Long-Term Management Plan
Alvarado Creek Affordable Housing Project
San Diego, CA

PTS 671912

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1.0 INTRODUCTION

1.1 Overview

This Long-Term Management Plan (LTMP) for the Alvarado Creek Affordable Housing Project (Project) was prepared to guide the long-term management of the Project's 0.599-acre onsite habitat mitigation site (Mitigation Site). Wetland habitat creation and enhancement would occur as mitigation for impacts to wetlands from construction of the Project as described in the Habitat Mitigation and Monitoring Plan (HMMP) (Blackhawk 2022); restoration activities are expected to generate 0.599 acre of onsite mitigation credit. The habitat Mitigation Site and directly associated buffer areas would be conserved and managed in perpetuity following the directives outlined in this LTMP.

Long-term management of the Mitigation Sites would commence upon the five-year post-restoration acceptance by the resources agencies and City of San Diego and the availability of annual management funds. Long-term management would be conducted by an accredited and California Department of Fish and Wildlife (CDFW)-approved land management entity upon availability of the management funds invested by the Owner in form of a non-wasting endowment.

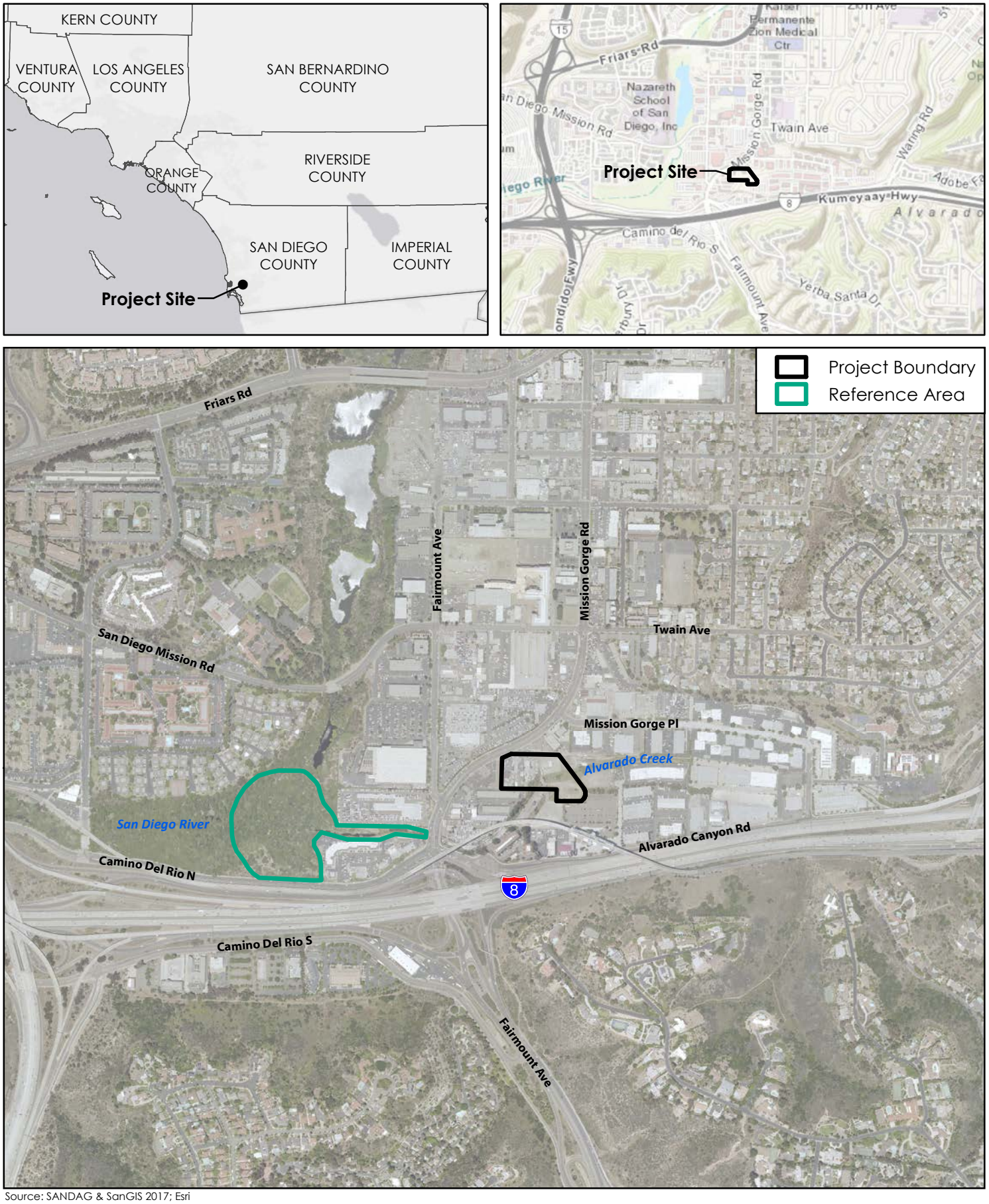
Long-term management is part of the Project's mitigation and permit requirements, pursuant to federal, state and local regulations, policies, and guidelines and approved by the Regulatory Agencies (U.S. Army Corps of Engineers (Corps), CDFW, and Regional Water Quality Control Board (RWQCB)). Long term management is also required by the City of San Diego Biology Guidelines (City of San Diego 2018). In addition to Project permits, this LTMP must also be compliant with regulations pertaining to the long-term management of Project mitigation lands as defined by the City of San Diego. It should be noted that while it is the intent of this LTMP to comply with federal, state and local permits, if any discrepancies between this LTMP and the permits exist, the permits shall override the LTMP stipulations unless written approval is received from the agency exerting the appropriate jurisdiction.

1.2 Purpose of Long-term Management

The purpose of this LTMP is to ensure that the conserved Mitigation Site is managed, monitored, and maintained in perpetuity to preserve biological and wetlands functions and values along with any sensitive biological resource they support. This LTMP describes the methods, schedule, and means necessary to manage and monitor the Mitigation Site by providing a framework that is consistent with the goals of the City's Environmentally Sensitive Lands and Biology Guidelines (City of San Diego 2018). The ultimate goal of this LTMP is to ensure the long-term viability and function of habitats on-site. The LTMP shall be implemented as new information and scientific data permit.

1.3 Project Location

The proposed Alvarado Creek Affordable Housing Project is located on 3.86 acres southeast of Mission Gorge Road, south of Mission Gorge Place, and north of Interstate 8 (I-8) and the Grantville Trolley station (Figure 1). The Mitigation Site is part of the Project site (Figure 2).



