

January 31, 2022

Mr. Martins Aiyetiwa, P.E. Senior Civil Engineer County of Los Angeles, Department of Public Works 900 South Fremont Avenue Alhambra, CA 91803-1331

Subject: Sunshine Canyon Landfill, Quarterly Vegetation Report

Fourth Quarter 2021 Vegetation Report

Mr. Aiyetiwa,

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 fourth quarter of 2021. 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. The winterization activities for 2021 was completed in third/fourth quarters 2021 during the month of September andOctober.

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 – 4Q2021

During the fourth quarter of 2021, 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)
- Thickleaf 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 aboveground 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 fourth quarter of 2021, 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 2021 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 third quarter of 2021 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, Third Quarter 2021

Sage Miligation Areas, Third Quarter 2021					
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 fourth 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)	d Upper s (Decks C, and Decks C) and Decks C are a second 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)	1 /1 OOMINATAN WITH HAN-		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) seeds during the range season after soil mo		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, Third Quarter 2021

AREA	REC	COMMENDATION	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		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 Continue w needed		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 – Third Quarter 2021

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 2021 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 the LA County forester, local nurseries and universities in Q1 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.

City of San Fernando Arbor Day with Sun Valley Hauling

In preparation of Arbor Day on April 30th, 2021 the City of San Fernando and Sun Valley Hauling requested Coast Live Oaks trees from the Sunshine Canyon Landfill Nursery. As we do every year, except for last year due to the coronavirus pandemic, Republic Services assist the City of San Fernando in celebrating Arbor Day with planting trees during their event. During this year on April 27th four (4) Coast Live Oak trees were planted in celebration. For

more information regarding these events please contact the City of San Fernando and Republic Services Sun Valley Hauling Division.



Donation to Local Community

As part of community outreach, a rancher in the area asked if he could plant some oaks 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 (818) 698.9418 if you have any questions.

Sincerely,

Kate Downey

Environmental Manager Sunshine Canyon Landfill

Cc: Ms. Dorcas Dee Hanson-Lugo, SCL LEA

Mr. David Thompson, SCL LEA

Ms. Tiffany Butler, City of Los Angeles, Department of City Planning

Ms. Devon Zatorski, City of Los Angeles Department of City Planning

Ms. Ly Lam, City of Los Angeles, Department of City Planning

Mr. Nicholas Hendricks, City of Los Angeles, Department of City Planning

Dr. Wen Yang, Los Angeles Regional Water Quality Control Board

Ms. Maria Masis, County of Los Angeles, Department of Regional Planning

Mr. Wayde Hunter, SCL CAC

Mr. Jim Aidukus, UltraSystems

County DPW Landfill Unit

Attachments

Attachment 1 Rincon Progress Report, City-Side Sage Mitigation Area

Attachment 2 Rincon Progress Report, County-Side Sage Mitigation

Area

Attachment 3 Architerra Design Group, Field Observation Report,

South City Sage Mitigation Pilot Project - 4Q2021 with

Photo Log

Attachment 4 Rincon Quarterly Monitoring Report - Coastal Sage

Scrub Deck C Pilot Study, 4Q2021

Attachment 5 Rincon Quarterly Monitoring Report - Coastal Sage

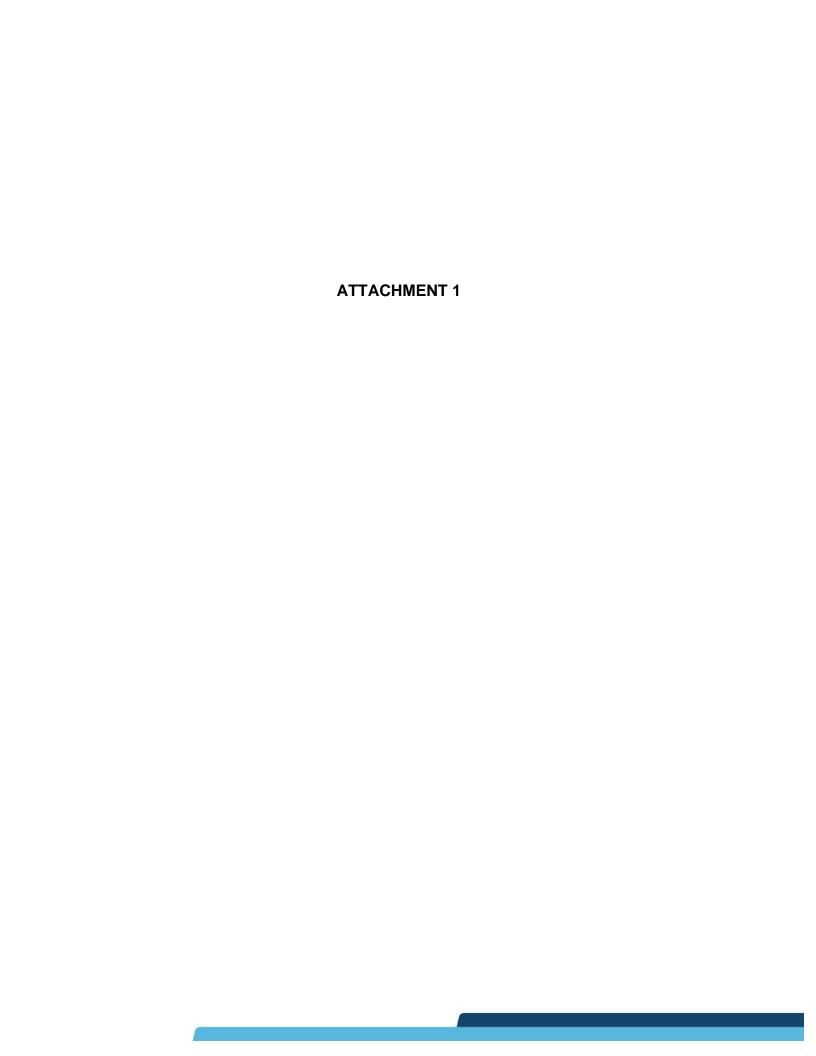
Scrub Deck B Pilot Study, 4Q2021

Attachment 6 Rincon Sunshine Canyon Landfill Ultimate Entry

Improvement Project, Oak Tree Survey Report

Drawing

Drawing 1 3Q2021 Site Vegetation Status and Activity



December 23, 2021 Project No: 21-11086

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

Via email: KDowney@republicservices.com

Subject: Qualitative Progress Report – 4th Quarter, 2021 for the Republic Services City-Side Sage

Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Ms. Downey,

On December 16, 2021, Rincon Consultants conducted the fourth quarter qualitative progress report of 2021 for the Republic Services City-Side Sage Mitigation Area. This memorandum 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 surrounding slope), 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, imprint, and hydroseed. 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 most prevalent native plant species observed within the Lower Deck in the fourth quarter of 2021 was California sunflower (Encelia californica). In 2020 following the Saddleridge Fire, areas that were previously dominated with saltbush species such as big saltbush (Atriplex lentiformis) and allscale saltbush (Atriplex polycarpa) were largely replaced by mats of non-native brome grasses (i.e., red brome [Bromus madritensis], ripgut brome [Bromus diandrus]) and foxtail barley [Hordeum murinum]). Currently, saltbush species have resprouted and showed signs of continued growth since the fire. Large stands of common sunflower (Helianthus annuus) were observed blooming in the third quarter of 2021 and are now setting seed. Exotic annual plant species such as foxtail barley and ripgut brome have increased in cover since the third monitoring event of 2021. Exotic annual plants were removed through weeding treatment that was applied to the landscape prior to the second quarter monitoring event. Exotic annual plants remained at low cover in the second and third quarters due to the weeding treatment. However, recent winter rainfall events have resulted in the germination of non-native annual species that have been previously observed in the Lower Deck. The majority of non-native vegetation that was observed



sprouting at the Lower Deck consisted of non-native annual grasses and short podded mustard. Additionally, Italian thistle (*Salsola tragus*) was observed setting seed within the Lower Deck.

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% of sage scrub plantings/seedlings and 30% 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, consisting of woody species such as brittlebush (*Encelia farinosa*), scarlet burglar (*Penstemon centranthifolius*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), coastal goldenbush (*Isocoma menziesii*), and white sage (*Salvia apiana*), and herbaceous species such as alkali rye (*Elymus triticoides*). Of all the observed native species, brittlebush and coastal goldenbush have shown the greatest increase in abundance between 2020 and the fourth quarter of 2021. The majority of native plant species had completed flowering by the fourth quarter of 2021 and have already set seed, with the exception of a few California buckwheat individuals that were observed 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 (*Hordeum murinum*), Mediterranean grass (*Schismus arabicus*), red brome (*Bromus madritensis*), and forbs such as short podded mustard (*Hirschfeldia incana*) that have begun germinating following the first winter rains of 2022. In general, non-native weed cover is generally low to moderate, and has slightly increased since the third quarter of 2021 due to rainfall-induced germination.

