

April 30, 2022

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
First Quarter 2022 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 first quarter of 2022. 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 – 1Q2022

During the first quarter of 2022, 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 indicated the intense weeding efforts implemented has greatly reduced the cover of the noxious non-native annual species.

During their most recent visit, 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 Architerra, late fall rains and cooler daytime temperatures have triggered new foliage growth of the above-mentioned species. Additionally, early rainfall has contributed to new growth on many of the Venturan Sage Scrub species that have remained dormant over the last several months. This has also begun the germination period where a mix of native and non-native species are beginning to emerge, creating challenges in identification of species.

The decks were noted to be very active with wildlife and several bird species were seen using the protective canopy of the existing vegetation. Tracks of many animals were seen in the areas of wet soils and a grouping of Mule Deer (*Odocoileus hemionus*) were spotted grazing on the decks.

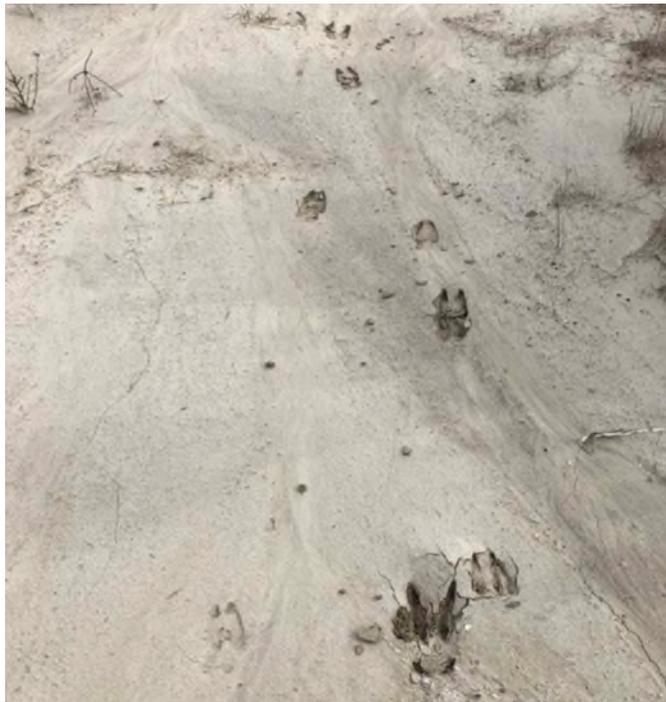
4.2 City South Deck B

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) indicates Deck B is doing quite well and there is 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 have 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.

Architerra has reported several bird and lizard species were actively moving around the deck during their inspection. It was reported the vegetative coverage has a closed canopy in several locations for wildlife species to conceal themselves. A San Diegan Whiptail Lizard and Common Side-Blotched Lizard were seen while walking through the deck vegetation.

Architerra reported a large portion of Deck B that burned in the Saddle Ridge Fire, has rebounded back over the last two years and has an abundance of new seedlings filling in what was barren dirt. It has demonstrated that it has become self-sustaining and reestablished without the need for supplemental irrigation. Architerra has previously indicated that within a few years, evidence of the fire will be virtually unnoticeable in this area. The fire ecology working within the landfill area and the weeding within this zone has also helped to build this area back to its pre-fire condition.



Mule deer tracks on Deck B

Rincon noted in their most recent inspection report a substantial amount of regrowth has occurred following the fire, that includes germination from the seed bank in the soil and resprouting of below- and above-ground plant parts.

4.3 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 first quarter of 2022, 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 2022 first quarter vegetation report that this area remains problematic for establishment of vegetation. Soil samples from this location indicate low pH, high salinity, and Boron present in native soils. A trail test pilot plan is being evaluated at this time with Architerra.

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 first quarter of 2022 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.

Table 1 – Rincon Recommendations and Proposed Actions – City Sage Mitigation Areas, first Quarter 2022

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 – Upgrade and enhance irrigation if drought conditions continue to the areas to alleviate stress on regrowth	The first quarter of 2022 had above-average rainfall, and therefore irrigation may not be necessary if conditions continue through this winter season.

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	This will be addressed when plans for Deck A are developed.

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 continues 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.

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, First Quarter 2022

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 are evaluating 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 – First Quarter 2022

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 fourth quarter of 2021 based on this methodology is included in Attachment 4 and Attachment 5 for Deck C and Deck B, respectively.

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 will be conducted in this mitigation area for 2022 and into the future.

A meeting with Rincon biologist was conducted on October 21, 2021 at the Big Cone Mitigation area. Some important topics were assistance from local nurseries and universities to help replace and replant some of the existing dead big cone pine and canyon oak, also to establish 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 and universities in Q2 of 2022.

PM10 Berm

Republic Services hosted an Adopt-A-Tree event for employees and their family members. On Saturday, November 14th, 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 will consider hosting more Adopt-A-Tree events in the near future.



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 9th 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 (661) 208-9796 if you have any questions.

Sincerely,

Handwritten signature of Kimberly Pena.

Kimberly Pena
Environmental Specialist
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, 1Q2022 City-Side Sage Mitigation Area
Attachment 2	Rincon Progress Report, 1Q2022 County-Side Sage Mitigation Area
Attachment 3	Architerra Design Group, Field Observation Report, South City Sage Mitigation Pilot Project – 1Q2022with Photo Log
Attachment 4	Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck C Pilot Study, 1Q2022
Attachment 5	Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck B Pilot Study, 1Q2022
Attachment 6	Rincon Sunshine Canyon Landfill Ultimate Entry Improvement Project, Oak Tree Survey Report

Drawing

Drawing 1	1Q2022 Site Vegetation Status and Activity
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ATTACHMENT 1





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www.rinconconsultants.com

April 22, 2022
Project No: 21-11086

Kate Downey
Environmental Manager
Republic Services
14747 San Fernando Road
Sylmar, California 91342

Via email: KDowney@republicservices.com

Subject: Qualitative Monitoring Report – 1st Quarter, 2022 for the City-Side Sage Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Ms. Downey,

On March 29, 2022, Rincon Consultants conducted the first quarter qualitative monitoring of 2022 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 vegetation as well. 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 that includes germination from the seed bank in the soil and resprouting of below- and above-ground plant parts. The Lower Deck appears to have mostly recovered from the fire. The most prevalent native plant species observed within the Lower Deck in the first quarter of 2022 was California sunflower (*Encelia californica*), followed by big saltbush (*Atriplex lentiformis*) and allscale saltbush (*Atriplex polycarpa*). In 2020 following the Saddleridge Fire, areas that were previously dominated with saltbush species were largely replaced by mats of non-native brome grasses, such as red brome (*Bromus madritensis*) and ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), and non-native forbs (e.g., redstem filaree [*Erodium cicutarium*]). Currently, saltbush species have resprouted and show signs of continuous growth since the fire. Exotic annual plant species such as foxtail barley and ripgut brome have increased in cover since the



fourth quarter monitoring event of 2021. Exotic annual plants appear to be controlled through maintenance practices that include hand pulling and weed whipping by Republic Services staff. During the first quarter of 2022, it appeared that a weeding treatment had occurred recently, as evidenced by sheared stems of non-native grasses. Some native grass species (i.e., beardless wild rye [*Elymus triticoides*]) were also inadvertently cut as a result of the treatment. Recent rainfall events have increased non-native plant germination, and non-native plants are anticipated to significantly increase during the second quarter of 2022. The majority of non-native vegetation that was observed sprouting and flowering at the Lower Deck consisted of non-native annual grasses, short podded mustard (*Hirschfeldia incana*), and redstem filaree. Additionally, Russian thistle (*Salsola tragus*) and tocalote (*Centaurea melitensis*) were observed germinating within the Lower Deck as well.

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 that also decimated its irrigation system.

