

October 31, 2023

Mr. David Nguyen  
County of Los Angeles, Department of Public Works  
900 South Fremont Avenue  
Alhambra, CA 91803-1331

Subject: Sunshine Canyon Landfill, Quarterly Vegetation Report  
Third Quarter 2023 Vegetation Report

Mr. Nguyen,

This report has been prepared in accordance with the following:

- Condition 18B of the Finding of Conformance
- Condition 44A of the Condition Use Permit (CUP)
- Los Angeles City Condition [Q] C.8 of the Ordinance No. 172,933

This report presents the progress of the site's landscaping and revegetation activities for the third quarter of 2023. The intent of these reports is to provide detailed information regarding the site's efforts related to vegetation including vegetation of interim and permanent slopes and activities conducted for the on-site sage mitigation areas.

Architerra Design Group continues to assist site personnel in evaluating current site conditions relating to vegetation and provide recommendations for future efforts. This report includes their assessment of the pilot sage vegetation area as well as recommendations for this area. Architerra's evaluation is in addition to the required quarterly monitoring performed by our consulting biologist.

#### 1.0 Interim Slopes

For the purposes of this report, interim slopes are those defined as slope areas where no activities have taken place for 180 days or longer. CUP Condition 44A requires "a temporary hydroseed vegetation cover on any slope or landfill area that is projected to be inactive for a period of greater than 180 days".

## 1.1 Hydroseeding Activities

Based on the results of the trial project completed in August 2017, a 57-acre vegetative cover project using the approved seed mix was completed in mid-December 2017. Additionally, the site completed hydroseeding approximately 155 acres; application of the approved seed mix was completed during 2019. The increase in hydroseeding application is a result of our normal winterization efforts along with slope revegetation as a result of the Saddle Ridge Fire that impacted Sylmar, CA on October 2019. These areas had successful vegetation growth after the recent rains.

## 2.0 Permanent Slopes

Permanent slopes are defined as those where no landfilling activities will be conducted in the future.

As part of our Saddle Ridge Fire recovery efforts both the City and County permanent slopes of the landfill had hydroseed applied as necessary. This application of hydroseed was completed for soil stabilization purposes.

## 3.0 Non-Permanent Cut Slopes

Prior quarterly vegetation reports have illustrated one area above the front terminal sedimentation basin and one area near the temporary bypass road as “non-permanent cut slopes”. An evaluation of these areas has been conducted and it has been determined that these areas are “permanent slopes” because no landfilling activities will be conducted against these slopes in the future.

## 4.0 Activities Conducted in Sage Mitigation Areas – 3Q2023

During the third quarter of 2023, the following activities were conducted in the sage mitigation areas at the landfill.

### 4.1 City South Sage Pilot Project Area – Deck C

The lower Deck C mitigation project area was impacted by the Saddle Ridge fire in October 2019. As noted in Rincon’s (formerly JMA) City-Side Sage Mitigation Area Lower Deck report a substantial amount of the lower deck was burned or scorched. However, in previous reports they note that because this was an established site, they expect natural re-establishment of the native vegetation within the first two to three years. Rincon has noted a substantial amount of regrowth has occurred following the fire and included the most prevalent natives such as California Sunflower, Saltbush, Horseweed, and pockets of Wild Ryegrass. Rincon also noted non-native plant cover has not changed substantially since Q1 and Q2 2023 but is expected to decrease during the fall and winter months.

As reported previously, Architerra Design Group indicates that there has been an abundance of Venturan CSS species germinating and crown-sprouting since the

fire. The species following the rebound include Purple Sage, Coast Sunflower, White Sage, Creeping Wild Rye, Deerweed, Black Sage, and Mexican Elderberry. Surprisingly there are also new species from the original seed mix are now sprouting up in decent numbers and included in the list below:

- Purple Sage (*Salvia leucophylla*)
- Coast Sunflower (*Encelia californica*)
- White Sage (*Salvia apiana*)
- Creeping Wild Rye (*Leymus triticoides*)
- Deerweed (*Lotus scoparius*)
- Black Sage (*Salvia mellifera*)
- Mexican Elderberry (*Sambucus mexicana*)
- Scarlet Bugler (*Penstemon centranthifolia*)
- Telegraph Weed (*Heterotheca grandiflora*)
- Monkey Flower (*Mimulus aurantiacus*)
- Smooth-Leaf Yerba Santa (*Eriodictyon trichocalyx*)
- Thicketleaf Yerba Santa (*Eriodictyon crassifolium*)
- Sunflower (*Helianthus annuus*)
- California Bush Sunflower (*Encelia californica*)
- California Sagebrush (*Artemisia californica*)
- California Buckwheat (*Eriogonum fasciculatum*)
- Quail Bush (*Atriplex lentiformis*)
- Four-Wing Saltbush (*Atriplex canescens*)
- Cattle Spinach (*Atriplex polycarpa*)
- Spinescale (*Atriplex spinifera*)
- Toyon (*Heteromeles arbutifolia*)
- Foothill Needlegrass (*Nassella lepida*)
- Coyote Bush (*Baccharis pilularis*)
- Showy Penstemon (*Penstemon spectabilis*)
- Wright's Cudweed (*Pseudognaphalium microcephalum*)
- White Horehound (*Marrubium vulgare*) Non-Native
- Australian Saltbush (*Atriplex semibaccata*) Non-Native

As reported from Archterra, the abundance of historic level rains last winter and the summer storm Hillary has assisted in the emergence of many of the Ventruan CSS Species. With the warmer temperatures and recent rains, several of the VCSS species have begun emerging several months early. Many species of the Saltbush are in full bloom and new Saltbush plants germinated due to the extensive winter rains. California Bush Sunflower (*Encelia californica*), California Sagebrush (*Artemisia californica*), Deerweed (*Acmispon glaber*) and several Sage species (*Salvia* sp.) are now beginning summer dormancy response. Typically Mexican Elderberry (*Sambucus mexicana*) goes drought deciduous by this time of year, but due to the extended winter rains has not and is flowering and developing fruit thus providing a vital resource to many of the birds that visit the deck.

Also noted were continued growth of several invasive species; Shortpod Mustard (*Hirschfeldia incana*), Yellow Star Thistle (*Centaurea solstitialis*), and Russian Thistle (*Salsola* spp.) continues to be problematic. It was recommended maintenance

personnel work on removing these before they flower and seed. In Q3, minimal maintenance work was done on removing invasive species and it was also noted the interior of the deck still needed to be weeded. Also noted was to identify native species prior to any invasive removals. In addition, the majority of the Coast Live Oaks at the PM 10 berm have recovered from fire damage in 2020.

#### 4.2 City South Deck B

The Deck B sage mitigation project began on April 9, 2018 and planting was completed by the end of the fourth quarter 2018. Soil samples indicated low pH and high salinity, as a result Deck B underwent a leaching schedule. Additional soil amendments and resampling were completed before planting began, which took place during the fourth quarter 2018. Pacific Restoration Group, Inc (PRG) has been working with Architerra for the completion of project. A summary of the progress is included in Attachment 3. The northwest portion of the Middle Deck burned during the Saddle Ridge Fire in October 2019. Architerra Design Group (ADG) indicated previously Deck B was doing quite well and there was evidence of desiccation of the seedlings especially the Common Yarrow and other native species that have recently spouted and are beginning to harden off and defoliate. Architerra has, in the past, also indicated the plant diversity on Deck B is impressive and many of the species in the seed mix have germinated and the containerized plants also are doing well and are blooming or just finished which are the White Sage, Mexican Elderberry, Menzie's Goldenbush, and Prickly Pear.

During Ricon's observation of Deck B, brittlebush (*Encelia farinosa*) coverage was estimated at 4%. Recognizing the concerns of the County Biologist, Republic will work with our mitigation team to recognize this plant and perform the next several quarters. It will also be removed from future seed mixes.

Revegetation efforts have been successful in the establishment of the Venturan Coastal Sage Scrub habitat and evidence of species and age diversity and resprouting of larger species. Architerra also noted Deck B site is similar to those found on Deck C in the growth of the VCSS. Deck B is also dominated by California Buckwheat (*Eriogonum fasciculatum*). However, the downslopes are primarily covered with little to no native species and should be addressed to remove the invasive weeds as soon as possible. The south side of the slope has been overtaken by invasive Slenderleaf Iceplant (*Mesembryanthemum nodiflorum*) and was growing in the revegetation area and has spread northward. Maintenance of the iceplant has been minimal and continues to spread. The northern part of Deck B has been completely filled in and is well established with shading to prevent weed growth. Over all, there is a good species diversity on this deck and planting is responding well with vigorous growth.

#### 4.3 City South Deck A

In December 2022, Conversations with Architerra were started to discuss a plan to address the potential mitigation plans for Deck A. An onsite meeting occurred during May 2023 for an initial assessment of Deck A and determine what will need to be done. We anticipate a tentative schedule to be established in the coming months.

Prior to any mitigation efforts, soil was placed in a large area affected by subsidence and graded for proper drainage. This occurred in June and July 2023 and it is anticipated in quarter four 2023, mitigation plans will commence to address the area.

The Deck A sage mitigation is anticipated to restart late 2023 and early 2024. Recent grading activity on approximately 1.5 acres occurred during the second quarter and into early third quarter 2023. This grading activity was completed in order to fill a low spot resulting from subsidence and which led to ponding during this past winter. The initial plan for Deck A is to partition the approximately 25 acres into more manageable 5-acre plots. The recently graded area will be part of the initial revegetation plot and is expected to start after the first rains to allow the soil to properly leach. Soil sampling was conducted in September, 2023 to determine the viability of the soil. The full report can be found in Attachment 3. Additional details outlining the steps to reseed and mitigate this area are included in Attachment 3.

#### 4.4 County Sage Mitigation Area

The County sage mitigation area is located on the western side of the County portion of Sunshine Canyon Landfill (Drawing 1). As noted in the fourth quarter Rincon County-Side Sage Mitigation Area report the upper half of the mitigation site was burned in the Saddle Ridge fire in October of 2019. No revegetation activities were conducted in this area during the third quarter 2023, and as noted in multiple Rincon progress reports, the conditions in this mitigation area have remained unchanged for some time. Rincon notes in their attached 2023 third quarter vegetation report that this area remains problematic for establishment of vegetation due to barren soil. Soil samples from this location indicate low pH, high salinity, and Boron present in native soils.

#### 5.0 Assessments of Sage Mitigation Areas

Assessments of the site's sage mitigation areas are conducted by a qualified biologist on a quarterly basis. The following sections present a summary of the recommendations for the sage mitigation areas from Rincon (City and County sage mitigation areas) and Architerra (City South Sage Pilot Project Area (Deck C) and Middle Deck (Deck B) and the proposed actions in response to the recommendations.

#### 5.1 Rincon Recommendations for City Sage Mitigation Areas

Rincon’s progress reports for the City Sage Mitigation Areas for the second quarter of 2023 are provided in Attachment 1. These reports include recommendations based on the assessments. Table 1 presents a summary of these recommendations and the proposed actions.

- The booster pump and power that was destroyed in the Saddleridge Fire will need to be replaced for irrigation to deck A. Architerra’s initial recommendation is to get a team on site to walk the deck and determine best strategy moving forwards to tackle the approximately 25 acres.

**Table 1 – Rincon Recommendations and Proposed Actions – City Sage Mitigation Areas, Third Quarter 2023**

AREA		RECOMMENDATION	PROPOSED ACTION
Lower, Middle, and Upper Decks (Decks C, B, and A)	1	Weed Control – Implement a year-round weed control program to control non-native species.	A weed control program is already in place on Deck C and B as part of the pilot project and will continue. A weed control program on A will be implemented along with the mitigation plans for these areas.
Lower, Middle Decks (Decks C, B)	2	Irrigation – Reinstall irrigation system if drought conditions continue to the areas to alleviate stress on regrowth	Even with above average rainfall this winter, supplemental irrigation systems may be reinstalled to promote germination and growth of native plants if signs of desiccation appear.
Lower, Middle, and Upper Decks (Decks C, B, and A)	3	Prohibit Access – Continue to prohibit vehicle access to mitigation areas.	Repairs to the T-post fencing will be made as needed.
Upper Deck (Deck A)	3	Improve root zone and soil conditions	This will be addressed when the plans for Deck A is developed. Actions were taken to address improving the root zone in Decks B & C; it is expected that similar actions will be incorporated into the plans for Deck A.
Upper Deck (Deck A)	4	Plant natives in areas dominated with non-natives	This will be addressed when the plans for Deck A are developed. Various planting methods were used for the construction of the pilot project on Decks B & C; it is expected that similar actions will be incorporated into the plans for Deck A.
Upper Deck (Deck A)	5	Reseeding – apply native seeds during the rainy season after soil mounds have been established	Deck A was partially regraded to fill in ponding locations. Reseeding will start in graded section in Q4 2023 or Q1 2024

Rincon also recommended that a monitoring biologist should be present during weed control activities or the native plants should be flagged to ensure only non-native species are removed. A monitoring biologist will be consulted prior to any weed control activities to ensure native plants are protected.

Architerra and Rincon continue to provide support to the Oakridge maintenance personnel to assist in removal of the invasive weeds on both Deck B and C. Architerra has pointed out some of the more aggressive weeds that have flourished since the Saddle Ridge Fire. Architerra provided them with images of the invasive weeds to help identify and target these invasive species. Oakridge Landscape have been diligently removing Russian Thistle, Wild Oat, Shortpod Mustard, Red Brome Grass, False Barley, Tree Tobabcco, and Yellow Star Thistle that took hold in the burned barren areas. During May 2023, An Architerra biologist was present during weeding activities to ensure native species are properly identified within the heavily non-native vegetation.

#### 5.2 Rincon Recommendations for County Sage Mitigation Area

Table 2 presents a summary of the recommendations proposed by Rincon based on the assessment of the County Sage Mitigation Area and the proposed actions. Please refer to the full recommendations in the Rincon reports in Attachment 2.

**Table 2 – Rincon Recommendations and Proposed Actions – County Sage Mitigation Area, Third Quarter 2023**

AREA	RECOMMENDATION	PROPOSED ACTION
County Sage Mitigation Area	1 Create benches to control soil erosion and improve soil conditions to improve plant establishment and seed dispersal	Rincon and ADG continue to evaluate recommendations from the County Task Force and UltraSystems.
County Sage Mitigation Area	2 Reseed and plant container plants	A trail test pilot plan will be discussed with California Native shrubs.
County Sage Mitigation Area	3 Use soil amendments	A trial test plot would need to be developed. This recommendation will be considered at a later date.
County Sage Mitigation Area	5 Signage – Install signage indicating revegetation efforts.	Due to the slopes, stormwater channel and overall difficulty to access this area, personnel are limited to access this area.

County Sage Mitigation Area	6	Weed Control – Continue weeding as needed on a quarterly basis.	Personnel continues to evaluate the current status.
County Sage Mitigation Area	7	Prohibit Access – continue to prohibit vehicle access to mitigation deck.	Upper entrance has a locked gate, no further action is required.

### 5.3 Architerra Inspection for City South Sage Mitigation Pilot Project Area – Second Quarter 2023

The inspection report is included in Attachment 3 along with photos of the area taken at the photo stations.

### 5.4 Quarterly Assessment of City South Sage Pilot Project Area

The methodology for assessment of the City South Sage Pilot Project Area developed by Rincon (formerly JMA) was included in the first quarter 2015 Vegetation Report. The evaluation report for the first quarter of 2023 based on this methodology is included in Attachment 4 and Attachment 5 for Deck C and Deck B, respectively. Concerns for the county-side stability for soil erosion will be addressed in the coming months. Current plans require some regrading and infrastructure repairs due to the extremely heavy rains over this past winter.

## 6.0 Status of Other Vegetated Areas

### Big Cone Douglas Fir Tree Mitigation

As reported in the vegetation report for the first quarter of 2015, 200 Big Cone Douglas fir tree saplings were planted the third week of March 2015. These big cone Douglas fir pine trees continue to be monitored and maintenance activities were conducted in this mitigation area for 2022 and into the future.

