July 31, 2021

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

Second 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 second 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 will commence in third quarter 2021 during the month of October.

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 – 2Q2021

During the second 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

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 guite 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 18 months and has an abundance of new seedlings filling in what was barren dirt. Architerra indicates 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.

Rincon has noted a large amount of sage scrub has resprouted and some of which are flowered this past Spring following the damage from the fire. Rincon has mentioned the weed cover is generally low-to-moderate and most annual species are currently dormant or have desiccated.



Western Kingbird (*Tyrannus verticalis*) found on City South Deck B Mitigation area.

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 second quarter Rincon County-Side Sage Mitigation Area report the upper half of the mitigation site was burned in the Saddle Ridge fire in October of 2019. No revegetation activities were conducted in this area during the first quarter of 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 fourth quarter of 2020 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, Second 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, and Upper Decks (Decks C, B, and A)	2	Prohibit Access – Continue to prohibit vehicle access to mitigation areas.	Repairs to the T-post fencing will be made as needed.		
Upper Deck (Deck A)	3	Improve root zone and soil conditions	This will be addressed when the plans for Deck A is developed. Actions were taken to address improving the root zone in Decks B & C; it is expected that similar actions will be incorporated into the plans for Deck A.		
Upper Deck (Deck A)	4	Plant natives in areas dominated with non- natives	This will be addressed when the plans for Deck A are developed. Various planting methods were used for the construction of the pilot project on Decks B & C; it is expected that similar actions will be incorporated into the plans for Deck A.		
Upper Deck (Deck A)	5	Reseeding – apply native seeds during the rainy season after soil mounds	This will be addressed when plans for Deck A are developed.		

	have been established	

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, Second Quarter 2021

AREA	RE	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	Plant within view sheds	A trail test pilot plan will be discussed with California Native shrubs.

County Sage Mitigation Area	4	Use soil amendments	A trial test plot would need to be developed. This recommendation will be considered at a later date.
County Sage Mitigation Area	5	Signage – Install signage indicating revegetation efforts.	Due to the slopes, stormwater channel and overall difficulty to access this area, personnel are limited to access this area.
County Sage Mitigation Area	6	Weed Control – Continue weeding as needed on a quarterly basis.	Personnel continues to evaluate the current status.
County Sage Mitigation Area	7	Prohibit Access – continue to prohibit vehicle access to mitigation deck.	Upper entrance has a locked gate, no further action is required.
County Sage Mitigation Area	8	Employee Awareness – conduct employee awareness training.	This is currently being done as part of our Environmental Communication efforts.

5.3 Architerra Inspection for City South Sage Mitigation Pilot Project Area – Second 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 second 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.

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.



Please do not hesitate to contact me at (818) 362-2096 if you have any questions.

Sincerely,

Tuong Phu ngo

Tuong-Phu Ngo, P.E. 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 – 2Q2021 with

Photo Log

Attachment 4 Rincon Quarterly Monitoring Report - Coastal Sage

Scrub Deck C Pilot Study, 2Q2021

Attachment 5 Rincon Quarterly Monitoring Report - Coastal Sage

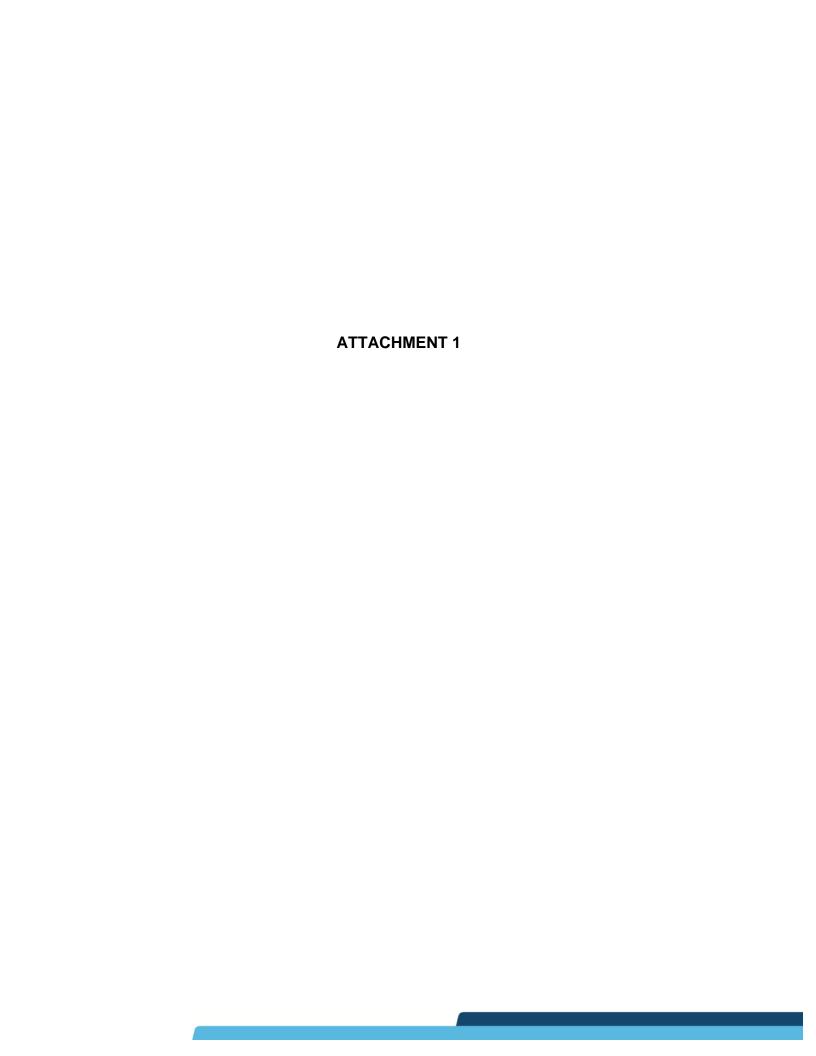
Scrub Deck B Pilot Study, 2Q2021

Attachment 6 Rincon Sunshine Canyon Landfill Ultimate Entry

Improvement Project, Oak Tree Survey Report

Drawing

Drawing 1 2Q2021 Site Vegetation Status and Activity





City-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

July 6, 2021

Project No: 21-11086

Tuong-phu Ngo Environmental Manager Republic Services 14747 San Fernando Road Sylmar, California 91342

Via email: tngo@republicservices.com

Subject: Qualitative Progress Report – 2nd Quarter, 2021 for the Republic Services City-Side Sage

Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Mr. Ngo,

On June 23, 2021, Rincon Biologist Kyle Gern conducted the second 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 surround slope), which are discussed in detail below.

General Conditions

Lower Deck

In 2014, the Landfill initiated a pilot study at the Lower Deck 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 second 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 new growth, and large stands of blooming common sunflower (*Helianthus annuus*) were observed. Exotic grasses such as foxtail barley and ripgut brome have showed decline since the first monitoring event of 2021. The decline in exotic grasses is due to the weeding treatment that was applied to the landscape, as well as natural senescence of the grasses due to their annual life cycle. Despite the decline in exotic grass cover, they are still dominant in the herbaceous layer. The non-native grasses should continue to be maintained periodically throughout the remainder of the 2021 growing season to prevent further dispersal within the mitigation area.



City-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

Middle Deck

In 2019, the Landfill initiated a pilot study at the Middle Deck 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*), and white sage (*Salvia apiana*), and herbaceous species such as alkali rye (*Elymus triticoides*) and yarrow (*Achillea millefolium*). Of all the observed native species, brittlebush has shown the greatest increase in abundance between 2020 and the second quarter of 2021. 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*). In general, the weed cover is generally low to moderate.