Before the Saddleridge Fire, the vegetation composition was approximately 35 percent of sage scrub plantings/seedlings and 30 percent non-native grasses, with the remainder of the area comprised of bare ground and/or rock substrate. A substantial amount of the planted vegetation on the Middle Deck completely burned in the fire; however, a large amount has resprouted and appears to have recovered since the fire. Native vegetation observed at the Middle Deck consists of woody species such as brittlebush (*Encelia farinosa*), scarlet burglar (*Penstemon centranthifolius*), deerweed (*Acmispon glaber*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), coastal goldenbush (*Isocoma menziesii*), and white sage (*Salvia apiana*), and herbaceous species such as beardless wild rye. Of all the observed native species, brittlebush, coastal goldenbush, and deerweed have shown the greatest increase in abundance between 2020 and the first quarter of 2022. The majority of native plant species are in their vegetative state. Deerweed, brittlebush, and California sunflower (*Encelia californica*) are currently in flower.

Non-native plant establishment was also observed within the Middle Deck; however, this establishment is much 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, redstem filaree, and Small flowered iceplant (*Mesembryanthemum nodiflorum*) that have begun germinating following seasonal rains. In general, non-native weed cover is low to moderate, and has slightly increased since the fourth quarter of 2021. As with the Lower Deck, non-native plants are anticipated to significantly increase in the Middle Deck during the second quarter of 2022.

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 (*Eriogonum fasciculatum*) as well as non-



native species such as foxtail barley, redstem filaree, and Australian saltbush (*Atriplex semibaccata*). 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 vegetation on the Upper Deck currently include wild oats (*Avena fatua*), Russian thistle, riggut 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 was observed in its vegetative and flowering state during the first quarter of 2022; however, overall natural recruitment of native plant species within the Upper Deck is low due to poor and dry soil conditions.

Table 1 Summary of Observations in the Lower, Middle, and Upper Decks in Quarter 3, 2021

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	Recovering from fire, drought	12"-36"	Low-Moderate	Moderate	Vegetative/ Flowering
Middle Deck	Moderate	Recovering from fire, drought	12"-36"	Low-Moderate	Low	Vegetative/ Flowering
Upper Deck	Minimal	Poor soils, drought	12"-24"	Low	High	Vegetative/ Flowering

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 of 2022 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 Deck.
- 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, riggut 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, particularly 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. Vegetation within the Lower and Middle Decks are showing signs of desiccation stress due to the persistent drought occurring in southern California. If drought conditions persist, 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.
- If permissible, 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 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.

Sincerely,

Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "G. Ainsworth", written over a light blue horizontal line.

Greg Ainsworth
Natural Resources Director

A handwritten signature in black ink, appearing to read "Kyle Gern", written over a light blue horizontal line.

Kyle Gern
Biologist

Attachments

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

Attachment A

Figure 1. Photograph Locations



Figure 1 Photograph Locations



Attachment B

Site Photographs





Photograph 1. Facing west at Lower Deck. View of eastern limits that was dominated by *Atriplex* sp. and California sunflower prior to the Saddleridge Fire (March 29, 2022).



Photograph 2. Facing east at Lower Deck from western boundary (March 29, 2022).



Photograph 3. Facing east at the Middle Deck from western boundary (March 29, 2022).



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 setting seed) and non-native annual grasses (March 29, 2022).



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 (March 29, 2022).



Photograph 6. Facing southwest at the Upper Deck. This area is dominated by wild oats and California buckwheat, which are currently flowering and setting seed (March 29, 2022).



Photograph 7. Facing southeast at the western portion of the Upper Deck. This area is dominated by short podded mustard and Australian saltbush (March 29, 2022).

ATTACHMENT 2





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April 22, 2022
Project No: 21-11086

Kate Downey
Environmental Manager
Republic Services
14747 San Fernando Road
Sylmar, California 91342

Via email: KDowney@republicservices.com

Subject: Qualitative Monitoring Report – 1st Quarter 2022 for the County-Side Sage Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Ms. Downey,

On March 29, 2022, Rincon Consultants conducted the first quarter qualitative monitoring of 2022 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. Conditions on the mitigation area remain relatively unchanged since the fourth quarter of 2021. Areas that are moderately covered with native and non-native vegetation are concentrated in the southern portion of the mitigation area. The northern portion of the mitigation area continues to be bare and problematic for establishment of vegetation, primarily because of highly eroded soils, steep slopes, and Boron-toxic soils (See *Recommendations* section).

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 (*Eriogonum fasciculatum*) and California sunflower (*Encelia californica*). Established laurel sumac (*Malosma laurina*) individuals are present as well. California sunflower and California buckwheat were in flower, and the remainder of plant species were in their vegetative state. 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 California sunflower 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. Annual nonnative 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*), and Russian thistle (*Salsola tragus*) are the dominant non-native vegetation present, which comprises approximately 25 percent of the total cover. California buckwheat dominates the native vegetation coverage with California sagebrush (*Artemisia californica*) and California sunflower as co-dominants. These native species comprise of approximately 75 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*), 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. A substantial portion of the mitigation area continues to be bare and problematic for vegetation to become established. However, in areas where vegetation is present, there is a moderate coverage of native species, mostly California buckwheat and California sunflower.

As indicated during previous monitoring periods and 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 the amount of non-native grasses that are present is expected when compared to sparsely covered areas of California buckwheat in the region. 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 beginning to flower and set seed. Additional germination is anticipated in response to recent rainfall events. Other established weeds that were observed include redstem filaree (*Erodium cicutarium*), telegraph weed ([*Heterotheca grandiflora*](#)), which is a weedy native plant species, and tocalote (*Centaurea melitensis*).



Table 1 Summary of Native and Exotic Plant Cover in the County-Side Sage Mitigation Area in Quarter 1, 2022

	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	None	12"-36"	Medium	Moderate	Germinating/ Flowering/ Setting Seed

Recommendations

The following recommendations within the County-Side Sage Mitigation are suggested based upon the field survey conducted in the first quarter of 2022.

- **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.

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



Attachment B

Site Photographs





Photograph 1. Facing southwest at the County-Side Sage Mitigation Area (March 29, 2022).



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 (March 29, 2022).

ATTACHMENT 3





ARCHITERRA DESIGN GROUP

FIELD OBSERVATION REPORT

DATE OF VISIT:	04/1/22
PROJECT:	Sunshine Canyon Mitigation Sites
PROJECT NUMBER:	1214
PROJECT MANAGER:	Gregg Denson
SITE INSPECTION #:	
PURPOSE OF VISIT:	Review site conditions/Photo Catalog
TIME OF SITE VISIT:	10:00am
WEATHER/TEMPERATURE:	Sunny 78°
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 (Decks B/C) and County Mitigation Slopes. Additional items noted during the site visit are as follows:

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

- Even though we are experiencing the third year of a drought and minimal precipitation fell during the late winter months, the Venturan Coastal Sage Scrub vegetation on Decks B and C are still flourishing as if rainfall was normal. This time of year is optimal to observe the resurgence of *Encelia californica* (California Sunflower) as it is in full bloom and foliage. Typically California Sunflower is the first VCSS species to defoliate once temperatures rise and soil moisture declines. After the Saddleridge Fire of Fall 2019, much of the deck was burned and the succession of this species took a few years to reestablish. Several other VCSS natives are in bloom and have reestablished on the decks. These species include: *Salvia apiana* – White Sage, *Salvia mellifera*– Black Sage, *Salvia leucophylla* – Purple Sage, *Acmispon glaber* – Deerweed, *Sambucus mexicana* – Mexican Elderberry, *Simmondsia chinensis* – Jojoba and *Penstemon centranthifolius* – Scarlet Bugler. A new plant species was observed for the first time on Deck C, *Emmenanthe penduliflora* – Whispering Bells. This is a native annual wildflower that germinates after the presence of fire. Some photos of the above listed species are included in this report.
- A visual inspection of the PM10 Berm Oak Trees was completed and Shortpod Mustard (*Hirshfeldia incana*) and Red Brome Grass (*Bromus madritensis*) have flowered and are

