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September 3, 2013

Baltazar Mejia
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

Subject: Fairview Park Site Assessment of Vernal Pools 4 through 7 and A, B, and C; Restoration Alternatives Assessment of Vernal Pools 5 and 6 (LSA Project No. CCM1301)

Dear Mr. Mejia:

As requested by the City of Costa Mesa (City), on August 19, 2013, LSA Associates, Inc. (LSA) biologists Ingri Quon and Dan Rosie conducted an on-site review of Vernal Pools 4 through 7 west of Placentia Avenue (Figure 1; all figures are attached) and three vernal pool/marsh areas east of Placentia Avenue (Figure 2). All ponding features are located at Fairview Park (Park) in the City of Costa Mesa, California (Figure 1).

At the beginning of the day, Baltazar (Bart) Mejia and Robert Staples of the City were present to coordinate and confirm the objectives of the exercise. Specifically, LSA used Global Positioning System (GPS) data collected in 2006 (LSA) for reference when identifying the limits of Vernal Pools 4, 5, 6, and 7; adjusted the boundaries based on observed field conditions using yellow pin flags; and re-collected data using a GPS unit with sub-meter accuracy. The majority of the pin flag locations were then reinforced with survey stakes driven to ground level and sprayed with white paint by City intern David Vong. The three vernal pool/marsh areas east of Placentia Avenue had been previously marked on a map from Glenn Lukos in 2002,¹ but the boundaries were not defined at the time.

No surface water was present at the time of the review and mid-August conditions were very dry.

During the August 19 visit, vernal pools on the west side of Placentia Avenue were marked and mapped.

- Vernal Pools 4 and 5 were mapped generally consistent with the 2006 data, with slight adjustments to various boundaries based on field observations. These pools are in a similar condition to the 2006 field results, with Vernal Pool 4 undisturbed except for a dirt path encroaching into the southern edge. Vernal Pool 5 is undisturbed except for a recently installed decomposed granite (DG) trail that covered the eastern edge of the watershed.
- Vernal Pool 6 was mapped partially consistent with 2006 data, with a few adjustments based on field observations. However, only the 2006 boundary data was used to identify the southern and eastern boundaries, which had been recently modified by placement of DG within these boundaries. This pool showed no evidence of other disturbances.

¹ Glenn Lukos. 2002. Evaluation of Biological Resources Associated with Expansion of Model Railroad Facility at Fairview Park. Report prepared for the City of Costa Mesa. 12 September. Lake Forest, California.

- Vernal Pool 7 was mapped using 2006 data only as reference; the majority of the boundaries were re-identified based on field observations. This pool is in a disturbed area of bare ground.

During the August 19 visit, Vernal Pools A, B, and C located on the east side of Placentia Avenue were not marked with perimeter flagging/stakes. The boundary of Vernal Pool A was defined as being approximately 10 feet by 40 feet,¹ but Vernal Pools B and C were not previously defined.² During the August 2013 visit, the perimeters were not discernible; therefore, these three pools were not marked around their perimeters. To delineate the boundary of these areas, a field survey during a wet season following an average or higher than average rainfall season would be required. The northern area appears undisturbed and is surrounded by the model railroad track and a concrete pathway that extends from the Park's foot bridge. The two adjacent southern areas are sparsely vegetated and show evidence of occasional disturbance by vehicle activity.

On August 22, Ms. Quon returned to Fairview Park to mark the boundaries of two vernal marshes with flags and stakes, and then collect polygon data using the same sub-meter accuracy GPS unit. These marsh areas are just south of Vernal Pool 4 and were initially identified in the mid-1990s by Tony Bomkamp³ (Figure 1). These vernal marshes were most recently recorded in 2006 (LSA) and the GIS data were used to facilitate location of the marsh boundary in August 2013. Mr. Staples was present to place stakes at flagged locations installed by Ms. Quon and to observe the marked marsh locations, which appeared nearly the same as in 2006 and appear undisturbed by human use at the Park. The marshes are sparsely vegetated and show no notable evidence of disturbance.

The City proposes to fence the boundaries of the vernal pools and marshes along with an agency-approved (United States Fish and Wildlife Service [USFWS]) buffer to discourage human activity within the vernal pool areas that may potentially damage the vernal pool resources. The following alternatives are proposed by the City to address concerns regarding present and future impacts to the vernal pools and marshes, followed by LSA's recommendations.

VERNAL POOL 5

The recently installed DG path did not encroach into the footprint of Vernal Pool 5, but the path was placed over the eastern portion of the watershed. This watershed area extends to the School District fence.

LSA Recommendation. The DG placement did not appear to substantially alter the watershed topography; therefore, perimeter fencing is recommended. Removal of the DG may not be necessary since water can still pass through the DG and flow into the pool.