Upper Deck

Overall, the Upper Deck (Deck A) continues to be sparsely covered with native vegetation, and total vegetation coverage is sparse due to compacted and poor soil conditions. However, in the southern-center of the revegetation area, 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 (*Erodium cicutarium*), 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 (*Salsola tragus*), ripgut brome, red brome, and short podded mustard. California buckwheat is the most dominant native perennial woody plant species on the Upper Deck,

and it was observed in flower and setting seed during the fourth quarter of 2021; 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

		Native Plan	Exotic Plant Vegetation			
Location	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"-24"	Low	Moderate	Setting Seed/Germinating
Middle Deck	Minimal	Recovering from fire, drought	12"-24"	Low	Moderate	Setting Seed/Germinating
Upper Deck	Minimal	Poor soils, drought	12"-24"	Low	Moderate	Setting Seed/Germinating

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, ripgut brome, foxtail barley, and short podded mustard should be controlled by removing flowers and immature seeds heads before they drop. These areas should be reseeded with native herbaceous species that are known to grow well in the Lower (and Middle) Decks, particularly alkali 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. 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 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) native species, incorporate
 a soil amendment or mulch with high organic content by tilling it into the top 12 inches of the
 existing compacted soils to improve soil texture, drainage, porosity, and aerobic conditions. If an
 organic mulch or soil amendment is not feasible or available, incorporate available soil from
 borrow sites within the landfill that have the appropriate soil properties, so long as these
 borrowed soils have been determined to not have toxic conditions, such as boron or high
 salinity.

Plant Natives in Areas Dominated with Non-natives

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

Weed Control

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

Reseeding

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

Prohibit Access

• Continue to prohibit vehicle access to mitigation areas.



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

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 west at lower deck. View of eastern limits that was dominated by Atriplex sp. and California sunflower prior to the Saddleridge Fire (December 16, 2021).



Photograph 2. Facing east at lower deck from western boundary (December 16, 2021).





Photograph 3. Facing east at the Middle Deck from western boundary (December 16, 2021).



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 (December 16, 2021).





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 (December 16, 2021).

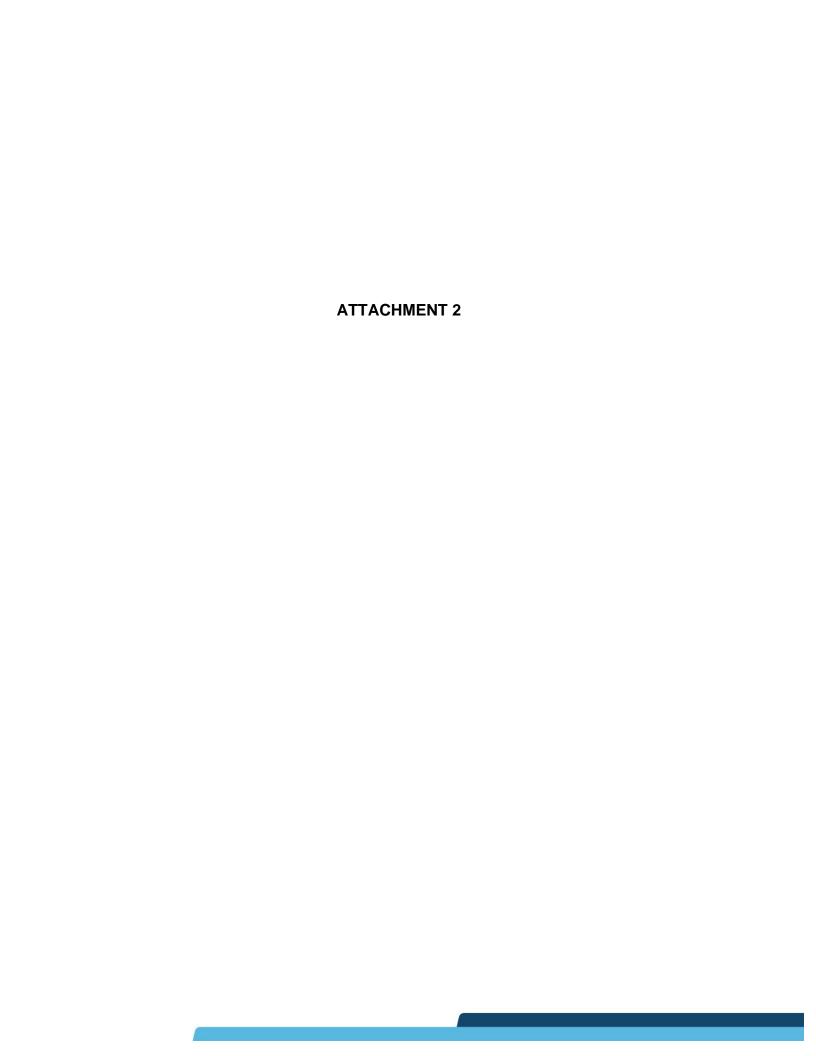


Photograph 6. Facing southwest at the Upper Deck. This area is dominated by wild oats and California buckwheat, which are currently flowering and setting seed (December 16, 2021).





Photograph 7. Facing southeast at the western portion of the Upper Deck. This area is dominated by short podded mustard and Australian saltbush (December 16, 2021).



December 23, 2021 Project No: 21-11086

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

Via email: KDowney@republicservices.com

Subject: Qualitative Progress Report – 4th Quarter, 2021 for the Republic Services County-Side Sage

Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Ms. Downey,

On December 16, 2021, Rincon Consultants conducted the fourth quarter qualitative monitoring visit in 2021 for the Republic Services County-Side Sage Mitigation Area. This report qualitatively documents the current conditions of the County-Side Sage Mitigation Area.

General Conditions

Hydroseeded Areas

Germination and plant growth from hydroseeding that occurred several years ago is not discernible. Conditions on the County-Side Sage Mitigation Area remain relatively unchanged since the third quarter of 2021. Areas that are moderately covered with native and non-native vegetation are concentrated. A substantial 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). Overall, the hydroseeded areas are covered with native vegetation in generally the southern-half of the mitigation area.

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). California buckwheat, which was flowering during the third quarter, has since set seed. The remainder of native vegetation had already set seed during the fourth quarter of 2021. Established laurel sumac (Malosma laurina) individuals are present as well. 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 non-native grasses and forbs currently dominate the understory and serve as ground cover in most of the vegetated areas. Brome grasses (Bromus spp.), wild oats (Avena fatua), short podded mustard (Hirschfeldia incana), and Russian thistle (Salsola tragus) are the dominant non-native vegetation present, which comprises approximately 20 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, a moderate cover of native plants exists within vegetated areas and annual non-native grasses and forbs currently dominate the understory as described in the Hydroseeded Areas discussion above.

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. 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 germinate for the 2022 growing season following recent rainfall events. Additionally, patches of Russian thistle were setting seed during the fourth quarter monitoring visit. 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 Observations in the County-Side Sage Mitigation Area in Quarter 4, 2021

		Native P	Exotic Plant Vegetation			
Location	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"-24"	Medium	Moderate	Setting seed/Germinating

Recommendations

The following recommendations within the County-Side Sage Mitigation are suggested based upon the field survey conducted on December 16, 2021.

