

Final

Habitat Conservation Plan
for the Ohlone Tiger Beetle, the Santa Cruz Tarplant, and the
Gairdner's Yampah
Santa Cruz Gardens Unit 12 Project Site
(APNs 025-391-01, 025-401-01, 025-401-02, & 025-491-01)

Soquel, California

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EXECUTIVE SUMMARY

The Porter-Livingston Development, Inc., a California-based corporation, and O'Hara-Balfour LP, a California Limited Partnership, has applied for a permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884) (Act), as amended, from the U.S. Fish and Wildlife Service (the Service) for the incidental take of the endangered Ohlone tiger beetle (*Cicindela ohlone*), the threatened Santa Cruz tarplant (*Holocarpa macradenia*), and the Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), a CNPS List 4 species. The potential taking would occur incidental to development of nine new single-family residences at an undeveloped 58.6-acre project site (APNs 025-391-01, 025-401-01, 025-401-02, & 025-491-01) owned by the aforementioned corporation near Soquel (Santa Cruz County), CA. The project site is located in the unincorporated Live Oak Planning Area.

The proposed development or impact area of the project site measures approximately 2.96 acres, which includes the footprint of the new single-family residences and all other planned improvements, including the access road, driveways, sidewalks, underground utilities, and a lot line adjustment. Development of this portion of the project site will result in the loss of approximately 1.24 acres of coastal prairie, 0.87 acre of mixed grassland-scrub and non-native grassland and 0.651 acre of coast live oak woodland.

Adults of the Ohlone tiger beetle have been observed at the project site annually since 1987. A small population of the Santa Cruz tarplant was observed here until 1993 and its seedbank may still persist. Over 5,000 individuals of the Gairdner's yampah were observed in 1998. Residential development of the project site parcel will result in minimal impacts to all three of these species.

As a result of these anticipated impacts, Porter-Livingston Development, Inc. and O'Hara-Balfour LP have applied for a section 10 (a)(1)(B) permit and propose to implement this HCP as described herein, which provides measures for minimizing and mitigating adverse effects on the endangered beetle and both plants. They request that the section 10 (a)(1)(B) permit be issued for a period of six years.

This HCP summarizes the project and identifies the responsibilities of the Service, Porter-Livingston Development, Inc., O'Hara-Balfour LP, and their successors and assigns (including a Homeowners Association), and a designated land management agency. The primary biological goals of this HCP are:

- Goal 1: Permanently preserve upland habitats for Ohlone tiger beetle, Santa Cruz tarplant, and Gairdner's yampah.
- Goal 2: Manage conserved lands to benefit the Ohlone tiger beetle, Santa Cruz tarplant, and Gairdner's yampah.
- Goal 3: Implement actions that will protect Ohlone tiger beetle, Santa Cruz tarplant, and Gairdner's yampah during construction activities.
- Goal 4: Determine status of Ohlone tiger beetle, Santa Cruz tarplant and Gairdner's yampah populations at the Santa Cruz Gardens site.

This HCP describes measures that will be implemented to minimize and mitigate impacts of the project on the beetle and plants and their habitats and to further the conservation of these species.

These measures include:

- a. Permanently protect 55.64 acres of the project site as a conservation parcel, consisting of coastal prairie (approx. 8.26 acres), freshwater stream and riparian woodland (11.5 acres), coast live oak woodland and eucalyptus groves (28.75 acres), mixed grassland mixed grassland/ scrub and non-native grassland (6.73 acres), with fee title held by the Homeowners Association. Permanently protect the conservation parcel via conveyance of a permanent conservation easement, in favor of the Center for Natural Lands Management;
- b. Designate a 12-foot wide maintenance easement on Lot 9 to provide access to the conservation parcel;
- c. Install protective fencing around portions of the conservation parcel to prohibit unauthorized access to the approximately 9.3-acre prairie/grassland management area that supports the three special status species (covered species);
- d. Manage the approximately 9.3-acre prairie/grassland management area within the conservation parcel to maintain populations of the covered species;
- e. Undertake various measures during grading and construction activities of the residential development at the project site to minimize impacts to the covered species and their habitats;
- f. Remove invasive, non-native plant species, such as eucalyptus, French broom, Monterey pine, cotoneaster, and acacia from the 9.3-acre prairie/ grassland management area;
- g. Control invasive, non-native annual and perennial grasses and weeds from the 9.3-acre prairie/grassland management area if they pose a threat to the persistence of the covered species;
- h. Implement habitat management actions to facilitate germination of the Santa Cruz tarplant seed bank within an extant population within the 9.3-acre prairie/grassland management area of the conservation parcel;
- i. Prior to site development, salvage soil and seedbank materials from an historic Santa Cruz tarplant colony located within the development area and distribute this material in the 9.3-acre grassland/prairie management area to facilitate re-establish of the species on the site;
- j. Prior to site development, transplant all available individuals of Gairdner's yampah from the development area to suitable areas of the 9.3-acre prairie/grassland management area to achieve an overall goal of 1:1 plant replacement; and,
- k. Provide funding to the Center for Natural Lands Management, through a non-wasting endowment, to implement management actions within the 9.3-acre prairie/grassland management area to benefit the covered species.

The net effect of these measures is that approximately 9.3 acres of coastal prairie, mixed grassland, non-native grassland and mixed grassland-scrub habitats will be protected in perpetuity to benefit the endangered beetle and both plants (covered species). In addition, the remaining approximately 46.3 acres of the conservation parcel will be protected for overall open space and wildlife habitat values. The HCP describes measures to ensure that the elements of the HCP are implemented in a timely manner. Funding sources for implementation of the HCP, actions to be taken for changed circumstances and unforeseen events, alternatives to the proposed, and other measures required by the Service are also discussed.

TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY | i |
| TABLE OF CONTENTS | ii |
| LIST OF TABLES AND FIGURES | vi |
| 1.0 INTRODUCTION | 1 |
| 1.1 Project Location | 2 |
| 1.2 Project Site | 5 |
| 1.3 History of the HCP Process | 5 |
| 2.0 PROJECT DESCRIPTION AND AREA | 6 |
| 2.1 Project Description | 6 |
| 2.2 Permit Holder/Permit Boundary | 6 |
| 2.3 Zoning and Surrounding Land Uses | 9 |
| 3.0 REGULATORY FRAMEWORK | 10 |
| 3.1 Federal Regulations | 10 |
| 3.1.1 Endangered Species Act of 1973 | 10 |
| 3.1.2 National Environmental Policy Act of 1969 | 12 |
| 3.2 California Regulations | 12 |
| 3.2.1 California Environmental Quality Act | 12 |
| 3.2.2 California Endangered Species Act of 1984 | 12 |
| 3.2.3 California Fish & Game Code | 13 |
| 3.2.4 Native Plant Protection Act | 13 |
| 3.3 Santa Cruz County Regulations | 13 |
| 3.3.1 Santa Cruz County's General Plan and Code | 13 |
| 3.3.2 Santa Cruz County – Central Fire District | 13 |
| 4.0 BIOLOGY AND COVERED SPECIES | 15 |
| 4.1 Habitats | 15 |
| 4.1.1 Coastal Prairie | 15 |
| 4.1.2 Mixed Grassland | 16 |
| 4.1.3 Non-native Grassland | 16 |
| 4.1.4 Mixed Grassland/Scrub Mosaic | 16 |
| 4.1.5 Riparian Habitat | 18 |
| 4.1.6 Coast Live Oak Woodland/Eucalyptus Groves | 18 |
| 4.1.7 Eucalyptus Grove on Central Knoll | 18 |
| 4.2 Covered Species: Ohlone Tiger Beetle | 18 |
| 4.2.1. Conservation Status | 18 |
| 4.2.2. Description and Taxonomy | 18 |
| 4.2.3. Distribution and Habitats | 19 |
| 4.2.4. Natural History | 20 |
| 4.2.5. Occurrence at the Project Site and Vicinity | 20 |
| 4.3 Covered Species: Santa Cruz Tarplant | 21 |
| 4.3.1 Conservation Status | 21 |
| 4.3.2 Description and Taxonomy | 21 |

| | | |
|------------|---|-----------|
| 4.3.3 | Distribution and Habitats | 21 |
| 4.3.4 | Occurrence at the Project Site and Vicinity | 23 |
| 4.4 | Covered Species: Gairdner's Yampah | 23 |
| 4.4.1 | Conservation Status | 23 |
| 4.4.2 | Description and Taxonomy | 24 |
| 4.4.3 | Distribution and Habitats | 24 |
| 4.4.5 | Occurrence at the Project Site and Vicinity | 24 |
| 5.0 | IMPACTS AND ENVIRONMENTAL COMPLIANCE | 26 |
| 5.1 | Impact Assessment | 26 |
| 5.1.1 | Impacts to OTB During Residential Construction Period | 26 |
| 5.1.2 | Impacts to SCT During Residential Construction Period | 26 |
| 5.1.3 | Impacts to GY During Residential Construction Period | 27 |
| 5.1.4 | Impacts to Covered Species During Management of 9.3-acre Prairie/Grassland Management Area | 27 |
| 5.2 | Direct and Indirect Effects | 28 |
| 5.2.1 | Direct and Indirect Effects on OTB | 28 |
| 5.2.2 | Direct and Indirect Effects on SCT and GY | 28 |
| 5.3 | Cumulative Effects | 28 |
| 5.4 | Effects on Critical Habitat | 29 |
| 6.0 | QUANTIFICATION OF IMPACTS | 30 |
| 6.1 | OTB | 30 |
| 6.2 | SCT and GY | 31 |
| 7.0 | MINIMIZATION AND MITIGATION MEASURES | 32 |
| 7.1 | Minimization Measures During Construction | 32 |
| 7.1.1 | Construction Monitor | 32 |
| 7.1.2 | Delineation of Impact Area | 32 |
| 7.1.3 | Construction and Operational Requirements | 32 |
| 7.1.4 | Contractor and Employee Orientation | 32 |
| 7.1.5 | Access to Project Site | 32 |
| 7.1.6 | Habitat Protection During Construction | 33 |
| 7.1.7 | Salvage of SCT and GY | 33 |
| 7.1.8 | Construction Grading | 34 |
| 7.2 | Mitigation Measures | 34 |
| 7.2.1 | Mitigation Site Location | 34 |
| 7.2.2 | Conservation Easement | 35 |
| 7.2.3. | Habitat Protection, Management and Monitoring Activities | 35 |
| 7.2.4 | Species Monitoring Activities | 37 |
| 7.2.4.1 | Ohlone Tiger Beetle | 38 |
| 7.2.4.2 | Santa Cruz Tarplant and Gairdner's Yampah | 40 |
| 7.2.4.3 | Annual Monitoring Report | 41 |
| 7.3 | Schedule for Implementation | 41 |
| 7.3.1 | Years 1 and 2 | 41 |
| 7.3.2 | Years 3 to Perpetuity | 42 |

| | | |
|-------------|--|----|
| 8.0 | PLAN IMPLEMENTATION | 44 |
| 8.1 | Biological Goals and Objectives | 44 |
| 8.2 | Identification of Project Representative | 44 |
| 8.3 | Identification of Construction and Biological Monitors | 44 |
| 8.4 | Responsibilities | 45 |
| 8.5 | Plan Duration | 45 |
| 8.6 | Reporting | 45 |
| | 8.6.1 Post-Construction Compliance Report | 45 |
| | 8.6.2 Annual Mitigation Monitoring Reports | 45 |
| 8.7 | Funding | 46 |
| 8.8 | Disposition of Dead or Injured Specimens | 48 |
| 9.0 | CHANGED AND UNFORSEEN CIRCUMSTANCES | 49 |
| 9.1 | Changed Circumstances | 49 |
| 9.2 | Unforeseen Circumstances | 50 |
| 10.0 | PERMIT AMENDMENT/RENEWAL PROCESS | 52 |
| 10.1 | Amendments to the Permit | 52 |
| 10.2 | Amendments to the HCP | 52 |
| 10.3 | Permit Renewal | 52 |
| 10.4 | Permit Transfer | 52 |
| 11.0 | ALTERNATIVES CONSIDERED | 53 |
| 11.1 | Alternative #1: No-Action | 53 |
| 11.2 | Alternative #2: Redesigned Project (reduced take) | 53 |
| 11.3 | Alternative #3: Proposed Action (permit issuance) | 53 |
| 12.0 | HABITAT CONSERVATION PLAN PREPARERS | 54 |
| 13.0 | REFERENCES CITED | 55 |