¹ Glenn Lukos. 2002. Evaluation of Biological Resources Associated with Expansion of Model Railroad Facility at Fairview Park. Report prepared for the City of Costa Mesa. 12 September. Lake Forest, California.

² Chambers Group. 2005. Final Draft of Results of the Preconstruction Survey for the Fairview Regional Park Bicycle Trail, Costa Mesa, California. Prepared for Shelby Howard, City of Costa Mesa. 15 March. Costa Mesa, Orange County, California.

³ Bomkamp, Tony. 1995. Vernal Pools: Environmental Sensitivity of and Description of Vernal Pools and Associated Resources. Fairview Park Master Plan as Appendix C, dated March 1998. 9 October. City of Costa Mesa, California.

VERNAL POOL 6

City Alternative 1. *Delineate with two-strand cable railing and leave as is. DG is a permeable media that will continue to allow water to reach the historic boundary to the south and east.*

LSA Recommendation. In LSA's professional opinion, this option will not be satisfactory to the USFWS. Vernal pool-dependent plants and wildlife cannot use the areas affected by the placement of the DG trail. In addition, these impacts to the vernal pool will require consultation with the USFWS to determine the correct course of action, which may involve restoration and/or mitigation.

City Alternative 2. *Delineate with two-strand cable railing, leave DG in place and regrade to the north to extend the limits equivalent to the area covered with DG (this could be volunteer program sponsored by a local university as part of their environmental studies program).*

LSA Recommendation. This option may satisfy the USFWS. Again, these impacts to the vernal pools will require consultation with the USFWS to determine the correct course of action, which may involve restoration and/or additional mitigation beyond a 1:1 replacement. If a volunteer program is utilized, the USFWS should be provided assurance that there will be biological oversight to ensure the restoration is conducted properly and only an authorized (permitted) individual with take authorization is allowed to collect and relocate any vernal pool soil from an existing pool since it may contain protected species (e.g., seeds or eggs).

City Alternative 3. *Delineate with two-strand cable railing, remove DG from the vernal pool and restore.*

LSA Recommendation. This option also may satisfy the USFWS. However, consultation with the USFWS will be required to determine the correct course of action, which may involve additional mitigation beyond restoration of the affected areas to compensate for impacts, including temporal loss of vernal pool resources. The nearby existing School District gate could not be used since this option would include the 10-foot fenced buffer from the edge of Vernal Pool 6.

City Alternative 4. Relocate Vernal Pool 6 northwest (closer to Vernal Pool 5) a minimum of 20 feet from the School District fences and delineate the relocated vernal pool with two-strand cable fencing to be installed a minimum of 10 feet from the edge of the vernal pool. All work to be performed in strict conformance with a USFWS-approved mitigation plan, and under the supervision of a qualified biologist.

This alternative will allow the City to properly manage and protect Vernal Pool 6 by creating a buffer wide enough for the installation of the cable fencing and access to the south and east edges of Fairview Park without the potential for future impacts to a vernal pool. In this way, should the City and/or the School District need to replace the school's property line fence, construction equipment will have a 10-foot buffer between the property line fence and the delineation fencing to perform the work.

LSA Recommendation. Create a new vernal pool at a ratio determined by the USFWS to offset the partial loss of Vernal Pool 6. The newly created pool would be constructed in the vicinity of existing Vernal Pool 5 with a minimum 20-foot setback from School District fencing. The created pool will be protected by the installation of two-strand cable fencing with a minimum 10-foot setback from the newly created vernal pool limits. Vernal pool creation will be conducted in accordance with a mitigation plan that is approved by the USFWS.

Please feel free to contact me at (760) 931-5471 or Dan.Rosie@lsa-assoc.com or Ms. Quon at (949) 553-0666 or Ingri.Quon@lsa-assoc.com if you have any questions or concerns regarding this letter.

Sincerely,

LSA ASSOCIATES, INC.



Dan Rosie
Senior Biologist



Ingri Quon
Associate Biologist

Attachment: Figure 1. Vernal Pools 4–7 and Vernal Marsh Locations
Figure 2. Vernal Pools East of Placentia Avenue



FIGURE 1

L S A

LEGEND

- Vernal Pools (8/19/2013)
- Vernal Marsh (8/22/2013)
- Vernal Pools and Vernal Marshes (2006)



SOURCE: Eagle Aerial (2012) **NOT FOR PUBLIC DISTRIBUTION**

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Fairview Park - Southwest Area
Vernal Pools 4-7 and Vernal Marsh Locations



LSA

LEGEND

- Vernal Pools - Glenn Lukos (2002) and Chambers Group (2005)
- Vernal Pools and Vernal Marshes (2006)



FIGURE 2

Fairview Park - East of Placentia Avenue
Vernal Pools A, B, and C