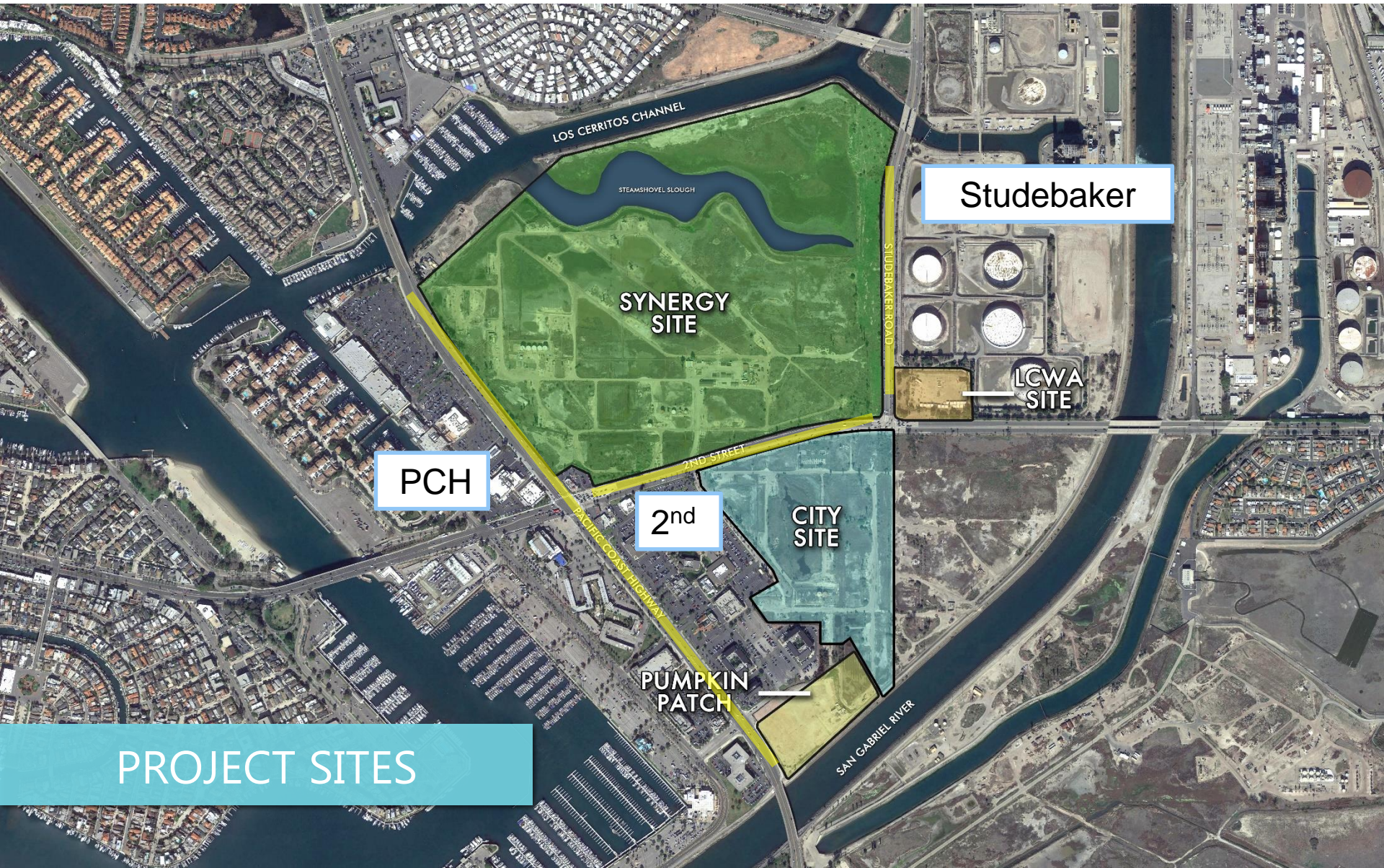




**CONNECTING COMMUNITIES TO
PROTECT, RESTORE, PRESERVE**



Studebaker

LCWA SITE

PCH

2nd

CITY SITE

PUMPKIN PATCH

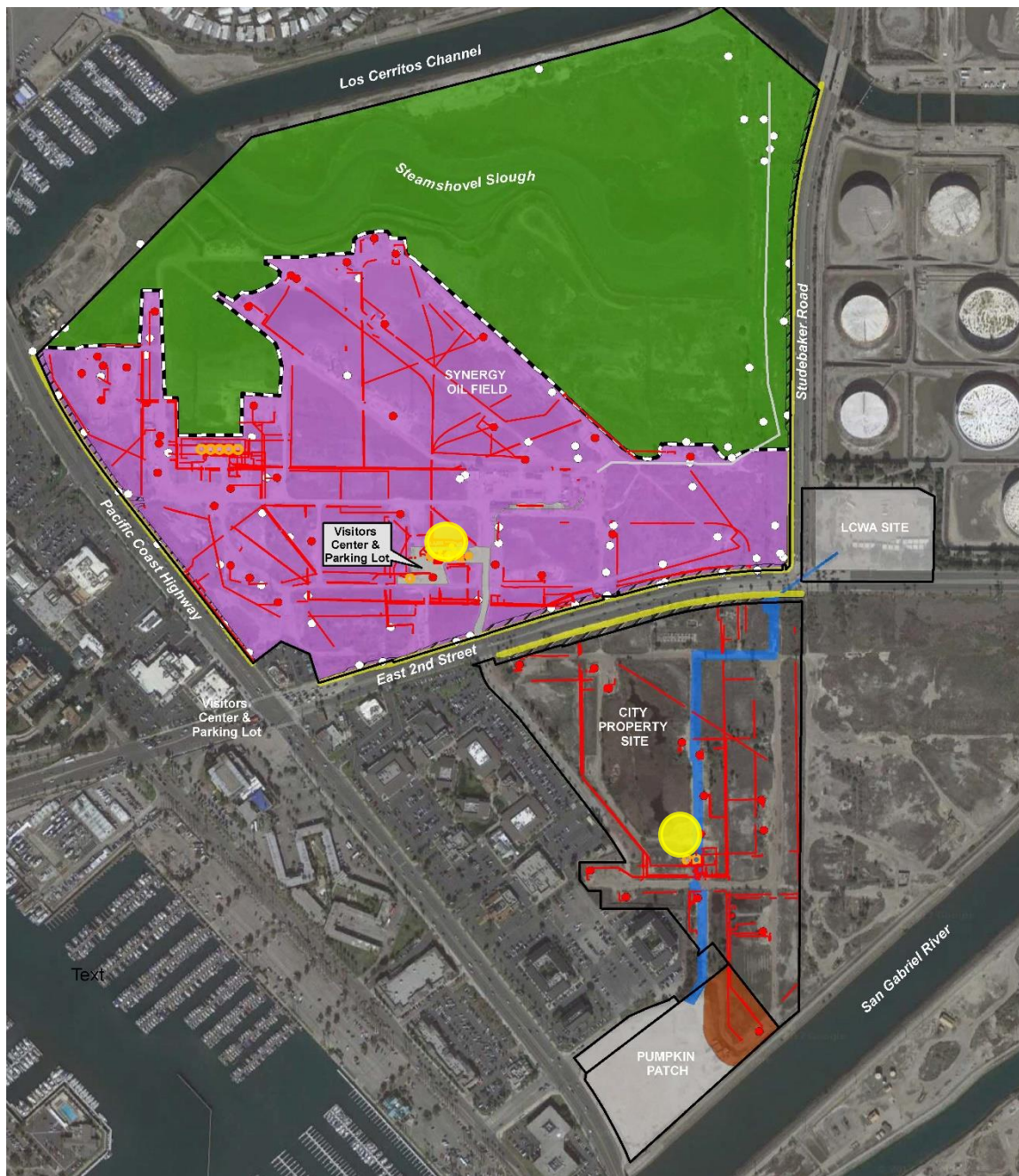
SYNERGY SITE

PROJECT SITES

Los Cerritos Wetlands Oil Consolidation and Restoration Project