Source: SANDAG & SanGIS 2017; Esri

Figure 1

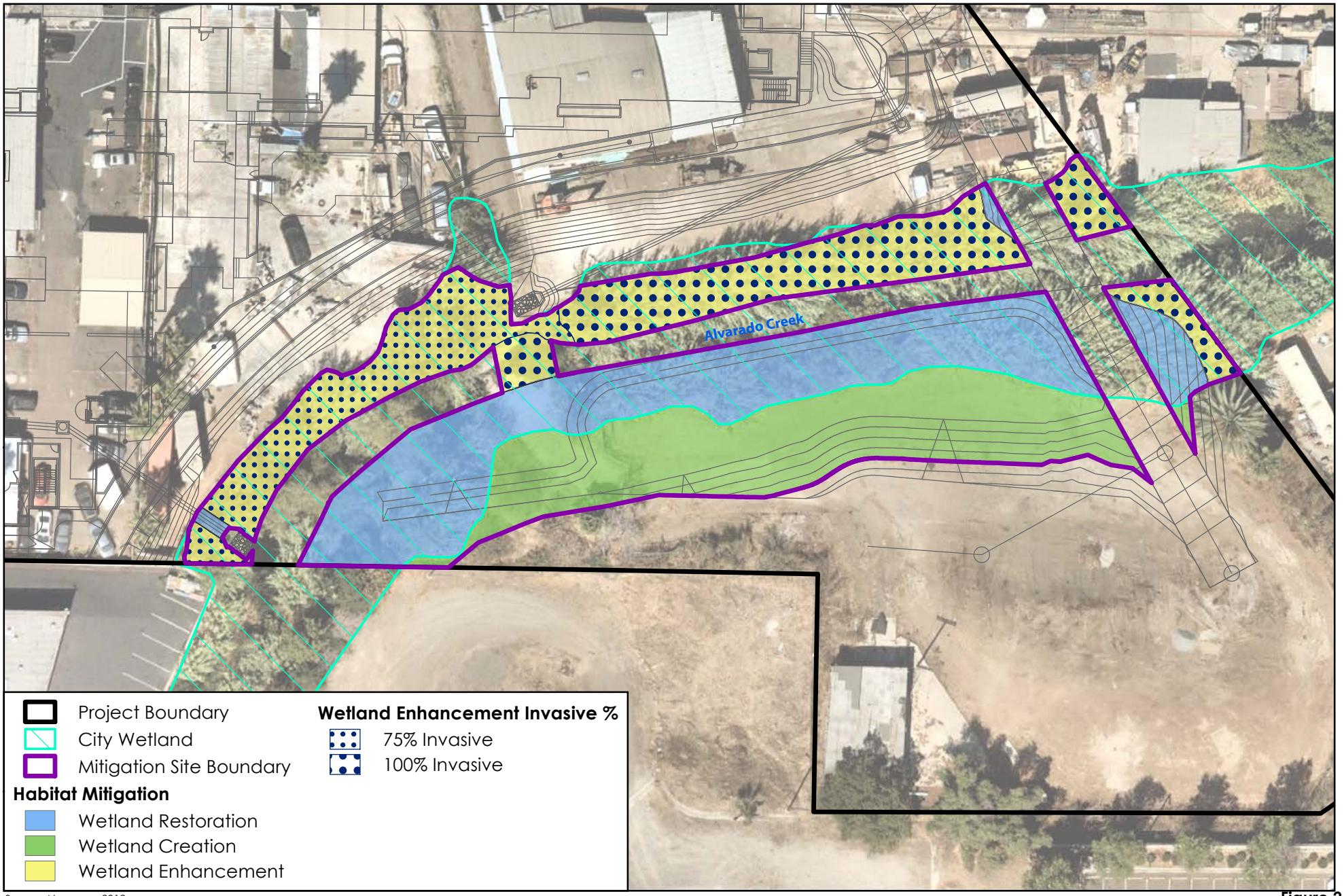
Project Location

Alvarado Creek Affordable Housing Project

BLACKHAWK Environmental

N

0 1,000 Feet



Source: Nearmap 2019

Figure 2

BLACKHAWK Environmental

N

0 50 Feet

Mitigation Site

Alvarado Creek Affordable Housing Project

The Project is located within the following Assessor Parcel Numbers (APNs): 461-320-06-00, 461-320-08-00 and 461-320-09-00. Alvarado Creek bisects portions of the 3.86-acre Project development and includes jurisdictional wetlands and non-wetland areas.

1.4 Project Summary

The Project proposes 227 100-percent affordable residential rental apartment units in one five-story building. The 227 residential units include 54 studios, 53 one-bedroom units, 60 two-bedroom units and 60 three-bedroom units. Common area amenities include a pool area and access to the proposed Alvarado Creek trail, which would be constructed above the wetlands buffer along the onsite portion of Alvarado Creek within the proposed development. An existing sewer line and easement is proposed to be relocated southerly across Alvarado Creek to an existing point of connection near the Grantville Trolley Station.

Development of the Project will result in direct impacts to a total of 0.283 acre (i.e., 0.213 acre of temporary impacts and 0.070 acre of permanent impacts) to City wetland/ESL habitats including the following wetland habitat types: arundo-dominated wetland (0.060 acre temporary and 0.047 acre permanent impacts), disturbed wetland/unvegetated channel (0.002 acre temporary and 0.008 acre permanent impacts), non-native riparian (0.137 acre temporary and 0.015 acre permanent impacts) and southern riparian woodland (0.014 acre temporary and no permanent impacts).

1.5 Habitat Restoration

The 0.599-acre Mitigation Site is part of the 3.86-acre Project site and includes 0.183 acre of habitat creation, 0.217 acre of habitat restoration and 0.199 acre of habitat enhancement that will result in a net gain of 0.316 acre of wetland habitat and will enhance the existing degraded riparian habitat that is dominated by noxious weed species (Figure 2). The Project is located within Reach 2 of the Grantville Trolley Station/Alvarado Creek Revitalization Study, which requires the relocation and construction of the Alvarado Creek channel, creek trails and habitat restoration/creation. Implementation of the onsite portion of the Alvarado Creek improvements outlined in the revitalization study will require additional engineering and environmental design, and coordination with upstream and downstream property owners, and will be implemented following construction of the proposed Project.

Habitat restoration as mitigation for the Project will occur in form of habitat creation by widening Alvarado Creek. Habitat creation areas are intended to develop into a riparian transitional community, and restoration and enhancement areas are intended to develop into southern riparian scrub. Both of these habitat types are intended to be dominated by riparian species and would qualify as City-regulated wetlands and also as jurisdictional resource to satisfy regulatory permit requirements. It is anticipated that these habitat types will continue to mature during long-term management and ultimately develop into mixture of riparian scrub and riparian forest habitats over time, and may also exhibit some form of freshwater marsh or ephemeral wetlands along the fringes of the Alvarado Creek channel.

2.0 MITIGATION SITE DESCRIPTION

2.1 Existing Conditions

The 0.599-acre Mitigation Site consists of mostly flat developed/disturbed areas on the north and south side of Alvarado Creek. Steep banks on the north side of the creek directly abut developed parking lots; the south edge of the creek is bordered by more moderate slopes that gradually transition into disturbed upland habitat, dominated by nonnative plant species. The Mitigation Site is dominated by non-native and invasive species. Portions of Alvarado Creek within the Project show signs of vegetation management, including removal of giant reed (*Arundo donax*) and Mexican fan palm (*Washingtonia robusta*). No sensitive flora or fauna occur on the site, although the existing habitats may provide nesting habitat for migratory bird and raptors.

Once restored, the Mitigation Site will contain a functioning and sustainable riparian and wetland ecosystem. The restoration plan calls for the removal of all non-native species, and planting with native wetland and riparian species that are currently thriving on the site, such as California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), Gooding's black willow (*Salix gooddingii*), sandbar willow (*Salix exigua*) and coast live oak (*Quercus agrifolia*) among others. In addition, higher quality riparian habitats exist and will remain within downstream portions of the creek, which host a higher density of the aforementioned species.

2.2 Surrounding Land Use

Existing onsite and surrounding land uses include a variety of industrial and commercial businesses, with Alvarado Creek bisecting the Project site. The Project site is located on three previously developed parcels. Parcels north of Alvarado Creek are actively used for light industrial use and commercial uses such as auto repairs and sales, metal fabrication, convenience stores, etc. The area surrounding the Project to the north and east includes similar commercial and industrial land uses, characterized by single and multi-story buildings with paved hardscaped surfaces and landscaping. The Project parcel south of Alvarado Creek includes previously graded areas with relic outbuildings that have been idle and are in disrepair. Existing land uses appear to include illegal dumping, fill material storage, and homeless encampments. Areas surrounding the Project to the south include commercial space, business centers, and transit hubs, including the Grantville Trolley Station. Due to the heavily developed nature of the surrounding areas, the Project is isolated from surrounding MHPA Reserve areas, which include portions of the San Diego River approximately 0.35 miles to the west and northwest, and canyons south of Interstate-8 approximately 0.36 miles.

2.3 Topography and Hydrology

Elevations within the Project site generally drain towards the center of the Project area, where the site is bisected by Alvarado Creek. Within the Project, Alvarado Creek flows on to the site near the center of the eastern parcel boundary, flowing in a generally west-southwest direction through the south-central portion of the Project area, and leaving the site along the southern boundary.

Surface water and storm water flow is highly modified, but generally becomes concentrated before discharging directly into Alvarado Creek. Surface water entering Alvarado Creek from parcel 416-320-06-00 generally flows south to the parcel boundary, where surface water is redirected by a cinder block wall and diverted into a low-capacity non-vegetated concrete swale, flowing east and discharging directly into the Alvarado Creek. Similarly, surface water from parcel 461-320-09-00, a paved lot, generally flows south to the parcel boundary located immediately adjacent to Alvarado Creek. At the southern boundary of parcel 461-320-09-00 water is restricted from entering Alvarado Creek by a man-made concrete wall, which redirects water along the property boundary to the west, before intercepting an existing road and Arizona crossing at the interface between parcels 416-320-06-00 and 416-320-09-00. The existing road carries surface water both from both adjacent parcels directly to Alvarado Creek. Surface water from parcel 416-320-08-00 generally follows topographic contours flowing from the southeast of the parcel to northwest of the parcel, concentrating along graded unpaved roads and discharging into Alvarado Creek at an established Arizona crossing. Additional surface water from parcel 416-320-08-00 is directed along the western boundary within a vegetated unlined swale (Figure 2).

2.4 Soils

Three distinct soil series mapped by USDA (1973) occur in the Project area: Tujunga sand, 0 to 5 percent slopes, Riverwash, and Huerhuero-Urban land complex, 2 to 9 percent slopes (Figure 3). Both the Tujunga sand and Riverwash soil series are described as hydric according to USDA.

2.5 Vegetation Communities

Prior to habitat restoration and enhancement, the Mitigation Site contained the following vegetation communities.

Arundo-dominated Wetland (Holland Code 65100)

Arundo-dominated wetland is a type of non-native riparian community that consists almost exclusively of a dense thicket of giant reed or arundo. Although dominated by a non-native, invasive species, this vegetation community is a wetland and generally treated as a sensitive vegetation community by CDFW and may also be regulated as a wetland by USACE, RWQCB. These areas are considered City of San Diego wetlands. Arundo-dominated wetland is restricted to the eastern boundary totaling 0.29 acre. Although overall vegetation coverage is dense, the area has undergone a recent non-Project-related cut and treatment for management of the invasive giant reed. Therefore, the area is now open, bisected by open water, and devoid of a canopy or understory.

Disturbed Lands (Holland Code 11300)

Disturbed land occur within the Mitigation Site in the form of non-native plant communities. Dominant species included cheeseweed (*Malva parviflora*), sweet fennel (*Foeniculum vulgare*), smilo grass (*Stipa miliacea* var. *miliaceae*), Bermuda grass (*Cynodon dactylon*), castor bean (*Ricinus communis*), and filaree (*Erodium* sp.).

