

### 3.1 Overview

Terraforming for the Project is divided into four categories:

#### 3.1.1 Master Grading

Master grading is the general over-excavation and cut/fill associated with the land development. For NBR, master grading is considered to be within the primary development envelope and includes the park system, roads and development lots. Mass grading also includes the over-excavation and recompaction of soils as recommended in the geotechnical report

#### 3.1.2 Bluff Restoration

Buff restoration is needed along the south- and west-facing bluffs to restore areas impacted by erosion and soil degradation. Care will be taken to match the existing bluff edge elevations to preserve the bluff massing and create a more natural appearance.

#### 3.1.3 Remediated Soil Disposition

Hydrocarbon-laden soils will be treated, tested and placed in accordance with the Remedial Action Plan developed by the owners.

#### 3.1.4 Open Space Grading

Grading will be required in the open space to establish trail grades, prepare habitat mitigation areas, and allow for public access, maintenance access, and water quality basins/wetlands creation areas. These earthwork volumes will be minor as to minimize impact to the important open space resources.

### 3.2 Existing Conditions

The existing topography is comprised of Upland, Lowland, and transitional zones. The Upland landforms range in elevation from 60 to 110 feet above MSL, and are bounded by the edge of the natural bluff to the west and by existing development in Costa Mesa and Newport Beach to the east. The Large Arroyo divides the two Lowland development areas. The existing bluff edge has been adversely impacted by oil operations, wind, and water erosion in some areas.

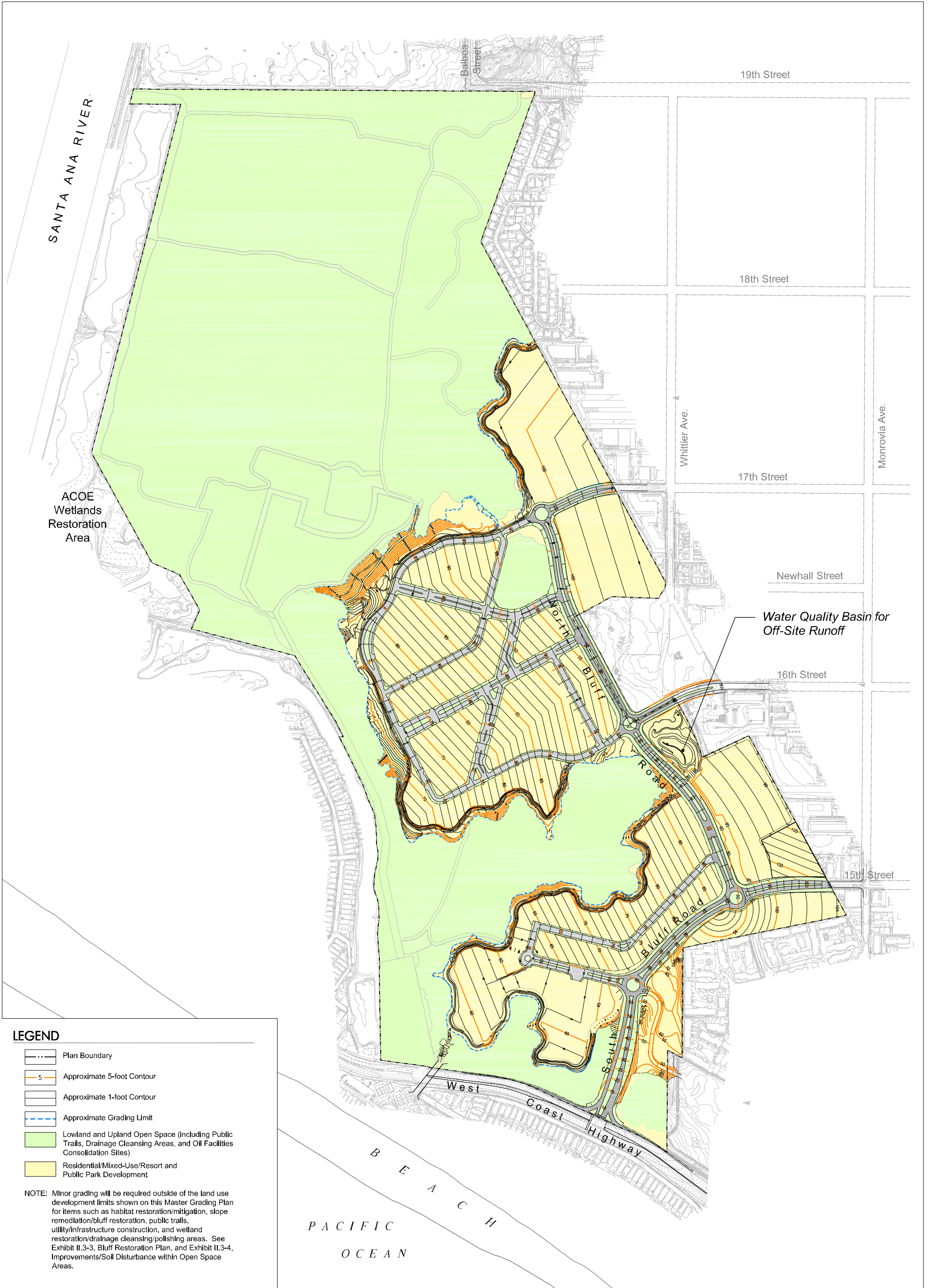
The Lowland is generally 0 to 10 feet above MSL and is composed of wetlands, oil access roads and tidal areas. The transitional areas vary in elevation between 10 feet and 60 feet above MSL and include the large arroyo mentioned above.

