

## **C3 ESHA Technical Memorandum**



# TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES

Regulatory Services



**PROJECT NUMBER:** 10320002MITI

**TO:** Ms. Kate Huckelbridge  
Dr. Jonna Engel  
Mr. Chuck Posner

**FROM:** Thienan Pfeiffer/Tony Bomkamp

**DATE:** May 3, 2017  
[Revised June 22, 2017]

**SUBJECT:** Impacts to Areas that Potentially Meet the California Coastal Act Definition for Environmentally Sensitive Habitat Areas (ESHA) Associated with the Los Cerritos Wetlands Oil Consolidation and Restoration Project, Long Beach, California

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The Los Cerritos Wetlands Oil Consolidation and Restoration Project in the City of Long Beach has the potential to impact areas that could potentially meet the definition for “Environmentally Sensitive Habitat Areas” (ESHA) as defined under the California Coastal Act (CCA). The CCA protects important coastal biological resources including wetlands, riparian habitats, and other areas defined as ESHA by the California Coastal Commission (CCC) in accordance with the Coastal Act. The Coastal Act Section 30107.5 defines an ESHA as:

*...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Following guidance and policies established by the Coastal Commission, criteria used by Glenn Lukos Associates for determining whether habitats exhibit the potential for an ESHA determination are as follows:

- The habitat consists of predominantly native vegetation that supports or is likely to support state or federally listed threatened or endangered animal species and California Fully Protected Species, or other special status animal species (e.g., listed by the California Department of Fish and Wildlife (CDFW) as Species of Concern or species with other designation such as in the IUCN lists);

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- The habitat consists of predominantly native vegetation that supports or is likely to support state or federally listed threatened or endangered plant species or species designated as 1B or 2B by the California Rare Plant Rank (CRPR); or
- The native vegetation alliance has a rarity ranking of S1, S2 or S3 by the California Natural Diversity Database (CNDDDB).

As set forth in the project description included in the Biological Technical Report, the project includes four properties: Synergy Oil Field, Pumpkin Patch Site, Los Cerritos Wetlands Authority (LCWA) Site and the City Property Site. For purposes of this Technical Memorandum, each property was evaluated in accordance with the above-referenced criteria. It is important to note that a final determination of ESHA will be made by the CCC at a future public hearing wherein the Coastal Development Permit for the project will be considered. As such, this Technical Memorandum identifies impacts to potential ESHA based on the above criteria, which in turn are informed by past CCC ESHA determinations, wherein impacts to similar resources have been considered by the CCC. For example, in the recent August 25, 2016 Memorandum addressing “Site-specific analysis of wetlands and ESHA on Banning Ranch,” Dr. John Dixon and Dr. Jonna Engel provide their rationale for making recommendations that certain areas meet the threshold for ESHA:

*The California Department of Fish and Wildlife ranks species and natural communities by degree of imperilment (as measured by rarity, trends, and threats) and considers communities and species with state ranks of S1, S2, and S3 to be rare and “highly imperiled”. In past actions, the Coastal Commission has consistently regarded natural communities and species with these rankings to be “rare” for purposes of the definition of Environmentally Sensitive Habitat Areas (ESHA) in Section 30107.5 of the Coastal Act. The determination of whether a particular area containing elements of such natural communities or individuals of such species meets the definition of ESHA requires a site specific analysis that takes into consideration such matters as the size of the area, the degree of isolation, adjacent development and other disrupting activities (and the legality thereof), amount of existing degradation, and potential jeopardy to regional populations by loss of the area<sup>1</sup>.*

Dr. Dixon and Dr. Engel note in footnote 20 on the same page that:

*The Commission has occasionally found that small, relatively isolated patches or scattered individuals of a rare species or habitat are not rare or ESHA (e.g.,*

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<sup>1</sup> Dr. John Dixon and Dr. Jonna Engel, August 25, 2016 Memorandum addressing “Site-specific analysis of wetlands and ESHA on Banning Ranch”.

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*small isolated patches of southern tarplant at Hearthside Homes 5-05-020); on the other hand, the Commission found that an area on a capped toxic waste site supporting a small population of Ventura marsh milk-vetch was ESHA because it was the only known remaining population of the species (City of Oxnard LCP No. Oxnmaj-1-00: North Shore at Mandalay Bay Annexation).*

The following State or federally listed animal species or California Fully Protected Species and associated habitats have been identified on or in proximity to one or more of the subject properties and potential impacts to those species are addressed below for each property:

- American peregrine falcon (*Falco peregrinus anatum*) (State: Endangered, California Fully Protected)
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) (State: Endangered)
- California least Tern (*Sterna antillarum browni*) (State and Federal: Endangered, California Fully Protected)
- Pacific green sea turtle (*Chelonia mydas*) (Federal: Threatened)
- California brown pelican (*Pelecanus occidentalis californicus*) (: California Fully Protected)
- Western snowy plover (*Charadrius alexandrinus nivosus*) (State: Endangered, Federal: Threatened)
- White-tailed kite (nesting) (*Elanus leucurus*) (California Fully Protected)

Where focused surveys have not detected special-status species, a determination that the site is "likely to support" such species is not warranted for purposes of ESHA determination. Since burrowing owl was not detected during focused wintering and breeding season surveys, the site is not considered "likely to support burrowing owl" and as such, it along with other California Species of Concern discussed below are not further addressed in detail.

The following special-status plants with a CRPR of 1B have been identified on one or more of the subject properties and potential impacts to those species are addressed below for each property.

- Estuary seablite (*Suaeda esteroa*)
- Southern tarplant (*Centromadia parryi* ssp. *australus*)

The following Vegetation Alliances with a CNDDDB Rarity Ranking of S3 or lower have been identified on one or more of the subject properties and potential impacts to those alliances are addressed below for each property.