Disturbed Wetland/Un-vegetated Channel (Holland Code 11200)

Disturbed wetlands/un-vegetated channel are restricted to the channel bottom of Alvarado Creek and include the disturbed and modified channel, where presence of installed rip-rap and concrete lined areas blend with natural scouring and sediment deposits. This vegetation community is permanently or periodically inundated by water and significantly modified by human activity, but may contain scattered native or non-native vegetation. Such areas, despite the presence of artificial structures or prevalence of non-native species, may be considered sensitive if determined to be USACE, CDFW, and/or RWQCB, and are considered City of San Diego wetlands due to its association with Alvarado Creek and wetland functionality. Where vegetation is present, the dominant species include southern cattail (*Typha domingensis*), umbrella sedge (*Cyperus* sp.), giant reed, California bulrush (*Schoenoplectus californicus*) and common threesquare (*Schoenoplectus pungens*).

Non-native Riparian (Holland Code 65000)

Non-native riparian areas consist of a densely vegetated riparian thicket dominated by non-native, invasive species. Although dominated by non-native invasive species, non-native riparian is a potential wetland and generally treated as a sensitive vegetation community by CDFW and may also be regulated as a wetland by USACE, and/or RWQCB. These areas are considered City of San Diego wetlands. Onsite, this vegetation community is dominated by a relatively dense canopy cover of Mexican fan palm, arroyo willow, black willow, and giant reed. The creek in this area is earthen-lined, with rip-rap banks. The understory was primarily vegetated by herbaceous ground cover in areas where the canopy was not complete. Understory species in these areas include non-natives, such as sprouting Mexican fan palm, castor bean, smilo grass, and occasional salt cedar (*Tamarix ramosissima*). Evidence of vegetation management was observed in the form of giant reed and fan palm removal.

Southern Riparian Woodland (Holland Code 52400)

Southern riparian woodland is a riparian community typically found along upland creek banks and drainages. The high density of the cover provided by mature trees typically prevents development of a substantial understory of smaller plants in some areas. Southern riparian woodland is a potential wetland and generally treated as a sensitive vegetation community by CDFW and may also be regulated as a wetland by USACE, and/or RWQCB, and is considered City of San Diego wetlands. This community is restricted to approximately 0.11 acre located at the southern portion of the site. Riparian canopy within this habitat is dominated by coast live oak, Fremont cottonwood, and black willow, with occasional small Mexican fan palms. Where understory was present, the vegetative cover ranges from light to moderate and is largely dominated by giant reed, smilo grass and other non-native herbaceous species. Tree species forming a canopy within this habitat on the south and east side of the channel appear planted.

According to the HMMP, the plantings on the Mitigation Site are expected to mature, evolve, and transition to southern willow scrub (description below) and southern riparian woodland (description above) post-restoration and five-year monitoring and maintenance.

Southern Willow Scrub (Holland Code 61320)

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows (specifically arroyo willow (*Salix lasiolepis*) in association with mule fat (*Baccharis salicifolia*), and with scattered emergent cottonwood (*Populus fremontii*) and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest. Willow scrub is considered a sensitive vegetation community.

3.0 RESPONSIBILITIES AND ASSURANCES

3.1 Responsible Parties

3.1.1 Project Proponent / Property Owner

The Project Proponent, Pacific Companies, shall be responsible for providing funding for long term management in perpetuity. Section 4.2 discusses funding in more detail. Pacific Companies shall also be responsible for securing permanent conservation for the Mitigation Sites (see Section 4.1) and establishing long-term management funding and agreements for the Mitigation Sites. All funding shall be secured prior to issuance of the grading permit for the Project.

3.1.2 Habitat and Easement Managers

The Habitat Manager must be an accredited (i.e. Land Trust Alliance Accreditation) and CDFW-approved land management entity with documented experience managing local native habitats, including wetlands and riparian habitats, and be approved in writing by the City of San Diego and Regulatory Agencies. The Habitat Manager shall be responsible for implementing the management directives and biological monitoring pursuant to this LTMP. To this end, the SDHC shall:

- Be an advocate of the preserved open space and its protection
- Be responsible for implementing the requirements outlined in the CE that has been placed over the Preserve
- Maintain all documents transferred by the Project Proponent and Wildlife Agencies
- Be knowledgeable about the resources addressed in these reports
- Document all field visits and management actions and submit an annual report to the Wildlife Agencies.
- Coordinate with the manager(s) of adjacent preserves or neighboring land owners on management practices and tasks related to preservation and maintenance of the subregional open space system, specifically the removal of invasive species.
- Educate the surrounding community about the value of open space conservation and management and respond to community concerns.
- Apply pertinent adaptive management recommendations and ensure compatibility with the MSCP Subarea Plan and SDMMP Management Strategic Plan (MSP) (SDMMP 2013).

Furthermore, a separate CDFW-approved entity shall be retained by Pacific Companies to manage the Conservation Easement (CE). The Easement Manager shall implement all management requirements specific to the CE, and outlined in the CE or similar instrument attached to the management lands. The Easement Manager shall not be responsible for providing habitat management as described in this LTMP.

3.2 Land Protection Instrument

The Mitigation Site will be conserved and protected from future unauthorized uses as identified in the Project regulatory permits and the City's Biology Guidelines (City 2018). The mitigation lands shall be managed in perpetuity for the long-term preservation of native species and habitats, and no developments incompatible with habitat protection and preservation shall be allowed (see

Section 4.3.2). Pacific Companies shall protect the Mitigation Site through a CE placed on the entire Mitigation Site and deeded to the Habitat Manager, with the appropriate agency as a third-party beneficiary (this could be CDFW, Corps, or RWQCB). The habitat protection mechanism shall be approved by the City and Regulatory Agencies per permit requirements. The Project permits will be attached to the CE in the County's records to ensure the permit's restrictions (including those related to long-term protections) are included on the CE.

3.3 Funding Assurances

The Pacific Companies shall fund the long-term management and the implementation of this LTMP through an "impact fee". Long-term management includes monitoring, management, and preservation of the mitigation lands in perpetuity. The funding mechanism shall be in effect prior to issuance of a grading permit for the Project, or as approved by the City of San Diego and the Regulatory Agencies. An impact fee in form of a non-wasting endowment shall be invested by the Pacific Companies, and held by an independent third party financial institution accepted and approved by the Regulatory Agencies (e.g., The San Diego Foundation). This account shall provide funding on an annual basis for monitoring and management pursuant to this LTMP. The full amount of endowments and annual management funds needed to manage the Mitigation Site is included in the Property Record Analysis (PAR) appended to this LTMP (Appendix A). The preliminary long-term management funding estimate identifies the total management funds and annual funds (generated by the interest from the invested funds). The PAR reports the initial investment and annual long-term monitoring and management activities, including administrative and contingency fees and emergency funds. Annual funding of LTMP activities shall be generated through net interest earned on the account; the account's principal shall never be used to fund management, monitoring, or preservation activities.

Long-term management shall begin immediately after the post-restoration monitoring and management period or after the restoration project has been accepted by the Regulatory Agencies as successful and the management funds have been transferred to and approved by the Habitat Manager.

4.0 LONG-TERM MANAGEMENT AND MONITORING

This section discusses the goals and objectives of this LTMP, and establishes a framework for adaptive management. If discrepancies occur between this LTMP and the regulatory permits, the permit requirements shall supersede this LTMP.

Long-term management shall be the responsibility of the Project Proponent and Habitat Manager and shall be performed as identified in this LTMP and in the work plan outlined in Table 1 (at the end of Chapter 4). Long-term management shall ensue immediately following the City's and Regulatory Agencies' acceptance of the restoration projects and shall be funded by the interest generated from the endowment invested by the Project Proponent.

Baseline conditions post-restoration are assumed to be of high quality as the site would have been maintained and monitored throughout the post-restoration period as described in the Project's HMMP (Blackhawk 2021).

4.1 Management Goals and Targets

The main goal of long-term management as identified in this LTMP is to conserve the Mitigation Site and the biological and wetlands resources contained within, to contribute to the biological diversity in the region, and conserve the functions and values of wetlands and waters, including water quality, and viable populations of key sensitive species and their habitats. This shall be accomplished through regular monitoring and the implementation of adaptive management to ensure ecological and wetlands function in perpetuity.

The management goals for native vegetation communities are as follows:

1) Maintain the ecological functions and values of the Mitigation Site
2) Maintain the functions and values of waters and wetlands.
3) Maintain and enhance overall biological diversity of the Mitigation Sites.
4) Prevent impacts to habitat or species from invasive species, artificial hydrological changes, and anthropogenic threats and stressors.

4.1.1 Threats and Stressors

Threats (direct impacts) and stressors/pressures (indirect impacts) occur from edge effects and habitat modifications. Edge effects include anthropogenic and natural threats, such as international border security, trash dumping, trampling, and other mechanic disturbance. Stressors (pressures) include altered hydrology, exposure to pesticides, invasion by nonnative plant and animal species, habitat fragmentation, water and air pollution, and fire. The Mitigation Site is surrounded by urbanization, and therefore, edges surround the restored habitats, including trails. The identification of threats and stressors shall be conducted at least once annually during a qualitative monitoring visit.

Edge Effects: The Mitigation Site is surrounded by development, which may result in edge effects such as trespassing, vandalism, compaction, floods, fires, adjacent trail use, and invasive species. Access controls will be in place.

Erosion/Soils: Intact soils are fundamental to the sustained function of wetlands ecosystems. Damage to the substrate, erosion, scour, sedimentation, and siltation would significantly impact wetlands functions. Minimal scour, sedimentation, and changes of the floodway are expected in dynamic riparian systems.

