

April 30, 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
First 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 first 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.

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 – 1Q2021

During the first 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, Horsetweed, 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 are Scarlet Bugler, Telegraph Weed, Monkey Flower and Smooth-Leaf Yerba Santa and now the VCSS is going through dormancy.

4.2 City South Deck B

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

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 first 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, First 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	
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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. PRG and Oakridge Landscape have been diligently removing Russian Thistle, Wild Oat, Shortpod Mustard, Red Brome Grass, False Barley, Tree Tobabcco, and Yellow Star Thistle that took hold in the burned barren areas.

5.2 Rincon Recommendations for County Sage Mitigation Area

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

Table 2 – Rincon Recommendations and Proposed Actions – County Sage Mitigation Area, First Quarter 2021

AREA	RECOMMENDATION		PROPOSED ACTION
County Sage Mitigation Area	1	Create benches to control soil erosion and improve soil conditions to improve plant establishment and seed dispersal	Rincon and ADG are evaluating recommendations from the County Task Force and UltraSystems.
County Sage Mitigation Area	2	Reseed and plant container plants	A trail test pilot plan will be discussed with California Native shrubs.
County Sage Mitigation Area	3	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 – First Quarter 2021

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

5.4 Quarterly Assessment of City South Sage Pilot Project Area

The methodology for assessment of the City South Sage Pilot Project Area developed by Rincon (formerly JMA) was included in the first quarter 2015 Vegetation Report. The evaluation report for the fourth quarter of 2020 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, 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 – 1Q2021 with Photo Log
Attachment 4	Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck C Pilot Study, 1Q2021
Attachment 5	Rincon Quarterly Monitoring Report - Coastal Sage Scrub Deck B Pilot Study, 1Q2021
Attachment 6	Rincon Sunshine Canyon Landfill Ultimate Entry Improvement Project, Oak Tree Survey Report

Drawing

Drawing 1	1Q2021 Site Vegetation Status and Activity
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ATTACHMENT 1





Rincon Consultants, Inc.

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April 7, 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 – 1st Quarter, 2021 for the Republic Services City-Side Sage Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Mr. Ngo,

On March 30, 2021, Rincon Biologists Greg Ainsworth and Kyle Gern conducted the first 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 observed in the first 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*). In the first monitoring event of 2021, saltbush species have resprouted and showed signs of new growth, although exotic grasses such as foxtail barley are still dominant in the herbaceous layer. The non-native grasses



within the Lower Deck are currently flowering and they should be removed as soon as possible to prevent further dispersal within the mitigation area.

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 2021. Non-native plant establishment was also observed within the Middle Deck and includes 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. However, as observed during previous springtime monitoring events, there is a stand of native California goldfields (*Lasthenia californica*) located in the southern-center portion of the Upper Deck (Attachment A, Photograph 6). Vegetation is high in this portion of the Upper Deck, which includes other 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*), 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 Upper Decks in Quarter 1, 2021

Location	Native Plant Vegetation				Exotic Plant Vegetation	
	Native Plant Cover	Plant Health Issues	Height of Native Species	Native Species Richness	Exotic Plant Cover	Phenological State
Lower Deck	Moderate	Fire	12"-24"	Low	Dense	Setting seed
Middle Deck	Minimal	Fire	12"-24"	Low	Moderate	Flowering and setting seed
Upper Deck	Minimal	Fire	12"-24"	Low	Moderate	Flowering and setting seed

Recommendations

Lower and Middle Decks

Weed Control

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



Upper Deck

Improve Root Zone and Soil Conditions

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

Plant Natives in Areas Dominated with Non-natives

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

Weed Control

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



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

Reseeding

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

Prohibit Access

- Continue to prohibit vehicle access to mitigation areas.

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

Sincerely,

Rincon Consultants, Inc.

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

Greg Ainsworth
Natural Resources Director

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

Kyle Gern
Biologist

Attachments

- Attachment A 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

Attachment B Site Photographs



Photograph 1. Facing west at lower deck. View of eastern limits that was dominated by *Atriplex* sp. and California sunflower prior to the Saddleridge Fire (March 30, 2021).



Photograph 2. Facing east at lower deck from western boundary (March 30, 2021).



Photograph 3. Facing east at the Middle Deck from western boundary (March 30, 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 and non-native annual grasses (March 30, 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 California buckwheat shrubs are evident in the background (March 30, 2021).



Photograph 6. Facing southwest at the Upper Deck. This area is dominated by wild oats and California goldfields, which are beginning to flower (March 30, 2021).

ATTACHMENT 2





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April 7, 2021

Project No: 21-11086

Tuong-phu Ngo

Environmental Manager

Republic Services

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Via email: tngo@republicservices.com

Subject: Qualitative Progress Report – 1st Quarter, 2021 for the Republic Services County-Side Sage Mitigation Area at the Sunshine Canyon Landfill in Sylmar, California

Dear Mr. Ngo,

On March 30, 2021, Rincon biologists Greg Ainsworth and Kyle Gern conducted the first 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 with regard to vegetation.

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*). 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*), and short podded mustard (*Hirschfeldia incana*) are the dominant non-native vegetation present, which comprises approximately 25 percent of the total cover. California buckwheat dominates the native vegetation coverage with California sagebrush (*Artemisia californica*) and California sunflower as co-dominants. These native species comprise of



approximately 75 percent of the native vegetation cover in areas where vegetation is present. Other less dominant native species observed include golden bush (*Ericameria linearifolia*), coyote brush (*Baccharis pilularis*), black sage (*Salvia mellifera*) and laurel sumac.

Seed Mix Areas

Like the hydroseeded areas, germination and plant growth from the seed mix areas that occurred several years ago is not discernible. A substantial portion of the mitigation area continues to be bare and problematic for vegetation to become established. However, in areas where vegetation is present, there is a moderate coverage of native species, mostly California buckwheat and California sunflower.

As indicated during previous monitoring periods, 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

It should be noted that the plant cover rating indicated further below in



Table 1 applies where vegetation is dominant in the southeastern portion of the mitigation area. Vegetation cover is moderate in the southeastern portion of the mitigation area and sparse along the upper slopes where rocky and eroded soil conditions occur. As such, most of the northern and upper portions of the mitigation area continue to have minimal coverage. 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. 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.

California buckwheat dominates 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 are currently in flower, as well as patches of short podded mustard, which is beginning to flower. Other established weeds that were observed include redstem filaree (*Erodium cicutarium*) and telegraph weed (*Heterotheca grandiflora*), which is a weedy native plant species. Seedlings of Russian thistle (*Salsola tragus*) are scattered within the vegetated areas, but at lower frequency than the other non-native species noted above.



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

Location	Native Plant Vegetation				Exotic Plant Vegetation	
	Native Plant Cover	Plant Health Issues	Height of Native Species	Native Species Richness	Exotic Plant Cover	Phenological State
County-Side Sage Mitigation Area	Moderate	None	12"-24"	Medium	Moderate	Flowering and 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 (March 30, 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 (March 30, 2021).