The geologic setting is covered in detail in geotechnical reports prepared by Goffman, McCormick, and Urban Geotechnical (GMU), identified in Section 1.3.1.


### **3.3 Master Grading**

It is anticipated that approximately 1,200,000 cubic yards of excavation will be required for the Project. Cuts will generally vary from one to 10 feet, but in localized areas may be up to 25 feet. Fills will generally vary from one to 30 feet, but in cases of bluff repairs may be up to 60 feet in limited areas. An additional 1,500,000 cubic yards of corrective/remedial grading will be necessary to implement geotechnical/soils recommendations.

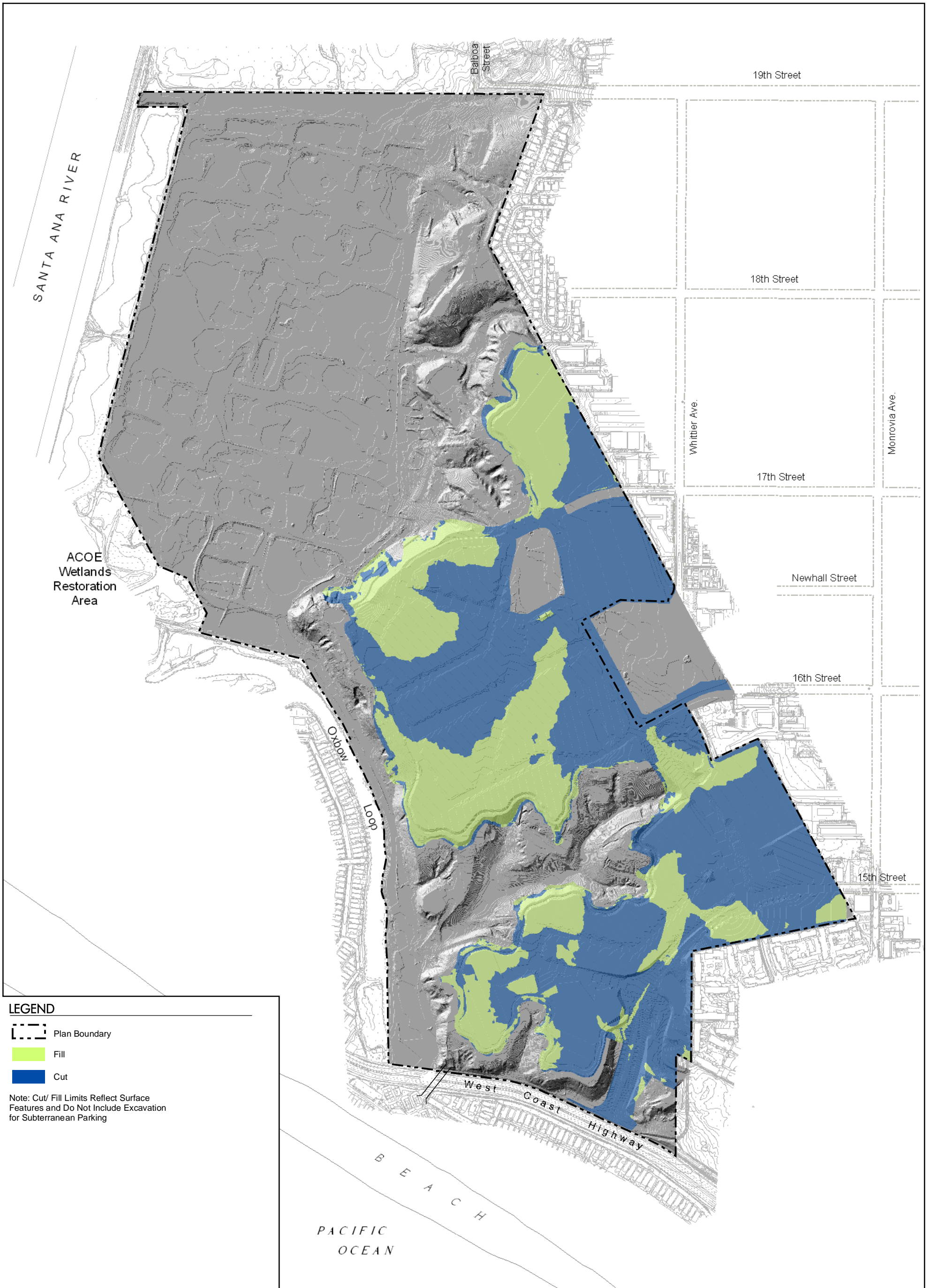
Corrective/remedial grading is expected to be from 3 feet to 30 feet below the proposed landform elevations. Corrective/remedial grading and general grading recommendations are covered in detail in the geotechnical report, prepared by Goffman, McCormick, and Urban included in the Technical Appendices. Grading will balance on-site and may be phased using borrow and spoil procedures as needed. An agronomist will evaluate soil chemistry for selective placement of the grading to get the best soil in place for planting. Exhibit II.3-1 depicts the Master Grading Plan. Exhibit II.3-2 depicts the cut and fill depths for the Master Grading area.