Upper Deck

Overall, the Upper Deck continues to be sparsely covered with native vegetation, and total vegetation coverage is sparse due to compacted and poor soil conditions. In the southern-center of the revegetation area, vegetation cover is high, 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; 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 Uppe	er Decks in Quarter 1. 2021

Native Plant Vegetation					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	12"-24"	Low	Moderate	Setting seed
Middle Deck	Minimal	Recovering from fire	12"-24"	Low	Moderate	Setting seed
Upper Deck	Minimal	Poor soils	12"-24"	Low	Moderate	Setting seed

Recommendations

Lower and Middle Decks

Weed Control

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

Prohibit Access

Continue to prohibit vehicle access to mitigation areas.

City-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

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



City-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

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 (June 23, 2021).



Photograph 2. Facing east at lower deck from western boundary (June 23, 2021).





Photograph 3. Facing east at the Middle Deck from western boundary (Jun 23, 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 in flower) and non-native annual grasses (June 23, 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 (June 23, 2021).

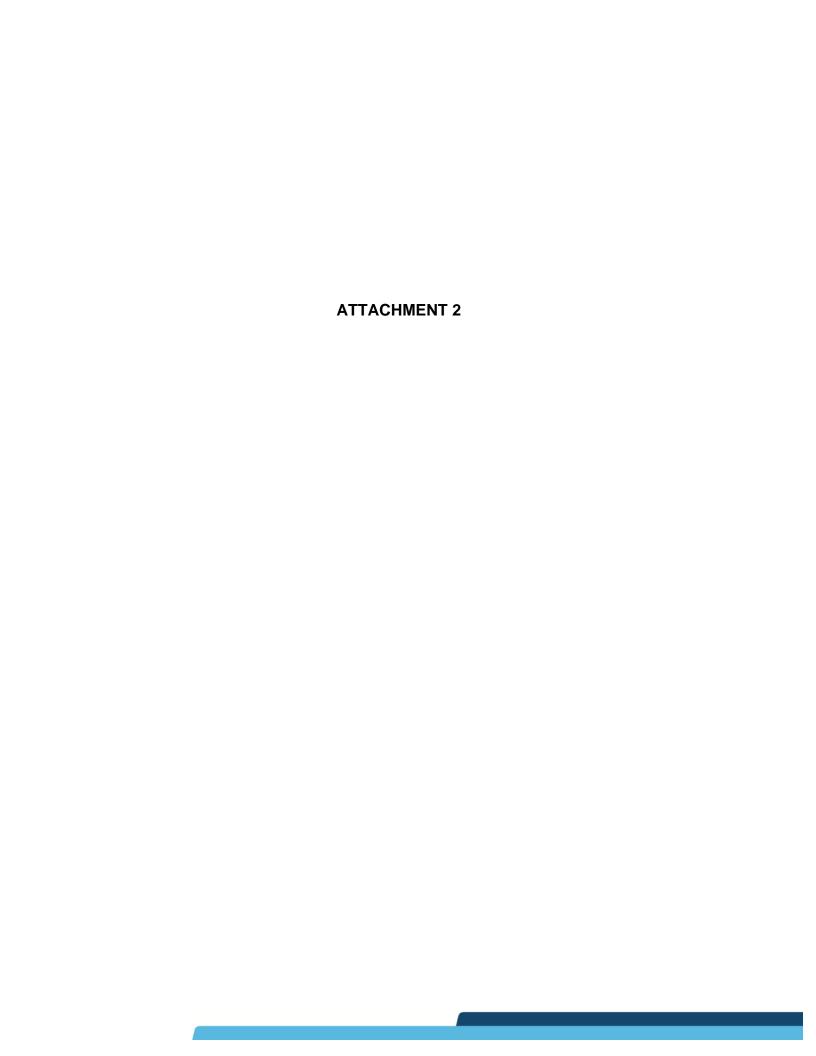


Photograph 6. Facing southwest at the Upper Deck. This area is dominated by wild oats and California buckwheat, which are currently flowering (June 23, 2021).





Photograph 7. Facing southeast at the western portion of the Upper Deck. This area is dominated by short podded mustard and Australian saltbush (June 23, 2021).





July 6, 2021

Project No: 21-11086

Tuong-phu Ngo Environmental Manager Republic Services 14747 San Fernando Road Sylmar, California 91342

Via email: tngo@republicservices.com

Subject: Qualitative Progress Report – 2nd Quarter, 2021 for the Republic Services County-Side Sage

Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Mr. Ngo,

On June 23, 2021, Rincon biologist Kyle Gern conducted the second quarter qualitative monitoring report of 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. 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 was observed in full flower in the second quarter. California sunflower, which was in full flower in the first quarter, is now setting seed. 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 hundreds of California sunflower seedlings that are present 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*

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County-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

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



County-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

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 dominants the native cover with California sunflower as a co-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 and wild oats, which have already set seed, as well as patches of short podded mustard, which have just finished flowering. Other established weeds that were observed include redstem filaree (*Erodium cicutarium*) and telegraph weed (*Heterotheca grandiflora*), which is a weedy native plant species. Immature Russian thistle (*Salsola tragus*) are scattered within the vegetated areas, and are expected to increase in size as they begin to reproduce during the 2021 growing season.

County-Side Sage Mitigation Area Qualitative Progress Report – 2nd Quarter, 2021

Table 1 Summary of Observations in the County-Side Sage Mitigation Area in Quarter 1, 2021

	Native Plant Vegetation				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	

Recommendations

The following recommendations within the County-Side Sage Mitigation are suggested based upon the field survey conducted on March 30, 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. 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



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Attachment A

Figure 1. Photograph Locations



Figure 1 Photograph Locations



Attachment B

Site Photographs

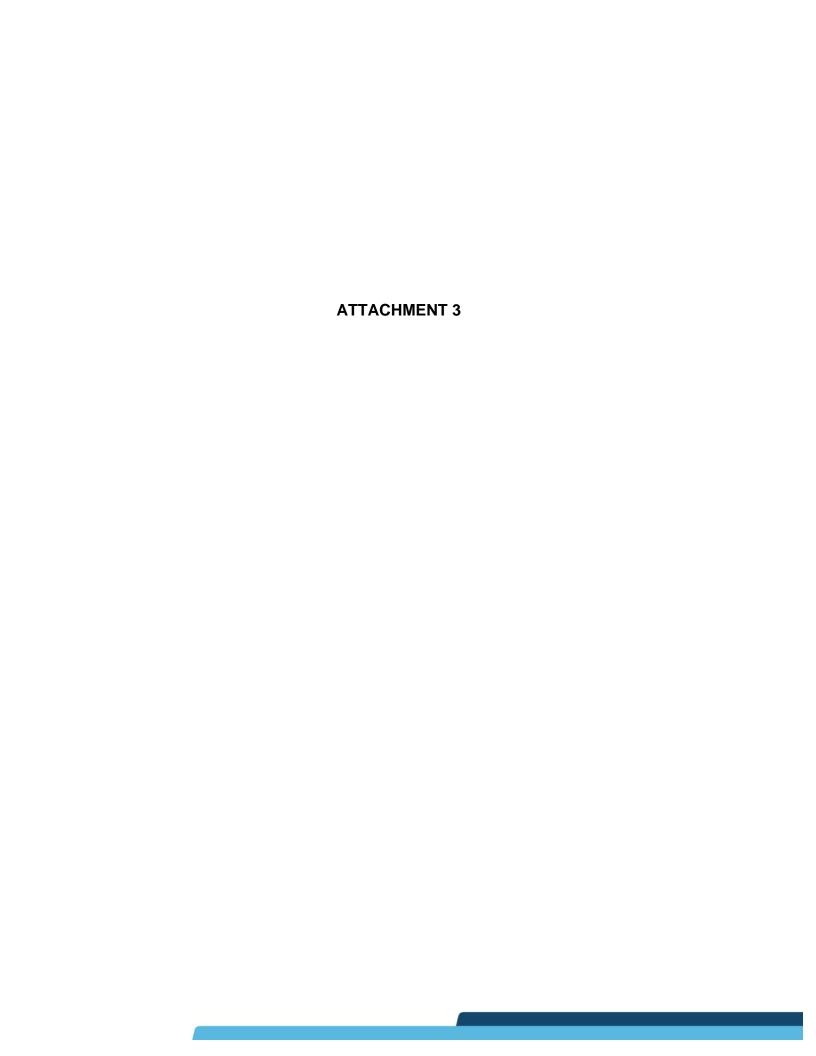




Photograph 1. Facing west at the County-Side Sage Mitigation Area (June 23, 2021).