APPENDIX A: Conservation Easement

APPENDIX B: Property Analysis Record (PAR)

APPENDIX C: Letter of Credit

APPENDIX D: Copy of Endowment

LISTS OF TABLES AND FIGURES

TABLES

| | |
|--|----|
| 1. Habitat types and existing, impacted and protected acreages for each habitat type | 16 |
| 2. Summary of SCT and GY population at the project site | 25 |
| 3. Schedule for implementation for habitat management activities | 43 |
| 4. Summary of Tasks and Costs During 6-Year Term of ITP | 47 |
| 5. Summary of Annual Tasks and Costs Beginning in Year 7 | 48 |

FIGURES

| | |
|--|----|
| 1. Regional location map for the project site. | 3 |
| 2. Portion of Soquel 7.5' USGS topographic map depicting the boundaries of the project site, including the impact area and conservation parcel | 4 |
| 3. Location of project impact area, conservation parcel and landscape easements | 7 |
| 4. Site plan for the impact parcel | 8 |
| 5. Existing vegetation within the development impact area and conservation parcel | 17 |
| 6. Distribution of OTB, SCT, and GY at the project site | 22 |
| 7. Habitat management areas within 9.3-acre prairie/grassland management area | 39 |

1.0 INTRODUCTION

This Habitat Conservation Plan (HCP) for the proposed development of nine single-family residences on the 58.5-acre Santa Cruz Gardens Unit 12 project site (APNs 025-391-01, 025-401-01, 025-401-02, & 025-491-01) located near Soquel, Santa Cruz County, California, has been prepared pursuant to the requirements of Section 10(a) of the Federal Endangered Species Act (ESA) of 1973, as amended. The HCP is intended to provide the basis for issuance of a Section 10(a)(1)(B) permit (also referred to as an incidental take permit) to Porter-Livingston Development, Inc., a California corporation, and O'Hara-Balfour LP, a California Limited Partnership, to authorize incidental take (see Section 6.0) of the Ohlone tiger beetle (*Cicindela ohlone*) (OTB), a Federally-listed endangered species, and the Santa Cruz tarplant (*Holocarpha macradenia*) (SCT), a Federally-listed threatened species, which will result from development of the proposed project. The project site also supports a population of Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*) (GY), a CNPS List 4 plant species. Based on historical and recent observations of the three aforementioned species at the Santa Cruz Gardens project site, the U.S. Fish & Wildlife Service (hereafter referred to as the Service) has concluded that the site is occupied by all three species (covered species).

Porter-Livingston Development, Inc. and O'Hara-Balfour LP, in conjunction with the Santa Cruz Gardens #12 Homeowners Association and the Center for Natural Lands Management (hereafter referred to as the Applicant) proposes that several listed and unlisted plant species be included on the permit. Take of listed plant species is not prohibited under the Act and cannot be authorized under a Section 10 permit. The threatened Santa Cruz tarplant and the unlisted Gairdner's yampah are proposed to be included on the permit in recognition of the conservation benefits provided for them under the Plan.

The Applicant requests a permit for a period of six years commencing on the date of permit approval. The incidental take permit will authorize the take of the Ohlone tiger beetle (OTB) during initial land clearing activities for the residential development, future residential occupation of the site, and during the first six years of habitat management and monitoring of the proposed mitigation area at the project site. Upon completion of the developer's construction activities, the developer will be removed from the permit. The permit will then be solely in the name of the Santa Cruz Gardens #12 Homeowners Association (hereafter referred to as the HOA) and Center for Natural Lands Management, the designated land management agency (hereafter referred to as CNLM). The HOA and CNLM will assume all the terms and conditions of the HCP and responsibility for compliance of the permit and the HCP. Porter-Livingston Development, Inc. and the HOA will provide funds to the CNLM for implementation of the HCP.

This HCP describes the occurrence of the three species at the project site, evaluates the effects of the proposed development on these species, and discusses appropriate minimization and mitigation measures to protect their existing habitats and reduce any direct harm to these species that could result from development of the single-family residences at the project site. The overall biological goal of the mitigation component of this HCP is to preserve the coastal prairie, mixed grassland scrub, and other habitats within an approximately 9.3-acre prairie/grassland management area for the long-term benefit of the three covered species to provide mitigation for impacts to such resources from the residential development. In addition, the remaining approximately 46.3 acres of the 55.64-acre conservation parcel will be protected for overall open space and wildlife habitat values. This will be accomplished through the following tasks:

- a. Permanent protection of approximately 55.64 acres of the project site as a conservation parcel, consisting of coastal prairie (8.26 acres), freshwater stream and riparian

