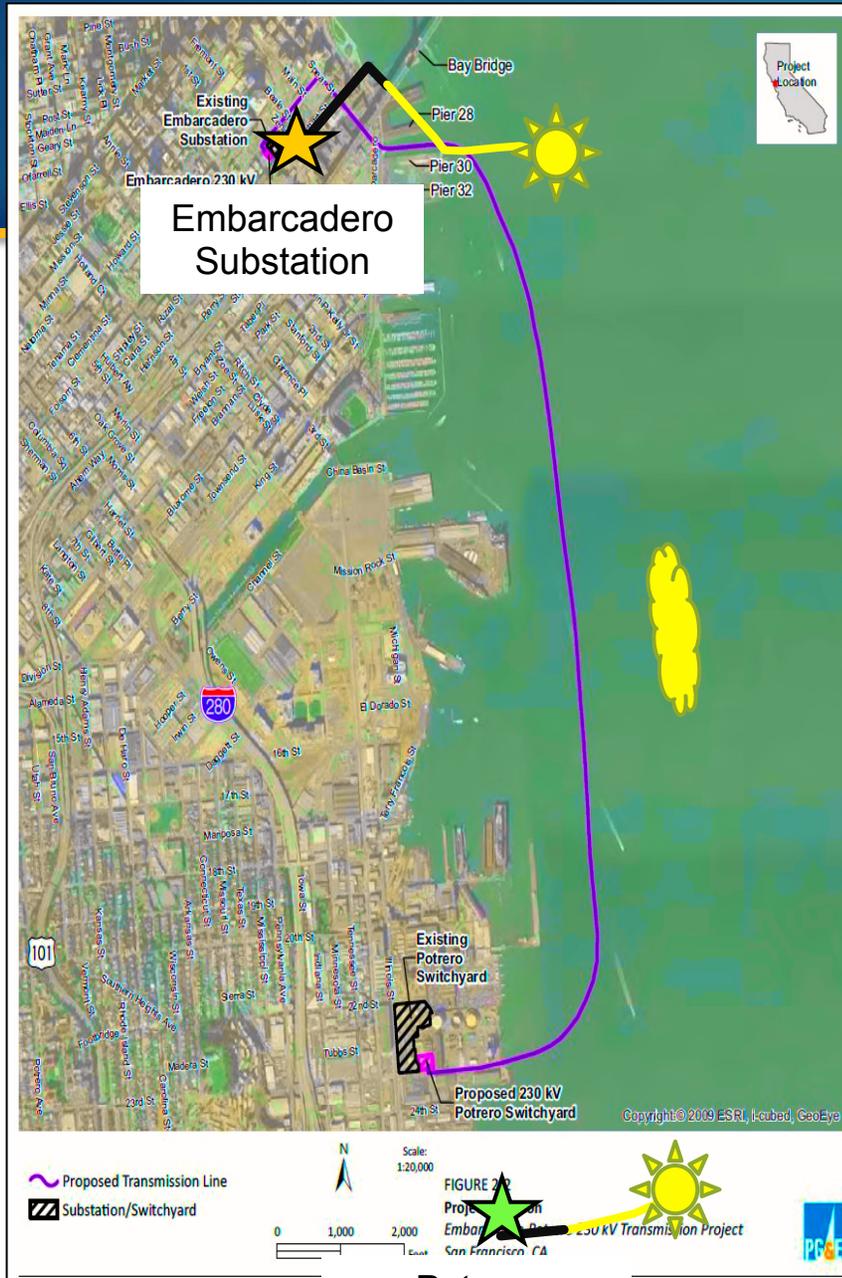
└ Horizontal Directional Drill
(HDD): from land to offshore

└ Submarine Cable
(3 cables = one 230 kV circuit)