- *Arthrocnemum subterminale* Herbaceous Alliance (Parish's Glasswort Patches)(G4S2)
- *Frankenia salina* Herbaceous Alliance (Alkali heath flats)(G4S3)

- *Sarcocornia Pacifica* Herbaceous Alliance (Pickleweed Mats)(G4S3)
- *Spartina foliosa* Herbaceous Alliance (California cordgrass marsh)(G4S3.2)

## SYNERGY OIL FIELD

Pursuant to the Coastal Act, impacts to ESHA are generally limited to activities such as habitat restoration as noted by the Coastal Commission Staff:

*The Coastal Act establishes a high standard for protection of areas that are identified as environmentally sensitive. Only resource-dependent uses, such as habitat restoration, are allowed within an environmentally sensitive area (ESHA).<sup>2</sup>*

### Special-Status Animals

Exhibit 1 depicts potential habitat for four listed animal species and two State protected species: American peregrine falcon, Belding's savannah sparrow, California least tern, Pacific green sea turtle, California brown pelican and white-tailed kite.

#### **American Peregrine Falcon**

Steamshovel Slough represents the most likely foraging area for the American peregrine falcon, with potential foraging areas that could be potential ESHA coincident with the foraging areas shown for the California least tern and California brown pelican. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to the tidal channel that is potential foraging habitat for the peregrine falcon. These impacts, needed to implement the habitat restoration, can be allowed under the Coastal Act as restoration is a use dependent on the resource pursuant to Section 30240 and Section 30233(a)(b). Following completion of grading the potential foraging area for the peregrine falcon, the habitat would be expanded due to the addition of saltmarsh and mudflats used by potential prey for this species.

#### **Belding's Savannah Sparrow**

Exhibit 1 depicts potential habitat for Belding's savannah sparrow. Approximately 0.003 acres of wetland habitat will be permanently impacted by the wetlands restoration component of the project associated with installation of a sheet pile wall, which is a necessary component of the restoration in order to protect adjacent areas from tidal flooding with the introduction of tidal waters to areas that currently lack tidal influence.

Temporary impacts associated with transitional wetland grading, tidal channel grading, construction of a berm and overlook terrace, and berm/road removal to special-status habitats

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<sup>2</sup> California Coastal Commission. Staff Report for Newport Banning Ranch, 5-15-2007, p. 26.

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including parish's glasswort patches, alkali heath flats, pickleweed mats and California cordgrass marsh as well as other wetland habitats including saltgrass flats, shoregrass flats, unvegetated flats, and tidal channel potentially used by Belding's savannah sparrow will be necessary to implement the proposed habitat restoration. Potential impacts are summarized in Table 1 below.

These temporary impacts associated with the proposed habitat restoration can be allowed under the Coastal Act, and importantly, would result in a large net increase in suitable habitat for the Belding's savannah sparrow both in the near-term and in the longer-term under various sea level rise scenarios.

### **California Least Tern**

Exhibit 1 depicts potential foraging habitat for the California least Tern that could be determined to be ESHA. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to the tidal channel that is potential foraging habitat for the California least tern. These impacts, needed to implement the restoration can be allowed under the Coastal Act for the same habitat restoration purposes described above and following completion of grading the potential foraging area for the California least tern would be expanded due to the addition of tidal channels.

### **Pacific Green Sea Turtle**

Exhibit 1 depicts potential foraging habitat for the Pacific Green Sea Turtle. Project grading would not impact any areas that could potentially be determined to be ESHA for the Pacific Green Sea Turtle.

### **California Brown Pelican**

Exhibit 1 depicts potential foraging habitat for the California brown pelican that could be determined to be ESHA. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to the tidal channel that is potential foraging habitat for the California brown pelican. These impacts, needed to implement the restoration can be an allowed use under the Coastal Act as discussed above and following completion of grading the potential foraging area for the California brown pelican would be expanded due to the addition of tidal channels.

### **Western Snowy Plover**

Potential foraging habitat for the California western snowy plover that could be determined to be ESHA is coincident with areas used for foraging by the California least tern. There are no potential nesting areas on the site. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to tidal channel that is potential foraging habitat for the snowy plover. These impacts, needed to implement the restoration can be allowed under the Coastal Act as habitat restoration is a resource-dependent use and following completion of grading the potential foraging area for the snowy plover would be expanded due to the addition of salt marsh and tidal channels.

**White-tailed Kite (Nesting Only)**

Areas of Steamshovel Slough and areas south of the berm within the proposed Mitigation Bank Area exhibit potential for foraging white-tailed kite; however, these areas do not contain trees that exhibit potential for nesting and therefore there are no areas of potential ESHA affected by the project.

<b>Table 1: Temporary Impacts to Potential ESHA Associated with Grading and Construction of Restoration Areas (Acres) Synergy Oil Field – Phase 1</b>						
<i>Wetland Alliances</i>	<i>Transitional Wetland Grading</i>	<i>Tidal Channel Grading</i>	<i>Seawall Berm</i>	<i>Overlook Terrace</i>	<i>Berm/Road Removal</i>	<i>Sidewalk Grading</i>
Alkali Heath Flats (Non-Tidal)	0.13	0.00	0.00	0.00	0.00	0.00
California Cordgrass Marsh	0.00	0.00	0.00	0.00	0.01	0.00
Mudflats	0.00	0.02	0.00	0.00	0.00	0.00
Parish's Glasswort Patches	0.09	1.14	0.58	0.00	0.35	0.00
Pickleweed Mats	0.67	0.47	0.25	0.04	0.07	0.00
Saltgrass Flats	0.00	0.04	0.85	0.00	0.00	0.00
Shoregrass Flats	0.29	0.00	0.00	0.00	0.00	0.00
Unvegetated Flats	0.00	1.78	0.38	0.00	0.00	0.00
Tidal Channel	0.00	0.08	0.00	0.00	0.02	0.00
<i>Wetland Alliances Subtotal by Category</i>	<b>1.18</b>	<b>3.54</b>	<b>2.06</b>	<b>0.04</b>	<b>0.45</b>	<b>0.00</b>
<b>Total</b>	<b>7.27</b>					

**Other Special-Status Species Considered**

Mudflat Tiger Beetle (*Cicindella trifasciata sigmoidea*) – Potentially occurs in Steamshovel Slough. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to the tidal channel that is potential foraging habitat for the mudflat tiger beetle. Impacts needed to implement the restoration can be an allowed use under the Coastal Act and following completion of grading the potential foraging area for this species would be expanded due to the addition of tidal channels.

