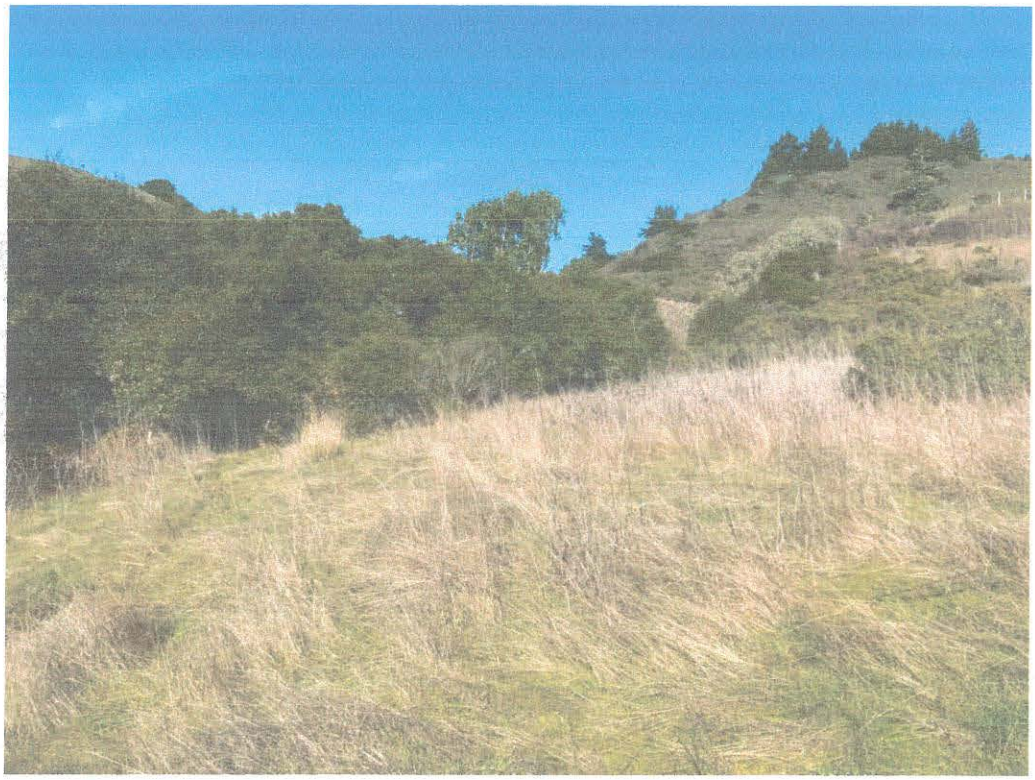
County of San Mateo - Planning and Building Department

ATTACHMENT F

PLN2018-00401

Verdura Property
San Gregorio, CA
Habitat Restoration Plan
APN 041-121-03



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INTRODUCTION

Proposed Project and Location

The applicant proposes to build a single family residence and associated infrastructure on an 8 acre parcel on an unnamed private road off of La Honda Rd (California State Highway 84) in an unincorporated section of San Mateo County, CA. Figure 1 provides a map of the project location.

APN: 041-121-03

Purpose of Report

On February 9, 2018, Toyon Consultants submitted to Verdura Construction a *Biotic Assessment* outlining potential impacts and proposed mitigation measures for the proposed project (Toyon Consultants 2018). The *Assessment* identified potentially significant impacts to Baccharis Scrub Habitat found on the property, and proposed the following mitigation measure to bring these impacts to a less than significant level:

> *BIO-1. In order to mitigate for the loss of 0.03 acres of Baccharis scrub habitat, the applicant shall implement a restoration plan approved by the San Mateo Panning Department that provides for the restoration of 0.09 acres (3,920 sq. ft.) of Baccharis scrub habitat. The restoration area shall be located on the developed parcel, and the restoration plan shall include defined success criteria and a minimum five year mitigation monitoring program with yearly reports submitted to the County of San Mateo.* (Toyon Consultants 2018, pg. 38)

The purpose of this report is to provide the Restoration Plan referred to in BIO-1.

All species names in this report are consistent with the *Second Edition Jepson Manual* (Baldwin et al 2012).