A meeting with Rincon biologist was conducted on November 18, 2022 at the Big Cone Mitigation area. We will begin to work with local nurseries to help replace and replant some of the existing dead big cone pine and canyon oak. We are also evaluating a new location for planting more big cone pines and canyon oak in this area, and finally to establish healthy big cone pine and canyon oak in a timely established schedule. We look forward to working with the LA County forester, local nurseries in 2023. Plans to replenish the mitigation bank will commence with seed collection in the fall of 2023. Once the seeds are collected and stratified, seed will then be potted in the spring of 2024 whereas they will be allowed to germinate for a year at a nursery. Once saplings are viable, they will be brought to site to be planted in the mitigation area on site. This planting is anticipated the fall of 2025.



### PM10 Berm

Republic Services hosted an Adopt-A-Tree event for employees and their family members. On Saturday, November 14<sup>th</sup>, 2020, at 2:00 pm, Fourteen (14) Coast Live Oak trees were planted in critical areas of the PM10 Berm that was damaged during the Saddleridge Fire. Architerra and JMA (i.e. Rincon) assisted in the planting efforts with their expertise and knowledge of tree growth and ideal planting locations. Republic Services is actively working on hosting another Adopt-A-Tree event in Q2 of 2024 for Arbor day.



### Front Entrance Toe Berm

The proposed project involves the development of a landfill termination berm and construction of a roadway. There were 20 coast live oak trees surveyed within the project footprint by Rincon and project leads. One of the oak trees was dead, and all of them would be removed by the project activities. There are currently 48 coast live oak trees in the landfill's mitigation bank. As noted, the 20 coast live oak trees would be removed by the proposed project, therefore at a mitigation ratio of 2:1, a total of 40 coast live oak trees will be deducted from the landfill's oak tree mitigation bank, leaving 4 oak trees remaining in the bank for future removals at the landfill, if needed. A report detailing the survey is located in Attachment 6.

### Donation to Local Community

As part of community outreach, a rancher in the area asked if he could plant some oak trees on his ranch nearby, and Sunshine Canyon agreed it would be a great idea. Thereafter on September 9<sup>th</sup> 2021, twenty-two (22) coast live oaks and two sycamores were donated from the Sunshine Canyon nursery and given to the rancher. The rancher mentioned the oak trees shall provide shade for his livestock and beautify the surrounding private property and was very pleased with the trees.



Please do not hesitate to contact me at (818) 200-3016 if you have any questions.

Regards,

A handwritten signature in black ink that reads "Paul D. Koster II".

Paul D. Koster II  
Environmental Manager  
Sunshine Canyon Landfill

Cc: Ms. Dorcas Dee Hanson-Lugo, SCL LEA  
Mr. David Thompson, SCL LEA  
Ms. Tiffany Butler, City of Los Angeles, Department of City Planning  
Ms. Devon Zatorski, City of Los Angeles Department of City Planning  
Ms. Ly Lam, City of Los Angeles, Department of City Planning  
Mr. Nicholas Hendricks, City of Los Angeles, Department of City Planning  
Dr. Wen Yang, Los Angeles Regional Water Quality Control Board

Ms. Maria Masis, County of Los Angeles, Department of Regional Planning  
Mr. Wayde Hunter, SCL CAC  
Mr. Jim Aidukus, UltraSystems  
County DPW Landfill Unit

***Attachments***

- |              |   |
|--------------|---|
| Attachment 1 | Rincon Progress Report, 3Q2023 City-Side Sage Mitigation Area   |
| Attachment 2 | Rincon Progress Report, 3Q2023 County-Side Sage Mitigation Area   |
| Attachment 3 | Architerra Design Group, Field Observation Report, South City Sage Mitigation Pilot Project – 3Q2023 with Photo Log |
| Attachment 4 | Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck C Pilot Study, 3Q2023                                  |
| Attachment 5 | Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck B Pilot Study, 3Q2023                                  |
| Attachment 6 | Rincon Sunshine Canyon Landfill Ultimate Entry Improvement Project, Oak Tree Survey Report                          |

***Drawing***

- |           |                                     |
|-----------|-------------------------------------|
| Drawing 1 | Site Vegetation Status and Activity |
|-----------|-------------------------------------|



**ATTACHMENT 1**





**Rincon Consultants, Inc.**

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October 19, 2023

Project No: 21-11086

Paul D. Koster II

Environmental Manager

Republic Services

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Via email: [PKoster@republicservices.com](mailto:PKoster@republicservices.com)

**Subject: Qualitative Monitoring Report for the City-Side Sage Mitigation Area – 3<sup>rd</sup> Quarter 2023  
Sunshine Canyon Landfill, Sylmar, California**

Dear Mr. Koster,

On September 27, 2023, Rincon Consultants performed the third quarter qualitative monitoring of 2023 for the Republic Services City-Side Sage Mitigation Area. This report qualitatively documents the current conditions of the City-Side Sage Mitigation Area with regards to the Landfill's coastal sage scrub restoration efforts. The City-Side Sage Mitigation Area consists of the Lower Deck, Middle Deck, and Upper Deck (including slope between middle and upper decks), which are discussed in detail below.

## General Conditions

### Lower Deck

In 2014, the Landfill initiated a pilot study at the Lower Deck (Deck C) to assess three different seeding applications of native species that included hand broadcasting, imprinting, and hydroseeding. Some container plants were also planted at the Lower Deck, but in low quantities. Germination, establishment, and natural recruitment of native plants ensued; however, the Lower Deck and surrounding area burned during the Saddleridge Fire in October 2019. The fire burned a substantial amount of the Lower Deck, scorching some of the vegetation entirely and partially burning some of the vegetation. The fire also burned the irrigation system, and the vegetation has been without supplemental water ever since.

A substantial amount of regrowth has occurred following the fire, including germination from the seed bank in the soil and resprouting of below- and above-ground plant parts. The Lower Deck appears to have almost fully recovered from the fire. The most prevalent native plant species observed within the Lower Deck in the third quarter of 2023 was California sunflower (*Encelia californica*), followed by big saltbush (*Atriplex lentiformis*), allscale saltbush (*Atriplex polycarpa*), and beardless wild rye (*Elymus triticoides*). Immediately following the Saddleridge Fire, areas that were previously dominated with saltbush species were largely replaced by mats of non-native grasses such as red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), and non-native forbs such as redstem filaree (*Erodium cicutarium*). Native shrub species have resprouted and are almost fully re-established, and have shown signs of continuous growth since the fire.



Exotic annual plant species, which increased slightly between the fourth quarter of 2022 and first quarter of 2023, have remained relatively constant between the first and third quarters of 2023, likely as a result of reduced water availability in the summer and fall months. A majority of exotic annual plant species were observed in their vegetative state or setting seed in the Lower Deck in the second quarter of 2023, with a few mid- to late-season non-native plants (e.g., Russian thistle [*Salsola tragus*]) observed in flower. Exotic annual plants appear to be successfully managed through hand pulling and ongoing weed control activities. However, some native grass species (i.e., beardless wild rye) have also been inadvertently cut and may have been misidentified as non-native species during the weed control activities. Beardless wild rye has shown notable increases in cover between the first and third quarters of 2023, indicating that it is recovering from weeding activities. Non-native plant species cover is anticipated to decrease in the fall and winter months, and increase again in the spring of 2024. The majority of non-native vegetation observed at the Lower Deck in the third quarter of 2023 consisted of non-native annual grasses, short podded mustard (*Hirschfeldia incana*), redstem filaree, tocalote (*Centaurea melitensis*), and Russian thistle.

## Middle Deck

In 2019, the Landfill initiated a pilot study at the Middle Deck (Deck B) to assess germination and establishment rates (e.g., percent cover) of soil imprinting and broadcast seeding methods. Some container plants were also planted at the Middle Deck, but in low quantities. Germination and establishment of native plants ensued; however, there was not much evidence of natural recruitment due to the short timeframe from when the deck was seeded to when it burned during the Saddleridge Fire, which also decimated the irrigation system.

As described in previous monitoring reports, the vegetation composition at the Middle Deck before the Saddleridge Fire was approximately 35 percent of sage scrub plantings/seedlings and 30 percent non-native grasses. The remainder of the area was comprised of bare ground and/or rock substrate. A substantial amount of the planted vegetation on the Middle Deck burned in the fire; however, a large amount has resprouted and appears to have mostly recovered. Native vegetation observed at the Middle Deck consists of woody species such as brittlebush (*Encelia farinosa*), California sunflower (*Encelia californica*), scarlet bugler (*Penstemon centranthifolius*), deerweed (*Acmispon glaber*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), coastal goldenbush (*Isocoma menziesii*), white sage (*Salvia apiana*), coyote brush (*Baccharis pilularis*), and herbaceous species such as beardless wild rye. Of all the observed native species, brittlebush, coastal goldenbush, California sagebrush, and deerweed have shown the greatest increase in abundance since the fire. Almost all native shrub species were in their vegetative state, with the exception of California buckwheat, which was in late-flower.

Non-native plant establishment was also observed within the Middle Deck; however, this establishment is lower than what has been observed within the Lower Deck. Non-native plants observed include exotic grasses such as foxtail barley, Mediterranean grass (*Schismus arabicus*), red brome, and forbs such as short podded mustard, tocalote, redstem filaree, and small flowered iceplant (*Mesembryanthemum nodiflorum*). These species were observed in their vegetative state or setting seed flowering during the third quarter of 2023. In general, non-native weed cover is low to moderate, and has remained constant since the second quarter of 2023. Small flowered iceplant saw the greatest increase in cover of all non-native species. Non-native plants are anticipated to decline in the fall and winter months, and increase again in the spring of 2024.



## Upper Deck

Overall, the Upper Deck (Deck A) continues to be sparsely covered with native vegetation, and total vegetation coverage (native and non-native) is generally sparse due to compacted and poor soil conditions. However, in the southern-center of the Upper Deck, vegetation cover is higher than in other areas and includes native species such as California buckwheat, as well as non-native species such as foxtail barley, redstem filaree, and Australian saltbush (*Atriplex semibaccata*). California goldfields (*Lasthenia californica*), which were observed in flower during the first quarter of 2023, have since set seed (Attachment B, Photograph 6). The presence of vegetation in the southern-center portion of the Upper Deck generally demonstrates that the soils in this area are suitable for supporting vegetation, both native and exotic. However, the soils elsewhere on the Upper Deck appear to be heavily compacted and gravelly, and vegetation coverage in these areas is sparse. Evidence of previous seeding is no longer discernible within the portions of the Upper Deck where plant establishment is visibly poor.

Non-native herbaceous species that dominate the Upper Deck currently include wild oats (*Avena fatua*), Russian thistle, ripgut brome, red brome, short podded mustard, and redstem filaree. California buckwheat is the most dominant native perennial woody plant species on the Upper Deck, and it is currently flowering. However, as described in previous monitoring reports, overall natural recruitment of native plant species within the Upper Deck is low due to poor and dry soil conditions.

Additionally, ground-disturbing activities occurred in the upper deck between the second and third quarters of 2023. An approximately 300-foot-long, 250-foot-wide area was cleared in the southeastern portion of the upper deck (Attachment B, Photographs 8-9). This area is now mostly unvegetated, with some scattered establishment of non-native species such as short podded mustard.

**Table 1 Summary of Observations in the Lower, Middle, and Upper Decks in Quarter 3, 2023**

Location	Native Plant Vegetation			Exotic Plant Vegetation		
	Native Plant Cover	Plant Health Issues	Height of Native Species	Native Species Richness	Exotic Plant Cover	Phenological State
Lower Deck	Moderate-High	Recovering from fire, drought	12"-48"	Shrubs: Moderate Herbs: Low	Moderate	Vegetative and setting seed
Middle Deck	Moderate	Recovering from fire, drought	12"-48"	Shrubs: Moderate Herbs: Low	Low to Moderate	Vegetative and setting seed
Upper Deck	Minimal	Poor soils, drought	12"-24"	Shrubs: Low Herbs: Low	High	Vegetative and setting seed

## Recommendations

### Lower and Middle Decks

#### Weed Control

- Implement a year-round weed control program to control non-native species. The weed control program should incorporate both chemical and mechanical control practices and should be



initiated in the late winter to early spring prior to seed set, which typically occurs between the months of February and April. This will prevent further dispersal of exotic plants within the Lower and Middle Decks.

- Following weed control, any dead material harboring seeds should be removed to an off-site location to the extent feasible. Dense areas covered with red brome, ripgut brome, foxtail barley, and short podded mustard should be controlled by removing flowers and immature seeds heads before they drop. These areas should be reseeded with native herbaceous species that are known to grow well in the Lower (and Middle) Decks, such as beardless wild rye and yarrow (*Achillea millefolium*).
- A qualified biologist should be present during weed control activities or flag the native plants that should remain prior to weed control activities to ensure only non-native species are removed and to minimize damage to native plant species to the greatest extent feasible. If a contractor is responsible for weed control, the contractor should verify with the Landfill that all personnel are experienced in native and non-native plant identification.
- Weeding is best performed just before, or at the onset of flowering, but before seed set. If seeds are already present, additional care should be taken to remove the plants with the seeds attached, or the seeds should be removed from the plants prior to the plant removal. A consistent weed abatement schedule will reduce the potential for non-natives to set seed. Soil disturbance should be limited by hand weeding, wherever possible, and weeds should be disposed of off-site to avoid any reinfestation through reseeding or from plant propagules. If hand weeding is not possible, the monitoring biologist should be consulted regarding the appropriate method of weed removal. For example, using mechanical equipment to remove flowers and immature seed heads may be appropriate where dense mats of non-native grasses have established. If there continues to be high incidence of weed infestation, weed control may need to be increased to every four to six weeks. Otherwise, weeds should continue to be monitored and controlled on a quarterly basis.

## Irrigation

- The Lower and Middle Decks burned during the Saddleridge Fire in October 2019. The fire burned the irrigation system that was installed prior to the fire, and the vegetation has been without supplemental water ever since. While southern California received above-average rainfall in the winter of 2022 and spring of 2023, supplemental irrigation may be necessary if native plants show signs of desiccation stress. If indicators of drought stress are observed, it is recommended that the irrigation system within the Lower and Middle Decks are re-installed to promote germination and growth of native plant species.

## Prohibit Access

- Continue to prohibit vehicle access to mitigation areas.





## Upper Deck

### Improve Root Zone and Soil Conditions

- Continue to investigate ways to import the soil layer to improve the root penetration and saturation zone to enable plant growth in heavily compacted areas. Consider applying soil in random undulations or uneven mounds to improve soil porosity and filtration and to control soluble salts from leaching from existing layer.
- Prior to seeding (broadcast, hydroseeding, or drilling) of native species, incorporate a soil amendment or mulch with high organic content by tilling it into the top 12 inches of the existing compacted soils to improve soil texture, drainage, porosity, and aerobic conditions. If an organic mulch or soil amendment is not feasible or available, incorporate available soil from borrow sites within the landfill that have the appropriate soil properties, so long as these borrowed soils have been determined to not have toxic conditions, such as boron or high salinity.

### Plant Natives in Areas Dominated with Non-Natives

- The vegetated areas on the Upper Deck that are currently dominated with non-native annual species have decent soil-texture conditions. These areas are less compacted than adjacent areas that are gravelly and mostly devoid of vegetation. In general, the soil texture within the vegetated areas with non-native vegetation is friable down to approximately 8-12 inches in depth. Various planting methods (i.e., planting container plants and hydroseeding) may be used to re-establish native plants on the Upper Deck where non-natives currently dominate.

### Weed Control

- Implement a year-round weed control program to control non-native species. The weed control program should incorporate both chemical and mechanical control practices. Following weed control, any dead material harboring seeds should be removed to an off-site location to the extent feasible.
- A qualified biologist should be present during weed control activities or flag the native plants that should remain prior to weed control activities to ensure only non-native species are removed and to minimize damage to native plant species to the greatest extent feasible. A biologist should verify that the weed removal methodology does not encourage re-colonizing of non-native plant species.
- Weeding is best performed just before, or at the onset of flowering, but before seed set. If seeds are already present, additional care should be taken to remove the plants with the seeds attached, or the seeds should be removed from the plants prior to the plant removal. A consistent weed abatement schedule will reduce the potential for non-natives to set seed. Soil disturbance should be limited by hand weeding, wherever possible, and weeds should be disposed of off-site to avoid any reinfestation through reseeding or from plant propagules. If hand weeding is not possible, the monitoring biologist should be consulted regarding the appropriate method of weed removal. For example, using mechanical equipment to remove flowers and immature seed heads may be appropriate where dense mats of non-native grasses have established. If there continues to be high incidence of weed infestation, weed control



frequency may need to be increased. Otherwise, weeds should continue to be monitored and controlled on a quarterly basis.