- 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

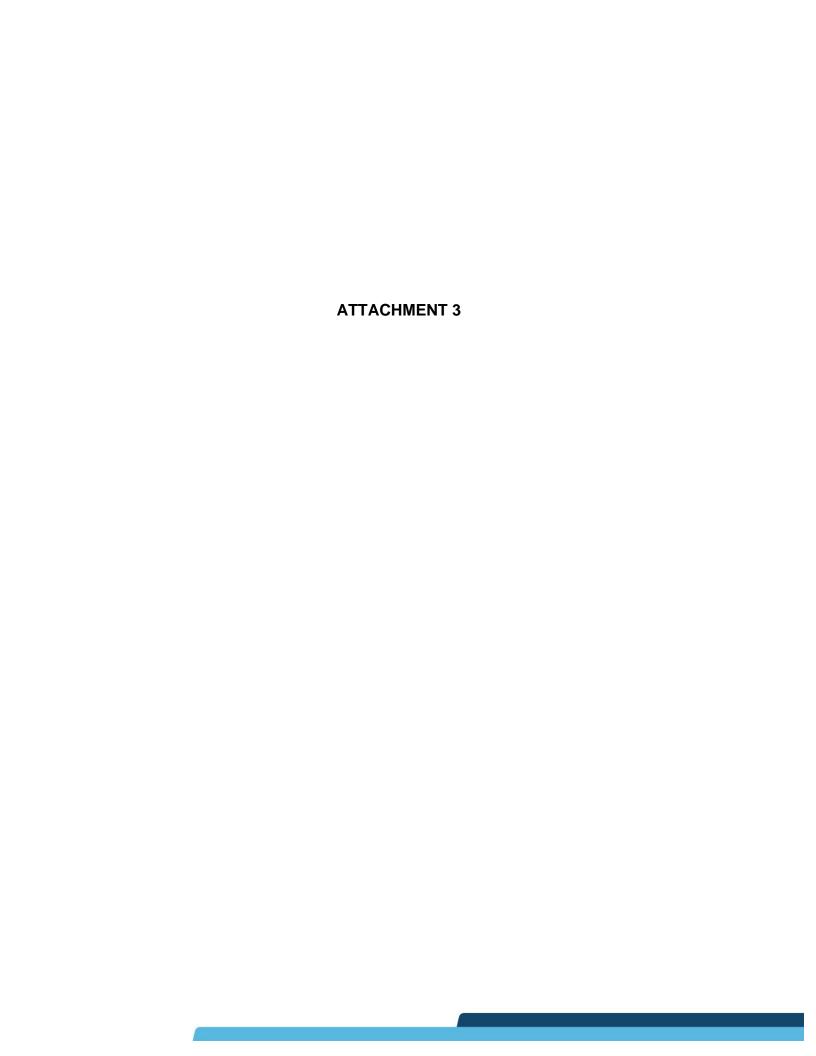




Photograph 1. Facing west at the County-Side Sage Mitigation Area (December 16, 2021).



Photograph 2. Facing west at the northern portion of the County-Side Sage Mitigation Area where plant growth has been problematic due to poor soil conditions (December 16, 2021).



ARCHITERRA DESIGN GROUP

FIELD OBSERVATION REPORT

DATE OF VISIT:	12/21/21
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:	11:00am
WEATHER/TEMPERATURE:	Cloudy 55°
ESTIMATED % COMPLETED:	100%
CONFORMANCE WITH SCHEDULE (+, -)	

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

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

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

- Late Fall rains and cooler daytime temperatures have triggered new foliage growth from the Bush Sunflower (*Encelia californica*), Deerweed (*Acmispon glaber*) and even the Creeping Rye (*Leymus triticoides*) that were in summer dormancy are beginning to show new vegetative growth and, in some cases, blooming. California Sagebrush (*Artemesia californica*), Black Sage (*Salvia mellifera*), Purple Sage (*Salvia leucophylla*), White Sage (*Salvia apiana*), Mexican Elderberry (*Sambucus mexicana*), Coyote Bush (*Baccharis pilularis*), and several of the Saltbush species (*Atriplex sp.*) are also showing signs of regrowth.
- 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 reestablished native vegetation on Deck C has flourished and is closing the canopy once again with a more diverse mix of species. There are isolated areas within the Deck which show little to no germination, much like in previous years prior to the Saddleridge Fire. It is possible that the soil chemistry is restricting the opportunity for plant germination in these areas. Recommendations for reestablishing vegetation in these isolated areas include: soil testing and applying amendments along with scarification and hand seeding. Scarification should be done using smaller hand-held tools so as not to disturb any surrounding native vegetation. Applying a layer of course mulch (2"-3" thick) over the existing soil has also shown to improve germination by allowing the soil to retain moisture

for a longer period. Complimentary to the use of mulch is the strategic placement of straw wattles which minimize soil erosion. Timing of these activities should occur in late Fall prior to the majority of the seasonal precipitation since irrigation within this deck was abandoned several years ago.

- We recommend that by mid-January, Oakridge Landscape maintenance personnel begin weed abatement on the non-native seedlings that have germinated. At this time, identification is a bit tough, but within a few weeks, it will be much easier to target the invasive weed species. ADG can provide assistance in working with Oakridge to target or flag areas that are more abundant with non-natives. The non-native Brome Grass (Bromus spp.) and Shortpod Mustard (Hirschfeldia incana) are the first emergent non-native weed species to germinate in the winter. As temperatures increase, other non-native species like Russian Thistle (Salsola australis), will begin to germinate and dominate. Therefore, weed abatement should be done bi-weekly during the winter and spring months when germination and growth is most active, prior to flowering period.
- The decks are 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.



New non-native weed growth of Shortpod Mustard and Brome Grass



California Sunflower (Encelia californica) seedling amongst Shortpod Mustard seedlings



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Emerging new foliage of Wild Rye (Leymus triticoides)



Emerging foliage of California Sagebrush (*Artemisia californica*)

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New Black Sage (Salvia mellifera) seedling emerges in previously burned area (charred and shattered PVC piping to left)



California Sagebrush seedlings emerging
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Barren areas lacking new growth and germination



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Animal tracks at Deck C



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Non-native Eucalyptus seedling (to be removed) at east end of Deck C



Non-native Eucalyptus seedling (to be removed) at west end of Deck C



Scarlet Bugler (Penstemon centranthifolius) with new emerging growth



New Oak Tree plantings at PM10 Berm

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California Sunflower (Encelia californica) beginning its flowering phase



Mule Deer overlooking deck

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

- After 2 years since the event of the Saddleridge Fire, Deck B is demonstrating that it has become self-sustaining and reestablished without the need for the supplemental irrigation. Temporary irrigation was provided for the first 1 ½ years before the fire destroyed all of the mainline and laterals. An access road was created during the fire, and the scar is still evident, but vegetation is slowly beginning to reestablish along that road. It still would benefit the Deck to have straw wattles placed every 40' on center perpendicular to the road to minimize erosion.
- Similar to Deck C, Deck B does have some isolated areas that have not showed signs of germination/revegetation. It may be helpful to reseed these areas following some of the recommendations previously listed.



Bladderpod (Isomeris arborea) blooming on deck



Mule Deer tracks on Deck B



New California Buckwheat (Eriogonum fasciculatum) seedlings

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Post Fire December 2019



Current Revegetation December 2021



New seedlings and volunteer Coast Prickly Pear (Opuntia littoralis)



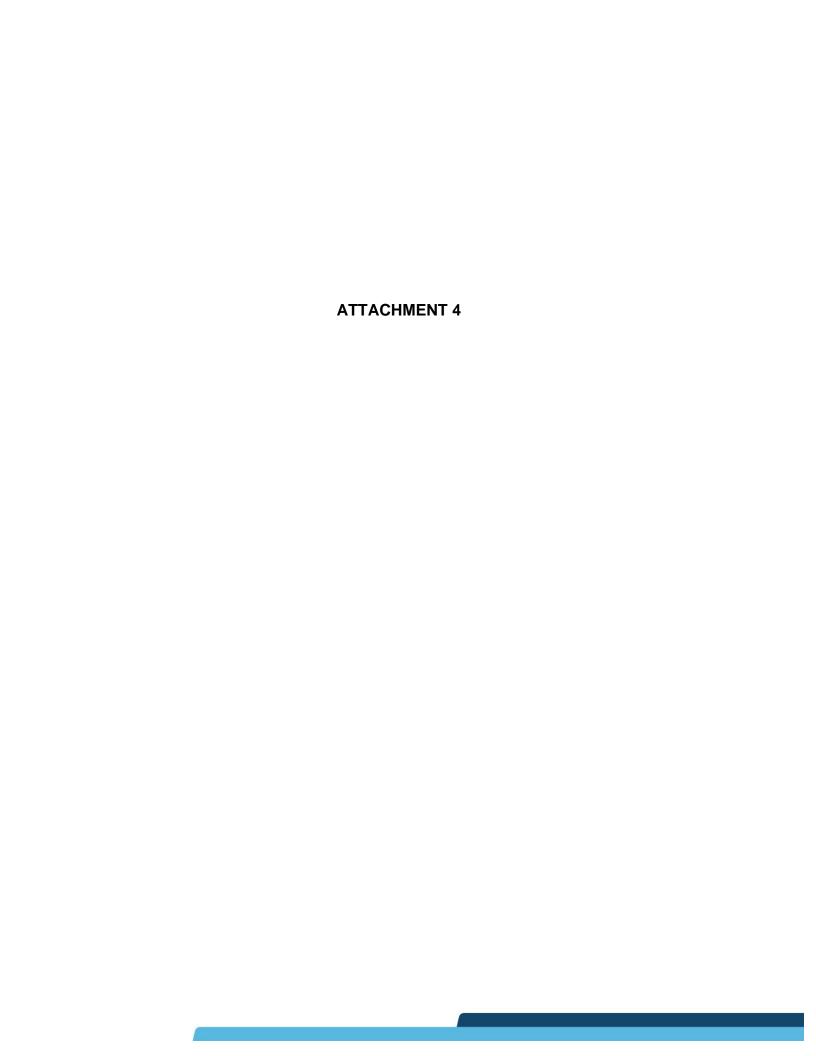
Sediment erosion accumulating behind straw wattle.