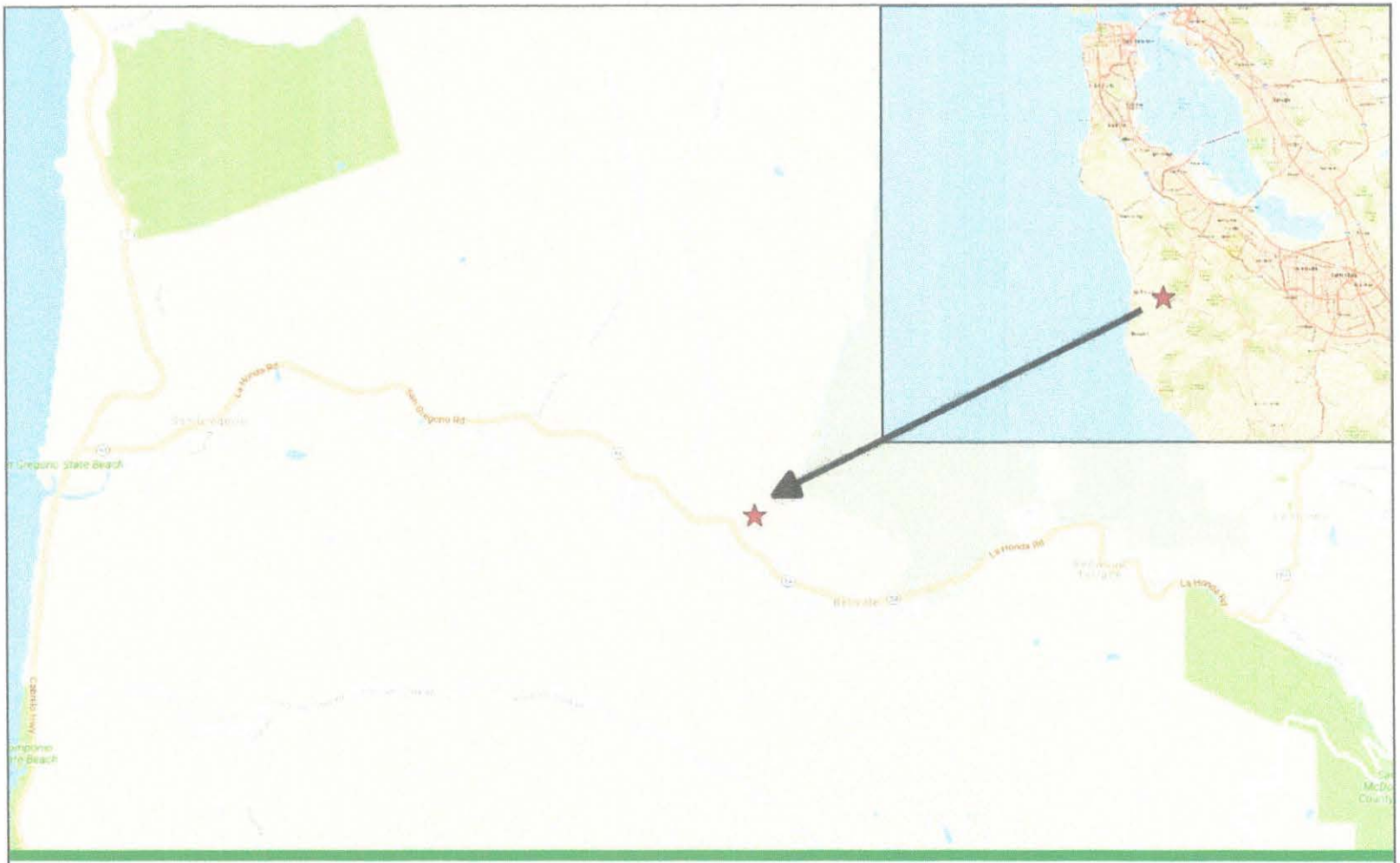

Figure 1: Project Location
San Mateo County, CA, APN 041-121-03

Data Source: ESRI Standard

Toyon Consultants

HABITAT RESTORATION PLAN

Plan Goals and Objectives

The goal of this plan is to provide the Habitat Restoration Plan required by County of San Mateo. It is the intent of this plan that it also be accepted by other agencies that may require a Habitat Restoration Plan.

