RECON

Restoration and Revegetation Plan for the North University City Fire Station 50 Project, San Diego, California

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ATTACHMENT

1:	City of San Diego Biological Impacts & Monitoring Mitigation Monitoring and
	Reporting Program Conditions

Acronyms

AMSL	above mean sea level
APN	Assessor's Parcel Number
BMZ	Brush Management Zone
Cal-IPC	California Invasive Plant Council
CEQA	California Environmental Quality Act
City	City of San Diego
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
dB(A)	A-weighted decibels
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MMRP	Mitigation Monitoring and Reporting Program
MSCP	Multiple Species Conservation Program
PEP	Plant Establishment Period
USDA	U.S. Department of Agricultures
USGS	U.S. Geological Survey
Whitebook	City of San Diego Standard Specifications for Public Works Construction

1.0 Introduction

This document serves as the Restoration and Revegetation Plan (plan) for the North University City Fire Station No. 50 Project (project). This plan has been developed in accordance with Attachment B of the City of San Diego (City) Biology Guidelines (2012), City of San Diego Multi-Habitat Planning Area (MHPA) Land Use Adjacency Guidelines (1997), and the City of San Diego Landscape Standards (2004).

The project will cause impacts to valley needlegrass grassland that will require mitigation via a combination of native grassland creation and restoration. Other sensitive vegetation communities that will be impacted by the project (Diegan coastal sage scrub and non-native grassland) will require mitigation with preservation within the MHPA or purchase of mitigation credits. Additionally, the invasive plants vanilla-scented wattle (*Acacia redolens*) and Mexican fan palm (*Washingtonia robusta*) will be eradicated from the MHPA to the south of the project and the area will be revegetated with native grassland.

1.1 **Project Background and Purpose**

The project includes construction and operation of a three-story, 12,000-square-foot fire station, including a workshop, vestibule, watch room, exterior patio, and associated components to house 10 crew members. The fire station will also include bays for storage of fire engines and ambulances, a 14-space parking lot with gated entry, a storage area for a fuel tank, generator, and transformer, and a trash enclosure. There will be three 75-foot-wide flow-through planters to treat and capture all storm water runoff on-site. Landscaping within the site will feature native species.

1.2 **Project Location**

The project is located in the community of University City, in the northern portion of the City (Figures 1, 2, and 3). It is situated in the southwest corner of Assessor's Parcel Number (APN) 345-01-124, which is a City-owned parcel covering approximately 92 acres and extends across the athletic fields north of Nobel Drive and east to Interstate 805. The project site is within the U.S. Geological Survey (USGS) La Jolla quadrangle, Township 15 South, Range 3 West, on unsectioned lands within the Pueblo Lands of San Diego land grant (USGS 1996; see Figure 2). An aerial view of the project site and survey area is shown on Figure 4. The project site is within the City's Multiple Species Conservation Program (MSCP) Subarea Plan (City of San Diego 1997) boundary and it lies largely within the MHPA (Figure 5).

The habitat creation and restoration (hereafter simplified as "restoration" where appropriate) described in this report will occur within the MHPA, just southeast of the proposed fire station, outside the Brush Management Zones (BMZ) of the new structure (Figure 6). Restoration will occur entirely within areas mapped as non-native grassland, disturbed land, and ornamental plantings. Revegetation will occur within the MHPA, west of the restoration area, and will include portions within and outside BMZ 2 for the fire station.



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Project Site Parcel Boundary

FIGURE 2

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Project Site Location on USGS Map



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Project Site

Site Plan

Feet 0



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Project Location on Aerial Photograph





- Parcel
- 📃 Survey Area
 - City of San Diego MHPA

Eastgate Technology Park Mitigation Area

Sensitive Species

REC



Ashy Spike-moss (Selaginella cinerascens)

Belding's Orange-throated Whiptail (Aspidoscelis hyperythra beldingi)

Vegetation Communities

- Urban/Developed Land
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub -Disturbed
- Disturbed Land
- Valley Needlegrass Grassland
- Non-native Grassland
- Ornamental Plantings
- Southern Mixed Chaparral
- Southern Willow Scrub

FIGURE 5 Existing Biological Resources

0

Feet

80

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Vegetation Communities

- Urban/Developed Land
 - Diegan Coastal Sage Scrub

Diegan Coastal Sage Scrub -Disturbed

- Disturbed Land
- Valley Needlegrass Grassland
- Non-native Grassland
- **Ornamental Plantings**
- Southern Mixed Chaparral
- Southern Willow Scrub

Native Grassland Revegetation Areas

Creation Area - 0.217 acre (minimum)

Restoration Area - 0.434 acre (maximum)

Revegetation Area - 0.298 acre Reference Site

> FIGURE 6 Restoration Plan

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1.3 Goals and Objectives / Mitigation Requirements

The goal of this plan is restoration of 0.651 acre (0.217 acre of creation and 0.434 acre of restoration) and revegetation of 0.298 acre of native grassland/Diegan coastal sage scrub to maintain and enhance biological diversity in the region and conserve sensitive species and their habitats. The project will impact valley needlegrass grassland, Diegan coastal sage scrub (including disturbed), non-native grassland, disturbed land, and ornamental plantings. Impacts to disturbed land and ornamental plantings will not require mitigation. Impacts to Diegan coastal sage scrub (including disturbed) and non-native grassland will be mitigated via preservation of existing habitat within the MHPA, as described in the project's Biological Survey Report (RECON 2016). Impacts to valley needlegrass grassland will be mitigated with the native grassland restoration described in this plan.

A total of 0.12 acre of valley needlegrass grassland will be impacted by the project. This impact will occur within an area that was previously set aside as mitigation for the Eastgate Technology Park project. This impact is considered both a significant direct impact and a significant cumulative impact. As described in the City's California Environmental Quality Act (CEQA) Significance Determination Thresholds (2011), the direct impact component may be mitigated with creation, restoration, or preservation at a 2:1 ratio per the City's Biology Guidelines. Because the impact will occur within a dedicated mitigation area, that mitigation ratio has been increased to 3:1. Additionally, the cumulative impact component may be mitigated only via creation at a minimum 1:1 ratio. The total mitigation requirement for the project is 0.367 acre, including a minimum of 0.12 acre of creation. Thus, the 0.651 acre of creation and restoration (Table 1) exceeds the mitigation requirement by 0.284 acre. This excess restoration, plus the 0.298 acre of revegetation is intended to improve the habitat value within and adjacent to the MHPA adjacent to the fire station project.

The creation and restoration areas were determined based on the existing vegetation present, with land mapped as ornamental plantings targeted for creation, and areas mapped as disturbed land and non-native grassland targeted for restoration. As required per the City's Mitigation Monitoring Reporting Program (MMRP) conditions (Attachment 1), restored areas will be subject to five years of maintenance, monitoring, and reporting, and revegetated areas will be subject to 25 months of maintenance, monitoring and reporting.

Table 1Native Grassland Creation,Restoration, and Revegetation Areas			
Restoration Area	Size (acre)		
Habitat Creation	0.217		
Habitat Restoration	0.434		
Habitat Revegetation	0.192		
Total	0.843		

Revegetation will occur in three areas (see Figure 6):

- 1. An area of non-native grassland and disturbed Diegan coastal sage scrub east of the development area and just south of Nobel Drive.
- 2. An area of invasive plant species (vanilla-scented wattle and Mexican fan palm) that will be removed from inside the MHPA west of the restoration area.
- 3. A patch of non-native grassland within the fire station project's BMZ and inside the MHPA.

Non-native species will be removed from these areas and they will be revegetated with native grassland and sage scrub species. The revegetation area will be subject to 25 months of maintenance, monitoring, and reporting. Because the revegetation area is not designed to mitigate project impacts, the overall purpose and requirements for this area differs from those for the restoration area.