Coyote Bush (Baccharis pilularis) flowering after recent rainfall.

As part of the review of each deck, ADG has provided photo station images comparing vegetation growth over the years. For the sake of comparison, ADG provided images from 2 years ago Post Saddleridge Fire for Deck C where revegetation growth has rebounded significantly. Since Deck B revegetation is still in the early stages, ADG provided the standard annual comparison from 2020.

Signed: Gregg Denson		Date: 1/6/22	
	DISTRIBUT	<u>rion</u>	
Republic Services	lacktriangledown	Contractor	
Project Manager (Gregg Denson)		Other_	





December 22, 2021 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 – 4th Quarter, 2021

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 fourth quarter of 2021.

Methods

On December 17, 2021, Rincon Consultants monitored the Coastal Sage Scrub City South C Trial Plot at the Sunshine Canyon Landfill, which constitutes the fourth quarter monitoring for 2021. 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.

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Coastal Sage Scrub City South C Trial Plot, Sunshine Canyon Landfill Monitoring Report 4th Quarter, 2021

- 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) 14%
- Percent basal cover (herbs) 9%
- Percent bare ground 34%
- Percent rock or other 5%
- Percent canopy (shrubs) 40%
- Percent canopy (herbs) 13%

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

- Percent basal cover (shrubs) 16%
- Percent basal cover (herbs) 10%
- Percent bare ground 40%
- Percent rock or other 5%
- Percent canopy (shrubs) 32%
- Percent canopy (herbs) 13%

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

■ Percent basal cover (shrubs) – 10%





Coastal Sage Scrub City South C Trial Plot, Sunshine Canyon Landfill Monitoring Report 4th Quarter, 2021

- Percent basal cover (herbs) 30%
- Percent bare ground 23%
- Percent rock or other 3%
- Percent canopy (shrubs) 18%
- 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.



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

	Plo	ot A	Plo	ot B	t B Plot C		Plot D	
Species	Number of Hits	Percent Cover						
Native Shrubs								
Acmispon glaber					3	6%	1	2%
Artemisia californica								
Atriplex lentiformis	14	28%	7	14%	4	8%	7	14%
Atriplex polycarpa	4	8%	11	22%	4	8%		
Atriplex spinosa								
Baccharis pilularis								
Diplacus aurantiacus								
Encelia californica	7	14%	4	8%	2	4%	8	16%
Salvia apiana								
Salvia mellifera								
Native Herbs								
Achillea millefolium								
Cryptantha intermedia								
Helianthus annuus					1	2%	3	6%
Elymus triticoides			7	14%	1	2%		
Nasella pulchra								
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Exotic annual grasses ¹	5	10%	11	22%			3	6%
Centaurea melitensis								
Echinochloa crus-galli								
Erodium cicutarium								
Hirschfeldia incana							1	2%
Hordeum murinum								
Salsola tragus					1	2%		
Bare ground	20	40%	10	20%	34	68%	27	54%
		Plot A	Pi	ot B	Plot C	Plot	D F	A,B,C,D Percent Cove
Percent Cover Native Shrub		50%	44%		26%	32%		38%
Percent Cover Native Herb		0%	14%		4%	6%		6%
Percent Cover Non-Nativ		0%		0%		0%		
Percent Cover Non-Nativ		10%	22%		0% 2%		3% 11%	
Percent Bare Ground		40%		20%	68%	54%		46%

¹ Non-native annual grasses that were unidentifiable during the field survey due to their phenological stage, as only basal leaves were present.



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

	Plo	ot E	Plo	t F	Plot G		Plot H	
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs								
Adenostema fasciculatum								
Artemisia californica								
Atriplex lentiformis			8	16%	2	4%		
Atriplex polycarpa	2	4%	11	22%	3	6%	1	2%
Atriplex spinosa			3	6%				
Baccharis pilularis								
Diplacus aurantiacus								
Encelia californica	9	18%	2	4%	16	32%	29	58%
Salvia leucophylla							1	2%
Salvia mellifera								
Native Herbs								
Achillea millefolium								
Cryptantha intermedia								
Helianthus annuus							1	2%
Elymus triticoides								
Nasella pulchra								
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Exotic annual grasses ¹	14	28%	3	6%	1	2%		
Centaurea melitensis								
Echinochloa crus-galli								
Erigeron canadensis								
Erodium cicutarium								
Hirschfeldia incana	4	8%						
Hordeum murinum			2	4%				
Salsola tragus	1	2%						
Bare ground	20	40%	23	46%	28	56%	18	36%
		Plot E	Plot I	=	Plot G	Plot H		E,F,G,H cent Cover
Percent Cover Native Shrub		22%	48%		42%	62%		44%
Percent Cover Native Herb		0%	0%		0%	2%		1%
Percent Cover Non-Native S	hrub	0%	0%		0%	0%		0%
Percent Cover Non-Native H	erb	38%	6%		2%	0%		12%
Percent Bare Ground		40%	46%		56%	36%		45%

¹ Non-native annual grasses that were unidentifiable during the field survey due to their phenological stage, as only basal leaves were present.

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

	Plot I		Plot J		Plot K		Plot L	
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs								
Adenostema fasciculatum								
Artemisia californica			1	2%				
Atriplex lentiformis	1	2%	2	4%				
Atriplex polycarpa							4	8%
Atriplex spinosa								
Baccharis pilularis							2	4%
Diplacus aurantiacus								
Encelia californica	13	26%	1	2%			25	50%
Salvia apiana								
Salvia mellifera								
Native Herbs								
Achillia mellifoluim								
Cryptantha intermedia								
Helianthus annuus	2	4%	2	4%	2	4%		
Elymus triticoides					30	60%	5	10%
Nasella pulchra								
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Exotic annual grasses ¹	21	42%	13	26%	1	2%	1	2%
Centaurea melitensis								
Erigeron canadensis								
Erodium cicutarium								
Hirschfeldia incana			11	22%				
Hordeum murinum								
Salsola tragus	1	2%						
Bare ground	12	24%	20	40%	17	34%	13	26%
		Plot I	Plot J		Plot K	Plot L		C,L Percent Cover
Percent Cover Native Shrub)	28%	8%		0%	62%		25%
Percent Cover Native Herb		4%	4%		64%	10%		21%
Percent Cover Non-Native S	Shrub	0%	0%		0%	0%		0%
Percent Cover Non-Native H	Herb	44%	48%		2%	2%		24%
Percent Bare Ground		24%	40%		34%	26%		31%

¹ Non-native annual grasses that were unidentifiable during the field survey due to their phenological stage, as only basal leaves were present.





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

	,	roseed A, B, C, and D)		orint , F, G, and H)	Hand Broadcast (Quadrats I, J, K, and L)		
	Qualitative Quantitative		Qualitative Quantitativ		Qualitative	Quantitative	
Percent Cover Shrub	40%	38%	32%	44%	18%	25%	
Percent Cover Herb	13%	17%	13%	13%	43%	45%	
Percent Bare Ground	34%	46%	44%	45%	23%	31%	

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. Non-native species, most notably brome grasses (Bromus spp.) and foxtail barley (Hordeum murinum) have established in areas that were previously dominated by saltbush (Atriplex spp.). The trial plot is slowly recovering from the fire; however, seed germination and natural recruitment has been suppressed due to establishment of non-native species and ongoing drought conditions occurring throughout southern California.

Native shrub species such as California sunflower (Encelia californica) and California sagebrush (Artemisia californica) within the areas that burned have recovered substantially, including the saltbush species that dominated the overall cover of the restoration before the fire (i.e., allscale saltbush [Atriplex polycarpa] and big saltbush [Atriplex lentiformis]). The quantitative percent cover of native shrub species currently has an average of 38% within the hydroseed quadrats, 44% within the imprint quadrats, and 25% within the hand broadcast quadrats (Tables 1-3). All shrub species have set seed, and are expected to begin flowering in the spring of 2022. Native annual herbs and grasses such as alkali rye (Elymus triticoides) and annual sunflower (Helianthus annuas) were observed setting seed within the sampled quadrats in the Coastal Sage Scrub City South C Trial Plot. A few annual sunflower individuals were still in flower during the fourth quarter of 2021. Native herb cover calculated qualitatively was relatively low (hydroseed quadrats: 6% cover; imprint quadrats: 1% cover; hand broadcast quadrats: 21% cover). Native plant species has remained relatively unchanged since the third quarter of 2021, as water availability from precipitation has been sparse, and the majority of native plant species have set seed and are no longer in flower.