- going to seed. We recommend that the areas adjacent to Decks B and C receive weed abatement as soon as possible to limit the spread of these weeds onto the Decks. Some of the recently planted (Fall 2020) Oak Tree saplings are struggling to establish. Approximately (6) six of the newly planted Coast Live Oak Trees have died. Any new plantings should occur during the fall months so that the saplings can take advantage of the cooler temperatures and rainfall and saplings should be outfitted with drip emitters from the existing dripline system. Most of the established Coast Live Oak Trees at the PM10 Berm have recovered from fire damage in 2020.
- We also recommend that an aggressive weed abatement program continue during the spring months to keep Decks from being overrun. Several zones on Deck C have a number of exotic weeds. These include: Shortpod Mustard (*Hirschfeldia incana*), Red Brome Grass (*Bromus madritensis*), *Hordeum depressum* (Low Barley), Russian Thistle (*Salsola tragus*), Yellow Star Thistle (*Centaurea solstitialis*). Weed abatement, especially within Deck C and the PM10 Berm area will need to be a weekly during the spring months to keep weeds in check. All weeds should be carefully handled and bagged up to minimize any seed distribution during removals.
- During the visit of the decks, several bird species were seen actively utilizing the VCSS cover. The additional vegetation cover provides more opportunities for wildlife to traverse these sites.
- If appears that the dormant foliage of the Creeping Wild Rye (*Elymus triticoides*) may have been removed this winter. However, due to its rhizomatous root system, it is resprouting with new foliage and beginning to fill back in.



PM10 Berm with Shortpod Mustard and Red Broom Grass



Healthy Coast Live Oak Sapling at PM10 Berm



Shortpod Mustard, Yellow Star Thistle and Red Brome Grass Weeds



Active growing weeds on Deck C – Shortpod Mustard and Yellow Star Thistle





Bird species using VCSS vegetation cover on Decks





Flowering Black Sage (*Salvia mellifera*)



Flowering Black Sage, California Sagebrush (*Artemisia californica*) &
Bush Sunflower (*Encelia californica*)



New growth of Creeping Wild Rye (*Elymus triticoides*)



New growth of Foothill Needlegrass (*Stipa lepida*)



Blooming Deerweed (*Acmispon glaber*) with Scarlet Bugler (*Penstemon centranthifolius*) at right and Bush Sunflower (*Encelia californica*) at background



Blooming Purple Sage (*Salvia leucophylla*)



Blooming Mexican Elderberry (*Sambucus Mexicana*)



Blooming White Sage (*Salvia apiana*) with Bush Sunflower (*Encelia California*) in background



Black Sage (*Salvia mellifera*) growing in burnt remains of shrub





2021 Post-Fire recovery with new sprouted seedlings



2022 Post-Fire recovery at same location



Whispering Bells (*Emmenanthe penduliflora*) in bloom





View looking west with Deck C in the foreground and Deck B in the background

City-Side Sage Mitigation (Deck B):

- Deck B Trail site continues to recover from the Saddleridge Fire and damage from fire fighting efforts just a few years ago. Exotic weeds within Deck B's trail site are minimal and not as extensive as Deck C. There is ample weed growth on the downslopes of Deck B/C interface. This area is designated as our next area for revegetation along with the eastern portion of Deck B.
- Although it was several days after rainfall at the site, there was still evidence of standing water at the eastern side of Deck B. As part of the revegetation improvements, ADG's grading plans show microtopography and drainage swales along that edge, eliminating the low spots and providing more positive drainage.
- The trail deck area still needs to close off openings along the perimeter and fill in with the T-Bar stakes to eliminate vehicular traffic onto the deck. Access points that were used during the fire fighting efforts are now reestablishing with vegetation and access should be blocked off to eliminate and future driving onto the deck.



Deck B/C downslope with Shortpod Mustard and Deerweed. This slope is included in the next revegetation set of plans.



December 2019 Post-Fire



April 2022





Reestablishment of VCSS shrubs and grasses within swale



New Creeping Wild Rye (*Elymus triticoides*) growing along swale where soil sediment has collected



Ponding at eastern edge of Deck B





Parasitic Dodder/Witch's Hair (*Cuscuta cephalanthi*)



Post-Fire December 2019



April 2022 Recovery

Signed: Gregg Denson

Date: 4-18-22

DISTRIBUTION

Republic Services



Contractor

Project Manager (Gregg Denson)

Other _____



Photo Station #1 - April 2021 (East)



Photo Station #1 - April 2022 (East)



Photo Station #1 - April 2021 (North)



Photo Station #1 - April 2022 (North)



Photo Station #1 - April 2021 (West)



Photo Station #1 - April 2022 (West)



Photo Station #2 - April 2021 (East)



Photo Station #2 - April 2022 (East)



Photo Station #2 - April 2021 (North)



Photo Station #2 - April 2022 (North)



Photo Station #2 - April 2021 (South)



Photo Station #2 - April 2022 (South)



Photo Station #3 - April 2021 (East)



Photo Station #3 - April 2022 (East)



Photo Station #3 - April 2021 (North)



Photo Station #3 - April 2022 (North)



Photo Station #3 - April 2021 (West)



Photo Station #3 - April 2022 (West)



Photo Station #4 - April 2021 (South)



Photo Station #4 - April 2022 (South)



Photo Station #4 - April 2021 (East)



Photo Station #4 - April 2022 (East)



Photo Station #4 - April 2021 (West)



Photo Station #4 - April 2022 (West)



Photo Station #5 - April 2021 (East)



Photo Station #5 - April 2022 (East)



Photo Station #5 - April 2021 (North)



Photo Station #5 - April 2022 (North)



Photo Station #5 - April 2021 (West)



Photo Station #5 - April 2022 (West)



Photo Station #6 - April 2021 (East)



Photo Station #6 - April 2022 (East)



Photo Station #6 - April 2021 (North)



Photo Station #6 - April 2022 (North)



Photo Station #6 - April 2021 (West)



Photo Station #6 - April 2022 (West)



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Photo Station #7 - April 2022 (East)



Photo Station #7 - April 2021 (West)

Photo Station #7 - April 2022 (West)



Photo Station #7 - April 2021 (North)

Photo Station #7 - April 2022 (North)



Photo Station #8 - April 2021 (East)



Photo Station #8 - April 2022 (East)



Photo Station #8 - April 2021 (North)



Photo Station #8 - April 2022 (North)



Photo Station #8 - April 2021 (West)



Photo Station #8 - April 2022 (West)



Photo Station #9 - April 2021 (East)



Photo Station #9 - April 2022 (East)



Photo Station #9 - April 2021 (North)



Photo Station #9 - April 2022 (North)



Photo Station #9 - April 2021 (West)



Photo Station #9 - April 2022 (West)



Photo Station #2 - April 2021 (North)



Photo Station #2 - April 2022 (North)



Photo Station #2 - April 2021 (East)



Photo Station #2 - April 2022 (East)



Photo Station #2 - April 2021 (West)



Photo Station #2 - April 2022 (West)

ATTACHMENT 4





Rincon Consultants, Inc.

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April 22, 2022
Project No: 21-11086

Kate Downey
Environmental Manager
Republic Services
14747 San Fernando Road
Sylmar, California 91342
Via email: KDowney@republicservices.com

Subject: Coastal Sage Scrub City South C Trial Plot Monitoring Report, Sunshine Canyon Landfill – 1st Quarter, 2022

Dear Ms. Downey,

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 first quarter of 2022.