Project Objectives

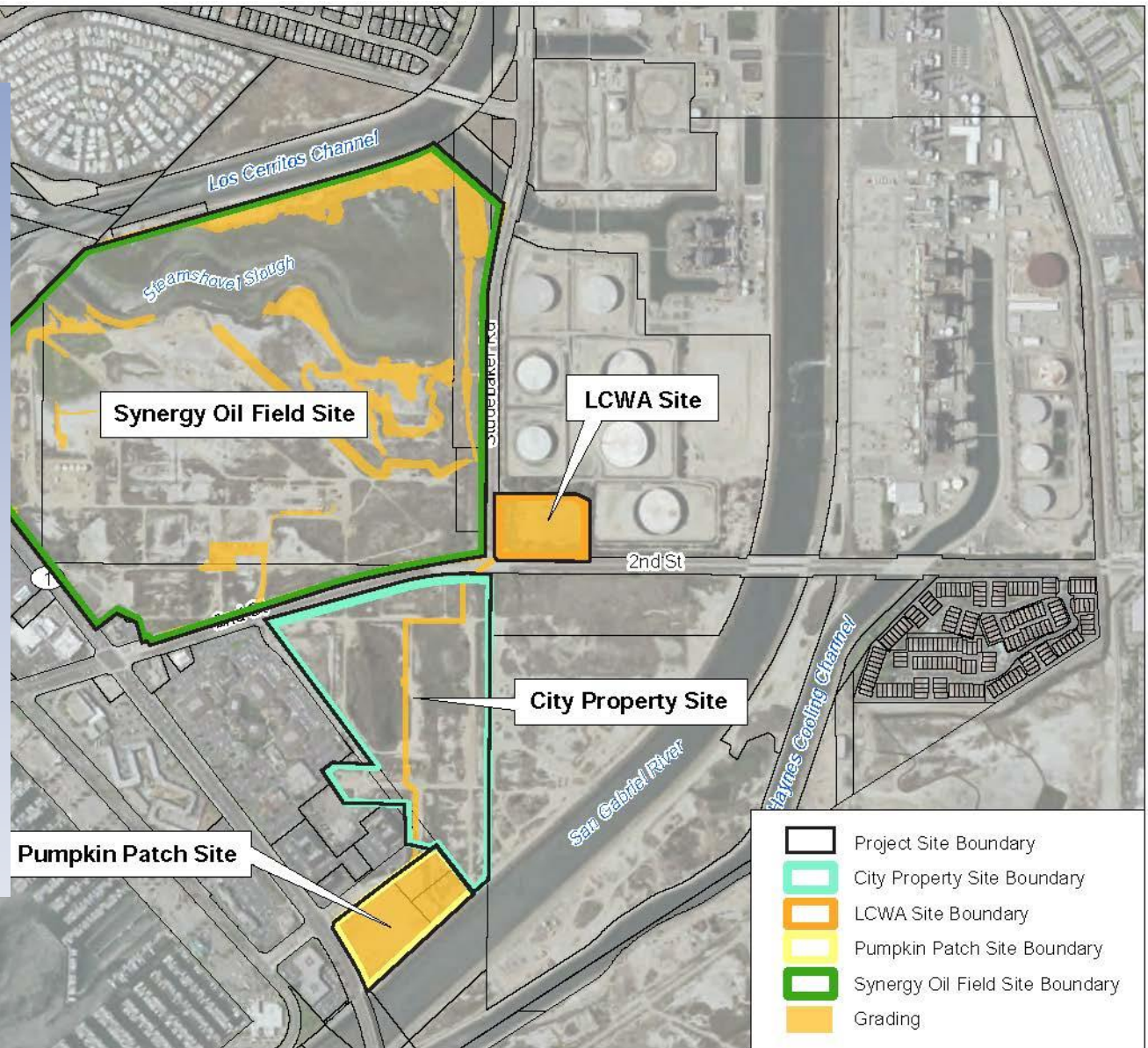
- Oil Consolidation
 - Upgrade technology to be safer and more efficient on significantly smaller footprint
- Wetlands Restoration
 - Enhance Habitat Quality
 - Create Visitors Center
 - Allow for Public Access