Non-native plants have notably increased in cover within the Coastal Sage Scrub City South C Trial Plot between the third and fourth quarter of 2021. Non-native annual grasses and forbs such as foxtail barley (Hordeum murinum), Mediterranean grass (Schismus arabicus), red brome (Bromus madritensis), and short podded mustard (Hirschfeldia incana) have begun germinating in the fourth quarter of 2021 due to recent rainfall events. Recent rainfall events have initiated germination and growth for these nonnative plant species, which will continue to grow throughout the remainder of 2021 and into the spring of 2022. Total non-native herbaceous cover currently has an average of 11% within the hydroseed quadrats (up from 5% in the third quarter), 12% within the imprint quadrats (up from 9% in the third quarter), and 24% (up from 12% in the third quarter) within the hand broadcast quadrats (Tables 1-3).





Recommendations

Wildfires in Southern California have become more common in recent years and have impacted on the native landscape including established restoration sites. Direction that has been provided from such organizations as the California Department of Fish and Wildlife Service and the California Society of Ecological Restoration, recommending that revegetation efforts be focused on non-native weed control for reestablishing restoration sites, including previously undisturbed areas. Successional regrowth of herbaceous non-native species is to be expected within the first two to three years following a wildfire, and native shrubs will recover over a longer period of time through germination of existing seed within the topsoil and basal growth from charred plants. Successional growth of herbaceous species is important for providing 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 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 seedlings and 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.

Drought conditions have been persistent since the Saddleridge Fire, limiting germination of seedlings and recovery 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 reestablishment 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.

Sincerely,

Rincon Consultants, Inc.

Greg Ainsworth

Natural Resources Director

Kyle Gern Biologist

Attachments

Attachment A Deck C Revegetation Area Quadrat Layout and Planting Plan

Attachment B Representative Site Photographs





Coastal Sage Scrub City South C Trial Plot, Sunshine Canyon Landfill Monitoring Report 4th Quarter, 2021

References

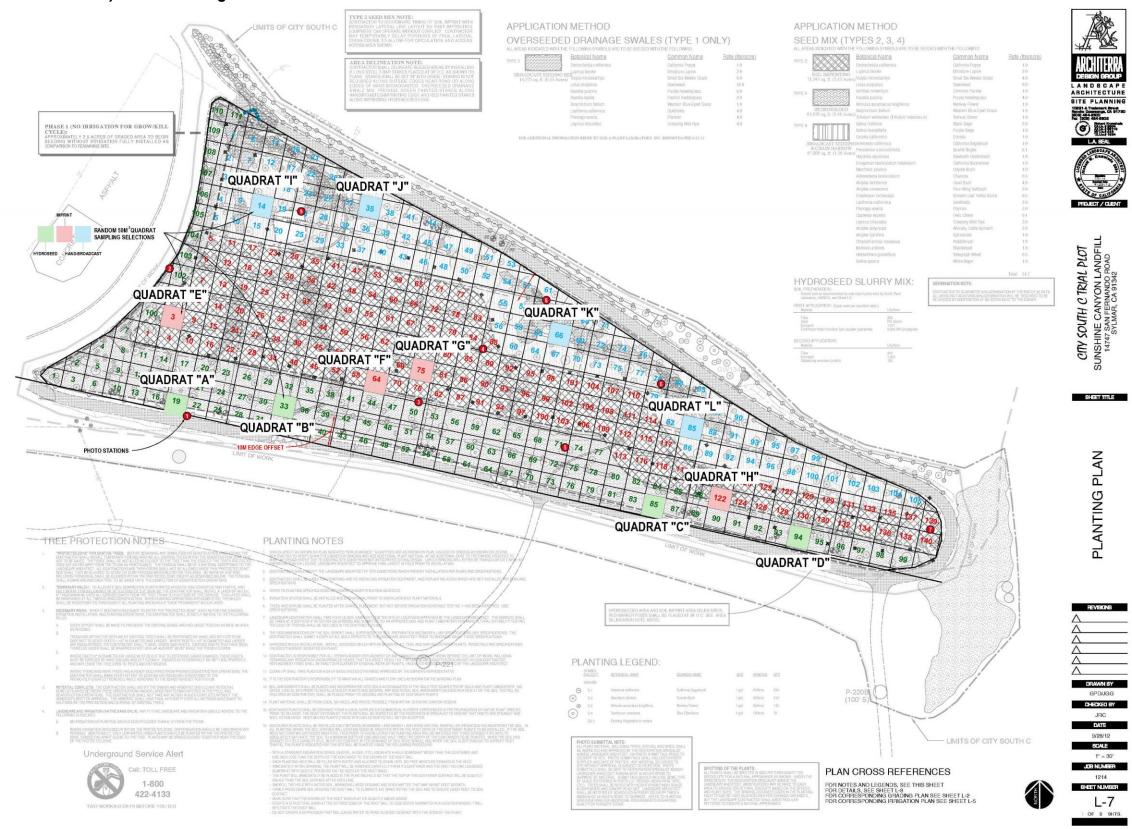
John Minch and Associates, Inc. (JMA). 2014. Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill.



Deck C Revegetation Area Quadrat Layout and Planting Plan



Deck C Revegetation Area Quadrat Layout and Planting Plan





Representative Site Photographs



Photograph 1. Quadrat A facing northeast from southwest corner (December 17, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (December 17, 2021).



Photograph 3. Quadrat C facing northeast from southwest corner (December 17, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (December 17, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (December 17, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (December 17, 2021).



Photograph 7. Quadrat G facing northeast from southwest corner (December 17, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (December 17, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (December 17, 2021).



Photograph 10. Quadrat J facing northeast from southwest corner (December 17, 2021).

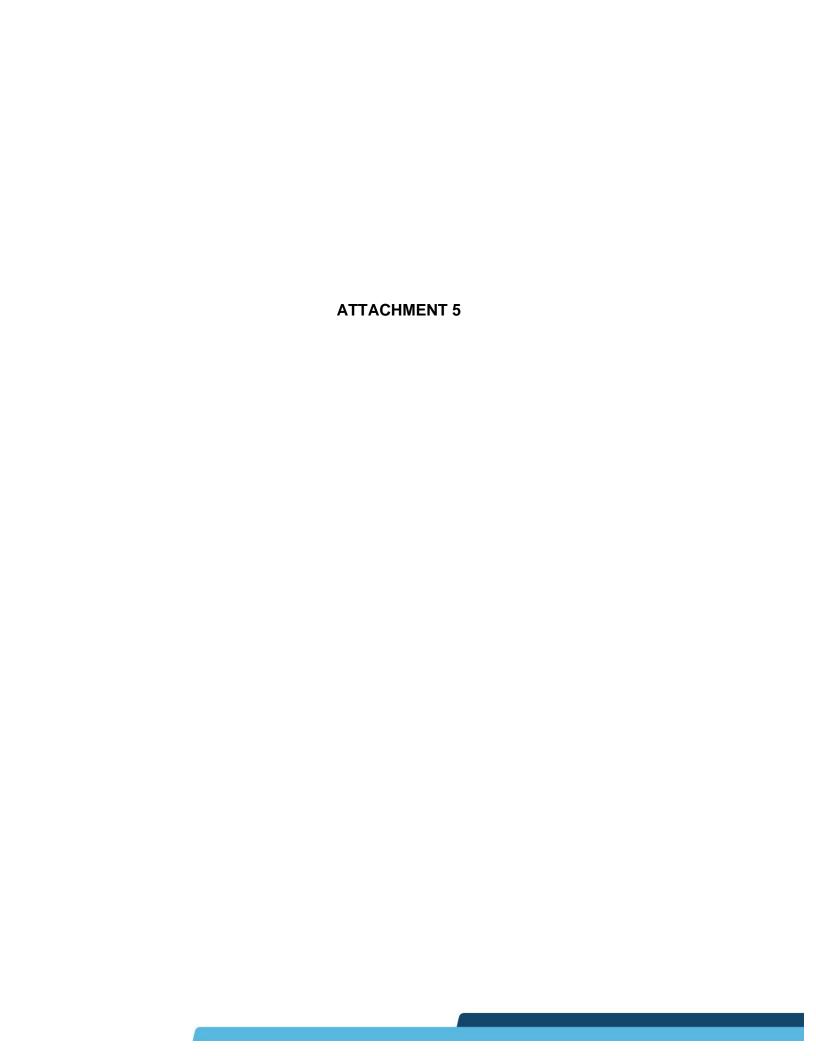




Photograph 11. Quadrat K. Photograph was corrupted; therefore, none provided.



Photograph 12. Quadrat L facing northeast from southwest corner (December 17, 2021).