ATTACHMENT 3





ARCHITERRA DESIGN GROUP

FIELD OBSERVATION REPORT

DATE OF VISIT:	03/31/21
PROJECT:	Sunshine Canyon Mitigation Sites
PROJECT NUMBER:	1214
PROJECT MANAGER:	Gregg Denson
SITE INSPECTION #:	
PURPOSE OF VISIT:	Review site conditions/Photo Catalog
TIME OF SITE VISIT:	11:00am
WEATHER/TEMPERATURE:	Cool and Breezy 55°
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):

- Significant change in the reestablishment of the Venturan Coastal Sage Scrub is evident on both decks and even though the precipitation has been less than average this year. Cool temperatures through winter and smaller frequent storms have allowed for new germination and established plantings to resprout and fill in. Several new species have been observed on Deck C since the Saddleridge Fire of Fall 2019. These species include: *Phacelia tanacetifolia* – Lacy Phacelia, *Calystegia macrostegia* – Island False Bindweed, *Pseudognaphalium microcephalum* – Wright's Cudweed, *Pseudognaphalium californicum* – Ladies' Tobacco, *Solanum Americanum* – American Black Nightshade, *Amsinckia menziesii* – Menzies Fiddleneck, *Maslosma laurina* – Laurel Sumac, *Penstemon centranthifolius* – Scarlet Bugler, *Penstemon spectabilis* – Showy Penstemon, *Eriodictyon californicum* – California Yerba Santa, *Eriodictyon crassifolium* – Thicketleaf Yerba Santa, *Helianthus annuus* – Sunflower, *Marrubium vulgare* – White Horehound. Some photos of the above listed species are included in this report.
- A visual inspection of the PM10 Berm Oak Trees was completed and the majority of the trees are recovering from the fire damage. Even some of the recently planted (Fall 2020) Oak Tree saplings have started pushing out new tip growth after defoliating right after planting. Only (2) two of the newly planted Coast Live Oak Trees have died.
- During my visit of the decks, Oakridge Landscape was present and was targeting the Mustard on the Deck C slope between Deck B and C. They reduced the height of the Shortpod Mustard (*Hirschfeldia incana*) and also were spraying the remaining foliage with a foliar herbicide. This will help to minimize the amount of weed seed spreading into the decks since they removed the vegetation prior to it going to seed.

- Oakridge Landscape needs to continue their weed abatement and remain aggressive during the spring to keep areas from being overrun. Active exotic weed growth on Deck C includes: Shortpod Mustard (*Hirshfeldia incana*), Red Brome Grass (*Bromus madritensis*), *Hordeum depressum* (Low Barley). With early spring heat arriving later this week, smaller seedlings of Russian Thistle (*Salsola ssp.*) are sprouting and should also be targeted. Weed abatement within Deck C will need to be a monthly, if not bi-weekly activity during the spring months to keep weeds in check.



Mechanically removed Mustard (to stubble) and herbicide is also being applied. This slope area between Deck B and C has been overrun by Mustard for many years. This slope will be included in the next revegetation effort with plans being prepared in 2021 and anticipated improvements beginning in the Fall and continuing into 2022.



New foliage sprouting out from California Sagebrush after dormancy



New foliage sprouting out from California Buckwheat



Seedlings of Purple Sage (foreground), Black Sage (middle) and Deerweed (background)



Shortpod Mustard germinating in the dead understory of Saltbush



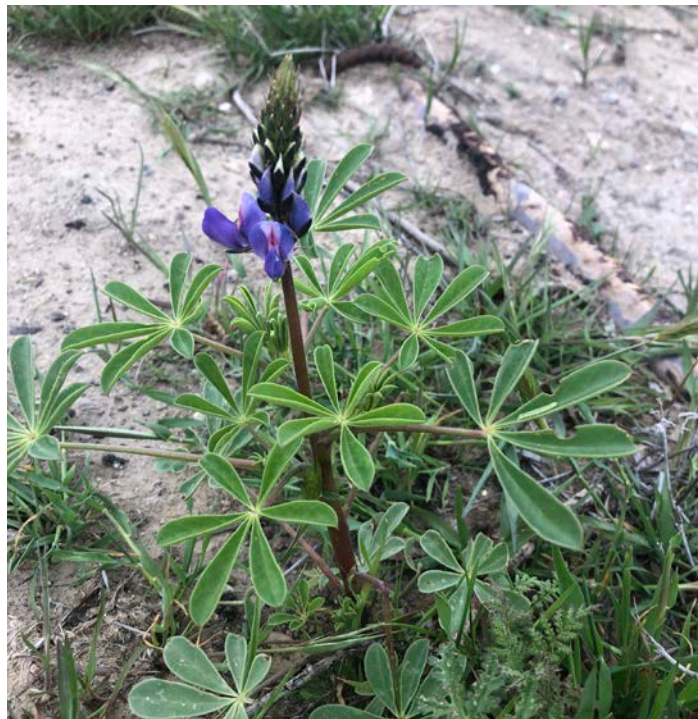
Straw Wattle Installed Pre-Fire 2017



2021 Post-Fire (Straw Wattle burned) but seedlings have sprouted in the sediment deposits



Post-Fire growth of *Acmispon glaber* – Deerweed in burned remnants of Saltbush



Lupinus bicolor – Miniature Lupine beginning to bloom



Phacelia tanacetifolia – Lacy Phacelia



Penstemon centranthifolius – Scarlet Bugler



Penstemon spectabilis – Showy Penstemon germinating next to burned PVC irrigation lateral.



Eriodictyon crassifolium – Thickleaf Yerba Santa germinating (foreground) and a few *Penstemon centranthifolius* – Scarlet Bugler (background)



Eriodictyon californicum – California Yerba Santa



Pseudognaphalium microcephalum – Wright's Cudweed



Hordeum depressum - Low Barley that should be removed now that identification is obvious



Salvia mellifera - Black Sage flowering on Deck C



Recently planted Oak Trees at PM10 Berm pushing new tip growth

City-Side Sage Mitigation (Deck B):

- Over the last three months, considerable sprouting of new plants and growth of existing species has helped to reestablish what was burned in the Fall of 2019. I am very impressed with how quickly things have rebounded considering that there was no irrigation in 2020 due to the damage to the mainline and laterals as a result of the fire. The vegetation on Deck B has shown that it
- New straw wattles were placed along swales to minimize erosion and for the most part it was successful.
- Close off openings along the perimeter and fill in with the T-Bar stakes to eliminate vehicular traffic onto the deck. Some evidence of vehicular traffic on the deck.
- The portion of the mature CSS vegetation stand that was previously burned had several weeds germinating amongst the natives during the fall months. Weeding efforts this last quarter were very successful in removing the exotics and now native vegetation is filling in quickly.



Oakridge Landscape spraying Deck B/C downslope dominated by Shortpod Mustard. This slope area will be included in the next revegetation set of plans.



December 2019



April 2021



December 2019



April 2021



Healthy and diverse stand of VCSS on Deck B



California Sagebrush sprouting adjacent to remnants of burned vegetation



Crown sprouting of *Salvia apiana* – White Sage



Crown sprouting of *Isocoma menziesii* – Menzie's Goldenbush

Signed: Gregg Denson

Date: 4-7-21

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

DISTRIBUTION

Republic Services



Contractor



Project Manager (Gregg Denson)



Other _____





Photo Station #1 - April 2020 (East)



Photo Station #1 - April 2021 (East)



Photo Station #1 - April 2020 (North)



Photo Station #1 - April 2021 (North)



Photo Station #1 - April 2020 (West)



Photo Station #1 - April 2021 (West)



Photo Station #2 - April 2020 (East)



Photo Station #2 - April 2021 (East)



Photo Station #2 - April 2020 (North)



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Photo Station #8 - April 2021 (East)



Photo Station #8 - October 2020 (West)



Photo Station #8 - April 2021 (West)

ATTACHMENT 4





Rincon Consultants, Inc.