The objectives are:

- Restore a minimum of 0.09 acres (3,920 sq. ft.) of Baccharis scrub habitat
- Provide measurable performance criteria to ensure project success
- Provide yearly monitoring and reporting requirements

Project Management

The project shall be overseen by a Qualified Restoration Ecologist, as approved by the County of San Mateo.

Adaptive Management

In order to achieve the goals and objectives of this project, management of the restoration areas will be adapted based on the conditions revealed during monitoring. The project Restoration Ecologist shall have the authority to change this plan over the course of implementation as necessary to attain the project success criteria (see MONITORING AND REPORTING below). Any changes to the plan shall be reported in the required reports.

Adaptive strategies that may be implemented under specific conditions are provided below. Adaptive management strategies are not limited to those listed and additional strategies may be required as unforeseen situations arise.

1. High die-off rate of specific plant species
    - Replace non-surviving species with different species
2. Drought conditions
    - Increase watering frequency
3. Die-off due to animal browsing
    - Place browse protection screen around plants

Habitat Restoration Treatment Areas

Figure 2 provides the location of the proposed restoration treatment area as located on the project parcel. The purpose in choosing this location is to add habitat continuity to the existing Coastal Scrub habitat area immediately to the north of the treatment area, as well as to place plants adjacent to the existing riparian habitat area.

The treatment area shown in Figure 2 is, however, conceptual in nature, and so the planting area can be relocated by the project Restoration Ecologist if conditions in the field warrant, so long as the final area restored is 0.09 acres (3,920 sf). In the event that the planting area is changed, this shall be reflected in the *As Built Report* for the project (see MONITORING AND REPORTING below).

Table 1 provides the species to be planted within the restoration treatment area.

Table 1: Plants in Restoration Treatment Areas

Treatment Area	Area to be Planted	Species Name	Common Name
Baccharis Scrub Habitat	0.09 acres (3,920 sf)	*Artemisia californica*	California Sage
		Baccharis pilularis	Coyote Bush
		Mimulus aurantiacus	Sticky Monkey Flower
		Rubus ursinus	California Blackberry