**LEGEND**

-  Plan Boundary
-  Approximate 5-foot Contour
-  Approximate 1-foot Contour
-  Approximate Grading Limit
-  Lowland and Upland Open Space (including Public Trails, Drainage Cleansing Areas, and Oil Facilities Consolidation Sites)
-  Residential/Mixed-Use/Resort and Public Park Development

NOTE: Minor grading will be required outside of the land use development limits shown on this Master Grading Plan for items such as habitat restoration/mitigation, slope remediation/bluff restoration, public trails, utility/infrastructure construction, and wetland restoration/drainage cleansing/pollishing areas. See Exhibit II.3-3, Bluff Restoration Plan, and Exhibit II.3-4, Improvements/Soil Disturbance within Open Space Areas.



**LEGEND**

-  Plan Boundary
-  Fill
-  Cut

Note: Cut/ Fill Limits Reflect Surface Features and Do Not Include Excavation for Subterranean Parking

### 3.4 Bluff Restoration

In several areas, the bluff/slope edge has suffered from erosion due to years of oil operations, uncontrolled drainage through the Site and other sources. These areas will require careful grading in order to restore and revegetate the bluff/ slope edge and limit further degradation. In addition to the grading, drainage currently overtopping the bluff/slope edge will be intercepted along the public trail system and redirected.

Bluff restoration is characterized in the following cases for ease of discussion:

#### 1. Natural Bluff (no erosion features)

Instances where erosion damage to the existing bluff is not evident, evasive plants and the asphalt like material (ALM) will be carefully removed where practicable and the areas replanted. The design for the area of the bluff will continue to direct storm flow away from these areas.

#### 2. Case 1 – Significant Erosion – Bluff Edge Not Discernable

Case 1 applies where significant areas of the bluff have been impacted by erosion and/or oil operations. In these cases, the impacted area is greater than 300 LF of bluff edge. Conventional grading techniques and equipment can be utilized to regrade impacted area. Slope gradient is proposed to be 1.5:1 without terrace drains in order to match the existing character of the bluff. Fabric or equivalent methods may be used upon soils engineer recommendations. Smaller equipment and/or hand labor will be necessary at the join locations.