Salt marsh wandering skipper (*Panoquina errans*) – Potentially occurs in Steamshovel Slough and limited areas within areas to be graded for wetland creation. Project grading would have minimal impact to suitable saltgrass that is potential foraging habitat for the Salt marsh wandering skipper. Impacts needed to implement the restoration can be an allowed use under the

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Coastal Act and following completion of grading the potential foraging area for this species would be expanded due to the addition of tidal channels.

Sandy beach tiger beetle (*Cicindela hirticollis gravida*) – Potentially occurs in Steamshovel Slough in areas not affected by project grading.

Senile tiger beetle (*Cicindela senilis frosti*) – Potentially occurs in Steamshovel Slough in areas not affected by project grading.

Western beach tiger beetle (*Cicindela latesignata latesignata*) – Potentially occurs in Steamshovel Slough. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to the tidal channel that is potential foraging habitat for the western beach tiger beetle. Impacts needed to implement the restoration can be an allowed use under the Coastal Act and following completion of grading the potential foraging area for this species would be expanded due to the addition of tidal channels.

Western tidal-flat tiger beetle (*Cicindela gabbii*) – Potentially occurs in Steamshovel Slough in areas not affected by project grading.

Double Crested cormorant *Phalacrocorax auritus* – Observed on trash boom at mouth of Steamshovel Slough and not within potential impact area. This area is potential ESHA but unaffected by the project.

Northern harrier (nesting) *Circus cyaneus* - Areas of Steamshovel Slough and areas south of the berm within the proposed Mitigation Bank Area exhibit potential for foraging northern harrier; however, these areas do not contain potential for nesting and therefore there are no areas of potential ESHA affected by the project.

Osprey (*Pandion haliaetus*) - Potential foraging habitat for the osprey that could be determined to be ESHA is coincident with areas used for foraging by the California least tern. Project grading would have minimal impact totaling 0.08 acre of temporary impacts to tidal channel that is potential foraging habitat for the osprey. These impacts, needed to implement the restoration can be allowed under the Coastal Act and following completion of grading the potential foraging area for the osprey would be expanded due to the addition of salt marsh and tidal channels.

### **Special-Status Plants**

Exhibit 2 depicts the locations for two special-status plants, including southern tarplant and estuary seablite.

### **Southern Tarplant**

The Synergy Oil Field contains a regionally important population of southern tarplant, portions of which exhibit characteristics that could potentially be considered ESHA. It is important to note that many of the areas where southern tarplant occurs are highly disturbed with the plants growing through gravel, cracks in concrete slabs, pipeline storage areas, and similarly disturbed areas that otherwise lack native habitats. In other areas, southern tarplant is associated with native vegetation alliances including areas that support common pickleweed, saltgrass, and alkali heath. As such, ESHA determinations must be made based on site-specific conditions as noted by Dr. Dixon and Dr. Engel in the above references.

The project results in impacts to southern tarplant in three locations: 1) tidal channel grading within the eastern edge of the coastal salt marsh reestablishment area, 2) berm installation associated with the wetland reestablishment, and 3) relocation of the visitor center which will include removal of existing oil tanks and associated gravel occupied by southern tarplant.

The southern tarplant to be affected by grading of the tidal channel is associated with areas of disturbed pickleweed that includes a substantial component of the non-native small-flowered ice plant. Given the extent of the occurrence and the number of southern tarplant in this area (approximately 6,000 in 2015), based on the criteria set forth by Dr. Dixon and Dr. Engel, this area could potentially be determined to be ESHA. However, any impacts that would occur are associated with grading necessary for reestablishment of the tidal connection associated with the wetland reestablishment, and therefore, the impacts could be allowed. It is important to note that pursuant to the Biological Technical Report (BRT) that has been submitted to the City for preparation of an Environmental Impact Report pursuant to the California Environmental Quality Act (CEQA), the BRT concluded that impacts to southern tarplant would be significant and will be fully mitigated as set forth in the Southern Tarplant Restoration Plan prepared for the project.

Similarly, impacts to southern tarplant associated with construction of the berm occurs in an area of alkaline soils that also support a mix of saltgrass and non-native grasses. Based on the criteria set forth by Dr. Dixon and Dr. Engel, this area could potentially be determined to be ESHA. However, since the impacts associated with creating this berm are necessary for reestablishment of the tidal connection associated with the wetland reestablishment, the impacts could be permissible. As noted above, impacts to all individuals of southern tarplant will be fully mitigated.

The southern tarplant surrounding the tank farm and adjacent areas is growing through gravel and other disturbed substrates that do not support native vegetation characteristic of southern tarplant habitat. Based on the criteria set forth by Dr. Dixon and Dr. Engel, this area would not likely be determined to be ESHA due to adjacent development and disrupting activities associated with oil production. In addition, it is possible that this area would need to undergo soil remediation following the removal of the tank farm. A Phase II Environmental Site

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Assessment is being prepared and will address the need, if any, for remediation in this area. Nevertheless, as noted above, even if not considered ESHA, the BRT recommends that impacts to all individuals of southern tarplant be fully mitigated including these individuals.