★ Embarcadero Substation

★ Potrero Switchyard

Elements of the Project



Potrero
Switchyard



Horizontal Directional Drill (HDD) exit pits



Rock debris removal: near Pier 50



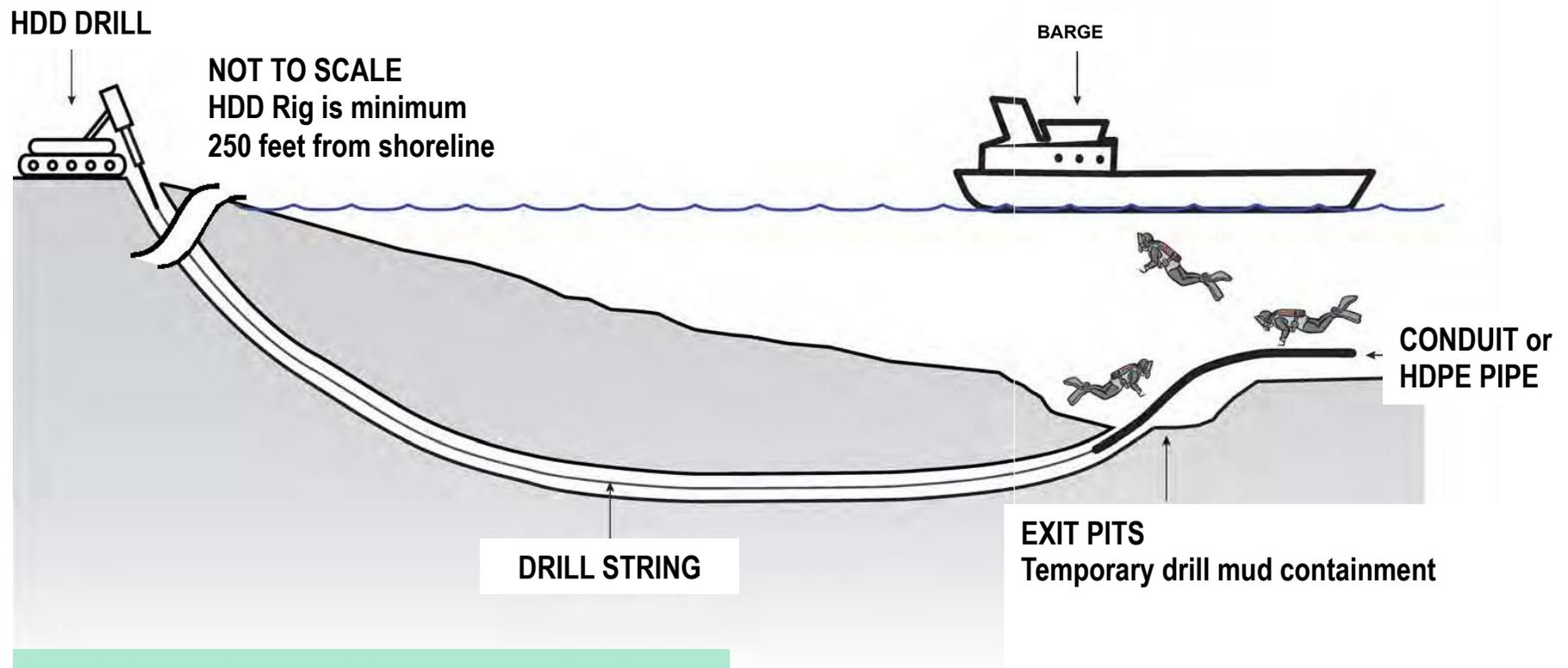
Hydroplow Cable Installation:
(3 cables = one circuit)

Concrete mattresses: provide protection where minimum 6-foot burial cannot be achieved

Schedule

- ▶ BCDC Commission Oct 16 2014
- ▶ Environmental work windows disallow work in Bay Dec 1 to June 1 without a waiver
- ▶ Critical to start HDD and dredging now to Dec 2014 (waiver needed)
- ▶ Submarine cable laying starts June 2015 based on HDD completion and must be completed before Sept 2015 to support subsequent activities
- ▶ Transmission line operational by Dec 2015