Methods

On March 29, 2022, Rincon Consultants monitored the Coastal Sage Scrub City South C Trial Plot (trial plot) at the Sunshine Canyon Landfill, which constitutes the first quarter monitoring for 2022. 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-meter² 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) – 15%
- Percent basal cover (herbs) – 12%
- Percent bare ground – 39%
- Percent rock or other – 5%
- Percent canopy (shrubs) – 46%
- Percent canopy (herbs) – 17%

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

- Percent basal cover (shrubs) – 18%
- Percent basal cover (herbs) – 10%
- Percent bare ground – 40%
- Percent rock or other – 5%
- Percent canopy (shrubs) – 40%
- Percent canopy (herbs) – 13%



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

- Percent basal cover (shrubs) – 11%
- Percent basal cover (herbs) – 34%
- Percent bare ground – 28%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 22%
- Percent canopy (herbs) – 43%

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							
Native Shrubs									
<i>Acmispon glaber</i>					4	8%	1	2%	
<i>Artemisia californica</i>					1	2%			
<i>Atriplex lentiformis</i>	8	16%	4	8%	2	4%	5	10%	
<i>Atriplex polycarpa</i>	3	6%	11	22%	4	8%			
<i>Atriplex spinosa</i>									
<i>Baccharis pilularis</i>									
<i>Diplacus aurantiacus</i>									
<i>Encelia californica</i>	9	18%	9	18%	3	6%	13	26%	
<i>Salvia apiana</i>									
<i>Salvia mellifera</i>									
Native Herbs									
<i>Achillea millefolium</i>									
<i>Cryptantha intermedia</i>									
<i>Helianthus annuus</i>					1	2%	1	2%	
<i>Elymus triticoides</i>					1	2%			
<i>Nasella pulchra</i>									
<i>Sisyrinchium bellum</i>									
<i>Vulpia microstachys</i>									
Non-Native Herbs									
<i>Bromus diandrus</i>									
<i>Bromus madritensis</i>					3	6%	5	10%	
<i>Echinochloa crus-galli</i>									
<i>Erodium cicutarium</i>					1	2%			
<i>Hirschfeldia incana</i>									
<i>Hordeum murinum</i>	6	12%	15	30%	3	6%	3	6%	
<i>Salsola tragus</i>							1	2%	
Bare ground	24	48%	11	22%	27	54%	21	42%	
								A,B,C,D	
								Percent Cover	
Percent Cover Native Shrub		40%		48%		28%		38%	39%
Percent Cover Native Herb		0%		0%		4%		2%	2%
Percent Cover Non-Native Shrub		0%		0%		0%		0%	0%
Percent Cover Non-Native Herb		12%		30%		14%		18%	19%
Percent Bare Ground		48%		22%		54%		42%	42%



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
Native Shrubs								
<i>Acmispon glaber</i>							2	4%
<i>Artemisia californica</i>								
<i>Atriplex lentiformis</i>			9	18%	2	4%		
<i>Atriplex polycarpa</i>	1	2%	8	16%	3	6%	2	4%
<i>Atriplex spinosa</i>			2	4%				
<i>Baccharis pilularis</i>								
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	12	24%	4	8%	24	48%	29	58%
<i>Salvia leucophylla</i>								
<i>Salvia mellifera</i>								
Native Herbs								
<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>								
Non-Native Herbs								
<i>Bromus diandrus</i>							1	2%
<i>Centaurea melitensis</i>								
<i>Echinochloa crus-galli</i>								
<i>Erigeron canadensis</i>								
<i>Erodium cicutarium</i>	4	8%	1	2%				
<i>Hirschfeldia incana</i>	3	6%						
<i>Hordeum murinum</i>	6	12%	7	14%				
<i>Salsola tragus</i>							1	2%
Bare ground	24	48%	19	38%	21	42%	14	28%
		Plot E	Plot F		Plot G	Plot H	E,F,G,H Percent Cover	
Percent Cover Native Shrub		26%	46%		58%	66%	49%	
Percent Cover Native Herb		0%	0%		0%	2%	1%	
Percent Cover Non-Native Shrub		0%	0%		0%	0%	0%	
Percent Cover Non-Native Herb		26%	16%		0%	4%	12%	
Percent Bare Ground		48%	38%		42%	28%	39%	



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
Native Shrubs								
<i>Adenostema fasciculatum</i>								
<i>Artemisia californica</i>			2	4%				
<i>Atriplex lentiformis</i>	1	2%	2	4%				
<i>Atriplex polycarpa</i>							3	6%
<i>Atriplex spinosa</i>								
<i>Baccharis pilularis</i>							1	2%
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	17	34%	5	10%			32	64%
<i>Salvia apiana</i>								
<i>Salvia mellifera</i>								
Native Herbs								
<i>Achillia mellifolium</i>								
<i>Cryptantha intermedia</i>								
<i>Helianthus annuus</i>					2	4%		
<i>Elymus triticoides</i>					28	56%	3	6%
<i>Nasella pulchra</i>								
<i>Sisyrinchium bellum</i>								
<i>Vulpia microstachys</i>								
Non-Native Herbs								
<i>Bromus diandrus</i>			3	6%			1	2%
<i>Bromus madritensis</i>	10	20%	10	20%				
<i>Erigeron canadensis</i>								
<i>Erodium cicutarium</i>			1	2%				
<i>Hirschfeldia incana</i>			7	14%	1	2%		
<i>Hordeum murinum</i>	5	10%	14	28%				
<i>Salsola tragus</i>								
Bare ground		17	6		12%	38%	10	20%
		Plot I	Plot J		Plot K	Plot L	I,J,K,L Percent Cover	
Percent Cover Native Shrub		36%	18%		0%	72%	32%	
Percent Cover Native Herb		0%	0%		60%	6%	17%	
Percent Cover Non-Native Shrub		0%	0%		0%	0%	0%	
Percent Cover Non-Native Herb		30%	70%		2%	2%	26%	
Percent Bare Ground		34%	12%		38%	20%	26%	



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	46%	39%	40%	49%	22%	32%
Percent Cover Herb	17%	21%	13%	13%	43%	43%
Percent Bare Ground	39%	42%	40%	39%	28%	26%

The majority of the trial plot substantially burned during the Saddleridge Fire in October 2019. With the exception of quadrats A, B E, F and G, the remainder of the quadrats burned entirely. Fire equipment, such as bulldozers, removed and/or crushed much of the vegetation that did not burn in quadrats A, B E, F and G. Following the fire, non-native species such as brome grasses (*Bromus* spp.) and foxtail barley (*Hordeum murinum*) established in areas that were previously dominated by saltbush (*Atriplex* spp.). However, the trial plot is showing notable recovering from the fire, as evidenced by establishment and growth of native shrub species such as allscale saltbush (*Atriplex polycarpa*), big saltbush (*Atriplex lentiformis*), California sunflower (*Encelia californica*), and California sagebrush (*Artemisia californica*) that previously dominated the overall cover of the trial plot prior to the fire.

The quantitative percent cover of native shrub species currently has an average of 39 percent within the hydroseed quadrats, 49 percent within the imprint quadrats, and 32 percent within the hand broadcast quadrats (Tables 1-3). Native shrub quantitative percent cover increased across all quadrats from the fourth quarter monitoring event in 2021, highlighting the recovery of the trial plot since the fire. California sunflower and brittlebush (*Encelia farinosa*) were in flower during the monitoring event, and the saltbush species were in their vegetative state. Native annual herbs such as annual sunflower (*Helianthus annuus*) and California goldfields (*Lasthenia californica*) were observed flowering within the sampled quadrats in the trial plot. However, most native herbaceous species were in their early vegetative stages and were not yet flowering but will flower at some point this spring. Native herb cover calculated qualitatively decreased slightly across all quadrats from the fourth quarter of 2021 (hydroseed quadrats: 2 percent cover; imprint quadrats: 1 percent cover; hand broadcast quadrats: 17 percent cover). The slight decrease in native plant cover is likely tied to the ongoing weeding effort conducted by Republic Services, as beardless wild rye (*Elymus triticoides*) individuals were observed to be trimmed by a weedwhacker, particularly in plot K (Attachment B, Photograph 11).

