ATTACHMENT 3

FAIRVIEW PARK VERNAL POOL RESTORATION AND LONG TERM MAINTENANCE PLAN FOR VERNAL POOLS 5 AND 6, AND THE ASSOCIATED WATERSHED AREAS WITHIN THE JURISDICTION OF

THE UNITED STATES FISH AND WILDLIFE SERVICE PURSUANT TO THE ENDANGERED SPECIES ACT

FAIRVIEW PARK
COSTA MESA, CALIFORNIA

JUNE 8, 2018

Prepared for:

City of Costa Mesa
Parks Department
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I. EXECUTIVE SUMMARY

This Restoration and Maintenance Plan for Vernal Pools 5 and 6, and the associated watershed area (Complex) which is inclusive of historical Feature 7 located in Fairview Park ("Project Site") in the City of Costa Mesa ("City"), Orange County, California [Exhibit 1 – Regional Map, Exhibit 2 – Vicinity Map, Exhibit 3 – Restoration Site Plan Map, and Exhibit 4 – Site Photographs], has been developed to address potential impacts associated with installation of a decomposed granite foot path in and adjacent to vernal pools (Vernal Pools 5 and 6) occupied by the federally listed endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*). In addition, this plan addresses potential watershed impacts associated with preparation and use of the area surrounding historical Feature 7 as a parking lot and telephone poles that were placed in the vicinity of the former feature to prevent unauthorized vehicular access into the watershed surrounding Vernal Pools 5 and 6. Placement of the telephone poles created shallow indentations in the soil surface. The foot path and telephone poles have been removed. This plan addresses 1) restoration of the foot path (i.e., restoration of the area where the foot path was removed) to original elevation and topography, so as to restore the watershed for Vernal Pools 5 and 6, 2) reestablishment of the impacted portions of Vernal Pool 6 in a manner that results in restoration of the previous functions, 3) repair of indentations in the watershed associated with former Feature 7 caused by the placement of telephone poles and 4) repair of disturbance related to use of the watershed area for parking. This plan also addresses the removal of turf and irrigation along the northern edge of the watershed for Vernal Pool 5 to prevent irrigation runoff from entering Vernal Pool 5, while also providing a natural buffer. The purpose of this plan is to set forth in detail the various components of the vernal pool and watershed restoration plan, including the restoration methods, monitoring and maintenance methods, and success criteria. The plan also includes long-term maintenance activities that will be implemented within the Complex once the restoration activities are completed.

As a result of the presence of the San Diego fairy shrimp and the potential for take of listed species associated with the proposed restoration efforts, these activities are being coordinated with and are subject to approval of the U.S. Fish and Wildlife Service (USFWS), which issued a letter on July 24, 2014 requiring restoration of these areas. Completion of this plan will enhance the survival of San Diego fairy shrimp, thus contributing to the recovery of this species and as such, the actions carried out to implement this plan are anticipated to be covered under a Section 10(a)(1)(A) Recovery Permit, which allows otherwise prohibited take of the San Diego fairy shrimp to enhance the survival of the species.

II. PROJECT DESCRIPTION

A. Responsible Parties

Owner:

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77 Fair Drive
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Contact: Mr. Baltazar Mejia
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Preparer of Restoration and Maintenance Plan: Glenn Lukos Associates, Inc.
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B. Location of Project

Fairview Park is situated along the bluffs overlooking the Santa Ana River in the City of Costa Mesa, Orange County, California. The park is roughly bounded by Adams Avenue to the north, Santa Ana River to the west, Victoria Street to the south, and is bisected by Placentia Avenue [Exhibits 1 and 2]. Land uses adjacent to the restoration sites include developed parkland to the north, Estancia High School with sports fields to the east, Waldorf School of Orange County and associated sports field to the south, and natural lands including a runway area used by Harbor Soaring Society for flying model planes and a previously restored vernal pool to the west [Exhibit 3]. The topography of the site is flat.

C. Brief Summary of Project

This Restoration and Maintenance Plan includes: (1) restoration of the watershed for Vernal Pools 5 and 6, by restoring the elevation and contours to the conditions prior to installation of the foot path that also ensures that runoff from rainfall is directed toward Vernal Pool 5 rather than collecting on the foot path; (2) reestablishment of portions of Vernal Pool 6 affected by the installation of a foot path along the eastern and southern edges of Vernal Pool 6, which would be accomplished through the reestablishment of the original perimeter contours; (3) repair of the indentations associated with the placement and removal of telephone poles within the watershed of historical Feature 7; (4) removal of non-native weeds and establishment of native vegetation within the watersheds for Vernal Pools 5 and 6 and former Feature 7; and (5) removal of turf grass and irrigation within the watershed of Vernal Pool 5, including reestablishment of native coastal sage scrub shrubs and grasses to provide a natural vegetated buffer and remove the source of potential irrigation runoff. The details for each component of this restoration plan are set forth in detail below. In addition, a Long-Term Management Plan (LTMP) will be implemented once the performance standards for the restoration plan have been achieved. The LTMP will include the following components as describe in more detail in the final section of this plan: training of maintenance personnel, ongoing non-native vegetation control, general maintenance (e.g., trash and debris removal, repair of fencing and signage, and annual reporting.

III. GOALS OF RESTORATION AND MAINTENANCE PLAN

The goal of the Restoration and Maintenance Plan is to contribute to the recovery of the San Diego fairy shrimp through specific restoration and maintenance efforts described in detail below. The restoration plan proposes to restore the limited portions of the watershed associated with Vernal Pools 5 and 6 affected by footpath installation and removal, which will ensure conservation of the San Diego fairy shrimp within these pools. The restoration plan goals will

also be accomplished by restoring the eastern boundary of Vernal Pool 6 to reestablish this component of the pool's watershed, which was affected by installation of the foot path. While former Feature 7 has not been documented to support fairy shrimp (a dry-season survey conducted in summer of 2015 was negative for cysts),[1] remediation of any potential damage to the watershed by placement of the telephone poles, and the preparation and use of this area for parking vehicles would ensure maintenance of existing habitat functions for the historically significant feature, which has in wetter-than-average years supported a small number of vernal pool plants. The goals of the Long-Term Management Plan include ongoing control on non-native invasive species within the watershed areas of Vernal Pools 5 and 6, and former Feature 7, which will be subject to restoration of native scrub and grasslands, maintenance of protective fencing, and regular removal of any trash or debris in the vernal pools or associated watersheds.