### **Estuary Seablite**

As depicted on Exhibit 2, Estuary seablite only occurs within the wetland alliances noted below, all of which have a CNDDDB Rarity Ranking of S3 or lower and are thus likely to be considered potential ESHA in accordance with the criteria set forth by Dr. Dixon and Dr. Engel. The project has been designed to avoid estuary seablite. Nevertheless, should estuary seablite establish in the impact areas and impacts to a few individuals occur, it would occur during grading necessary to establish tidal connections needed for the wetland reestablishment and would be allowable under the Coastal Act. It is also important to note that estuary seablite is included in the plant palette and there will be a substantial net increase in this species with the wetland reestablishment program.

In addition to the two List 1B plants discussed above, woolly seablite (*Suaeda taxifolia*), a CNPR List 4 plant occurs within Steamshovel Slough within an area that would be considered ESHA; however, this area would not be affected by project grading or otherwise impacted by the project.

### **Special-Status Vegetation Alliances**

As depicted on Exhibit 3, the following vegetation alliances with a CNDDDB Rarity Ranking of S3 or lower would be impacted by the project's proposed habitat restoration activities.

#### ***Arthrocnemum subterminale* Herbaceous Alliance (Parish's Glasswort Patches)(G4S2) -**

Parish's glasswort is a plant that is most common in high marsh areas, and the patches dominated by Parish's glasswort (*Arthrocnemum subterminale*, FACW) are common on the berm that demarcates the southern edge of Steamshovel Slough as well as non-tidal areas south of Steamshovel Slough. While this species often forms monocultures, other species that are sometimes associated with it include common pickleweed (*Salicornia pacifica*, OBL), alkali heath (*Frankenia salina*, FACW), saltgrass (*Distichlis spicata*, FAC), shoregrass (*Distichlis littoralis*, FACW), and sea lavender (*Limonium californicum*, FACW).

As summarized in Table 1 above, there would be temporary impacts to this alliance due to grading needed to establish expanded tidal areas as a component of the wetland reestablishment and rehabilitation. As such, temporary impacts to this alliance could be allowable under the Coastal Act.

***Frankenia salina* Herbaceous Alliance (Alkali heath marsh)(G4S3) –** Alkali heath is common in a variety of alliances in both Phase 1 and Phase 2 and is most common with the pickleweed mat

alliance described below. In some areas this species forms unbroken stands that constitute a separate alliance. Alkali heath is the dominant species and both saltgrass and common pickleweed may also be present.

As summarized in Table 1 above, there would be temporary impacts to this alliance necessary for grading needed to establish expanded tidal areas as a component of the wetland reestablishment and rehabilitation. As such, temporary impacts to this alliance could be allowable under the Coastal Act.

***Sarcocornia Pacifica Herbaceous Alliance (Pickleweed Mats)(G4S3)*** – Pickleweed mats are common in a variety of alliances in both Phase 1 and Phase 2. In some areas this species forms unbroken stands that constitute a separate alliance. In other areas is other species such as alkali heath, shoregrass and saltgrass may also be present.

As summarized in Table 1 above, there would be temporary impacts to this alliance necessary for grading needed to establish expanded tidal areas as a component of the wetland reestablishment and rehabilitation. As such, temporary impacts to this alliance could be allowable under the Coastal Act.

***Spartina foliosa Herbaceous Alliance (California cordgrass marsh)(G4S3.2)*** – is within Steamshovel Slough. Cordgrass (*Spartina foliosa*, OBL) is dominant with other species including common pickleweed and saltwort.

As summarized in Table 1 above, there would be temporary impacts to this alliance necessary for grading needed to establish expanded tidal areas as a component of the wetland reestablishment and rehabilitation. As such, temporary impacts to this alliance could be allowable under the Coastal Act.

## **PUMPKIN PATCH SITE**

The Pumpkin Patch Site includes an upper (in elevation) area, which has been used historically and continues to be used as the location for seasonal commercial activities and associated staging and parking, specifically for a Pumpkin Patch leading up to Halloween and a Christmas Tree Farm leading up to Christmas. The parcel also includes a lower in elevation area to the north that includes oil operations and associated roads and pads as well as areas of non-tidal pickleweed mats that could potentially be determined to be ESHA. However, there are no impacts proposed for the lower area and therefore no potential impacts to potential ESHA.

### **Special-Status Animals**

The Pumpkin Patch site does not support habitat for American Peregrine falcon, Belding's savannah sparrow, California least tern, California green sea turtle, California brown pelican, western snowy plover, or the white-tailed kite and as such there would be no ESHA associated with these species and no potential impacts to ESHA associated with these species.

GLA has completed a two-year protocol of focused surveys for listed fairy shrimp and the surveys have identified only the common versatile fairy shrimp (*Branchinecta lindahli*) from a seasonal ponding feature at the northeast corner of the site. No listed fairy shrimp occur on the site.

There are no other special-status species or habitat with potential to occur on the Pumpkin Patch site and therefore no other potential impacts to potential ESHA.

### **Special-Status Plants**

As depicted on Exhibit 4 the upper portion of the Pumpkin Patch site supports a small isolated patch of southern tarplant that occurs within areas typically used for parking when the site is occupied by the Pumpkin Patch and Christmas Tree Lot. Consistent with the criteria referenced by Dr. Dixon and Dr. Engel, such as the isolated character of the small population and the highly-disturbed conditions, this area would not likely be considered ESHA. In accordance with the referenced factors relative to the Ventura marsh milkvetch noted by Dr. Dixon and Dr. Engel, southern tarplant is not restricted to a single site; rather, this species remains distributed from south Orange County into Long Beach including San Juan Capistrano, Newport Beach, Irvine, Huntington Beach, Seal Beach and Long Beach, including three of the four sites within the project area.

As depicted on Exhibit 4, there is no potential habitat for the estuary seablite on the Pumpkin Patch parcel. Similarly, as depicted on Exhibit 5 there are no special-status vegetation alliances on the Pumpkin Patch site that exhibit potential for ESHA that would be affected by the project and therefore no potential impacts to potential ESHA.