Immediate Actions

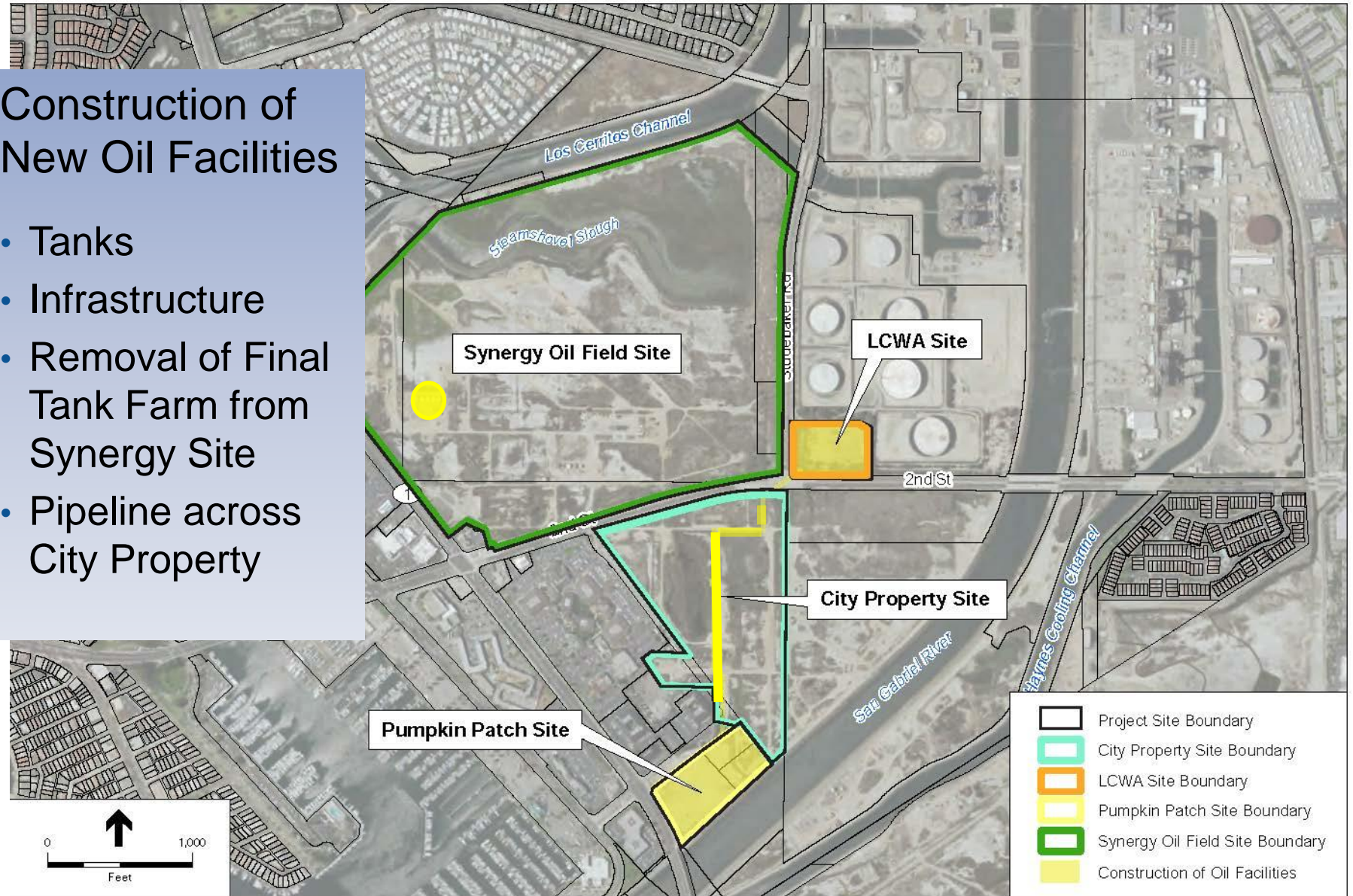
- Establish Non-Wasting Endowment
- Initiate Wetlands Restoration
- Remove Invasive Species from Restoration Area
- Remove 95% (16 miles) of Pipeline on Synergy and City Sites
- Remove 2 “Out of Service” Tank Farms

- Immediate Grading to Restore Tidal Flow
- Create Earthen Berm to Address SLR
- Public Access Trail Within Existing Disturbed Area (outside of wetlands footprint)
- LCWA and Pumpkin Patch Site Preparation