The long-term goal of this plan is to establish a self-sustainable, functioning ecosystem that is in equilibrium with the surrounding landscape. To meet this goal, the objectives for this plan are:

- Expand and enhance the area of native grassland in the project vicinity by restoring and revegetating habitat within areas that currently contain non-native and invasive vegetation.
- Protect the existing, restored, and revegetated biological resources from disturbance within and adjacent to the MHPA while accommodating compatible public land uses.
- Enhance and restore native plant associations and functional wildlife connections in strategic locations to provide viable wildlife and sensitive species habitat.
- Facilitate monitoring of selected target species, habitats, and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages.

This plan complies with the City's standard Biological Impacts and MMRP Conditions. A copy of these conditions is included as Attachment 1.

2.0 Roles and Responsibilities

2.1 City of San Diego

The City Engineering & Capital Projects Department shall be responsible for coordination and management of project activities. Decisions to stop work are the responsibility of the Engineering & Capital Projects Department, which shall have authority in decisions to suspend payment or terminate such contracts. This includes all phases of project installation, maintenance, and biological monitoring.

2.2 Project Biologist

The project biologist shall be a qualified individual or team of qualified individuals with a minimum of four years' experience in upland habitat restoration. The project biologist shall perform the following tasks and be responsible for monitoring the restoration in accordance with the habitat mitigation plan specifications:

- Consult with the contractor on any activities that may disturb the site.
- Monitor qualified subcontractors in execution of plan implementation and maintenance.
- Oversee and perform the required monitoring and reporting in accordance with the procedures established in this plan.

2.3 Installation (Landscape) Contractor

The landscape contractor shall have a minimum of five years of experience in upland habitat restoration and shall be a firm that specializes in installing and maintaining native habitat. The landscape contractor shall be responsible for implementing the tasks outlined in this plan under the supervision of the project biologist.

- Prepare areas for planting.
- Implement restoration plan.
- Maintain site as outlined in this plan.

3.0 Existing Conditions

3.1 Environmental Setting of Impacted Areas

For the purposes of biological surveys, a survey area was defined that includes the project development footprint, plus a minimum 100-foot buffer. A total of eight vegetation communities occur within the survey area: southern willow scrub, valley needlegrass grassland, Diegan coastal sage scrub (including disturbed), southern mixed chaparral, non-native grassland, disturbed land, ornamental vegetation, and urban/developed land. The acreage of each vegetation community and land cover type within the survey area are presented in Table 2 and shown in Figure 5. The tier for each vegetation community and land cover type is identified per the City's Biology Guidelines.

The project will result in direct permanent impacts to a total of 0.91 acre, including 0.81 acre inside the MHPA and 0.10 acre outside the MHPA (see Table 2 and Figure 6). A total of 0.29 acre (0.27 acre inside the MHPA and 0.02 acre outside the MHPA) lies within BMZ 2 and will be considered impact-neutral.

Two sensitive plant species occur within the project site: ashy spike-moss (*Selaginella cinerascens*) and San Diego County viguiera (*Bahiopsis laciniata*). Ashy spike-moss, a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 4.1 species (CNPS 2015), occurs within the valley needlegrass grassland and Diegan coastal sage scrub in the southern portion of the site, as well as within disturbed land in the western portion of the site. An estimated 50 individuals will be impacted by the project. Two San Diego County viguiera, a CNPS CRPR 4.2 species, occur in Diegan coastal sage scrub and non-native grassland in the northeast portion of the survey area; however, none will be impacted by the project (see Figure 5).

Two sensitive wildlife species were detected within or adjacent to the survey area: Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) and western bluebird (*Sialia mexicana*). Belding's orange-throated whiptail was detected in the valley needlegrass grassland areas and is expected to be present throughout the valley needlegrass grassland, Diegan coastal sage scrub, and non-native grassland survey area, including in areas that will be impacted. One western bluebird was observed among the landscaping trees associated with the athletic fields north of Nobel Drive (greater than 100 feet from the project site boundary). It is not expected to use habitat on-site, but could nest in the larger trees along Rose Canyon, which is approximately 750 feet south of the site.

Protocol surveys for coastal California gnatcatcher (*Polioptila californica californica*) were negative, but incidental observations of the species have been made subsequently within and adjacent to the site. Although patchy and interspersed with grasslands and disturbed land, there is potentially suitable Diegan coastal sage scrub present on-site. Other, higher quality Diegan coastal sage scrub occurs off-site to the east. Given the presence of marginally suitable habitat on-site and highly suitable habitat in the area, there is moderate potential for coastal California gnatcatchers to occur on-site.

Table 2 Vegetation Communities/Land Cover Types (acres)						
	Impacts					
			Inside	MHPA		
	City of		Outside	Inside		
	San Diego	Existing	Mitigation	Mitigation	Outside	
Vegetation Community	Tier	On-site	Parcel	Parcel	MHPA	Total
Southern willow scrub	Riparian	0.01	0.00	0.00	0.00	0.00
Valley needlegrass grassland	Ι	0.24	0.12	< 0.01*	0.00	0.12
Diegan coastal sage scrub	II	0.53	0.18	0.01	0.03	0.21**
Disturbed Diegan coastal sage scrub	II	0.18	0.02	0.00	0.02	0.04
Southern mixed chaparral	IIIA	0.22	0.00	0.00	0.00	0.00
Non-native grassland	IIIB	0.66	0.11	0.00	0.02	0.13*
Disturbed Land	IV	0.22	0.18	< 0.01*	0.03	0.21
Ornamental Plantings	IV	0.78	0.18	0.01	0.00	0.19
Urban/developed Land	N/A	1.84	0.01	0.00	0.00	0.01
Total		4.68	0.80	0.01	0.10	0.91**
*Actual impact is 76 square feet for valley needlegrass grassland and 110 square feet for disturbed land. MHPA = multi-habitat planning area. ** Total may not equal sum of cells due to rounding.						

Other sensitive wildlife species that have potential to occur on the site include red diamond rattlesnake (*Crotalus ruber*), coast horned lizard (*Phrynosoma coronatum blainvillii*), Cooper's hawk (*Accipiter cooperii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

3.2 Environmental Setting of Restoration Area

The native grassland restoration area is located just southeast of the main project site (see Figure 6), within the same undeveloped City-owned parcel (APN 345-01-124). It occurs at the western edge of a large stretch patch of undeveloped habitat extending east to and across Interstate 805, and south to Rose Canyon. It lies within the City's MHPA in the Rose Canyon Open Space. In addition to the fire station, existing multi-family residential developments occur to the south and west of the site, and a large athletic field is located to the north of Nobel Drive.

Topography within the survey area generally slopes from a high of 312 feet above mean sea level (AMSL) in the northwest to approximately 292 feet AMSL in the southeast (USGS 1996). Soils within the survey area are Huerhuero loam, 15 to 30 percent slopes eroded (USDA 1973). The Huerhuero series consists of moderately well-drained loams that have a clay subsoil (USDA 1973).

3.3 Restoration Site Characteristics

3.3.1 Restoration Area

The restoration area consists of non-native vegetation communities and land uses (nonnative grassland, ornamental plantings, and disturbed land) with an island of valley needlegrass grassland in the center. Topography consists of a gentle, east-facing slope, leading down to a moderate-sized patch of southern mixed chaparral. The underlying soils are Huerhuero loam (15 to 30 percent slopes, eroded).

The existing valley needlegrass grassland adjacent to the restoration area will be used as a reference site for the development of success standards. Because this patch is adjacent to the areas to be restored, it will provide clear indication of the success of the native grassland restoration.

Access to the restoration area could be achieved either from the existing parking area for the residential complex, which lies immediately adjacent to the site via foot from the fire station parking lot, or from the cul-de-sac at the end of Shoreline Drive to the west.