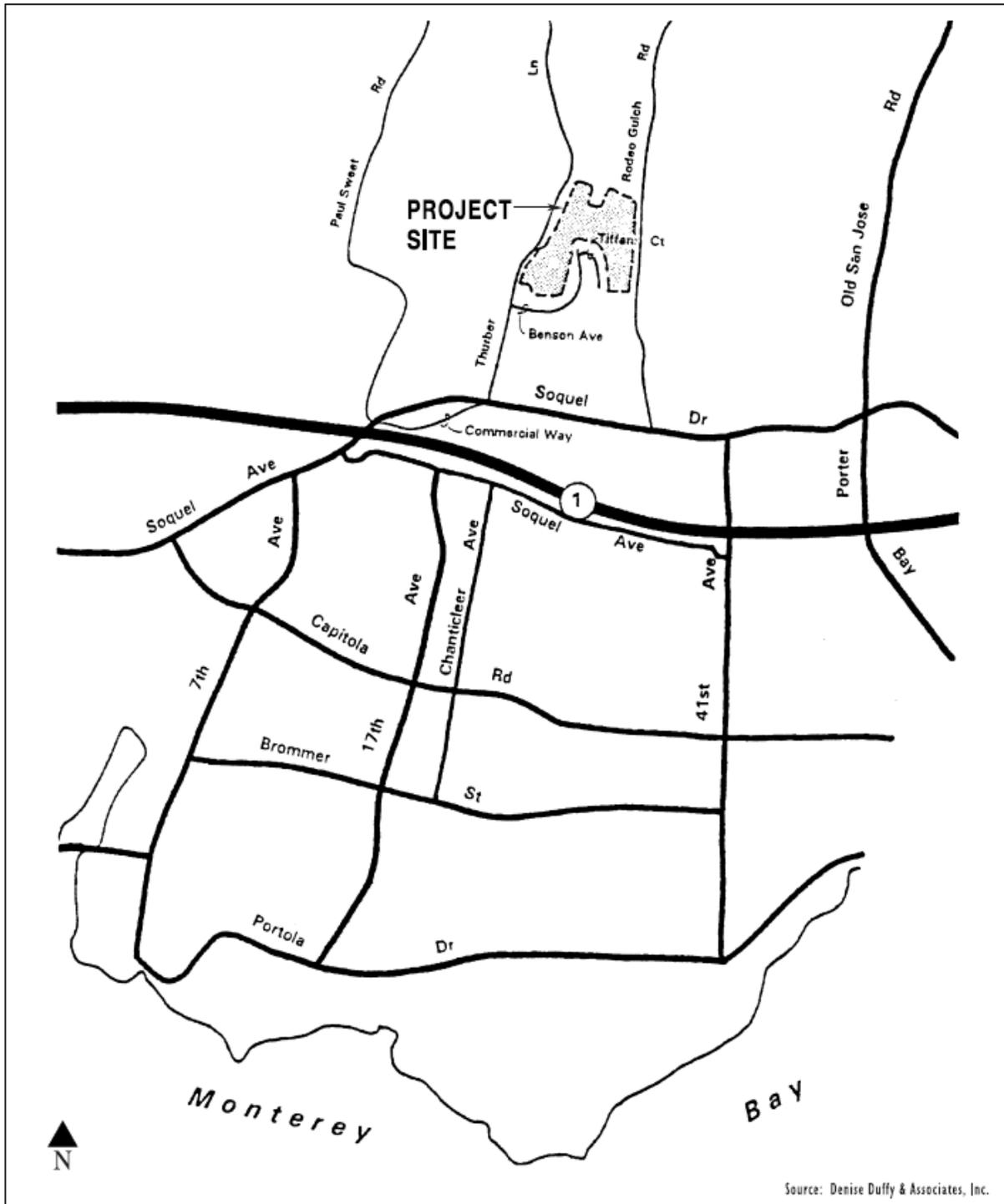
woodland (11.5 acres), coast live oak woodland and eucalyptus groves (28.75 acres), mixed grassland, grassland/ scrub and non-native grassland (6.73 acres), via fee title held by the HOA;

- b. Permanent protection of the conservation parcel via a recorded conservation easement to be held by the CNLM;
- c. Protection of landscape buffers on Lots 8 and 9 via HOA Covenants, Conditions & Restrictions (CC&R's).
- d. Installation of protective fencing around portions of the conservation parcel to prohibit unauthorized access to the approximately 9.3-acre prairie/grassland management area that supports the covered species;
- e. Management of vegetation within the approximately 9.3-acre prairie/grassland area of the conservation parcel in a manner that maintains populations of the covered species and the coastal prairie, mixed grassland and mixed grassland/scrub communities;
- f. Undertake various measures during grading and construction activities of the residential development at the project site to minimize impacts to the covered species and their habitats;
- g. Remove invasive, non-native plant species, such as eucalyptus, French broom, Monterey pine, cotoneaster, and acacia from the 9.3-acre prairie/grassland management area;
- h. Control invasive, non-native annual and perennial grasses and weeds from the 9.3-acre prairie/grassland management area if they pose a threat to the persistence of the covered species;
- i. Implement habitat management actions to facilitate germination of the Santa Cruz tarplant seed bank within an extant population within the 9.3-acre prairie/grassland management area;
- j. Prior to site development, salvage soil and seedbank materials from an historic Santa Cruz tarplant colony located within the development area and distribute this material in the 14.8-acre grassland/prairie area of the conservation parcel to facilitate re-establish of the species on the site;
- k. Prior to site development, transplant all available individuals of GY that occur within the development area to suitable areas of the 9.3-acre prairie/grassland management area to achieve an overall goal of 1:1 plant replacement; and,
- l. Provide funding the CNLM, through a non-wasting endowment, to implement management actions within the 9.3-acre prairie/grassland management area to benefit the covered species.

This HCP, in conjunction with the attached conservation easement delineate the responsibilities of the Porter-Livingston Development, Inc., O'Hara-Balfour LP, the HOA, the CNLM, the Service, the California Department of Fish & Game (CDFG) and the County of Santa Cruz (County). The remainder of this document describes how these goals will be achieved.