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 (June 23, 2021).



ARCHITERRA DESIGN GROUP

FIELD OBSERVATION REPORT

DATE OF VISIT:	06/17/21
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:	10:30am
WEATHER/TEMPERATURE:	Sunny and Hot 102°
ESTIMATED % COMPLETED:	100%
CONFORMANCE WITH SCHEDULE (+, -)	

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

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

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

- During this last quarter, Oakridge Landscape has done a great job of weed abatement. Typically, this time of year we see plenty of Russian Thistle (Salsola ssp.), Wild Oat (Avena fatua), Shortpod Mustard (Hirshfeldia incana), Red Brome Grass (Bromus madritensis), False Barley (Hordeum murinum), Tree Tobacco (Nicotiana glauca), and Yellow Star Thistle (Centaurea solstitialis). However, the deck weed abatement has been very consistent and natives are coming back without competing with these invasives. We would recommend that additional weeding be done around the Oak Trees along the PM10 Berm as well, since several weed species have started to sprout up along that southern edge.
- There is a great abundance of biodiversity in VCCS species that have germinated and/or crown-sprouted since the Saddle Ridge Fire. Some of these species include:
 - o Purple Sage (Salvia leucophylla)
 - o Coast Sunflower (Encelia californica)
 - o White Sage (Salvia apiana)
 - o Creeping Wild Rye (Leymus triticoides)
 - o Deerweed (Lotus scoparius)
 - o Black Sage (Salvia mellifera)
 - o Mexican Elderberry (Sambucus mexicana)
 - o Scarlet Bugler (Penstemon centranthifolia)
 - o Telegraph Weed (Heterotheca grandiflora)

- o Monkey Flower (Mimulus aurantiacus)
- Smooth-Leaf Yerba Santa (Eriodictyon trichocalyx)
- o Thickleaf Yerba Santa (Eriodictyon crassifolium)
- o Sunflower (Helianthus annuus)
- o California Bush Sunflower (Encelia californica)
- o California Sagebrush (Artemisia californica)
- o California Buckwheat (Eriogonum fasciculatum)
- o Quail Bush (Atriplex lentiformis)
- o Four-Wing Saltbush (Atriplex canescens)
- o Cattle Spinach (Atriplex polycarpa)
- o Spinescale (Atriplex spinifera)
- o Toyon (Heteromeles arbutifolia)
- o Foothill Needlegrass (Nassella lepida)
- o Coyote Bush (Baccharis pilularis)
- o Showy Penstemon (Penstemon spectabilis)
- Wright's Cudweed (Pseudognaphalium microcephalum)
- o White Horehound (Marrubium vulgare) Non-Native
- o Australian Saltbush (Atriplex semibaccata) Non-Native

A number of other annuals/perennials were observed in early spring 2021, but have gone dormant (or drought deciduous) and are no longer noticeable.

- Juvenile Oak Trees planted last winter along the PM10 Berm are recovering and have pushed new vegetative growth. Upon visual inspection, approximately 75% were viable and in recovery mode (9 live, 3 dead).
- Several bird and lizard species were actively moving around the deck during my visit.
 Now that the vegetative coverage has a closed canopy in several locations, there is refuge for these species to conceal themselves. A San Diegan Whiptail Lizard and Common Side-Blotched Lizard were seen while walking through the deck vegetation.



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Showy Penstemon (Penstemon spectabilis)



Evidence of spraying of germinating Russian Thistle



Black Sage and Toyon Seedlings



Mexican Elderberry in bloom



East side of Deck C which is showing good recovery. After the Saddle Ridge Fire, this portion of the deck was predominately invasive weeds.



Deck C swale line with dormant Creeping Wild Rye

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

 Weeding efforts on Deck B have also been successful in minimizing the takeoff of invasive species. There are a few locations where California Pepper Trees (Schinus molle) have established.



- In addition to the previously listed plant species on Deck C, here are some additional species that were observed on Deck B:
 - o Prickly Pear (Opuntia littoralis) Part of the container planting
 - o Menzie's Goldenbush (Isocoma menziesii)
 - o Our Lord's Candle (Yucca whipplei) Part of the container planting
 - o Bladderpod (Isomeris arborea)
 - o Desert Encelia (Encelia farinosa)
- A large portion of Deck B that burned in the Saddle Ridge Fire, has rebounded back over the last 18 months and has an abundance of new seedlings filling in what was barren dirt. Within a few years, evidence of the fire will be virtually unnoticeable in this area. It is encouraging to see fire ecology working within the landfill area. Weeding within this zone has also helped to build this area back to it's pre-fire condition.



Portion of Deck B burned completely to the ground now features VCCS species of Sages, Sagebrush and Buckwheat.



California Buckwheat in abundant bloom

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Evidence of vehicular traffic on restricted area of Deck B. T Bar staking needs to be repaired to close off access to the deck.



Menzie's Goldenbush in full bloom



Prickly Pear (Opuntia littorallis) blooms beginning to emerge.



New revegetation site which includes remaining slopes of Deck C



Additional slopes of Deck A that are part of the next revegetation site.



Tiered portion of Deck C for revegetation

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Lower portion of Deck B is also part of the next revegetation project.

Signed: Gregg Denson	Date: 6/25/21					
	<u>DISTRIBUT</u>	<u>rion</u>				
Republic Services		Contractor				
Project Manager (Gregg Denson)		Other				



Photo Station #1 - July 2020 (East)



Photo Station #1 - June 2021 (East)



Photo Station #1 - July 2020 (North)



Photo Station #1 - June 2021 (North)



Photo Station #1 - July 2020 (West)



Photo Station #1 - June 2021 (West)



Photo Station #2 - July 2020 (East)



Photo Station #2 - June 2021 (East)



Photo Station #2 - July 2020 (North)



Photo Station #2 - June 2021 (North)



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Photo Station #6 - June 2021 (East)



Photo Station #6 - April 2021 (West)



Photo Station #6 - June 2021 (West)



Photo Station #7 - April 2021 (North)



Photo Station #7 - June 2021 (North)



Photo Station #7 - April 2021 (East)



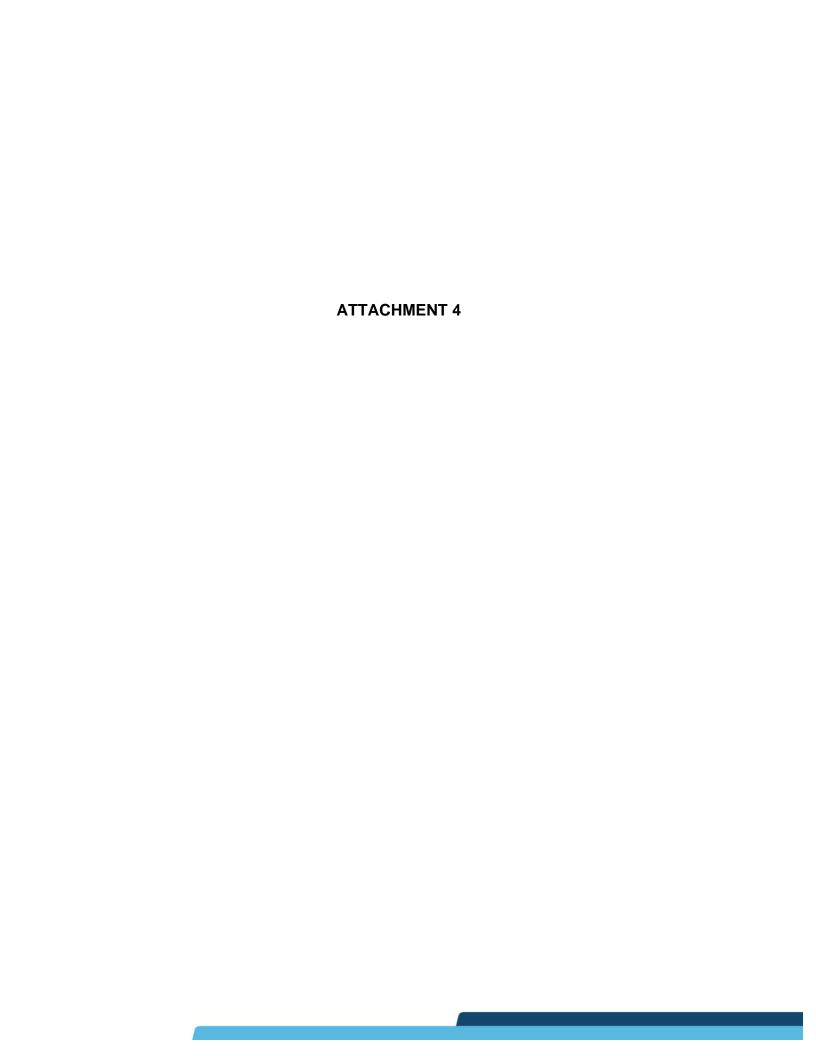
Photo Station #7 - June 2021 (East)