December 22, 2021 Project No: 21-11086

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

Via email: KDowney@republicservices.com

Coastal Sage Scrub City South B Trial Plot Monitoring Report, Sunshine Canyon Landfill – 4th Subject: Quarter, 2021

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 fourth quarter of 2021.

Methods

On December 17, 2021, Rincon Consultants monitored the Coastal Sage Scrub City South B Trial Plot at the Sunshine Canyon Landfill, which constitutes the fourth quarter of monitoring for 2021. 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.

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- 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) 13%
- Percent canopy (herbs) 6%

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

- Percent basal cover (shrubs) 8%
- Percent basal cover (herbs) 2%
- Percent bare ground 76%
- Percent rock or other 3%
- Percent canopy (shrubs) 17%
- Percent canopy (herbs) 3%

Broadcast seeding – Quadrat C

■ Percent basal cover (shrubs) – 7%



- Percent basal cover (herbs) 5%
- Percent bare ground 70%
- Percent rock or other 3%
- Percent canopy (shrubs) 20%
- Percent canopy (herbs) 12%

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) 8%
- Percent canopy (herbs) 3%

Soil Imprinting and hand broadcast – Quadrat E

- Percent basal cover (shrubs) 5%
- Percent basal cover (herbs) 2%
- Percent bare ground 82%
- Percent rock or other 1%
- Percent canopy (shrubs) 16%
- Percent canopy (herbs) 3%

Percent Cover (Quantitative)

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



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

	Quad	rat A	Quadrat G		
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover	
Native Shrubs					
Acmispon glaber	2	4%			
Artemisia californica			1	2%	
Atriplex lentiformis			4	8%	
Atriplex polycarpa			5	10%	
Atriplex spinosa					
Baccharis pilularis	1	2%			
Baccharis salicifolia					
Encelia californica					
Salvia apiana					
Salvia mellifera					
Non-Native Shrubs					
Atriplex semibaccata			1	2%	
Native Herbs					
Achillea millefolium					
Eschscholzia californica					
Elymus triticoides	3	6%	1	2%	
Nasella pulchra					
Sisyrinchium bellum					
Non-Native Herbs					
Erodium cicutarium	1	2%			
Hirschfeldia incana	1	2%			
Bare ground	42	84%	38	76%	
	Quadrat A	Quadrat G	A and G (% Cover)	
Percent Cover Native Shrub	6%	20%	139	%	
Percent Cover Native Herb	6%	2%	49	%	
Percent Cover Non-Native Shrub	0%	2%	19	%	
Percent Cover Non-Native Herb	4%	0%	29	%	
Percent Bare Ground	84%	76%	809	%	



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

	Quad	drat B	Qua	drat F	Quadrat H		
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	
Native Shrubs							
Acmispon glaber	2	4%					
Artemisia californica	16	32%	2	4%	3	6%	
Atriplex lentiformis			3	6%	1	2%	
Atriplex polycarpa							
Atriplex spinosa							
Baccharis pilularis							
Encelia californica	2	4%					
Encelia farinosa	3	6%					
Eriogonum fasciculatum	1	2%			1	2%	
Isocoma menziesii	6	12%					
Lepidospartum squamatum							
Salvia mellifera	1	2%					
Sambucus nigra ssp. caerulea	1	2%					
Native Herbs							
Elymus triticoides							
Helianthus annuus							
Sisyrinchium bellum							
Vulpia microstachys							
Non-Native Herbs							
Bromus madritensis							
Erodium botrys							
Hirschfeldia incana							
Hordeum vulgare							
Salsola tragus							
Schismus arabicus							
Mesembryanthemum							

Mesembryanthemum
nodiflorum

Bare ground	18	36%	45	90%	45	90%
	Quadr	at B	Quadrat F	Quadra	t H	B, F, H (% cover)
Percent Cover Native Shrub	64	%	10%	10%	6	28%
Percent Cover Native Herb	0	%	0%	0%	6	0%
Percent Cover Non-Native Shrub	0	%	0%	0%	ó	0%
Percent Cover Non-Native Herb	0	%	0%	0%	6	0%
Percent Bare Ground	36	%	90%	90%	6	72%

Table 3 Broadcast Seeding – Quadrat C

	Quadrat C						
Species	Number of Hits	Percent Cover					
Native Shrubs							
Adenostoma fasciculatum							
Artemisia californica	11	22%					
Atriplex lentiformis							
Atriplex polycarpa							
Atriplex spinosa							
Baccharis pilularis							
Encelia californica							
Acmispon glaber	4	8%					
Encelia farinosa	4	8%					
Isocoma menziesii							
Salvia apiana							
Salvia mellifera							
Native Herbs							
Achillea millefolium							
Eschscholzia californica							
Elymus triticoides							
Nasella pulchra							
Sisyrinchium bellum							
Vulpia microstachys							
Non-Native Herbs							
Centaurea melitensis							
Echinochloa crus-galli							
Erodium cicutarium							
Hirschfeldia incana	9	18%					
Hordeum vulgare							
Marrubium vulgare	1	2%					
Bare ground	21	42%					
	Quadra	t C (% cover)					
Percent Cover Native Shrub		38%					
Percent Cover Native Herb		0%					
Percent Cover Non-Native Shrub		0%					
Percent Cover Non-Native Herb		20%					
Percent Bare Ground		42%					



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

	Quad	rat D	Quadrat I			
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover		
Native Shrubs						
Acmispon glaber	1	2%	2	4%		
Artemisia californica	2	4%				
Atriplex lentiformis	2	4%	1	2%		
Atriplex polycarpa						
Atriplex spinosa						
Baccharis pilularis						
Encelia californica						
Eriogonum fasciculatum	1	2%	1	2%		
Diplacus aurantiacus						
Isocoma menziesii	2	4%	1	2%		
Opuntia littoralis						
Non-Native Shrubs						
Atriplex semibaccata			5	10%		
Native Herbs						
Achillea millefolium						
Eschscholzia californica						
Elymus triticoides			2	4%		
Nasella pulchra						
Sisyrinchium bellum						
Vulpia microstachys						
Non-Native Herbs						
Erodium cicutarium			2	4%		
Exotic annual grasses ¹			1	2%		
Hordeum vulgare						
Salsola tragus						
Schismus arabicus						
Bare ground	42	84%	35	70%		

Bare ground	42	84% 35	70%
	Quadrat D	Quadrat I	D and I (% cover)
Percent Cover Native Shrub	16%	10%	13%
Percent Cover Native Herb	0%	4%	2%
Percent Cover Non-Native Shrub	0%	10%	5%
Percent Cover Non-Native Herb	0%	6%	3%
Percent Bare Ground	84%	70%	77%

¹ Non-native annual grasses that were unidentifiable during the field survey due to their phenological stage, as only basal leaves were present.



Table 5 Soil Imprinting and Hand Broadcast – Quadrat E

		Quadrat E
Species	Number of Hits	Percent Cover
Native Shrubs		
Acmispon glaber		
Artemisia californica	1	2%
Atriplex lentiformis	3	6%
Atriplex polycarpa	5	10%
Atriplex spinosa		
Baccharis pilularis		
Encelia farinosa	1	2%
Eriogonum fasciculatum	4	8%
Isocoma menziesii	7	14%
Opuntia littoralis		
Salvia apiana		
Salvia mellifera		
Native Herbs		
Achillia mellifoluim		
Eschscholzia californica		
Elymus triticoides		
Nasella pulchra		
Sisyrinchium bellum		
Vulpia microstachys		
Non-Native Herbs		
Bromus diandrus		
Centaurea melitensis		
Echinochloa crus-galli		
Erodium cicutarium		
Hirschfeldia incana		
Hordeum vulgare		
Salsola tragus		
Schismus arabicus		
Bare ground	29	58%
		Quadrat E (% cover)
Percent Cover Native Shrub		42%
Percent Cover Native Herb		0%
Percent Cover Non-Native Shrub		0%
Percent Cover Non-Native Herb		0%
Percent Bare Ground		58%

Table 6 below provides a summary of the percent cover of native and non-native shrubs and herbs, including areas of bare ground.

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	13%	28%	38%	13%	42%
Percent Cover Native Herb	4%	0%	0%	2%	0%
Percent Cover Non-Native Shrub	1%	0%	0%	5%	0%
Percent Cover Non-Native Herb	2%	0%	20%	3%	0%
Percent Bare Ground	80%	72%	42%	77%	58%

The Deck B Revegetation Area was established in November 2018. The Saddleridge Fire that occurred in October 2019 burned a large portion of the revegetation area, 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 Deck B area was damaged and is no longer functioning.