IV. IMPLEMENTATION PLAN FOR RESTORATION ACTIVITIES

A. Responsible Parties

Owner:	City of Costa Mesa 77 Fair Drive Costa Mesa, California 92628-1200 Contact: Mr. Baltazar Mejia Telephone: (714) 754-5291
Preparer of Plan:	Glenn Lukos Associates, Inc. 29 Orchard Lake Forest, California 92630 Contact: Tony Bomkamp[2] or Kevin Livergood Phone: (949) 837-0404

B. Implementation Schedule

A qualified habitat restoration specialist or biologist with a minimum of 5 years of experience in vernal pool restoration in southern California hereinafter referred to as the Project Biologist, will supervise the implementation, maintenance, and five-year monitoring of the restoration activities. Activities with the potential for take of the San Diego fairy shrimp (such as wet- or dry-season surveys and collection of inoculum) will be conducted by Biologists and/or Restoration Specialists (Project Biologist) approved by USFWS and listed on a Section 10(a)(1)(A) Recovery Permit issued to the City specifically for restoration, biological surveys, and long-term maintenance. Implementation of the restoration activities shall occur, to the maximum extent practicable, as soon as possible after plan approval and issuance of a Section 10(a)(1)(A) Recovery Permit to the City, dependent on weather conditions. As the site will need

[1] Glenn Lukos Associates. July 20, 2015. Letter Report to Stacey Love: Submittal Requirements for 2015 Dry Season Survey for Listed Branchiopods Conducted for the Fairview Park Project – Feature 7, Located in the City of Costa Mesa, County of Orange, California. It should be noted that the dry-season survey was conducted after the area was disturbed repeatedly for preparation and use as a parking lot.

[2] Tony Bomkamp has over 22 years of experience restoring vernal pools in southern California.

to be dry to collect inoculum, work may begin after a period of approximately 4 - 6 weeks with no rain events, or after the rainy season, which typically ends in mid-April. The site will be maintained and monitored for a minimum of five years or until specific success criteria are met. Long-term maintenance will continue, once success criteria are met, as described in Section VIII below.

C. Implementation of Restoration Plan

As noted, this plan addresses restoration activities that will contribute to the recovery of the San Diego fairy shrimp, but which also exhibit potential for take of the species. Any activities with potential for take of the San Diego fairy shrimp (Covered Activity) will be performed by qualified individuals, approved by USFWS, and listed in the Section 10(a)(1)(A) Permit issued to the City ("Permit Holder") specifically for the restoration, biological surveys, and long-term maintenance activities described in the Plan. Other activities that exhibit no potential for take will not require coverage under the Recovery Permit, but will contribute to the recovery of the San Diego fairy shrimp through habitat and watershed enhancements. Activities that would be covered under the Recovery Permit are limited to 1) restoration of the watershed area impacted by the foot path adjacent to Vernal Pool 5 and 2) reestablishment of the impacted portions of Vernal Pool 6 to restore previous functions, which includes the introduction of inoculum to the reestablished pool area. Repair of the shallow indentations created by the telephone poles in the vicinity of former Feature 7 and re-vegetation of the surrounding watershed area with coastal sage scrub and native grasses do not exhibit potential for take of the San Diego fairy shrimp.

1. Reestablishment of Impacted portions of Vernal Pool 6 (Covered Activity)

As depicted on Exhibit 3, a portion of Vernal Pool 6 was affected by installation and removal of the decomposed granite foot path. The watershed of Vernal Pool 6 was also affected by the removal of the foot path, which left the ground surface a few inches lower than the adjacent pool basin. Restoration of the impacted watershed area of Vernal Pool 6 is addressed below.

a. *Reestablishment of Vernal Pool 6 Contours* - Reestablishment of the impacted portions of Vernal Pool 6 will be directed by the Section 10(a)(1)(A) Permit Holder under the guidance of the Project Biologist. Reestablishment of original contours will be conducted by a grading contractor experienced in the restoration of vernal pool basins. The equipment to be used for reestablishment of the impacted portions of Vernal Pool 6 will be determined by the grading contractor; although it is expected to be a small dozer or bobcat due to the limited area to be restored. An engineered grading plan will not be developed; rather, recontouring will be field-directed and micro elevations and micro grading will be determined and directed by the Project Biologist with final contours established in the field in a manner that is consistent with the original elevation. All soil placement will be directly monitored by the Project Biologist to ensure that no damage to functioning and intact vernal pool habitat occurs. Prior to commencing work, the target basin perimeter will be marked on the ground and the portion of the basin to be avoided will be marked as noted. A transit or laser auto-level will be used to record elevations at various locations both inside and outside of the target basin. Recontouring will be performed until target elevations are achieved. Upon completion of mechanical and hand contouring (using rakes and shovels as needed), final

elevations for the reestablished contours of Vernal Pool 6 will be recorded to 0.05 feet.

b. *Inoculum Collection and Redistribution* - Collection of inoculum for the San Diego fairy shrimp (and vernal pool plants) from Vernal Pool 1 would be conducted to replace the pool substrate that was removed from Vernal Pool 6. Given the adjacency of the reestablishment area with the existing pool, the area would also be rapidly colonized by both the San Diego fairy shrimp and vernal pool plants. Because of the presence of the San Diego fairy shrimp within the donor vernal pool basins, inoculum collection and redistribution must be conducted by individuals holding a valid Section 10(a)(1)(A) permit for listed branchiopods with prior notification to USFWS as provided in the guidelines[3].

Inoculum containing San Diego fairy shrimp cysts and vernal pool plants will be collected using the two-percent collection methodology described by Bauder (cited in Michael Brandman Associates and KEA Environmental 1995)[4]. Use of this method ensures that no more than two-percent of the existing propagules are removed from the donor areas. Vernal Pool 1 will provide donor inoculum.[5] Inoculum collection will be performed in the fall season when the site is dry and before the rainy season which typically begins in mid-October and lasts through mid-April. Inoculum collection will occur once the contours of Vernal Pool 6 and the adjacent watershed area are reestablished. Collection of inoculum will be performed using a one-meter quadrat, which is placed in one corner of the donor area. Two one-decimeter quadrats are randomly placed within the one-meter quadrat and the top one centimeter of soil and vegetative material are collected from the area circumscribed by each one-decimeter quadrat, which is then placed in cardboard boxes for transport. The one-meter quadrat is moved to the adjacent one-meter plot and the process is repeated until each one-meter plot from the donor vernal pool is completed.

No formal planting plan or plant palette has been developed. Rather, material salvaged from the donor vernal pool will provide all of the necessary propagules and cysts for the portion of Vernal Pool 6 to be reestablished. Introduction of the collected seed and organic matter (containing cysts) from the donor vernal pools will be accomplished by hand-broadcasting over the surface of the reestablished pool area followed by light raking. All hand-broadcasting will occur between September 15 and October 15, immediately following collection of inoculum.