## Reseeding

- Following the application of soil mounds as previously described, apply native seed (by means of broadcast seeding, hydroseeding or drilling) during the rainy season, between December and March, or prior to a forecasted rain event.

## Prohibit Access

- Continue to prohibit vehicle access to mitigation areas.

Thank you for the opportunity to work with you on this important project. Please contact Greg Ainsworth if you have questions concerning the contents of this report. He may be reached by telephone at (818) 564-5544, or by email at [gainsworth@rinconconsultants.com](mailto:gainsworth@rinconconsultants.com).

Sincerely,

**Rincon Consultants, Inc.**

Greg Ainsworth  
Natural Resources Director

Kyle Gern  
Biologist

## Attachments

- Attachment A    Figure 1. Photograph Locations  
Attachment B    Site Photographs

# Attachment A

---

Figure 1. Photograph Locations

Figure 1 Photograph Locations



Imagery provided by Microsoft Bing and its licensors © 2023.  
Photo Locations have been georeferenced and are approximate locations.

21-11086 B10  
Fig 2 City Sage - Photo Locations

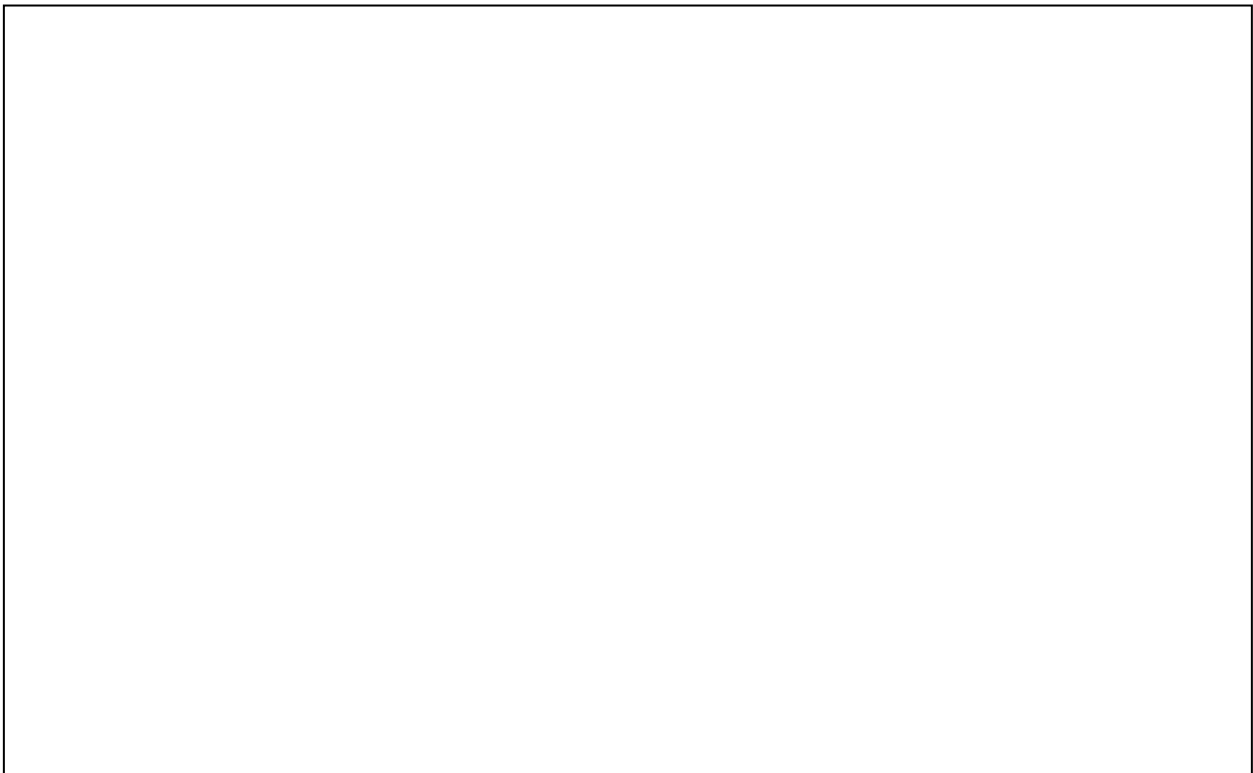
# Attachment B

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Site Photographs



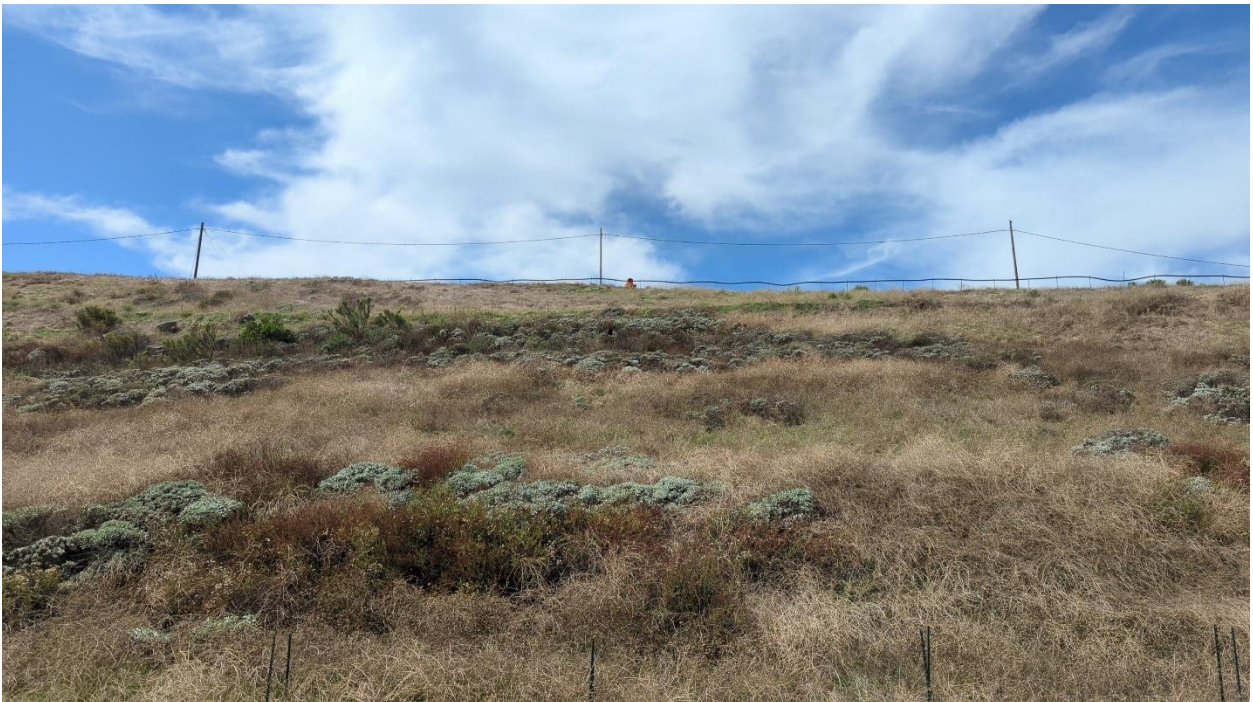
**Photograph 1.** Facing west at Lower Deck. View of eastern limits dominated by *Atriplex* spp. and California sunflower (September 27, 2023).



**Photograph 2.** Lower Deck from western boundary. Photograph was corrupted; therefore, no photograph is provided (September 27, 2023).



**Photograph 3.** Facing east at the Middle Deck from western boundary (September 27, 2023).



**Photograph 4.** Facing west at the easterly-facing slope located between the Middle and Upper Decks. The vegetation on the slopes between the Upper Deck is dominated by California buckwheat (currently vegetative) and non-native annual grasses (September 27, 2023).



**Photograph 5.** Facing northeast at the Upper Deck. This area is compacted and gravelly and continues to be problematic for supporting vegetation. Non-native annual grasses and forbs, and California buckwheat shrubs are evident in the background (September 27, 2023).



**Photograph 6.** Facing southwest at the Upper Deck. This area is primarily dominated by wild oats, brome grasses, redstem filaree, and short podded mustard (September 27, 2023).





**Photograph 7.** Facing southeast at the western portion of the Upper Deck. This area is dominated by short podded mustard, Australian saltbush, and Russian thistle (September 27, 2023).



**Photograph 8.** Portion of Upper Deck where ground-disturbing activities occurred between the second and third quarters of 2023, facing south. This is located in the southeastern portion of the Upper Deck (September 27, 2023).



**Photograph 9.** Portion of Upper Deck where ground-disturbing activities occurred between the second and third quarters of 2023, facing north. This is located in the southeastern portion of the Upper Deck (September 27, 2023).

**ATTACHMENT 2**





**Rincon Consultants, Inc.**

180 North Ashwood Avenue  
Ventura, California 93003

805 644 4455 OFFICE AND FAX

info@rinconconsultants.com  
www.rinconconsultants.com

October 19, 2023  
Project No: 21-11086

Paul D. Koster II  
Environmental Manager  
Republic Services  
14747 San Fernando Road  
Sylmar, California 91342

Via email: [PKoster@republicservices.com](mailto:PKoster@republicservices.com)

**Subject: Qualitative Monitoring Report for the County-Side Sage Mitigation Area – 3<sup>rd</sup> Quarter 2023  
Sunshine Canyon Landfill, Sylmar, California**

Dear Mr. Koster,

On September 27, 2023, Rincon Consultants performed the third quarter qualitative monitoring of 2023 for the County-Side Sage Mitigation Area (mitigation area). This report documents the current conditions of the mitigation area.

## General Conditions

### Hydroseeded Areas

Germination and plant growth from hydroseeding that occurred several years ago is not discernible in some portions of the mitigation area. Conditions in the mitigation area remain relatively unchanged since the second quarter of 2023. Areas that are moderately covered with native and non-native vegetation are concentrated in the southeastern portion of the mitigation area. The northern and upper portions of the mitigation area continue to be bare and problematic for establishment of vegetation, primarily because of highly eroded soils, steep slopes, and Boron-toxic soils (See *Recommendations* section). However, there are some small patches of vegetation that have established in the northern-central portion of the mitigation area and include shrubs such as California buckwheat (*Eriogonum fasciculatum*), deerweed (*Acmispon glaber*), and California sagebrush (*Artemisia californica*).

Native plant coverage is similar to the previous quarterly monitoring reports. The southern half of the mitigation area has relatively good coverage of native species, mostly California buckwheat and California sunflower (*Encelia californica*). Established laurel sumac (*Malosma laurina*) individuals are present as well. A majority of native shrub species had already set seed, while California buckwheat was flowering during the monitoring event. The native vegetation coverage is assumed to be a direct result of seeding; however, some natural recruitment of native plant species is apparent based on the various sizes of shrubs and the presence of native shrub seedlings within the understory. Due to rocky (hydrophobic) soil conditions, soil erosion and Boron-toxic soils on the northern-half and upper portions of the mitigation area, minimal plant growth is present. Due to the lack of plant establishment in these areas, erosional features have become prominent, especially following above-average rainfall events during the winter of 2022 and spring of 2023.

Annual non-native grasses and forbs currently dominate the understory and serve as ground cover in most of the vegetated areas. Brome grasses (*Bromus* spp.), wild oats (*Avena fatua*), short podded



mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and tocalote (*Centaurea melitensis*) are the most dominant non-native species present, and comprise approximately 25 to 30 percent of the total cover. California buckwheat dominates the native vegetation coverage with California sagebrush and California sunflower present as co-dominants. Native species comprise of approximately 75 to 80 percent of the native vegetation cover in areas where vegetation is present. Other less dominant native species observed include golden bush (*Ericameria linearifolia*), coyote brush (*Baccharis pilularis*), black sage (*Salvia mellifera*), deerweed, and laurel sumac.

## Seed Mix Areas

Like the hydroseeded areas, germination and plant growth from the seed mix areas that occurred several years ago is not discernible. As described in previous monitoring reports, a substantial portion of the mitigation area continues to be bare and problematic, which has inhibited the establishment and growth of vegetation. However, in areas where vegetation is present, there is a moderate coverage of native species (e.g., California buckwheat and California sunflower).

As described in the *Hydroseeded Areas* discussion above, a moderate cover of native plants exists within vegetated areas in the southeastern portion of the mitigation area, and annual non-native grasses and forbs currently dominate the understory.

## Native Plant Conditions

The plant cover rating indicated further below in



Table 1 applies where vegetation is dominant in the southeastern portion of the mitigation area. Vegetation cover is moderate in the southeastern portion of the mitigation area and sparse along the upper slopes where rocky and eroded soil conditions occur, and in the northern portion of the mitigation area due to problematic soil conditions. As a result, most of the northern and upper portions of the mitigation area continue to have minimal coverage. Native vegetation coverage is good in vegetated areas and non-native plant cover is relatively low. Bare areas and non-native annual grasses are intermixed; however, as noted the northern and upper areas continue to be mostly bare where erosion and rocks are apparent.

California buckwheat is dominant and California sunflower is sub-dominant. Establishment of vegetation is problematic due to rocky soils with poor soil structure, and Boron toxicity has made plant growth (i.e., seed germination and recruitment) difficult. The species richness is low to medium within vegetated areas; however, species richness is considerably low when considering the entire county-sage mitigation area.

## Exotic Plant Conditions

Annual non-native weed species consist primarily of brome grasses, wild oats, and mustards, which are mostly in their vegetative state and/or setting seed. Additionally, some mid- to late-season non-native plants (e.g., Russian thistle) are currently in their flowering state. Non-native plant cover is anticipated to decline in the fall and winter months, and increase again in the spring of 2024. Other established weeds that were observed include redstem filaree (*Erodium cicutarium*) and telegraph weed (*Heterotheca grandiflora*; a weedy native plant species).



**Table 1 Summary of Native and Exotic Plant Cover in the County-Side Sage Mitigation Area in Quarter 3, 2023**

Location	Native Plant Vegetation				Exotic Plant Vegetation	
	Native Plant Cover	Plant Health Issues	Height of Native Species	Native Species Richness	Exotic Plant Cover	Phenological State
County-Side Sage Mitigation Area	Moderate	Drought	12"-36"	Medium	Moderate	vegetative, in flower, and setting seed

## Recommendations

The following recommendations within the County-Side Sage Mitigation are suggested based upon the field survey performed in the third quarter of 2023.

- **Create Benches.** Consider creation of several benches throughout the mitigation area to control soil erosion and to improve soil conditions to improve plant establishment and seed dispersal. This technique has been widely used on steep slopes and in areas where soil erosion is problematic. This technique also allows for opportunities to introduce a high-quality soil layer above the poor soils that exist.
- **Reseed and Plant Container Plants With Irrigation.** If creation of benches is feasible, planting methods should include hydroseeding, broadcast seeding, and/or imprinting no more than 10 days prior to a forecasted rain event, unless an irrigation system is installed. Planting with container plants with supplemental irrigation should also be considered.
- **Use Soil Amendments.** Incorporate a soil amendment or mulch with high organic content in select areas as determined by a restoration specialist.
- **Signage.** Install signs indicating that the area is undergoing revegetation.
- **Weed Control.** Continue weed control program as needed on a quarterly basis.
- **Prohibit Access.** Prohibit equipment access to mitigation area.

Thank you for the opportunity to work with you on this important project. Please contact Greg Ainsworth if you have questions concerning the contents of this report. He may be reached by telephone at (818) 564-5544, or by email at [gainsworth@rinconconsultants.com](mailto:gainsworth@rinconconsultants.com).

Sincerely,

**Rincon Consultants, Inc.**

Greg Ainsworth  
 Natural Resources Director

Kyle Gern  
 Biologist

## Attachments

- Attachment A Figure 1. Photograph Locations
- Attachment B Site Photographs

# Attachment A

---

Figure 1. Photograph Locations





# Attachment B

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Site Photographs



**Photograph 1.** Facing southwest at the County-Side Sage Mitigation Area (September 27, 2023).



**Photograph 2.** Facing northwest at the northern portion of the County-Side Sage Mitigation Area where plant growth has been problematic due to poor soil conditions (September 27, 2023).