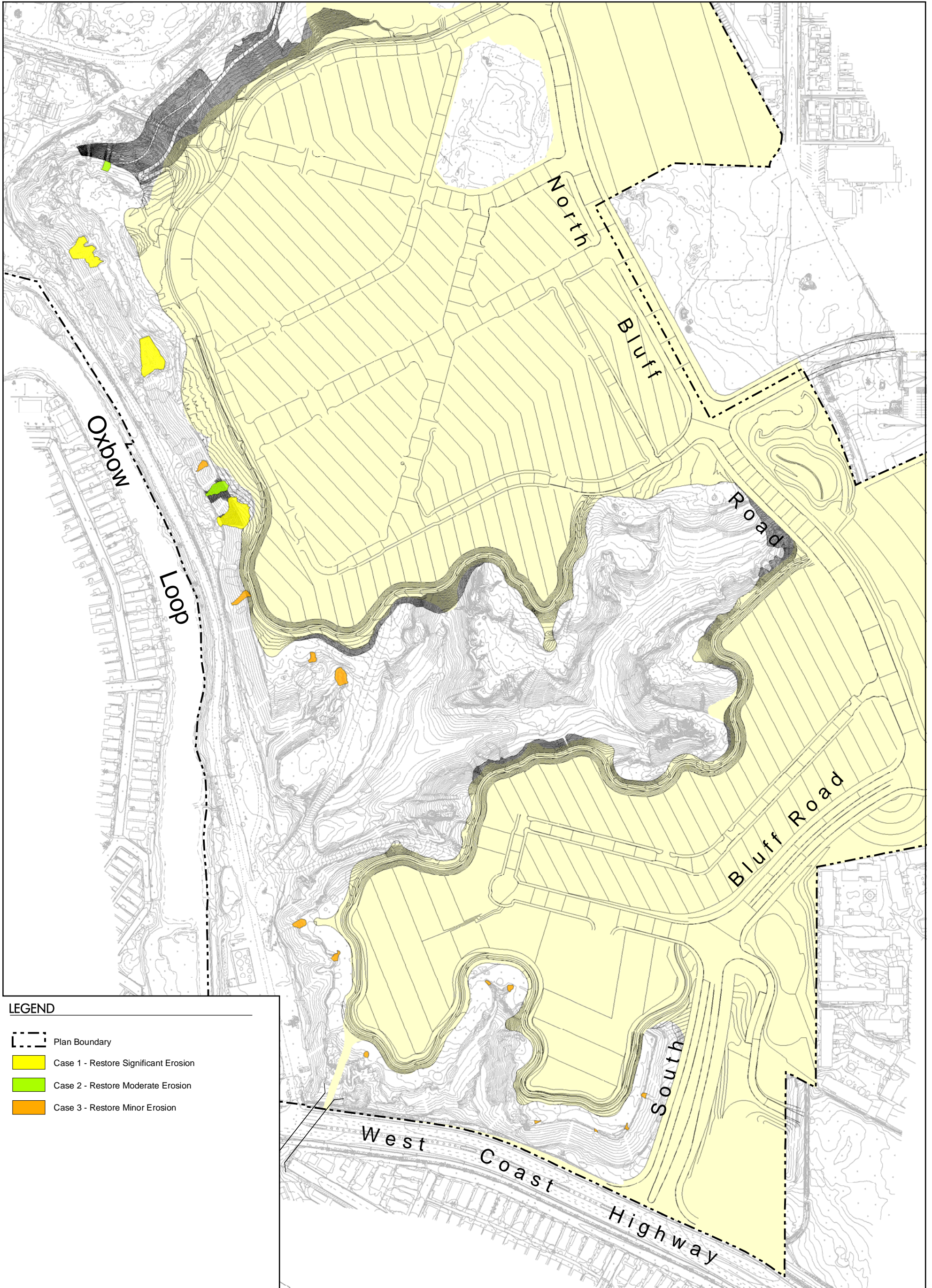
#### 3. Case 2 – Medium Erosion

In these cases the bluff edge projection is apparent but the erosional damage has moved 20-50 feet into the Lowland area. It is proposed that the sloughed areas be cleaned out, a key established and the bluff fully developed to match the existing condition. Repair techniques will include small equipment operating from the bluff side, solutions such as fabric and soil cement to allow for the steeper than the proposed 2:1 slope and redirection of the storm runoff.





