

November 22, 2013

7151-02

Daniel McCoy
Weston Solutions, Inc.
5817 Dryden Place, Suite 101
Carlsbad, California 92008

Subject: Results of Post-Construction Site Evaluation at the Los Trancos Creek Maintenance Project, Crystal Cove State Park, Orange County, California

Dear Mr. McCoy,

This letter summarizes the results of a qualitative post-construction site evaluation performed by Dudek biologist Tricia Wotipka on September 25, 2013, at the Los Trancos Creek Maintenance Project (Project). This letter is being submitted to help satisfy State Water Resources Control Board (SWRCB) Proposition 84 requirements that a qualitative site assessment be performed onsite following Project implementation, in order to document project status and progress of the habitat restoration efforts.

Project construction, container plant installation, and hydroseeding were initiated in May 2013 and took approximately two weeks to complete. The Project involved physical modifications to the channel and the restoration of a 200 foot long, by roughly 26 foot wide, section of Los Trancos Creek. The work included the removal of invasive, non-native vegetation and revegetation with native wetland/salt marsh plants and vegetation. To support improved hydrology and water flow through the channel, as specified by Weston Solutions, crews also excavated a small, shallow trench (approximately 2.5 feet in depth, one foot in width at the bottom, up to 5 feet wide at the top, with side slopes of approximately 1:1) parallel to the channel walls, running through the approximate center of a mound of accumulated sediment located downstream of the easterly pedestrian bridge. The Project also involved the removal of concrete debris, trash and accumulated organic material from the channel and relocation of displaced rock and cobble along both sides of the creek to encourage a more natural channel cross-section and improved water flow. As we understand it, all work was completed by hand using hand tools; no mechanical equipment and/or machinery were utilized directly in Los Trancos Creek. All equipment access occurred from above along the channel, along the perimeter roadway.

Prior to work initiation, this stretch of Los Trancos Creek was in a dynamic, erosive condition with deep scour pits and large rock debris deposited along the north side of the channel with

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notable quantities of accumulated sediment along a bench on the south side of the channel. The channel was largely vegetated with non-native vegetation including garden nasturtium (*Tropaeolum majus*), kikuyu grass (*Pennisetum clandestinum*), and other non-native species that had naturally recruited into the area from the adjacent park landscaping. Salt grass (*Distichlis spicata*) and common pickleweed (*Salicornia virginica*), two wetland/salt marsh species native to California, occupied a smaller percent cover and were scattered in fragmented patches throughout the channel length.

Approximately 0.04 acre of disturbed channel and disturbed coastal salt marsh were impacted by the Project. The work was performed in accordance with all relevant local, state, and federal resource agency and local jurisdiction approvals.

During the September 2013 biological resources assessment, moderate quantities of kikuyu grass were still noted in the upper reaches of Los Trancos Creek, in addition to the non-native/invasive species castor bean (*Ricinus communis*). The establishment of native species within the creek is evident and is progressing satisfactorily, however, plant establishment has been slowed by the lack of consistent watering and some disturbances from un-seasonal creek flows. The natural vegetation and revegetation effort in Los Trancos Creek is relying on either natural precipitation or channel flows and subsurface moisture, as no irrigation was feasible. Because the project was constructed in May 2013, rain events were sparse and minimal at best and moisture in the creek has been minimal. However, there were reports of an un-seasonal rain event in late May/early June 2013 that appears to have washed away some of the hydroseed materials and impacted the revegetation efforts.

Additionally, some supplemental sand accumulation on the beach has resulted in the creation of a berm at the mouth of Los Trancos Creek that is blocking flow from the creek and as of the September visit, was yet to be breached by creek flow or high tide events. This has resulted in water body stagnation with notable quantities of algae on the water surface. Once this berm is breached and/or the area receives precipitation and flow from expected fall and winter rain events, we are certain that native plant recruitment and recovery will progress at a more vigorous rate. It is evident that areas that once supported predominantly kikuyu grass and garden nasturtium are now slowly recovering with native salt grass, pickleweed, salty-susan (*Jaumea carnosa*), and various sedges (*Cyperus* spp.). Please see Photo 1 for a visual illustration of the site conditions as of our September site visit.

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Photo 1: South-facing view of Los Trancos Creek.

The pilot channel that was hand excavated using hand tools has helped to re-establish and stabilize a more natural channel cross-section with a central low flow flanked by artificially constructed primary floodplain terraces. These terraces were initially targeted for native plant revegetation as part of the initial Project efforts; however, as mentioned above, an un-seasonal rain event in late spring/early Summer 2013 washed-out some of the revegetation materials in these areas, leaving behind some unvegetated areas. However, these areas are already beginning to show signs of natural native plant recolonization and, as previously mentioned, they are expected to naturally re-establish with native species over time. As seen in Photo 1, non-native kikuyu grass continues to establish in the Project area, in the more upper reaches of the creek near the far north pedestrian bridge. Dudek recommends targeting this exotic grass, along with newly recruited seedlings of salt cedar (*Tamarix ramosissima*) and castor bean (*Ricinus communis*), for removal in 2013/2014 to help ensure these species remain controlled and do not pose a continued threat to project success. All weed material should be removed and disposed of appropriately off site. Mechanical weed whips are not recommended for use in the creek, as they could impact native seedlings. Hand pulling and/or target spot spraying of weeds and exotics are recommended to reduce collateral damage to surrounding establishing native plants. Dudek also recommends re-hydroseeding to the island and south channel banks in early 2014 to further assist in plant establishment, native plant recruitment and overall site recovery.

Based on expected recruitment of native species in spring 2014, coupled with the additional hydroseed application and the continued removal of non-native species as described above, we are hopeful that in time this section of Los Trancos Creek will support a higher percent cover of

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native plant species with improved functions and services leading to a more balanced, healthier creek ecosystem.

If you would like to discuss the contents of this letter or if you have any questions about what was discussed please do not hesitate to contact me at 760.479.4295 or via email at twotipka@dudek.com.

Very truly yours,



Tricia Wotipka
Senior Biologist

cc: John Minchin, Dudek
Asha Bleier, Dudek