Photo Station #7 - April 2021 (West)



Photo Station #7 - June 2021 (West)





July 6, 2021

Project No: 21-11086

Tuong-phu Ngo Environmental Manager Republic Services 14747 San Fernando Road Sylmar, California 91342

Via email: tngo@republicservices.com

Quarter, 2021

Dear Mr. Ngo,

Subject:

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 second quarter of 2021.

Coastal Sage Scrub City South C Trial Plot Monitoring Report, Sunshine Canyon Landfill – 2nd

Methods

On June 23, 2021, Rincon biologist Kyle Gern monitored the Coastal Sage Scrub City South C Trial Plot at the Sunshine Canyon Landfill, which constitutes the second 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 Deck C Revegetation Area 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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- 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)

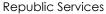
- Percent basal cover (shrubs) 14%
- Percent basal cover (herbs) 9%
- Percent bare ground 33%
- Percent rock or other 5%
- Percent canopy (shrubs) 40%
- Percent canopy (herbs) 15%

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

- Percent basal cover (shrubs) 14%
- Percent basal cover (herbs) 8%
- Percent bare ground 41%
- Percent rock or other 5%
- Percent canopy (shrubs) 33%
- Percent canopy (herbs) 13%

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

■ Percent basal cover (shrubs) – 10%





- Percent basal cover (herbs) 28%
- Percent bare ground 24%
- Percent rock or other 3%
- Percent canopy (shrubs) 17%
- Percent canopy (herbs) 38%

Percent Cover (Quantitative)

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



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

	Plo	ot A	Plo	ot B	Plot C		Plot D	
Species	Number of Hits	Percent Cover						
Native Shrubs								
Acmispon glaber					3	6%	2	4%
Artemisia californica					1	2%		
Atriplex lentiformis	19	38%	10	20%	1	2%	4	8%
Atriplex polycarpa	4	8%	8	16%	1	2%		
Atriplex spinosa								
Baccharis pilularis								
Diplacus aurantiacus								
Encelia californica	7	14%	4	8%	3	6%	7	14%
Salvia apiana								
Salvia mellifera								
Native Herbs								
Achillea millefolium								
Cryptantha intermedia								
Helianthus annuus							12	24%
Elymus triticoides			7	14%	1	2%		
Nasella pulchra								
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Bromus madritensis							2	4%
Bromus diandrus			3	6%				
Centaurea melitensis								
Echinochloa crus-galli								
Erodium cicutarium								
Hirschfeldia incana			3	6%				
Hordeum murinum	2	4%	2	4%	2	4%	1	2%
Salsola tragus								
Bare ground	18	36%	16	32%	38	76%	22	44%
		Plot A	Pl	ot B	Plot C	Plot	D Po	A,B,C,D ercent Cover
Percent Cover Native Shr	ub	60%		14%	18%	26%	6	37%
Percent Cover Native Her	rb	0%	1	.4%	2%	24%	6	10%
Percent Cover Non-Nativ	e Shrub	0%		0%	0%	0%	6	0%
Percent Cover Non-Nativ	e Herb	4%	1	.0%	4%	69	6	6%
Percent Bare Ground		36%		32%	76%	449	4	47%



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

	Plo	ot E	Plot 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			7	14%	3	6%		
Atriplex polycarpa	2	4%	8	16%	3	6%	6	12%
Atriplex spinosa			5	10%				
Baccharis pilularis								
Diplacus aurantiacus								
Encelia californica	8	16%	1	2%	14	28%	21	42%
Salvia leucophylla								
Salvia mellifera								
Native Herbs								
Achillea millefolium								
Cryptantha intermedia								
Helianthus annuus							4	8%
Elymus triticoides							1	2%
Nasella pulchra								
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Bromus diandrus					1	2%		
Bromus madritensis					3	6%		
Centaurea melitensis								
Echinochloa crus-galli								
Erigeron canadensis								
Erodium cicutarium			1	2%				
Hirschfeldia incana								
Hordeum murinum	11	22%	3	6%				
Salsola tragus								
Bare ground	29	58%	25	50%	26	52%	18	36%
		Plot E	Plot		Plot G	Plot F		E,F,G,H cent Cover
Percent Cover Native Shrub		20%	42%		40%	54%		39%
Percent Cover Native Herb		0%	0%		0%	10%		3%
Percent Cover Non-Native S	hrub	0%	0%		0%	0%		0%
Percent Cover Non-Native H		22%	8%		8%	0%		10%
Percent Bare Ground		58%	50%		52%	36%		49%
T CICCIII Daie Giouliu		J070	30%		J2/0	30%		7370



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

	Plo		Plot J		Plo	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			2	4%					
Atriplex lentiformis			1	2%					
Atriplex polycarpa							2	4%	
Atriplex spinosa									
Baccharis pilularis							1	2%	
Diplacus aurantiacus									
Encelia californica	11	22%	1	2%			21	42%	
Salvia apiana									
Salvia mellifera									
Native Herbs									
Achillia mellifoluim									
Cryptantha intermedia									
Helianthus annuus	5	10%	13	26%	1	2%			
Elymus triticoides					28	56%	5	10%	
Nasella pulchra									
Sisyrinchium bellum									
Vulpia microstachys									
Non-Native Herbs									
Bromus diandrus									
Bromus madritensis	1	2%	2	4%			5	10%	
Centaurea melitensis									
Echinochloa crus-galli									
Erigeron canadensis									
Erodium cicutarium	1	2%							
Hirschfeldia incana									
Hordeum murinum	14	28%	8	16%					
Salsola tragus									
Bare ground	18	36%	23	46%	21	42%	16	32%	
		Plot I	Plot J		Plot K	Plot L		,L Percent Cover	
Percent Cover Native Shrub)	22%	8%		0%	48%		20%	
Percent Cover Native Herb		10%	26%		58%	10%		26%	
Percent Cover Non-Native S	Shrub	0%	0%		0%	0%		0%	
Percent Cover Non-Native I		32%	20%		0%	10%		16%	
Percent Bare Ground		36%	46%		42%	32%		39%	
			1070		,.	32/0			



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	Quantitative	Qualitative	Quantitative	
Percent Cover Shrub	40%	37%	33%	39%	17%	20%	
Percent Cover Herb	15%	16%	13%	13%	38%	42%	
Percent Bare Ground	33%	47%	41%	49%	24%	39%	

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 ongoing drought conditions.