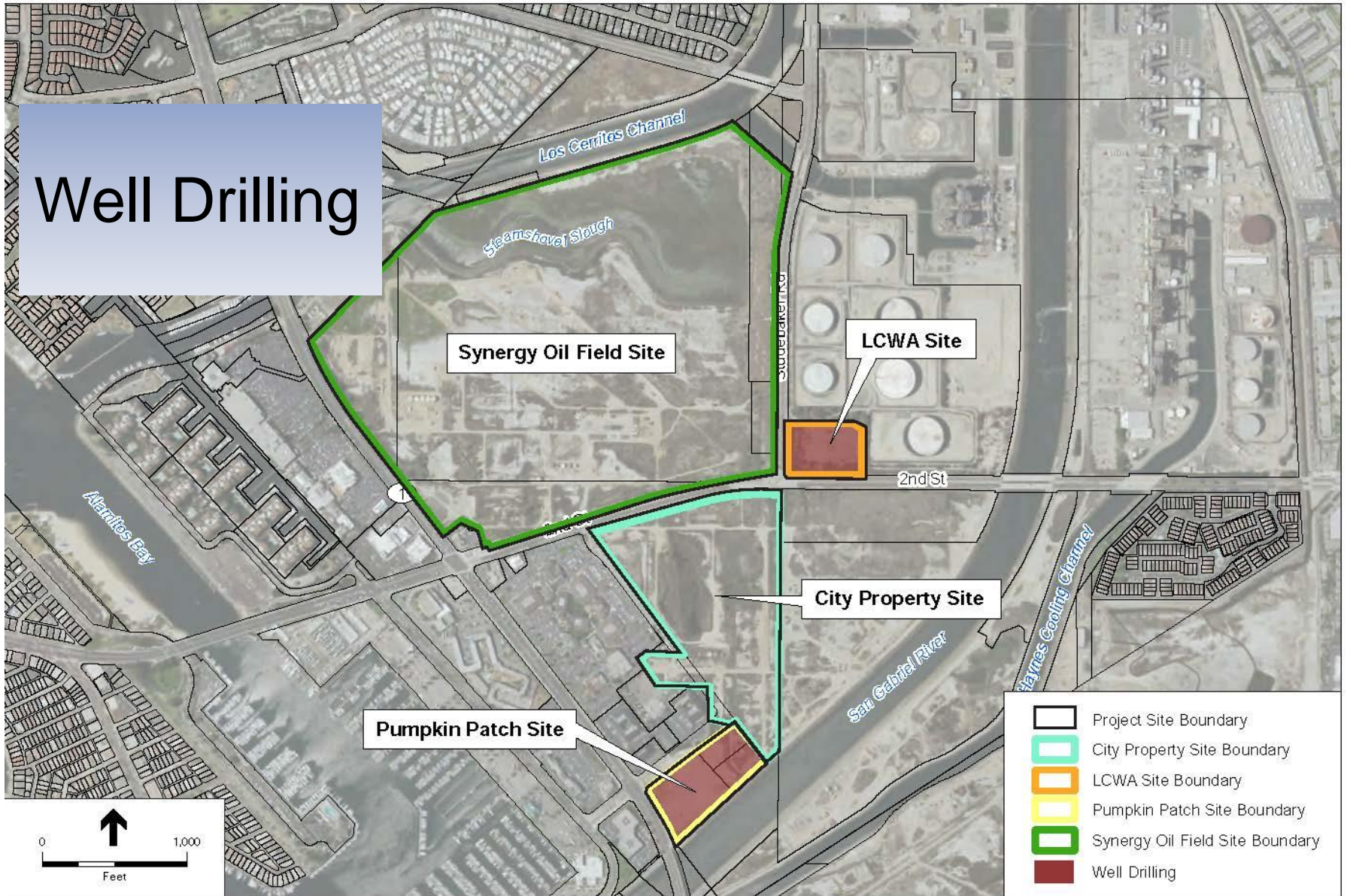


Construction of New Oil Facilities

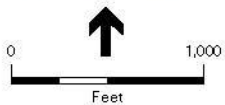
- Tanks
- Infrastructure
- Removal of Final Tank Farm from Synergy Site
- Pipeline across City Property