3.3.2 Revegetation Area

As mentioned above, revegetation will occur in three areas:

- 1. An area of non-native grassland and disturbed Diegan coastal sage scrub east of the development area and just south of Nobel Drive (see Figure 6). Topography is flat in the northern portion of this area, and slopes steeply to the south from Nobel Drive.
- 2. An area consisting of ornamental plantings dominated by vanilla-scented wattle and Mexican fan palm along the southern property boundary. Topography in this area includes a southeast-facing slope that leads to a low point where the storm drain for the fire station will be installed.
- 3. A patch of non-native grassland within the fire station project's BMZ. Topography in this area consists of a west-facing slope that leads down to the same storm drain area.

The underlying soils in these three areas are Huerhuero loam (15 to 30 percent slopes, eroded).

As above, access to the revegetation area could be achieved either from the existing parking area for the residential complex, which lies immediately adjacent to the site, via foot from the fire station parking lot, or from the cul-de-sac at the end of Shoreline Drive to the west.

4.0 Implementation

4.1 Site Preparation

Site preparation will consist of site resource protection, non-native species treatment, clearing and grubbing, and installation of erosion control measures.

4.1.1 Site Resource Protection

The restoration and revegetation areas are located adjacent to Novel Drive and a private road associated with a multi-family residential complex. Neither boundary is currently fenced adjacent to the restoration and revegetation areas, and there is evidence of unauthorized pedestrian access through the site. To define the edge of the site and protect the restoration and revegetation areas from unauthorized access, temporary fencing will be installed along the southern boundary of the site where it is adjacent to the road. Where revegetation occurs adjacent to Nobel Drive, temporary fencing may be installed at the discretion of the restoration biologist. Signage will be installed along the fence line to inform pedestrian traffic of the restoration activities underway.

Pin flags or other markers will be installed along the remaining perimeter of the restoration and revegetation areas and along the shared boundary with the existing patch

of valley needlegrass grassland to identify the edge of the restoration area and prevent damage to the existing native vegetation during installation. To accomplish this, the pin flags may be placed adjacent to existing individual grass plants. Pin flags are recommended instead of larger stakes or fencing, because they will minimize damage to the soil and any cryptogamic crust while still providing a visual cue for maintenance crews and the project biologist.

4.1.2 Non-Native Species Treatment

Non-native species treatment will consist of treating with herbicide and/or mechanical removal of all non-native plant species. Large non-native plants, such as the acacia shrubs that occur in the ornamental plantings, will be removed by grubbing after weed eradication is complete.

Prior to the start of treatments, the project biologist is required to implement the following measures in compliance with permit requirements:

- Mark access routes if necessary to avoid impacts to native vegetation during nonnative plant removal.
- Coordinate with the City and contractor in the field to review weed removal areas, access flagging, and disposal methods.
- Time the weed removal such that non-native species do not produce and dehisce viable seed within the site. Any viable seed found on non-native plants will be cut and bagged and disposed of at an approved facility.

Prior to the start of and during weed removal, the contractor shall:

- Ensure appropriate notifications are made to inform the property owner of the use of herbicide.
- Document safe operating procedures including an emergency spill clean-up plan.

Non-native species treatment will consist of herbicide treatment of live, green weeds, followed by dethatching of dead weeds with line trimmers and rakes. Care will be taken to avoid damaging native plants in the treatment areas. All weed material removed in this manner will be transported off-site and disposed of at an approved facility.

4.1.3 Clearing and Grubbing

Vegetation clearing will be required prior to planting and seeding in all three areas. Areas currently supporting non-native grassland and disturbed land will be dethatched and raked as described above to expose the soil and create viable germination microsites for seeding and suitable substrate for planting. The areas containing ornamental plantings (vanilla-scented wattle and Mexican fan palm) may need to be cleared and grubbed to remove the large bulk of the existing plants. Once the large ornamental plants are removed, they will be either mulched or removed and disposed of legally at a landfill. Native plants present within the restoration and revegetation areas will be avoided during vegetation clearing. In areas with more abundant native species, such as the disturbed Diegan coastal sage scrub (see Figure 6) non-natives species may need to be removed using hand tools to prevent damage to the native plants.

As mentioned above, pin flags or other markers will be installed along the perimeter of the native grassland, adjacent to existing native grasses. The pin flags will serve as a visual reminder to avoid clearing additional vegetation or damaging the soil within the native grassland.

Following clearing and grubbing, the restoration and revegetation areas will be left in rough grade, with any depressions from removed stumps remaining in place. This will provide microtopographic variability, which can improve plant diversity of the restoration and revegetation sites.

The federally listed coastal California gnatcatcher and other bird species have been observed or have potential to occur within the MHPA in the vicinity of the restoration area. To prevent impacts to these species, clearing and grubbing must be conducted outside of the coastal California gnatcatcher breeding season (March 1 to August 15). If construction activities are to occur during the breeding season, the project shall adhere to all mitigation measures set forth in the Biological Survey Report (RECON 2016).

4.1.4 Erosion Control Measures

Following vegetation clearing, the project biologist will assess the need for erosion control measures, such as straw wattles or silt fencing. These measures will be implemented if necessary, to help protect against erosion and site damage while the container plantings and seed establish.

4.1.5 Topsoil Salvage

The City's Standard Specifications for Public Works Construction (Whitebook; City of San Diego 2015) requires salvage and storage of the top eight inches topsoil, during project construction, and reapplication within disturbed areas prior to planting. For purposes of restoration and revegetation, only topsoil within areas of native grassland, coastal sage scrub, or ornamental plantings will be salvaged and reapplied. The topsoil from areas of non-native grassland will contain a seed bank of non-native species and would therefore not be salvaged. Topsoil containing cryptogamic soils, including areas of ashy spike-moss within the development area should be carefully excavated intact to the degree feasible, and stored off-site until needed for restoration site preparation.

Following vegetation clearing and grubbing, any salvaged cryptogamic soils should be re-installed as intact clods to the restoration and revegetation areas prior to planting and seeding.

4.2 Irrigation

Planting will be timed to occur during the fall and winter months in order to take advantage of cooler temperatures and seasonal rainfall. Although natural precipitation may provide sufficient moisture to germinate the seed, supplemental water is recommended to assure survival of the plantings until root systems have developed sufficiently to access groundwater in the dry season. In these cases, water use is expected to be highest during the first growing season, tapering off gradually over a period of three years until no supplemental water is necessary. An irrigation schedule will be determined by the project biologist and modified based on the season of planting and rainfall patterns. Supplemental watering will be discontinued at least two years prior to the end of the five-year maintenance program.

A temporary irrigation system will be designed at the project site to provide the plants with water as they establish and acclimate to the site. Irrigation of the site will be conducted with reclaimed water, if possible. The irrigation system design will be approved by the project biologist prior to installation; the design must demonstrate appropriate coverage and frequency of watering for plant establishment. The irrigation system shall conform to the City's Landscape Standards (2004).

As-built drawings of the restoration and revegetation areas, including the irrigation system, will be submitted to the City within 120 days of completion of installation. All irrigation will be maintained by the City.

4.3 Plant Installation

As previously mentioned, this plan includes native grassland restoration and revegetation in areas that currently support non-native grassland, ornamental plantings, and disturbed land. The plant palette for each of the three areas will be identical; however, the project biologist may direct installation of certain species in particular areas (such as installing a higher proportion of shrub species within or adjacent to coastal sage scrub habitat). Installation will include two phases: installation of container plants and hand seeding (Table 3). Figure 6 depicts the three areas and Table 1 summarizes the acreages.

In order to optimize plant establishment, planting is required to be performed immediately prior to or during the rainy season.