Non-native plants have increased slightly in cover within the trial plot between the fourth quarter of 2021 to the first quarter of 2022. Non-native annual grasses and forbs such as foxtail barley, Mediterranean grass (*Schismus arabicus*), red brome (*Bromus madritensis*), and short podded mustard (*Hirschfeldia incana*), which were germinating in the fourth quarter of 2021, are now fruiting. It appears that a weeding treatment had recently been performed on the non-native grasses, as a majority of individuals were cut at the base of their stems by a weedwhacker. Additional growth of non-native plant species is expected to occur throughout the spring and into summer of 2022. Total non-native herbaceous cover currently has an average of 19 percent within the hydroseed quadrats (up from 11%



in the fourth quarter of 2021), 12 percent within the imprint quadrats (no change from the fourth quarter of 2021), and 26 percent (up from 24 percent in the fourth quarter of 2021) 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 on 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 of time 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

Additionally, southern California is experiencing ongoing drought conditions that have generally persisted since the Saddleridge Fire, limiting germination and growth of native plant species and recovery of the trial plot through natural recruitment. If drought conditions continue, an irrigation system within the trial plot area should be installed to create conditions that are suitable for seed germination and re-establishment of native vegetation.

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.



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.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Greg Ainsworth", written in a cursive style.

Greg Ainsworth
Natural Resources Director

A handwritten signature in black ink, appearing to read "Kyle Gern", written in a cursive style.

Kyle Gern
Biologist

Attachments

Attachment A Deck C Revegetation Area Quadrat Layout and Planting Plan

Attachment B Representative Site Photographs

Attachment A

Deck C Revegetation Area Quadrat Layout and Planting Plan





Photograph 1. Quadrat A facing northeast from southwest corner (March 29, 2022).



Photograph 2. Quadrat B facing northeast from southwest corner (March 29, 2022).



Photograph 3. Quadrat C facing northeast from southwest corner (March 29, 2022).



Photograph 4. Quadrat D facing northeast from southwest corner (March 29, 2022).



Photograph 5. Quadrat E facing northeast from southwest corner (March 29, 2022).



Photograph 6. Quadrat F facing northeast from southwest corner (March 29, 2022).



Photograph 7. Quadrat G facing northeast from southwest corner (March 29, 2022).



Photograph 8. Quadrat H facing northeast from southwest corner (March 29, 2022).



Photograph 9. Quadrat I facing northeast from southwest corner (March 29, 2022).



Photograph 10. Quadrat J facing northeast from southwest corner (March 29, 2022).

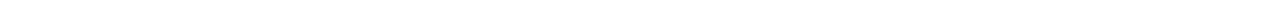


Photograph 11. Quadrat K facing northeast from southwest corner (March 29, 2022).



Photograph 12. Quadrat L facing northeast from southwest corner (March 29, 2022).

ATTACHMENT 5





Rincon Consultants, Inc.

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April 22, 2022
Project No: 21-11086

Kate Downey
Environmental Manager
Republic Services
14747 San Fernando Road
Sylmar, California 91342
Via email: KDowney@republicservices.com

**Subject: Coastal Sage Scrub City South B Trial Plot Monitoring Report, Sunshine Canyon Landfill –
1st Quarter, 2022**

Dear Ms. Downey,

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 first quarter of 2022.

Methods

On March 29, 2022, Rincon Consultants monitored the Coastal Sage Scrub City South B Trial Plot (trial plot) at the Sunshine Canyon Landfill, which constitutes the first quarter of monitoring for 2022. 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-meter² 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) – 3%
- Percent bare ground – 89%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 14%
- Percent canopy (herbs) – 8%

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

- Percent basal cover (shrubs) – 9%
- Percent basal cover (herbs) – 2%
- Percent bare ground – 76%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 18%
- Percent canopy (herbs) – 6%

Broadcast seeding – Quadrat C

- Percent basal cover (shrubs) – 10%



- Percent basal cover (herbs) – 10%
- Percent bare ground – 25%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 46%
- Percent canopy (herbs) – 37%

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

- Percent basal cover (shrubs) – 2%
- Percent basal cover (herbs) – 2%
- Percent bare ground – 92%
- Percent rock or other – 7%
- Percent canopy (shrubs) – 9%
- Percent canopy (herbs) – 8%

Soil Imprinting and hand broadcast – Quadrat E

- Percent basal cover (shrubs) – 5%
- Percent basal cover (herbs) – 2%
- Percent bare ground – 80%
- Percent rock or other – 1%
- Percent canopy (shrubs) – 19%
- Percent canopy (herbs) – 6%

Percent Cover (Quantitative)

The representation of each species within each quadrat was estimated by broad cover classes (<1%, 15%, 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
Native Shrubs				
<i>Acmispon glaber</i>	1	2%		
<i>Artemisia californica</i>			1	2%
<i>Atriplex lentiformis</i>			7	14%
<i>Atriplex polycarpa</i>			2	4%
<i>Atriplex spinosa</i>				
<i>Baccharis pilularis</i>	6	12%		
<i>Baccharis salicifolia</i>				
<i>Encelia californica</i>				
<i>Salvia apiana</i>				
<i>Salvia mellifera</i>				
Non-Native Shrubs				
<i>Atriplex semibaccata</i>			2	4%
Native Herbs				
<i>Achillea millefolium</i>				
<i>Eschscholzia californica</i>				
<i>Elymus triticoides</i>	2	4%	3	6%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
Non-Native Herbs				
<i>Centaurea melitensis</i>	1	2%		
<i>Erodium cicutarium</i>	1	2%		
<i>Hirschfeldia incana</i>	3	6%		
Bare ground	36	72%	35	70%
	Quadrat A	Quadrat G	A and G (% Cover)	
Percent Cover Native Shrub	14%	20%	17%	
Percent Cover Native Herb	4%	6%	5%	
Percent Cover Non-Native Shrub	0%	4%	2%	
Percent Cover Non-Native Herb	10%	0%	5%	
Percent Bare Ground	72%	70%	71%	



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
Native Shrubs						
Native Herbs						
<i>Acmispon glaber</i>	10	20%			2	4%
<i>Artemisia californica</i>	11	22%			1	2%
<i>Atriplex lentiformis</i>			1	2%		
<i>Atriplex polycarpa</i>						
<i>Atriplex spinosa</i>						
<i>Baccharis pilularis</i>						
<i>Encelia californica</i>	1	2%				
<i>Encelia farinosa</i>	3	6%				
<i>Eriogonum fasciculatum</i>	3	6%				
<i>Isocoma menziesii</i>	3	6%				
<i>Salvia apiana</i>	1	2%	1	2%	1	2%
<i>Salvia mellifera</i>	5	10%				
<i>Sambucus nigra ssp. caerulea</i>	1	2%				
<i>Elymus triticoides</i>	1	2%				
<i>Helianthus annuus</i>						
<i>Sisyrinchium bellum</i>						
	1	2%				
<i>Vulpia microstachys</i>						
Non-Native Herbs						
Bare ground						
<i>Bromus diandrus</i>			1	2%		
<i>Festuca myuros</i>					1	2%
<i>Hordeum vulgare</i>						
<i>Mesembryanthemum nodiflorum</i>			6	12%		
<i>Polygonum aviculare</i>						
<i>Salsola tragus</i>			1	2%		
<i>Schismus arabicus</i>					1	2%
Percent Cover Native Shrub					1	2%
Percent Cover Native Herb	13	26%	40	80%	43	86%
Percent Cover Non-Native Shrub						
Percent Cover Non-Native Herb						
Percent Bare Ground	72%		4%		4%	27%
	2%		0%		0%	1%
	0%		0%		0%	0%
	0%		16%		6%	7%
	26%		80%		86%	64%