### **LOS CERRITOS WETLANDS AUTHORITY SITE**

The LCWA site does not contain any habitats capable of supporting special-status plants or animals and does not support and native vegetation alliances with a Rarity Ranking of S3 or lower; therefore, the site does not contain any areas that could potentially be considered ESHA.

## **THE CITY PROPERTY SITE**

### **Special-Status Animals**

The City Property Site does not support habitat for American peregrine falcon, Belding's savannah sparrow, California least tern, California green sea turtle, California brown pelican, western snowy plover or white-tailed kite and as such there would be no ESHA associated with these species and no potential impacts to ESHA associated with these species.

### **Special-Status Plants**

As depicted on Exhibit 6, limited areas of the City Property Site support a scattered small population of southern tarplant that occurs within areas of native alkali meadow, mulefat scrub and coastal brackish marsh, which consistent with the criteria referenced by Dr. Dixon and Dr. Engel, could potentially be considered ESHA. Similarly, other areas occupied by the southern tarplant occur in highly disturbed areas such as the gravel areas around existing an existing tank farm and other oil field infrastructure that would likely not be considered ESHA due to adjacent development and disrupting activities associated with oil production. As depicted on Exhibit 6, the proposed pipeline would traverse the area currently occupied by the existing oil tank. As part of the project, the tank farm would be removed and it is possible that this area would need to undergo soil remediation following removal. A Phase II Environmental Site Assessment is being prepared and will address the need, if any, for remediation in this area. Nonetheless, the southern tarplant in this location would likely not be considered ESHA due to the limited numbers and the highly-disturbed character of the areas around the oil tank and associated infrastructure.

There is no potential habitat for the estuary seablite on the City Property Site.

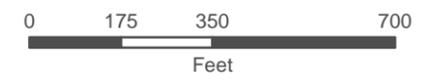
As depicted on Exhibit 7, the City Property Site includes one special-status vegetation alliance, pickleweed mats, which corresponds to southern coastal saltmarsh. The area is non-tidal significantly reducing the habitat values; nevertheless, based on the Rarity Ranking, the area could be determined to be ESHA. It is important to note that the proposed pipeline that would traverse the site fully avoids this alliance.

Should you have any questions, please contact Thienan Pfeiffer or Tony Bomkamp at (949) 837-0404, extension 34 or 41, respectively.



**Legend**

- Synergy Project Boundary
- Impact Boundary
- Oil Wells to be Abandoned
- Invasive Fan Palm to be Removed
- Oil Tank Farms to be Removed
- 95% Aboveground/Obsolete Pipes to be Removed
- Trail
- CA Least Tern/California Brown Pelican Foraging Habitat
- Pacific Green Sea Turtle Habitat
- Belding's Savannah Sparrow Habitat



1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**  
 Synergy Oil Field - Special Status Animals Map

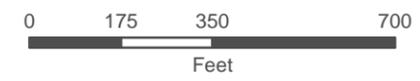
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Exhibit 1



**Legend**

- Synergy Project Boundary
- Impact Boundary
- Oil Wells to be Abandoned
- Invasive Fan Palm to be Removed
- Estuary Seablite
- Woolly Seablite
- Oil Tank Farms to be Removed
- 95% Aboveground/Obsolete Pipes to be Removed
- Southern Tarplant



1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**  
 Synergy Oil Field - Special Status Plants Map

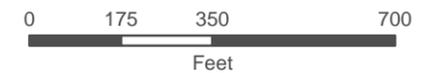
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Exhibit 2



**Legend**

- |                             |                            |
|-----------------------------|----------------------------|
| Project Boundary            | Mudflats - Tidal           |
| Development Area            | Mulefat Thickets           |
| Alkali Heath Flats          | Non-Native Grassland       |
| Alkali Weed-Saltgrass Flats | Ornamental                 |
| Bassia Thicket              | Pampas Grass Patches       |
| Black Willow                | Parish's Glasswort Patches |
| California Cordgrass Marsh  | Pickleweed Mats            |
| Cattail Marshes             | Saltgrass Flats            |
| Coyote Brush Scrub          | Shoregrass Flats           |
| Disturbed                   | Tidal Channel              |
| Emory's Baccharis Thickets  | Unvegetated Flats-Upland   |
| Ice Plant Mats              | Unvegetated Flats-Wetland  |
| Iceplant/Pickleweed         | Yellow Star-Thistle Fields |
| London Rocket Fields        | Yellow Sweet Clover Fields |
| Menzie's Golden Bush Scrub  |                            |
- 
- Oil Wells to be Abandoned
  - Invasive Fan Palm to be Removed
  - Oil Tank Farms to be Removed
  - 95% Aboveground/Obsolete Pipes to be Removed
  - Synergy Site Phasing Boundary