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April 7, 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 C Trial Plot Monitoring Report, Sunshine Canyon Landfill – 1st 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 C Trial Plot, hereby referred to as the Deck C Revegetation Area, in the first quarter of 2021.

Methods

On March 30, 2021, Rincon biologists Greg Ainsworth and Kyle Gern monitored the Deck C Revegetation Area at the Sunshine Canyon Landfill, which constitutes the first 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.
- **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) – 21%
- Percent bare ground – 31%
- Percent rock or other – 5%
- Percent canopy (shrubs) – 40%
- Percent canopy (herbs) – 42%

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

- Percent basal cover (shrubs) – 14%
- Percent basal cover (herbs) – 21%
- Percent bare ground – 34%
- Percent rock or other – 7%
- Percent canopy (shrubs) – 33%
- Percent canopy (herbs) – 39%



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

- Percent basal cover (shrubs) – 10%
- Percent basal cover (herbs) – 38%
- Percent bare ground – 17%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 18%
- Percent canopy (herbs) – 70%

Percent Cover (Quantitative)

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



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

Species	Plot A		Plot B		Plot C		Plot D	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs								
<i>Acmispon glaber</i>					3	6%		
<i>Artemisia californica</i>								
<i>Atriplex lentiformis</i>	15	30%	13	26%			2	4%
<i>Atriplex polycarpa</i>	6	12%	2	4%				
<i>Atriplex spinosa</i>								
<i>Baccharis pilularis</i>								
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	5	10%	15	30%	1	2%	7	14%
<i>Salvia apiana</i>								
<i>Salvia mellifera</i>								
Native Herbs								
<i>Achillea millefolium</i>								
<i>Cryptantha intermedia</i>								
<i>Helianthus annuus</i>							5	10%
<i>Elymus triticoides</i>					2	4%		
<i>Nasella pulchra</i>								
<i>Sisyrinchium bellum</i>								
<i>Vulpia microstachys</i>								
Non-Native Herbs								
<i>Bromus madritensis</i>	2	4%						
<i>Bromus diandrus</i>	2	4%			1	2%	3	6%
<i>Centaurea melitensis</i>								
<i>Echinochloa crus-galli</i>								
<i>Erodium cicutarium</i>								
<i>Hirschfeldia incana</i>			3	6%				
<i>Hordeum murinum</i>	13	26%	12	24%	4	8%	21	42%
<i>Salsola tragus</i>								
Bare ground	7	14%	5	10%	39	78%	12	24%
		Plot A		Plot B		Plot C		Plot D
Percent Cover Native Shrub		52%		60%		8%		18%
Percent Cover Native Herb		0%		0%		4%		10%
Percent Cover Non-Native Shrub		0%		0%		0%		0%
Percent Cover Non-Native Herb		34%		30%		10%		48%
Percent Bare Ground		14%		10%		78%		24%
								A,B,C,D Percent Cover
								35%
								4%
								0%
								31%
								32%



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

Species	Plot E		Plot F		Plot G		Plot H	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs								
<i>Adenostema fasciculatum</i>								
<i>Artemisia californica</i>								
<i>Atriplex lentiformis</i>			8	16%	2	4%		
<i>Atriplex polycarpa</i>	2	4%	5	10%	2	4%		
<i>Atriplex spinosa</i>			5	10%				
<i>Baccharis pilularis</i>								
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	7	14%			21	42%	29	58%
<i>Salvia leucophylla</i>							1	2%
<i>Salvia mellifera</i>								
Native Herbs								
<i>Achillea millefolium</i>								
<i>Cryptantha intermedia</i>								
<i>Helianthus annuus</i>							3	6%
<i>Elymus triticoides</i>								
<i>Nasella pulchra</i>								
<i>Sisyrinchium bellum</i>								
<i>Vulpia microstachys</i>								
Non-Native Herbs								
<i>Bromus madritensis</i>	1	2%	1	2%			2	4%
<i>Bromus diandrus</i>			3	6%				
<i>Centaurea melitensis</i>								
<i>Echinochloa crus-galli</i>								
<i>Erigeron canadensis</i>								
<i>Erodium cicutarium</i>	3	6%	1	2%				
<i>Hirschfeldia incana</i>	4	8%			1	2%		
<i>Hordeum murinum</i>	17	34%	13	26%	7	14%	1	2%
<i>Salsola tragus</i>								
Bare ground	16	32%	14	28%	17	34%	17	34%
	Plot E		Plot F		Plot G		Plot H	
Percent Cover Native Shrub	18%		36%		50%		60%	
Percent Cover Native Herb	0%		0%		0%		6%	
Percent Cover Non-Native Shrub	0%		0%		0%		0%	
Percent Cover Non-Native Herb	50%		36%		16%		6%	
Percent Bare Ground	32%		28%		34%		34%	



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

Species	Plot I		Plot J		Plot K		Plot L	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs								
<i>Adenostema fasciculatum</i>								
<i>Artemisia californica</i>			1	2%				
<i>Atriplex lentiformis</i>				0%			1	2%
<i>Atriplex polycarpa</i>								
<i>Atriplex spinosa</i>								
<i>Baccharis pilularis</i>								
<i>Diplacus aurantiacus</i>								
<i>Encelia californica</i>	8	16%	2	4%			21	42%
<i>Salvia apiana</i>								
<i>Salvia mellifera</i>								
Native Herbs								
<i>Achillia mellifolium</i>								
<i>Acmispon glaber</i>								
<i>Helianthus annuus</i>	2	4%	3	6%	1	2%		
<i>Elymus triticoides</i>					26	52%	5	10%
<i>Nasella pulchra</i>								
<i>Sisyrinchium bellum</i>								
<i>Vulpia microstachys</i>								
Non-Native Herbs								
<i>Bromus madritensis</i>	5	10%	4	8%			4	8%
<i>Bromus diandrus</i>	2	4%	3	6%				
<i>Centaurea melitensis</i>								
<i>Echinochloa crus-galli</i>								
<i>Erigeron canadensis</i>								
<i>Erodium cicutarium</i>			1	2%				
<i>Hirschfeldia incana</i>			1	2%	2	4%		
<i>Hordeum murinum</i>	30	60%	30	60%	4	8%	5	10%
<i>Salsola tragus</i>								
Bare ground	3	6%	5	10%	17	34%	14	28%
	Plot I		Plot J		Plot K		Plot L	I,J,K,L Percent Cover
Percent Cover Native Shrub	16%		6%		0%		44%	17%
Percent Cover Native Herb	4%		6%		54%		10%	19%
Percent Cover Non-Native Shrub	0%		0%		0%		0%	0%
Percent Cover Non-Native Herb	74%		78%		12%		18%	46%
Percent Bare Ground	6%		10%		34%		28%	20%



Discussion

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

Table 4 Summary of vegetation cover for each planting method

	Hydroseed (Quadrats A, B, C, and D)		Imprint (Quadrats E, F, G, and H)		Hand Broadcast (Quadrats I, J, K, and L)	
	Qualitative	Quantitative	Qualitative	Quantitative	Qualitative	Quantitative
Percent Cover Shrub	40%	35%	33%	41%	18%	17%
Percent Cover Herb	42%	35%	39%	29%	70%	65%
Percent Bare Ground	31%	32%	34%	32%	17%	20%

The majority of the Deck C Revegetation Area 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.).