4.3.1 Container Plant Installation

The container plant palette (see Table 3) is designed to include native grasses and forbs found around the project site, plus a moderate number of coastal sage scrub shrub species to provide increased cover and to more closely mimic the surrounding habitat.

Table 3 Container Plant and Seed Palette					
Scientific Name	Common Name	Approximate Container Planting Density (plants/acre)	Approximate Seed Density (lbs/acre)		
Stipa pulchra	purple needlegrass	500	10		
Stipa cernua	nodding needlegrass	250	10		
Allium praecox	early onion	90	3		
Dichelostemma capitatum	blue dicks	45	3		
Sisyrinchium bellum	western blue-eyed grass	45	3		
Artemisia californica	California sagebrush	20			
Acmispon glaber	deerweed	20			
Calystegia macrostegia	morning glory	10			
Salvia mellifera	black sage	10			
Mimulus aurantiacus	bush monkey-flower	10	3		
Deinandra fasciculata	fascicled tarweed		5		
Nuttallanthus texanus	blue toadflax		1		
Osmadenia tennella	Osmadenia		1		
Pseudognaphalium biolettii	bicolor cudweed		1		
Pseudognaphalium californicum	California everlasting		1		
Croton setiger	dove weed		1		
Daucus pusillus	rattlesnake weed		1		
Laennecia coulteri	Coulter's horseweed		1		
Navarretia hamata	hooked navarretia		1		
Total		1,000	45		

The City's Whitebook requires plants used in restoration and revegetation to originate from within a 25-mile radius of San Diego County. To the degree feasible however, container plants should be propagated from seed collected within 20 miles of the project site, where possible, in quantities directed by the project biologist. Container plants are to be grown in native soil and inoculated with beneficial mycorrhizae (mutualistic fungi), which contains natural fungi and other microorganisms.

Standard horticultural practices shall be followed for this project. This involves digging a hole approximately twice the size (width and depth) of the plant's root ball. Plants are then positioned so that the surface of the soil in the container is at or slightly below ground level, with backfill from the excavation of the hole added carefully beneath and around the installed plant's rootball. The soil is then firmly tamped in around the plant. Each planting will have a recessed watering basin to aid in the capture of natural rainfall and artificial irrigation.

The restoration and revegetation areas will be planted and seeded with species that are appropriate for native grassland and coastal sage scrub habitats in the area (see Table 3). Two-inch to one-gallon container stock will be planted at a density of approximately 1,000 plants per acre. Any changes to the proposed plant palette shall be determined by the project biologist and approved by City Engineering & Capital Projects Department.

4.3.2 Seeding

Native plant seed shall be thoroughly mixed and hand broadcast evenly across the three areas. After application of the seed, the site will be raked to a depth of one-quarter inch to ensure optimal seed to soil contact.

Native seed must be sourced from a supplier with at least five years of experience collecting native grass and other native plant seed for restoration projects in the San Diego region.

- Only species specified by the project biologist shall be collected.
- In accordance with the City's Whitebook seed must originate within a 25-mile radius of San Diego County. However, if possible, seed should be collected from the vicinity of the project site or from coastal San Diego County (within 25 miles of the coast) within a 20-mile radius of the site.
- If locally available seed does not exist for a particular species, the landscape contractor shall consult with the project biologist to determine alternatives.
- Seed shall be free from noxious weed species and be certified Pure Live Seed in quantities outlined in Table 3.

4.4 Reporting

Following installation, a memo summarizing the installation activities and monitoring results, and recommendations for approval of installation will be submitted to the City. Additionally, implementation activities will comply with the City's standard Biological Impacts and Monitoring MMRP Conditions (see Attachment 1).

5.0 Adaptive Management Strategy

An adaptive management approach will be implemented as part of this plan. Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational procedures. If operational procedures are not meeting management goals, methods are adjusted until the goals are achieved. Adaptive management will consist of the following key elements:

- 1. Establish Management Goals. It is imperative to establish clear and measurable goals before embarking on a restoration program. Careful consideration will be given to which vegetation type or plant species will be installed based on hydrologic, hydraulic, and topographical data. The ultimate goal of a restoration program will be to further the preservation of a species assemblage, vegetative type, or functioning ecosystem.
- 2. Identify and Prioritize Species that Interfere with Management Goals. The areas surrounding the project area have been surveyed as part of the preparation of this document. In many cases, it was immediately clear which weed species posed the

biggest threat to the native plant habitats. For other species, the immediate threat was not clear, and observation over an extended period will help to identify if those species pose a threat to the native plant communities being restored. Section 6.2.1 of this plan identifies the highest priority species for control within the project area.

- **3.** Assess Techniques. All options for control of a particular invasive weed species will be considered. Each method will have advantages and disadvantages, and often the best approach is using a combination of management strategies. Furthermore, it is important to remain current on control methods, as new methodologies are constantly being developed, especially in the field of chemical control.
- 4. Develop and Implement a Management Plan. This document will supply the framework and background necessary for implementing management programs for vegetation and habitat type restoration throughout the project area.
- 5. Review Management Goals, Restoration Methods, and Control Techniques. Another crucial step in adaptive management is to examine and appraise the restoration methods that are currently in use. If portions of the mitigation areas are not responsive to planting one particular plant species because of differing hydrologic requirements or if natural recruitment into an area is not progressing at the expected rate, then planting alternate appropriate native plant species will be considered. Careful attention will be paid to weed species being controlled, then it will be verified whether the control techniques are working towards reaching the specified goals, and determined whether alternate control methods will be used or if weed management actions will focus on an alternate species that has subsequently become problematic.

6.0 Maintenance and Monitoring Program

The maintenance and monitoring program is designed to support the establishment of native habitat by performing erosion control measures, non-native weed removal, protection from unauthorized access, pests, and vandalism, trash and debris removal, irrigation system maintenance, remedial planting, and reseeding if necessary. Additionally, the biological monitor will establish an information base to document the maintenance and monitoring efforts. To achieve these objectives, the project biologist will observe and direct implementation, maintenance, and monitoring activities.

6.1 Schedule

The maintenance and monitoring of the project will occur according to the schedule described in Table 4.

Table 4						
Maintenance and Monitoring Schedule						
Type/Task PEP ¹ Year 1 Year 2 Year 3 Year 4 Year 4						Year 5
Maintenance	Maintenance					
Weed control	Monthly or as needed	Quarterly or as needed	Quarterly	Quarterly	Quarterly	$Once^1$
Horticultural treatment	As needed	As needed	As needed	As needed		
Erosion control	As needed					
Trash removal	Monthly or as needed	Quarterly or as needed	Quarterly	Quarterly	Quarterly	Quarterly
Replacement planting and seeding	As needed	Fall	Fall			
Site protection and Signage	As needed	As needed	As needed	As needed	As needed	As needed
Pest management						
Management of Vandalism	As needed	As needed	As needed	As needed	As needed	As needed
Irrigation maintenance ²	As needed	As needed	As needed			
Monitoring						
Qualitative	Bi-weekly for first month; monthly thereafter	Monthly for first 3 months; quarterly thereafter	Quarterly	Quarterly	Quarterly	Quarterly
Quantitative	_	Once ³	Once ³	Once ³	Once ³	Once ³
NOTE: Schedule is approximate. ¹ PEP = plant establishment period. ² Irrigation will be directed by the project biologist and maintained by the City						

³Once during spring season.

6.2 120-day Plant Establishment Period

A 120-day plant establishment period (PEP) will commence upon planting of the final container plants. The 120-day PEP will be identical for the restoration and revegetation areas. During this period, the project biologist will monitor weekly for the first month, and biweekly for the remainder of the PEP (Table 4). Maintenance will occur monthly or as-needed at the direction of the project biologist. Throughout the PEP, the maintenance crew shall control emerging weed seedlings, replace dead plants, and remove any trash.