2. Restoration of Watershed Area Damaged by the Foot Path near Vernal Pools 5 and 6 (Covered Activity)

Restoration of the watershed area damaged by the foot path will be conducted simultaneously with reestablishment of Vernal Pool 6 (see Task 1a above). Removal of the decomposed granite foot path created a "lip" outside of the eastern boundary of Vernal Pools 5 and 6 (note: the basin for Vernal Pool 5 was not affected by the foot path construction or associated removal). The "lip" is generally shallow, averaging about 3 inches and reaches 10 inches in one area, causing

[3] U.S. Fish and Wildlife Service. Revised November 13 2017. *Survey Guidelines for Listed Large Branchiopods.*
[4] Michael Brandman Associates and KEA Environmental. 1995. Kearny Villa Road Vernal Pool Restoration: First Progress Report.
[5] Vernal Pool 1 was selected because it contains San Diego fairy shrimp cysts and exhibits the highest concentration of sensitive plant species including *Navarretia prostrata*, *Myosurus minimis* ssp. *apus*, and *Microseris douglasii* var. *platycarpha*, as well as supporting low densities of non-native species such as *Rumex crispus* and *Lythrum hyssopifolia*.

rainfall that falls on the former path to pond rather than contributing to the hydrological input for Vernal Pools 5 and 6. The ground surface elevations will be restored to ensure positive drainage to the pools as set forth below:

a. Soils will be imported from other portions of the park that consist of the suitable clays, with the primary site located at the end of Pacific Avenue (extended) near the southwest corner of the park. The soils will be moved from the donor sites to the foot path either by dump truck or by front-end loader. If a dump truck is used and soil is stockpiled, it will be stockpiled on the turf, on top of canvas or plastic covers to ensure that turf is not inadvertently introduced to the restored foot path area.
b. The clay will be deposited on the foot path areas starting at the southern extent of the foot path, adjacent to Vernal Pool 6, a portion of which extended into the area now occupied by the foot path, and will be spread either by dozer or loader such that positive drainage will occur from the eastern edge of the foot path to Vernal Pool 5. The work will begin adjacent to Vernal Pool 6 and work toward the north past Vernal Pool 5 to where the foot path began. To ensure that there will be minimal soil settlement, the soils will be compacted to approximately 90 percent and will be surveyed to 0.05 inch to ensure that the final elevations of the restored path drain towards Vernal Pools 5 and 6.
c. An as-built plan with final topographic measurements on the former foot path and in the vernal pools, showing positive drainage to the pools will be prepared and submitted to the USFWS following completion of the restoration of the foot path to pre-existing grades.
d. The limits of Vernal Pools 5 and 6 will be demarcated using pin flags to ensure that no work encroaches into the pools and that no fill is placed in the pools. To maximize potential success, all work will be directed and supervised by the Project Biologist and any work with the potential for take will also be supervised by the Section 10(a)(1)(A) Permit Holder.
e. The restored foot path will be re-vegetated with native upland species as set forth in Table 1 of Section C.5. below.
f. Prior to the initiation of work, the Project Biologist and Section 10(a)(1)(A) Permit Holder will hold a pre-construction meeting on the site with the contractor, including equipment operators, to describe the sensitive nature of the vernal pools and associated biota. The meeting will focus on ingress and egress and avoidance of the existing Vernal Pool 5 and the extant portion of Vernal Pool 6.

3. Removal of Turf Grass and Irrigation along Northern Edge of Vernal Pool 5 (Not a Covered Activity)

An approximately 0.37-acre area of turf grass along the northern edge of Vernal Pool 5 will be removed using mechanized equipment and hand tools as determined appropriate by the City. Following removal of the turf, the area will be treated, through installation of black tarp, to kill the remaining roots of the turf in a manner that has no potential for effects on Vernal Pool 5. If it is necessary to use chemicals, only chemicals approved for use around wetlands will be used and straw wattle will be placed at the lower edge of the restoration area to limit the potential for chemicals from reaching Vernal Pool 5. Following removal and necessary treatment, the area will be revegetated with native upland species per Table 1 in Section C.5. below. The irrigation that currently exists will remain in place to establish the newly planted upland vegetation.

During establishment, the water shall be carefully controlled to prevent excess water from entering Vernal Pool 5. The irrigation will be turned off after vegetation establishment, which is anticipated to occur approximately 2-3 years after planting. In order to ensure that leakage from the irrigation system does no reach Vernal Pool 5, the irrigation system will be inspected at least twice annually for leaks and any leaks detected will be fixed immediately.

4. Repair Damage from the Telephone Poles near Former Feature 7 (Not a Covered Activity)

Shallow indentations in the ground surface were created where telephone poles were placed to restrict vehicle access to Vernal Pools 5 and 6. The poles were placed in the vicinity of a former feature located within the watershed of Vernal Pools 5 and 6. Due to the sensitivity of pools 5 and 6, the watershed (inclusive of Feature 7) will be re-vegetated with native plant species and topographic irregularities resulting from the placement of the telephone poles will be removed. These areas will be repaired by hand-filling the pole indentations with soil harvested from the borrow area identified for restoration of the foot path at Vernal Pool 6. Hand tools would be used to fill and compact the soil such that the grade on either side of the indentations would match the surrounding topography.

While former Feature 7 does not currently exhibit characteristics of a vernal pool, this plan acknowledges that prior to disturbance in the area, Feature 7 and the surrounding watershed may have supported deeper ponding suitable for vernal pool branchiopods and during wetter-than-average years supported a low density of vernal pool plants. Therefore, the area should be preserved for its long-term contribution to the Vernal Pool 5 and 6 watershed and the potential recovery of Feature 7.

5. Upland Planting Plan along Northern Edge of Vernal Pool 5 (Not a Covered Activity)

Following removal of turf grass and site preparation along the northern edge of Vernal Pool 5, the area will be planted with native coastal sage scrub using a combination of seed and container stock. The container stock and seed mix is provided in Table 1 below.

Table 1: Coastal Sage Scrub Plant Palette

Botanical Name	Common Name	
Container Stock		Plants/Acre
Eriogonum fasciculatum	California buckwheat (CSS)	200
Artemisia californica	California sagebrush (CSS)	200
Isocoma menziesii	Coast goldenbush (CSS and Grassland)	100
Stipa lepida	Foothill needlegrass (CSS and Grassland)	100
Stipa pulchra	Purple needlegrass (CSS and Grassland)	100
Melica imperfecta	Coast range melic (CSS and Grassland)	50
Galium angustifolium	Narrow-leaved bedstraw (CSS)	50

Seed		Lbs/Acre
Encelia californica	California bush sunflower (CSS and Grassland)	6.0
Deinandra fasciculata	Fascicled tarweed (Grassland)	1.0
Lupinus bicolor	Miniature lupine (CSS and Grassland)	2.0
Lasthenia californica	California goldfields (Grassland)	2.0

6. Install Protective Fencing and Signs Around Vernal Pool Complex (Not a Covered Activity)

Protective fencing will be installed along the perimeter of the Vernal Pool 5 and 6 Complex, which is inclusive of historical Feature 7 and the associated watershed [Exhibit 3]. Installation of the fencing will be monitored by a qualified biologist to ensure that no incursions occur into vernal pools. Signage prohibiting entry and educating the public of the sensitive habitat will be placed along the fencing at regular intervals as depicted on Exhibit 3.