Altered Hydrology: Wetland hydrology provides the foundation for wetlands ecosystem function. Native riparian and marsh species rely on proper hydrology and the functionality of the micro-watershed. Topographic alterations through trespassing, or storm events may significantly alter these functions. Access controls will be in place.

Litter: The site may be impacted by wind-blown debris, litter, illegal dumping and illegal encampments. Access controls, management, and enforcement will be in place.

Trespass: The Mitigation Site is surrounded by urban land uses. Trespass in form of unauthorized encampments currently occurs and may occur in the future. Access controls will be in place.

Fire and Fire Suppression: The site may be impacted as a result of emergency fire suppression activities in the event of fire or aviation accidents.

Invasive Species: Nonnative invasive species currently occur on the site. While invasive species will be removed as part of the management within the Mitigation Site, sources of invasion outside the Mitigation Site boundaries may be difficult to control (and are not part of this plan).

Pests and Diseases: Regional infestations may have the potential to affect the Mitigation Site, including mosquito-borne diseases and plant pests. Management may require emergency funds.

4.1.3 Adaptive Management

Adaptive management is a cyclic, goal-drive process that is tested and revised as new information becomes available, specifically to adapt to the effects of climate change. Over time, the understanding of the status and conditions of the Mitigation Sites, their habitats and species, and ability to manage stressors will increase. Following the Atkinson et al. (2004) model for adaptive management, the monitoring data will be collected, analyzed, and then used in the decision-making on next steps to determine management actions, survey protocols, and/or triggers. Conceptual models feed and scientific principles and information are evaluated against the objectives identified in this LTMP, and feed back to conservation strategies and management decisions, and any adaptations that may need to be made to monitoring and management methods.

Adaptive management program shall include regular coordination with the San Diego Management and Monitoring Program (SDMMP) as part of the Management Strategic Plan for Conserved Lands in Western San Diego County (SDMMP 2014). Adaptive management shall be conducted as needed in coordination with the Regulatory Agencies, City of San Diego, and in participation with SDMMP, as feasible. Adaptive management measures that are not identified in and funded by this LTMP will require the use of emergency funds or additional funding (e.g., grant or emergency funding).

4.1.4 Management Targets and Triggers

The Mitigation Site will be managed to benefit the following management targets.

Riparian and Wetland Habitat

Status: federally and state-protected; considered jurisdictional wetlands by the Corps, RWQCB, CDFW, and City of San Diego.

Habitat: The restored and enhanced riparian and wetland habitats surround Alvarado Creek, which runs intermittently based on stormwater input and natural precipitation events. These habitats hold water either after heavy rains or with dry weather flows; Alvarado Creek naturally flows intermittently, but drains hard surfaces from developed areas in the watershed that contribute to the flows in the creek. These wetlands may periodically dry up, often in mid to late summer or following long periods of drought. The water source is infiltrated water from stream flows. The restored habitats consist mainly of willow riparian forest that include coast live oaks and mulefat and southern willow scrub habitats. Ephemeral wetlands may develop at the edges of the creek as a result of natural succession.

Threats: Habitat destruction, invasive species, fragmentation, changes in hydrological regime including groundwater withdrawal or stream flow blockage, pollutants, and sedimentation. Although ephemeral wetlands filtrate out some pollutants, heavy pollution such as airplane fuels may affect water quality and wetlands vegetation.

The impetus behind monitoring data collection is to determine long-term trends and identify adaptive management triggers and provide feedback loops. These triggers may increase or decrease management and monitoring needs or suggest adaptive management studies necessary to identify threats, stressors and their remediation. Triggers shall be identified in annual reports and adaptive management or remediation recommended (feedback loop). Adaptive management strategies may need to be employed based on the following triggers:

- an average decline of native riparian and wetland plant species for more than two to three consecutive years regardless of rainfall;
- an average increase of non-native plant species over five years;
- a change in hydrology that significantly and permanently affects the health and function of the native habitats on the Mitigation Site.

Adaptive management should occur as soon as a management trigger criterion has been reached (over two to three years of monitoring), as indicated by the monitoring data. The LTMP may have to be updated accordingly.

4.2 One-Time Baseline Inspections

Baseline inspections and biological surveys will provide the Habitat Manager with documentation of the baseline condition of the Mitigation Site, and are considered one-time tasks (i.e. they will not be performed annually for the purpose of long-term monitoring). Baseline survey results will serve as a reference to which future monitoring can be compared, which can then be used to establish management triggers and inform future management. Because created and restored habitat

areas would have been carefully monitored prior to the initiation of long-term management, the purpose of the baseline surveys is confirm the conditions reported in the final post-restoration monitoring and maintenance report.

4.2.1 Baseline Survey

Objective: *Conduct baseline inspection of the property, including general conditions and access controls.*

Objective: *Conduct a biological inventory within the first year of long-term management to document the baseline conditions.*

Task: baseline inspection. Prior to conducting long-term management, the Habitat Manager shall inspect the Mitigation Site to confirm baseline conditions (including habitat boundaries, erosion and scour, photo documentation markers), access controls (fencing, gates, signage), and confirm that management conditions are compatible with those described in the LTMP and PAR.

Task: invasive species mapping. During the first year of long-term management, the Habitat Manager shall map invasive species and qualitatively estimate the percent cover to establish a baseline. The baseline mapping shall be used to compare long-term conditions of the Mitigation Sites. Mapping may be accomplished through use of available technologies, such as GIS and aerial photography.

Task: biological resources inventory. During the first year of long-term management, the Habitat Manager shall conduct a general biological resources survey to confirm baseline conditions and detect any potentially sensitive plant and animal species. The surveys shall be conducted in the spring to capture the blooming window of native plant species and the time of highest detectability for sensitive wildlife species.

4.2.2 Public Outreach

Acceptance of the Mitigation Site as a valuable amenity by the community is an important consideration for the long-term viability of associated open space resources. To that end, steps will be taken to encourage participation by local residents and community members in the stewardship of the mitigation site. It is a goal of this plan that community members take pride in the maintenance and protection of the Preserves, and function as stewards of the Preserve in coordination and consultation with the Habitat Manager.

Objective: *Educate public and inform of habitat management, stewardship opportunities, and prohibited acts.*

Task: installation of signage: At the onset of habitat management activities, the Habitat Manager shall install two signs identifying the Mitigation Site as a managed preserve, prohibiting access, and providing the Habitat Manager's contact information. The signs shall be installed in locations visible to the public.

Task: public outreach. Within three months of the onset of habitat management, the Habitat Manager shall inform the public about the mitigation site and habitat management to be conducted on the site (see Section 4.5.3).

4.3 Long-Term Monitoring

Monitoring methods shall be specifically designed for long-term management rather than post-restoration management and shall include trend monitoring methods. Following the Atkinson et al. (2004) model for adaptive management, the monitoring data should be collected, analyzed, and then used in the decision-making on next steps and any necessary revisions to the LTMP. Adaptive management shall consist of providing feedback loops that lets the Habitat Manager adapt monitoring and management methods to scientific outcomes, study results, successes and failures, and new threats and stressors. Management activities in form of a work plan are summarized in Table 2 at the end of Section 4. Many of the tasks identified below may be combined during one monitoring or maintenance visit.

4.3.1 General Conditions Monitoring

This section discusses the general monitoring directives (tasks) that apply to the general long-term stewardship of the onsite Mitigation Site. The Mitigation Site shall not be open to the public and shall be fenced off from the adjacent pedestrian trail. Educational access might be permitted as authorized by the Habitat Manager. The Mitigation Sites are intended to serve as a long-term preservation areas for sensitive habitats and wildlife species, and as such, are not compatible with the following activities:

- Off-road vehicle use
- Hunting
- Dumping
- Construction activities and staging
- Unauthorized recreational use or camping
- Unauthorized vegetation clearing or mowing
- Removal of natural resources.

The Habitat Manager shall control access to prevent unauthorized dwellings and other unauthorized access. Vehicular access shall be limited to management or emergencies. Exceptions to these prohibitions include specific activities related to habitat restoration and biological resources monitoring and management pursuant to this LTMP.

Objective: *Conduct regularly scheduled site assessments to identify potential management issues.*

Task: qualitative site visits. Quarterly site visits shall be conducted to assess the overall condition of the Mitigation Site and to identify threats and stressors (e.g., signage, fencing, trash, unauthorized access/vandalism, habitat degradation/erosion, vegetation loss, invasive species, erosion, edge effects, pests and diseases, etc.). During these visits, incidental observations of sensitive plants and animals shall be mapped and recorded. A log shall be kept during each visit

describing the observations, actions taken, and recommended future actions. The Habitat Manager shall coordinate with neighboring land owners on any issues related to trespass and other damages.

Task: vehicle access control. No vehicle access shall remain at the Mitigation Sites after successful restoration. Access for the purpose of monitoring and management shall be limited to pedestrian access. Should vehicle access be necessary to maintain the Mitigation Sites, access should be temporary, not impact any of the sensitive resources for which the Mitigation Sites were restored, and be restored to pre-existing conditions as necessary.

Task: emergency access. Emergency access (e.g., for the purpose of accident recovery or fire suppression) shall be granted to the Mitigation Site, and shall be coordinated with the Habitat Manager as feasible. The Mitigation Site shall be restored to pre-existing conditions should emergency access cause disturbance to the Mitigation Sites.