To ensure that conditions of this plan are adhered to, all implementation activities will be monitored and recorded by the project biologist. The project biologist will be available onsite during implementation to assist in making necessary plan modifications so that the work may proceed. Records kept will include dates of planting and seeding and any significant problems encountered or necessary changes.

The 120-day PEP letter will be submitted to the City and to the applicable jurisdictions. Upon submittal of the 120-day PEP letter, the project will transition to Year 1 of the maintenance and monitoring period.

6.2.1 Weed Control

Weed control will be accomplished through a combination of hand or mechanical removal and herbicide treatments and will be performed by trained maintenance workers under the supervision of the project biologist. In general, native grasslands, including those in the project vicinity, contain a high proportion of non-native grasses and forbs, which often exceed the natives in overall cover (Holland 1996). Therefore, 25 percent cover by non-native annual species will be permitted during the PEP. Such moderate tolerance for non-native species will also serve to protect sensitive native grasses and small native annuals from herbicide overspray and soil disturbance from manual weed removal.

While some cover by non-native annual species may be allowed to remain to prevent unintended damage to the site, non-native perennial species and other particular nonnative invasive plant species will be targeted for removal whenever observed. These include invasive plant species as defined by the California Invasive Plant Council (Cal-IPC) database (Cal-IPC 2016), as well as several species recommended for removal by City staff (City of San Diego 2016). Table 5 summarizes invasive plant species known from the survey area that should be targeted for weed treatment within the restoration and revegetation areas whenever observed. In the event that additional non-native invasive species or nonnative perennial species are encountered, the project biologist shall refine control measures to include them.

Table 5					
Anticipated Exotic Plant Species					
Scientific Name	Common Name				
Acacia cyclops	western coastal wattle				
Acacia redolens	vanilla-scented wattle				
Atriplex semibaccata	Australian saltbush				
Avena spp.	wild oats				
Brachypodium distachyon	purple falsebrome				
Brassica nigra	black mustard				
Bromus diandrus	ripgut grass				
Bromus hordeaceus	soft chess				
Bromus madritensis ssp. rubens	red brome				
Carduus pycnocephalus	Italian thistle				
Centaurea melitensis	tocalote				
Delosperma sp.	iceplant				
Dittrichia graveolens	stinkwort				
Festuca myuros	rattail sixweeks grass				
Foeniculum vulgare	fennel				
Glebionis coronaria	garland daisy				
Helminthotheca echioides	bristly ox-tongue				
Hirschfeldia incana	short-pod mustard				
Marrubium vulgare	horehound				
Mesembryanthemum nodiflorum	slender-leaved ice plant				
Raphanus sativus	radish				
Rumex crispus	curly dock				
Salsola tragus	Russian thistle				
Schinus terebinthifolius	Brazilian pepper tree				
Schismus barbatus	Mediterranean schismus				
Sisymbrium irio	London rocket				
Stipa miliacea	smilo grass				

This weed control program will allow for control of non-native grass cover, while allowing for development of native species and still maintaining a habitat quality similar to that of the reference site.

6.2.2 Erosion Control

If erosion control measures, such as straw wattles, are determined necessary by the project biologist, they will be installed by the maintenance crew during regular maintenance visits. Similarly, if the project biologist determines that any installed erosion control devices are in need of repair or replacement, the necessary remedial work will be conducted by the landscape contractor during regular maintenance visits.

6.2.3 Trash Removal

Trash and other debris have the potential to be blown into the site from the surrounding area or dropped by pedestrians accessing the area without authorization. All such materials will be removed by hand during regular maintenance visits.

6.2.4 Replacement Planting and Reseeding

Some of the installed vegetation may be damaged by herbivory or disease. In such cases, the project biologist will note the number and species of plants to be replaced, and will direct the landscape contractor to install supplemental plants during regular maintenance visits.

In the case that seed in some areas fails to germinate or other damage occurs to the site, supplemental seeding will occur at the direction of the project biologist and with the approval of the City Engineering & Capital Projects Department.

6.2.5 Site Protection and Signage

Temporary fencing and informational signage will be installed along the southern edge of the restoration and revegetation areas where they are adjacent to the multi-family residential complex. Fencing and signage may also be installed along the northern edge of the revegetation area adjacent to Nobel Drive. The final decision on fencing in this area will be at the discretion of the project biologist. The project biologist will monitor the condition of any fencing and signage to determine if additional fencing or signage is required. Such repairs or additional material installation will be implemented during regular maintenance visits.

6.2.6 Management of Vandalism

Remedial measures to repair damage caused by vandalism, if any, will be implemented during regular maintenance visits at the direction of the project biologist and with the authorization of the City Engineering & Capital Projects Department.

6.2.7 Irrigation Maintenance

The project biologist will monitor the condition and effectiveness of the irrigation system. If the irrigation system becomes damaged or if additional irrigation lines are required, the project biologist will recommend remedial measures to be implemented by the landscape contractor during regular maintenance visits.

6.2.8 PEP Reporting

A monitoring report shall be prepared to document the completion of the 120-day PEP. The report shall include discussion on weed control, horticultural treatments (pruning, mulching, and disease control), erosion control, trash/debris removal, replacement planting/reseeding, site protection/signage, pest management, vandalism, and irrigation maintenance.

6.3 Maintenance Period

Following successful completion of the PEP, the project will begin a maintenance period. Because the restoration area is designed to mitigate project impacts, the overall purpose and requirements for this area differs from those for the revegetation area. As such, the maintenance period for the restoration area will be five years, whereas that for the revegetation area will be 25 months.

6.3.1 Restoration Area

The five-year maintenance period will begin upon submittal of the 120-day PEP letter. Maintenance within the restoration area will be conducted quarterly or as directed by the project biologist. Maintenance measures during the five-year maintenance period will be the same as those described for the 120-day PEP.

During the first four months of Year 1, maintenance in the restoration area will be conducted at a minimum of two times, at least one month apart. During the remainder of the five-year maintenance period, maintenance will occur quarterly (or as determined by the project biologist) to keep weeds from producing seeds and to control weed competition during the establishment period of native plants.

6.3.2 Revegetation Area

The 25-month maintenance period for the revegetation area will begin upon submittal of the 120-day PEP letter and may be extended at the determination of the City's Mitigation Monitoring Coordination (MMC) section. Maintenance measures during the 25-month maintenance period will be the same as those described for the 120-day PEP.

During the first four months of Year 1, the revegetation area will be weeded at a minimum of two times, at least one month apart. During the remainder of the 25-month maintenance

period, maintenance will be conducted quarterly or as needed at the direction of the project biologist.

6.4 Monitoring and Reporting

6.4.1 Qualitative Monitoring

Restoration Area

The project biologist will conduct monthly qualitative monitoring in the restoration area for the first three months, then quarterly monitoring for the remainder of the five-year maintenance period (see Table 4). Qualitative monitoring will focus on soil conditions (e.g., moisture and fertility), container plant health, seed germination, and native species recruitment, as well as the factors discussed in Section 6.2 above (weed control, erosion control, trash removal, replacement planting and reseeding, site protection and signage, vandalism, and irrigation maintenance).

Site maintenance needs will be communicated to the landscape contractor for scheduling and implementation. In addition, the project biologist will note evidence of wildlife use as described in the City's Guidelines for Conducting Biological Surveys (City of San Diego 2002).

Three photo points will be established in the restoration area (one in the creation area and two in the restoration area) and one photo point will be established in the reference site. As discussed in the section below, a fifth photo point will be established in the revegetation area. The photo points will record the progress of the restoration effort over the monitoring period. Photographs will be taken at each photo point during annual quantitative monitoring.

The photographs and survey results will be summarized and reported to the City in the annual monitoring reports.