7. Upland Planting Plan within the Vernal Pool Complex

Disturbance associated with a) installation of the foot path, b) preparation and use of the area in and surrounding historical Feature 7 as a parking area, and c) pedestrian access to the watershed area due to a lack of protective fencing has degraded habitat for San Diego fairy shrimp by increasing the extent and diversity of non-native vegetation within the Vernal Pool Complex. To restore habitat conditions for San Diego fairy shrimp, non-native vegetation will be replaced with coastal sage scrub and native grasslands within the boundary of the proposed fencing (Exhibit 3). Non-native vegetation will be hand pulled from the watershed and replaced with native vegetation per Table 1 above. Larger woody shrubs (e.g., California sagebrush, California buckwheat and coast goldenbush) will be primarily concentrated along the periphery of the fenced area and will further discourage encroachment into the watershed area. Vernal pool-associated flora will be reestablished along the boundary of Vernal Pools 5 and 6 using inoculum collected from Vernal Pool 1, as described in Task 1b above.

D. As-Built Conditions

The City will submit a report (including topographic maps and vernal pool locations) to the USFWS within 6 weeks of completion of reestablishment of previous contours and distribution of inoculum, describing as-built status of the restoration project. If the site recontouring and inoculation are not completed within six weeks of each other, separate reports will be submitted describing those specific as-built conditions (separation of recontouring and inoculum distribution would only occur if recontouring were to occur during July or early August and inoculum introduction did not occur until late September or early October).

V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

A. Maintenance Activities

Maintenance activities will ensure the success of the proposed restoration. Successful

reestablishment of native vegetation and hydrological conditions typically associated with vernal pools will limit establishment of most weedy non-native species. Because collection of inoculum will specifically avoid areas in the existing vernal pools which contain these plants, it is not expected that weedy species will be introduced to Vernal Pools 5 and 6, or the surrounding watershed inclusive of former Feature 7. Trash and other types of unwanted debris will be removed on a regular basis from all areas of the Project Site when the ground is dry. In addition, signage and fencing will be repaired as needed. Should weedy aquatic species become established in numbers or extent that removal is required, there would be potential for take of San Diego fairy shrimp cysts through trampling or dislocation. In order to minimize the potential for take, all weeding activities within Vernal Pools 5 and 6 will be conducted under the supervision of a qualified biologist named on the project Section 10(a)(1)(A) permit.

It is important to note that the vernal pools at Fairview Park generally only fill with water during above-average rainfall years and that when filling occurs, the period of inundation is sufficient to kill most upland non-native grasses and forbs, which invade the pools during low rainfall years or periods of drought. During high rainfall years, the pools experience a "reset" as non-native upland species are eliminated and native vernal pool and other wetland species are dominant. As such, "weeding" within Vernal Pool Basin 6, will focus on invasive aquatic plants such as hyssop loosestrife (*Lythrum hyssopifolia*), brass buttons (*Cotula coronipifolia*), rabbitsfoot grass (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), and prickle grass (*Crypsis* spp.). Maintenance, within the watershed of the Vernal Pool 5 and 6 complex will include removal of non-native annual grasses, including but not limited to: *Bromus* spp., *Avena* spp., *Hordeum* spp., and *Festuca perennis* and forbs including but not limited to: *Brassica* spp., *Raphanus sativus*, *Erodium* spp, and *Centaurea melitensis*.

Because of the potential for large rainfall years and associated long-term ponding to kill the non-native upland annual grasses and forbs, if rainfall during the season preceding weeding results in exceptional ponding, an adaptive management approach will be implemented relative to weeding in Vernal Pool 5, in coordination with USFWS.

Maintenance in the watershed areas will also include replacement of native scrub and grassland container plants that do not survive following installation to ensure that the performance standards set forth below are achieved within the five-year establishment period.

B. Responsible Parties

The City of Costa Mesa will be responsible for financing and ensuring that maintenance activities are funded and implemented.

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C. Maintenance Schedule

The restoration maintenance program will begin during implementation of the restoration activities and continue for five years, or until final success criteria are met. Maintenance activities will include trash and debris removal within the fenced area on a regular basis when the ground is dry and repair of signage and fencing and will occur on a quarterly basis during the monitoring period. Weeding of non-native upland and invasive aquatic plant species located in the vernal pool basins will be performed by hand only. Mechanized equipment such as weed-whips can be used in areas of watershed restoration for Vernal Pools 5 and 6 but cannot work within 25 feet of the outer extent of the pools as identified by pin flags denoting the limits of ponding.

VI. MONITORING ACTIVITIESFOR THE RESTORATION PLAN

A. Final Success Criteria

1. Target Fauna – San Diego Fairy Shrimp

Restoration of Vernal Pool 6 and restoration of the watershed associated with the Vernal Pool Complex will contribute to the recovery of the federally-listed San Diego fairy shrimp. In addition, it is assumed that with the installation of fencing, potential future impacts from vehicles will be eliminated, potential threats of degradation from other types of incursion will be minimized, and the functions associated with the existing vernal pools will be maintained.

Success Criteria 1: Criteria for target fauna will be met if gravid females of the San Diego fairy shrimp are present in the reestablished portion of Vernal Pool 6 during any two of the five monitoring seasons that exhibit ponding for a minimum duration necessary to support gravid females. If sufficient ponding does not occur during the five year period, then monitoring will be extended until sufficient rainfall occurs to induce sufficient ponding necessary for support of gravid females. If gravid female San Diego fairy shrimp are detected during two out of five years, then the success criteria are met. If gravid female San Diego fairy shrimp are not detected, the City will consult with USFWS to determine appropriate remedial measures.

2. Target Hydrological Regime

Hydrological contribution to the vernal pools will continue to originate as direct precipitation into the pools as well as drainage from the watersheds, which will be reestablished to baseline conditions as a result of re-contouring the foot path to ensure positive drainage towards Vernal Pools 5 and 6. In addition, removal of the irrigated turf and dense non-native weeds throughout the watershed will increase the hydrologic input to the Vernal Pool Complex. Any potential minor effects to the watershed associated with former Feature 7 resulting from the telephone pole indentations will also be remedied, reestablishing the baseline condition for the watershed. With implementation of the remedial measures in the watersheds of the Vernal Pool Complex, baseline conditions would be restored. Monitoring conducted during the 2016-2017 rainfall season demonstrated that ponding in Vernal Pools 5 and 6 is of sufficient depth, duration and quality to support San Diego fairy shrimp. Recontouring of Vernal Pool 6 and the former foot

path will ensure that hydrological conditions observed at Vernal Pools 5 and 6 are maintained or improved.

Success Criteria 2: The area where the foot path was removed and restored will exhibit positive drainage toward Vernal Pools 5 and 6, and will exhibit only de minimis ponding following rainfall events in areas where the foot path was removed adjacent to Vernal Pool 6. This is defined as ponding that is no more than a maximum of 0.25 inch deep, and cumulatively covers no greater than three square feet. Should ponding in the area where the foot path was removed and restored be observed more than 24 hours following a rainfall event and the ponding is not contiguous with the basin area of Vernal Pool 5 or 6, then remedial measures including minor re-contouring and the addition of soil[6], as needed, will be implemented until this success criterion is achieved.