**ATTACHMENT 3**





**ARCHITERRA DESIGN GROUP**

**FIELD OBSERVATION REPORT**

DATE OF VISIT:	10/18/22
<b>PROJECT:</b>	<b>Sunshine Canyon Mitigation Sites</b>
PROJECT NUMBER:	1214
PROJECT MANAGER:	Gregg Denson
SITE INSPECTION #:	
PURPOSE OF VISIT:	Review site conditions/Photo Catalog
TIME OF SITE VISIT:	11:40pm
WEATHER/TEMPERATURE:	Sunny 90° - Winds 5-10 mph
ESTIMATED % COMPLETED:	100%
CONFORMANCE WITH SCHEDULE (+, -)	

WORK IN PROGRESS:	Weed abatement / Monitoring Period /Construction Observation
PRESENT ON SITE:	Gregg Denson

A site visit walk and evaluation has been completed to review the Venturan CSS vegetation establishment on the Trial Site (Deck C), Deck B and County Mitigation Slopes. Additional items noted during the site visit are as follows:

**City-Side Sage Mitigation (Trial Site Deck C):**

- The weeding abatement over the last quarter has been minimal at best. It is obvious that many of the targeted weeds noted in the last report were not removed from the deck. That fact, combined with the unusual abundance of rain during the late summer months catapulted weed growth, with weeds the opportunity to flower a season earlier than they normally would. Russian Thistle (*Salsola* spp.), Horseweed (*Erigeron canadensis*), Tree Tobacco (*Nicotiana glauca*), and Shortpod Mustard (*Hirschfeldia incana*) are the most actively growing invasive weeds on Deck C. Typically flowering of Shortpod Mustard occurs in late winter after the arrival of precipitation. Conversely, the native Venturan Coastal Sage Scrub (VCSS) has also grown during a normally dormant period of the growing season.
- It is imperative that the deck be cleaned of these invasive weeds as soon as possible to minimize early season seeding. It is also vital that the surrounding PM10 Berm and other perimeter edges receive a similar treatment in the removal of these weeds. Eucalyptus (*Eucalyptus* sp.), California Pepper Trees (*Schinus molle*), and Saltcedar (*Tamarisk* sp.) seedlings have established on the deck. This grass should be removed immediately before it becomes an issue.
- Cooler temperatures, along with heavier summer storms (Tropical Storm Hilary), have provided additional soil moisture to support native plants and have allowed them to wake up from that dormancy period a few months earlier than usual. Emerging growth is

evident amongst the groupings of Coast Sunflower (*Encelia californica*), Mexican Elderberry (*Sambucus mexicana*), California Sagebrush (*Artemisia californica*), Saltbush (*Atriplex* sp.), and Deerweed (*Acmispon glaber*). When comparing photos from the Photo Stations of 2022, it is obvious that there has been increased growth of many of the VCSS species. VCSS canopy closure of the open barren portions of the deck has improved greatly.

- Past maintenance of scalping the dormant native Creeping Rye Grass (*Leymus triticoides*) has allowed an increase of Horseweed (*Erigeron canadensis*) to establish. This weed should be removed as soon as possible. The native Creeping Rye Grass should be left to reestablish without cutting so that it will shade out potential weeds.
- Upon inspection of the PM10 Coast Live Oak trees, many are established with canopies extending up to 15'-20'. Those that died or that were severely damaged by the Saddleridge Fire, have not recovered.
- Recent grading efforts at the north west corner of Deck C should be stabilized with crushed recycled asphalt or graded roadbed to minimize ponding and rutting at the vehicular access road.



Shortpod Mustard (*Hirschfeldia incana*)



Established Russian Thistle (*Salsola* spp.) at flowering stage



Shortpod Mustard (*Hirschfeldia incana*) intermixed with new seedlings of Coast Sunflower (*Encelia californica*),



Tree Tobacco (*Nicotiana glauca*)







Horseweed (*Erigeron canadensis*) established and flowering within the swales where Creeping Wild Rye previously existed.





Shortpod Mustard (*Hirschfeldia incana*) seedlings



Shortpod Mustard (*Hirschfeldia incana*) at east end of Deck C



Eucalyptus (*Eucalyptus* sp.) seedling at Deck C



New pad location for mobile weathering station trailer



Coast Sunflower (*Encelia californica*) seedlings established under dead Saltbush



New growth emerges from Coast Sunflower (*Encelia californica*)



New Saltbush (*Atriplex* sp.) seedlings



Recently graded areas surrounding Deck C



Recent grading near new mobile weather station trailer





Newly graded road and slopes as part of Phase 3 Entrance Improvement Project



### City-Side Sage Mitigation (Trial Site Deck B):

- Weed growth on Deck B is in better shape than Deck C. However, there has been no effort to remove the expansion of Slenderleaf Iceplant (*Mesembryanthemum nodiflorum*). Currently this invasive groundcover is dormant, but soon will begin actively growing and spreading throughout the deck. Treatment of control may require application of herbicides, cultivation or a combination of both.
- The Venturan Coastal Sage Scrub has quickly established and the trail site is filling in with less barren portions of the deck. There is a good species diversity and the planting is responding well with vigorous growth, flowering and seeding.



Flowering Menzie's Goldenbush (*Isocoma menziesii*)





Establishment of VCSS on previous access road



Invasive California Pepper Tree (*Schinus molle*)



Invasive Smilo Grass (*Piptatherum miliaceum*)



Invasive Salt Cedar (*Tamarix* species)

ARCHITERRA DESIGN GROUP  
10221-A TRADEMARK STREET, RANCHO CUCAMONGA, CA 91730  
Phone (909) 484-2800, Fax (909) 484-2802



New Black Sage (*Salvia mellifera*) seedling



Butterfly resting on flowering Coyote Bush (*Baccharis pilularis*)

**City-Side Sage Mitigation (Deck A):**

- Soils testing was recently completed for the fill dirt area of Deck A. Results are favorable for seeding of VCSS native species with some minor soil amendment recommendations. Below are images of the fill-dirt site; Soils testing is included at end of report.



Existing conditions of Deck A





Anaheim Office  
Lab No: 23-262-0010  
September 26, 2023

Architerra Design Group, Inc.  
10221-A Trademark St.  
Rancho Cucamonga, CA 91730

Attn: Gregg Denson

**Project: Sunshine Canyon – Sylmar Job# 1214**

Attached are the results of the analysis performed on 3 soil samples that were collected from the above mentioned project site by the client from a 6-12-inch depth and received by our laboratory on 09/19/2023. These samples were analyzed for nutrient levels, agricultural suitability, and physical characteristics in preparation for seeding.

**Analytical Results and Comments**

The reaction of sample #1 is neutral at 7.0, which is within the preferred range for most plants and no pH adjustment is recommended. Sample #2 is moderately alkaline at 7.7 and #3 is slightly alkaline at 7.5 on the pH scale. Qualitative lime is high in #3 indicating that the pH is strongly buffered in the alkaline range. Free lime is favorably low in #1 and #2. Most CA natives have some tolerance for alkaline soil conditions; however, incorporation of soil sulfur in the #2 location would adjust the pH downward toward the preferred near neutral range to the depth of incorporation. Sulfur can also be incorporated in the #3 location but sulfur is expected to be less effective due to the high level of free lime present.

Salinity (ECe), soluble sodium, and soluble boron are favorably low. The sodium adsorption ratios (SAR) are favorably low, indicating that the sodium in this sample is properly balanced by calcium and magnesium.

In terms of fertility, potassium is sufficient in #3. Calcium and magnesium are sufficient in all samples. In the minor element group, copper, zinc, and iron are well supplied in #1. The remaining nutrients are low.

The texture of the less than 2mm fraction of the #1, #2, and #3 samples is 'loamy sand', 'sandy clay loam', and 'sandy loam' respectively according to the USDA classification system. Gravel in the 2-12 mm range comprises 25% of the #2 soil by dry weight classifying the material as 'gravelly'. Gravel in the 2-12 mm range comprises 37.6% of the #3 soil by dry weight classifying the material as 'very gravelly'. Elevated gravel content, in combination with a relatively wide distribution of particle sizes in the sand category, indicates that the #2 and #3 soils will have a tendency to consolidate and compact. This can impede drainage, aeration, and root development. Also keep in mind that the gravel will decrease rooting space. Soil physical properties can be improved by incorporating organic amendment at the provided rate and depth but only to a point. The estimated water infiltration rate of the #1 material is 0.44 inches per hour. The estimated water infiltration rate of the #2 and #3 materials is 0.23 inches per hour. The actual rates of water infiltration may vary with the degree of soil compaction. Organic content is low in the range of 0.94-1.24% on a dry weight basis.



Page 2  
Architerra Design Group, Inc.  
September 26, 2023

#### Recommendations

California native plants are often installed without the use of fertilizers and amendments, since they are well adapted to low fertility soils. However, a slow release form of nitrogen can be broadcast over the area of concern and incorporated into the upper 6 inches of existing soil or included in the hydroseed slurry in order to aid establishment. A slow release nitrogen source such as Nitroform (39-0-0,28%, WIN) would be a good option at the rate of 8 lbs. per 1000 sq. ft.

Organic content can be improved through the incorporation of 2 cu. yards of nitrogen fortified organic amendment per 1000 sq. ft. to a depth of 6 inches. Although these plants do have some tolerance for alkaline soil conditions, a downward pH adjustment would improve nutrient availability. If a downward pH adjustment is desired in the #2 and #3 locations, this can be accomplished by incorporating soil sulfur at a rate of 10 lbs. per 1000 sq. ft. to a depth of 6 inches. No additional amendments are suggested for these types of plants.

#### Maintenance Fertilization for California Native Plants

Uniformly broadcast a complete, but low phosphorous, fertilizer. One option is Apex® 21-5-6 Super Iron Topdress which can be applied at the rate of 5 lbs. per 1000 sq. ft. This application should occur 60-90 days after planting if the plants are installed this fall or winter. Afterwards, fertilizer applications can be based entirely on color and growth performance. When needed thereafter, native plants can be maintained by broadcasting sulfur coated urea at the rate of 2.5 lbs. per 1000 sq. ft..

As noted above, some of the micronutrients are below optimum. When these nutrients are low, especially in an alkaline soil, deficiencies can sometimes show in the plants. If deficiencies show once plants have become established, they may be addressed upon the first sign of deficiency. Symptoms of manganese deficiency may be seen as a general loss of color in the young leaves, followed by yellowing between veins and brownish-black spots appearing. Iron and zinc deficiency symptoms are often characterized by yellow, almost white, interveinal chlorosis on the youngest growth. If these symptoms are apparent once plants are established, then application of iron, zinc, and/or manganese chelate at the manufacturer's label rate may improve appearance. Chelates are generally more effective on alkaline soils than some of the other forms of trace elements.

If we can be of any further assistance, please feel free to contact us.

A handwritten signature in black ink, appearing to read "J. Kiefer".

Joe Kiefer, CCA

Architerra Design Group, Inc.  
10221-A Trademark Street  
Rancho Cucamonga CA 91730



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Anaheim, CA 92807  
Main 714-282-8777 Fax 714-282-8575  
www.waypointanalytical.com

Project : Sunshine Canyon - Sylmar  
Job# 1214

Report No : 23-262-0010  
Purchase Order :  
Date Recd : 09/19/2023  
Date Printed : 09/22/2023  
Page : 1 of 1

**COMPREHENSIVE SOIL ANALYSIS**

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO <sub>3</sub> -N ppm	NH <sub>4</sub> -N ppm	PO <sub>4</sub> -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime		Sufficiency Factors											
Deck A #1	13	7.0	0.7	4	3	5	23	543	133	0.9	3.8	1	20	0.94	01500
	38	Low		0.3	0.3	0.8	1.5	1.8	2.0	0.2	1.1				
Deck A #2	19	7.7	1.3	8	5	2	91	2580	805	0.9	1.4	1	7	1.03	01501
	199	Low		0.3	0.1	0.4	0.9	2.2	0.4	0.2	0.1	0.1			
Deck A #3	17	7.5	2.3	5	5	2	141	1690	345	0.8	2.5	1	8	1.24	01502
	108	High		0.3	0.1	1.0	1.0	1.5	0.6	0.5	0.1	0.2			

Saturation Extract Values						SAR	Gravel %		Percent of Sample Passing 2 mm Screen					USDA Soil Classification	Lab No.
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO <sub>4</sub> meq/L		Coarse 5 - 12	Fine 2 - 5	Sand			Silt .002-.05	Clay 0-.002		
3.5	2.4	3.1	0	0.26	0.6	1.8	0.2	0.6	1.8	28.4	55.2	8.7	5.8	Loamy Sand	01500
6.4	5.5	6.1	0	0.36	7.3	2.5	11.4	13.6	9.6	9.6	36.2	22.7	21.8	Gravelly Sandy Clay Loam	01501
21	9.7	6.1	0.1	0.26	21	1.6	19.8	17.8	12.0	11.4	42	16.7	17.8	Very Gravelly Sandy Loam	01502

Signed: Gregg Denson

Date: 10/24/23

DISTRIBUTION

Republic Services



Contractor



Project Manager (Gregg Denson)



Other \_\_\_\_\_





**Photo Station #1 - October 2022 (North)**



**Photo Station #1 - October 2023 (North)**



**Photo Station #1 - October 2022 (East)**



**Photo Station #1 - October 2023 (East)**



**Photo Station #1 - October 2022 (West)**



**Photo Station #1 - October 2023 (West)**





**Photo Station #2 - October 2022 (North)**



**Photo Station #2 - October 2023 (North)**



**Photo Station #2 - October 2022 (North)**



**Photo Station #2 - October 2023 (North)**



**Photo Station #2 - October 2022 (West)**



**Photo Station #2 - October 2023 (West)**



**Photo Station #3 - October 2022 (North)**



**Photo Station #3 - October 2023 (North)**



**Photo Station #3 - October 2022 (East)**



**Photo Station #3 - October 2023 (East)**



**Photo Station #3 - October 2022 (South)**



**Photo Station #3 - October 2023 (South)**



**Photo Station #4 - October 2022 (North)**



**Photo Station #4 - October 2023 (North)**



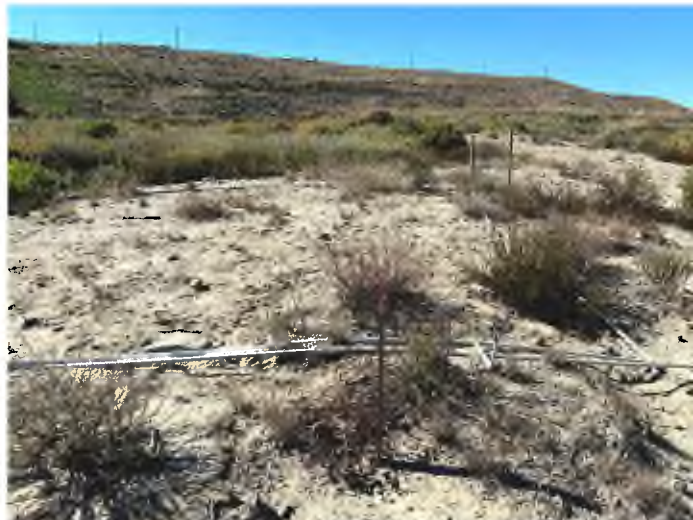
**Photo Station #4 - October 2022 (East)**