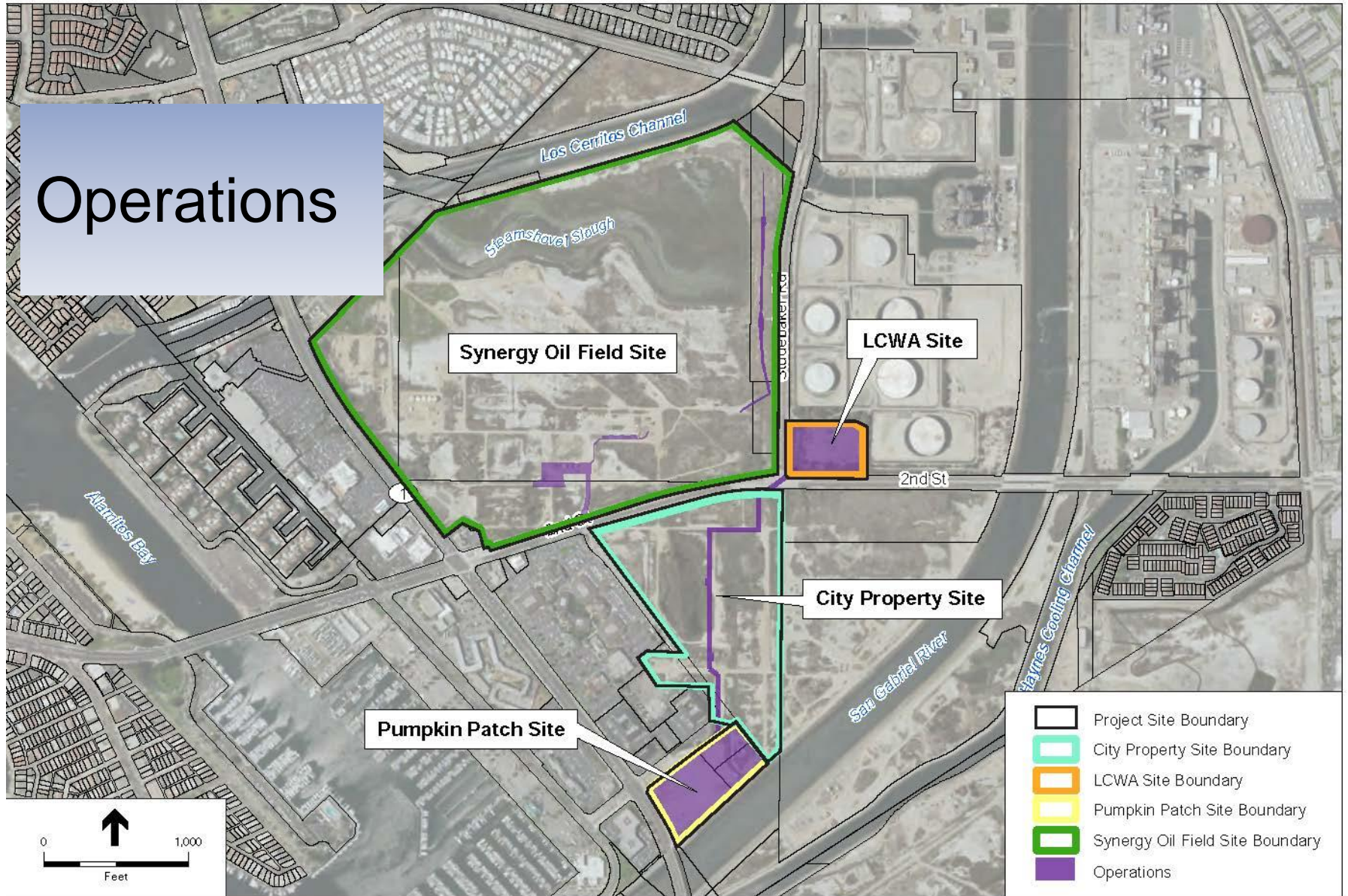
Well Drilling



- Project Site Boundary
- City Property Site Boundary
- LCWA Site Boundary
- Pumpkin Patch Site Boundary
- Synergy Oil Field Site Boundary
- Well Drilling



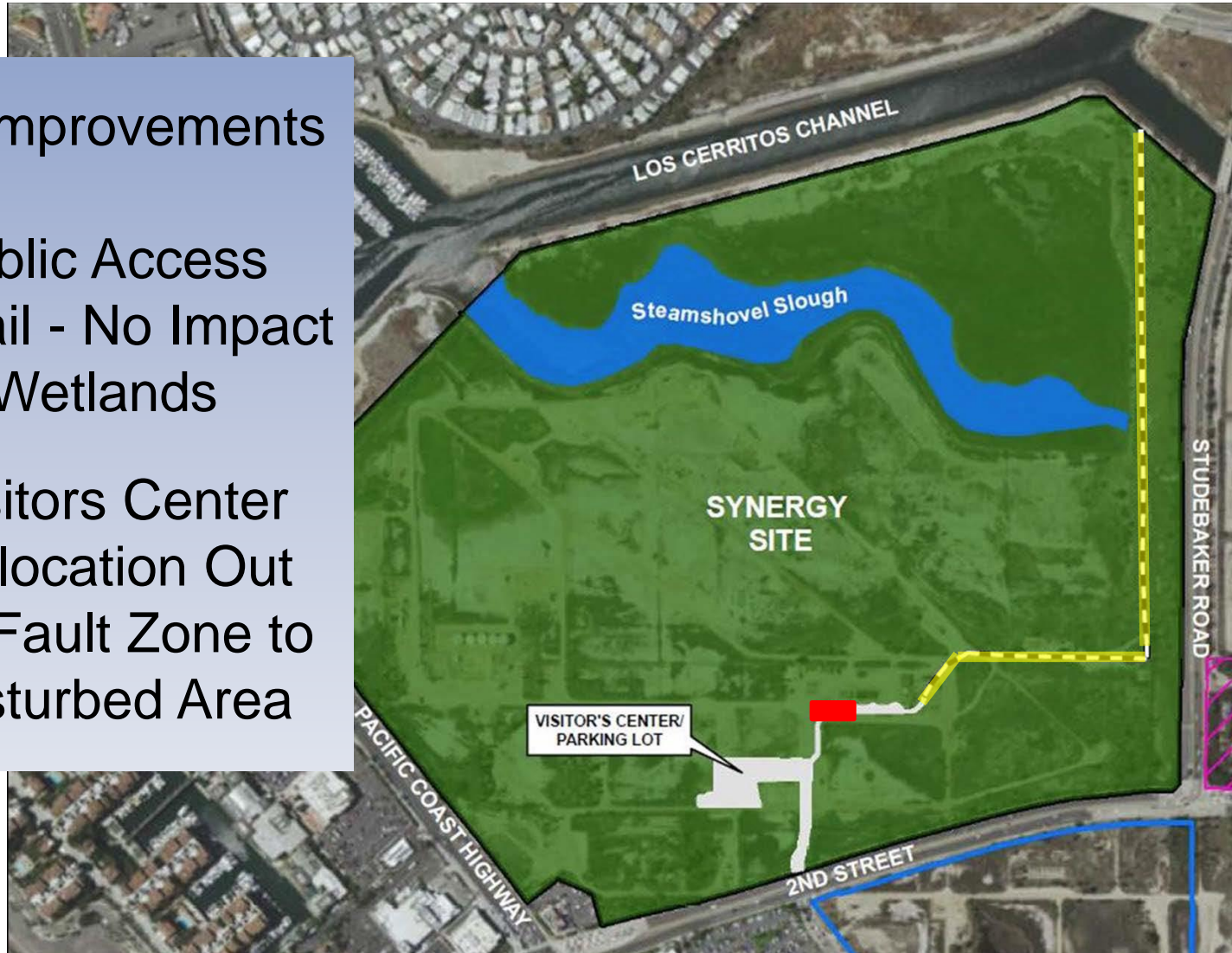
Operations



Los Cerritos Wetlands

Site Improvements

- Public Access Trail - No Impact to Wetlands
- Visitors Center Relocation Out of Fault Zone to Disturbed Area