#### 4. Case 3 – Minor Erosion

In some areas, minor erosional features have appeared. The primary solution in these cases will be to redirect Lowland runoff away from these areas. Additionally, hand labor work may be required to stabilize the top of slope.

The proposed locations of the various Bluff Restoration are included in Exhibit II.3-3, Bluff Restoration Plan.



**LEGEND**

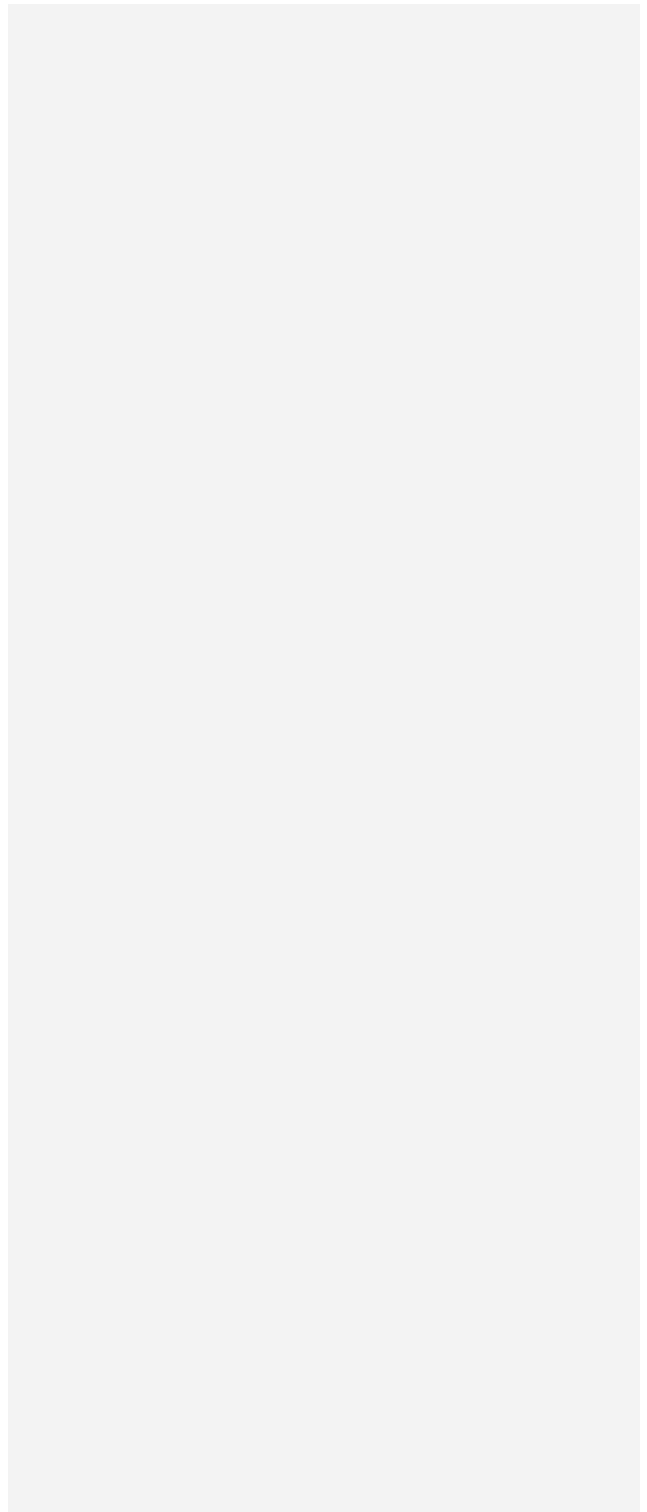
-  Plan Boundary
-  Case 1 - Restore Significant Erosion
-  Case 2 - Restore Moderate Erosion
-  Case 3 - Restore Minor Erosion

### 3.5 Remediated Soil Disposition

As part of the oil well consolidation process, the existing oil wells within development and habitat restoration areas will be abandoned and remediated. Remediated soil will be properly treated and placed in deep fills or outside the residential and commercial building areas.