**Photo Station #4 - October 2023 (East)**



**Photo Station #4 - October (West)**



**Photo Station #4 - October (West)**



**Photo Station #5 - October 2022 (North)**



**Photo Station #5 - October 2023 (North)**



**Photo Station #5 - October 2022 (East)**



**Photo Station #5 - October 2023 (East)**



**Photo Station #5 - October 2022 (West)**



**Photo Station #5 - October 2023 (West)**



**Photo Station #6 - October 2022 (North)**



**Photo Station #6 - October 2023 (North)**



**Photo Station #6 - October 2022 (East)**



**Photo Station #6 - October 2023 (East)**



**Photo Station #6 - October 2022 (West)**



**Photo Station #6 - October 2023 (West)**



**Photo Station #1 - October 2022 (East)**



**Photo Station #1 - October 2023 (East)**



**Photo Station #1 - October 2022 (North)**



**Photo Station #1 - October 2023 (North)**



**Photo Station #1 - October 2022 (West)**



**Photo Station #1 - October 2023 (West)**



**Photo Station #2 - October 2022 (East)**



**Photo Station #2 - October 2023 (East)**



**Photo Station #2 - October 2022 (North)**



**Photo Station #2 - October 2023 (North)**



**Photo Station #2 - October 2022 (South)**



**Photo Station #2 - October 2023 (South)**



**Photo Station #3 - October 2022 (East)**



**Photo Station #3 - October 2023 (East)**



**Photo Station #3 - October 2022 (North)**



**Photo Station #3 - October 2023 (North)**



**Photo Station #3 - October 2022 (West)**



**Photo Station #3 - October 2023 (West)**





**Photo Station #4 - October 2022 (South)**



**Photo Station #4 - October 2023 (South)**



**Photo Station #4 - October 2022 (East)**



**Photo Station #4 - October 2023 (East)**



**Photo Station #4 - October 2022 (West)**



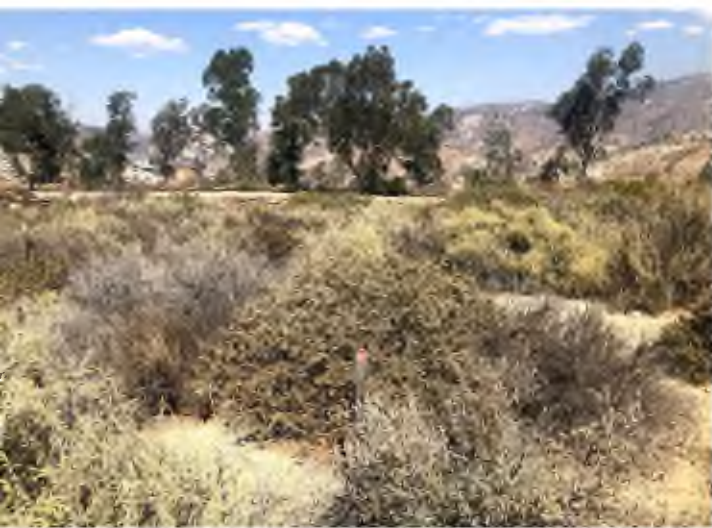
**Photo Station #4 - October 2023 (West)**



**Photo Station #5 - October 2022 (East)**



**Photo Station #5 - October 2023 (East)**



**Photo Station #5 - October 2022 (North)**



**Photo Station #5 - October 2023 (North)**



**Photo Station #5 - October 2022 (West)**



**Photo Station #5 - October 2023 (West)**



**Photo Station #6 - October 2022 (East)**



**Photo Station #6 - October 2023 (East)**



**Photo Station #6 - October 2022 (North)**



**Photo Station #6 - October 2023 (North)**



**Photo Station #6 - October 2022 (West)**



**Photo Station #6 - October 2023 (West)**



**Photo Station #7 - October 2022 (South)**



**Photo Station #7 - October 2023 (South)**



**Photo Station #7 - October 2022 (West)**



**Photo Station #7 - October 2023 (West)**



**Photo Station #7 - October 2022 (North)**



**Photo Station #7 - October 2023 (North)**



**Photo Station #9 - October 2022 (East)**



**Photo Station #8 - October 2023 (East)**



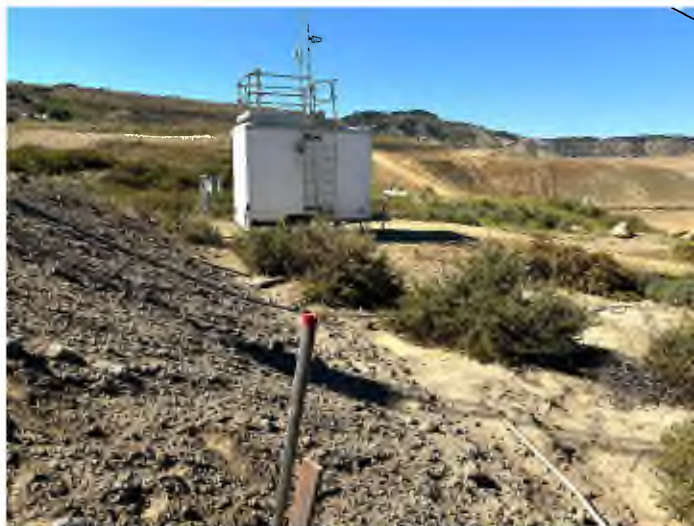
**Photo Station #9 - October 2022 (North)**



**Photo Station #9 - October 2023 (North)**



**Photo Station #9 - October 2022 (West)**



**Photo Station #9 - October 2023 (West)**

**ATTACHMENT 4**





**Rincon Consultants, Inc.**

180 North Ashwood Avenue  
Ventura, California 93003

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October 20, 2023  
Project No: 21-11086

Paul D. Koster II  
Environmental Manager  
Republic Services  
14747 San Fernando Road  
Sylmar, California 91342  
Via email: [PKoster@republicservices.com](mailto:PKoster@republicservices.com)

**Subject: Coastal Sage Scrub City South C Trial Plot 3<sup>rd</sup> Quarter 2023 Monitoring Report, Sunshine Canyon Landfill**

Dear Mr. Koster,

This monitoring report has been prepared by Rincon Consultants, Inc. (Rincon) to inform Republic Services on the status of coastal sage scrub restoration at the Sunshine Canyon Landfill located at 14747 San Fernando Road, Sylmar, California 91342. Specifically, this letter report serves to document the abundance of vegetation at the Coastal Sage Scrub City South C Trial Plot in the third quarter of 2023.

## Methods

On September 27, 2023, Rincon Consultants monitored the Coastal Sage Scrub City South C Trial Plot (trial plot) at the Sunshine Canyon Landfill, which constitutes the third quarter of monitoring for 2023. The sample methodology generally followed the *Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill* (JMA, April 23, 2014). Quadrat sampling of the Coastal Sage Scrub City South C Trial Plot consists of four 50-meter<sup>2</sup> quadrats that are randomly sampled within each of the following three seeded areas: hydroseed, imprint, and hand broadcast. The twelve quadrats sampled were randomly selected prior to the first initial monitoring event from a grid that was placed over the entire trial plot, and each quadrat was given a letter (A-L) and delineated in the field with wooden stakes (Attachment A).

As shown in Attachment A, three different seeding methods were used as follows:

- Hydroseed (Quadrats A, B, C, and D)
- Imprint (Quadrats E, F, G, and H)
- Hand broadcast (Quadrats I, J, K, and L)

## Absolute Cover

The following qualitative data was collected in each quadrat to determine the absolute cover of native and non-native herbaceous and woody species:



- **Percent basal cover (shrubs).** Visual estimate of the amount of basal cover within each quadrat for all shrub species.
- **Percent basal cover (herbs).** Visual estimate of the amount of basal cover within each quadrat for all herb species.
- **Percent bare ground.** Visual estimate of the amount of available bare ground with no vegetation, but suitable for plant growth.
- **Percent rock or other.** Visual estimate of the amount of unavailable ground for supporting plant growth. Inhibitors generally included rocks and boulders, irrigation lines and valve boxes, and mulch.
- **Percent canopy.** Visual estimate of the percent canopy of each shrub and herbaceous species.
- **Photographs.** A photograph was taken from the southwest corner (facing northeast) of each quadrat.

## Percent Cover

The following quantitative data was collected in each quadrat to determine the percent cover of native and non-native species.

- **Point intercept method.** Sampling began at the southwest corner of each quadrat and continued around the quadrat in a clockwise direction. The species located precisely at every meter point was tallied, including areas of bare ground, rock and other.

## Field Results

Below are the average data collected for each planting method.

### Absolute Cover (Qualitative)

#### *Hydroseed – Quadrats A, B, C, and D (average)*

- Percent basal cover (shrubs) – 20%
- Percent basal cover (herbs) – 5%
- Percent bare ground – 31%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 58%
- Percent canopy (herbs) – 20%

#### *Imprint – Quadrats E, F, G, and H (average)*

- Percent basal cover (shrubs) – 20%
- Percent basal cover (herbs) – 5%
- Percent bare ground – 41%
- Percent rock or other – 5%
- Percent canopy (shrubs) – 53%
- Percent canopy (herbs) – 8%





*Hand broadcast – Quadrats I, J, K, and L (average)*

- Percent basal cover (shrubs) – 16%
- Percent basal cover (herbs) – 35%
- Percent bare ground – 26%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 35%
- Percent canopy (herbs) – 55%

## Percent Cover (Quantitative)

The representation of each species within a quadrat was estimated by broad cover classes (<1%, 1-5%, 5-25%, 25-50%, 50-75%, and >75%). The percent cover of each species based upon the point intercept method is presented in Table 1 through Table 3 below.



**Table 1 Hydroseed – Quadrats A, B, C, and D (Average)**

Species	Plot A		Plot B		Plot C		Plot D	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
<b>Native Shrubs</b>								
<i>Acmispon glaber</i>					2	4%		
<i>Artemisia californica</i>								
<i>Atriplex lentiformis</i>	7	14%	3	6%	8	16%	10	20%
<i>Atriplex polycarpa</i>	5	10%	11	22%	3	6%		
<i>Atriplex spinosa</i>					6	12%		
<i>Baccharis pilularis</i>								
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	10	20%	15	30%	8	16%	13	26%
<i>Salvia apiana</i>								
<i>Salvia mellifera</i>								
<b>Native Herbs</b>								
<i>Achillea millefolium</i>								
<i>Cryptantha intermedia</i>								
<i>Helianthus annuus</i>							6	12%
<i>Elymus triticoides</i>			7	14%				
<i>Erigeron canadensis</i>			8	16%				
<i>Sisyrinchium bellum</i>								
<i>Vulpia microstachys</i>								
<b>Non-Native Herbs</b>								
<i>Amaranthus albus</i>	1	2%						
<i>Bromus rubens</i>					4	8%		
<i>Centaurea melitensis</i>					6	12%		
<i>Erodium cicutarium</i>	1	2%						
<i>Hirschfeldia incana</i>	8	16%			1	2%	6	12%
<i>Hordeum murinum</i>							1	2%
<i>Salsola tragus</i>			2	4%	1	2%		
<b>Bare ground</b>	<b>18</b>	<b>36%</b>	<b>4</b>	<b>8%</b>	<b>11</b>	<b>22%</b>	<b>14</b>	<b>28%</b>
								<b>A,B,C,D</b>
		<b>Plot A</b>	<b>Plot B</b>	<b>Plot C</b>	<b>Plot D</b>			<b>Percent Cover</b>
Percent Cover Native Shrub		44%	58%	54%	46%			<b>51%</b>
Percent Cover Native Herb		0%	30%	0%	12%			<b>11%</b>
Percent Cover Non-Native Shrub		0%	0%	0%	0%			<b>0%</b>
Percent Cover Non-Native Herb		20%	4%	24%	14%			<b>16%</b>
Percent Bare Ground		36%	8%	22%	28%			<b>24%</b>



**Table 2 Imprint – Quadrats E, F, G, and H (Average)**

Species	Plot E		Plot F		Plot G		Plot H		
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	
<b>Native Shrubs</b>									
<i>Acmispon glaber</i>									
<i>Artemisia californica</i>									
<i>Atriplex lentiformis</i>			9	18%	2	4%			
<i>Atriplex polycarpa</i>	6	12%	5	10%			5	10%	
<i>Atriplex spinosa</i>			7	14%					
<i>Baccharis pilularis</i>									
<i>Diplacus aurantiacus</i>									
<i>Encelia californica</i>	18	36%	11	22%	30	60%	30	60%	
<i>Salvia leucophylla</i>							1	2%	
<i>Salvia mellifera</i>									
<b>Native Herbs</b>									
<i>Achillea millefolium</i>									
<i>Cryptantha intermedia</i>									
<i>Helianthus annuus</i>									
<i>Elymus triticoides</i>							1	2%	
<i>Nasella pulchra</i>									
<i>Sisyrinchium bellum</i>									
<i>Vulpia microstachys</i>									
<b>Non-Native Herbs</b>									
<i>Amaranthus albus</i>	1	2%							
<i>Bromus rubens</i>									
<i>Centaurea melitensis</i>									
<i>Erigeron canadensis</i>									
<i>Erodium cicutarium</i>									
<i>Hirschfeldia incana</i>	4	8%	2	4%	2	4%			
<i>Hordeum murinum</i>									
<i>Salsola tragus</i>									
<b>Bare ground</b>	<b>21</b>	<b>42%</b>	<b>16</b>	<b>32%</b>	<b>17</b>	<b>34%</b>	<b>13</b>	<b>26%</b>	
							<b>E,F,G,H Percent Cover</b>		
Percent Cover Native Shrub		48%		64%		62%		72%	<b>62%</b>
Percent Cover Native Herb		0%		0%		0%		2%	<b>1%</b>
Percent Cover Non-Native Shrub		0%		0%		0%		0%	<b>0%</b>
Percent Cover Non-Native Herb		10%		4%		4%		0%	<b>5%</b>
Percent Bare Ground		42%		32%		34%		26%	<b>34%</b>



**Table 3 Hand Broadcast – Quadrats I, J, K, and L (Average)**

Species	Plot I		Plot J		Plot K		Plot L		
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	
<b>Native Shrubs</b>									
<i>Acmispon glaber</i>									
<i>Artemisia californica</i>			3	6%			2	4%	
<i>Atriplex lentiformis</i>	2	4%	6	12%					
<i>Atriplex polycarpa</i>	3	6%	2	4%			6	12%	
<i>Atriplex spinosa</i>	7	14%							
<i>Baccharis pilularis</i>							3	6%	
<i>Encelia californica</i>	15	30%	5	10%			16	32%	
<i>Salvia leucophylla</i>									
<b>Non-Native Shrubs</b>									
<i>Atriplex semibaccata</i>									
<b>Native Herbs</b>									
<i>Achillia mellifolium</i>									
<i>Cryptantha intermedia</i>									
<i>Helianthus annuus</i>	4	8%	3	6%					
<i>Elymus triticoides</i>					28	56%	10	20%	
<i>Nasella pulchra</i>									
<i>Sisyrinchium bellum</i>									
<i>Vulpia microstachys</i>									
<b>Non-Native Herbs</b>									
<i>Amaranthus albus</i>	1	2%							
<i>Bromus rubens</i>			14	28%					
<i>Centaurea melitensis</i>			1	2%					
<i>Dittrichia graveolens</i>			2	4%					
<i>Hirschfeldia incana</i>	2	4%	10	20%	12	24%	3	6%	
<i>Hordeum murinum</i>									
<i>Salsola tragus</i>			1	2%					
<i>Sonchus oleraceus</i>									
<b>Bare ground</b>	<b>16</b>	<b>32%</b>	<b>3</b>	<b>6%</b>	<b>10</b>	<b>20%</b>	<b>10</b>	<b>10%</b>	
								<b>I,J,K,L Percent Cover</b>	
Percent Cover Native Shrub		54%		32%		0%		54%	<b>35%</b>
Percent Cover Native Herb		8%		6%		56%		20%	<b>23%</b>
Percent Cover Non-Native Shrub		0%		0%		0%		0%	<b>0%</b>
Percent Cover Non-Native Herb		6%		56%		24%		6%	<b>23%</b>
Percent Bare Ground		32%		6%		20%		20%	<b>20%</b>



## Discussion

Table 4 below provides a summary of the vegetation cover of shrubs and herbs, including areas of bare ground. The percent cover of native and non-native species is summarized above in Tables 1-3.