1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

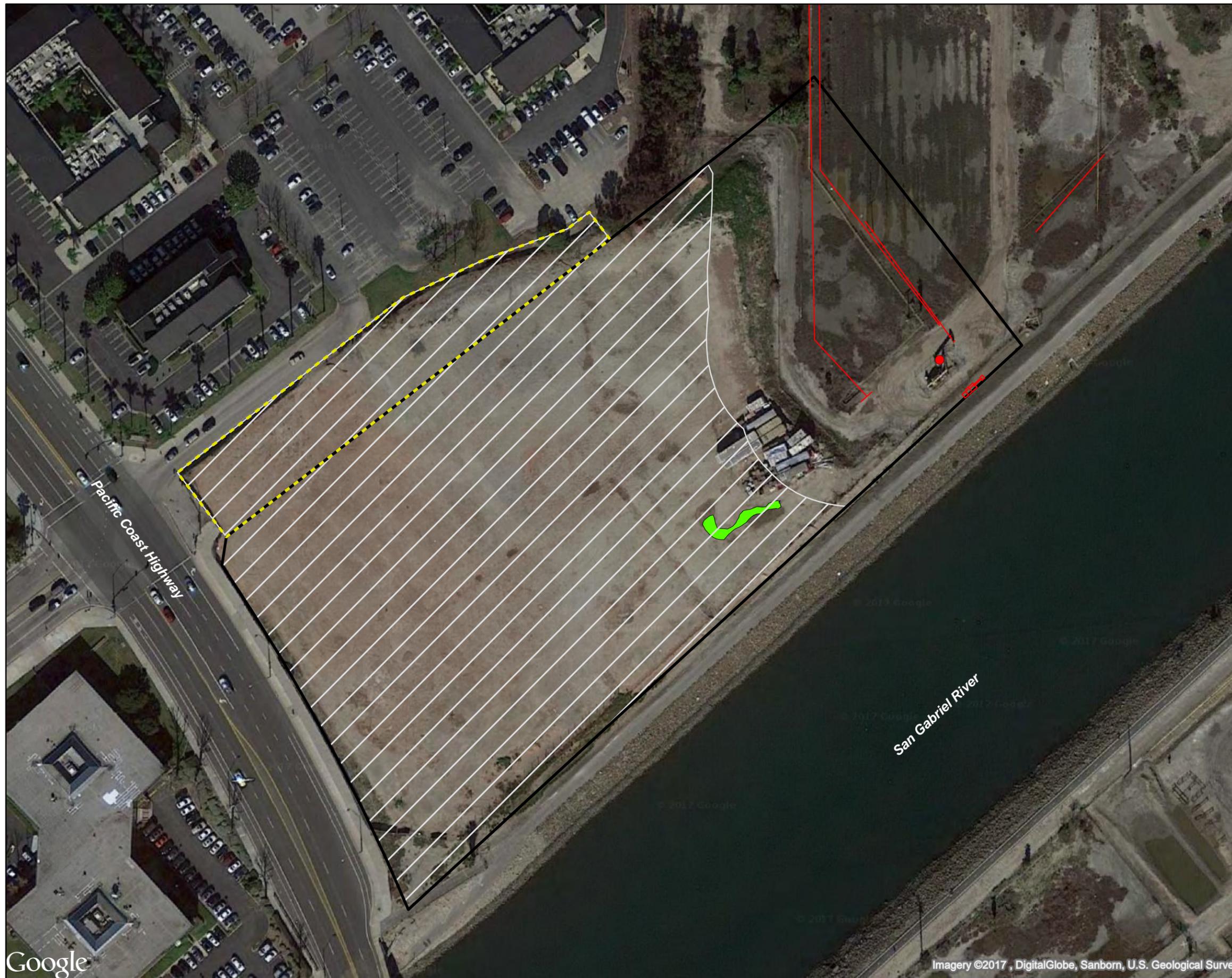
**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**

Synergy Oil Field - Vegetation Impact Map

GLENN LUKOS ASSOCIATES

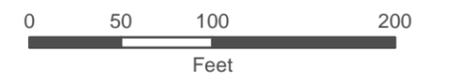


Exhibit 3



**Legend**

- Oil Wells to be Abandoned
- 95% Aboveground/Obsolete Pipes to be Removed
- Project Boundary
- City Right of Way
- Impact Footprint
- Southern Tarplant



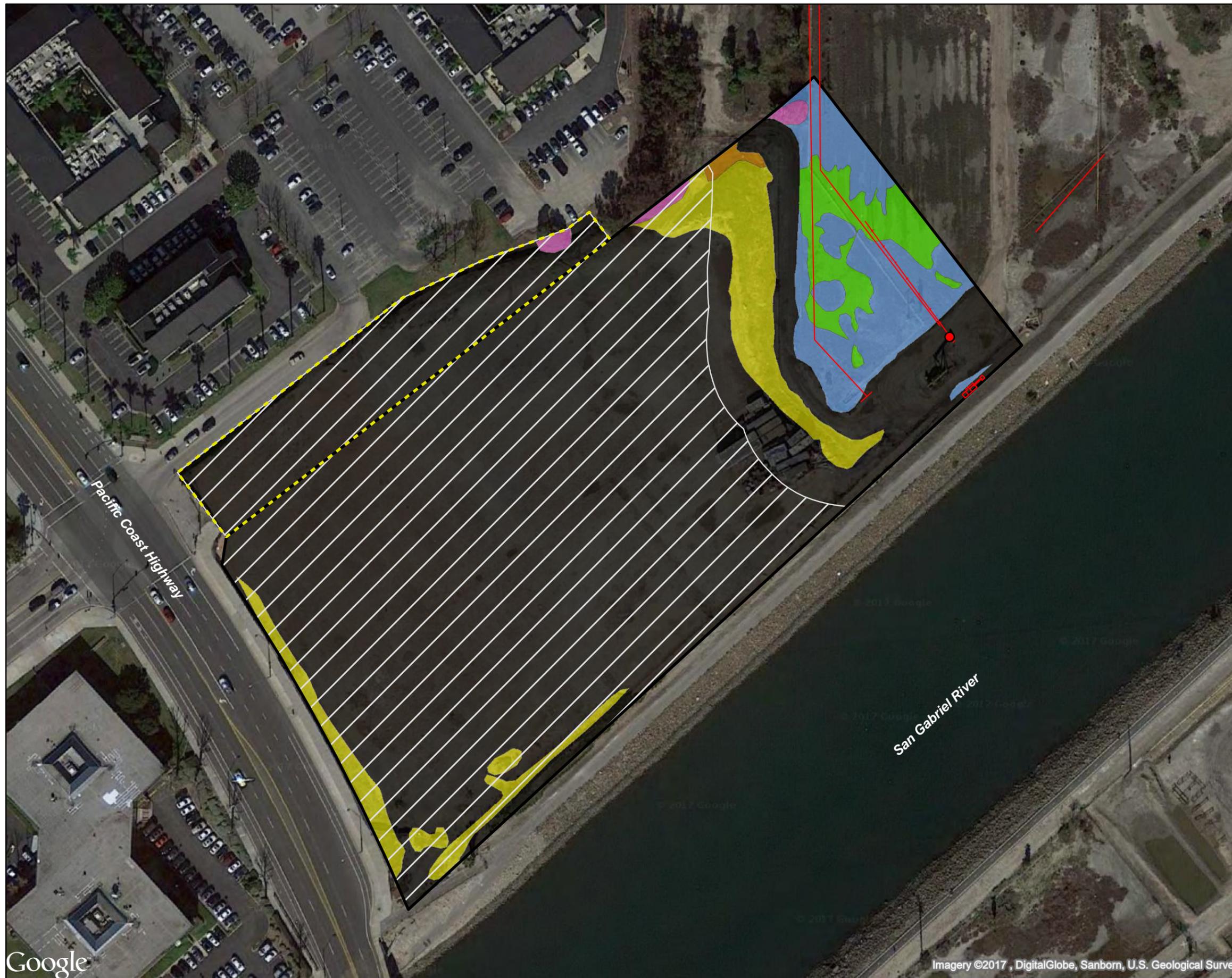
1 inch = 100 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**  
 Pumpkin Patch Site – Special Status Plants Map