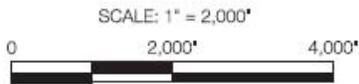
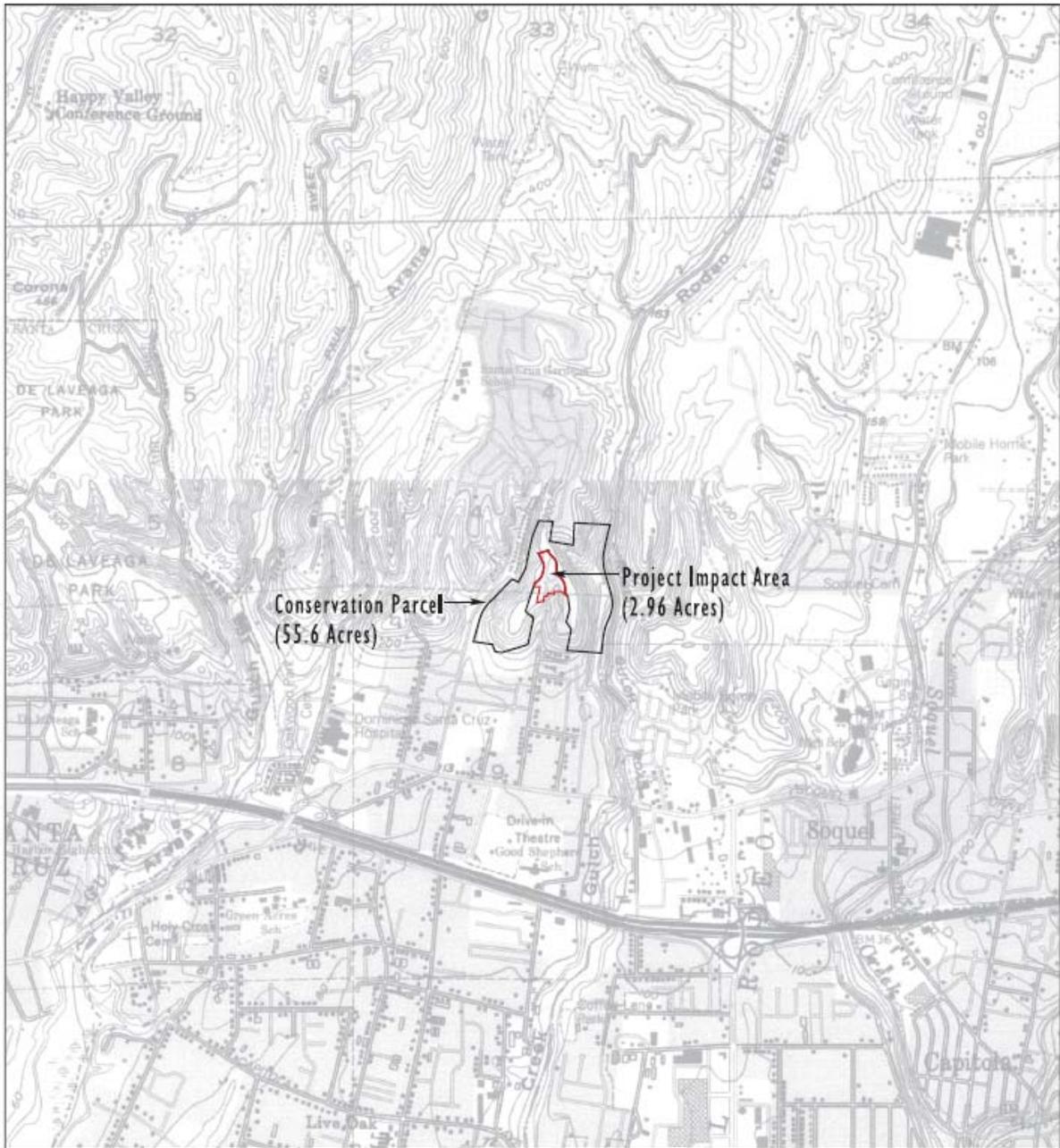
1.1 PROJECT LOCATION

The Santa Cruz Gardens Unit 12 residential (hereafter referred to as Santa Cruz Gardens #12) project site consists of 58.6 acres within the Live Oak Planning Area, an unincorporated area of Santa Cruz County (Figure 1), located near the town of Soquel. It lies approximately one-third of a mile north of Soquel Avenue and west of Rodeo Gulch Road. The property is roughly bounded by the terminus of Benson Avenue, Tiffany Court, and residential areas to the south, Thurber Lane to the west, Winkle Avenue and undeveloped lands to the north, and Rodeo Gulch Road to the east (Figure 1).



Source: Denise Duffy & Associates, Inc.

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| <p>Biotic Resources Group 2551 S. Rodeo Gulch # 12 ♦ Soquel, California 95073 (831) 476-4803 ♦ Fax (831) 476-8038</p> | <p>Santa Cruz Gardens Unit 12 Habitat Conservation Plan Regional Location Map</p> | <p>Figure 1 7/08 160-02</p> |
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Base Map: USGS Soquel 7.5' Topographic Map

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Santa Cruz Gardens Unit 12
 Habitat Conservation Plan
 Location of Project Impact Area
 and Conservation Parcel

Figure 2
 7/08
 160-02

At this time the project site consists of four neighboring parcels, 025-391-01, 025-401-01, 025-401-02, & 025-491-01, that are located within the Soquel 7.5" U.S. Geological Survey (USGS) topographic quadrangle, in Township 11 S., Range 1W, Mt. Diablo Base Meridian (Figure 2). No section numbers are identified in this portion of the topographic quadrangle map. Collectively, the four parcels are arranged in a crude H-shaped configuration, as depicted on Figure 2.

1.2 PROJECT SITE

The 58.6-acre project site (i.e., including both the impact and conservation parcel) is presently undeveloped and is characterized by a predominantly north-south coastal terrace with surrounding hillsides (Figure 2). Elevations at the site range from about 100 to 320 feet. Slopes that are greater than 30% characterize much of the property. Rodeo Gulch flows along the eastern border. An intermittent drainage is adjacent to Thurber Lane. Dirt trails cross the terrace. A secondary fire access road extends from Winkle Avenue through the northern portion of the project site to Benson Avenue.

The Soils Conservation Service (Bowman et al. 1980) mapped the soils at the project site. Soils on the upper slopes and flatter portions of the terraces are Watsonville loams, while those on the slopes and lower elevations include Bonny Doon rock outcrop, Elkhorn-Pfeiffer complex, and Lompico-Felton complex.

Habitats present at the project site include stream and riparian woodland, coast live oak woodland, coastal prairie, mixed grassland and scrub, non-native grassland, groves of blue gum eucalyptus, and small stands of invasive, non-native plants such as eucalyptus, acacia, Monterey pine, cotoneaster, pampas grass, and French broom. The occurrence of these habitat types, as well as information on the special-status species, is discussed in more detail in Section 4.0.

1.3 HISTORY OF THE CONSERVATION PLANNING PROCESS

The current development proposal for the Santa Cruz Gardens #12 project site has evolved during the past several years from earlier proposals submitted to the County of Santa Cruz for environmental review. The original development proposal was a 21-lot residential subdivision. Draft and final environmental impact reports were prepared (Parsons Engineering Sciences, February 1997). Because potential impacts to the OTB, SCT, and GY were determined to be significant and unavoidable, a modified site design consisting of 12 residential lots was identified as the preferred alternative for the project.

The applicant subsequently adopted the modified site design alternative and an Expanded Initial Study (Denise Duffy & Associates, 2001) evaluated the 12-lot alternative. Based on the environmental review process, the study recommended approval of a nine-lot development with a conservation parcel, which is the project discussed in Section 2.1.

Informal consultation with the Service occurred on August 14, 2001, when representatives for the applicant, County of Santa Cruz planning staff, and project biologists conferred with Colleen Sculley, an entomologist from the Ventura office of the Service, to discuss measures to avoid and minimize impacts to the OTB and its habitat, and the procedure for obtaining a permit for incidental take should the OTB be listed as endangered or threatened. Once the OTB was listed as an endangered species in October 2001 (U.S. Fish & Wildlife Service 2001a), this HCP was prepared as part of the application package for an incidental take permit.