**Table 4 Summary of Vegetation Cover for Each Planting Method at the Coastal Sage Scrub City South C Trial Plot**

	Hydroseed (Quadrats A, B, C, and D)		Imprint (Quadrats E, F, G, and H)		Hand Broadcast (Quadrats I, J, K, and L)	
	Qualitative	Quantitative	Qualitative	Quantitative	Qualitative	Quantitative
Percent Cover Shrub	58%	51%	53%	62%	35%	35%
Percent Cover Herb	20%	27%	8%	6%	55%	46%
Percent Bare Ground	31%	24%	41%	34%	26%	20%

As discussed in previous reports, most of the trial plot (except for quadrats A, B, E, F, and G) substantially burned during the Saddleridge Fire in October 2019, and much of the vegetation was removed and/or crushed by fire equipment (e.g., bulldozers). Following the fire, non-native species such as brome grasses (*Bromus* spp.), foxtail barley (*Hordeum murinum*), and short podded mustard (*Hirschfeldia incana*) established in areas that were previously dominated by saltbush (*Atriplex* spp.). However, the trial plot has almost fully recovered from the fire, as evidenced by the establishment, growth, and reproduction of native shrub species such as allscale saltbush (*Atriplex polycarpa*), big saltbush (*Atriplex lentiformis*), California sunflower (*Encelia californica*), California sagebrush (*Artemisia californica*), purple sage (*Salvia leucophylla*), black sage (*Salvia mellifera*), and coyote brush (*Baccharis pilularis*) that previously dominated the trial plot prior to the fire.

The quantitative percent cover of native shrub species currently has an average of 51 percent within the hydroseed quadrats, 62 percent within the imprint quadrats, and 35 percent within the hand broadcast quadrats (Tables 1-3). Native shrub quantitative percent cover increased across all treatments from the first quarter monitoring event in 2023, and have not substantially changed since the second quarter of 2023. All shrub species within the trial plot were either at the end of flowering (e.g., California buckwheat [*Eriogonum fasciculatum*]), or had already set seed (e.g., California sunflower, big saltbush, and allscale saltbush) during the third quarter of 2023. As described in previous monitoring reports from 2022, beardless wild rye (*Elymus triticoides*) was trimmed as part of the weeding effort implemented by Republic Services in spring of 2022; however, this species has recovered from the trimming efforts, indicated by the increase in native herbaceous cover across all treatment types (hydroseed quadrats: 11 percent cover; imprint quadrats: 1 percent cover; hand broadcast quadrats: 23 percent cover).

Non-native plant cover has not changed substantially within the trial plot between the second and third quarters of 2023. The most abundant non-native herbaceous plants observed within the trial plot during the third quarter of 2023 include foxtail barley, Mediterranean grass (*Schismus arabicus*), red brome (*Bromus rubens*), and short podded mustard. Short-podded mustard and Russian thistle (*Salsola tragus*) were flowering during the third quarter of 2023, while most other non-native herbs were either in their vegetative state or had already completed their flowering cycle. Non-native plant species cover is expected to decline in the fall and winter months, and increase again during the spring of 2023. Total non-native herbaceous cover currently has an average of 16 percent within the hydroseed quadrats (no change from the second quarter of 2023), 5 percent within the imprint quadrats (down from 9 percent



in the second quarter of 2023), and 23 percent (down from 25 percent in the second quarter of 2023) within the hand broadcast quadrats (Tables 1-3).

## Recommendations

### **Successional Growth and Weed Control**

Wildfires in Southern California have become more common in recent years and have impacted the native landscape, including established restoration sites. Non-native weed control is essential in establishing post-fire restoration sites and is recommended by such organizations as the California Department of Fish and Wildlife Service and the California Society of Ecological Restoration. Successional regrowth of herbaceous non-native species is to be expected within the first two to three years following a wildfire, which is currently being observed at the trial plot. Native shrubs are expected to recover over a longer period through germination of existing seed within the topsoil and basal growth from charred plants. Native shrubs have shown notable growth following the fire and appear to be well established in the trial plot.

Successional growth of herbaceous species is also important, as native herbaceous species provide natural erosion of topsoil. To control the spread non-native herbaceous species such as foxtail barley, red brome, and short podded mustard, and minimize competition with native herbaceous and woody species for water, nutrients, and sunlight, weed maintenance should occur no less than every four months, and special attention should be afforded to minimizing impacts to native grasses that may appear to be non-native (i.e., beardless wild rye), native seedlings, and native shrub resprouts. Weed maintenance should be scheduled to maximize removal of non-native species prior to seed set, which typically occurs in spring between the months of February and April, but may also occur throughout the growing season based upon precipitation events.

### **Supplemental Irrigation**

While southern California received above-average rainfall in the winter of 2022 and spring of 2023, supplemental irrigation is a valuable restoration technique to promote re-establishment of native vegetation, particularly during the dry months of the year (i.e., summer and fall). If native herbaceous vegetation continues to be sparse throughout the trial plot, and/or if native shrubs senesce or show indicators of drought stress, the irrigation system within the trial plot should be re-installed to increase water availability and promote seed germination and re-establishment of native vegetation.



## References

John Minch and Associates, Inc. (JMA). 2014. Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill.

Thank you for the opportunity to work with you on this important project. Please contact Greg Ainsworth if you have questions concerning the contents of this report. He may be reached by telephone at (818) 564-5544, or by email at [gainsworth@rinconconsultants.com](mailto:gainsworth@rinconconsultants.com).

Sincerely,  
**Rincon Consultants, Inc.**

A handwritten signature in black ink, appearing to read "G. Ainsworth", with a large, sweeping flourish at the end.

Greg Ainsworth  
Natural Resources Director

A handwritten signature in black ink, appearing to read "Kyle Gern", with a large, sweeping flourish at the end.

Kyle Gern  
Biologist

## Attachments

- Attachment A Deck C Revegetation Area Quadrat Layout and Planting Plan
- Attachment B Representative Site Photographs

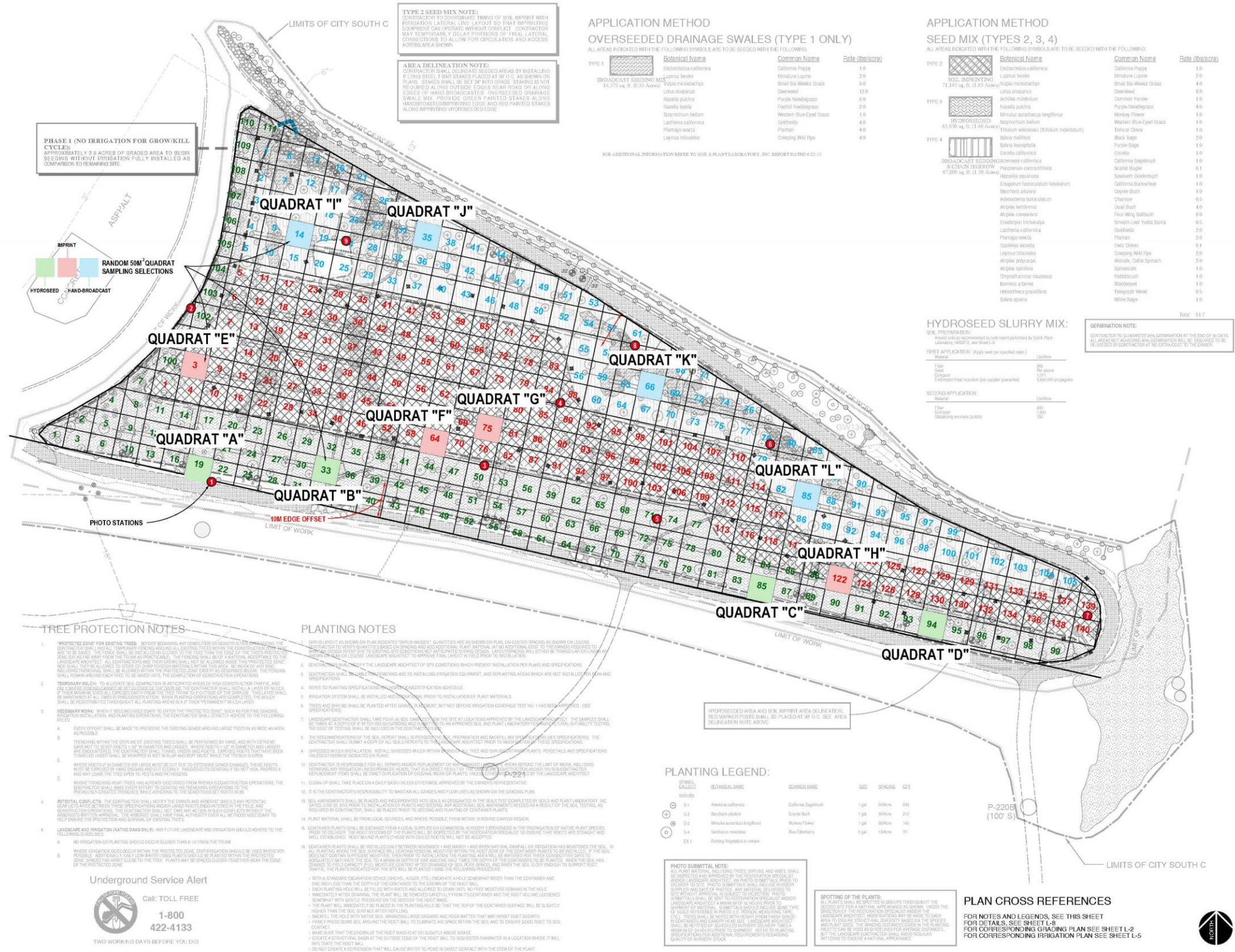
# Attachment A

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Deck C Revegetation Area Quadrat Layout and Planting Plan



### Deck C Revegetation Area Quadrat Layout and Planting Plan



CITY SOUTH C TRIAL PLOT  
SUNSHINE CANYON LANDFILL  
14747 SAN FERNANDO ROAD  
STYLUMAR, CA 91342

SHEET TITLE

PLANTING PLAN

REVISIONS

1		
2		
3		
4		
5		
6		

DRAWN BY: GPD/JGG  
CHECKED BY: JRC  
DATE: 9/28/12  
SCALE: 1" = 30'  
JOB NUMBER: 1214  
SHEET NUMBER: L-7  
7 OF 8 SHEETS

# Attachment B

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Photographs of Sample Plots



**Photograph 1.** Quadrat A facing northeast from southwest corner (September 27, 2023).



**Photograph 2.** Quadrat B facing northeast from southwest corner (September 27, 2023).



**Photograph 3.** Quadrat C facing northeast from southwest corner (September 27, 2023).



**Photograph 4.** Quadrat D facing northeast from southwest corner (September 27, 2023).



**Photograph 5.** Quadrat E facing northeast from southwest corner (September 27, 2023).



**Photograph 6.** Quadrat F facing northeast from southwest corner (September 27, 2023).



**Photograph 7.** Quadrat G facing northeast from southwest corner (September 27, 2023).



**Photograph 8.** Quadrat H facing northeast from southwest corner (September 27, 2023).



**Photograph 9.** Quadrat I facing northeast from southwest corner (September 27, 2023).



**Photograph 10.** Quadrat J facing northeast from southwest corner (September 27, 2023).



**Photograph 11.** Quadrat K facing northeast from southwest corner (September 27, 2023).



**Photograph 12.** Quadrat L facing northeast from southwest corner (September 27, 2023).



**ATTACHMENT 5**





**Rincon Consultants, Inc.**

180 North Ashwood Avenue  
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October 20, 2023  
Project No: 21-11086

Paul D. Koster II  
Environmental Manager  
Republic Services  
14747 San Fernando Road  
Sylmar, California 91342  
Via email: [PKoster@republicservices.com](mailto:PKoster@republicservices.com)

**Subject: Coastal Sage Scrub City South B Trial Plot 3<sup>rd</sup> Quarter 2023 Monitoring Report, Sunshine Canyon Landfill**

Dear Mr. Koster,

This monitoring report has been prepared by Rincon Consultants, Inc. (Rincon) to inform Republic Services on the status of coastal sage scrub restoration at the Sunshine Canyon Landfill located at 14747 San Fernando Road, Sylmar, California 91342. Specifically, this letter report serves to document the abundance of vegetation at the Coastal Sage Scrub City South B Trial Plot in the third quarter of 2023.

## Methods

On September 27, 2023, Rincon Consultants monitored the Coastal Sage Scrub City South B Trial Plot (trial plot) at the Sunshine Canyon Landfill, which constitutes the third quarter of monitoring for 2023. The sample methodology generally followed the *Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill* (JMA, April 23, 2014). Quadrat sampling of the revegetation area consists of nine 50-meter<sup>2</sup> quadrats that are randomly located throughout the revegetation area. The quadrats were randomly selected prior to the first initial monitoring event from a grid that was placed over the entire trial plot, and each quadrat was given a letter (A-I) and delineated in the field with wooden stakes. As shown in Attachment A, five different planting methods were used as follows:

- Soil imprinting with hand broadcast overseeded drainage swales (Quadrats A and G)
- Soil imprinting (Quadrats B, F and H)
- Broadcast seeding (Quadrat C)
- Broadcast seeding with soil imprinting (Quadrat D and I)
- Soil imprinting and hand broadcast (Quadrat E)

## Absolute Cover

The following qualitative data was collected in each quadrat to determine the absolute cover of native and non-native herbaceous and woody species:

- **Percent basal cover (shrubs).** Visual estimate of the amount of basal cover within each quadrat for all shrub species.



- **Percent basal cover (herbs).** Visual estimate of the amount of basal cover within each quadrat for all herbaceous species.
- **Percent bare ground.** Visual estimate of the amount of available bare ground with no vegetation.
- **Percent rock or other.** Visual estimate of the amount of unavailable ground for supporting plant growth. Inhibitors generally included rocks and boulders, irrigation lines and valve boxes, and mulch.
- **Percent canopy.** Visual estimate of the percent canopy of each shrub and herbaceous species.
- **Photographs.** A photograph was taken from the southwest corner (facing northeast) of each quadrat.

## Percent Cover

The following quantitative data was collected in each quadrat to determine the percent cover of native and non-native species.

- **Point intercept method.** Sampling began at the southwest corner of each quadrat and continued around the quadrat in a clockwise direction. The species located precisely at every meter point was tallied, including areas of bare ground, rock and other.

## Field Results

Below are the average data collected for each planting method.

### Absolute Cover (Qualitative)

*Soil imprinting with hand broadcast overseeded drainage swales – Quadrats A and G (average)*

- Percent basal cover (shrubs) – 3%
- Percent basal cover (herbs) – 13%
- Percent bare ground – 58%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 27%
- Percent canopy (herbs) – 22%

*Soil imprinting – Quadrats B, F, and H (average)*

- Percent basal cover (shrubs) – 14%
- Percent basal cover (herbs) – 10%
- Percent bare ground – 47%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 32%
- Percent canopy (herbs) – 24%

*Broadcast seeding – Quadrat C*

- Percent basal cover (shrubs) – 30%



- Percent basal cover (herbs) – 10%
- Percent bare ground – 15%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 100%
- Percent canopy (herbs) – 15%

*Broadcast seeding with soil imprinting – Quadrats D and I (average)*

- Percent basal cover (shrubs) – 5%
- Percent basal cover (herbs) – 11%
- Percent bare ground – 65%
- Percent rock or other – 7%
- Percent canopy (shrubs) – 19%
- Percent canopy (herbs) – 21%

*Soil Imprinting and hand broadcast – Quadrat E*

- Percent basal cover (shrubs) – 10%
- Percent basal cover (herbs) – 3%
- Percent bare ground – 75%
- Percent rock or other – 1%
- Percent canopy (shrubs) – 133%
- Percent canopy (herbs) – 10%

## Percent Cover (Quantitative)

The representation of each species within each quadrat was estimated by broad cover classes (<1%, 1-5%, 5-25%, 25-50%, 50-75%, and >75%). The percent cover of each species based upon the point intercept method is presented in Table 1 through Table 5 below.