Success Criteria 3: Ponding of sufficient depth, duration, and quality during consecutive days for Vernal Pools 5 and 6 to support gravid female San Diego fairy shrimp during at least two seasons during the five-year monitoring period. If gravid female San Diego fairy shrimp are not detected, the City will evaluate the hydrological data and consult with USFWS to determine appropriate remedial measures.

3. Target Vegetation

Restoration of native vegetation throughout the watershed of Vernal Pools 5 and 6, and former Feature 7 will contribute to maintaining the target hydrological regime by limiting the space available for non-native vegetation once it is removed. The species diversity and cover of native vegetation restored north of Vernal Pool 5 (Exhibit 3, "Turf Removal and CSS Planting") and throughout the watershed of Vernal Pools 5 and 6 will be monitored annually for five years or until success criteria are met.

Success Criteria 4: Native species cover within native grassland and coastal sage scrub will be at least 75-percent. Species diversity within the established native grassland and coastal sage scrub, based on the species included in the Plan (i.e., 11 species), will include 90-percent of the species planted (at least 1-percent relative cover of each species) at the completion of the restoration. Container plant survival should be at least 80-percent of the initial planting for the first five years, with all dead container stock replaced at the first and second anniversary of plant installation. Non-native species cover will be no greater than 5-percent and 10-percent of the basins and watersheds respectively (0-percent cover for weed species categorized as High or Moderate in the California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory).

Historically, Vernal Pool 6 supported five native vernal pool or wetland plant species plus two non-native species that often occur in vernal pools or other seasonal wetlands. Native species included creeping spikerush (*Eleocharis palustris*), purslane speedwell (*Veronica peregrine* ssp. *xalapensis*), smooth spike primrose (*Epilobium pygmaeum*), alkali weed (*Cressa truxillensis*), and woolly marbles (*Psilocarphus brevissimus*). Non-natives included hyssop loosestrife (*Lythrum hyssopifolia*) and curly dock (*Rumex crispus*). It is expected that the seed bank for these species remains extant and viable within the portions of Vernal Pool 6 that was not disturbed. Nevertheless,

[6] Soil will be added as described in Section IV(C) (Implementation Plan), task 2

inoculum from Vernal Pool 1 will be incorporated into the reestablished areas as well as into the undisturbed portions of Vernal Pool 6 (Task 1b above).

Vernal Pool 1 includes a high diversity of vernal pool plants as well as vernal pool associated species. As such, the inoculum from Vernal Pool 1 will include a much higher level of diversity than has previously occurred in Vernal Pool 6.

Success Criteria 5: Vernal Pool 6 will support at least five native vernal pool or vernal pool-associated plant species with each species contributing at least two-percent of the relative cover.

B. Monitoring Methods

1. Fairy Shrimp Monitoring

Wet season surveys for San Diego fairy shrimp will be conducted by individuals holding a valid Section 10(a)(1)(A) permit for listed branchiopods in Restored Basins 5 and 6 for a minimum of 5 years in accordance with the accepted protocol for listed vernal pool branchiopods (*Survey Guidelines for Listed Large Branchiopods*)[7] and until conditions allow for two complete wet season surveys. If ponding depth, duration, and quality are appropriate, but San Diego fairy shrimp are not detected in pools 5 or 6, the basin(s) will be inoculated with cysts collected from Vernal Pool 1 or Vernal Pool 4, as proposed in the current Plan. The presence of San Diego fairy shrimp was confirmed in both Vernal Pools 1 and 4 during 2016-2017 wet season surveys. Both Vernal Pools (1 and 4) were free of versatile fairy shrimp (*Branchinecta lindahli*), making the pools ideal candidates for source inoculate. Monitoring of Vernal Pools 5 and 6 will continue until at least two complete wet season surveys are conducted and result in positive detection of hatched San Diego fairy shrimp that reach a level of maturity sufficient for positive identification.

2. Hydrological Monitoring

Hydrological monitoring will be conducted in areas where the foot path was removed, near Vernal Pools 5 and 6, and in the watershed contributing to the Vernal Pool Complex. Hydrological monitoring will also include observations of ponding at historical Feature 7 to determine if ponding suitable for branchiopods and vernal pool vegetation occurs.

During the first rainy season following restoration of the area where the foot path was removed, hydrological monitoring will be conducted following storm events to determine if ponding is occurring in the area where the foot path was removed. If ponding is contiguous with Vernal Pool 5 or 6, then site visits will continue as needed to determine if a separate pond remains on the foot path as the water dissipates. Three years of hydrological monitoring will be performed between year one and year five to verify that positive drainage occurs following storm events.

Monitoring protocols will also include 1) review of water depth, ponding duration, temperature, and electroconductivity. In order to measure the depth of ponding in the reestablished portion of Vernal Pools 5 and 6, a pvc pipe (or similar device) with clearly identifiable centimeter markings

[7] U.S. Fish and Wildlife Service. Revised November 13, 2017. *Survey Guidelines for Listed Large Branchiopods.*

will be placed in the deepest area of each existing pool. During each monitoring visit following the onset of ponding, the pool depths at each location will be recorded to the nearest centimeter. In addition, during each visit the aereal extent of ponding will be recorded with a tape measure to the nearest decimeter along the long and short axes of the vernal pool. In addition, the limits of ponding will be mapped using GPS, taking care not to leave foot-prints in the saturated ground immediately adajcent to the vernal pools. Water quality (temperature and electroconductivity) will also be recorded during each visit for each pool that exhibits ponding. Site photographs will also be taken during each monitoring visit.

An individual holding a valid Section 10(a)(1)(A) permit for listed branchiopods with appropriate credentials and experience or person named on the City's Section 10(a)(1)(A) permit for this project can perform hydrological monitoring. Specifically, the hydrological monitor must have a minimum of five years experience in vernal pool creation and/or restoration including quantitative hydrological sampling.

3. Vegetation Monitoring

Coastal Sage Scrub and Native Grasslands

Vegetation monitoring of the species diversity and cover of native vegetation restored north of Vernal Pool 5 and throughout the Complex will be measured annually for five years.

Monitoring Methods

The restoration site will be monitored for five years following the completion of plant installation unless final success criteria are achieved. The monitoring activities will consist of the measurement of performance indicators and assessment of these indicators relative to established performance criteria. The Project Biologist along with other qualified habitat restoration specialists or biologists shall perform monitoring. Continuity within the personnel and methodology of monitoring shall be maintained insofar as possible to ensure comparable assessments.

Qualitative Monitoring

The Project Biologist or those under supervision by the Project Biologist shall conduct qualitative monitoring surveys on a monthly basis for the first 12 months and quarterly thereafter for the remainder of the monitoring period. Qualitative surveys consisting of a general site walkover and habitat characterization shall be completed during each monitoring visit. General observations such as fitness and health of planted species, pest problems, weed establishment, mortality, and drought stress shall be noted during each site walkover. Records shall be kept of mortality and other problems such as insect damage and weed infestation. The Project Biologist shall determine remedial measures necessary to facilitate compliance with performance standards. All remedial measures undertaken shall be referenced in the annual monitoring reports.