Specifically, native shrub species such as California sunflower (Encelia californica) and California sagebrush (Artemisia californica) within the areas that burned appear to be recovering, including the saltbush species that dominated the overall cover of the restoration before the fire, including allscale saltbush (Atriplex polycarpa) and big saltbush (Atriplex lentiformis). The quantitative percent cover of native shrub species currently has an average of 37% within the hydroseed quadrats, 39% within the imprint quadrats, and 20% within the hand broadcast quadrats (Tables 1-3). Native annual herbs and grasses such as alkali rye (Elymus triticoides) and annual sunflower (Helianthus annuus) were observed flowering within the sampled quadrats in the Deck C Revegetation Area, although native annual herb cover was relatively low (hydroseed quadrats: 10% cover; imprint quadrats: 3% cover; hand broadcast quadrats: 26% cover). Native plant species cover did not change substantially between the first and second quarter of 2021, as water availability from precipitation has been sparse.

Non-native plants showed an overall decline in cover within the Deck C Trial Plot between the first and second guarter of 2021, as the majority of non-native species observed in the first guarter were earlyseason annual plants such foxtail barley (Hordeum murinum), Mediterranean grass (Schismus arabicus), and red brome (Bromus madritensis). During the first quarter of monitoring, these non-native plant species formed mats beneath and adjacent to shrub species. These species showed a decline during the second quarter monitoring due to natural senescence as well as weeding treatments which occurred within Deck C, which drastically reduced non-native plant cover. Total non-native herbaceous cover currently has an average of 6% within the hydroseed quadrats (down from 31% in the first quarter), 10% within the imprint quadrats (down from 27% in the first quarter), and 16% (down from 46% in the first 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 and red brome to minimize competition 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.

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





References

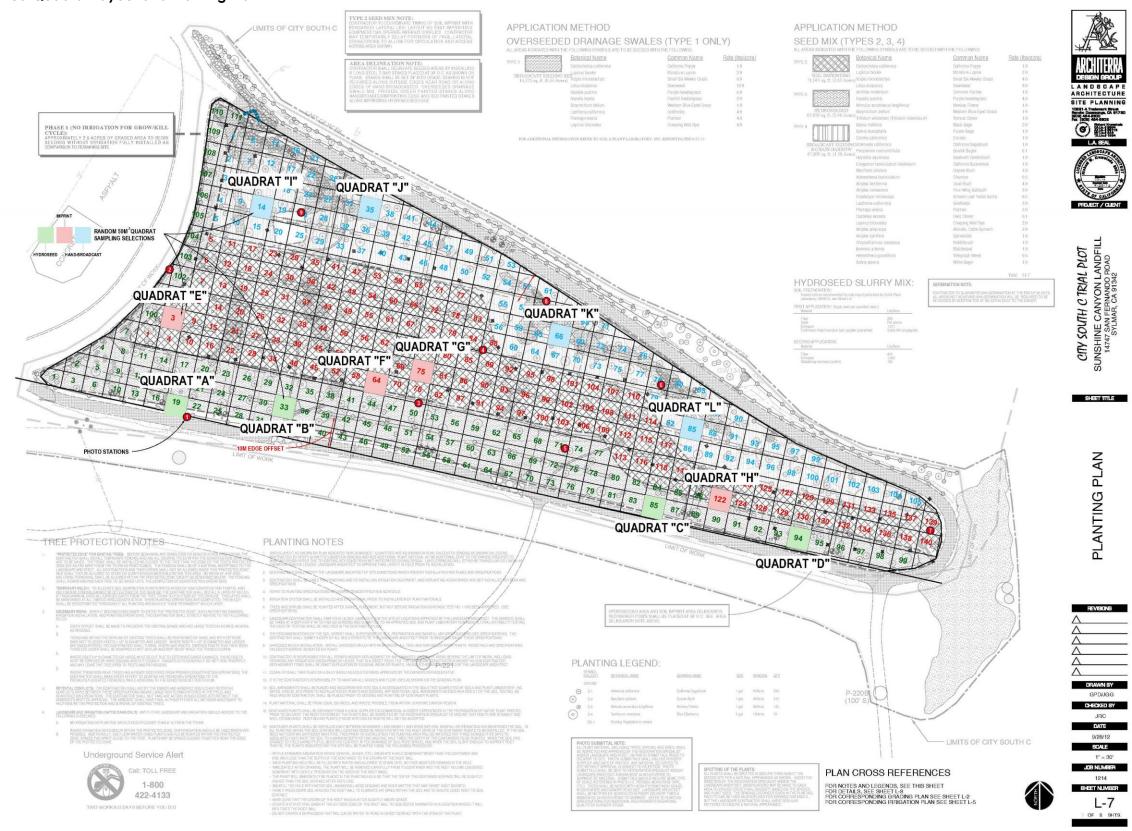
John Minch and Associates, Inc. (JMA). 2014. Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill.



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 (June 23, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (June 23, 2021).

rincon



Photograph 3. Quadrat C facing northeast from southwest corner (June 23, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (June 23, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (June 23, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (June 23, 2021).



Photograph 7. Quadrat G facing northeast from southwest corner (June 23, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (June 23, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (June 23, 2021).



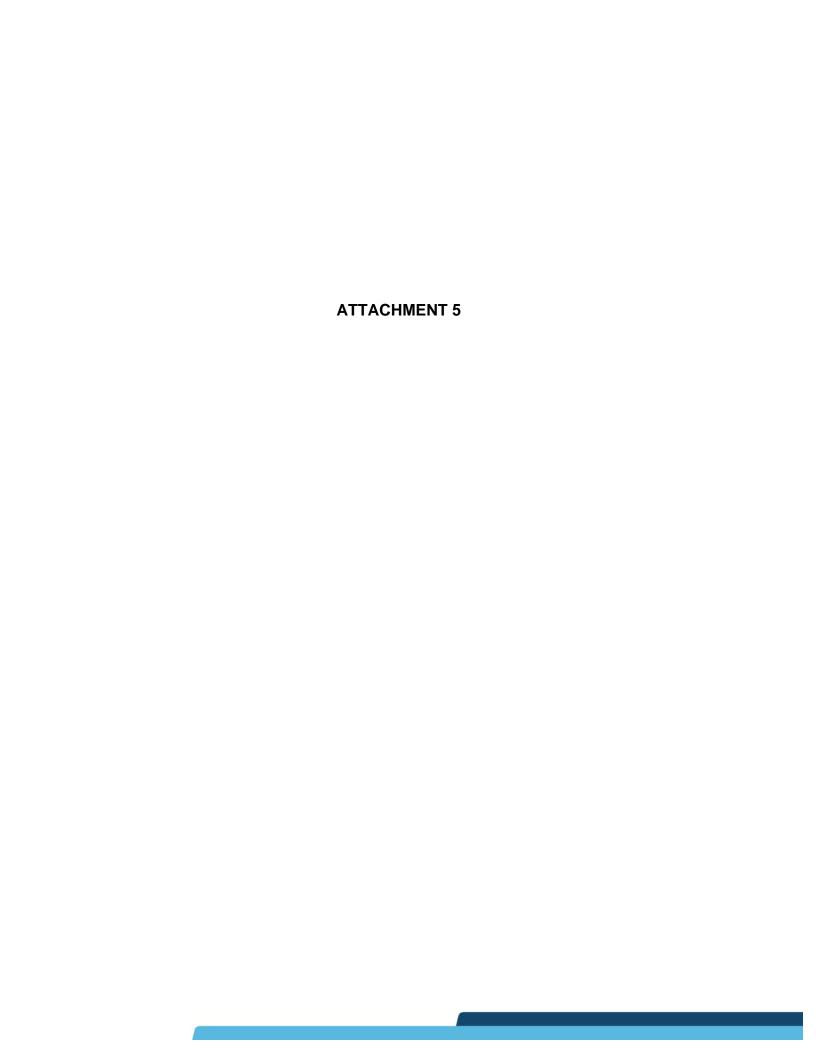
Photograph 10. Quadrat J facing northeast from southwest corner (June 23, 2021).



Photograph 11. Quadrat K facing northeast from southwest corner (June 23, 2021).



Photograph 12. Quadrat L facing northeast from southwest corner (June 23, 2021).





