

Department of Fish and Game Protects and Manages the Public's Fish and Wildlife Resources of the State

Department is a Trustee and Responsible Agency

- Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (FGC §1802)
- In this capacity Department administers CESA, Native Plant Protection Act and other provisions of the FGC that afford protection to State fish and wildlife public trust resources (CEQA §15386)

Authority Resides in:

- State Fish and Game Code
- Public Resources Code
- Porter-Cologne Water Quality Act
- Coastal Act
- CEQA
- CESA and FESA
- U.S. Fish and Wildlife Coordination Act
- U.S. Clean Water Act
- NEPA

Potential Environmental Impacts to Fish and Wildlife Resources and their Habitats

- **Offshore LNG Facilities**
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Potential Environmental Impacts

Issues with Offshore LNG Facilities

- Artificial Lighting/ Impacts to Seabirds
- Marine Mammal Interactions
- Pipelines/Anchors and Impacts to Hard-substrate
- Shore Landings of New Seafloor Pipelines
- Use of Seawater for Production Operations
- Contaminants and Potential Spills

Artificial Lighting from Illuminated Offshore Facilities May Cause Disorientation in Nocturnal Seabirds

- **Leads to collisions with vessels and structures resulting in injury or death to the birds**
- **Birds fall stunned and/or injured into the water, or on decks and platforms**
- **Injured birds become easy targets for predation once it is daylight**

Seabird Species Impacted by Artificial Lighting

Xantus's murrelet**

Ashy storm-petrel*

Black storm-petrel*

Fork-tailed storm-petrel

Leach's storm-petrel

Rhinoceros auklet*

Cassin's auklet

*DFG Species of Special Concern

** To be Listed as Threatened under CESA



Impacts to Marine Mammals (primarily during the construction phase)

- Collisions with vessels
- Disruption of normal behavior patterns such as feeding, movement, and migration



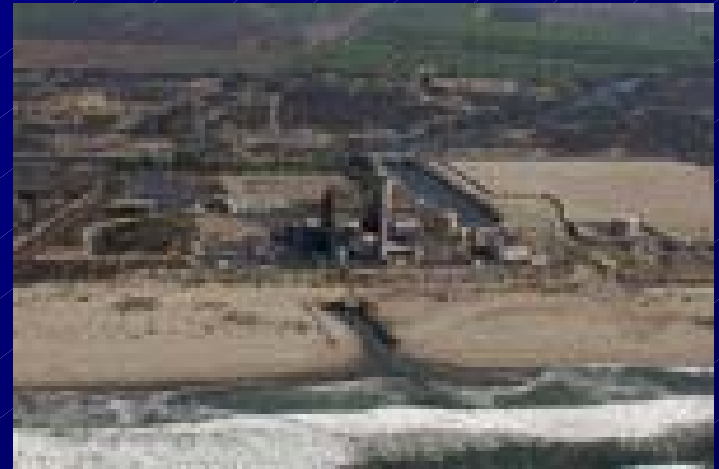
New Pipelines may Impact Hard-Bottom Substrate

- Pipelines may damage hard-bottom substrate and associated communities
- Anchors and anchor chains used during construction operations may also impact hard-bottom substrate
- Additional pipelines may inhibit commercial fishing activities



Shore Landings of New Pipelines from Offshore LNG Facilities

- Both offshore projects propose Horizontal Directional Drilling so impacts to the nearshore zone and beach would be minimal
- Potential for temporary disturbance to shorebirds foraging on beach
- Possible impacts to terrestrial habitat from