Table 3 Broadcast Seeding – Quadrat C

Species	Quadrat C	
	Number of Hits	Percent Cover
Native Shrubs		
<i>Acmispon glaber</i>	15	30%
<i>Artemisia californica</i>	9	18%
<i>Atriplex lentiformis</i>		
<i>Atriplex polycarpa</i>		
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia californica</i>		
<i>Encelia farinosa</i>	1	2%
<i>Isocoma menziesii</i>		
<i>Salvia apiana</i>		
<i>Salvia mellifera</i>		
Native Herbs		
<i>Achillea millefolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>		
<i>Nasella pulchra</i>		
<i>Sisyrinchium bellum</i>		
<i>Vulpia microstachys</i>		
Non-Native Herbs		
<i>Centaurea melitensis</i>	12	24%
<i>Echinochloa crus-galli</i>		
<i>Erodium cicutarium</i>		
<i>Hirschfeldia incana</i>	2	4%
<i>Hordeum vulgare</i>		
<i>Marrubium vulgare</i>		
Bare ground	11	22%
Quadrat C (% cover)		
Percent Cover Native Shrub	50%	
Percent Cover Native Herb	0%	
Percent Cover Non-Native Shrub	0%	
Percent Cover Non-Native Herb	28%	
Percent Bare Ground	22%	



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

Species	Quadrat D		Quadrat I	
	Number of Hits	Percent	Number of Hits	Percent Cover
Native Shrubs				
<i>Acmispon glaber</i>			1	2%
<i>Artemisia californica</i>	2	4%		
<i>Atriplex lentiformis</i>			2	4%
<i>Atriplex polycarpa</i>	1	2%	2	4%
<i>Atriplex spinosa</i>				
<i>Baccharis pilularis</i>				
<i>Encelia farinosa</i>	1	2%		
<i>Eriogonum fasciculatum</i>	2	4%	1	2%
<i>Isocoma menziesii</i>			1	2%
<i>Peritoma arborea</i>	1	2%		
Non-Native Shrubs				
<i>Atriplex semibaccata</i>			2	4%
Native Herbs				
<i>Achillea millefolium</i>				
<i>Eschscholzia californica</i>				
<i>Elymus triticoides</i>	1	2%	4	8%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
<i>Vulpia microstachys</i>				
Non-Native Herbs				
<i>Bromus madritensis</i>			1	2%
<i>Centaurea melitensis</i>	1	2%		
<i>Hordeum vulgare</i>				
<i>Salsola tragus</i>				
<i>Schismus arabicus</i>				
Bare ground	41	82%	35	70%
	Quadrat D		Quadrat I	D and I (% cover)
Percent Cover Native Shrub	14%		14%	14%
Percent Cover Native Herb	2%		8%	5%
Percent Cover Non-Native Shrub	0%		4%	2%
Percent Cover Non-Native Herb	2%		4%	3%
Percent Bare Ground	82%		70%	76%



Table 5 Soil Imprinting and Hand Broadcast – Quadrat E

Quadrat E		
Species	Number of Hits	Percent Cover
Native Shrubs		
<i>Acmispon glaber</i>		
<i>Artemisia californica</i>	1	2%
<i>Atriplex lentiformis</i>	5	10%
<i>Atriplex polycarpa</i>	4	8%
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia farinosa</i>	1	2%
<i>Eriogonum fasciculatum</i>	5	10%
<i>Isocoma menziesii</i>	4	8%
<i>Opuntia littoralis</i>		
<i>Salvia apiana</i>		
<i>Salvia mellifera</i>		
Native Herbs		
<i>Achillia mellifolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>		
<i>Nasella pulchra</i>		
<i>Sisyrinchium bellum</i>		
<i>Vulpia microstachys</i>		
Non-Native Herbs		
<i>Bromus diandrus</i>		
<i>Centaurea melitensis</i>		
<i>Echinochloa crus-galli</i>		
<i>Erodium cicutarium</i>		
<i>Hirschfeldia incana</i>	1	2%
<i>Hordeum vulgare</i>		
<i>Salsola tragus</i>		
<i>Schismus arabicus</i>		
Bare ground	29	58%
Quadrat E (% cover)		
Percent Cover Native Shrub		40%
Percent Cover Native Herb		0%
Percent Cover Non-Native Shrub		0%
Percent Cover Non-Native Herb		2%
Percent Bare Ground		58%



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		17%	28%	50%	14%	40%
Percent Cover Native Herb		5%	1%	0%	5%	0%
Percent Cover Non-Native Shrub		2%	0%	0%	2%	0%
Percent Cover Non-Native Herb		5%	7%	28%	3%	2%
Percent Bare Ground		71%	64%	22%	76%	58%

The trial plot was established in November 2018. The Saddleridge Fire that occurred in October 2019 burned a large portion of the trial plot, but mostly spared the sample plots. The intense heat from the fire appeared to have dried out a lot of the vegetation within the sample plots and the irrigation throughout the trial plot was damaged and is no longer functioning.

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*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), and California broomsage (*Lepidospartum squamatum*). Native shrub species resprouted from burned stumps following the Saddleridge Fire, from the pre-existing seedbank, and from seeds installed during the seeding treatments conducted during implementation of the trial plot. Native shrubs have shown notable establishment and growth since the fire, and the areas that burned appear to have almost fully recovered from the based upon observations made during the first quarter monitoring event of 2022. However, below-average rainfall in the past two years throughout southern California has impacted native species growth in the trial plot. Specifically, native herbaceous species cover was at or below an average of five percent across all treatment types in the first quarter of 2022 (Table 6).

Non-native plant cover was generally low throughout all treatment types except for Quadrat C, where non-native cover was 28 percent. However, non-native plant cover has increased across all treatment types in the trial plot except the broadcast seeding with soil imprinting treatment type (quadrats D and I). The increase in non-native plant cover was expected to occur following winter rainfall events of 2022 and is expected to continue to increase through the second quarter of 2022. The majority of non-native plant species observed within the trial plot are grasses such as red brome (*Bromus madritensis*) and ripgut brome (*Bromus diandrus*). And annual forbs such as short podded mustard (*Hirschfeldia incana*), redstem filaree (*Erodium cicutarium*), and tocalote (*Centaurea melitensis*). These plant species were observed in their vegetative, flowering, and fruiting states, and will set seed during the spring of 2022. Non-native herbaceous species abundance is expected to increase between during the spring of 2022. The day prior to the first quarter monitoring event of 2022 (March 28, 2022), the regional vicinity of the Sunshine Canyon Landfill received approximately 1.64 inches of rainfall (Western Regional Climate



Center 2022); therefore, more native and non-native plants are expected to germinate due this late season rain event.

Broadcast seeding in Quadrat C had the highest percent cover of native shrubs using the point intercept method (50%) and represents an increase in cover of 12 percent since the fourth quarter of 2021. Notably, deerweed (*Acmispon glaber*) percent cover increased by 22 percent since the fourth quarter of 2021. Deerweed 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; 40 percent), and the third highest was the soil imprinting treatment (Quadrats B, F, and H; 28 percent) (Table 6). As described above, percent cover of native herbaceous plant species was low in all seeding methods, ranging between 0 and 5 percent. Native (and non-native) herbaceous species abundance is expected to increase between the first and second quarters of 2022 in response to the late season rain event.