Revegetation Area

The project biologist will conduct monthly qualitative monitoring in the revegetation area for the first three months, then quarterly monitoring for the remainder of the 25-month maintenance period (see Table 4). Qualitative monitoring will be identical to that for the restoration area, and will focus on soil conditions (e.g., moisture and fertility), container plant health, seed germination, and native species recruitment, as well as the factors discussed in Section 6.2 (weed control, erosion control, trash removal, replacement planting and reseeding, site protection and signage, management of vandalism, and irrigation maintenance).

Site maintenance needs will be communicated to the landscape contractor for scheduling and implementation. In addition, the project biologist will note evidence of wildlife use as described in the City's Guidelines for Conducting Biological Surveys (City of San Diego 2002).

In addition to the photo points established for the restoration areas and reference site, two photo points will be established within the revegetation area (one in the northern revegetation area, and one in the area of ornamental plantings in the south) to record the revegetation progress. A photograph will be taken at the photo point during each qualitative monitoring visit and incorporated into regular site observation reports.

6.4.2 Quantitative Monitoring

Annual quantitative monitoring will be conducted for the restoration and revegetation area to verify the sites are progressing relative to quantitative performance standards (see Section 6.5).

Restoration Area

The project biologist will conduct annual quantitative monitoring in the restoration area stating at the end of Year 1 and continuing through the end of Year 5 or project sign-off. Monitoring will occur using the relevé vegetation sampling technique to quantitatively monitor vegetation within the creation area, restoration area, and reference site (the patch of existing valley needlegrass grassland located between the restoration and creation areas), following the CNPS methodology (2009). The relevé method allows biologists to visually estimate plant cover and works particularly well in irregularly shaped areas.

Revegetation Area

Annual monitoring will occur within the revegetation area at the end of Years 1 and 2. Similarly to monitoring in the restoration area, that in the revegetation area will occur using the relevé vegetation sampling technique to quantitatively monitor vegetation following the CNPS methodology (2009).

6.4.3 Reporting

At the end of the PEP, a letter report summarizing the maintenance activities and monitoring results will be submitted to the City. Upon submittal of this 120-day PEP letter, the project will transition into Year 1 of the maintenance and monitoring period.

Restoration Area

Following each qualitative monitoring visit for the restoration site, a site observation report will be prepared and submitted to the City. The site observation reports shall review maintenance activities, qualitative monitoring results and the need for any remedial measures. At the end of each monitoring year, an annual monitoring report will be submitted to the City summarizing the previous year. Each annual monitoring report will discuss the results and analysis of the quantitative monitoring survey and will include photographs taken at established photo points. Additionally, any remedial maintenance actions taken during the year will be discussed. Each report will compare findings of the current conditions with those in previous reports. Following the fifth year, a final monitoring report will be prepared that evaluates the quantitative monitoring results relative to success criteria, and, if warranted, requests final acceptance of the restoration effort.

Revegetation Area

Following each qualitative monitoring visit for the revegetation area, a site observation report will be prepared and submitted to the City. The site observation reports shall review maintenance activities, qualitative monitoring results and the need for any remedial measures.

At the end of each monitoring year, an annual monitoring report will be submitted to the City summarizing the previous year. Each annual monitoring report will discuss the results and analysis of the quantitative monitoring survey and will include photographs taken at established photo points. Additionally, any remedial maintenance actions taken during the year will be discussed. Each report will compare findings of the current conditions with those in previous reports. Following the fifth year, a final monitoring report will be prepared that evaluates the quantitative monitoring results relative to success criteria, and, if warranted, requests final acceptance of the restoration effort.

6.4.4 Maintenance

The maintenance period (five years for the restoration area and 25 months for the revegetation area) will begin upon submittal of the 120-day PEP letter. Maintenance in both areas will be conducted quarterly or as directed by the project biologist. Maintenance measures during the maintenance period will be the same as those described in Section 6.2 for the 120-day PEP.

6.5 Performance Standards

6.5.1 Restoration Area

Restoration will be considered complete when the performance standards shown in Table 6 have been met. If these standards have not been met, the maintenance period may be extended at the determination of MMC. If performance standards are not met following any annual milestone, remediation measures described in Section 7.0 will be implemented.

Table 6 Performance Standards – Restoration Area					
Milestone	Native Cover ¹ (Trees, Shrubs, and Herbs)	Non-native Cover ² (not to exceed)	Other		
Year 1	No Quantitative Goals	25% Annual Species 0% Invasive Species	100% survival of container plants Erosion control measures in place and functional		
Year 2	30%	25% Annual Species 0% Invasive Species	80% survival of container plants Erosion control measures in place and functional		
Year 3	50%	25% Annual Species 0% Invasive Species	Erosion control measures in place and functional		
Year 4	65%	20% Annual Species 0% Invasive Species	Erosion control measures in place and functional or removed		
Year 5	75–100%	20% Annual Species 0% Invasive Species	Erosion control measures removed		
¹ As a relative percentage of the reference site. ² Absolute value					

6.5.2 Revegetation Area

Revegetation will be considered complete at the end of 25 months, if the performance standards shown in Table 7 have been met. If these standards have not been met, the maintenance period may be extended at the determination of MMC. If performance standards are not met following any annual milestone, remediation measures described in Section 7.0 will be implemented.

Table 7 Performance Standards – Revegetation Area					
	Native Cover	Non-native Cover			
Milestone	(Trees, Shrubs, and Herbs)	(not to exceed)	Other		
Year 1 (Months 1–12)	No Quantitative Goals	25% Total Cover 0% Invasive Species	100% survival of container plants Erosion control measures in place and functional		
Year 2 (Months 13–25)	30% total native cover	25% Total Cover 0% Invasive Species	80% survival of container plants Erosion control measures in place and functional (or removed)		

7.0 Remediation Measures

If the minimum levels for any one of these performance standards are not achieved within either the restoration area or the revegetation (see Tables 6 and 7, respectively), the project biologist will recommend remedial actions (such as replanting and/or seeding) to reach the following year's required levels. If, at the end of the maintenance period (five years for the restoration area; 25 months for the revegetation area), a site fails to meet the standards, the monitoring and maintenance period may be extended and a specific set of remedial measures may be implemented per the direction of the biologist in coordination with the MMC. Only areas that fail to meet the success standards shall require additional work and/or additional remedial measures. This process will continue, until the final standards are met or until MMC determines that other measures are appropriate.

8.0 Completion of Mitigation Notification

8.1 Restoration Area

When the performance standards for the restoration area have been met, or other remedial measures agreed upon by the project biologist and MMC have been completed and approved, a Notice of Completion of Mitigation will be issued by MMC to the Landscape Contractor to signify the completion of the Landscape Contractor's responsibility for the project.

8.2 Revegetation Area

When the 25-month performance standards for the revegetation area have been met, or other remedial measures agreed upon by the project biologist and MMC have been completed and approved, a Notice of Completion will be issued by MMC to the Landscape Contractor to signify completion of the Landscape Contractor's responsibility for the project.

9.0 References Cited

California Invasive Plant Council

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California Native Plant Society (CNPS)

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ATTACHMENT 1

City of San Diego Biological Impacts & Monitoring Mitigation Monitoring and Reporting Program Conditions

BIOLOGICAL IMPACTS & MONITORING MMRP CONDITIONS:

To ensure that site development would avoid significant environmental impacts, a Mitigation, Monitoring, and Reporting Program (MMRP) is required. Compliance with the mitigation measures shall be the responsibility of the applicant. The mitigation measures are described below.