Deep fills are considered to be fills 10 feet or greater from the proposed finished surface. The primary location for placement of the treated soil will be in the deeper over-excavation portions of the northern development area.

It is anticipated that some percentage of the soil/material from the oil remediation and oil well closure process will not be recyclable or suitable for use on-site. It is estimated that approximately 25,000 cubic yards of this material may need to be exported off-site to an appropriate landfill.



### 3.6 Improvements/Soil Disturbance within Open Space Areas

Limited grading will be required in open space areas in order to allow for the following:

#### 1. Establish Trail Grades

Minor grading will be required to establish the open space trail network. While expected to be minimal, the grading is critical to create the trail grade and provide localized drainage conveyances to minimize the need for trail maintenance.

#### 2. Habitat Mitigation and Restoration Areas

As an active oil field, much of the Site has been degraded. In areas where habitat mitigation or restoration is proposed, minor grading to repair localized erosion features or compact loose soil is anticipated. It is expected that this work effort will be done by hand or with small equipment.

#### 3. Polishing Basins/Wetlands

Grading will be required to establish the two polishing basins/wetlands in the Lowland. Grading is expected to require cuts of up to 8 feet and fill grading of up to 6 feet in height.

#### 4. Utility Infrastructure

Exhibit II.3-4, Improvements/Soil Disturbance within Open Space Areas, identifies the area of impacts within the proposed open space.

#### 5. Ongoing Oil Operations for Native Planting Buffers

Limited soil disturbance will occur with the planting of native landscape adjacent the ongoing oil operations.



**LEGEND**

- Plan Boundary
- Utility Infrastructure
- Polishing Basin / Wetland
- Native Planting Buffer (35' lots/easements)
- Interpretive Trail Corridors (20' easements)
- Habitat Mitigation and Restoration Areas

**Notes:**

1. Minor grading and soil disturbance will be required for the creation of Wetland/Polishing Basins, Native Planting Buffers, and the improvement of Interpretive Trail Corridors within the Upland and Lowland Open Space Area.
2. Wetland/Polishing Basins and Native Planting Buffers around the Consolidated Oil Facilities avoid impacts to special-status habitat.
3. Almost exclusively, existing oil roads and berms have been selected for public trail locations (as well as for the utility infrastructure lines) to avoid native habitat including Habitat Mitigation and Restoration Areas.

## 4.1 Master Roadway Circulation Plan

### 4.1.1 Existing Conditions

Newport Banning Ranch is currently accessed from West Coast Highway in Newport Beach and 17th Street in Costa Mesa. Current usage is typical of an oil operation, and includes automobile, light truck, and heavy truck trips. In addition to the two access points, the following roads adjoin the Site:

- 15th Street;
- 16th Street; and
- 19th Street.

Based on the City’s Master Plan of Streets and Highways (MPSH) and the County’s Master Plan of Arterial Highways (MPAH), road classifications for the existing access points and adjacent streets are as follows:

STREET	MPSH / MPAH DESIGNATION	JURISDICTION
West Coast Highway	Major	CALTRANS
15 <sup>th</sup> Street	Secondary	Newport Beach
16 <sup>th</sup> Street	N/A	Newport Beach
17 <sup>th</sup> Street	Secondary	Costa Mesa
19 <sup>th</sup> Street	Major	Costa Mesa

Existing on-site circulation includes gravel, dirt, and paved travelways which criss-cross the Site to provide access to the oil wells, operations, and offices.