2.0 PROJECT DESCRIPTION AND AREA

2.1 PROJECT DESCRIPTION

The proposed subdivision at Santa Cruz Gardens #12 consists of the construction of nine single-family homes with associated driveways, an entrance road, and all utilities to service the new homes. The development is limited to an area north and west of the intersection of Benson Avenue and Tiffany Court, located near the center of the 58.5-acre project site, and measures approximately 2.96 acres (Figure 3). The nine residential lots will range in size from about 8,500 to 18,800 ft.². Development envelopes within each lot were determined based on required setbacks and slope constraints. Benson Avenue will be extended northward about 300 ft. from its present terminus to create a cul-de-sac to access the new homes. The existing alignment of the emergency fire road will be retained. All grading, utility hook-ups and other improvements for the project will occur within the 2.96-acre impact area, as depicted on Figure 4.

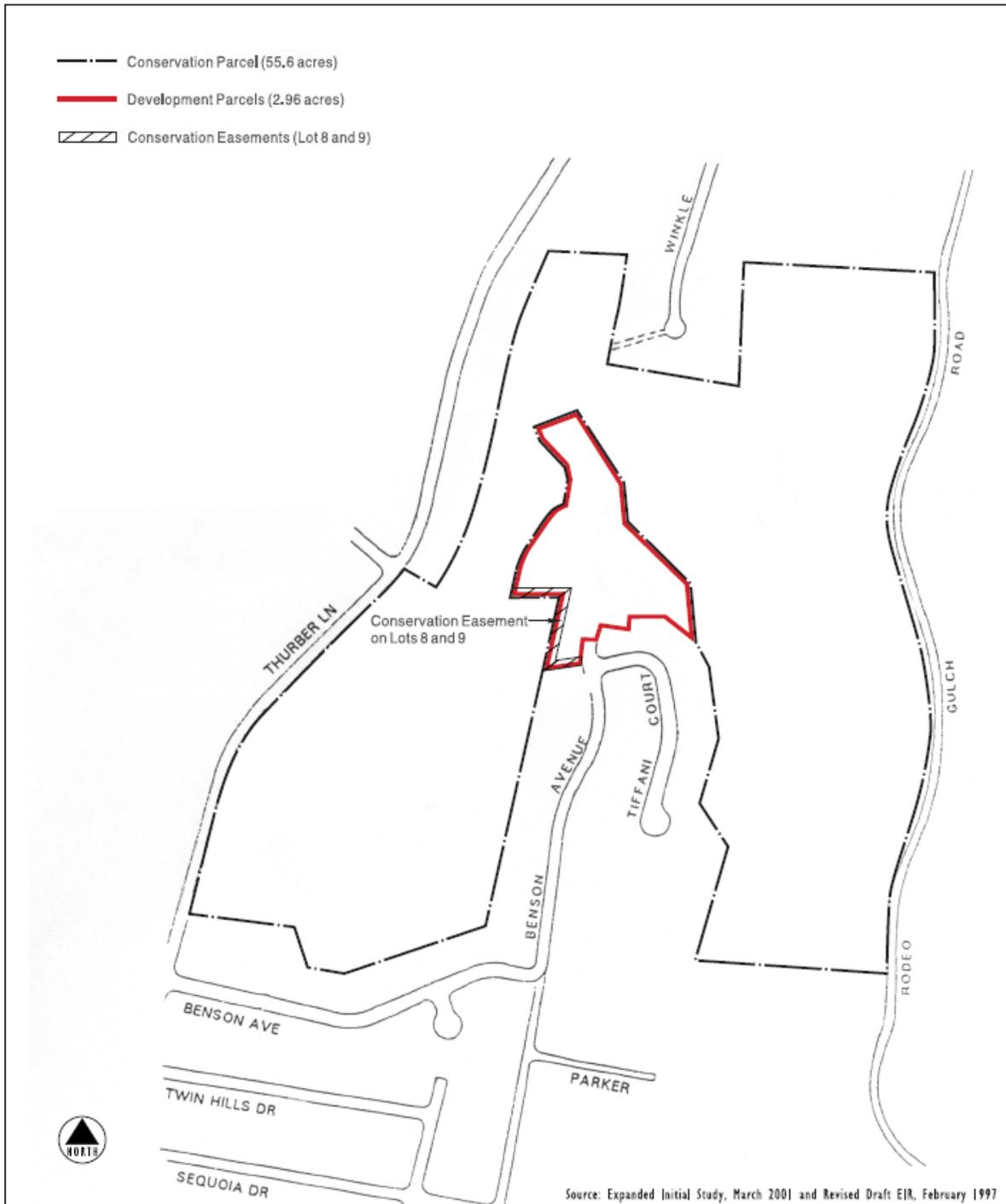
As part of the proposed project, a lot line adjustment will reconfigure the four parcels that currently comprise the project site into two parcels. The two reconfigured parcels will include a 2.96-acre parcel, where the residential development will occur (i.e., the impact parcel or area), and a remainder parcel, measuring approximately 55.64 acres, which will become the conservation parcel held in fee title by the HOA (Figure 3). A 15-foot wide landscape buffer on Lots 8 and 9 and a 12-foot wide maintenance access easement on Lot 9 will also be established. A conservation easement will be recorded to protect the 55.64-acre conservation parcel. The HOA CC&R's will require preservation of the landscape buffers on Lots 8 and 9. The conservation easement will be held by the CNLM. The conservation parcel supports coastal prairie and grassland habitat for the OTB, SCT, and GY, riparian woodland along Rodeo Creek, coast live oak woodland, eucalyptus groves, mixed grassland, mixed grassland-scrub, non-native grassland and has hillsides with slopes greater than 30%.