July 6, 2021

Project No: 21-11086

Tuong-phu Ngo Environmental Manager Republic Services 14747 San Fernando Road Sylmar, California 91342

Via email: tngo@republicservices.com

Subject: Coastal Sage Scrub City South B Trial Plot Monitoring Report, Sunshine Canyon Landfill – 2nd

Quarter, 2021

Dear Mr. Ngo,

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 second quarter of 2021.

Methods

On June 23, 2021, Rincon biologist Kyle Gern monitored the Coastal Sage Scrub City South B Trial Plot at the Sunshine Canyon Landfill, which constitutes the second 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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Coastal Sage Scrub City South B Trial Plot, Sunshine Canyon Landfill Monitoring Report 2nd Quarter, 2021

- 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) 4%
- Percent bare ground 88%
- Percent rock or other 3%
- Percent canopy (shrubs) 12%
- Percent canopy (herbs) 7%

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

- Percent basal cover (shrubs) 8%
- Percent basal cover (herbs) 1%
- Percent bare ground 78%
- Percent rock or other 3%
- Percent canopy (shrubs) 16%
- Percent canopy (herbs) 4%

Broadcast seeding - Quadrat C

■ Percent basal cover (shrubs) – 7%



Coastal Sage Scrub City South B Trial Plot, Sunshine Canyon Landfill Monitoring Report 2nd Quarter, 2021

- Percent basal cover (herbs) 3%
- Percent bare ground 75%
- Percent rock or other 2%
- Percent canopy (shrubs) 15%
- Percent canopy (herbs) 7%

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

- Percent basal cover (shrubs) 2%
- Percent basal cover (herbs) 4%
- Percent bare ground 90%
- Percent rock or other 7%
- Percent canopy (shrubs) 9%
- Percent canopy (herbs) 7%

Soil Imprinting and hand broadcast – Quadrat E

- Percent basal cover (shrubs) 5%
- Percent basal cover (herbs) 2%
- Percent bare ground 85%
- Percent rock or other 1%
- Percent canopy (shrubs) 17%
- Percent canopy (herbs) 4%

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	1	2%			
Artemisia californica			1	2%	
Atriplex lentiformis			5	10%	
Atriplex polycarpa			2	4%	
Atriplex spinosa					
Baccharis pilularis	1	2%			
Baccharis salicifolia	1	2%			
Encelia californica					
Salvia apiana					
Salvia mellifera					
Non-Native Shrubs					
Atriplex semibaccata			3	6%	
Native Herbs					
Achillea millefolium					
Eschscholzia californica					
Elymus triticoides	3	6%	5	6%	
Nasella pulchra					
Sisyrinchium bellum					
Non-Native Herbs					
Bromus madritensis	1	2%			
Hirschfeldia incana	1	2%			
Bare ground	42	84%	35	70%	
	Quadrat A	Quadrat G	A and G (% Cover)	
Percent Cover Native Shrub	6%	14%	109	%	
Percent Cover Native Herb	6%	10%	89	%	
Percent Cover Non-Native Shrub	0%	6%	39	%	
Percent Cover Non-Native Herb	4%	0%	29	%	
Percent Bare Ground	84%	70%	779	%	



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

	Quadrat B		Quad	lrat F	Qua	Quadrat H		
Species	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover		
Native Shrubs								
Acmispon glaber	4	8%						
Artemisia californica	16	32%						
Atriplex lentiformis								
Atriplex polycarpa								
Atriplex spinosa								
Baccharis pilularis								
Encelia californica	2	4%						
Encelia farinosa	3	6%						
Eriogonum fasciculatum	1	2%	3	6%	2	4%		
Isocoma menziesii	3	6%			1	2%		
Salvia leucophylla	1	2%						
Salvia mellifera	1	2%						
Native Herbs								
Achillia mellifoluim								
Eschscholzia californica								
Elymus triticoides								
Helianthus annuus	1	2%						
Sisyrinchium bellum								
Vulpia microstachys								
Non-Native Herbs								
Avena barbata								
Bromus madritensis			4	8%				
Echinochloa crus-galli								
Erodium botrys								
Hirschfeldia incana			1	2%				
Hordeum vulgare								
Salsola tragus								
Schismus arabicus			9	18%	2	4%		
Mesembryanthemum nodiflorum			2	4%				
Bare ground	18	36%	40	80%	45	90%		
	Qu	adrat B	Quadrat F	Quadra	t H B,	F, H (% cover)		
Percent Cover Native Shrub		62%	6%	6%	S	25%		
Percent Cover Native Herb		2%	0%	0%		1%		
Percent Cover Non-Native Shrul		0%	0%	0%		0%		
Percent Cover Non-Native Herb		0%	14%	4%		6%		
Percent Bare Ground		40%	80%	90%	Ď	69%		



Table 3 Broadcast Seeding – Quadrat C

	Quadrat C					
Species	Number of Hits	Percent Cover				
Native Shrubs						
Adenostema fasciculatum						
Artemisia californica	10	20%				
Atriplex lentiformis						
Atriplex polycarpa						
Atriplex spinosa						
Baccharis pilularis						
Encelia californica						
Acmispon glaber	4	8%				
Encelia farinosa	1	2%				
Eriogonum fasciculatum	1	2%				
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	2	4%				
Hirschfeldia incana						
Hordeum vulgare						
Salsola tragus						
Bare ground	32	64%				
	Quad	drat C (% cover)				
Percent Cover Native Shrub		32%				
Percent Cover Native Herb		0%				
Percent Cover Non-Native Shrub		0%				
Percent Cover Non-Native Herb		4%				
Percent Bare Ground		64%				





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%		
Artemisia californica	2	44%				
Atriplex lentiformis	1	2%				
Atriplex polycarpa	2	4%	1	2%		
Atriplex spinosa						
Baccharis pilularis						
Encelia californica						
Eriogonum fasciculatum						
Diplacus aurantiacus						
Isocoma menziesii	1	2%				
Opuntia littoralis	1	2%				
Non-Native Shrubs						
Atriplex semibaccata			1	2%		
Native Herbs						
Achillea millefolium						
Eschscholzia californica						
Elymus triticoides			11	22%		
Nasella pulchra						
Sisyrinchium bellum						
Vulpia microstachys						
Non-Native Herbs						
Bromus diandrus	1	2%				
Bromus madritensis	1	2%	3	6%		
Echinochloa crus-galli						
Erodium cicutarium	1	2%				
Hirschfeldia incana						
Hordeum vulgare						
Salsola tragus			1	2%		
Schismus arabicus						
Bare ground	40	80%	32	64%		
	Quadr	at D	Quadrat I	D and I (% cover)		
Percent Cover Native Shrub	14	1%	4%	9%		
Percent Cover Native Herb	(0%	22%	11%		
Percent Cover Non-Native Shru	b (0%	2% 1%			
Percent Cover Non-Native Herk	6	5%	8%	7%		
Percent Bare Ground	80)%	64%	72%		



Table 5 Soil Imprinting and Hand Broadcast – Quadrat E

	Quadrat E					
Species	Number of Hits	Percent Cover				
Native Shrubs						
Acmispon glaber						
Artemisia californica	2	4%				
Atriplex lentiformis	3	6%				
Atriplex polycarpa	2	4%				
Atriplex spinosa						
Baccharis pilularis						
Encelia farinosa	1	2%				
Eriogonum fasciculatum	5	10%				
Isocoma menziesii	6	12%				
Opuntia littoralis	7	14%				
Salvia apiana						
Salvia mellifera						
Native Herbs						
Achillia mellifoluim						
Eschscholzia californica						
Elymus triticoides	1	2%				
Nasella pulchra						
Sisyrinchium bellum						
Vulpia microstachys						
Non-Native Herbs						
Bromus diandrus						
Centaurea melitensis						
Echinochloa crus-galli						
Erodium cicutarium	1	2%				
Hirschfeldia incana						
Hordeum vulgare						
Salsola tragus						
Schismus arabicus						
Bare ground	28	56%				
	O	uadrat E (% cover)				
Percent Cover Native Shrub		40%				
Percent Cover Native Herb		2%				
Percent Cover Non-Native Shrub		0%				
Percent Cover Non-Native Herb		2%				
Percent Bare Ground		56%				



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	10%	25%	32%	9%	40%
Percent Cover Native Herb	8%	1%	0%	11%	2%
Percent Cover Non-Native Shrub	3%	0%	0%	1%	0%
Percent Cover Non-Native Herb	2%	6%	4%	7%	2%
Percent Bare Ground	77%	69%	64%	72%	56%

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.