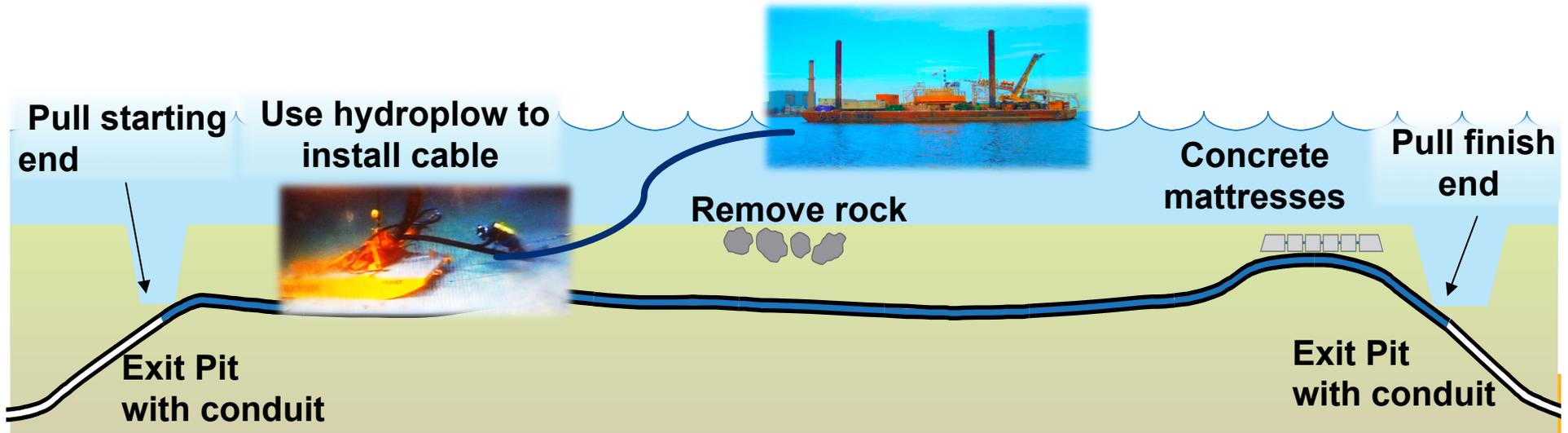
Horizontal Directional Drilling (HDD) under the Shoreline



Dredging exit pits: 1-2 days per pit (6)
Placing conduit: 1-2 days per conduit (6)

Cable Installation Technique

- ▶ Remove rock debris
- ▶ Pull north cable ends through conduit
- ▶ Use hydroplow to install cable below Bay sediment
- ▶ Pull south cable ends through conduit
- ▶ Place concrete mattresses where cable shallower than 6 feet



Hydroplow



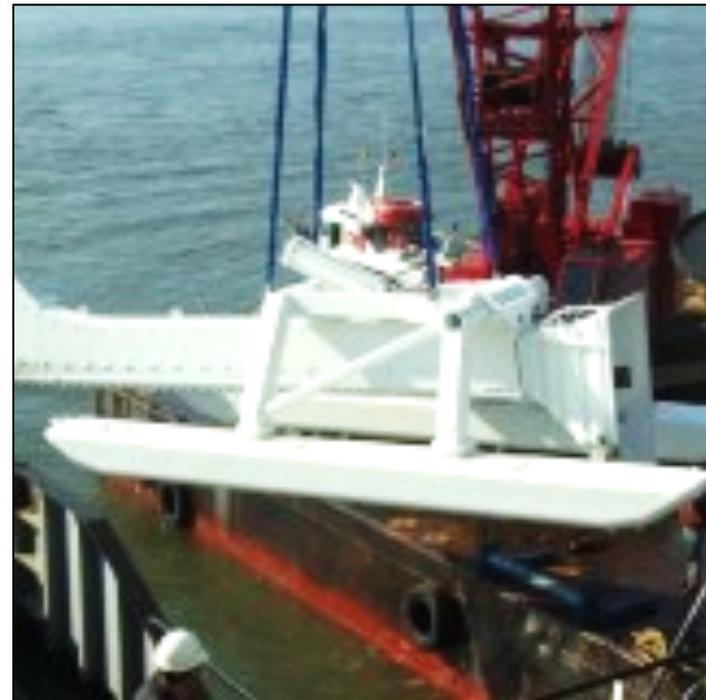
- ▶ Hydroplow water jets fluidize the sediments
- ▶ Cable layed out from end of the hydroplow