Establishment of both native and non-native plant species was observed within the revegetation area during this first quarter monitoring of 2021. 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 percent cover of native shrub species currently has an average of 35% within the hydroseed quadrats, 41% within the imprint quadrats, and 17% within the hand broadcast quadrats (Tables 1-3). Native annual herbs and grasses such as alkali rye (*Elymus triticoides*), distant phacelia (*Phacelia distans*) and California goldfields (*Lasthenia californica*) were observed flowering within the quadrats that are being sampled in the Deck C Revegetation Area, although native annual herb cover was relatively low (hydroseed quadrats: 4% cover; imprint quadrats: 2% cover; hand broadcast quadrats: 19% cover).

Non-native plant establishment and growth was also observed within the Deck C Revegetation Area and includes exotic grasses such as foxtail barley (*Hordeum murinum*), Mediterranean grass (*Schismus arabicus*), and red brome (*Bromus madritensis*) that formed mats beneath and adjacent to shrub species, and forbs such as short podded mustard (*Hirschfeldia incana*). Total non-native herbaceous cover currently has an average of 31% within the hydroseed quadrats, 27% within the imprint quadrats, and 46% within the hand broadcast quadrats (Tables 1-3). These exotic species became well-established in the Deck C Revegetation Area following the Saddleridge Fire in 2019.

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. As the native shrubs begin to sprout in the Deck C 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.

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

Greg Ainsworth
Natural Resources Director

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

Kyle Gern
Biologist

Attachments

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



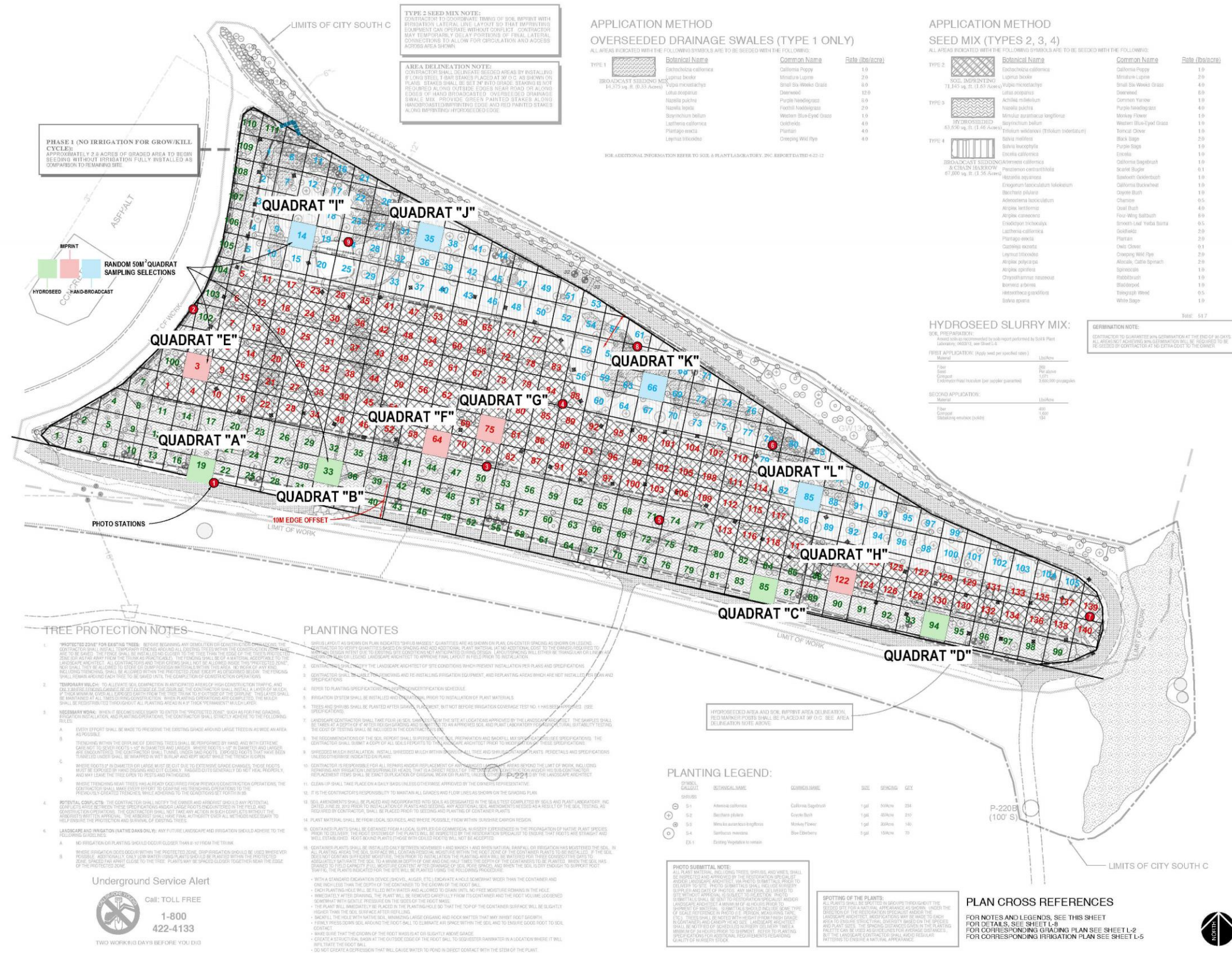
References

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.

Attachment A

Deck C Revegetation Area Quadrat Layout and Planting Plan

Deck C Revegetation Area Quadrat Layout and Planting Plan



Attachment B

Representative Site Photographs



Photograph 1. Quadrat A facing northeast from southwest corner (March 30, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (March 30, 2021).



Photograph 3. Quadrat C facing northeast from southwest corner (March 30, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (March 30, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (March 30, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (March 30, 2021).



Photograph 7. Quadrat G facing northeast from southwest corner (March 30, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (March 30, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (March 30, 2021).



Photograph 10. Quadrat J facing northeast from southwest corner (March 30, 2021).



Photograph 11. Quadrat K facing northeast from southwest corner (March 30, 2021).



Photograph 12. Quadrat L facing northeast from southwest corner (March 30, 2021).

ATTACHMENT 5





Rincon Consultants, Inc.

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April 7, 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 – 1st 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, hereby referred to as the Deck B Revegetation Area, in the first quarter of 2021.

Methods

On March 30, 2021, Rincon biologists Greg Ainsworth and Kyle Gern monitored the Deck B Revegetation Area at the Sunshine Canyon Landfill, which constitutes the first 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 revegetation area consists of nine 50-meter² quadrats that are randomly sampled throughout the revegetation area. The quadrats were randomly selected prior to the first initial monitoring event from a grid that was placed over the entire trial plot, and each quadrat was given a letter (A-I) and delineated in the field with wooden stakes. As shown in Attachment A, five different planting methods were used as follows:

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

Absolute Cover

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



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

Percent Cover

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

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

Field Results

Below are the average data collected for each planting method.