Growth of native plant species was observed within the Coastal Sage Scrub City South B Trial Plot during the second quarter of 2021. Native species such as brittlebush (*Encelia farinosa*), scarlet burglar (*Penstemon centranthifolius*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and white sage (*Salvia apiana*) were observed in the sample quadrats. The native plants within the areas that burned appear to be recovering, most notably brittlebush, which was observed flowering throughout the Coastal Sage Scrub City South B Trial Plot during the first quarter, and is now setting seed. Non-native plant cover declined throughout the Coastal Sage Scrub City South B Trial Plot Area since the first quarter of monitoring, as the majority of non-native plant species present 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*). The majority of these plants senesced between the first and second quarter of monitoring.

Soil imprinting and hand broadcast (Quadrat E) had the highest percent cover of native shrubs using the point intercept method (40%), followed by broadcast seeding (Quadrat C; 32%) and soil imprinting (Quadrats B, F, and H; 25%) (Table 6). Percent cover of native herbaceous plant species was low in all seeding methods, ranging between 0% and 11%. The lack of substantial rain events in the winter of 2020 and spring of 2021 likely played a role in the low cover of native herbaceous plant species, in particular annual plants such as yarrow that require rain to establish and that have been previously observed in high quantities in Quadrat B. Non-native herbs were most abundant in the broadcast seeding with soil imprinting plots using the point intercept method (Quadrats D and I; 11%), followed by soil imprinting with hand broadcast overseeded drainage swales (Quadrats A and G; 8%). Non-native herbaceous species abundance is anticipated to decline throughout the growing season, while native herbaceous species abundance will likely remain the same. This is because the majority of native herbaceous species observed within the Deck B Revegetation Area are perennials, such as beardless wild rye (*Elymus*



triticoides), whereas the majority of non-native herbaceous species are annuals that senesce throughout each growing season.

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 reestablishing restoration sites, including previously undisturbed areas. Under natural conditions where a seed bank is present in 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 the native shrubs begin to sprout in the Deck B Revegetation Area, it is essential to control the spread non-native herbaceous species such as foxtail barley and red brome to minimize competition for water, nutrients, and sunlight. Therefore, during the first two to three years following the fire, weed maintenance should occur no less than every four months, and special attention should be afforded to minimizing impacts to native seedlings and resprouts.

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

Deck B Revegetation Area Quadrat Layout Attachment A

Attachment B Representative Site Photographs





Coastal Sage Scrub City South B Trial Plot, Sunshine Canyon Landfill Monitoring Report 2nd Quarter, 2021

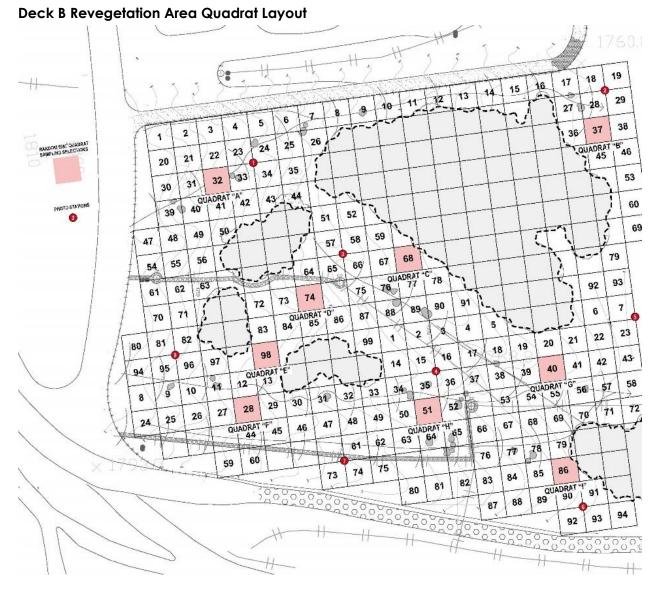
References

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.

Attachment A

Deck B Revegetation Area Quadrat Layout







Representative Site Photographs



Photograph 1. Quadrat A facing northeast from southwest corner (June 23, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (June 23, 2021).



Photograph 3. Quadrat C facing northeast from southwest corner (June 23, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (June 23, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (June 23, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (June 23, 2021).



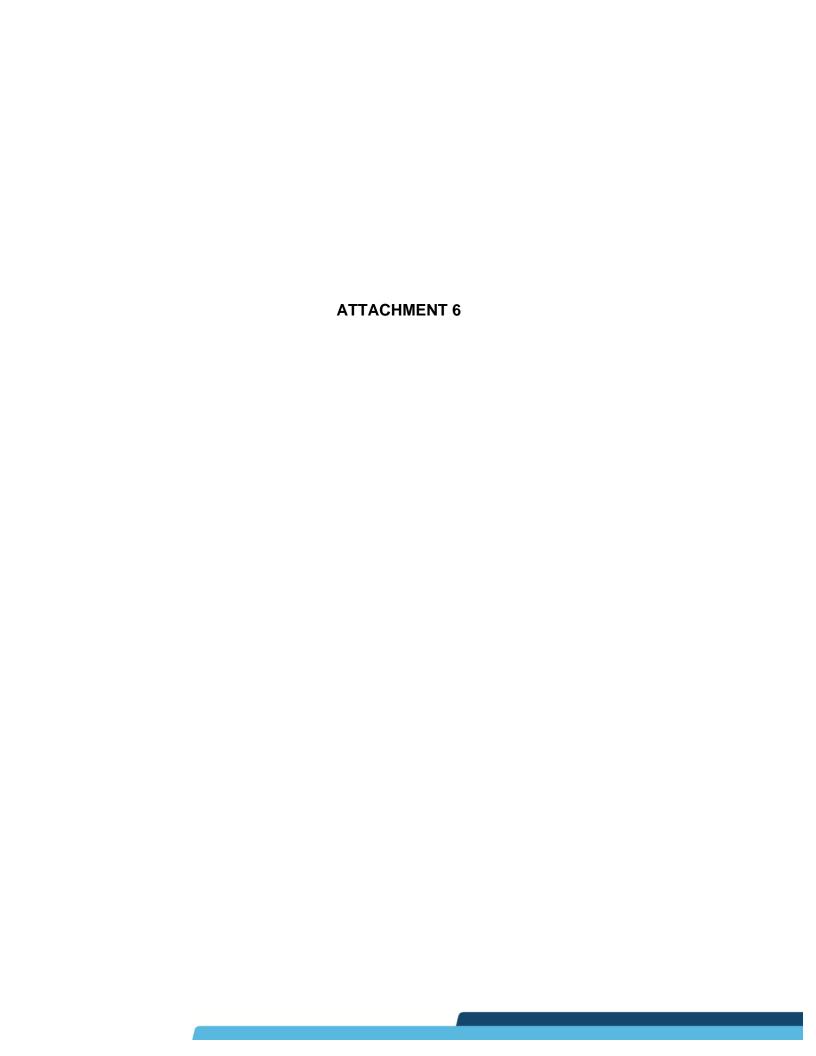
Photograph 7. Quadrat G facing northeast from southwest corner (June 23, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (June 23, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (June 23, 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

Tree # Species		DBH	Canopy Spread				طفاووا	Physical	Impact	Reason for	
Tree #	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

Tree # Species	DBH	Canopy Spread			Haalab	Physical	Impact	Reason for		
	ИВП	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,