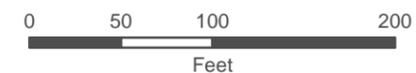
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Exhibit 4



**Legend**

- Oil Wells to be Abandoned
- 95% Aboveground/Obsolete Pipes to be Removed
- Project Boundary
- City Right of Way
- Impact Footprint
- Disturbed
- Ice Plant Mats
- Non-Native Grassland
- Ornamental
- Pickleweed Mats
- Unvegetated Flats-Wetland



1 inch = 100 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

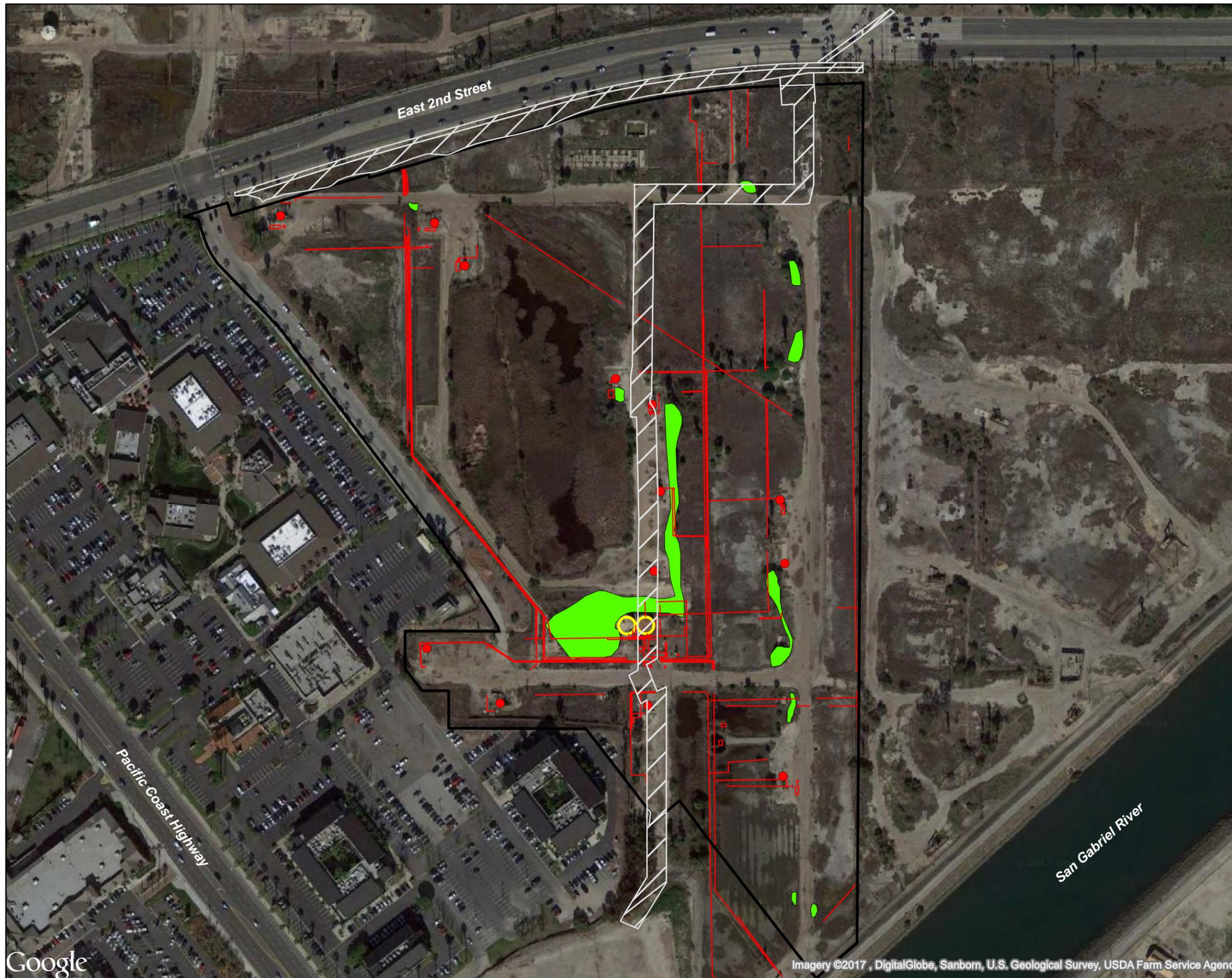
**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**