Absolute Cover (Qualitative)

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

- Percent basal cover (shrubs) – 3%
- Percent basal cover (herbs) – 4%
- Percent bare ground – 88%
- Percent rock or other – 3%
- Percent canopy (shrubs) – 11%
- Percent canopy (herbs) – 9%

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

- Percent basal cover (shrubs) – 7%
- Percent basal cover (herbs) – 2%
- Percent bare ground – 77%
- Percent rock or other – 2%
- Percent canopy (shrubs) – 16%
- Percent canopy (herbs) – 5%



Broadcast seeding – Quadrat C

- Percent basal cover (shrubs) – 3%
- Percent basal cover (herbs) – 25%
- Percent bare ground – 75%
- Percent rock or other – 2%
- Percent canopy (shrubs) – 12%
- Percent canopy (herbs) – 17%

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) – 8%
- Percent canopy (herbs) – 8%

Soil Imprinting and hand broadcast – Quadrat E

- Percent basal cover (shrubs) – 5%
- Percent basal cover (herbs) – 3%
- Percent bare ground – 85%
- Percent rock or other – 1%
- Percent canopy (shrubs) – 16%
- Percent canopy (herbs) – 5%

Percent Cover (Quantitative)

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



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

Species	Quadrat A		Quadrat G	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs				
<i>Acmispon glaber</i>	1	2%		
<i>Artemisia californica</i>			1	2%
<i>Atriplex lentiformis</i>			6	12%
<i>Atriplex polycarpa</i>			4	8%
<i>Atriplex spinosa</i>				
<i>Baccharis pilularis</i>	1	2%		
<i>Baccharis salicifolia</i>	1	2%		
<i>Encelia californica</i>				
<i>Salvia apiana</i>				
<i>Salvia mellifera</i>				
Native Herbs				
<i>Achillea millefolium</i>				
<i>Eschscholzia californica</i>				
<i>Elymus triticoides</i>	3	6%	3	6%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
Non-Native Herbs				
<i>Bromus diandrus</i>				
<i>Centaurea melitensis</i>				
<i>Echinochloa crus-galli</i>				
<i>Erodium cicutarium</i>	1	2%		
<i>Hirschfeldia incana</i>	1	2%		
<i>Hordeum murinum</i>	3	6%		
<i>Salsola tragus</i>				
Bare ground	39	78%	36	72%
	Quadrat A	Quadrat G	A and G (% Cover)	
Percent Cover Native Shrub	6%	22%	14%	
Percent Cover Native Herb	6%	6%	6%	
Percent Cover Non-Native Shrub	0%	0%	0%	
Percent Cover Non-Native Herb	10%	0%	5%	
Percent Bare Ground	78%	72%	75%	



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

Species	Quadrat B		Quadrat F		Quadrat H	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs						
<i>Acmispon glaber</i>	4	8%				
<i>Artemisia californica</i>	12	24%	1	2%		
<i>Atriplex lentiformis</i>						
<i>Atriplex polycarpa</i>			1	2%		
<i>Atriplex spinosa</i>						
<i>Baccharis pilularis</i>						
<i>Encelia californica</i>	2	4%				
<i>Encelia farinosa</i>	3	6%				
<i>Eriogonum fasciculatum</i>	3	6%	4	8%	3	6%
<i>Diplacus aurantiacus</i>					1	2%
<i>Salvia leucophylla</i>	1	2%				
<i>Salvia mellifera</i>	5	10%				
Native Herbs						
<i>Achillia mellifolium</i>						
<i>Eschscholzia californica</i>						
<i>Elymus triticoides</i>						
<i>Nasella pulchra</i>						
<i>Sisyrinchium bellum</i>						
<i>Vulpia microstachys</i>						
Non-Native Herbs						
<i>Bromus diandrus</i>			1	2%		
<i>Centaurea melitensis</i>						
<i>Echinochloa crus-galli</i>						
<i>Erodium cicutarium</i>						
<i>Hirschfeldia incana</i>						
<i>Hordeum vulgare</i>						
<i>Salsola tragus</i>						
<i>Schismus arabicus</i>			9	18%	1	2%
<i>Mesembryanthemum nodiflorum</i>			1	2%		
Bare ground	20	40%	33	66%	45	90%
	Quadrat B		Quadrat F		Quadrat H	
Percent Cover Native Shrub	60%		12%		8%	
Percent Cover Native Herb	0%		0%		0%	
Percent Cover Non-Native Shrub	0%		0%		0%	
Percent Cover Non-Native Herb	0%		22%		2%	
Percent Bare Ground	40%		66%		90%	



Table 3 Broadcast Seeding – Quadrat C

Species	Quadrat C	
	Number of Hits	Percent Cover
Native Shrubs		
<i>Adenostema fasciculatum</i>		
<i>Artemisia californica</i>	12	24%
<i>Atriplex lentiformis</i>		
<i>Atriplex polycarpa</i>		
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia californica</i>		
<i>Acmispon glaber</i>	4	8%
<i>Encelia farinosa</i>	2	4%
<i>Mimulus aurantiacus longiflorus</i>		
<i>Salvia apiana</i>		
<i>Salvia mellifera</i>		
Native Herbs		
<i>Achillea millefolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>		
<i>Nasella pulchra</i>		
<i>Sisyrinchium bellum</i>		
<i>Vulpia microstachys</i>		
Non-Native Herbs		
<i>Centaurea melitensis</i>		
<i>Echinochloa crus-galli</i>		
<i>Erodium cicutarium</i>	16	32%
<i>Hirschfeldia incana</i>	5	10%
<i>Hordeum vulgare</i>		
<i>Salsola tragus</i>		
Bare ground	11	22%
Quadrat C (% cover)		
Percent Cover Native Shrub	36%	
Percent Cover Native Herb	0%	
Percent Cover Non-Native Shrub	0%	
Percent Cover Non-Native Herb	42%	
Percent Bare Ground	22%	



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

Species	Quadrat D		Quadrat I	
	Number of Hits	Percent Cover	Number of Hits	Percent Cover
Native Shrubs				
<i>Adenostema fasciculatum</i>				
<i>Artemisia californica</i>	7	14%		
<i>Atriplex lentiformis</i>	1	2%		
<i>Atriplex polycarpa</i>	1	2%	1	2%
<i>Atriplex spinosa</i>				
<i>Baccharis pilularis</i>				
<i>Encelia californica</i>				
<i>Eriogonum fasciculatum</i>	1	2%		
<i>Diplacus aurantiacus</i>				
<i>Salvia apiana</i>				
<i>Salvia mellifera</i>				
Native Herbs				
<i>Achillea millefolium</i>				
<i>Eschscholzia californica</i>				
<i>Elymus triticoides</i>	3	6%	2	4%
<i>Nasella pulchra</i>				
<i>Sisyrinchium bellum</i>				
<i>Vulpia microstachys</i>				
Non-Native Herbs				
<i>Bromus diandrus</i>			1	2%
<i>Centaurea melitensis</i>				
<i>Echinochloa crus-galli</i>				
<i>Erodium cicutarium</i>				
<i>Hirschfeldia incana</i>				
<i>Hordeum vulgare</i>				
<i>Salsola tragus</i>				
<i>Schismus arabicus</i>			11	22%
Bare ground	36	72%	35	70%
	Quadrat D		Quadrat I	D and I (% cover)
Percent Cover Native Shrub	22%		2%	12%
Percent Cover Native Herb	6%		4%	5%
Percent Cover Non-Native Shrub	0%		0%	0%
Percent Cover Non-Native Herb	0%		24%	12%
Percent Bare Ground	72%		70%	71%