Los Cerritos Wetlands



Los Cerritos Wetlands



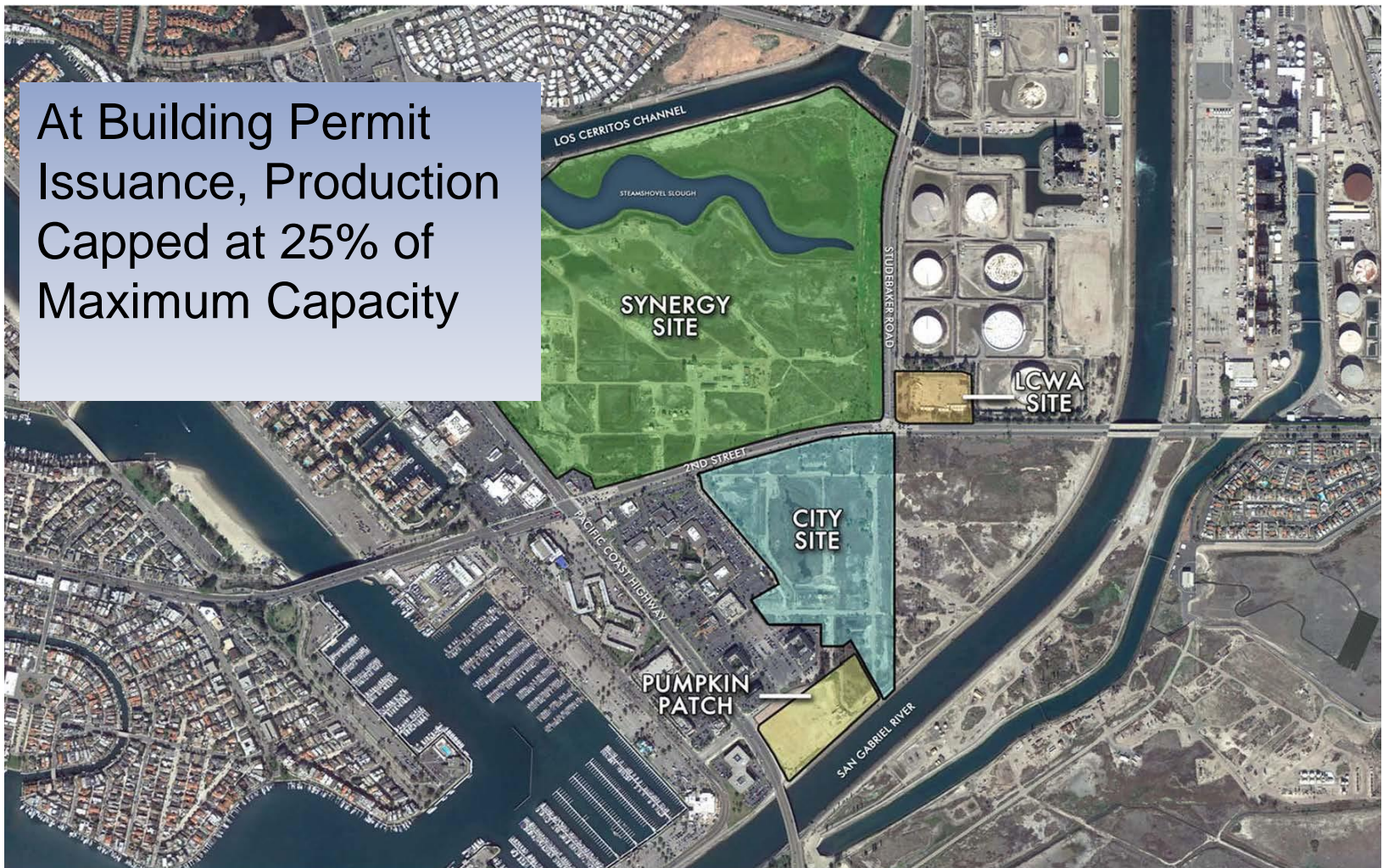
Sidewalks and Bike Paths



- Installation of Sidewalks and Bikeways on all Street Frontages
- Bike Repair Station Along PCH at Pumpkin Patch

Existing Wells – Production Limit

At Building Permit Issuance, Production Capped at 25% of Maximum Capacity



Existing Wells – Removal Schedule

- Less Than 1 BPD for 18 months = Immediate Removal.
- Within 20 Years 50% Wells Removed. Site Remediation and Revegetation.
- Within 40 Years all Remaining Wells and any Remaining Infrastructure Removed. Site Remediate and Revegetation.



Microgrid Energy System

- State of the Art Technology
- Local Source, Local Use
 - Zero Pollution Solar Panels and Natural Gas
- Turbine Cogeneration Reduces Air Pollution/GHG Emissions over 50%

WESTMINSTER AVE (SECOND ST)

Microgrid Energy System - Support

Federal Government

- US EPA Combined Heat & Power Partnership; Incentives
- US DOE Microgrids Program
- US Military Base Microgrids
- Lawrence Livermore and Lawrence Berkeley National Laboratories

California Government

- Air Board Climate Change Scoping Plan
- Energy Commission Microgrid Roadmap and Grants

Environmental Groups

- Environmental Defense Fund
- Natural Resources Defense Council
- Sierra Club
- Union of Concerned Scientists
- Environment California

Low Carbon Oil

- California Adopted Low Carbon Fuel Standards
 - Incentivizes Low-Carbon Sources
 - Disincentivizes Higher Polluting Sources
- Carbon Intensity from Project Oil Very Low
- Reduced GHG Emissions Compared to Higher Carbon Intensity Oil

WESTMINSTER AVE (SECOND ST)

Oil Pipeline Fault Crossings



Existing Condition

- 12 Locations Where Pipeline Crosses Fault
- All 12 Within Wetlands

Proposed Project

- Remove All Existing Pipeline Crossings
- Replace with Modern Pipeline Crossing 1 Time
- Location Outside of Wetlands

Facility Design and Safety

- Modern Technology
- Leak Detection and Active Monitoring
- Automatic Shutdown
- Pipeline, Tank, and Well Containment Systems

Old Technology

- Inefficient
- No Requirement to Comply to Modern Standards
- Visual Blight
- No Containment Measures



New Well Cellars

- Energy Efficient
- New and Safer Design
- Enhanced Aesthetic Appearance
- Containment Measures