**Table 1 Soil Imprinting with Hand Broadcast Overseeded Drainage Swales – Quadrats A and G (Average)**

Species	Quadrat A		Quadrat G	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover
<b>Native Shrubs</b>				
<i>Acmispon glaber</i>	1	2%		
<i>Artemisia californica</i>				
<i>Atriplex lentiformis</i>			10	20%
<i>Atriplex polycarpa</i>			6	12%
<i>Atriplex spinosa</i>				
<i>Baccharis pilularis</i>	2	4%		
<i>Baccharis salicifolia</i>				
<i>Encelia californica</i>				
<i>Salvia apiana</i>				
<i>Salvia mellifera</i>				
<b>Non-Native Shrubs</b>				
<i>Atriplex semibaccata</i>			4	8%
<b>Native Herbs</b>				
<i>Achillea millefolium</i>				
<i>Eschscholzia californica</i>				
<i>Elymus triticoides</i>	3	6%	8	16%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
<b>Non-Native Herbs</b>				
<i>Centaurea melitensis</i>	7	14%		
<i>Erodium cicutarium</i>				
<i>Hirschfeldia incana</i>			1	2%
<i>Hordeum murinum</i>				
<i>Salsola tragus</i>	1	2%		
<b>Bare ground</b>	<b>36</b>	<b>72%</b>	<b>21</b>	<b>42%</b>
	<b>Quadrat A</b>	<b>Quadrat G</b>	<b>A and G (% Cover)</b>	
Percent Cover Native Shrub	6%	32%	19%	
Percent Cover Native Herb	6%	16%	11%	
Percent Cover Non-Native Shrub	0%	8%	4%	
Percent Cover Non-Native Herb	16%	2%	9%	
Percent Bare Ground	72%	42%	57%	



**Table 2 Soil Imprinting – Quadrats B, F, and H (Average)**

Species	Quadrat B		Quadrat F		Quadrat H	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
<b>Native Shrubs</b>						
<i>Acmispon glaber</i>	1	2%				
<i>Artemisia californica</i>	13	26%			1	2%
<i>Atriplex lentiformis</i>			3	6%	3	6%
<i>Atriplex polycarpa</i>						
<i>Baccharis pilularis</i>	9	18%				
<i>Encelia californica</i>						
<i>Encelia farinosa</i>	2	4%				
<i>Eriogonum fasciculatum</i>	4	8%	8	16%	7	14%
<i>Hesperoyucca whipplei</i>	2	4%				
<i>Isocoma menziesii</i>	6	12%				
<i>Salvia apiana</i>	2	4%				
<i>Salvia mellifera</i>	7	14%				
<i>Sambucus mexicana</i>						
<b>Non-Native Shrubs</b>						
<i>Atriplex semibaccata</i>					1	2%
<b>Native Herbs</b>						
<i>Elymus triticoides</i>					2	4%
<i>Helianthus annuus</i>						
<b>Non-Native Herbs</b>						
<i>Bromus diandrus</i>						
<i>Bromus rubens</i>			8	16%	6	12%
<i>Centaurea melitensis</i>	3	6%			1	2%
<i>Festuca myuros</i>						
<i>Chenopodium album</i>						
<i>Hordeum murinum</i>						
<i>Mesembryanthemum nodiflorum</i>			22	44%	1	2%
<i>Polygonum aviculare</i>						
<i>Salsola tragus</i>					2	4%
<b>Bare ground</b>	<b>1</b>	<b>2%</b>	<b>9</b>	<b>18%</b>	<b>26</b>	<b>52%</b>
	<b>Quadrat B</b>		<b>Quadrat F</b>		<b>Quadrat H</b>	<b>B, F, H (% cover)</b>
Percent Cover Native Shrub	92%		22%		22%	<b>45%</b>
Percent Cover Native Herb	0%		0%		6%	<b>2%</b>
Percent Cover Non-Native Shrub	0%		0%		0%	<b>0%</b>
Percent Cover Non-Native Herb	6%		60%		20%	<b>29%</b>
Percent Bare Ground	2%		18%		52%	<b>24%</b>



**Table 3 Broadcast Seeding – Quadrat C**

Species	Quadrat C	
	Number of Hits	Percent Cover
<b>Native Shrubs</b>		
<i>Acmispon glaber</i>	4	8%
<i>Artemisia californica</i>	29	58%
<i>Atriplex lentiformis</i>		
<i>Atriplex polycarpa</i>		
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia californica</i>		
<i>Encelia farinosa</i>	3	6%
<i>Eriogonum fasciculatum</i>	2	4%
<i>Isocoma menziesii</i>	2	4%
<i>Salvia apiana</i>	1	2%
<b>Native Herbs</b>		
<i>Achillea millefolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>		
<i>Nasella pulchra</i>		
<i>Sisyrinchium bellum</i>		
<i>Vulpia microstachys</i>		
<b>Non-Native Herbs</b>		
<i>Centaurea melitensis</i>	7	14%
<i>Echinochloa crus-galli</i>		
<i>Erodium cicutarium</i>		
<i>Hirschfeldia incana</i>	1	2%
<i>Hordeum vulgare</i>		
<i>Marrubium vulgare</i>		
<b>Bare ground</b>	<b>1</b>	<b>2%</b>
<b>Quadrat C (% cover)</b>		
Percent Cover Native Shrub	82%	
Percent Cover Native Herb	0%	
Percent Cover Non-Native Shrub	0%	
Percent Cover Non-Native Herb	16%	
Percent Bare Ground	2%	



**Table 4 Broadcast Seeding with Soil Imprinting – Quadrats D and I (Average)**

Species	Quadrat D		Quadrat I	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover
<b>Native Shrubs</b>				
<i>Acmispon glaber</i>			1	2%
<i>Artemisia californica</i>	5	10%		
<i>Atriplex lentiformis</i>	4	8%		
<i>Atriplex polycarpa</i>			5	10%
<i>Eriogonum fasciculatum</i>			4	8%
<i>Isocoma menziesii</i>			2	4%
<i>Opuntia littoralis</i>				
<b>Non-Native Shrubs</b>				
<i>Atriplex semibaccata</i>			4	8%
<b>Native Herbs</b>				
<i>Achillea millefolium</i>				
<i>Descurainia pinnata</i>				
<i>Elymus triticoides</i>	6	12%	4	8%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
<i>Vulpia microstachys</i>				
<b>Non-Native Herbs</b>				
<i>Amaranthus albus</i>			1	2%
<i>Avena barbata</i>				
<i>Bromus diandrus</i>				
<i>Bromus rubens</i>	4	8%	8	16%
<i>Centaurea melitensis</i>	3	6%	3	6%
<i>Festuca myuros</i>			2	4%
<i>Hirschfeldia incana</i>	1	2%		
<i>Hordeum murinum</i>				
<i>Mesembryanthemum nodiflorum</i>	11	22%		
<i>Polygonum aviculare</i>				
<i>Salsola tragus</i>			4	8%
<b>Bare ground</b>	<b>16</b>	<b>32%</b>	<b>12</b>	<b>24%</b>
	<b>Quadrat D</b>		<b>Quadrat I</b>	<b>D and I (% cover)</b>
Percent Cover Native Shrub	18%		20%	21%
Percent Cover Native Herb	12%		6%	10%
Percent Cover Non-Native Shrub	0%		10%	4%
Percent Cover Non-Native Herb	38%		32%	37%
Percent Bare Ground	32%		32%	28%





**Table 5 Soil Imprinting and Hand Broadcast – Quadrat E**

Quadrat E		
Species	Number of Hits	Percent Cover
<b>Native Shrubs</b>		
<i>Acmispon glaber</i>		
<i>Artemisia californica</i>	2	4%
<i>Atriplex lentiformis</i>	6	12%
<i>Atriplex polycarpa</i>	2	4%
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia californica</i>		
<i>Encelia farinosa</i>		
<i>Eriodictyon californicum</i>	6	12%
<i>Eriogonum fasciculatum</i>	4	8%
<i>Isocoma menziesii</i>	3	6%
<i>Opuntia littoralis</i>		
<i>Salvia apiana</i>	1	2%
<i>Salvia mellifera</i>		
<b>Non-Native Shrubs</b>		
<i>Atriplex semibaccata</i>		
<b>Native Herbs</b>		
<i>Achillia mellifolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>	1	2%
<b>Non-Native Herbs</b>		
<i>Bromus diandrus</i>		
<i>Centaurea melitensis</i>	2	4%
<i>Hirschfeldia incana</i>	1	2%
<i>Hordeum vulgare</i>		
<i>Mesembryanthemum nodiflorum</i>	6	12%
<b>Bare ground</b>	<b>16</b>	<b>32%</b>
<b>Quadrat E (% cover)</b>		
Percent Cover Native Shrub	48%	
Percent Cover Native Herb	2%	
Percent Cover Non-Native Shrub	0%	
Percent Cover Non-Native Herb	18%	
Percent Bare Ground	32%	



## Discussion

Table 6 below provides a summary of the percent cover of native and non-native shrubs and herbs, including areas of bare ground within the Coastal Sage Scrub City South B Trial Plot.

**Table 6 Summary of Percent Cover for Each Planting Method Using the Point Intercept Method**

	Soil Imprinting with Hand Broadcast Overseeded Drainage Swales (Quadrats A and G)	Soil Imprinting (Quadrats B, F, and H)	Broadcast Seeding (Quadrat C)	Broadcast Seeding with Soil Imprinting (Quadrats D and I)	Soil Imprinting and Hand Broadcast (Quadrat E)
Percent Cover Native Shrub	19%	45%	82%	21%	48%
Percent Cover Native Herb	11%	2%	0%	10%	2%
Percent Cover Non-Native Shrub	4%	0%	0%	4%	0%
Percent Cover Non-Native Herb	9%	29%	16%	37%	18%
Percent Bare Ground	57%	24%	2%	28%	32%

The trial plot was established in November 2018. As described in previous monitoring reports, the 2019 Saddleridge Fire burned a large portion of the trial plot, but mostly spared the sample plots. The fire damaged the irrigation system, which is no longer functioning.

As discussed in previous reports, native species have established since the fire, and primarily include shrub species such as brittlebush (*Encelia farinosa*), coast prickly pear (*Opuntia littoralis*), big saltbush (*Atriplex lentiformis*), deerweed (*Acmispon glaber*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), and coastal goldenbush (*Isocoma menziesii*). Native shrub species resprouted from burned stumps following the Saddleridge Fire, from the pre-existing seedbank, and from seeds installed during the seeding treatments performed during creation of the trial plot. The trial plot appears to have mostly recovered from the fire, evidenced by substantial native shrub establishment and growth within the trial plot. As discussed in previous reports, below-average rainfall in 2021 and 2022 throughout southern California negatively impacted native species growth in the trial plot. In particular, native herbaceous species quantitative cover remained at or below five percent cover in 2021 and 2022. In the winter of 2022 and spring of 2023, above-average rainfall was observed throughout southern California. This above-average rainfall appears to have positively influenced native shrub and herbaceous species cover (Table 6). Native shrub species that increased in cover include California sagebrush, California buckwheat, coyote brush (*Baccharis pilularis*), blue elderberry (*Sambucus mexicana*), black sage (*Salvia mellifera*), deerweed, big saltbush, allscale saltbush (*Atriplex polycarpa*), and coastal goldenbush. Additionally, beardless wild rye (*Elymus triticoides*; a native herbaceous grass species) showed a notable increase in cover.

Non-native plant cover, which increased in all of the treatment types between the fourth quarter of 2022 and the first quarter of 2023, has remained relatively stable since between the first and third quarters of 2023 (Table 6). Commonly occurring non-native plant species observed in the trial plot include small flowered iceplant (*Mesembryanthemum nodiflorum*), redstem filaree (*Erodium cicutarium*), tocalote (*Centaurea melitensis*), short podded mustard (*Hirschfeldia incana*), foxtail barley (*Hordeum murinum*), and red brome (*Bromus rubens*). Non-native plant species in flower during the third quarter of 2023 include short podded mustard and Russian thistle (*Salsola tragus*). Most notably,



small flowered iceplant was at 44 percent cover in Quadrat F (using the point intercept method) in the third quarter of 2023. Non-native plant species cover is expected to decline throughout the fall and winter months, and increase again in the spring of 2024.

Broadcast seeding (Quadrat C) had the highest percent cover of native shrubs using the point intercept method (82 percent) and represents an increase in cover (18 percent) since the fourth quarter of 2022. This increase is likely a result of the aforementioned above-average rainfall that southern California received in the winter of 2022 and spring of 2023. Deerweed, which is one of the most dominant species in Quadrat C, is an early-successional shrub species that is extremely beneficial for restoration purposes, as it fixes nitrogen into the soil and thereby increases soil fertility for other native plant species. The second highest percent cover of native shrubs was in the soil imprinting and hand broadcast treatment (Quadrat E; 48 percent), and the third highest was the soil imprinting treatment (Quadrats B, F, and H; 45 percent; Table 6). Both of these treatment types saw increases in native shrub cover between the second and third quarters of 2023. The percent cover of native herbaceous plant species was low in all planting methods, ranging between zero and 11 percent in the third quarter of 2023. This is consistent with observations made in previous sampling events.

## Recommendations

### Successional Growth and Weed Control

Wildfires in Southern California have become more common in recent years and have impacted on the native landscape. Non-native weed control is essential in establishing post-fire restoration sites and is recommended by organizations such as the California Department of Fish and Wildlife Service and the California Society of Ecological Restoration. Successional regrowth of herbaceous non-native species is to be expected within the first two to three years following a wildfire, which is currently occurring at the trial plot. Native shrubs are expected to recover over a longer period through germination of existing seed within the topsoil and basal growth from charred plants. Native shrubs have shown notable growth in the past two years, and now appear to be well established in the trial plot.

Successional growth of herbaceous species is also important, as native herbaceous species provide natural erosion of topsoil. To promote establishment and growth of native herbaceous species, controlling the spread of non-native herbaceous species such as foxtail barley, red brome, and short podded mustard is essential. Reducing non-native herbaceous species growth minimizes negative competitive effects on native herbaceous and woody species for water, nutrients, and sunlight. Weed maintenance should occur no less than every four months, and special attention should be afforded to minimizing impacts to native grasses that may appear to be non-native (i.e., beardless wild rye), native seedlings, and native shrub resprouts. Weed maintenance should be scheduled to maximize removal of non-native species prior to seed set, which typically occurs in spring between the months of February and April, but may also occur throughout the growing season based upon water availability.

### Supplemental Irrigation

While southern California received above-average rainfall in the winter of 2022 and spring of 2023, supplemental irrigation is a valuable restoration technique to promote re-establishment of native vegetation, particularly during the dry months of the year (i.e., summer and fall). As described above, native herbaceous vegetation has continued to be notably low throughout all planting methods. If native herbaceous vegetation continues to be sparse throughout the trial plot, and/or if native shrubs senesce



or show indicators of drought stress, the irrigation system within the trial plot should be re-installed to increase water availability and promote seed germination and re-establishment of native vegetation.



## References

John Minch and Associates, Inc. (JMA). 2014. Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill.

Thank you for the opportunity to work with you on this important Project. Please contact Greg Ainsworth if you have questions concerning the contents of this report. He may be reached by telephone at (818) 564-5544, or by email at [gainsworth@rinconconsultants.com](mailto:gainsworth@rinconconsultants.com).

Sincerely,  
**Rincon Consultants, Inc.**

A handwritten signature in black ink, appearing to read "Greg Ainsworth".

Greg Ainsworth  
Natural Resources Director

A handwritten signature in black ink, appearing to read "Kyle Gern".

Kyle Gern  
Biologist

## Attachments

- Attachment A Deck B Revegetation Area Quadrat Layout
- Attachment B Representative Site Photographs

# Attachment A

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Deck B Revegetation Area Quadrat Layout

### Deck B Revegetation Area Quadrat Layout



# Attachment B

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Photographs of Sample Plots





**Photograph 1.** Quadrat A facing northeast from southwest corner (September 27, 2023).



**Photograph 2.** Quadrat B facing northeast from southwest corner (September 27, 2023).



**Photograph 3.** Quadrat C facing northeast from southwest corner (September 27, 2023).



**Photograph 4.** Quadrat D facing northeast from southwest corner (September 27, 2023).



**Photograph 5.** Quadrat E facing northeast from southwest corner (September 27, 2023).



**Photograph 6.** Quadrat F facing northeast from southwest corner (September 27, 2023).



**Photograph 7.** Quadrat G facing northeast from southwest corner (September 27, 2023).



**Photograph 8.** Quadrat H facing northeast from southwest corner (September 27, 2023).



**Photograph 9.** Quadrat I facing northeast from southwest corner (September 27, 2023).

**ATTACHMENT 6**





**Rincon Consultants, Inc.**

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March 22, 2021  
Project No: 21-11086

Tuong-phu Ngo  
Republic Services  
14747 San Fernando Road  
Sylmar, California 91342  
Via email: [email address](#)

**Subject: Sunshine Canyon Landfill Ultimate Entry Improvement Project, Oak Tree Survey  
14747 San Fernando Road, Sylmar, California, 91342**

Dear Mr. Ngo:

Rincon Consultants, Inc. (Rincon) prepared this report for the Ultimate Entry Improvement Project (project) located at the Sunshine Canyon Landfill (landfill) in Sylmar, Los Angeles County, California. This report, prepared by ISA certified arborist Greg Ainsworth, documents the results of an oak tree survey and assessment of impacts to protected oak trees from the project and provides a current tally on the remaining oak trees in the landfills' s oak tree mitigation bank.