Quantitative Monitoring

For the duration of the five-year monitoring period establishment of the coastal sage scrub and native grassland will be measured through a series of qualitative and quantitative measurements assessing native species cover, percent of planted species represented in the site, and non-native species cover. All of these, except for non-native species cover, should increase with time. If survival and cover requirements are not met, the City is responsible for replacement plantings to achieve these requirements. Replacement plants shall be monitored according to the same survival and growth requirements as initial plantings for the duration of the restoration activities.

Quantitative monitoring will assess the attainment of annual and final success criteria and identify the need to implement contingency measures in the event of failure. Monitoring methods include an annual census of dead and/or declining plant stock, visual estimates of cover, and field sampling techniques that are based in accordance with the methodology developed by the California Native Plant Society (CNPS)[8]. Please refer to *A Manual of California Vegetation* for further details on this sampling method.

Sampling Techniques for Vegetation Cover and Diversity

Percent canopy cover of the native grassland and coastal sage scrub plantings will be measured by using the point-intercept sampling method centered in a 2-meter by 50-meter plot. Two transects will be located within the coastal sage scrub on the slope, two transects will be located in the coastal sage scrub planted along the perimeter of the Complex and three transects will be located within the native grassland areas within the interior of the Complex. At each 0.5-meter interval along each transect (beginning at the 50-cm mark and ending at 50-meter), a point is projected vertically into the vegetation. Each plant species intercepted by a point is recorded, providing a tally of hits for each species in the herbaceous, shrub, and tree canopies, making it possible to record more than 100 hits in any 50-meter transect. Percent cover for each species, according to vegetation layer (herb, shrub, and tree) can be calculated from these data. A list of all additional species within the 250 square-meter belt is subsequently made. The starting point for each transect will be randomly located, using a random numbers table for the first sampling event and permanently marked to facilitate their use in subsequent years.

Photo-Documentation

Permanent stations for photo-documentation will be established during the first annual quantitative monitoring event. Photos shall be taken during each monitoring period from the same vantage point and in the same direction each year, and shall reflect material discussed in the annual monitoring report.

Monitoring Schedule

It is anticipated that all restoration site vegetation will be installed at the same time each year and that annual monitoring will occur in one collective monitoring event per year. Quantitative

[8] Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation.* California Native Plant Society.

monitoring will be conducted during the month of June during the first year and every year thereafter until all five-year success criteria have been met.

Monitoring Reports

Annual monitoring reports will include the following:

- Data addressing survival and/or replacement of container stock, percent cover of native and non-native species, and diversity of volunteer species within the restoration site;
- Cover and diversity data and associated analysis relative to the Performance Standards;
- Regional and vicinity maps indicating the location of the restoration site;
- A site plan identifying the target habitat and restoration, quadrat or transect locations, fixed photo-point locations and appropriate compass directions in which photographs are taken, photo-point geographic coordinates (latitude and longitude), and other information as needed;
- A list of names, titles, and companies of all persons involved in conducting monitoring event(s) and preparing the annual report; and
- An analysis of all qualitative and quantitative monitoring data that includes a summary of field data sheets.

Vernal Pool Plant Species

For Vernal Pool 6, vegetative cover will be determined by conducting vegetative sampling along established transects within the restored pool. Sampling will be conducted up to three times each season: during the aquatic phase immediately adjacent to ponded areas, immediately upon drying of the basin, and approximately one month following drying of the restored Vernal Pool 6. Two 15-meter transects will be placed randomly (using a random numbers table or similar device) on the north-south axis of the pool and one transect on the east-west axis. Beginning at one meter and continuing at each half-meter through 15 meters, a two-decimeter quadrat will be placed adjacent to the transect tape, alternative sides with each subsequent sample. Percent cover of all species combined, percent cover of non-native species (also combined) along with all species identified within the quadrat will be recorded.

As previously noted, Vernal Pool 5 will be subject to enhancement through introduction of inoculum along the outer margins of the pool. Monitoring of Vernal Pool 5 will consist of four 20-meter transects, that will be established on each side of the pool to capture the diversity and cover of the enhanced pool margins.

Photo-Documentation

Permanent stations for photo-documentation will be established during the first annual monitoring event. Photos shall be taken during each of the three monitoring periods from the same vantage point and in the same direction each monitoring year and shall reflect material discussed in the annual monitoring report.

C. Monitoring Schedule

Hydrological and fairy shrimp monitoring will be conducted on an annual basis, coinciding with the rainy season. Hydrological monitoring will begin with the first rainfall event of one-half inch or greater (whether on one or successive days) or after two inches have fallen cumulatively for the season. Monitoring would continue following each rainfall event of one inch or more with monitoring visits occurring within 24 hours following cessation of rainfall.

Monitoring of the area where the foot path was removed will be conducted following all storm events, within 24 hours of the cessation of rainfall to determine if ponding is occurring in the area where the foot path was removed. If ponding is contiguous with Vernal Pool 5 or 6 then site visits will continue as needed to determine if a separate pond remains on the foot path as the water dissipates. Three years of hydrological monitoring will be performed between year one and year five to verify that positive drainage occurs following storm events. Monitoring of the foot path area can be conducted by City of Costa Mesa personnel.

D. Annual Monitoring Reports

For the duration of the monitoring period, an annual report will be prepared for submittal to USFWS. Monitoring shall be tied to the actual implementation date (e.g., the first annual report shall be delivered on July 1st of the year following the first rainy season after implementation of the restoration plan). These reports shall include the results of the hydrological, fairy shrimp, and vegetation monitoring, and assess attainment of success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year;
- An aerial photograph indicating location of the areas addressed in the report;
- A restoration site map or aerial photograph identifying restoration activities, photo station locations, and other information (e.g., GPS data points) as appropriate;
- Copies of representative monitoring photographs;
- Copies of completed field data sheets;
- An analysis of all monitoring data.

VII. COMPLETION OF RESTORATION PLAN

A. Notification of Completion

The City will notify the USFWS in writing when the monitoring period is complete and the agency-approved success criteria have been met. If the restoration meets all success criteria within the five-year monitoring period, the restoration will be considered a success. If not, the maintenance and monitoring activities will be extended one full year at a time until success criteria are met. Only those areas that fail to meet the success criteria after the five-year monitoring period will require additional monitoring. This process will continue until all success criteria are met or until the USFWS determines that other restoration measures are appropriate.

Should the restoration effort meet all goals prior to the end of the five-year monitoring period, the USFWS, at their discretion, may terminate the monitoring effort. At that time, the City will be released from further maintenance and monitoring requirements of the restoration area.