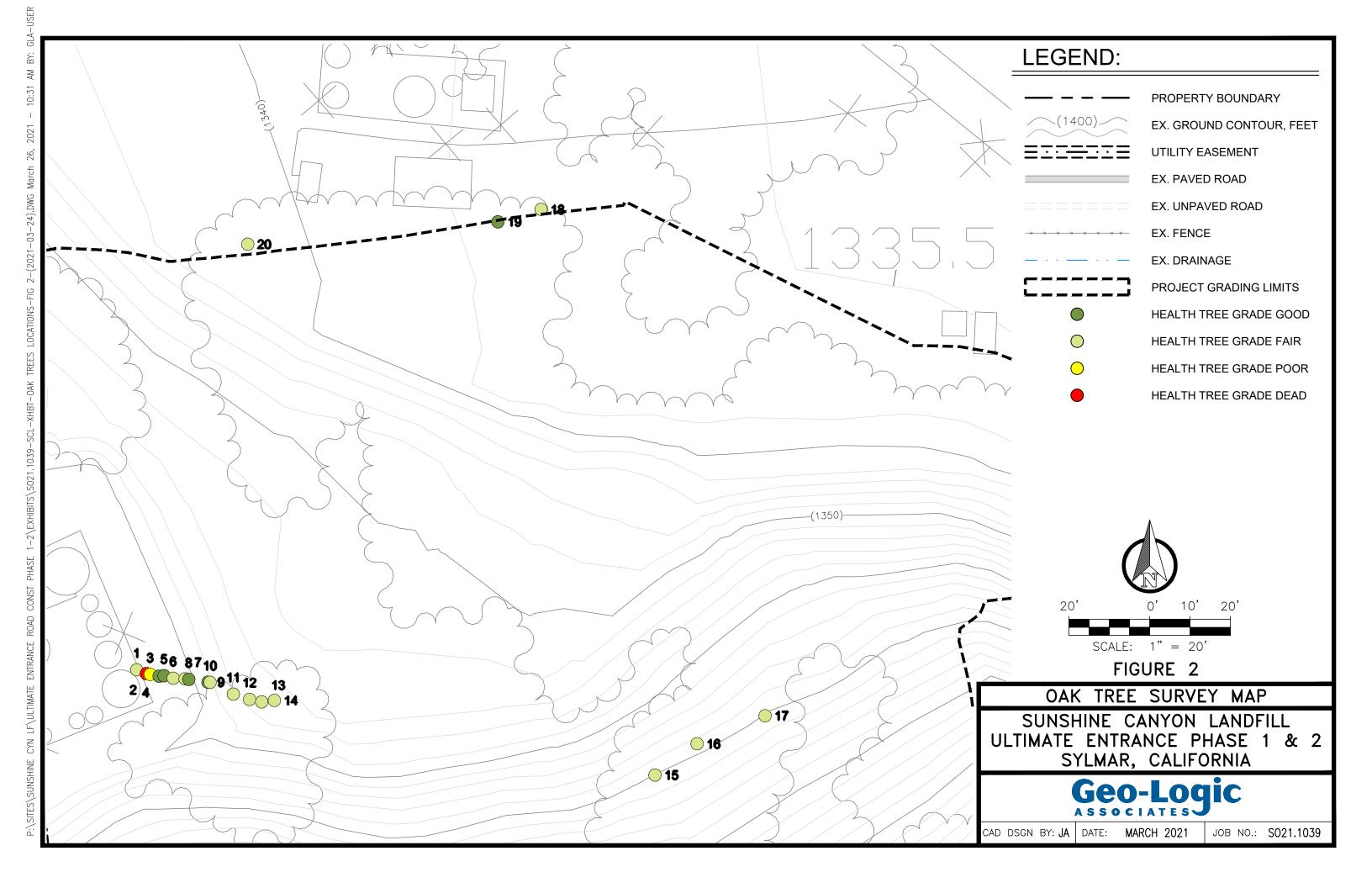
Rincon Consultants, Inc.

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

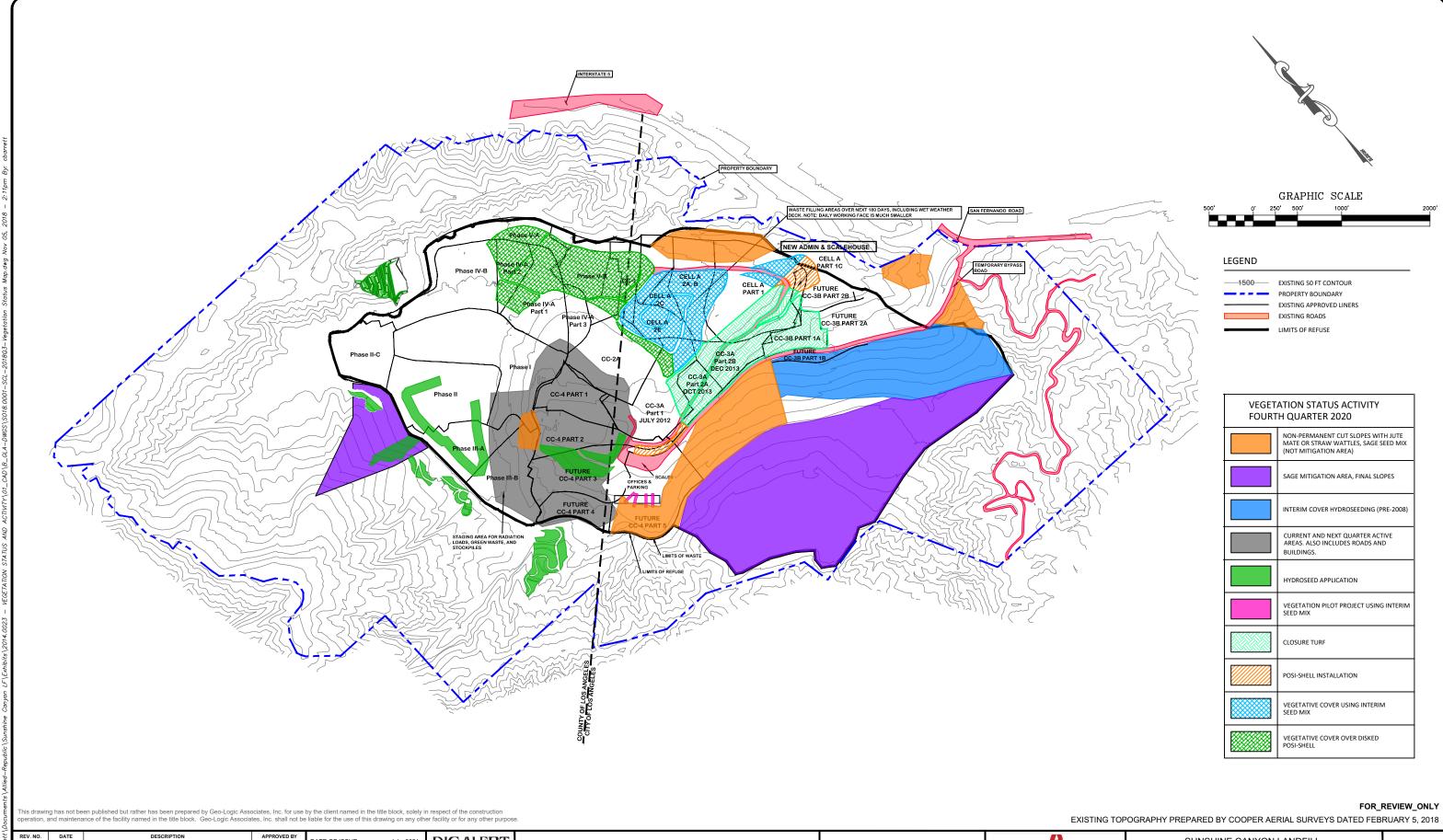
Director of Urban Forestry

Attachments

Oak Tree Map



DRAWING 1



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



Geo-Logic

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REPUBLIC SERVICES	

SUNSHINE CANYON LANDFILL SYLMAR, CALIFORNIA SITE VEGETATION STATUS AND ACTIVITY

Q2 2021

DWG NO.

PROJECT NO. SO18.0001