Table 5 Soil Imprinting and Hand Broadcast – Quadrat E

Species	Quadrat E	
	Number of Hits	Percent Cover
Native Shrubs		
<i>Acmispon glaber</i>	2	4%
<i>Artemisia californica</i>		
<i>Atriplex lentiformis</i>	3	6%
<i>Atriplex polycarpa</i>	1	2%
<i>Atriplex spinosa</i>		
<i>Baccharis pilularis</i>		
<i>Encelia farinosa</i>	1	2%
<i>Eriogonum fasciculatum</i>	1	2%
<i>Isocoma menziesii</i>	6	12%
<i>Diplacus aurantiacus</i>		
<i>Salvia apiana</i>		
<i>Salvia mellifera</i>		
Native Herbs		
<i>Achillia mellifolium</i>		
<i>Eschscholzia californica</i>		
<i>Elymus triticoides</i>		
<i>Nasella pulchra</i>		
<i>Sisyrinchium bellum</i>		
<i>Vulpia microstachys</i>		
Non-Native Herbs		
<i>Bromus diandrus</i>		
<i>Centaurea melitensis</i>		
<i>Echinochloa crus-galli</i>		
<i>Erodium cicutarium</i>	1	2%
<i>Hirschfeldia incana</i>		
<i>Hordeum vulgare</i>		
<i>Salsola tragus</i>		
<i>Schismus arabicus</i>	2	4%
Bare ground	33	66%
Quadrat E (% cover)		
Percent Cover Native Shrub	28%	
Percent Cover Native Herb	0%	
Percent Cover Non-Native Shrub	0%	
Percent Cover Non-Native Herb	6%	
Percent Bare Ground	66%	



Discussion

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	14%	27%	36%	12%	28%
Percent Cover Native Herb	6%	0%	0%	5%	0%
Percent Cover Non-Native Shrub	0%	0%	0%	0%	0%
Percent Cover Non-Native Herb	5%	8%	42%	12%	6%
Percent Bare Ground	75%	65%	22%	71%	66%

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.

Establishment of both native and non-native plant species was observed within the Deck B Revegetation Area. 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 Deck B Revegetation Area sample quadrats. The native plants within the areas that burned appear to be recovering, most notably brittlebush, which was observed flowering throughout the Deck B Revegetation Area. Non-native plant establishment was also observed throughout the Deck B Revegetation Area, including within several of the quadrats that includes 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*).

Broadcast seeding only (Quadrat C) had the highest percent cover of native shrubs using the point intercept method (36%), followed by soil imprinting and hand broadcast (Quadrat E; 28%) and soil imprinting (Quadrats B, F, and H; 27%) (Table 6). Percent cover of native herbaceous plant species was low in all seeding methods, ranging between 0% and 6%. 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 only plot using the point intercept method (Quadrat C; 42%), followed by broadcast seeding with soil imprinting (Quadrats D and I; 12%). Non-native herbaceous species were more abundant than native herbaceous species because they typically require less resources (including water) than native herbaceous plants to establish and reproduce.



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. 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.

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

Greg Ainsworth
Natural Resources Director

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

Kyle Gern
Biologist

Attachments

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



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

Deck B Revegetation Area Quadrat Layout



Attachment B

Representative Site Photographs



Photograph 1. Quadrat A facing northeast from southwest corner (March 30, 2021).



Photograph 2. Quadrat B facing northeast from southwest corner (March 30, 2021).



Photograph 3. Quadrat C facing northeast from southwest corner (March 30, 2021).



Photograph 4. Quadrat D facing northeast from southwest corner (March 30, 2021).



Photograph 5. Quadrat E facing northeast from southwest corner (March 30, 2021).



Photograph 6. Quadrat F facing northeast from southwest corner (March 30, 2021).



Photograph 7. Quadrat G facing northeast from southwest corner (March 30, 2021).



Photograph 8. Quadrat H facing northeast from southwest corner (March 30, 2021).



Photograph 9. Quadrat I facing northeast from southwest corner (March 30, 2021).

ATTACHMENT 6





Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003

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March 22, 2021
Project No: 21-11086

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

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

Dear Mr. Ngo:

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

Introduction

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

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

Sunshine Canyon Landfill Oak Tree Mitigation Bank

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



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

Project Description

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

Methods

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

Tree Characteristics

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

Physical Condition

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



Health Grade

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

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

Results

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

Table 1 Oak Tree Survey Data

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



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

Mitigation

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

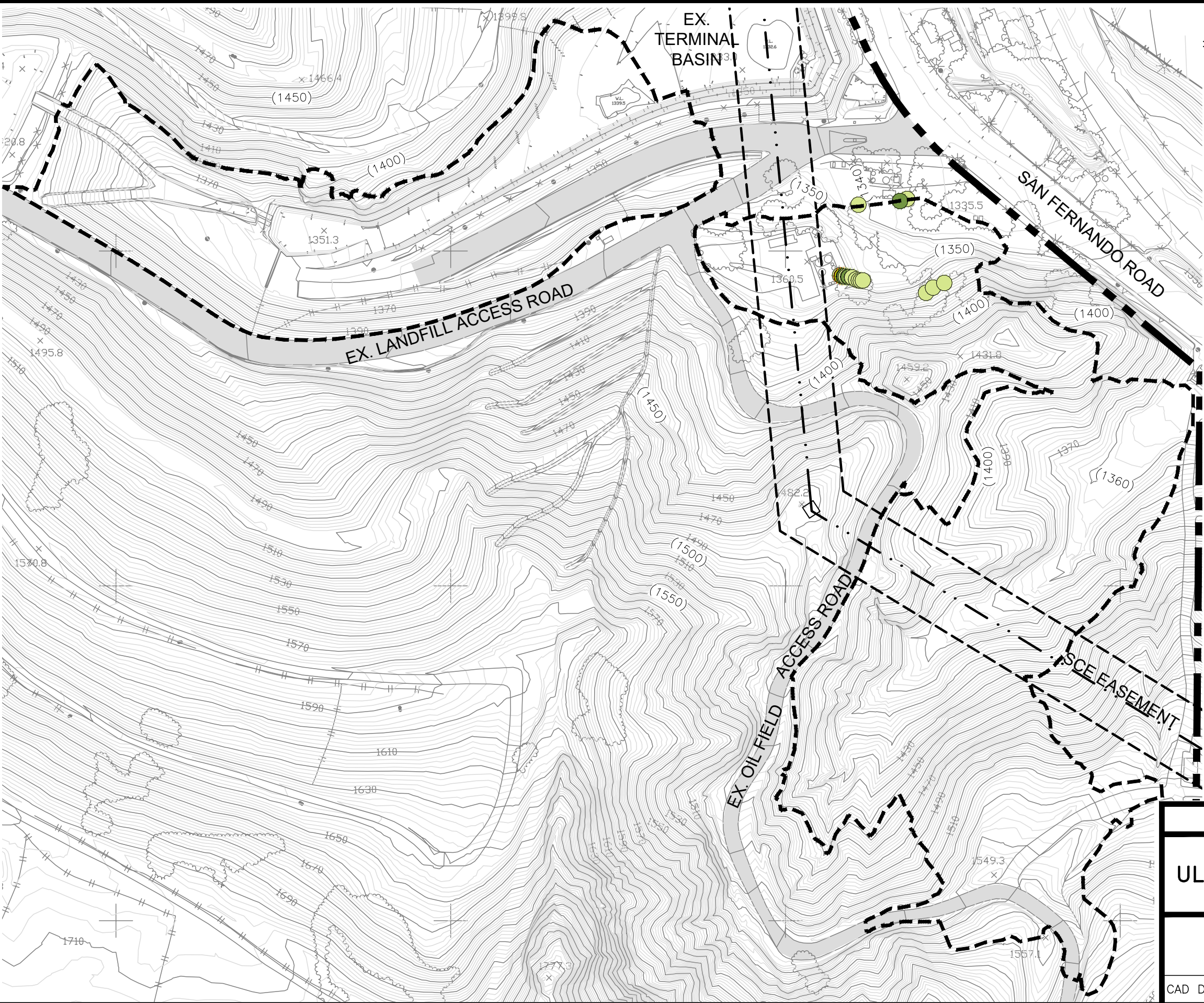
Please contact Greg Ainsworth at (818) 564-5544 or email at gainsworth@rinconconsultants.com if you have any question or comments regarding the information provided in this report.