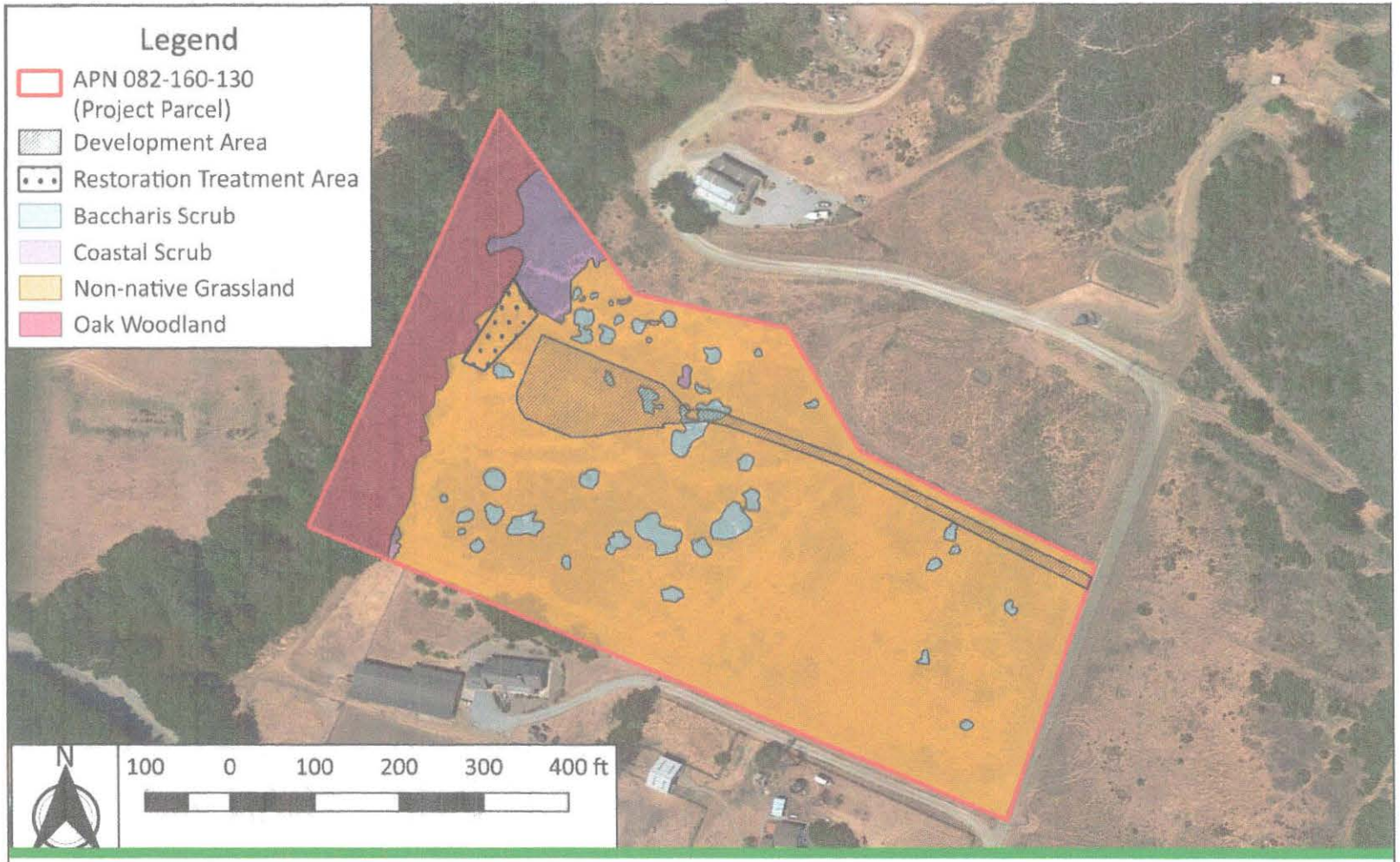

Figure 2: Restoration Treatment Area
San Mateo County, CA, APN 041-121-03

Data Source: San Mateo County APN, Toyon Consultants

Toyon Consultants

Photo 1: Existing Conditions of Restoration Treatment Area (January 4, 2019)

Restoration Planting

Site Specific Propagules

All plant propagules except erosion control seed shall be collected from a local genetic source. All field collected plant propagules shall be obtained according to Best Management Practices (BMP's) that control or eliminate the diseases caused by *Phytopthora ramorum*, as outlined by the California Oak Mortality Task Force[1].

Ideally, propagules shall be collected from the project site itself. However, in the event that this is not possible, material collected from San Mateo County within two miles of the coast and below 1000 ft. elevation shall be considered appropriate genetic material for this project.

Site Preparation

As necessary, soils at the planting locations should be de-compacted so as to allow for good root growth. Typically this is done by digging a planting hole approximately twice the size of the plant container.

Planting Specifications

All container plant materials shall be supplied by a nursery that has implemented Best Management Practices (BMP's) that control or eliminate the diseases caused by *Phytopthora ramorum*, as outlined by the California Oak Mortality Task Force[2].

Restoration areas will be planted with native species, as summarized in Table 2.

In the event that insufficient plant material is obtained for this project, plant and container type substitutions can be made based on the recommendation of the project Restoration Ecologist. Only plant species appropriate for the surrounding habitat area should be planted.

At the discretion of the project Restoration Ecologist, planting greater than the required numbers is allowed in order to attain success criteria so long as the plant spacing does not go below three foot on center (triangular grid layout). Over planting in this way is not a requirement of this plan.

Figure 3 provides a typical planting specification for container plants. Note that while cages and weed mats will increase the likelihood of project success, these items are considered optional on this project.

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[1] http://www.suddenoakdeath.org/wp-content/uploads/2016/04/Restoration.Nsy_.Guidelines.final_.092216.pdf

[2] Ibid.