2.2 PERMIT HOLDER/PERMIT BOUNDARY

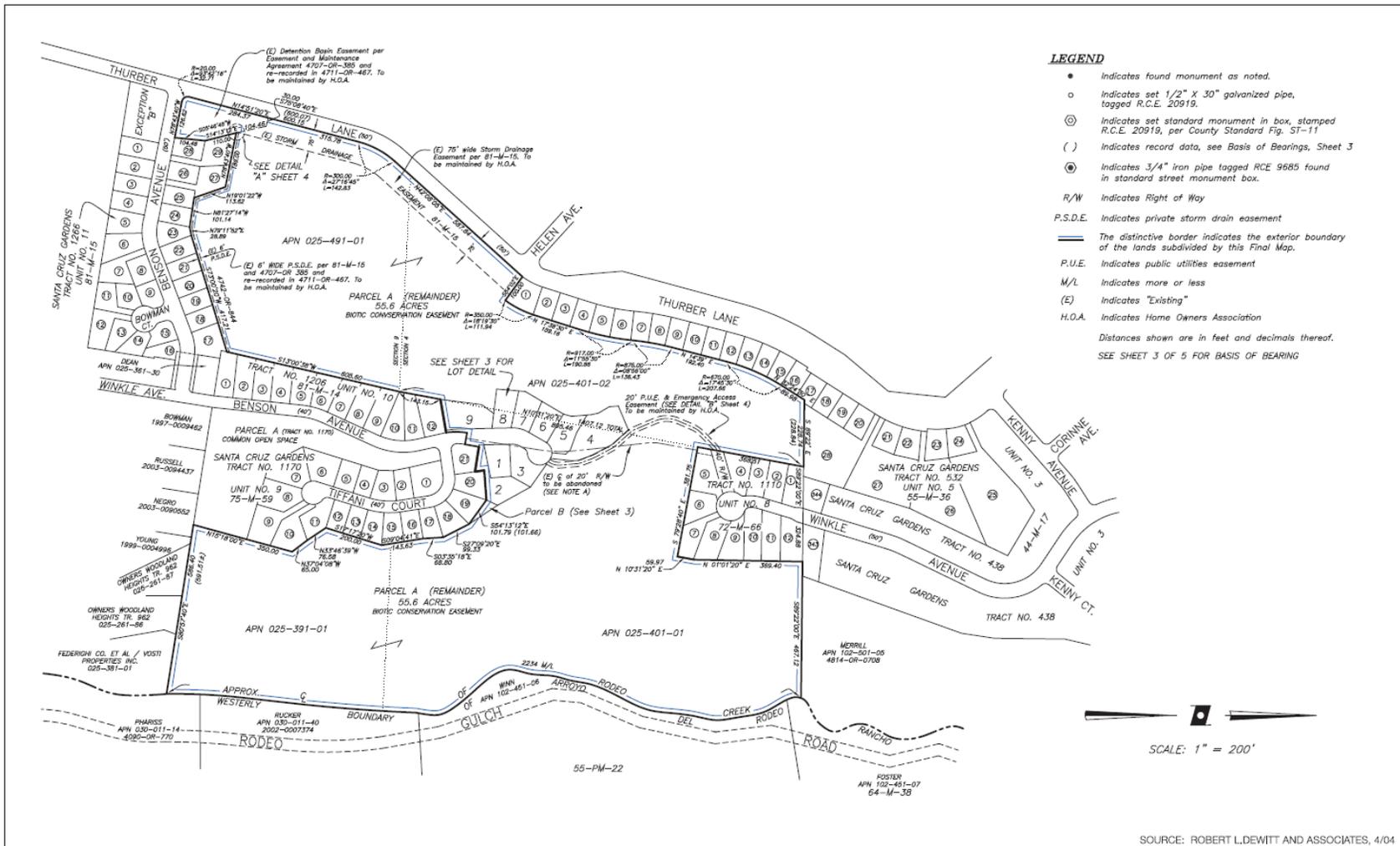
Initially, the Section 10(a) permit holders (i.e., permittees) will be the project's applicant, namely Porter-Livingston Development, Inc., O'Hara-Balfour LP, the Santa Cruz Gardens #12 HOA, and the CNLM. Mr. Brent Aasen, Principal of Porter-Livingston Development, Inc. will be the contact for the permittees. He can be contacted at 1120 Second Street, Brentwood, CA 94513, (925) 634-6023 (voice) and equusba@goldstate.net.

Upon completion of developers construction activities in connection with project the developer will be removed from the permit. The permit will then be solely in the name of the HOA and CNLM. The CC&Rs for the HOA will describe the obligations of the new homeowners in funding the CNLM for all actions identified in the HCP; funding to implement the HCP will be provided to CNLM in the form of a non-wasting endowment. In the event of a sale of the Santa Cruz Gardens #12 property prior to completion of the developer's construction activities, the new owner will submit a new permit application along with an Assumption Agreement to the Service.

The permit boundaries are the same as the boundaries of the 58.6-acre project site, which consists of the 55.64-acre conservation area and the 2.96-acre development area. The location of the project and conservation areas (i.e., conservation parcel and landscape buffers on Lots 8 and 9) is illustrated in Figure 3. The management activities within the HCP boundaries apply to the coastal prairie, non-native grassland, mixed grassland and mixed grassland/scrub, totaling approximately 9.3 acres (prairie/grassland management area) as depicted on Figure 3. The legal description is attached to the Conservation Easement (Appendix A).



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| <p> Biotic Resources Group 2551 S. Rodeo Gulch # 12 ♦ Soquel, California 95073 (831) 476-4803 ♦ Fax (831) 476-8038 </p> | <p> Santa Cruz Gardens Unit 12 Habitat Conservation Plan Location of Project Impact Area, Conservation Parcel and Conservation Easements </p> | <p> Figure 3 7/08 160-02 </p> |
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Santa Cruz Gardens Unit 12
 Habitat Conservation Plan
 Site Plan

Figure 4
 7/08
 160-02

2.3 ZONING AND SURROUNDING LAND USES

Currently, the project site is undeveloped, but ranching, including grazing horses and/or livestock, previously occurred there. Existing surrounding land uses include single-family homes to the north and south, and commercial and higher-density multi-family housing to the south along Soquel Drive. Lower-density residential is located east of the site along Rodeo Gulch and across Thurber Lane to the west.

In November 2003, the County of Santa Cruz rezoned the property to accommodate the proposed residential development. A portion of the project site (i.e., the 2.96-acre impact parcel) was rezoned to the “R-1-6” (i.e., single-family residential district with minimum lot sizes of 6,000 ft.²). The 55.64-acre conservation parcel was rezoned to PR (parks and recreation).

3.0 REGULATORY SETTING

This section of the HCP describes applicable federal, state, and local regulations with which the applicant must comply. In addition, the process for obtaining an incidental take permit is explained.