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 and is currently being implemented 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

Southern California is experiencing ongoing drought conditions that have generally persisted since the Saddleridge Fire, limiting germination and growth of native plant species and recovery of the trial plot through natural recruitment. If drought conditions continue, the irrigation system within the trial plot should be re-installed to create conditions that are suitable for 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.

Western Regional Climate Center. 2022. Climate Summary for the Porter Ranch RAWS Station. Available online at <https://raws.dri.edu/cgi-bin/rawMAIN.pl?caCPRT>. Accessed April 3, 2022.

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.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Greg Ainsworth", with a stylized flourish at the end.

Greg Ainsworth
Natural Resources Director

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

Kyle Gern
Biologist

Attachments

Attachment A Deck B Revegetation Area Quadrat Layout

Attachment B Representative Site Photographs

Attachment A

Deck B Revegetation Area Quadrat Layout



Deck B Revegetation Area Quadrat Layout



Attachment B

Representative Site Photographs



Photograph 1. Quadrat A. Photograph was corrupted; therefore, no photograph is provided.



Photograph 2. Quadrat B facing northeast from southwest corner (March 29, 2022).





Photograph 3. Quadrat C facing northeast from southwest corner (March 29, 2022).



Photograph 4. Quadrat D facing northeast from southwest corner (March 29, 2022).



Photograph 5. Quadrat E facing northeast from southwest corner (March 29, 2022).



Photograph 6. Quadrat F facing northeast from southwest corner (March 29, 2022).



Photograph 7. Quadrat G facing northeast from southwest corner (March 29, 2022).



Photograph 8. Quadrat H facing northeast from southwest corner (March 29, 2022).



Photograph 9. Quadrat I facing northeast from southwest corner (March 29, 2022)

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



Republic Services
Sunshine Canyon Landfill Ultimate Entrance Improvement Project Oak Tree Report

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.

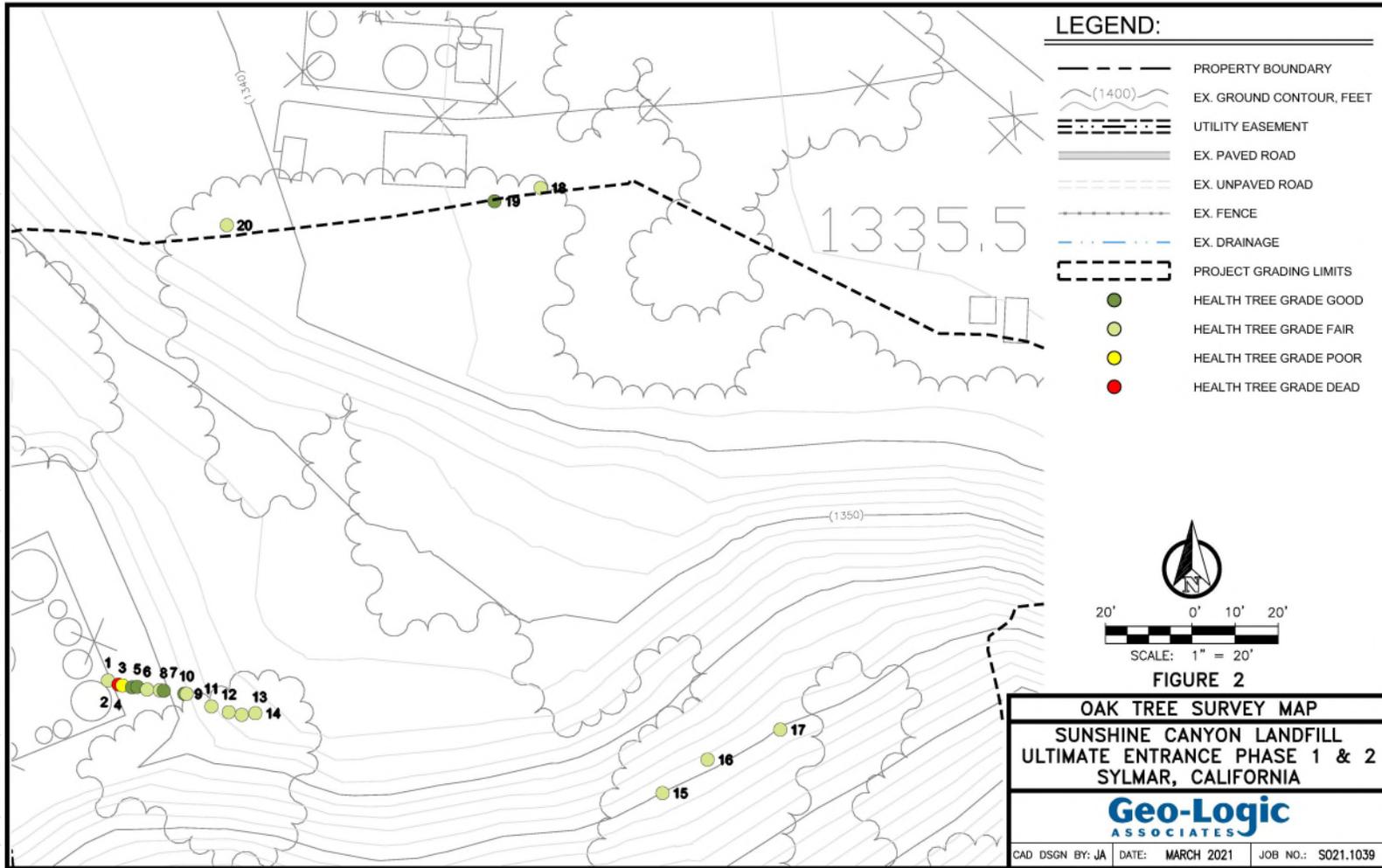
Please contact Greg Ainsworth at (818) 564-5544 or email at gainsworth@rinconconsultants.com if you have any question or comments regarding the information provided in this report.

Sincerely,
Rincon Consultants, Inc.