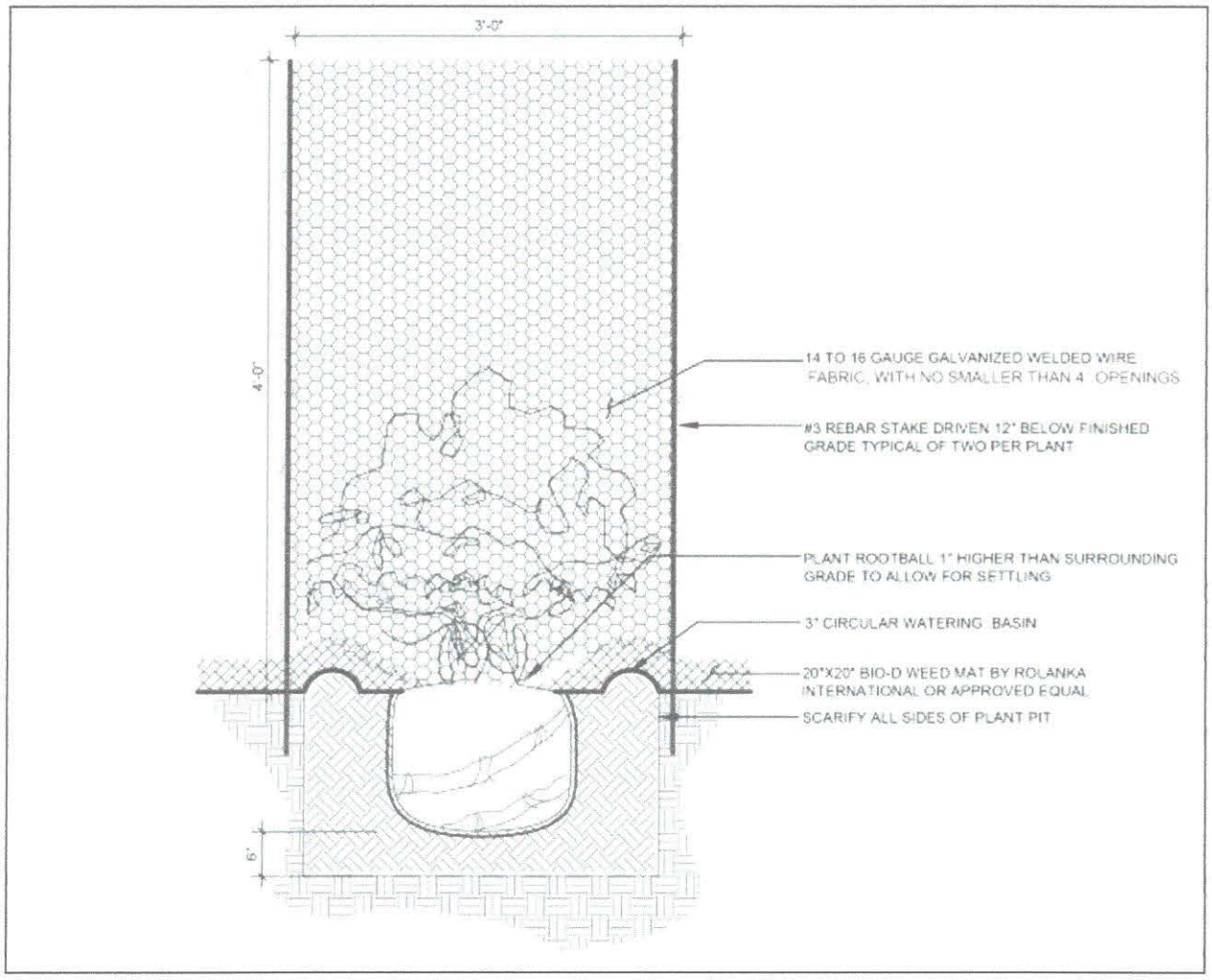

Figure 3: Typical planting specification for restoration planting
Note that cage and weed mat are optional.

Planting Layout

Plants shall be laid out in the field by the project Restoration Ecologist. Layout will avoid a grid pattern in order to mimic a more random, natural distribution of the plants.

Table 2: Restoration Planting Specifications

Species Name	Common Name	Container Type*	OC Spacing**	Total Number
Artemisia californica	California Sage	1 Gallon	7 ft	10
Baccharis pilularis	Coyote Bush	1 Gallon	7 ft	52
Mimulus aurantiacus	Sticky Monkey Flower	Tree Band	7 ft	10
Rubus ursinus	California Blackberry	Tree Band	7 ft	20
TOTAL				**92**

* Container type can be replaced on approval of project Restoration Ecologist

** On Center Spacing using triangular layout

Irrigation

An irrigation system shall be designed and installed by a qualified Landscape Contractor with experience in working on restoration projects. The irrigation system will be temporary, and all parts shall be removed upon cessation of plant irrigation (typically two years).