Habitat-specific monitoring and management will be performed to maintain riparian and wetlands functions and services. The Mitigation Site will receive basic stewardship management as described in Section 4.4. Management activities shall begin immediately upon satisfaction of habitat restoration success criteria and the availability of management funds.

4.3.2 Vegetation Mapping

The Mitigation Site experiences edge effects from surrounding developments. This and other effects (e.g., climate change, site disturbances, etc.) may cause a change in the vegetation types and composition of the vegetation communities on the sites. Vegetation mapping will assist in the monitoring of vegetation trends and inform the Habitat Manager of any adaptive management tasks that might be necessary to maintain the desired vegetation communities to benefit the native floral and faunal communities for which the site were restored and preserved.

Objective: *Maintain or increase the value of the native vegetation communities, including species integrity, diversity, and richness.*

Task: vegetation community mapping. Every five years, the vegetation communities of the Preserve shall reviewed and updated to identify any changes. Mapping will be conducted on foot with the aid of a current vegetation map, aerial photograph, and GPS unit with sub-meter accuracy. The survey method will consist of surveying meandering transects on foot throughout the site to classify vegetation communities. In addition, all observations of plant and animal species will be recorded. The location of sensitive species observed on site will be recorded with a global positioning (GPS) unit with sub-meter accuracy. The Habitat Manager shall use the Vegetation Classification Manual for Western San Diego County (SANDAG 2011) and crosswalk to Holland (1986)/Oberbauer (2008), unless otherwise directed by the City or Regulatory Agencies. The revised maps will be submitted to the City MMC and Regulatory Agencies. A revised map will be included in the annual report. If significant vegetation community changes are noted, the cause of vegetation changes shall be determined, the City of San Diego and regulatory agencies notified, and adaptive management methods applied to enhance or restore any lost riparian vegetation communities.

4.3.3 Invasive Species Monitoring and Mapping

Post-restoration, all Mitigation Sites are expected to be 95% weed-free in perpetuity. Special attention shall be given to high and moderate threat Cal-IPC species, and new invasive species that may not be included in the Cal-IPC lists.

Objective: *The Mitigation Sites shall be mostly (95%) free of invasive and non-native species as defined by Cal-IPC or other regional guidance; this includes newly introduced species that may not have been listed by Cal-IPC. Cover of invasive species shall not exceed 5 percent greater than the baseline condition established during the first year of long-term monitoring.*

Task: annual invasive species mapping. The Habitat Manager shall map invasive species twice per year in the spring to target specific problem areas and collect an invasive species inventory. In addition, the Habitat Manager shall qualitatively assess the Mitigation Sites at each scheduled site visit for signs of exotic species invasion. During these site visits, the Habitat Manager shall identify potential problem areas, map infestations and estimate the relative cover of target invasive species to determine extent and location of invasive species control. Cover estimates shall occur during the quantitative vegetation surveys; non-native species shall be assigned their own cover class to allow for trend monitoring and targeted removal. In addition, the Habitat Manager shall assess previously treated areas for one to three years after removal to ensure that invasive species have not re-emerged or been replaced by new invasive species. Invasive species identification may occur during the quarterly patrols.

4.3.4 Habitat Monitoring

The restored and enhanced native riparian and wetlands habitats on the Mitigation Site provides functions and services to improve water quality and benefit the local flora and fauna. The Mitigation Site was restored to mitigate for wetlands functions lost from the construction of the Project. Habitat monitoring will assist in the evaluation of these continued functions and services.

Objective: *The riparian habitat shall have similar species composition, frequency and species richness of plant species in high functioning riparian ecosystems.*

Task: annual photographic documentation. During one of the qualitative site visits in the spring, the Habitat Manager shall conduct photodocumentation of the riparian and wetlands habitat on the Mitigation Site. Permanent photo points (15) were established during the post-restoration monitoring period. These 15 photo points shall be used for annual photo monitoring. Photo points shall be marked using sub-meter accuracy GPS units; permanent markers may be placed, or existing markers reused. Photographs shall be taken at the same time each year from the same locations, angle, and vantage point to monitor change over time. Direction, height and angle of photographs shall be recorded to assure that the same vantage point is used repeatedly over the monitoring period. Photos shall be compared between each sampling event to document changes and trends.

4.4 Long Term Management

Management and maintenance of the Mitigation Site shall consist of invasive species control, trash removal, and access control maintenance. Management activities in form of a work plan are summarized in Table 2 at the end of Section 5.

4.4.1 Habitat Maintenance

General maintenance of the site should occur on a regular basis, at least twice per year. Litter, trash (including wind-blown trash) and dumping, homeless camps and other unauthorized uses are potential threats to the biological resources throughout the Mitigation Sites. The Habitat Manager shall remove trash, repair structures and access controls, maintain the functions of the creek and maintain the habitats for which the Mitigation Site was restored and protected.

Objective: *Collect and remove trash, repair vandalized structures and access controls, and rectify trespass impacts. Work with City enforcement to remove homeless camps.*

Task: general habitat maintenance. Conduct trash pick-up, erosion repairs, and access control. The as-needed maintenance requirements and schedule is dictated by the monthly qualitative site visits described above.

Task: trash removal. The Habitat Manager shall collect and remove industrial waste, trash, or other debris encountered within the restoration areas, including encampments. All materials shall be disposed of in a legal manner. Natural materials such as duff, leaf litter and wooden debris from broken tree limbs, etc., shall be left in place to provide wildlife habitat.

Task: sign installation. Signs would have been posted during the restoration of the Mitigation Site. Signs shall be maintained in perpetuity.

Task: fence and barrier installation. Fencing would have been installed during the restoration effort. The southern portion of the property is fenced with a chain link fence. Fencing north of the creek is included as part of the riding/walking trail and total approximately 350 linear feet. The Mitigation Site shall remain fenced as required in the mitigation plans. Fences shall be maintained in perpetuity; however fence maintenance is assumed to be minimal.

Task: homeless encampments: The Habitat Manager will report the location of encampments and those individuals who refuse to discontinue illegal activities, such as collecting natural resources and directing lighting from adjacent developments into the Preserve, to the City's Code Enforcement and applicable law enforcement agencies.

4.4.2 Invasive Species Control

Invasive species threaten the diversity and abundance of native species through competition for resources, predation, and parasitism, interbreeding with native populations, transmitting diseases, or causing physical or chemical changes to the invaded habitat. "Invasive species" are those identified as moderate or high risk by the California Invasive Plant Council (Cal-IPC 2006) or other species determined to be locally invasive.

Invasive species removal shall occur at least twice per year in the early and late spring, starting with invasive species emergence, and as directed through invasive species mapping and qualitative site visits. All workers conducting invasive plant removal activities shall be able to distinguish between native and non-native species, with special attention to rare plant species. Invasive species removal shall be conducted by personnel holding valid pesticide application licenses.

Objective: *Control invasive species that diminish the sensitive biological resources for which the Mitigation Site was established and restored.*

Task: general invasive species control. If an invasive species is determined to be a threat, appropriate control methods shall be employed, including hand removal, the use of mechanical equipment (e.g., weed whackers and mowers), or application of an appropriate herbicide. Spot-spraying with herbicides approved for use in California shall be conducted only by a licensed pesticide applicator and all label instructions shall be followed. Invasive species removal should be conducted before seed-set at the appropriate time of year based on the biology of a given species and potential impacts to sensitive plants and breeding birds.

Herbicide applications near or in water shall be conducted using water-safe materials. Invasive species may need to be removed manually. All invasive species material will be carefully removed from the site and legally disposed of at an appropriate facility. If an extensive treatment is needed, a detailed invasive species control plan shall be prepared and discussed with the City and Regulatory Agencies. Newly discovered invasive species should be targeted and removed as research prescribes.

4.5 Coordination and Reporting

4.5.1 Fire Management Coordination

Fire is an important element in the ecology of southern California, but may cause damage to native habitat and species if it burns too hot or too frequently. If a native habitat is affected by fire, there are general expectations for recovery, but also invasion by weeds. Following a fire, quantitative data should be carefully evaluated to identify short- and long-term impacts and adaptive management methods. The mitigation area is not in a City-required brush management zone and brush management (vegetation thinning) would not be conducted within the mitigation site.

Objective: *Coordinate with San Diego Fire Department on an as-needed basis to protect or restore the property from the effects of fires.*

Task: coordination. In the event of a fire, all necessary measures to protect lives and property will be utilized by the San Diego Fire Department. The City will coordinate with City fire staff to discuss appropriate access locations and measures to minimize impacts to sensitive biological resources in the event of a wildfire on site. Evidence of fire or disturbance from fire suppression shall be evaluated for impacts to the site (loss of native habitat, weed invasion, erosion, etc.). Following a fire, the habitat is allowed to recover naturally unless quantitative data identify short- and long-term impacts, the remediation of which should employ adaptive management methods such as habitat restoration.

Task: fire management. Any damage resulting from fire suppression (fencing damage, vehicle damage, contamination from fire suppressant chemicals, etc.) will be addressed immediately. Evidence of fire or disturbance from fire suppression shall also be evaluated for impacts to the site (loss of native habitat, weed invasion, erosion, etc.). Based on quantitative data, appropriate adaptive management measures such as repairs and restoration will be undertaken (emergency fund).