Pre-Application Planning and Outreach

Collaborative Planning Process with City and Coastal Commission Prior to Submitting Application

- CCC
- IRT
- LCWA
- El Dorado Audubon
- LCWLT
- Native American Stakeholders
- Business Associations
- HOAs
- 3-Day Open House,
- Scoping Session, 2 Study Sessions, Planning Commission Hearing



Common Issues Raised

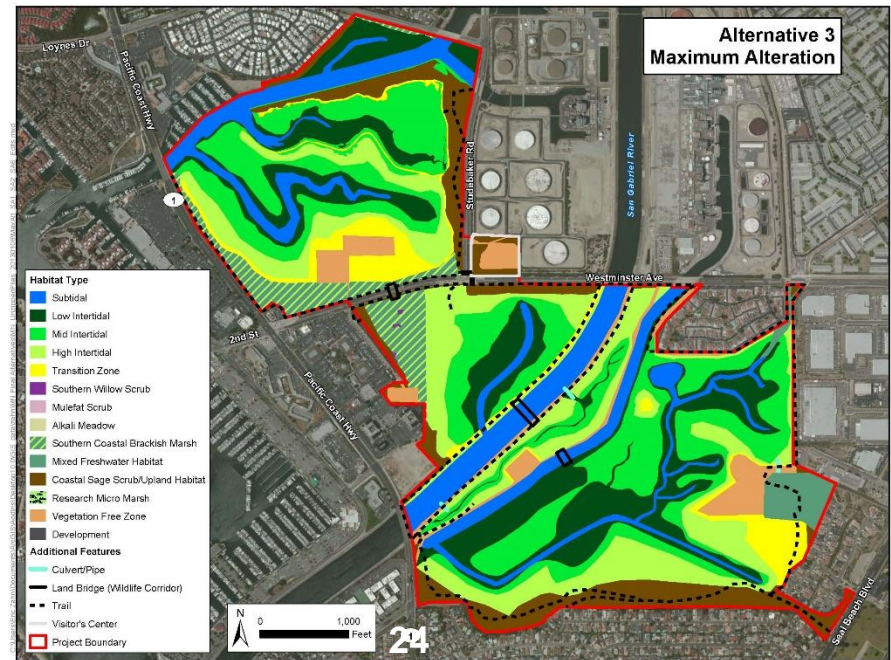
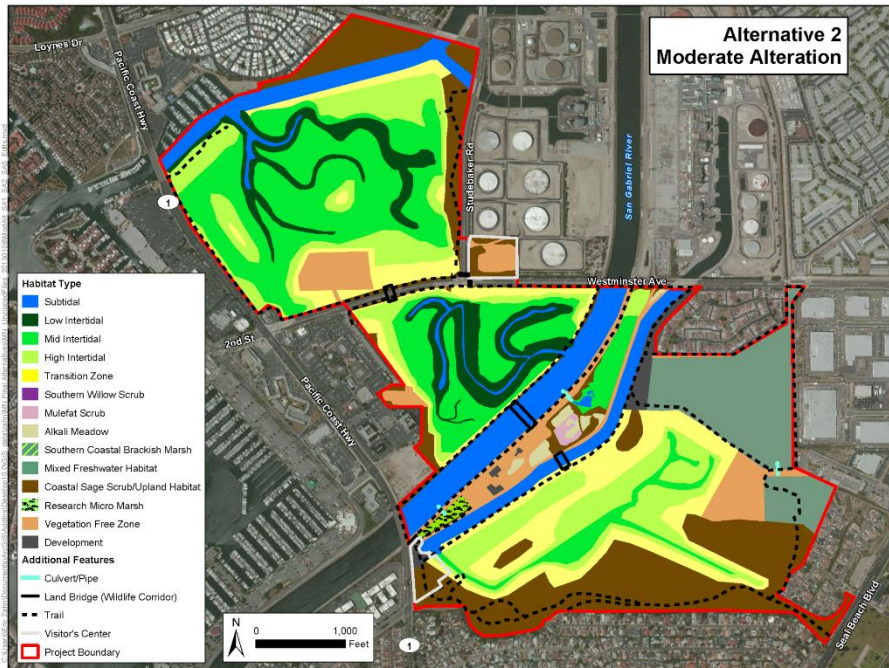
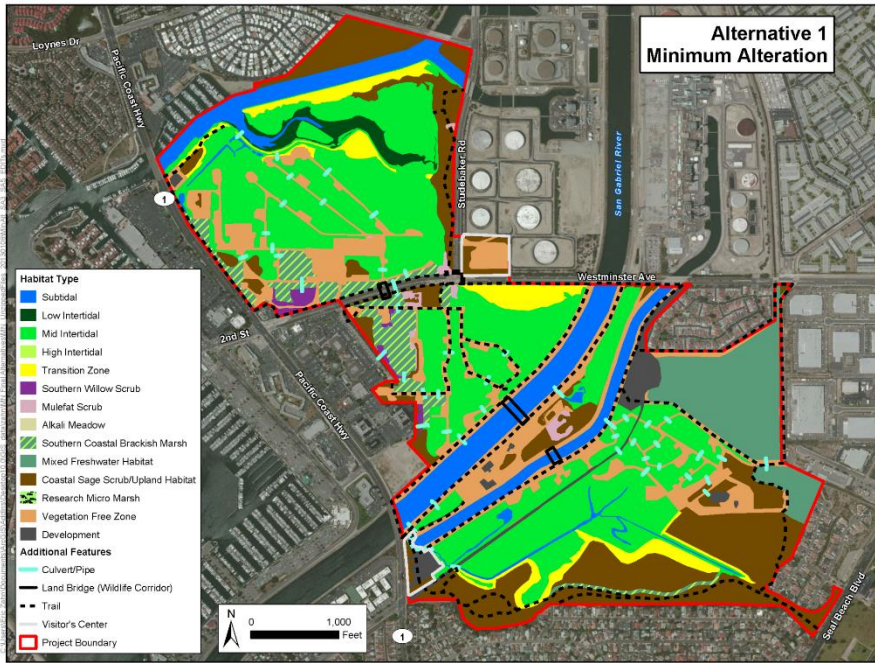
- Sea Level Rise
- Newport-Inglewood Canyon Fault
- Native American Consultation