B. Agency Confirmation

Following receipt of the final annual monitoring report, the City will contact USFWS to schedule a site visit to confirm the completion of the restoration effort. The restoration will not be considered complete without an on-site inspection by a USFWS project manager and written confirmation that approved success criteria have been achieved. The USFWS project manager may decide to waive the site visit and provide written confirmation upon reviewing the annual monitoring report.

VIII. LONG-TERM MANAGEMENT

Upon completion of and acceptance by the USFWS that the five-year performance standards have been achieved, implementation of a Long-Term Management Plan (LTMP) will begin. With the successful completion of the habitat restoration and the achievement of the performance standards, it is expected that the Complex containing Vernal Pools 5 and 6 as well as the coastal sage scrub and native grasslands located within the watershed avoidance fencing, will require only limited management activities that would include the following:

- Training of Maintenance Personnel;
- Ongoing Non-Native Vegetation Control;
- General Maintenance (e.g., Trash and Debris Removal, Repair of Fencing);
- Annual Reporting

Specific long-term management activities necessary to implement the measures noted in bullet points above are set forth in more detail below. A qualified Biological Monitor shall be retained to assist in implementing the LTMP and to monitor the status of the LTMP area, including the Vernal Pool Complex and coastal sage scrub. Any monitoring activities that could result in take of the San Diego fairy shrimp must be carried out by a biologist holding a Section 10(a)(1)(A) recovery permit for listed branchiopods. Other activities to be conducted by the Biological Monitor are as follows.

A. <u>Training of Maintenance Personnel</u>

In order to ensure that maintenance is performed properly, there will be an annual training event for maintenance personnel responsible for general maintenance such as removal of trash and debris, maintenance of fencing, or any other general maintenance needs that arise. The training will be conducted by the Project Biologist. The training will include the following components:

- Avoidance of impacts to nesting avifauna during the avian nesting season (February 15 to September 15);
- Avoidance of direct impacts to native habitat through cutting or trampling; and
- Collection and disposal methods for trash and debris that enters the fenced area (Exhibit 3).
- Each individual participating in the training will sign a "sign-in" sheet that will be included as an appendix in the annual report (discussed below). The training will include the following components: 1) a figure showing the location of vernal pool basins 5 and 6, 2) a description of the pin flags that are used to delineate the basins, and 3) an explanation of the importance of remaining outside of the basin area during maintenance activities unless specifically directed and accompanied by a biologist listed on the City's Section 10(a)(1)(A) Recovery Permit.

To ensure that landscape personnel only remove non-native species, the Project Biologist will prepare a booklet with color photographs of all native plants that occur within the fenced area to ensure that such species are identified as native species to be retained during weeding. Similarly, site photographs of known or expected weeds will be included to guide the landscape maintenance personnel in plants to be removed (e.g., non-native plants commonly found in Fairview Park including those species categorized as High or Moderate in the Cal-IPC Invasive Plant Inventory).

B. <u>Ongoing Non-Native Invasive Vegetation Control</u>

In order to control non-native plants within the fenced area (Complex), the LTMP will include twice annual maintenance events under the supervision of the Project Biologist to control non-native plants as needed to continue to meet Success Criteria 4. Vegetation control will be conducted under the supervision of a Biologist familiar with a broad suite of non-native grasses and forbs as well and plants on the various lists maintained by the Cal-IPC of invasive plants. Components of the maintenance plan would include:

- Prior to the initiation of vegetation control, the Biologist will identify the locations of invasive plants and other non-native weeds within the fenced area. Any species of invasive plants listed by Cal-IPC will be completely removed. Other non-native weeds such as (but not limited to) five-hook bassia (*Bassia hyssopifolia*), garland chrysanthemum (*Chrysanthemum coronarium*), Australia saltbush (*Atriplex semibaccata*), small-flowered ice plant (*Mesembryanthemum nodiflorum*), tocalote (*Centaurea melitensis*), crystalline ice plant (*Mesembryanthemum crystallinum*), non-native Mediterranean grasses (e.g., *Bromus*, *Avena*, *Hordeum*, etc.) and mustards (*Brassica* spp.) will be maintained at less than ten percent cover in perpetuity.

- Prior to initiation of vegetation control, the Biologist will use GPS data collected during implementation of the Restoration Plan to flag the approximate boundaries of Vernal Pools 5 and 6 to prevent the maintenance crew from entering the pools. The boundaries of the vernal pools may need to be updated over time due to slight changes in topography within the Vernal Pool Complex and associated hydrological enhancements.

- Vegetation control will be conducted twice annually, with the first visit to be conducted optimally in February to identify non-native grasses and forbs prior to seed set; thereby allowing removal in a manner that will over time deplete the seed bank and minimize the need for maintenance. Site visits shall be timed in a manner that ensures that the ground is not sufficiently saturated so as to create impressions in the soil due to walking. A second visit would be conducted in late March or early April, again sensitive to timing of rainfall and soil conditions, to identify later season non-native grasses and forbs, with the same goal of identifying weeds prior to seed set, ensuring that maintenance crews remove weeds prior to seed set.

- Removal of non-native plants including invasive species will be performed in a manner that limits the potential spread of seed or vegetative plants that could germinate. Use of herbicides and pesticides is prohibited within the fenced area. As such, all weed removal will be performed by hand within 25 feet of pool boundaries. Mechanized equipment may be used outside of the 25-foot buffer.

C. General Maintenance

General maintenance will be conducted on an as-needed basis and will consist of removal of trash and debris that reaches areas of restored habitat when the ground is dry. Maintenance will also include repair of fencing and replacement of signage (as needed). To the extent that general maintenance occurs during the avian nesting season, maintenance personnel will conduct the trash and debris removal within vegetated areas in a manner that does not require disturbance of vegetation (e.g., carefully removing trash and debris by hand without disturbing the vegetation). If unforeseen circumstances arise that require disturbance of vegetation during the avian nesting season (February 15 – September 15), the Project Biologist would be consulted and a nesting bird survey would be conducted prior to the maintenance activities. If nesting birds are detected and could possibly be disturbed by the maintenance, such maintenance would be postponed until the nesting is completed, as determined by the Project Biologist.

D. LTMP Annual Reporting

At the end of each year of the LTMP, a management report will be prepared by the Biological Monitor and will be submitted to the USFWS. The LTMP Year will be from January 1 to December 31 and each annual report will be submitted by March 15 of the following year. These reports will include:

- A description of the maintenance activities conducted during the previous calendar year;

- The date of and location where the management activities were undertaken;

- Information regarding weed eradication/abatement, including the amount removed and treated, frequency and timing of removal and treatment, and disposal specifics;

- Results associated with any nesting bird surveys implemented during the course of the prior year;

- Photos from designated photo stations; and
- Sign-in sheets from maintenance training sessions (every year).

E. Long-Term Protection of Vernal Pools and Vernal Pool Watersheds

In order to ensure long-term protection of vernal pools and the associated watershed, the vernal pools and watershed will be subject to two types of protection. To limit human access to the pools, protective fencing similar to the fencing installed around Vernal Pool 1 will be installed around the vernal pool watershed area associated with the Vernal Pools 5 and 6 Complex. Fencing will also be installed around Vernal Pool Complex 4.