Each plant shall be watered with 2 gallons per week during the dry season, approximately June through October. The Project Restoration Ecologist may adjust this watering schedule as needed to ensure plant survival. Watering shall be stopped when the Ecologist has determined that a plant is sufficiently established to no longer need additional water – typically two years.

In the event that site considerations make implementation of an irrigation system impractical, an alternative method of watering shall be implemented, such as hand watering, as approved by the Project Restoration Ecologist.

Plant Maintenance

Invasive Exotic Plant Control

A variety of techniques may be used, including hand pulling, weed whipping, cut and paint, and seedling blanching using a propane torch. Spot treatment with a surfactant free glyphosate based herbicide that is registered for use in wetland habitat areas shall be applied by a certified herbicide applicator only as determined necessary by the Project Restoration Ecologist.

Invasive species observed on the site that will be given priority for removal include:

- *Conium maculatum* (Poison Hemlock)
- *Phalaris aquatic* (Harding Grass)
- *Cirsium vulgare* (Bull Thistle)
- *Helminthotheca echioides* (Bristly Ox-tongue)

The Project Biologist may add to this list as necessary in order for the project to attain its performance criteria (see MONITORING AND REPORTING below).

Plant Replacement

Container plants shall be replaced as necessary in order to attain the project performance criteria. All replacement plants shall conform to the specifications provided above.

MONITORING AND REPORTING

The project shall be monitored against defined success criteria for a minimum of five years. A qualified Restoration Ecologist shall perform all monitoring, as approved by the County of San Mateo.

Plant Survivorship Monitoring

All plants that were installed as part of this project will be counted and percent survival shall be determined for each species yearly.

Invasive Exotic Monitoring

Invasive exotic plant cover shall be monitored yearly within the impact areas using the point-intercept line-transect method.

Photo Monitoring

Sufficient photo points will be established to provide coverage of the entire site. Photos shall be taken prior to plant installation, immediately after installation, and at least once per year during the same season, typically at the time when monitoring occurs. Photos shall be included in the yearly report, and an aerial photo shall be included showing the location and orientation of all photo points.

Success Criteria

Quantitative monitoring data will be compared to pre-established success criteria in order to assess project success. These performance criteria are outlined in Table 3 below.

Failure to meet these criteria during the five year monitoring period may require adaptive management and additional restoration activities in order to bring the project metrics in line with the criteria.

Table 3: Restoration Area Performance Criteria, Per Restoration Area

Metric	Success Criteria
Container Plant Survival	Year 1: Minimum 80% Survival Year 2 - 4: Minimum 60% Survival Year 5: Minimum 50% Survival
Invasive Exotic Percent Cover	Year 1-5: < 5% Invasive Exotic Plant Cover

Reporting

Within 30 days of the completion of restoration plan implementation, a *Biological As Built Report* will be submitted to the County of San Mateo Planning Department. This report shall include final maps indicating the restoration and planting areas, along with final numbers of plants installed. Any other changes to this plan approved by the project Restoration Ecologist shall also be included.

By December 31 in each year the project is monitored a *Mitigation Monitoring Report* shall be submitted County of San Mateo Planning Department. This report shall include at a minimum the following information:

- Dates monitoring occurred
- Results of quantitative monitoring, including copies of field data sheets
- Photos from photo monitoring
- Summary of restoration actions taken during the reporting period
- Any changes proposed or implemented in the project as a result of monitoring, including but not limited to:
  - invasive exotic control techniques
  - plant replacement
  - watering schedule
  - monitoring

CONCLUSION

The Habitat Restoration Plan proposed in this report is expected to meet agency requirements for the Restoration Plan required by the proposed project. Specific criteria against which the success can be compared are provided, and success monitoring shall occur for a minimum of five years. It is anticipated that the successful implementation of this plan shall lead to a functional Baccharis scrub habitat area dominated by native plants.

REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilkin, editors. 2012. *The Jepson Manual: Vascular Plants of California, second edition*. University of California Press, Berkeley.

Toyon Consultants. 2018. Verdura Property San Gregorio, CA Biotic Assessment. Dated February 9, 2018.