LCW Complex Land Ownership



LOS CERRITOS WETLANDS AUTHORITY'S CONCEPTUAL RESTORATION PLAN



OTD Parcel Wetlands Feasibility Study

May 15, 2010

Prepared for:



Los Cerritos Wetlands Authority

100 N. Old San Gabriel Canyon Road
Azusa, CA 91702

Prepared by:



1340 E. Florida St.
Long Beach, Ca 90802

Eric Forest Zahn, M.S.
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Conclusion

- Substantial Public Benefits Associated with Project
 - Immediate Restoration of Los Cerritos Wetlands and Establishment of Non-Wasting Endowment
 - Visitors Center and Public Trail
 - New Sidewalks and Bike Paths, Bike Repair Station
 - Sizeable Increase in Revenue Generation for City of Long Beach
 - State of the Art Project with Microgrid and Enhanced Safety Associated with New Oil Facilities
- Request Project Approval Consistent with Staff and Planning Commission Recommendation
- Project Team, Ownership and Technical Experts are Available for Questions



**CONNECTING COMMUNITIES TO
PROTECT, RESTORE, PRESERVE**

LosCerritosWetlandsRestorationPlan.com



Proposed Project

- Immediate Wetlands Restoration
- Public Ownership of Wetlands
- Removal of Oil Operations from Wetlands
- Visitors Center and Trail
- Sidewalks and Bikeways along frontage
- Increased Tax Revenue for City
- City of Long Beach Entry Monument
- Plans for Sea Level Rise in Restoration Plan and for Safely Separating Oil and Wildlife
- 1 Pipeline Crossing Fault Line

No Project

- No Wetlands Restoration
- No Public Ownership of Wetlands
- Reinvest in Existing Oil Operations in Wetlands without Newer Safer Technology
- No Entitlements or Discretionary approvals or Public Participation
- No Visitor Center or Trail
- No Sidewalks and Bikeways
- No City of Long Beach Entry Monument
- Sea Level Rise would cause a dangerous exchange between oil and wildlife
- 12 Pipelines Crossing Fault Line

Water Injection & Induced Seismicity

- LA Times Article (10/31/16), *Southern California deadliest quake make have been caused by oil drilling, study says*
 - “Scientists don’t believe that wastewater injection — or oil production in general — is causing earthquakes in the L.A. Basin. A study last year found no obvious connection between oil production and earthquakes in the basin after 1935, around the time modern seismic sensing equipment was developed.”
 - “Nowadays, water is carefully used to replace the pumped-out oil, which prevents land from sinking and helps extract more oil.”
- In places like Oklahoma, induced seismicity has been triggered when produced water is injected below the production formation in certain areas where a pressure imbalance and increase in shear stress are created, resulting in earthquakes.
- The Project will inject produced water back into the production formation. As the project’s injected water replaces the volume of fluids extracted, underground pressures will be maintained. This also serves to prevent subsidence.

Project Site	Existing Conditions	Proposed Project
Synergy Site (~150 acres)	<ul style="list-style-type: none"> • 39 wells • ~66,000 LF pipelines • 2 tank farms • Misc. oil facilities and distribution lines • Los Cerritos Wetlands (Steamshovel Slough) • Bixby Ranch building 	<ul style="list-style-type: none"> • Removal of oil operations • Remediation of contamination • Restoration of wetlands • Establishment of non-wasting endowment for long term wetlands monitoring and maintenance • Creation of public access • Establishment of visitors center • Transfer of property to public agency • Establishment of perimeter sidewalks and bike lanes
City Property (~33 acres)	<ul style="list-style-type: none"> • 13 wells • ~21,000 LF pipelines • 1 tank farms • Misc. oil facilities and distribution lines • Los Cerritos Wetlands (Marketplace Marsh) 	<ul style="list-style-type: none"> • Removal of oil operations • Remediation of contamination • Operation of new pipeline and utility corridor • Establishment of perimeter sidewalks and bike lanes
Pumpkin Patch (~7 acres)	<ul style="list-style-type: none"> • 1 well • ~1,000 LF pipelines • Los Cerritos Wetlands • Seasonal sale of pumpkins and Christmas trees 	<ul style="list-style-type: none"> • Removal of oil operations • Operation of new office building and warehouse • Operation of 50 new wells (production, water injection and water source wells) • Operation of new oil processing facilities • Operation of new microgrid components (EV charging station and solar panels) • Providing of perimeter landscaping • Establishment of perimeter sidewalks and bike lanes • Establishment of bike station at PCH and River Channel • Establishment of entry monument
LCWA Site (~5 acres)	<ul style="list-style-type: none"> • Leased for storage and staging 	<ul style="list-style-type: none"> • Operation of 70 new wells (production, water injection and water source wells) • Operation of new oil processing facilities • Operation of new microgrid components (natural gas turbine system) • Providing of perimeter landscaping • Establishment of perimeter sidewalks and bike lanes



- Drill up to 50 new wells (a combination of oil production, water injection, and water source wells), to be contained in well cellars below grade.
- 2 Story Office Building and Warehouse
- Rooftop Solar
- Vegetative Screening
- Sidewalks and Bike Lanes

PROPOSED Pumpkin Patch



- Drill up to 70 new wells (a combination of oil production, water injection, and water source wells), to be contained in well cellars below grade.
- Clean Cogeneration of Power with 4 Natural Gas Turbines and Solar
- Exchanged for 154 acres of restored wetlands, a visitors center and trail.
- Vegetative Screening
- Sidewalks and Bike Lanes



PROPOSED LCWA

Old Tanks to be removed within 18 months