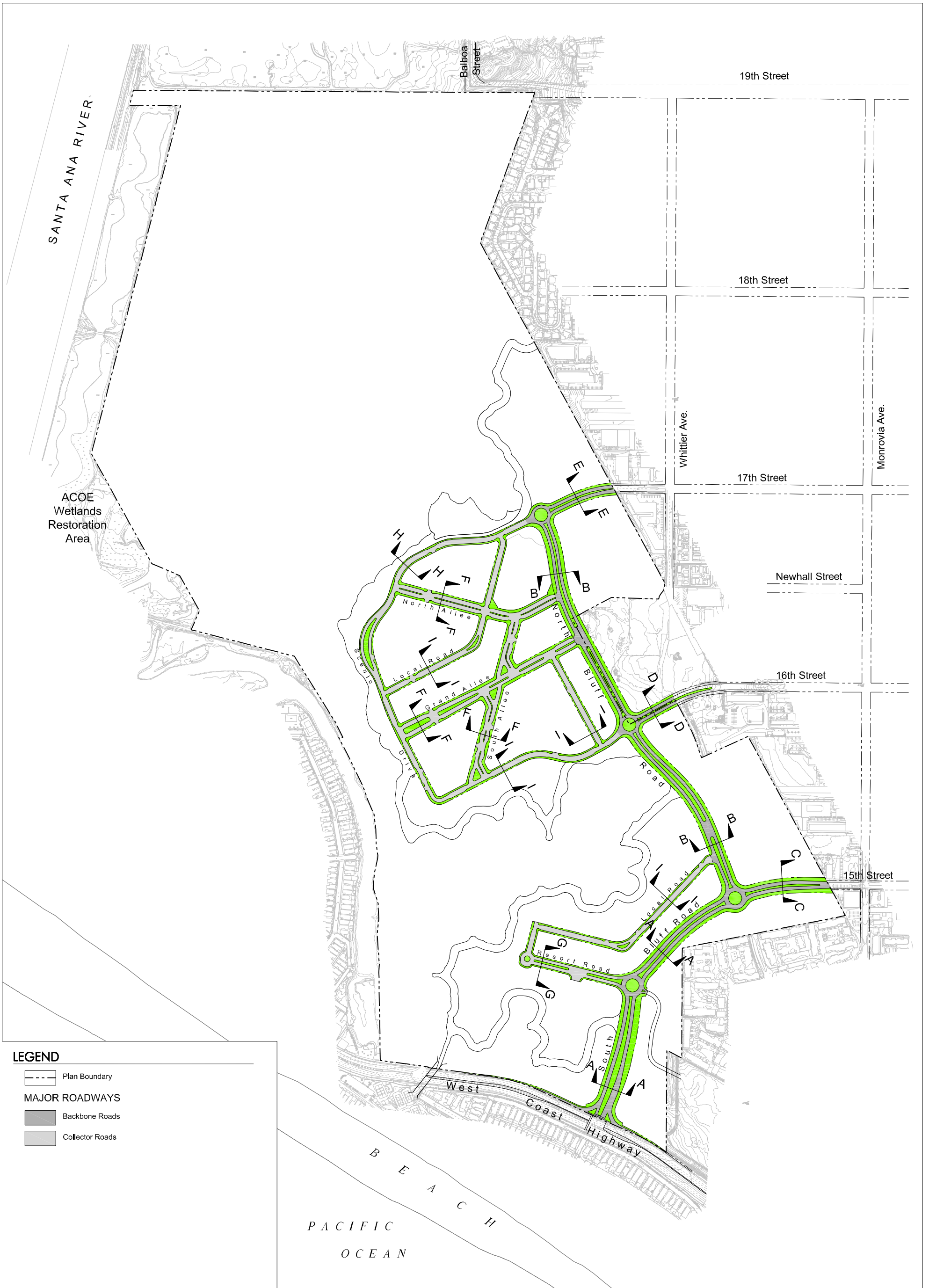
### 4.1.2 Proposed Master Roadway Plan

Newport Banning Ranch provides an internal network of streets with multiple connections to the existing street pattern in Newport Beach and Costa Mesa. Multiple connection points will disperse traffic throughout the larger existing regional network and are proposed at West Coast Highway, 15th Street, 16th Street, and 17th Street.

Proposed on-site circulation follows a hierarchy which includes a backbone of public secondary highways and collector roads – and then a network of local roads that includes local streets, alleys, and drives.

Signalization is proposed for the access point at West Coast Highway. Four roundabouts are proposed along South and North Bluff Road – at the entrance to the visitor-serving resort entry and at connections with 15th, 16th, and 17th Streets – to optimize traffic flow.

Exhibit II.4-1, Master Roadway Plan and Key Map, depicts the roadways that comprise the Master Roadway Plan.



**LEGEND**

- Plan Boundary
- MAJOR ROADWAYS**
- Backbone Roads
- Collector Roads



**MASTER SITE PLAN**  
City of Newport Beach - California

Exhibit II.4-1  
**Master Roadway Plan and Key Map**

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