4.5.2 Reporting

An annual report summarizing the status of the Mitigation Site, results of the surveys and inspections, and all major actions taken since the last assessment shall be prepared by the Habitat Manager and provided to the City and Regulatory Agencies no later than December 31 of each year. The report shall be concise and focus on methods, results with quantitative analysis, discussion of correlations and management triggers, changes in monitoring and management methods, recommendations for adaptive management measures, and a summary of expenses and year-end balance of funds. This annual report shall include a discussion of the following:

1. Summary of management and monitoring tasks and issues addressed during the previous year;
2. Overall conditions and functions of the Mitigation Site, including any changes to the health or distribution of sensitive species, hydrological changes, damage resulting from natural or anthropogenic causes, problems with invasive species, trespass, dumping, etc.;
3. Results of qualitative and quantitative monitoring and comparison to previous results;
4. Description of measures to remove invasive and non-native plant/animal species.
5. Site maps of areas of concern (e.g., invasive species, trespass, trash dumping, erosion, etc.)
6. Discussion of trends, correlations, and feedback loops;
7. Problems encountered, and recommendations for management and monitoring identified for the upcoming year;
8. Management triggers and any adaptive management;
9. Status of endowments, funds generated, expenses incurred, and year-end balance.

4.5.3 Public Outreach and Coordination

As described in Section 4.2.2, public outreach and education is an important task to continue community relations relative to preserve management, safety, and enforcement. Public outreach will include, but is not limited, to maintenance of signs, and coordination with neighboring land owners and the community.

Objective: *Educate public and inform of habitat management, stewardship opportunities, and prohibited acts.*

Task: signage. The Habitat Manager will maintain signage as discussed in Section 4.4.1. The signs shall be in English and Spanish and inform of code violations relative to trespassing and property

damage, including fences and gates. The signs should also include contact information of the Habitat Manager and the City of San Diego Code Enforcement.

Task: education of neighboring community. The Habitat Manager shall provide education to the neighboring community and the public regarding the sensitivity of riparian habitats and conserved open space. The Habitat Manager may also reach out to landowners of surrounding properties to inform them about edge effect management, such as access controls, trespass, littering, and invasive species invasion concerns. Coordination may include reporting of trespassing, poaching, and vandalism, and other violations. Contact information shall be provided.

Table 1. Summary of Long-term Monitoring and Management Tasks

TASK	PURPOSE	FREQUENCY
Habitat Monitoring		
Qualitative habitat monitoring; general conditions assessment	Assess overall condition of Mitigation Site (e.g., fencing, trash, trespassing, invasive species, need to vegetation trimming, habitat degradation, topography, etc.) and map incidental observations of sensitive species. Evaluate threats and stressors and adaptive management responses.	Quarterly
Vegetation mapping	Map vegetation communities to track changes in boundaries and composition over time.	Once every five years
Invasive species monitoring and mapping	Map infestations of invasive species and estimate percent cover of non-native species.	Twice per year in early and late spring
Habitat monitoring	Conduct photo documentation at approximately 15 photo points across the site to assess changes in vegetation conditions and habitat functions.	Annually in spring
Habitat Management		
Habitat Maintenance	Remove invasive species and trash, maintain access protection and signs, repair erosion and vandalism problems, , etc.	Twice per year or as needed
Invasive species control	Control and remove non-native and invasive species per LTMP requirements.	Twice per year in early and late spring
Reporting		
Annual reports	Prepare annual report summarizing all management and monitoring activities, continued threats, and other pertinent information for submittal to the City and Regulatory Agencies. Coordinate with neighbors, City, Regulatory Agencies as needed (including fire management).	Annually, submitted to resource agencies and City of San Diego on or before December 31
Public Outreach	Prepare brochures and conduct public outreach to neighboring landowners and residences	At the onset of habitat management and as-needed.

5.0 REFERENCES

Atkinson, A.J., P.C. Trenham, R.N. Fisher, S.A. Hathaway, B.S. Johnson, S.G. Torres, Y.C. Moore. 2004. Designing monitoring programs in an adaptive management context for regional multiple species habitat conservation plans. USGS Western Ecologist Research Center, Sacramento, CA.

Blackhawk Environmental, Inc. 2021. Alvarado Creek Affordable Housing Project Habitat Mitigation and Monitoring Plan. Submitted to Ascent Environmental and City of San Diego. In progress.

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory. Berkeley, CA. Available online: http://www.cali-ipc.org.

City of San Diego. 2018 as amended. San Diego Municipal Code, Land Development Manual, Biology Guidelines. February 2018.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California.

Oberbauer, T., and M. Kelly based on Robert Holland. 2007. Vegetation Communities of San Diego County based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Robert F. Holland, Ph.D. October 1986.

SANDAG. 2011. Vegetation Classification Manual for Western San Diego County. First Edition. February 2011.

San Diego Management and Program (SDMMP). 2014. Management Strategic Plan (MSP) for Conserved Lands in Western San Diego County. San Diego Management and Monitoring Program.

United States Department of Agriculture (USDA). 1973. San Diego County Soil Survey, Natural Resources Conservation Service (NRCS), Washington, D.C.

Appendix A: Property Analysis Record (PAR)

Property Analysis Record
Habitat Management Endowment Report
For Alvarado Creek Affordable Housing Project
Mitigation Site

Project Information

Preparer:

PAR Preparer: Schaefer Ecological Solutions
Christina Schaefer (certified CNLM PAR Preparer)
Address: 815 Madison Avenue
San Diego, CA 92116
Phone: 619-991-8968
Email: christina@schaeferecology.com

Date: June 30, 2022

Project and Mitigation Site Owner:

Contact: The Pacific Companies
ATTN: Darren Berberian
Address: 4330 East State Street
Eagle, Idaho, 836161155
Phone: (949) 599-6069
Email: darrenb@tpchousing.com

Habitat Preserve Property:

Type: Mitigation Site
APN: portions of 461-320-06, 461-320-08, and 461-320-09
Acreage: 0.599 acre (mitigation site only)

Habitat Manager: TBD

1.0 Introduction

The purpose of the Alvarado Creek Affordable Housing Property Analysis Record (PAR) is to prepare a cost estimate for the long-term management and monitoring of the Alvarado Creek Affordable Housing Mitigation Site (Mitigation Site), which is owned by the Project Proponent, The Pacific Companies. The 0.599-acre Mitigation Site is located southeast of Mission Gorge Road, south of Mission Gorge Place, and north of Interstate 8 (I-8) and the Grantville Trolley station.

This PAR is built upon the requirements set forth in the Alvarado Creek Affordable Housing Long-Term Management Plan (LTMP) that was prepared by SES in October 2021 and last updated on June 30, 2022, to ensure the long-term management of the Project's Mitigation Site. The cost analysis is based on the assumptions described below. Although this PAR may be used as a stand-alone document, it should be considered in association with the detail provided in the LTMP.

2.0 Preserve Details

1. The PAR was prepared exclusively for the Alvarado Creek Affordable House Mitigation Site.
2. The Mitigation Site is owned by The Pacific Companies. It is currently not conserved, but will be conserved in perpetuity through a Conservation Easement granted by The Pacific Companies to the Habitat Manager.
3. A Habitat Manger or Easement Manager has not yet been identified. Per the requirements by the CDFW, the Habitat Manager and Easement Managers must be separate entities. Easement management is identified as a line item in the annual PAR costs.
4. The Mitigation Site will have been restored and completed a five-year post-restoration monitoring and maintenance period at the onset of the long term management schedule.
5. The installation of gates and fencing will have been completed as part of the project construction and habitat restoration efforts. Therefore, costs for the installation of perimeter controls are not included in the PAR; long-term management will be limited to perimeter control maintenance and fence repair/replacement.
6. Signage will be installed during at the beginning of the long-term management to identify the Habitat Manager and site protection. The PAR assumes two signs, the location of which will be determined. The PAR includes repair and replacement of both signs every five years.
7. Baseline surveys and initial public outreach will be conducted at the onset of management activities. Baseline surveys will form the baseline for ongoing monitoring and management.
8. Ongoing efforts include management in perpetuity pursuant to provisions of the LTMP and in the table at the end of this document.

3.0 Cost Assumptions

The cost assumptions detained in the PAR are based on the following, and as detailed in this document:

1. The Project Proponent (The Pacific Companies) is responsible for funding the LTMP (impact fee) and success of the long term management. The Habitat Manager is responsible for habitat management pursuant to the LTMP. The City of San Diego and the Regulatory Agencies will ensure through receipt of annual reports that monitoring and management are conducted in

perpetuity in a manner consistent with the LTMP. Identity of Habitat Manager will be provided prior to the issuance of the grading permit.

2. Funding for long-term management will occur through the investment of an endowment identified in this PAR. The land manager will commence management as soon as funds are available and the restoration of the Mitigation Site has been accepted as completed by the City of San Diego Development Services Department (DSD) and Mitigation Monitoring Coordination (MMC), and Regulatory Agencies.
3. Costs for maintenance, monitoring and surveys are based on standard land trust/land management rates.
4. Costs are expected to increase annually due to inflation. The PAR provides an average per year estimated cost over 50 years, assuming a 3% inflation.
5. Cost for easement management are included in the PAR. The easement manager is a separate entity and may request that a separate PAR be prepared specific to the easement manager's conditions.
6. The habitat manager may conduct a separate PAR based on the habitat manager's conditions and fees. Slight adjustments may occur upon retention of a habitat manager.
7. The endowment will be managed by the San Diego Foundation based on a 4.25% rate of return.