Pumpkin Patch Site – Vegetation Impact Map

GLENN LUKOS ASSOCIATES

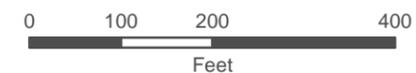


Exhibit 5



**Legend**

-  Development Area
-  Project Boundary
-  Oil Wells to be Abandoned
-  95% Aboveground/Obsolete Pipes to be Removed
-  Oil Tank Farms to be Removed
-  Southern Tarplant



1 inch = 200 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

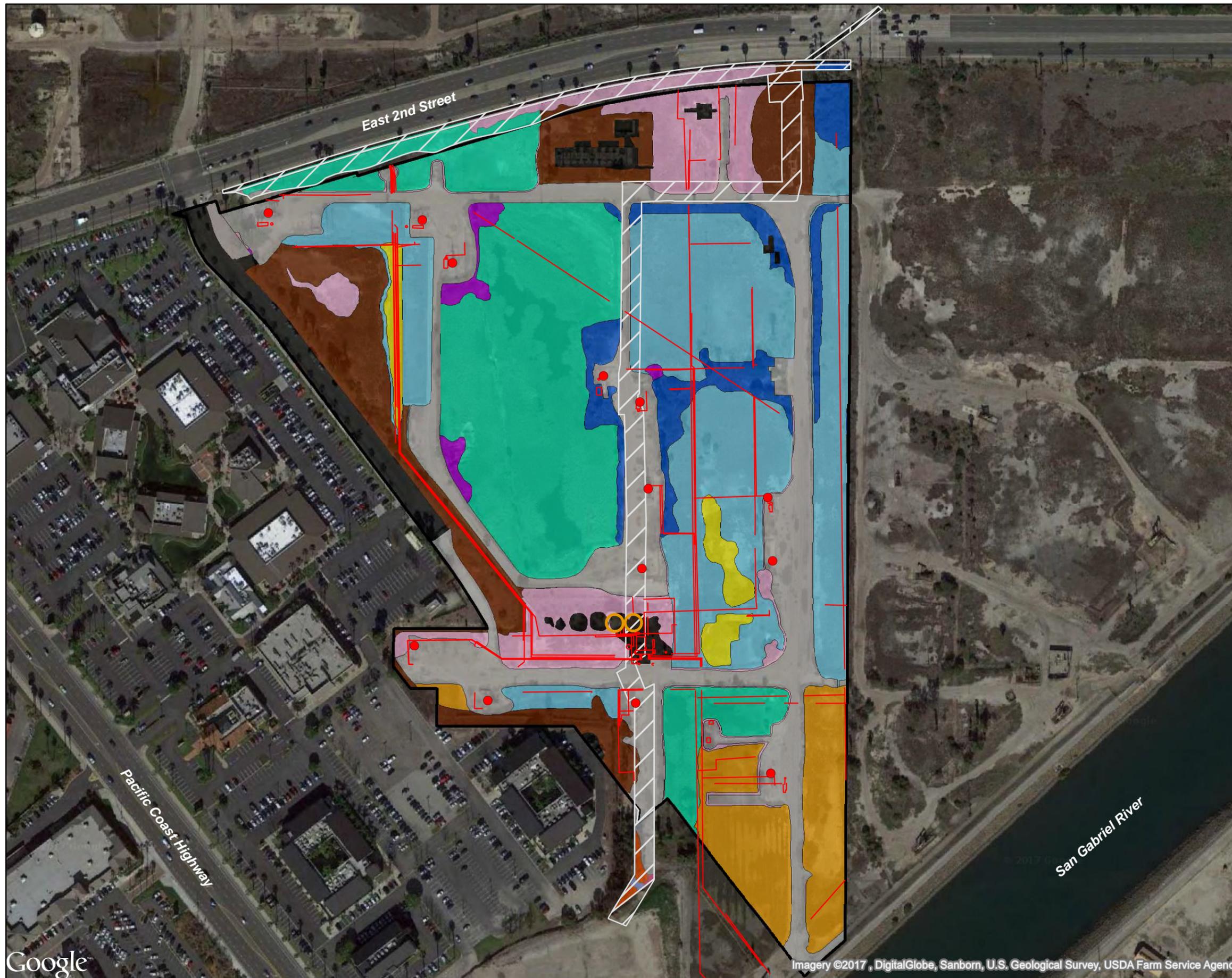
**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**

City Property Site – Special Status Plants Map

GLENN LUKOS ASSOCIATES

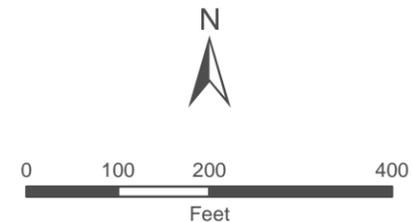


Exhibit 6



**Legend**

-  Project Boundary
-  Development Area
-  Development
-  Ice Plant Mats
-  Mulefat Scrub
-  Non-Native Grassland
-  Ornamental
-  Ruderal Uplands
-  Ruderal Wetlands
-  Salt Flat
-  Southern Coastal Brackish Marsh
-  Southern Coastal Salt Marsh
-  Southern Willow Scrub
-  Vegetation Free Zone
-  alkali meadow
-  Oil Tank Farms to be Removed
-  95% Aboveground/Obsolete Pipes to be Removed
-  Oil Wells to be Abandoned



1 inch = 200 feet

Coordinate System: State Plane 5 NAD 83  
 Projection: Lambert Conformal Conic  
 Datum: NAD83  
 Map Prepared by: C. Lukos, GLA  
 Date Prepared: April 28, 2017

**LCW OIL CONSOLIDATION AND RESTORATION PROJECT**

City Property Site – Vegetation Impact Map

GLENN LUKOS ASSOCIATES



Exhibit 7