Native species have established since the fire, and include 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). The native plants within the areas that burned appear to have mostly recovered from the Saddleridge Fire based on observations during the fourth quarter monitoring event of 2021. However, drought conditions observed throughout southern California during the 2021 growing season appears to be negatively influencing native shrubs. Some shrubs (e.g., big saltbush, California buckwheat) show indications of desiccation stress such as chlorosis (i.e., yellowing), brittle leaves, and mortality of some individuals. The majority of plant species have set seed, with the exception of a few California buckwheat and annual sunflower (Helianthus annuus) individuals that are currently in flower. Non-native plant cover has remained mostly unchanged in the Coastal Sage Scrub City South B Trial Plot Area since the third quarter of monitoring. The majority of non-native plant species within Deck B are early-season annual plants such as foxtail barley (Hordeum murinum), Mediterranean grass (Schismus arabicus), red brome (Bromus madritensis), and short podded mustard (Hirschfeldia incana). These plant species were observed sprouting as a result of recent rainfall events, but their cover has not increased substantially since the third quarter monitoring event.

Soil imprinting and hand broadcast (Quadrat E) had the highest percent cover of native shrubs using the point intercept method (42%), followed by broadcast seeding (Quadrat C; 38%) and soil imprinting (Quadrats B, F, and H; 28%) (Table 6). Percent cover of native herbaceous plant species was low in all seeding methods, ranging between 0% and 4%. The lack of substantial rain events in the 2021 growing season has likely played a role in the low cover of native herbaceous plant species, in particular annual plants such as common yarrow (Achillea millefolium) that require rain to establish and that have been previously observed in high quantities in Quadrat B. Percent cover of non-native herbs was low in all



seeding methods except for Quadrat C, where non-native cover was 20%. This increase is due to the establishment of short podded mustard, which was observed sprouting throughout the Deck B Revegetation Area as a result of recent rainfall. Non-native herbaceous species abundance is expected to increase substantially between the fourth quarter of 2021 and the first quarter of 2022 due to increased water availability provided by winter precipitation events. Native herbaceous species abundance is expected to remain the same, as the majority of native herbaceous species observed within the Deck B Revegetation Area are perennials that grow incrementally each year, such as beardless wild rye (*Elymus triticoides*).

Recommendations

Wildfires in Southern California have become more common in recent years and have impacted on the native landscape including established restoration sites. Direction that has been provided from such organizations as the California Department of Fish and Wildlife Service and the California Society of Ecological Restoration recommend that revegetation efforts be focused on non-native weed control for re-establishing restoration sites, including previously undisturbed areas. Under natural conditions where a seed bank is present in the upper soil layer, successional regrowth of herbaceous non-native species is to be expected within the first two to three years following a wildfire, and native shrubs will recover over a longer period of time through germination of existing seed within the topsoil and basal growth from charred plants. Successional growth of herbaceous species is important for providing natural erosion of topsoil. Drought conditions have been persistent since the Saddleridge Fire, limiting germination of seedlings and recovery through natural recruitment. If drought conditions continue, the irrigation system within the trial plot area should be reinstalled to create conditions that are suitable for seed germination and re-establishment of native vegetation.

As native shrubs continue to establish and grow in the Deck B Revegetation Area, it is essential to control the spread non-native herbaceous species such as foxtail barley, red brome, and short podded mustard to minimize competition for water, nutrients, and sunlight. Therefore, in 2022 weed maintenance should occur no less than every four months, and special attention should be afforded to minimizing impacts to native seedlings and resprouts. In particular, 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.

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 Deck B Revegetation Area Quadrat Layout

Attachment B Representative Site Photographs





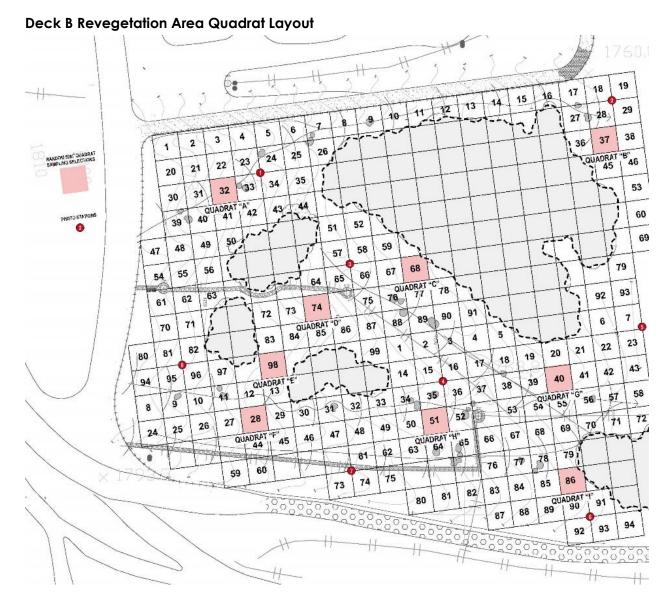
References

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.

Attachment A

Deck B Revegetation Area Quadrat Layout







Representative Site Photographs



Photograph 1. Quadrat A facing northeast from southwest corner (December 17, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (December 17, 2021).



Photograph 3. Quadrat C facing northeast from southwest corner (December 17, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (December 17, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (December 17, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (December 17, 2021).



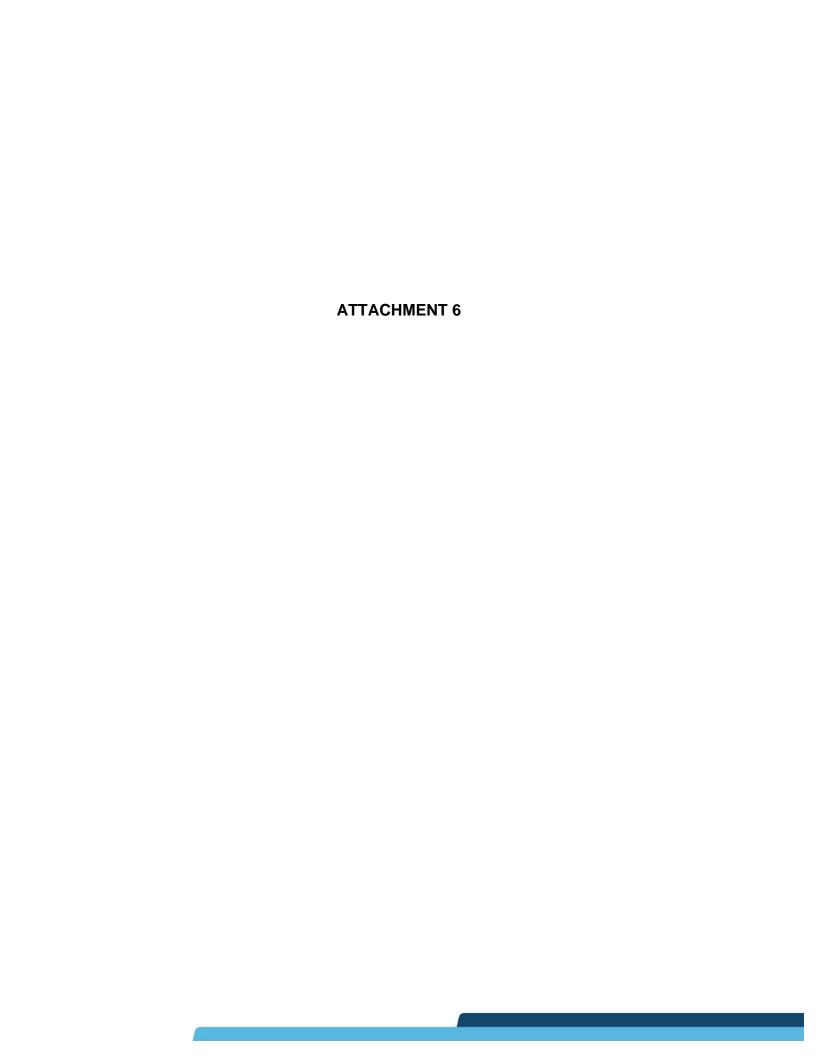
Photograph 7. Quadrat G facing northeast from southwest corner (December 17, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (December 17, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (December 17, 2021).





March 22, 2021 Project No: 21-11086

Tuong-phu Ngo Republic Services 14747 San Fernando Road Sylmar, California 91342 Via email: <u>email address</u>

Rincon Consultants, Inc.