Prior to the issuance of a Notice to Proceed (NTP) or any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits the Assistant Deputy Director (ADD) environmental designee of the City's Land Development Review Division (LDR) shall verify that the following statement is shown on the grading and/or construction plans as a note under the heading *Environmental Requirements: "PTS 463835 – North University City Fire Station Project- SDP is subject to Mitigation, Monitoring and Reporting Program and shall conform to the mitigation conditions as contained in the Mitigated Negative Declaration/463835".*

Biological Resources

Prior to the issuance of a Notice to Proceed (NTP) or any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits the ADD environmental designee of the City's LDR Division shall incorporate the following mitigation measures into the project design and include them verbatim on all appropriate construction documents.

Prior to Permit Issuance

- A. Land Development Review (LDR) Plan Check
 - 1. Prior to NTP or issuance for any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits, whichever is applicable, the ADD environmental designee shall verify that the requirements for the restoration plans and specifications, including mitigation of direct and cumulative impacts to 0.12 acre of valley needlegrass grassland with restoration of 0.367 acre of native grassland have been shown and noted on the appropriate landscape construction documents. The landscape construction documents and specifications must be found to be in conformance with this report.
- B. Restoration Plan(s) and Specifications
 - 1. Landscape Construction Documents (LCD) shall be prepared on D-sheets and submitted to the City of San Diego Development Services Department, Landscape Architecture Section (LAS) for review and approval. LAS shall consult with Mitigation Monitoring Coordination (MMC) and obtain concurrence prior to approval of LCD. The LCD shall consist of restoration, planting, irrigation and erosion control plans; including all required graphics, notes, details, specifications, letters, and reports as outlined below.
 - 2. Landscape Restoration Planting and Irrigation Plans shall be prepared in accordance with the San Diego Land Development Code (LDC) Chapter 14, Article 2, Division 4, the LDC Landscape Standards submittal requirements, and Attachment "B" (General Outline for Restoration Plans) of the City of San Diego's LDC Biology Guidelines (July 2002). The Principal Qualified Biologist (PQB) shall identify and adequately document all pertinent information

concerning the restoration goals and requirements, such as but not limited to, plant/seed palettes, timing of installation, plant installation specifications, method of watering, protection of adjacent habitat, erosion and sediment control, performance/success criteria, inspection schedule by City staff, document submittals, reporting schedule, ect. The LCD shall also include comprehensive graphics and notes addressing the ongoing maintenance requirements (after final acceptance by the City).

- 3. The Restoration Installation Contractor (RIC), Restoration Maintenance Contractor (RMC), Construction Manager (CM) and Grading Contractor (GC), where applicable shall be responsible to insure that for all grading and contouring, clearing and grubbing, installation of plant materials, and any necessary maintenance activities or remedial actions required during installation and the 120 day plant establishment period are done per approved LCD. The following procedures at a minimum, but not limited to, shall be performed:
 - a. The RMC shall be responsible for the maintenance of the creation and restoration area for a minimum period of 120 days (the 120-day PEP). Maintenance visits shall be conducted monthly or as directeb by the Qualified Biological Monitor (QBM) (City approved) throughout the plant establishment period.
 - b. At the end of the 120 day period the PQB shall review the mitigation area to assess the completion of the short-term plant establishment period and submit a report for approval by MMC.
 - c. MMC will provide approval in writing to begin the five year long-term establishment/maintenance and monitoring program.
 - d. Existing indigenous/native species shall not be pruned, thinned or cleared in the restoration/mitigation area.
 - e. The restoration site shall not be fertilized.
 - f. The RIC is responsible for reseeding (if applicable) if weeds are not removed, within one week of written recommendation by the PQB.
 - g. Weed control measures shall include the following: (1) hand removal, (2) cutting, with power equipment, and (3) chemical control. Hand removal of weeds is the most desirable method of control and will be used where feasible and possible without causing unnecessary damage to native plants in the restoraiotn area.
 - h. Damaged areas shall be repaired immediately by the RIC/RMC. Insect infestations, plant diseases, herbivory, and other pest problems will be closely monitored throughout the five-year maintenance period. Protective mechanisms such as metal wire netting shall be used as necessary. Diseased and infected plants shall be immediately disposed of off site in a legally-acceptable manner at the discretion of the PQB or QBM. Where possible, biological controls will be used instead of pesticides and herbicides.
- C. Letters of Qualification Have Been Submitted to ADD
 - 1. The applicant shall submit, for approval, a letter verifying the qualifications of the biological professional to MMC. This letter shall identify the PQB, Principal Restoration Specialist (PRS), and QBM, where applicable, and the names of all other persons involved in the implementation of the restoration plan and biological monitoring program, as they are defined in the City of San Diego Biological

Review References. Resumes and the biology worksheet should be updated annually.

- 2. MMC will provide a letter to the applicant confirming the qualifications of the PQB/PRS/QBM and all City Approved persons involved in the restoration plan and biological monitoring of the project.
- 3. Prior to the start of work, the applicant must obtain approval from MMC for any personnel changes associated with the restoration plan and biological monitoring of the project.

Prior to Start of Construction

- A. PQB/PRS Shall Attend Preconstruction (Precon) Meetings
 - 1. Prior to beginning any work that requires monitoring:
 - a. The owner/permittee or their authorized representative shall arrange and perform a Precon Meeting that shall include the PQB or PRS, Construction Manager (CM) and/or Grading Contractor (GC), Landscape Architect (LA), Restoration Installation Contractor (RIC), Restoration Maintenance Contractor (RMC), Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC.
 - b. The PQB shall also attend any other grading/excavation related Precon Meetings to make comments and/or suggestions concerning the restoration plan(s) and specifications with the RIC, CM and/or GC.
 - c. If the PQB is unable to attend the Precon Meeting, the owner shall schedule a focused Precon Meeting with MMC, PQB/PRS, CM, BI, LA, RIC, RMC, RE and/or BI, if appropriate, prior to the start of any work associated with the restoration phase of the project, including site grading preparation.
 - 2. Where Restoration Work Will Occur
 - a. Prior to the start of any work, the PQB/PRS shall also submit a restoration monitoring exhibit (RRME) based on the appropriate reduced LCD (reduced to 11"x 17" format) to MMC, and the RE, identifying the areas to be restored including the delineation of the limits of any disturbance/grading and any excavation.
 - b. PQB shall coordinate with the construction superintendent to identify appropriate Best Management Practices (BMP's) on the RRME.
 - 3. When Biological Monitoring Will Occur
 - a. Prior to the start of any work, the PQB/PRS shall also submit a monitoring procedures schedule to MMC and the RE indicating when and where biological monitoring and related activities will occur.
 - 4. PQB Shall Contact MMC to Request Modification
 - a. The PQB may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the restoration plans and specifications. This request shall be based on relevant information (such as other sensitive species not listed by federal and/or state agencies and/or not covered by the MSCP and to which any impacts may be considered significant under CEQA) which may reduce or increase the potential for biological resources to be present.