## Introduction

This oak tree report was prepared to disclose information on native oak (*Quercus sp.*) trees that would be removed by the proposed project.

Pursuant to the Los Angeles County Oak Tree Ordinance, any tree of the oak genus that is 25 inches in circumference (8 inches in diameter) or has a combined trunk circumference of any two trunks of at least 38 inches (12 inches in diameter), as measured 4.5 feet above the mean natural grade (i.e., diameter at breast height [DBH]), is considered a "protected tree" (Ordinance 88-0157 1, 82-0168 2, Section 22.56.2050, 1988). An oak tree that has a trunk DBH equal to or greater than 36 inches is considered a heritage tree, as defined in the Los Angeles County Oak Tree Ordinance. In accordance with the Ordinance, no damage shall occur within the protective zone (the area within the dripline of an oak tree and extending to a point at least 5 feet outside the dripline, or 15 feet from the trunk[s] of the tree, whichever distance is greater) of a protected oak tree. Damage is defined as any act causing or tending to cause injury to the root system or other parts of an oak tree, including, but not limited to, burning, application of toxic substances, operation of equipment or machinery, paving, changing of natural grade, and trenching or excavating.

## Sunshine Canyon Landfill Oak Tree Mitigation Bank

In accordance with landfill's Conditional Use Permit (CUP) and Oak Tree Permit (OTP) #86312-(5) (dated February 19, 1991) for the Sunshine Canyon Landfill Extension Project, all native oak trees that will be removed for any project-related impact shall be mitigated at a ratio of 2:1, and heritage-size oak trees (36-inch DBH or greater) shall be mitigated at a ratio of 10:1. All mitigation oaks shall be monitored for 7 years after the tree reaches 0.5 inches in diameter.



A surplus of coast live oak trees was previously planted in the landfill's mitigation areas, which now serves as a mitigation bank for the landfill to draw from for future removals of coast live oak trees. There are currently 48 coast live oaks remaining in the mitigation bank (JMA, Sunshine Canyon Landfill Oak Tree and Bigcone Douglas Fir Monitoring Report No. 28, March 8, 2021).

## Project Description

The proposed project involves the development of a landfill termination berm and cut/fill graded entrance roadway that will provide a down-slope buttress and access for a proposed landfill expansion. The nearly 190-foot-high proposed roadway and berm embankment across the mouth of the main canyon of Sunshine Canyon Landfill is designed to buttress the expanded landfill refuse prism that will be situated to the west. This new road embankment includes the associated cut and fill grading, three retaining walls, and a sedimentation basin with stormwater controls.

## Methods

All oak trees located within and immediately adjacent to the project footprint that could be impacted by the proposed project were surveyed by certified arborist Greg Ainsworth (I.S.A. Cert# WE-7473A). The tree survey was conducted on March 4, 2021. Using a forester's diameter-equivalent tape, the diameter of all native oak trees having a trunk diameter of 8 inches or greater (or combined trunk diameter of 12 inches or greater) were measured at 4.5 feet above the mean natural grade to obtain the DBH. The location of each tree was recorded from the base of the tree using a Global Positioning System (GPS) with sub-meter accuracy. The following parameters were assessed from the base of each tree (or from the nearest vantage point):

### Tree Characteristics

- Trunk diameter (DBH)
- Height
- Crown radius in all directions (north, south, east, and west).
- Balance or symmetry of the tree based on the crown radius measurements and whether the tree leans or is unstable.

### Physical Condition

- Identification of damage caused by pathogens or insect pests, by natural causes such as lightning, or by human activity.
- Evaluation of vigor based on such parameters as amount of new growth, leaf color, abnormal bark, dead wood, evidence of wilt, excessive necrosis or leaf chlorosis, thinning of crown, etc.
- Assessment of the overall health of the tree based on the evaluation of vigor, presence of damage, and comparison to the typical archetype tree of the same species.





## Health Grade

A subjective alphabetical ranking was assigned for overall health (vigor, aesthetic value, and balance) for each native oak and big cone fir tree based on the criteria described below:

- “A” = Excellent: A healthy and vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease, or pest infestation.
- “B” = Good: A healthy and vigorous tree with minor visible signs of stress, disease, and/or pest infestation. Some maintenance measures may need to be implemented, such as pruning of dead wood or broken branches.
- “C” = Fair: Although healthy in overall appearance, there is abnormal amount of stress or disease/insect infestation, and a substantial amount of maintenance may be needed.
- “D” = Poor: A tree that may be exhibiting a substantial amount of stress, disease, or insect damage than what the amount that is expected for the species. The tree may be in a state of rapid decline, and may show various signs of dieback, necrosis, or other symptoms caused by pathogens or insect pests.
- “F” = Dead: This tree has no foliage and exhibits no sign of life or vigor.

## Results

There are 20 coast live oak trees located within the project footprint, one of which is dead, and all of which would be removed by the proposed project. No other oak trees would be encroached or otherwise impacted by the proposed project. Data on these 20 oak trees is presented in Table 1 below.

**Table 1 Oak Tree Survey Data**

Tree #	Species	DBH	Canopy Spread				Health	Physical Condition	Impact Status	Reason for Impact
			North	West	South	East				
1	Coast live oak	13	14	3	8	21	Fair		Removal	Grading
2	Coast live oak	--	--	--	--	--	Dead		Removal	Grading
3	Coast live oak	16	3	8	25	35	Poor	fire scar	Removal	Grading
4	Coast live oak	12	12	7	18	15	Good	fire scar	Removal	Grading
5	Coast live oak	18	11	15	30	7	Good	fire scar	Removal	Grading
6	Coast live oak	9	4	8	18	2	Fair	fire scar	Removal	Grading
7	Coast live oak	15	7	16	15	8	Fair	fire scar	Removal	Grading
8	Coast live oak	9	7	3	18	8	Good	fire scar	Removal	Grading
9	Coast live oak	18	30	15	22	10	Good	fire scar	Removal	Grading
10	Coast live oak	16	8	17	15	6	Fair	fire scar	Removal	Grading
11	Coast live oak	10	15	14	1	2	Fair	fire scar	Removal	Grading
12	Coast live oak	10	20	6	4	2	Fair	fire scar	Removal	Grading
13	Coast live oak	22	18	21	16	10	Fair	fire scar	Removal	Grading
14	Coast live oak	10	19	1	1	1	Fair	fire scar	Removal	Grading
15	Coast live oak	21	10	7	18	22	Fair	fire scar	Removal	Grading



Tree #	Species	DBH	Canopy Spread				Health	Physical Condition	Impact Status	Reason for Impact
			North	West	South	East				
16	Coast live oak	18	1	22	19	8	Fair	fire scar, split trunk	Removal	Grading
17	Coast live oak	19	15	11	15	10	Fair	fire scar	Removal	Grading
18	Coast live oak	12	15	7	15	7	Fair	fire scar	Removal	Grading
19	Coast live oak	12	17	10	4	8	Good		Removal	Grading
20	Coast live oak	8	4	12	6	1	Fair		Removal	Grading

### Mitigation

There are currently 48 coast live oak trees in the landfill’s mitigation bank. As noted in Table 1, 20 coast live oak trees would be removed by the proposed project. Therefore, at a mitigation ratio of 2:1, 40 coast live oak trees will be deducted from the landfill’s oak tree mitigation bank, leaving 4 oak trees remaining in the bank for future removals at the landfill.

Please contact Greg Ainsworth at (818) 564-5544 or email at [gainsworth@rinconconsultants.com](mailto:gainsworth@rinconconsultants.com) if you have any question or comments regarding the information provided in this report.

Sincerely,  
**Rincon Consultants, Inc.**

Greg Ainsworth, I.S.A. Cert # WE-7473A  
Director of Urban Forestry

### Attachments

Oak Tree Map

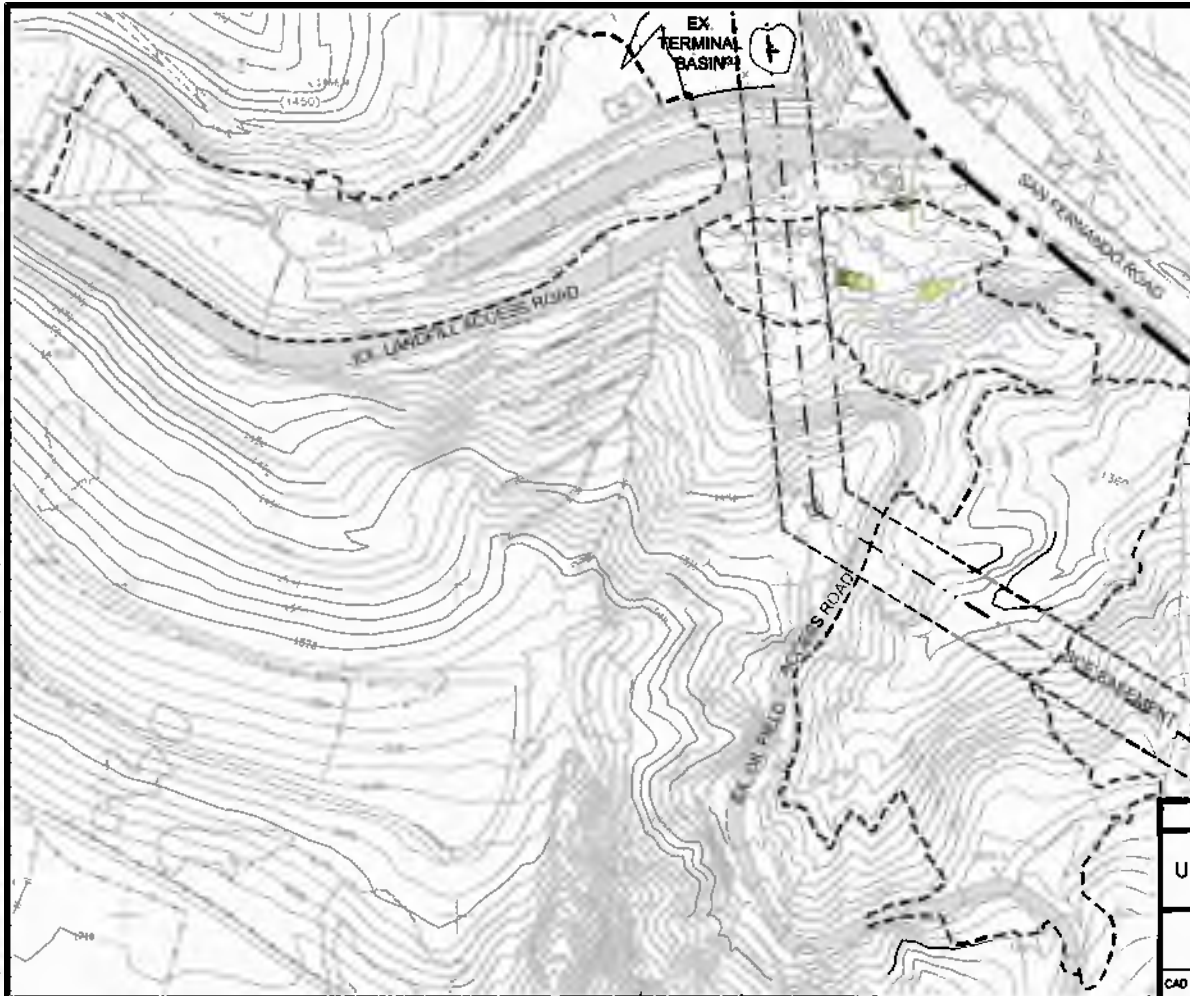
**DRAWING 1**



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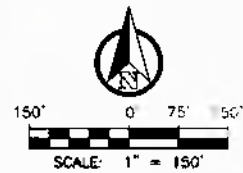
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1000 950 900 850 800 750 700 650 600 550 500 450 400 350 300 250 200 150 100 50 0



**LEGEND:**

- PROPERTY BOUNDARY
- EX. GROUND CONTOUR, FEET
- UTILITY EASEMENT
- EX. PAVED ROAD
- EX. UNPAVED ROAD
- EX. FENCE
- EX. DRAINAGE
- PROJECT GRADING LIMITS
- HEALTH TREE GRADE GOOD
- HEALTH TREE GRADE FAIR
- HEALTH TREE GRADE POOR
- HEALTH TREE GRADE DEAD

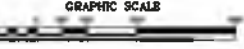


**FIGURE 1**

**OAK TREE SURVEY MAP**  
SUNSHINE CANYON LANDFILL  
ULTIMATE ENTRANCE PHASE 1 & 2  
SYLMAR, CALIFORNIA

**Geo-Logic**  
ASSOCIATES

CAD DSGN BY: JA DATE: MARCH 2021 JOB NO.: S021.1038



- 0-10' CONTOUR
- 10-20' CONTOUR
- 20-30' CONTOUR
- 30-40' CONTOUR
- 40-50' CONTOUR
- 50-60' CONTOUR
- 60-70' CONTOUR
- 70-80' CONTOUR
- 80-90' CONTOUR
- 90-100' CONTOUR
- 100-110' CONTOUR
- 110-120' CONTOUR
- 120-130' CONTOUR
- 130-140' CONTOUR
- 140-150' CONTOUR
- 150-160' CONTOUR
- 160-170' CONTOUR
- 170-180' CONTOUR
- 180-190' CONTOUR
- 190-200' CONTOUR
- 200-210' CONTOUR
- 210-220' CONTOUR
- 220-230' CONTOUR
- 230-240' CONTOUR
- 240-250' CONTOUR
- 250-260' CONTOUR
- 260-270' CONTOUR
- 270-280' CONTOUR
- 280-290' CONTOUR
- 290-300' CONTOUR
- 300-310' CONTOUR
- 310-320' CONTOUR
- 320-330' CONTOUR
- 330-340' CONTOUR
- 340-350' CONTOUR
- 350-360' CONTOUR
- 360-370' CONTOUR
- 370-380' CONTOUR
- 380-390' CONTOUR
- 390-400' CONTOUR
- 400-410' CONTOUR
- 410-420' CONTOUR
- 420-430' CONTOUR
- 430-440' CONTOUR
- 440-450' CONTOUR
- 450-460' CONTOUR
- 460-470' CONTOUR
- 470-480' CONTOUR
- 480-490' CONTOUR
- 490-500' CONTOUR

VEGETATION STATUS ACTIVITY THIRD QUARTER 2021	
	HIGH PRIORITY CUT GRASS (SPERMATOPHYTES OR GRASS) WITH 75% GRADE SIDE (SEE 50% CUT AT GRADE SIDE)
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD)
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD)
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD) ALL INCLUDES REDWOOD
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD)
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD) (SEE 50% CUT AT GRADE SIDE)
	CULTURE PINE
	PROPOSED INFRASTRUCTURE
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD) (SEE 50% CUT AT GRADE SIDE)
	1-1' HIGH PRIORITY AREA (PINE, REDWOOD) (SEE 50% CUT AT GRADE SIDE)

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REV	DATE	DESCRIPTION	APPROVED BY
01	02/13/21	ISSUED FOR PERMITTING	C. BAKER
02	03/02/21	ISSUED FOR PERMITTING	C. BAKER
03	03/02/21	ISSUED FOR PERMITTING	C. BAKER
04	03/02/21	ISSUED FOR PERMITTING	C. BAKER
05	03/02/21	ISSUED FOR PERMITTING	C. BAKER
06	03/02/21	ISSUED FOR PERMITTING	C. BAKER
07	03/02/21	ISSUED FOR PERMITTING	C. BAKER
08	03/02/21	ISSUED FOR PERMITTING	C. BAKER
09	03/02/21	ISSUED FOR PERMITTING	C. BAKER
10	03/02/21	ISSUED FOR PERMITTING	C. BAKER



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SUNSHINE CANYON LANDFILL  
SYLMAR, CALIFORNIA  
SITE VEGETATION STATUS AND ACTIVITY

Q3 2021

1
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FOR REVIEW ONLY  
EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 2, 2013