SoCal gas pipeline

Shore Landing of Cabrillo Port's Pipeline

Existing SoCalGas

Surface Facility

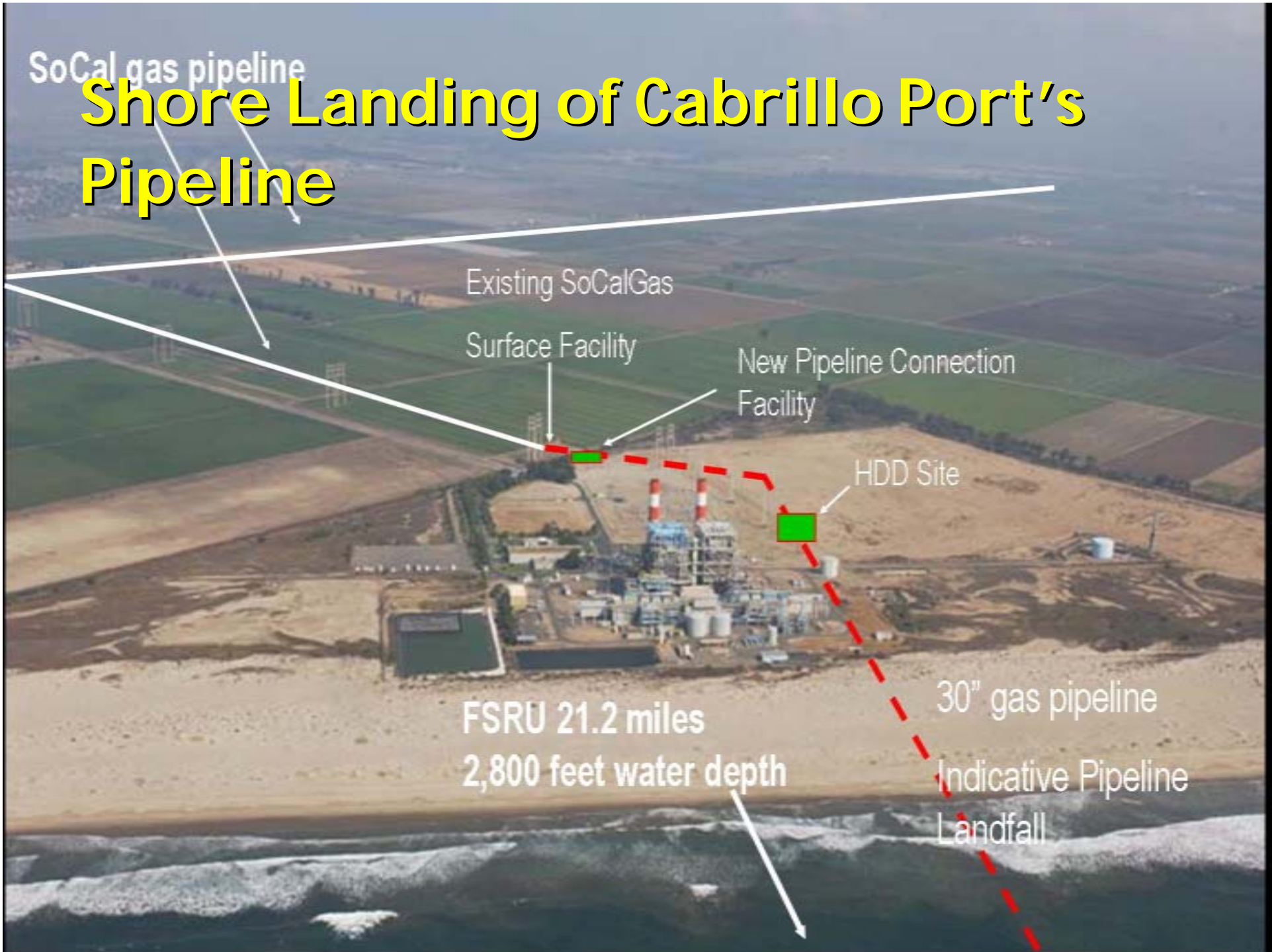
New Pipeline Connection Facility

HDD Site

FSRU 21.2 miles
2,800 feet water depth

30" gas pipeline

Indicative Pipeline Landfall



Use of Seawater by LNG Facility

- **Organisms may be pulled in through the seawater in-take lines**
- **Discharge of used seawater could have contaminants, elevated temperatures**

Contaminants and Potential Spills

- **Spill events from vessel/ facility operations**

Issues with Onshore LNG Facilities

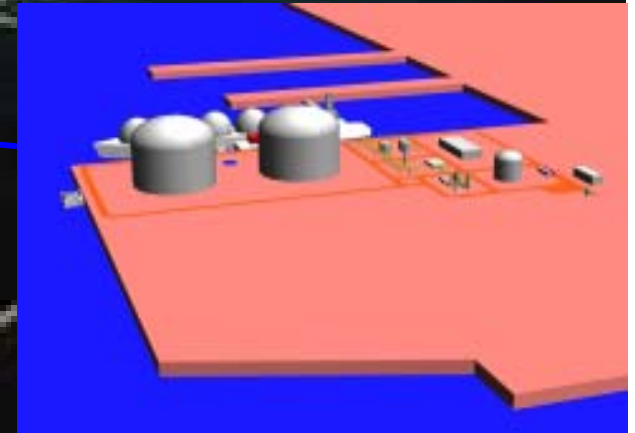
Developed Harbor (Long Beach/SES)

- Invasive Species
- Minor Dredging

Rural Harbor (CalPine)

- Invasive Species
- Major Dredging to Deepen Channels
- Widening of Turning Basin
- Loss of Mudflat Habitat
- Additional Terrestrial Pipelines

Port of Long Beach LNG Terminal Location



Proposed LNG Terminal Sites Humboldt Bay, California



0 0.3 0.6 0.9 1.2 Miles

LNG Terminal in Humboldt Bay has the Potential for Significant Environmental Impacts

Major Dredging

Shoreline Erosion

Loss of Mudflat & Wetland Habitat

Impacts to:

Vegetation* (eelgrass, rare plants)

Invertebrates

Fish* (chinook, steelhead, coho, sturgeon, gobies, smelt, eulachon)

Birds* (pelicans, puffins, cormorants, loons, osprey, marsh hawk...)

Marine Mammals

New On-shore Pipelines Could Further Impact

Additional Terrestrial Habitat and Wildlife

*includes listed species and DFG species of special concern

Summary of Potential Environmental Impacts to Fish and Wildlife Resources and Habitats

- Artificial Lighting/ Impacts to Seabirds
- Marine Mammal Interactions
- Pipelines/Anchors and Impacts to Hard-substrate
- Shore Landings Impacts
- Use of Seawater, Contaminants and Potential Spills
- Invasive Species
- Dredging
- Loss of Mudflat and Wetland Habitat
- Impacts to Aquatic Vegetation, Invertebrates
- Impacts to Fish, Birds, and Mammals
- Impacts to Terrestrial Habitat