4.0 Personnel

1. Management activities will be conducted by an accredited and CDFW-licensed Habitat Manager and their qualified personnel. To be "qualified," a habitat manager must have experience managing conserved lands with similar biological resources and be able to identify native plants.
2. Certain activities, such as trash removal, vegetation thinning and invasive species removal, may be conducted by maintenance staff or contractors; however, all maintenance activities will be supervised and managed by the Habitat Manager to ensure that native species and habitat are not damaged.
3. The PAR uses standard management, labor, and material rates provided by accredited conservancies and land trusts[1]. Labor rates are as follows (including overhead and fees):
    - Executive Director: $145/hour
    - Habitat Manager: $110/ hour
    - GIS Specialist: $105/ hour
    - Field Technician: $95/hour
    - Crew Supervisor/Pesticide Applicator: $97/hour
    - Field Technician: $45/hr.

5.0 Onetime and Ongoing Costs and Schedules

Management will consist of long-term management and monitoring of the Mitigation Site, and will continue indefinitely as identified in Table 1. Initial (Onetime) costs occur once only, typically at the beginning of the long-term management effort, and are identified separately on the first page of the PAR Output.

[1] The PAR costs are based on an average fee; each Habitat Manager may use a different cost analysis and will provide a revised PAR as part of the acceptance of the management contract.

Ongoing costs are estimated on an average annual basis and are identified on page 2 of the PAR Output. However, actual expenses will vary from year to year, as specific management and monitoring activities will occur at different frequencies and at times may require more or less intensive efforts. The frequencies (i.e. twice per year (=0.5), annually (=1), every five years (=5), etc.) are identified in the ”Year” column of the PAR Output. The cost estimate for habitat monitoring and maintenance activities includes travel time, preparation/submittal of monitoring logs, GIS data entry, analysis, administrative and contingency percentages, and emergency fund costs.

5.1 Baseline Surveys

5.1.1 Baseline Inspections

Baseline inspections and biological inventory will serve as a reference to which future monitoring can be compared, which can then be used to establish management triggers and inform future management. Because created and restored habitat areas would have been carefully monitored prior to the initiation of long-term management, the purpose of the baseline surveys is to confirm the conditions reported in the final post-restoration monitoring and maintenance report. Baseline inspections include a confirmation of site conditions and invasive species mapping and shall be conducted in the spring.

5.1.2 Public Outreach

Within three months of the onset of habitat management, the Habitat Manager shall install signs and inform the neighboring residences and/or business about the mitigation site and management.

5.2 Long-Term Monitoring

5.1.1 General Conditions Monitoring (Quarterly Patrol)

General conditions monitoring would be conducted quarterly to assess the general conditions of the Mitigation Site. This would include observations of invasive species, trash and debris, vandalism and trespassing, erosion, habitat degradation, vegetation management needs, and the integrity of all perimeter controls and access routes. Site visits will be documented with site visit logs and/or data spreadsheets, and information updated in GIS, as necessary. Specialized site visits as discussed below may occur concurrently.

5.1.2 Vegetation Mapping

Every five years, the vegetation communities of the Mitigation Site shall reviewed and updated to identify any changes. Mapping will be conducted on foot with the aid of a current vegetation map, aerial photograph, and GPS unit with sub-meter accuracy. The survey method will consist of surveying meandering transects on foot throughout the site to classify vegetation communities.

5.1.3 Invasive Species Monitoring

The Habitat Manager shall map invasive species twice per year in the spring to target specific problem areas and collect an invasive species inventory. This may occur concurrently with the general conditions monitoring site visits (quarterly patrols).

5.1.4 Habitat Monitoring

During one of the qualitative site visits in the spring, the Habitat Manager shall conduct photodocumentation of the riparian and wetlands habitat on the Mitigation Site. Permanent photo points

(15) were established during the post-restoration monitoring period. These 15 photo points shall be used for annual photo monitoring. This may occur concurrently with the spring visit of the quarterly patrols.

5.2 Long Term Management

5.2.1 Habitat Maintenance

General maintenance of the site should occur on a regular basis, at least twice per year. Litter, trash (including wind-blown trash) and dumping, homeless camps and other unauthorized uses are potential threats to the biological resources throughout the Mitigation Sites. The Habitat Manager shall remove trash and debris (except for duff, leaf litter and other natural, habitat-related debris), repair structures and access controls, maintain the functions of the creek and maintain the habitats for which the Mitigation Site was restored and protected. Trash identified during the quarterly visits will be removed with one larger removal effort planned on an annual basis. Any damage to or required replacement of the fencing will be reported to the City's Code Enforcement for repair or replacement. The Habitat Manager will report the location of encampments and those individuals who refuse to discontinue illegal activities, such as collecting natural resources and directing lighting from adjacent developments into the Preserve, to the City's Code Enforcement and applicable law enforcement agencies.

5.2.2 Invasive Species Control

Per the LTMP, Zero Tolerance (per CalIPC) and other non-native species will be removed and/or treated at least twice per year upon identification. These and other invasive species will be controlled in a seasonally timed manner that will prevent further invasion of the exotic species (i.e., before any new seed source matures) and allow for coordination of exotic species removal efforts with restoration measures if necessary. Removal of non-native species may be conducted using herbicides per specifications identified in the LTMP.

6.0 Planning, Reporting & Administration

This task includes coordination, administration, data analysis and the preparation and submittal of annual reports to the City of San Diego, and Regulatory Agencies.

1. Preserve Management, Planning and Coordination. The Preserve Manager will be responsible for coordination of all management and monitoring activities, including coordination with the San Diego Fire Department or local fire marshal to discuss access points and measures to minimize impacts in the event of fire damage, and coordination with the public.
2. Reporting. An annual report summarizing all management and monitoring activities, continued threats, and other pertinent information for submittal to the City and Regulatory Agencies, per the requirements of the LTMP. The Habitat Manager will update electronic files, photographs, hard copies, and GIS data annually.
3. Contingencies and Administration. Contingencies are included in the PAR at 12 percent over the overall budget and include emergencies and unforeseen events, such as floods, drought, fire, fallen trees, etc. Staff rates are 16 percent above raw rates. The 10 percent administrative expenses consist of the costs for contract administration, project management, etc. Adaptive management is anticipated over the life of the stewardship and the LTMP is expected to evolve and be updated as site conditions warrant. However, changes to the scope of annual stewardship as a result of adaptive management will be limited to available contingency funds.

PAR Summary

As detailed in the attached PAR Output, the onetime fee would amount to **$3,003.84**. The *average* annual allocation of approximately **$10,305.43** will be required for management and monitoring of the Mitigation Site. It is understood that some years may require more intensive management than others, specifically relative to invasive species removal and sensitive species surveys. The annual costs are generated by the interest earned from the endowment and may vary depending on market economies. Any remaining management funds for a given year may be rolled over to the next year. The total endowment, including legal fund, needed to manage the MAP Offsite North Mitigation Site amounts to **$251,235.39.** This amount is based on a 4.25 percent rate of return (specific to the San Diego Foundation), which varies annually depending on market volatility.

Summary of Long-term Monitoring and Management Tasks

TASK	PURPOSE	FREQUENCY
Habitat Monitoring		
Qualitative habitat monitoring; general conditions assessment	Assess overall condition of Mitigation Site (e.g., fencing, trash, trespassing, invasive species, need to vegetation trimming, habitat degradation, topography, etc.) and map incidental observations of sensitive species. Evaluate threats and stressors and adaptive management responses.	Quarterly
Vegetation mapping	Map vegetation communities to track changes in boundaries and composition over time.	Once every five years
Invasive species monitoring and mapping	Map infestations of invasive species and estimate percent cover of non-native species.	Twice per year in early and late spring, concurrently w/qualitative habitat monitoring
Habitat monitoring	Conduct photo documentation at approximately 15 photo points across the site to assess changes in vegetation conditions and habitat functions.	Annually in spring, concurrently with qualitative monitoring
Habitat Management		
Habitat Maintenance	Remove invasive species and trash, maintain access protection and signs, repair erosion and vandalism problems, , etc.	Twice per year or as needed
Invasive species control	Control and remove non-native and invasive species per LTMP requirements.	Twice per year in early and late spring
Reporting		
Annual reports	Prepare annual report summarizing all management and monitoring activities, continued threats, and other pertinent information for submittal to the City and Regulatory Agencies. Coordinate with neighbors, City, Regulatory Agencies as needed (including fire management).	Annually, submitted to resource agencies and City of San Diego on or before December 31
Public Outreach	Prepare brochures and conduct public outreach to neighboring landowners and residences	At the onset of habitat management and as-needed.