180 North Ashwood Avenue Ventura, California 93003

805 644 4455 OFFICE AND FAX

info@rinconconsultants.com www.rinconconsultants.com

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

Troo #	Troo # Species		e# Species DBH		Canopy Spread				طفاووا	Physical	Impact	Reason for
Tree #	Species	DBH	North	West	South	East	- Health	Condition	Status	Impact		
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		

Sunshine Canyon Landfill Ultimate Entrance Improvement Project Oak Tree Report

Troo # Crosics		DBH		Canopy Spread			Haalab	Physical	Impact	Reason for	
rree #	Tree # Species		North	West	South	East	- Health	Condition	Status	Impact	
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,

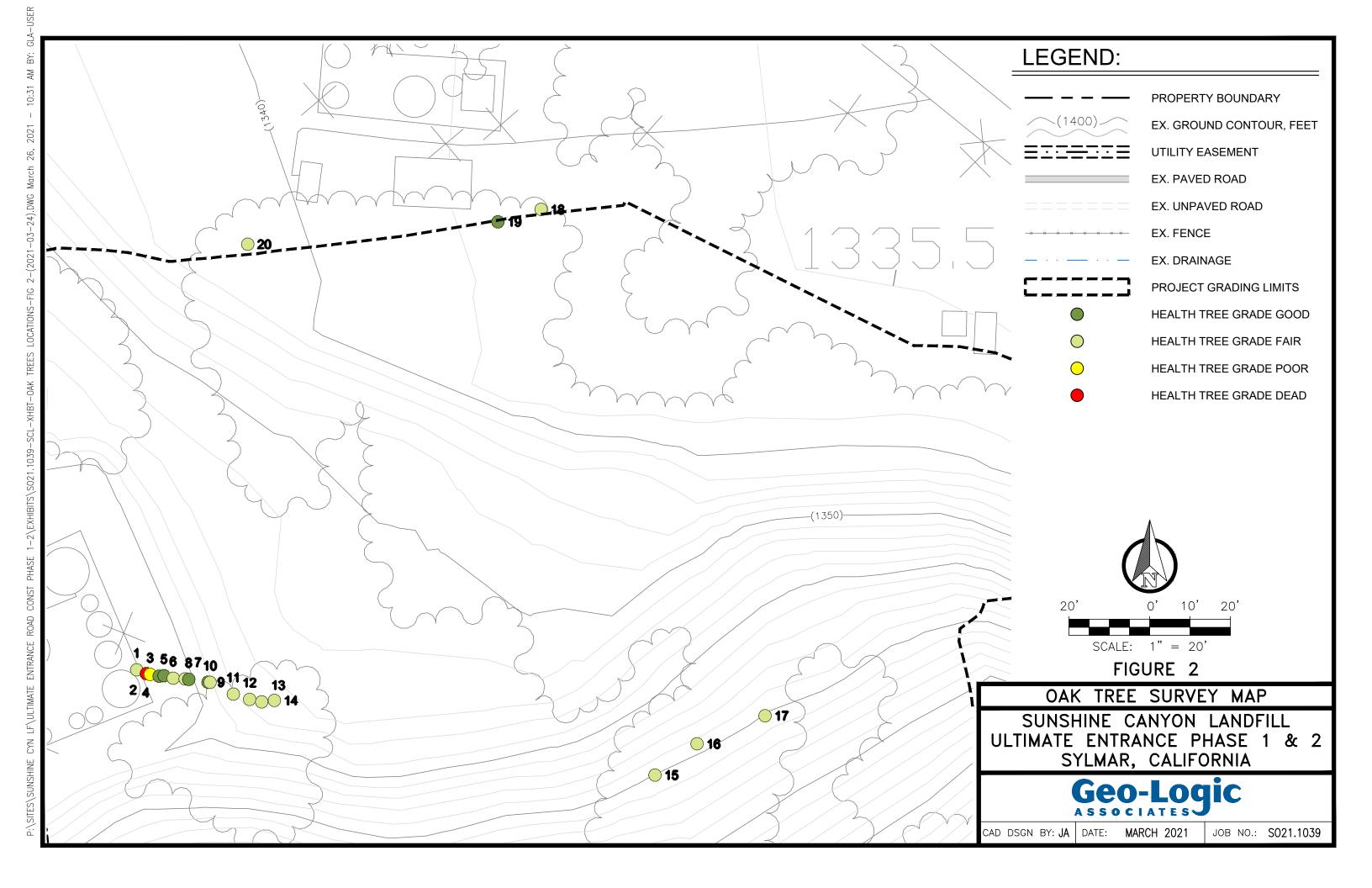
Rincon Consultants, Inc.

Greg Ainsworth, I.S.A. Cert # WE-7473A

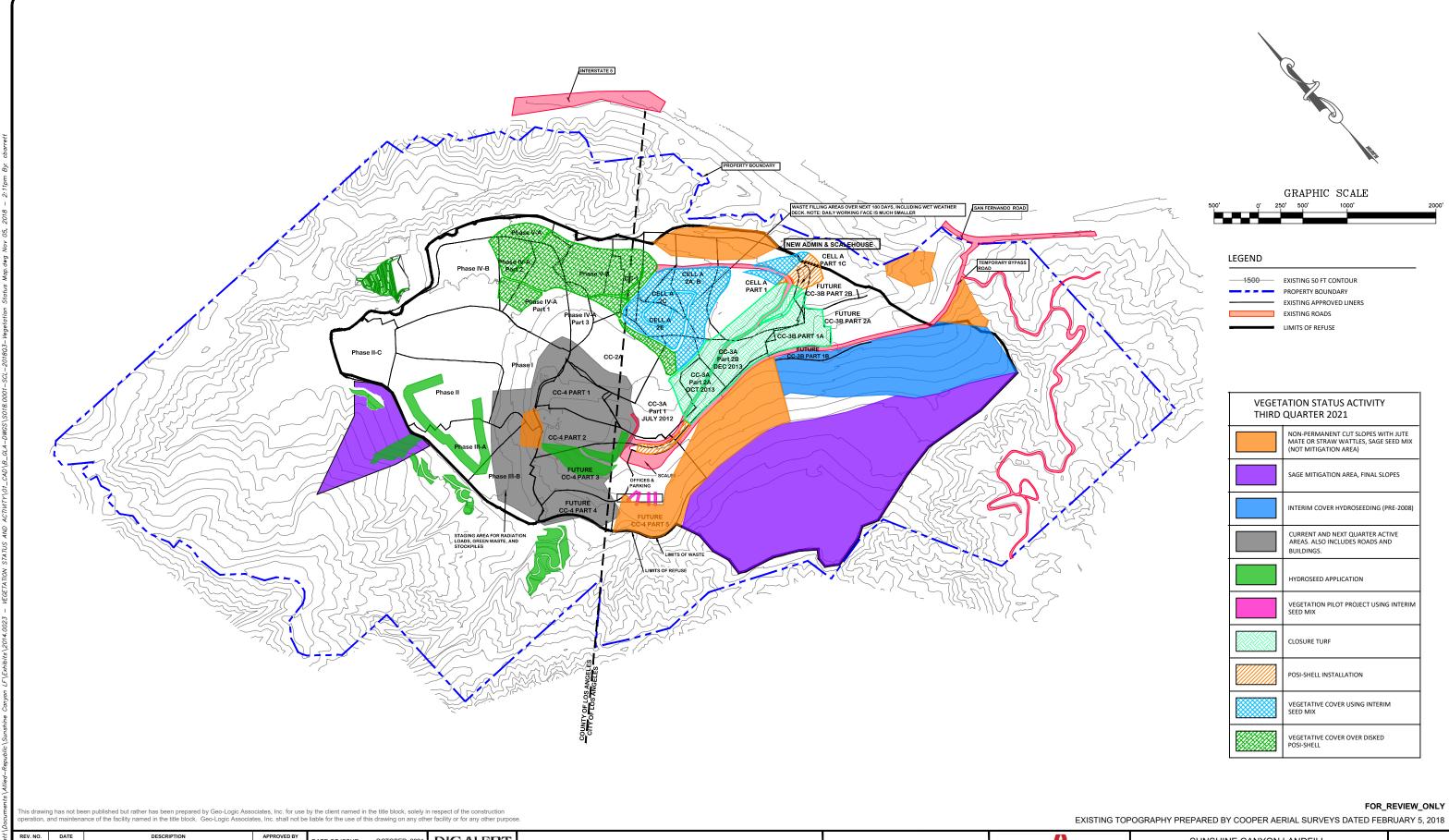
Director of Urban Forestry

Attachments

Oak Tree Map



DRAWING 1



DATE OF ISSUE: OCTOBER_2021 DESIGNED BY: DESCRIPTION DRAWN2 DRAWN5 DESCRIPTION6 DRAWN6 APPROVED BY: C_BARRETT



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REPUBLIC SERVICES

SUNSHINE CANYON LANDFILL SYLMAR, CALIFORNIA SITE VEGETATION STATUS AND ACTIVITY

Q3 2021

PROJECT NO. SO18.0001

DWG NO.