In order to ensure that the vernal pools and associated watersheds are not converted to other land uses at some point in the future, the City will include maps delineating the vernal pool watersheds and specific measures requiring the preservation and protection of these areas in the Master Plan for Fairview Park. The City will also include a provision in the Master Plan stating that the delineated areas cannot be adjusted, nor any new uses approved in any portion of those areas, without consultation with and approval from the USFWS.

p:0493-6.VP Restoration Plan-FINAL (060818).docx

Source: ESRI World Street Map

N

0 2 4 8 Miles

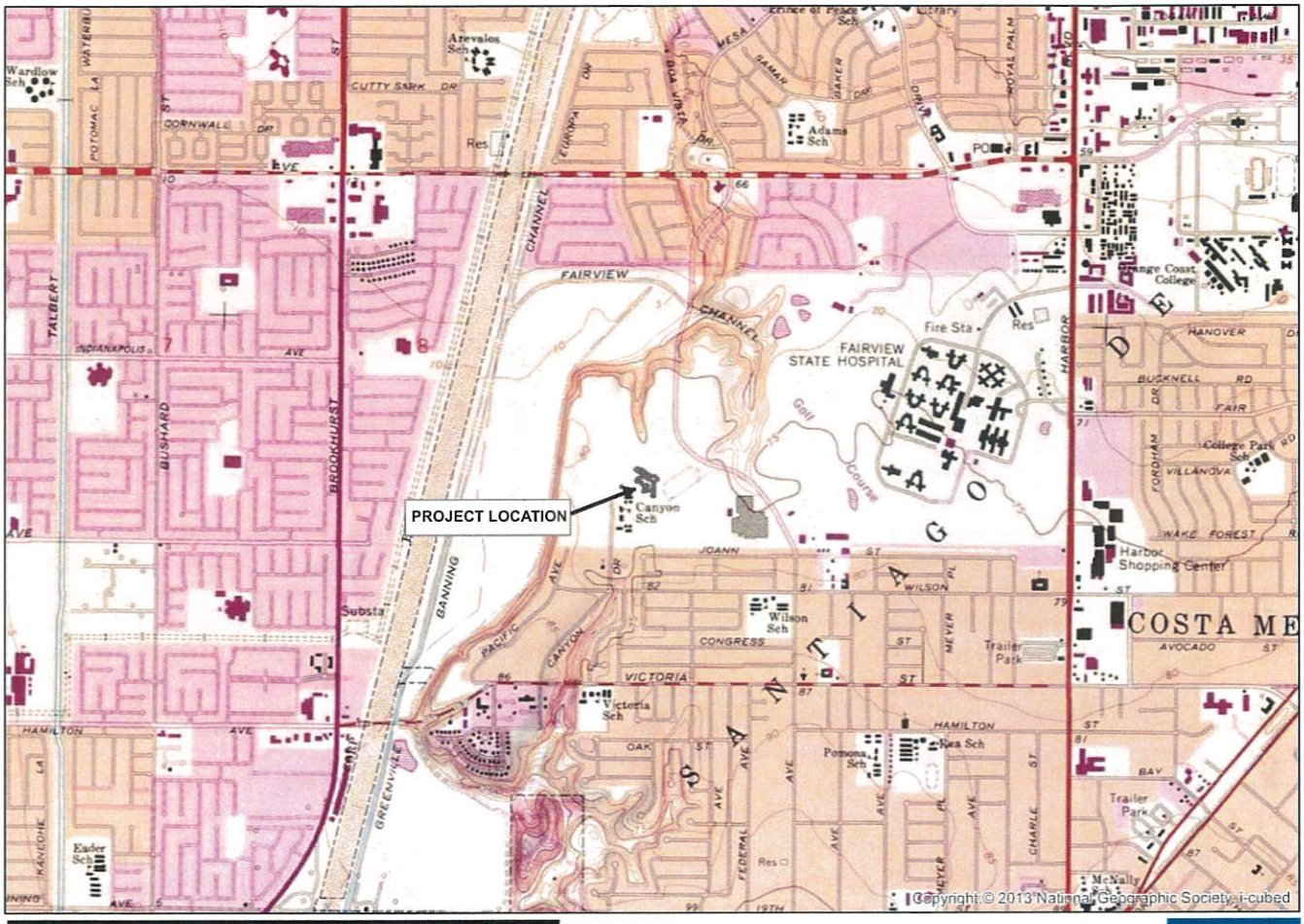
FAIRVIEW PARK RESTORATION PROJECT

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

Adapted from USGS Newport Beach, CA quadrangle



N

0 1,000 2,000 4,000 Feet

FAIRVIEW PARK RESTORATION PROJECT

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2

Legend

- Signage Locations Fence
- Existing Fencing
- New Exclusion Fencing
- Site Access
- Telephone Pole Indentation (209 ft)
- Stockpile/Staging Area
- Watershed Breaks
- Non-Native Vegetation to be Removed (0.08 ac)
- Foot Path Restoration (0.062 ac)
- Turf Removal and CSS Establishment (0.65 ac)
- Vernal Pool
- Vernal Pool Six Reestablishment Area (0.01 ac)
- Native Grassland Establishment (2.97 ac)

0 37.5 75 150
Feet

N

FAIRVIEW PARK RESTORATION PROJECT

Restoration/Planting Plan

GLENN LUKOS ASSOCIATES

Exhibit 3

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Photograph 1: View of foot path facing north. Note arrows pointing to depressions which will be smoothed to ensure positive drainage to Vernal Pools 5 and 6. The restored foot path will be re-vegetated with native upland species. Vernal Pool 5 is located in the top left of photo, and Vernal Pool 6 is located in the bottom left.

Photograph 2: View of foot path facing south, which will be restored and re-vegetated with native species. Vernal Pool 5 is located to the right of the trail. Vernal Pool 6 is located at the top right of the photograph.

GLENN LUKOS ASSOCIATES

Exhibit 4

FAIRVIEW PARK RESTORATION PROJECT

Site Photographs

Photograph 3: View of Vernal Pool 6 area (bottom right of photo) to be restored. Note trail in the top right corner of photograph. Vernal Pool 5 is located in the top left of the photo.

Photograph 4: View of typical indentation in the ground surface where telephone poles were placed to prevent access to Vernal Pools 5 and 6.

GLENN LUKOS ASSOCIATES

Exhibit 4

FAIRVIEW PARK RESTORATION PROJECT

Site Photographs

Photograph 5: View of buffer restoration area facing east. Turf grass in the left of the photo and non-native grasses in the right of the photo will be removed and restored with coastal sage scrub species. Note arrow pointing to existing access to the site.

Photograph 6: View of turf restoration area facing west. The rope fencing demarcates the vernal pool watershed boundary.

GLENN LUKOS ASSOCIATES

Exhibit 4

FAIRVIEW PARK RESTORATION PROJECT

Site Photographs