PAR OUTPUT

Initial Tasks and Costs

PROPERTY: Alvarado Creek Mitigation Site LAST UPDATED: 06/30/2022

TASK	ITEM	TITLE	#	UNIT	COST (Item)	COST (Title)	BASE COST	YRS	ANNUAL CONT	ANNUAL ADMIN	ANNUAL COST
Initial Property Inspection											
Site Visit/Inspection		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Site Visit/Inspection		Habitat Manager	1	Hour(s)		$ 110.00	$ 110.00	1	$ 13.20	$ -	$ 123.20
Document Preparation & Review		Habitat Manager	1	Hour(s)		$ 105.00	$ 105.00	1	$ 12.60	$ -	$ 117.60
							SUBTOTAL		$ 43.20	$ -	$ 403.20
Biotic Surveys											
Biological Inventory		Habitat Manager	4	Hour(s)		$ 110.00	$ 440.00	1	$ 52.80	$ -	$ 492.80
Biological Inventory		GIS Contractor	2	Hour(s)		$ 105.00	$ 210.00	1	$ 25.20	$ -	$ 235.20
							SUBTOTAL		$ 78.00	$ -	$ 728.00
Habitat/Site Maintenance											
Signs	Basic - 12"x16"		2	Item(s)	$ 42.00		$ 84.00	5	$ 2.02	$ -	$ 18.82
Signs	Hardware		2	Fee	$ 2.00		$ 4.00	5	$ 0.10	$ -	$ 0.90
Signs	Installation - Basic Sign	Field Technician	1	Hour(s)		$ 45.00	$ 45.00	5	$ 1.08	$ -	$ 10.08
							SUBTOTAL		$ 3.19	$ -	$ 29.79
General Coordination											
Coordinate - Neighboring Entities		Habitat Manager	1	Hour(s)		$ 110.00	$ 110.00	1	$ 13.20	$ -	$ 123.20
							SUBTOTAL		$ 13.20	$ -	$ 123.20
Field Equipment											
Mileage	Mileage - Initial Year		60	Mile(s)	$ 0.59		$ 35.40	1	$ 4.25	$ -	$ 39.65
							SUBTOTAL		$ 4.25	$ -	$ 39.65
Operations											
Project Management		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Audit	Audit - Flat Fee		1	Per Site	$ 730.00		$ 730.00	1	$ 87.60	$ -	$ 817.60
Track Endowment		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Insurance Liability			1	Fee	$ 315.00		$ 315.00	1	$ 37.80	$ -	$ 352.80
Terrafirma Insurance			1	Fee	$ 55.00		$ 55.00	1	$ 6.60	$ -	$ 61.60
Project Accounting		Accountant	1	Hour(s)		$ 110.00	$ 110.00	1	$ 13.20	$ -	$ 123.20
							SUBTOTAL		$ 180.00	$ -	$ 1,680.00

TOTAL $ 3,003.84

Annual Ongoing Tasks and Costs

PROPERTY: Alvarado Creek Mitigation Site LAST UPDATED: 06/30/22

TASK	ITEM	TITLE	#	UNIT	COST (Item)	COST (Title)	BASE COST	YRS	ANNUAL CONT	ANNUAL ADMIN	ANNUAL COST
Biotic Surveys											
Vegetation Communities Mapping		Habitat Manager	2	Hour(s)		$ 110.00	$ 220.00	5	$ 5.28	$ -	$ 49.28
Vegetation Communities Mapping		GIS Contractor	1	Hour(s)		$ 105.00	$ 105.00	5	$ 2.52	$ -	$ 23.52
Photodocumentation		Habitat Manager	2	Hour(s)		$ 110.00	$ 220.00	5	$ 5.28	$ -	$ 49.28
							SUBTOTAL		$ 13.08	$ -	$ 122.08
Habitat/Site Maintenance											
Quarterly Patrol	Invasives, Photodocumentation, etc.	Habitat Manager	8	Hour(s)		$ 110.00	$ 880.00	1	$ 105.60	$ -	$ 985.60
Invasives	Weeding - Hand Removal	Field Technician	4	Hour(s)		$ 45.00	$ 180.00	0.5	$ 43.20	$ -	$ 403.20
Invasives	Weeding - Manage & Direct	Field Supervisor	4	Hour(s)		$ 97.00	$ 388.00	0.5	$ 93.12	$ -	$ 869.12
Invasives	Weeding - Manage & Direct	Habitat Manager	4	Hour(s)		$ 110.00	$ 440.00	0.5	$ 105.60	$ -	$ 985.60
Invasives	Herbicide Concentrate		2	Gallon(s)	$ 125.00		$ 250.00	0.5	$ 60.00	$ -	$ 560.00
Trash	Dump Fee - Non-organic Debris		1	Item(s)	$ 300.00		$ 300.00	0.5	$ 72.00	$ -	$ 672.00
Signs	Basic - 12"x16"		2	Item(s)	$ 42.00		$ 84.00	5	$ 2.02	$ -	$ 18.82
Signs	Installation - Basic Sign	Field Technician	2	Hour(s)		$ 45.00	$ 90.00	5	$ 2.16	$ -	$ 20.16
Signs	Hardware		2	Fee	$ 2.00		$ 4.00	5	$ 0.10	$ -	$ 0.90
Fencing	Chain Link 6' Galvanized (Materials & Install)		350	Linear Feet	$ 18.00		$ 6,300.00	30	$ 21.00	$ 231.00	$ 462.00
Gate	Vehicle Access Gate		1	Item(s)	$ 200.00		$ 200.00	10	$ 2.00	$ 22.00	$ 44.00
Gate	Lock		1	Item(s)	$ 15.00		$ 15.00	5	$ 0.30	$ 3.30	$ 6.60
							SUBTOTAL		$ 507.09	$ 256.30	$ 5,027.99
Reporting											
Database Management Updates		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Collector Updates & Figures		GIS Contractor	1	Hour(s)		$ 105.00	$ 105.00	1	$ 12.60	$ -	$ 117.60
Annual Report - Preparation		Habitat Manager	8	Hour(s)		$ 110.00	$ 880.00	1	$ 105.60	$ -	$ 985.60
Annual Report - Preparation		GIS Contractor	2	Hour(s)		$ 105.00	$ 210.00	1	$ 25.20	$ -	$ 235.20
Annual Report - Review		Executive Director	2	Hour(s)		$ 145.00	$ 290.00	1	$ 34.80	$ -	$ 324.80
Photo	Aerial Photo		1	Photo(s)	$ 52.00		$ 52.00	1	$ 6.24	$ -	$ 58.24
HMP Update		Habitat Manager	1	Hour(s)		$ 110.00	$ 110.00	5	$ 2.64	$ -	$ 24.64
							SUBTOTAL		$ 204.48	$ -	$ 1,908.48
General Coordination											
Coordinate - Neighboring Entities		Habitat Manager	1	Hour(s)		$ 110.00	$ 110.00	1	$ 13.20	$ -	$ 123.20
Coordinate - Fire Dept.		Habitat Manager	1	Hour(s)		$ 110.00	$ 110.00	10	$ 1.32	$ -	$ 12.32
							SUBTOTAL		$ 14.52	$ -	$ 135.52
Field Equipment											
Mileage	Mileage - Annually		200	Mile(s)	$ 0.59		$ 118.00	1	$ 14.16	$ -	$ 132.16
							SUBTOTAL		$ 14.16	$ -	$ 132.16
Operations											
Easement_Management		Easement Manager	8	Hour(s)		$ 145.00	$ 1,160.00	1	$ 139.20	$ -	$ 1,299.20
Project Management		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Audit	Audit - Flat Fee		1	Per Site	$ 730.00		$ 730.00	1	$ 87.60	$ -	$ 817.60
Track Endowment		Executive Director	1	Hour(s)		$ 145.00	$ 145.00	1	$ 17.40	$ -	$ 162.40
Insurance Liability			1	Fee	$ 315.00		$ 315.00	1	$ 37.80	$ -	$ 352.80
Terrafirma Insurance			1	Fee	$ 55.00		$ 55.00	1	$ 6.60	$ -	$ 61.60
Project Accounting		Accountant	1	Hour(s)		$ 110.00	$ 110.00	1	$ 13.20	$ -	$ 123.20
							SUBTOTAL		$ 180.00	$ -	$ 2,979.20

TOTAL	**$**	**10,305.43**

Financial Summary

PROPERTY: Alvarado Creek Mitigation Site LAST UPDATED: 06/30/2022

Acreage =	0.599	
Contingency Rate =	12%	
Administrative Rate (Staff) =	16%	
Administrative Rate (Subs & Materials) =	10%	
Endowment per Acre =	$	353,009.76
Endowment per Acre per Year =	$	16,621.66

	Initial Year	Ongoing
Contingency	$ 321.84	$ 933.33
Administrative	$ -	$ 256.30

COSTS PER YEAR					**TOTAL ($)**
Initial & Capital Costs for Year 1 at 2021 rates					$ 3,003.84
Annual Ongoing Costs per Year from Year 2 to perpetuity at 2021 rates					$ 10,305.43
TOTAL INITIAL FINANCIAL REQUIREMENTS					
Initial & Capital Costs for Year 1					$ 3,003.84
Annual Ongoing Costs for Year 2					$ 10,305.43
Annual Ongoing Costs for Year 3					$ 10,305.43
Initial Financial Requirements for Years 1, 2,3					**$ 23,614.70**
ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP					
Endowment to Provide Ongoing Income of	$	10,305.43	at Cap. Rate of	4.25%	$ 242,480.75
Less Total Initial Financial Requirements					$ (23,614.70)
Required Endowment*					**$ 218,866.05**
EMERGENCY & LEGAL FUND					
4% of Endowment					**$ 8,754.64**
TOTAL CONTRIBUTION					
(Initial Financial Requirements for Years 1,2,3 + Endowment + Emergency & Legal Fund)					**$ 251,235.39**

** Assumes the endowment will be paid in 2022 and returns from the endowment will start being used to support stewardship tasks in Year 4 (2027).*