Sincerely,
Rincon Consultants, Inc.

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

Attachments

Oak Tree Map



LEGEND:

- PROPERTY BOUNDARY
- (1400) EX. GROUND CONTOUR, FEET
- === UTILITY EASEMENT
- EX. PAVED ROAD
- EX. UNPAVED ROAD
- x-x-x-x-x-x-x-x-x-x- EX. FENCE
- .-.-.-.- EX. DRAINAGE
- - - - - PROJECT GRADING LIMITS
- HEALTH TREE GRADE GOOD
- HEALTH TREE GRADE FAIR
- HEALTH TREE GRADE POOR
- HEALTH TREE GRADE DEAD

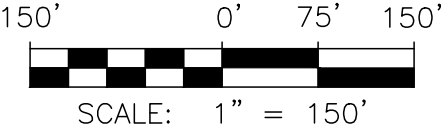
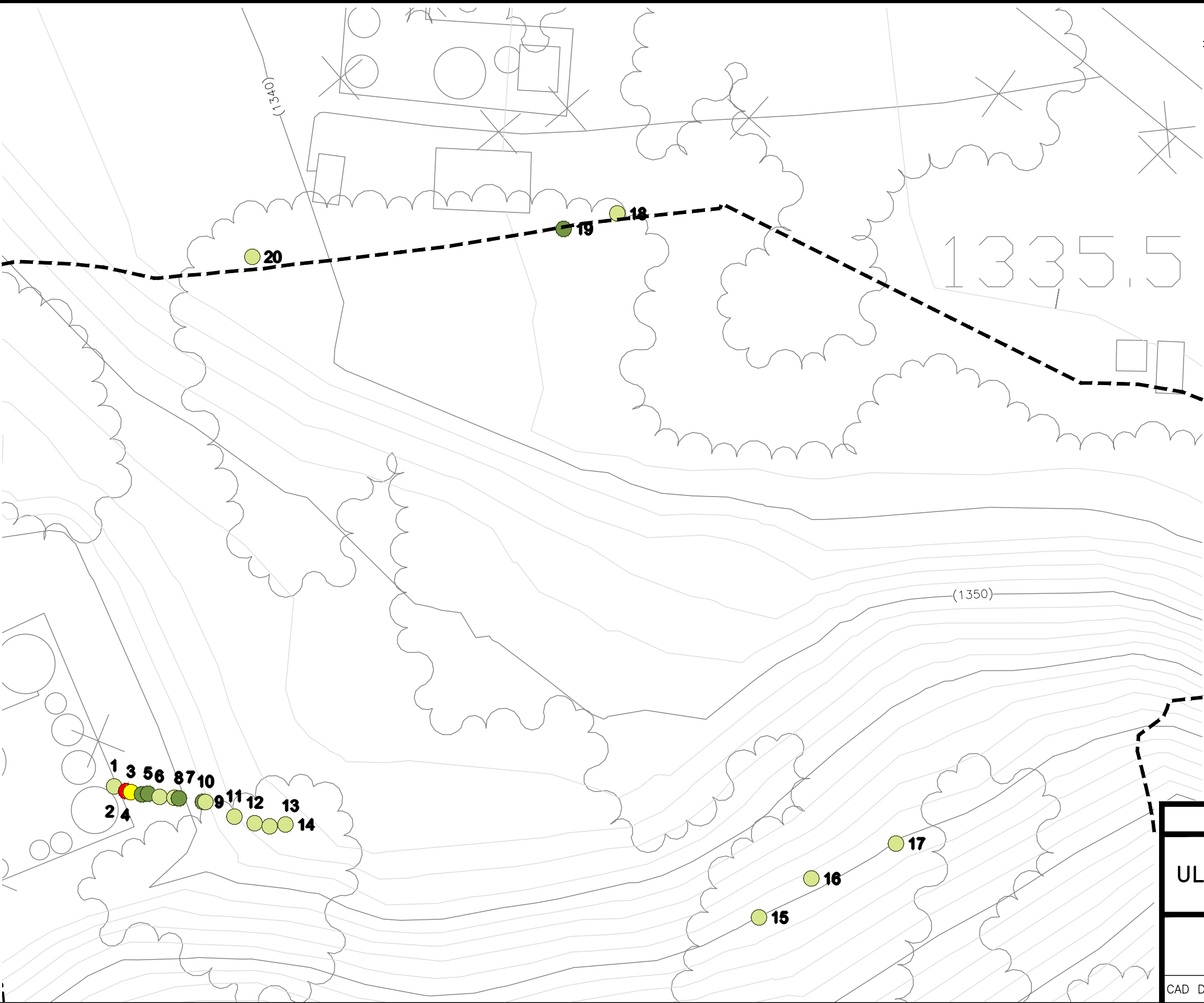


FIGURE 1

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





LEGEND:

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

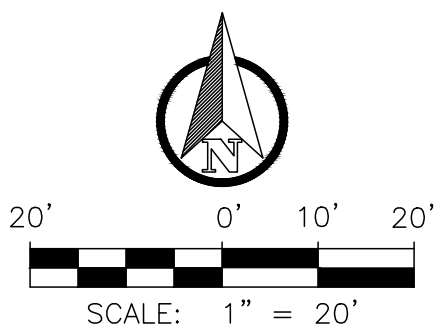


FIGURE 2

OAK TREE SURVEY MAP

SUNSHINE CANYON LANDFILL
ULTIMATE ENTRANCE PHASE 1 & 2
SYLMAR, CALIFORNIA

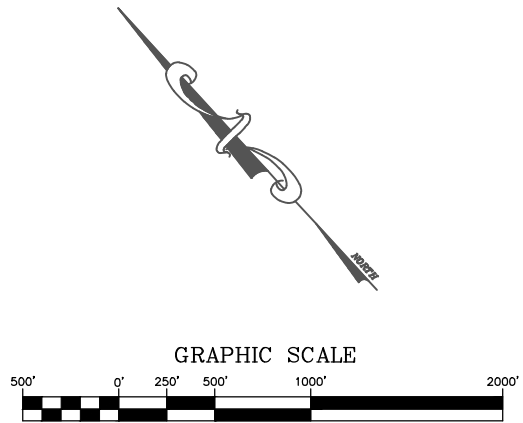
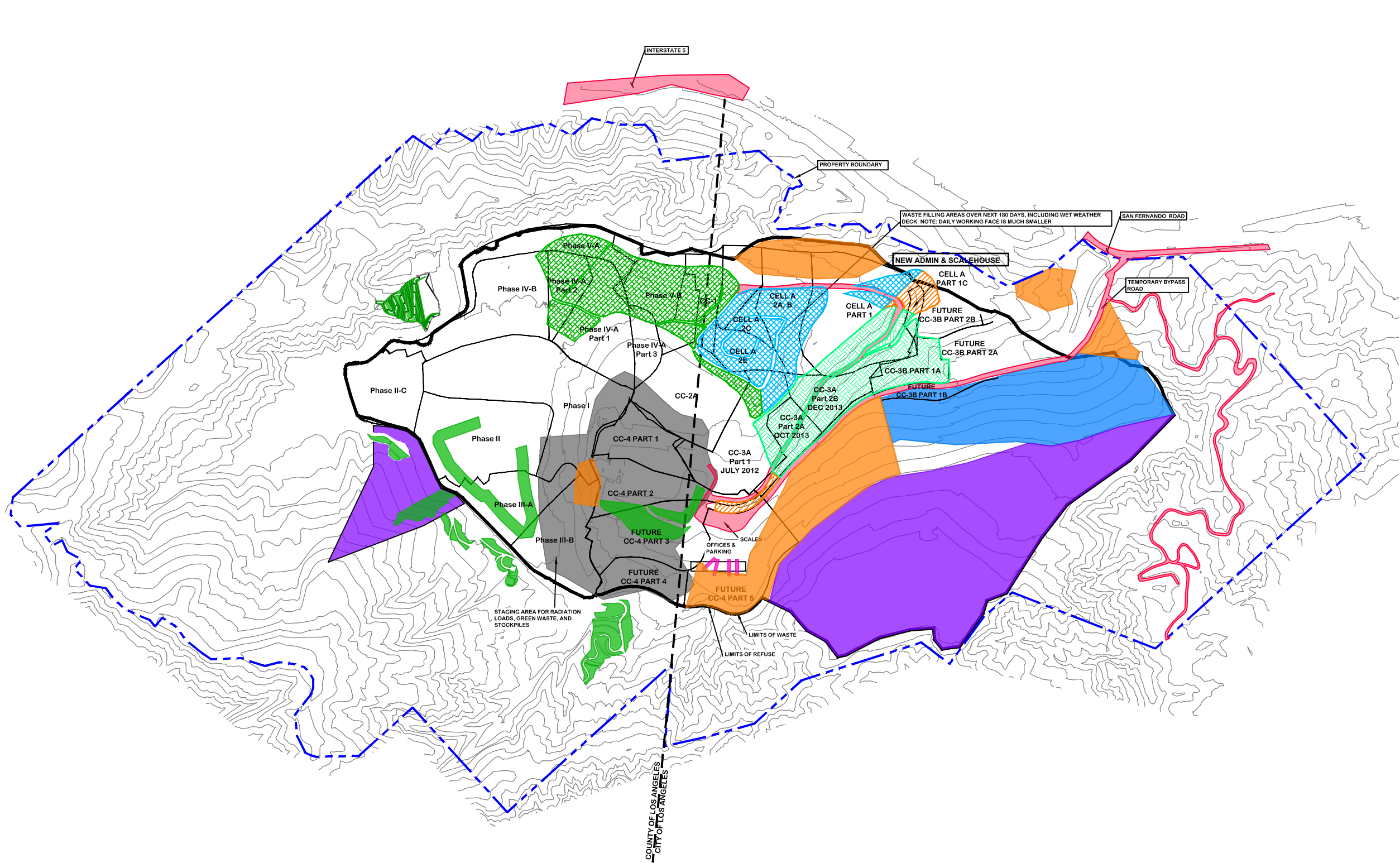
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CAD DSGN BY: JA	DATE: MARCH 2021	JOB NO.: S021.1039
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DRAWING 1



C:\Users\cbarrett\Documents\Allied-Republic\Sunshine Canyon LF\Exhibits\2014.0023 - VEGETATION STATUS AND ACTIVITY\01_CAD\B_GLA-DWGS\SO18.0001-SCL-201803-Vegetation Status Map.dwg Nov 05, 2018 - 2:11pm By: cbarrett



- LEGEND
- 1500 EXISTING 50 FT CONTOUR
 - PROPERTY BOUNDARY
 - EXISTING APPROVED LINERS
 - EXISTING ROADS
 - LIMITS OF REFUSE

VEGETATION STATUS ACTIVITY FOURTH QUARTER 2020	
	NON-PERMANENT CUT SLOPES WITH JUTE MATE OR STRAW WATTLES, SAGE SEED MIX (NOT MITIGATION AREA)
	SAGE MITIGATION AREA, FINAL SLOPES
	INTERIM COVER HYDROSEEDING (PRE-2008)
	CURRENT AND NEXT QUARTER ACTIVE AREAS. ALSO INCLUDES ROADS AND BUILDINGS.
	HYDROSEED APPLICATION
	VEGETATION PILOT PROJECT USING INTERIM SEED MIX
	CLOSURE TURF
	POSI-SHELL INSTALLATION
	VEGETATIVE COVER USING INTERIM SEED MIX
	VEGETATIVE COVER OVER DISKED POSI-SHELL

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FOR REVIEW ONLY
EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 5, 2018

REV. NO.	DATE	DESCRIPTION	APPROVED BY
REV1	DATE1	DESCRIPTION1	DRAWN1
REV2	DATE2	DESCRIPTION2	DRAWN2
REV3	DATE3	DESCRIPTION3	DRAWN3
REV4	DATE4	DESCRIPTION4	DRAWN4
REV5	DATE5	DESCRIPTION5	DRAWN5
REV6	DATE6	DESCRIPTION6	DRAWN6

DATE OF ISSUE: APR 2021
DESIGNED BY: C. BARRETT
DRAWN BY: C. BARRETT
CHECKED BY: C. BARRETT
APPROVED BY: C. BARRETT



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SUNSHINE CANYON LANDFILL
SYLMAR, CALIFORNIA
SITE VEGETATION STATUS AND ACTIVITY

Q1 2021

DWG NO.
1
PROJECT NO.
SO18.0001