During Construction

A. PQB or QBM Present During Construction/Grading/Planting

- 1. The PQB or QBM shall be present full-time during construction activities including but not limited to, site preparation, cleaning, grading, excavation, landscape establishment in association with the project, which could result in impacts to sensitive biological resources as identified in the LCD and on the RRME. The RIC and/or QBM are responsible for notifying the PQB/PRS of changes to any approved construction plans, procedures, and/or activities. The PQB/PRS is responsible to notify the CM, LA, RE, BI and MMC of the changes.
- 2. The PQB or QBM shall document field activity via the Consultant Site Visit Record Forms (CSVR). The CSVR's shall be faxed by the CM the first day of monitoring, the last day of monitoring, monthly, and in the event that there is a deviation from conditions identified within the LCD and/or biological monitoring program. The RE shall forward copies to MMC.
- 3. The PQB or QBM shall be responsible for maintaining and submitting the CSVR at the time that CM responsibilities end (i.e., upon the completion of construction activity other then that of associated with biology).
- 4. All construction activities (including staging areas) shall be restricted to the development areas as shown on the LCD. The PQB/PRS or QBM staff shall monitor construction activities as needed, with MMC concurrence on method and schedule. This is to ensure that construction activities do not encroach into biologically sensitive areas beyond the limits of disturbance as shown on the approved LCD.
- 5. The PQB or QBM shall supervise the placement of orange construction fencing or City approved equivalent, along the limits of potential disturbance at the edge of the project footprint to protect sensitive vegetation communities in the surrounding area, including southern willow scrub, valley needlegrass grassland, Diegan coastal sage scrub, and non-native grassland, as shown on the approved LCD.
- 6. The PBQ shall provide a letter to MMC that limits of potential disturbance has been surveyed, staked and that the construction fencing is installed properly
- 7. The PQB or QBM shall oversee implementation of BMP's, such as gravel bags, straw logs, silt fences or equivalent erosion control measures, as needed to ensure prevention of any significant sediment transport. In addition, the PQB/QBM shall be responsible to verify the removal of all temporary construction BMP's upon completion of construction activities. Removal of temporary construction BMP's shall be verified in writing on the final construction phase CSVR.
- 8. PQB shall verify in writing on the CSVR's that no trash stockpiling or oil dumping, fueling of equipment, storage of hazardous wastes or construction equipment/material, parking or other construction related activities shall occur adjacent to sensitive habitat. These activities shall occur only within the designated staging area located outside the area defined as biological sensitive area.
- 9. The long-term establishment inspection and reporting schedule per LCD must all be approved by MMC prior to the issuance of the Notice of Completion (NOC) or any bond release.

- B. Disturbance/Discovery Notification Process
 - 1. If unauthorized disturbances occurs or sensitive biological resources are discovered that where not previously identified on the LCD and/or RRME, the PQB or QBM shall direct the contractor to temporarily divert construction in the area of disturbance or discovery and immediately notify the RE or BI, as appropriate.
 - 2. The PQB shall also immediately notify MMC by telephone of the disturbance and report the nature and extent of the disturbance and recommend the method of additional protection, such as fencing and appropriate Best Management Practices (BMP's). After obtaining concurrence with MMC and the RE, PQB and CM shall install the approved protection and agreement on BMP's.
 - 3. The PQB shall also submit written documentation of the disturbance to MMC within 24 hours by fax or email with photos of the resource in context (e.g., show adjacent vegetation).
- C. Determination of Significance
 - 1. The PQB shall evaluate the significance of disturbance and/or discovered biological resource and provide a detailed analysis and recommendation in a letter report with the appropriate photo documentation to MMC to obtain concurrence and formulate a plan of action which can include fines, fees, and supplemental mitigation costs.
 - 2. MMC shall review this letter report and provide the RE with MMC's recommendations and procedures.

Post Construction

- A. Mitigation Monitoring and Reporting Period
 - 1. PEP and Five-Year Maintenance Period
 - a. The RMC shall be retained to complete maintenance monitoring activities throughout the PEP and five-year mitigation monitoring period.
 - b. Maintenance visits will be conducted monthly throughout the PEP, quarterly for the first year, and, and quarterly thereafter.
 - c. Maintenance activities will include all items described in the LCD.
 - d. Plant replacement will be conducted as recommended by the PQB (note: plants shall be increased in container size relative to the time of initial installation or establishment or maintenance period may be extended to the satisfaction of MMC.
 - 2. Five-Year Biological Monitoring
 - a. All biological monitoring and reporting shall be conducted by a PQB or QBM, as appropriate, consistent with the LCD.
 - b. Monitoring shall involve both qualitative horticultural monitoring and quantitative monitoring (i.e., success criteria). Horticultural monitoring shall focus on soil conditions (e.g., moisture and fertility), container plant health, seed germination rates, presence of native and non-native (e.g., invasive exotic) species, any significant disease or pest problems, irrigation repair and scheduling, trash removal, illegal trespass, and any erosion problems.
 - c. After plant installation is complete, qualitative monitoring surveys will occur bi-weekly for the first month of the PEP, monthly for the remainder of

the PEP and first three months of Maintenance and Moniotring, and quarterly thereafter.

- d. Upon the completion of the 120-days short-term plant establishment period, quantitative monitoring surveys shall be conducted at 0, 12, 24, 36, 48 and 60 months by the PQB or QBM, to determine compliance with the performance standards identified on the LCD. All plant material must have survived without supplemental irrigation for the last two years.
- e. Quantitative monitoring shall include the use of fixed transects or releve methods and photo points to determine the vegetative cover within the restored habitat. Collection of transect or releve data within the restoration site shall result in the calculation of percent cover or cover class for each plant species present, percent cover of native grassland, and percent cover of non-native/non invasive vegetation. Durng the PEP, container plants will also be counted to determine percent survivorship. The data will be used determine attainment of performance/success criteria identified within the LCD.
- f. Biological monitoring requirements may be reduced if, before the end of the fifth year, the restoration meets the fifth year criteria and the irrigation has been terminated for a period of at least two years.
- g. The PQB or QBM shall oversee implementation of post-construction BMPs, such as gravel bags, straw logs, silt fences or equvalent erosion control measures, as needed to prevent significant sediment transport. In addition, the PBQ/QBM shall be responsible to verify the removal of all temporary post-construction BMP's upon completion of construction activities. Removal of temporary post-construction BMPs shall be verified in writing on the final post-construction phase CSVR.
- C. Submittal of Draft Monitoring Report
 - 1. A draft monitoring report shall be prepared to document the completion of the 120-day plant establishment period. The report shall include discussion on weed control, horticultural treatments (pruning, mulching, and disease control), erosion control, trash/debris removal, replacement planting/reseeding, site protection/signage, pest management, vandalism, and irrigation maintenance. The restoration effort shall be visually assessed at the end of 120 day period to determine mortality of individuals.
 - 2. The PQB shall submit two copies of the draft monitoring report which describes the results, analysis, and conclusions of all phases of the Biological Monitoring and Reporting Program (with appropriate graphics) to MMC for review and approval within 30 days following the completion of monitoring. Monitoring reports shall be prepared on an annual basis for a period of five years. Site observation reports (SORs) shall be prepared by the PQB following each site visit and provided to the owner, RMC and RIC. SORs shall review maintenance activities, qualitative and quantitative (when appropriate) monitoring results including progress of the restoration relative to the performance/success criteria, and the need for any remedial measures.
 - 3. Draft annual reports (three copies) summarizing the results of each progress report including quantitative monitoring results and photographs taken from permanent viewpoints shall be submitted to MMC for review and approval within 30 days following the completion of monitoring.

- 4. MMC shall return the Draft Monitoring Report to the PQB for revision or, for preparation of each report.
- 5. The PQB shall submit revised Monitoring Report to MMC (with a copy to RE) for approval within 30 days.
- 6. MMC will provide written acceptance of the PQB and RE of the approved report.
- D. Final Monitoring Reports(s)
 - 1. PQB shall prepare a final monitoring report upon achievement of the fifth year success criteria and completion of the five year maintenance period.
 - a. This report may occur before the end of the fifth year if the restoration meets the fifth year success criteria and the irrigation has been terminated for a period of the last two years.
 - b. The final monitoring report shall be submitted to MMC for evaluation of the success of the mitigation effort and final acceptance. A request for a prefinal inspection shall be submitted at this time, MMC will schedule after review of report.
 - c. If at the end of the five years any of the restored area fails to meet the project's final success standards, the applicant must consult with MMC. This consultation shall take place to determine whether the restoration effort is acceptable. The applicant understands that failure of any significant portion of the restoration area may result in a requirement to replace or renegotiate that portion of the site and/or extend the monitoring and establishment/maintenance period until all success standards are met.