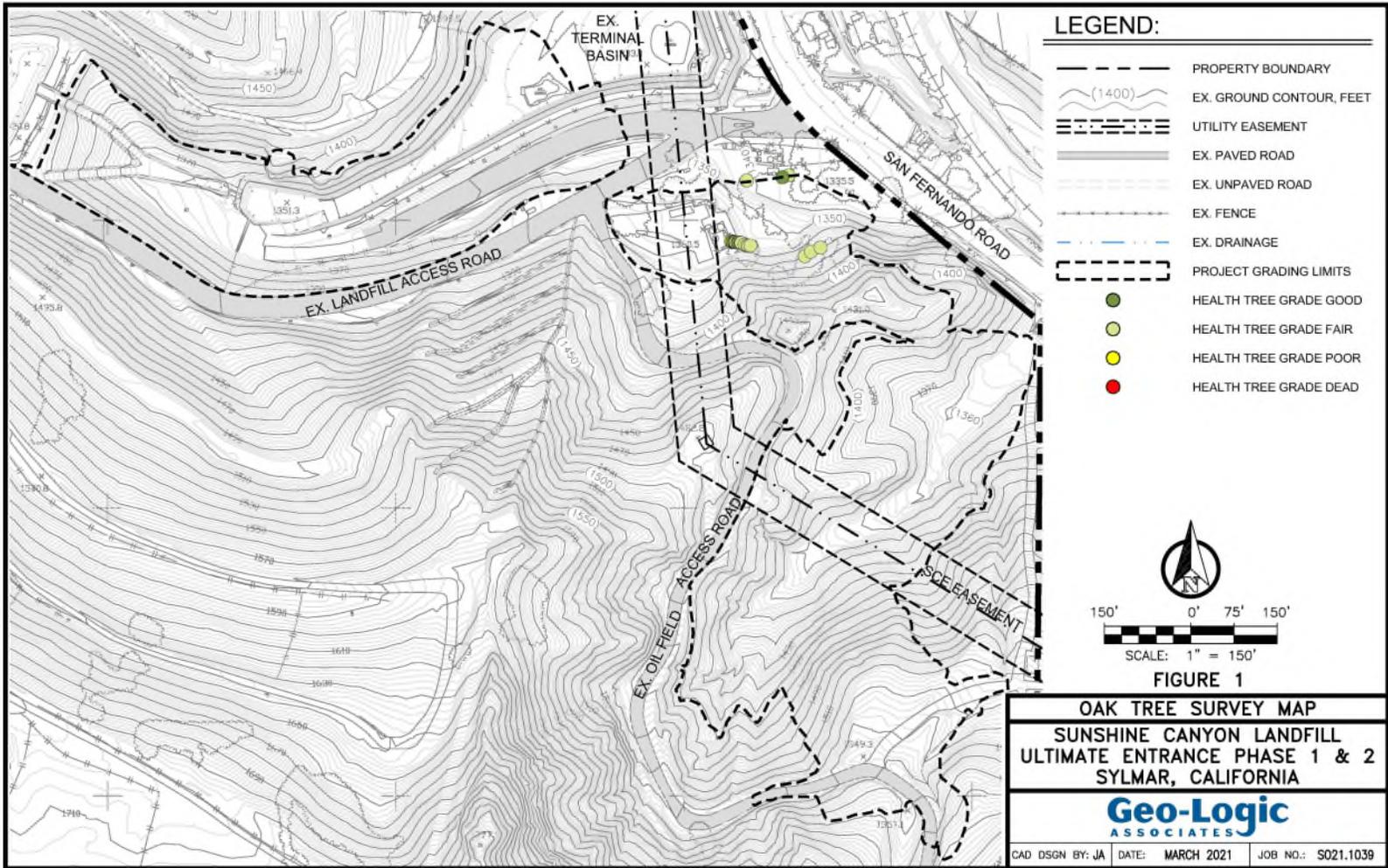
A handwritten signature in black ink, appearing to read 'Greg Ainsworth', with a large, sweeping flourish extending to the right.

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

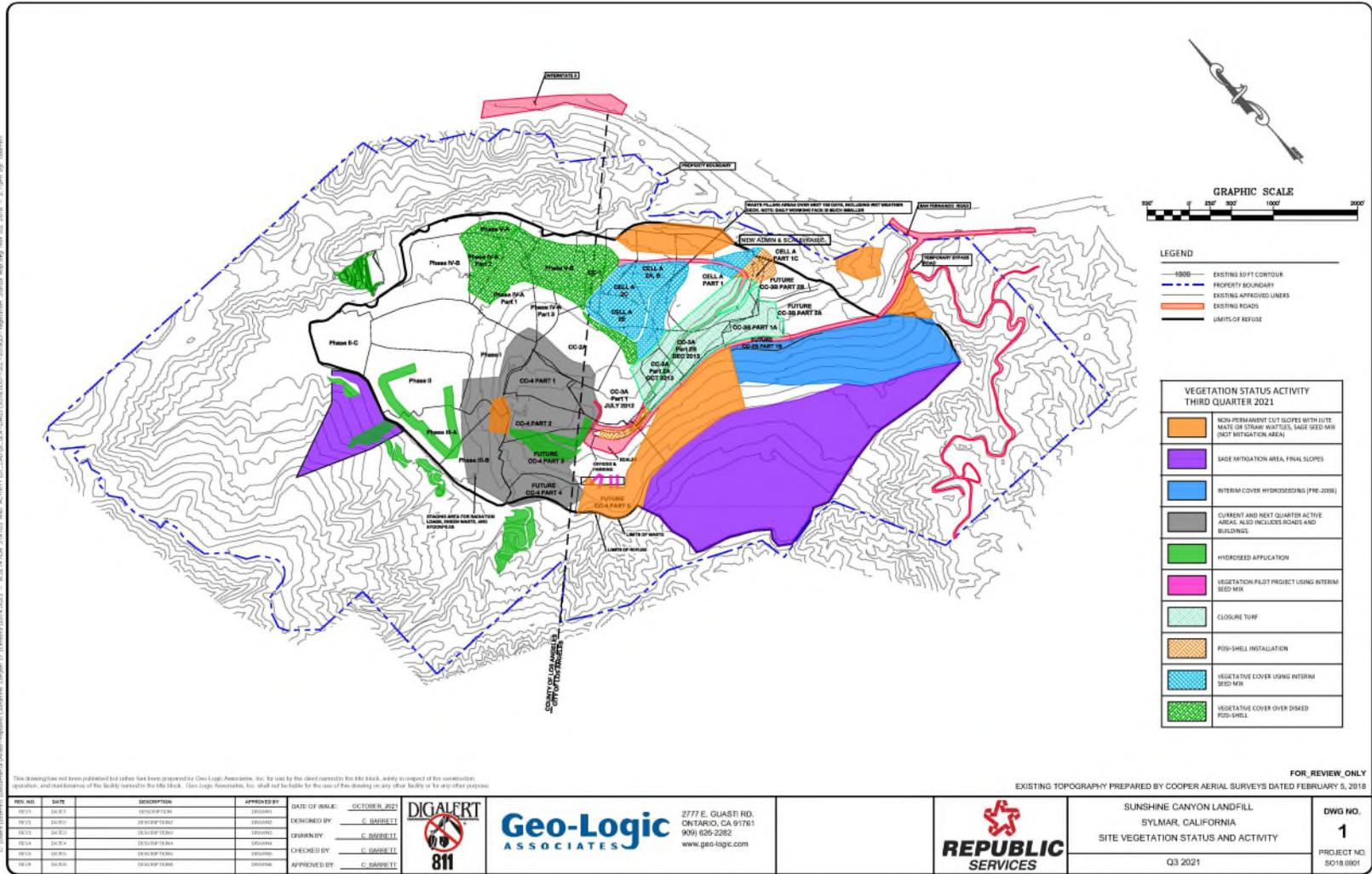
P:\SITES\SUNSHINE CANYON ULTIMATE ENTRANCE ROAD CONST PHASE 1-2\EXHIBITS\S0211039-SCL-XHBT-OAK TREES LOCATIONS-FIG 2-(2021-03-24).DWG March 26, 2021 - 10:31 AM BY: G.A.-USER



P:\SITES\SUNSHINE CANYON ULTIMATE ENTRANCE ROAD CONST PHASE 1-2\EXHIBITS\S021.1039-SCL-VHBT-OAK TREES LOCATIONS-FIG 1-(2021-03-24).DWG March 26, 2021 - 10:30 AM BY: GJA-USER



DRAWING 1



This drawing has not been published but rather has been prepared by Geo-Logic Associates, Inc. for use by the client pursuant to the site block, solely in respect of the construction, operation, and maintenance of the facility named in the title block. Geo-Logic Associates, Inc. shall not be liable for the use of this drawing on any other facility or for any other purpose.

REV. NO.	DATE	DESCRIPTION	APPROVED BY	DATE OF ISSUE
REV1	04/21	ISSUED	ISSUED	OCTOBER 2021
REV2	04/21	DESIGN/ISSUE	ISSUED	C. BARRETT
REV3	04/21	DESIGN/ISSUE	ISSUED	C. BARRETT
REV4	04/21	DESIGN/ISSUE	ISSUED	C. BARRETT
REV5	04/21	DESIGN/ISSUE	ISSUED	C. BARRETT
REV6	04/21	DESIGN/ISSUE	ISSUED	C. BARRETT



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SUNSHINE CANYON LANDFILL
 SYLMAR, CALIFORNIA
 SITE VEGETATION STATUS AND ACTIVITY
 Q3 2021

FOR REVIEW ONLY
 EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 5, 2018
 DWG NO. 1
 PROJECT NO. S018.0001