Cable Installation

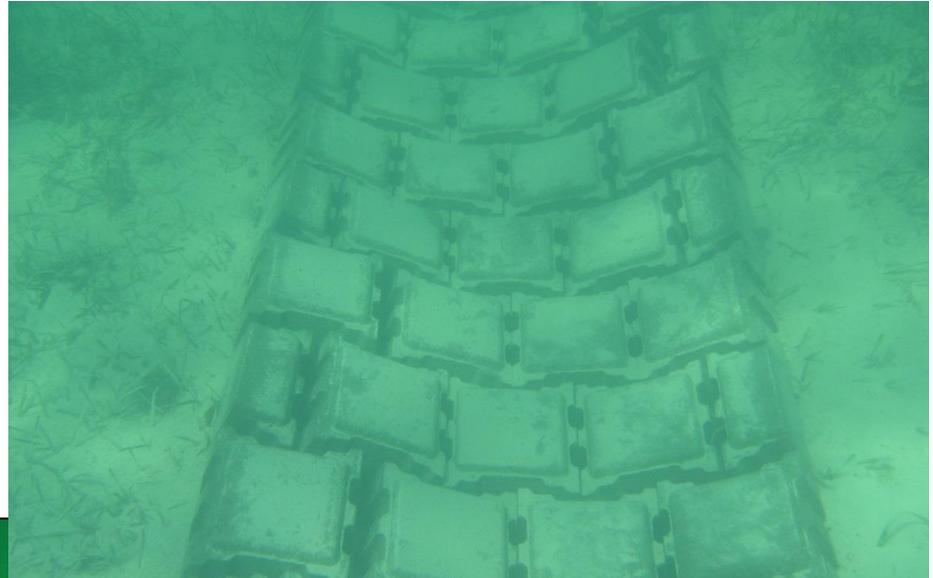


- ▶ Cable played out from ship to hydroplow



Concrete Mattresses

- ▶ When first installed



- ▶ After 72 hours



Permitting and Consultations Completed

Agency	Permit/Consultation	Done
CPUC	CEQA; CPCN	Oct '13; Jan '14
USACE	404 and Section 10	Sept '14
DMMO (interagency)	Approved SAP and Upland Disposal	Aug '14
SF RWQCB	401 Certification	Aug '14
National Marine Fisheries Service	Consultation	Jul '14
California Department of Fish and Wildlife	Consultation	Jun '14
Port of San Francisco	License	Sep '14
BCDC	Major Permit	Oct '14 proposed

Environmental Impacts and Measures

- ▶ Reviewed Subtidal Habitat Goals maps as well as literature and surveys: no eel grass beds, shellfish, wetlands
- ▶ Minimal dredge and fill
- ▶ NMFS issued a “not likely to adversely affect” letter
- ▶ Fish screens on hydroplow equipment approved by CDFW
- ▶ Removal of rock debris offsets use of concrete mattresses
- ▶ Extensive environmental compliance and monitoring plan

Conformance with San Francisco Bay Plan

- ▶ Minimized Impacts
 - No return water
 - Upland disposal
- ▶ Consistent with Bay Plan dredging policies
- ▶ Navigational safety
- ▶ Facility removal after life of project

Summary

- ▶ This San Francisco Lifeline Project brings reliability to San Francisco in the event of a major event
- ▶ All resource agency approvals received
- ▶ Environmental impacts minimized and mitigated
- ▶ Schedule sequencing requires work start immediately and extend into December
- ▶ We have reviewed and agree with the recommendations of the staff report
- ▶ Requesting your approval today



Questions