3.1 FEDERAL REGULATIONS

3.1.1 Endangered Species Act of 1973

The Endangered Species Act of 1973 (ESA), 15 United States Code (U.S.C.) Section 1531 *et seq.*, provides for the protection and conservation of various species of fish, wildlife, and plants that have been listed as threatened or endangered. Section 9 of the ESA prohibits the "take" of any fish or wildlife species that is listed as endangered under the ESA unless such take is otherwise specifically authorized pursuant to either Section 7 or Section 10(a)(1)(B) of the Act. Pursuant to the implementing regulations of the ESA, the take of fish or wildlife species listed as threatened is also prohibited unless otherwise authorized by the Service. "Take" as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct". "Harm" is further defined to mean an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding or sheltering (50 CFR 17.3).

Activities otherwise prohibited under ESA Section 9 and subject to the civil and criminal enforcement provisions under ESA Section 11 may be authorized under ESA Section 7 for actions by federal agencies and under ESA Section 10 for nonfederal entities. In the 1982 amendments to the ESA, Congress established a provision in Section 10 (a) (1) (B) that allows for the incidental take of endangered and threatened species of wildlife by non-Federal entities. Incidental take is defined by the ESA as take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity. The 10(a)(1)(B) provisions establish a mechanism for authorizing incidental take of federally listed species. However, in order to receive an incidental take permit, the permit applicant must submit a Habitat Conservation Plan (HCP) which describes, among other things, the effects of the taking and the measures the applicant will implement to mitigate for these effects. The Service and the National Marine Fisheries Service (NMFS) have joint authority under the ESA for administering the incidental take program. NMFS has jurisdiction for anadromous fish species and the Service has jurisdiction for all other fish and wildlife species.

Section 7 of the Endangered Species Act requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of its habitat. Technically, the issuance of an incidental take permit is an authorization for take by a federal agency; in conjunction with issuing a permit, the Service must conduct an internal Section 7 consultation on the proposed HCP. The internal consultation is conducted after an HCP is developed by a nonfederal entity (e.g., the applicant) and submitted for formal processing and review. Provisions of Sections 7 and 10 of the ESA are similar, but Section 7 requires consideration of several factors not explicitly required by Section 10. Specifically, Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat. The ESA requires that the Service identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered. The internal consultation results in a Biological Opinion prepared by the Service regarding whether implementation of the HCP will result in jeopardy to any listed species or adversely modify critical habitat.

The Section 10 process for obtaining an incidental take permit has three primary phases:

1. The HCP development phase;
2. The formal permit processing phase; and
3. The post-issuance phase.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

- Impacts likely to result from the proposed taking of the species for which permit coverage is requested;
- Measures that will be implemented to monitor, mitigate for, and minimize impacts;
- Funding that will be made available to undertake such measures;
- Procedures to deal with unforeseen circumstances;
- Alternative actions considered that would not result in take; and
- Additional measures the Service may require as necessary or appropriate for purposes of the plan.

The HCP development phase concludes and the permit-processing phase begins when a complete application package is submitted to the appropriate permit-issuing office of Service. The complete application package for a low-effect HCP consists of:

1. An HCP;
2. A completed permit application; and
3. A \$100 permit fee from the applicant.

The Service must publish a Notice of Receipt of a Permit Application in the Federal Register; prepare a Section 7 Biological Opinion; prepare a Set of Findings that evaluates the Section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below); and prepare an Environmental Assessment. A Section 10 incidental take permit is granted upon determination by Service that all requirements for permit issuance have been met. Statutory criteria for issuance of the permit are as follows:

- The taking will be incidental;
- The impacts of incidental take will be minimized and mitigated to the maximum extent practicable;
- Adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
- The applicant will provide additional measures that Service requires as being necessary or appropriate; and
- The Service has received assurances, as may be required, that the HCP will be implemented.

After receipt of a complete application, an HCP and permit application is typically processed within approximately 12 months. This schedule includes the Federal Register notification and public comment.

During the post-issuance phase, the permittee and other responsible entities implement the HCP and the Service monitors the permittee's compliance with the HCP and the long-term progress and success of the HCP. The public is notified of permit issuance through publication in the Federal Register.

3.1.2 National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969, as amended (NEPA), requires that Federal agencies analyze and disclose the environmental impacts of their proposed actions (i.e., issuance of an incidental take permit) and include public participation in the planning and implementation of their actions. Issuance of an incidental take permit by the Service is a Federal action subject to NEPA compliance. Although Section 10 and NEPA requirements overlap considerably, the scope of NEPA also considers the impacts of the action on non-biological resources such as water quality, air quality, and cultural resources. Depending on the scope and impact of the HCP, NEPA requirements can be satisfied by one of the following documents or actions:

1. Preparation of an environmental impact statement (generally prepared for high-effect HCPs);
2. Preparation of an Environmental Assessment (generally prepared for moderate-effect HCPs); or
3. A categorical exclusion (allowed for low-effect HCPs).

The NEPA process helps federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions.

3.2 CALIFORNIA REGULATIONS

3.2.1 California Environmental Quality Act

In many ways, the California Environmental Quality Act, commonly known as CEQA (Public Resources Code Section 21000 *et seq.*), is analogous at the state level as NEPA is to the federal level. CEQA applies to projects that require approval by state and local public agencies. It requires that such agencies disclose a project's significant environmental effects and provide mitigation whenever feasible. This environmental law covers a broad range of environmental resources. With regard to wildlife and plants, those that are already listed by any state or federal governmental agency are presumed to be endangered for the purposes of CEQA and impacts to such species and their habitats may be considered significant. CDFG's Significant Natural Areas Program lists for example, coastal prairie as threatened, restricted in all or part of its range. Impacts to such areas are to be evaluated under CEQA.

The Planning Department at the County of Santa Cruz has been the lead agency for CEQA review of the Santa Cruz Gardens Unit 12 Residential Project. An environmental impact report (EIR), including a revised draft and final EIR, were prepared for the original 21-lot project (Parsons Engineering Science, 1997). A Supplemental EIR (Denise Duffy & Associates, 2001) was prepared for the current project. Additionally, under CEQA the California Department of Fish & Game (CDFG) must review the project.

3.2.2 California Endangered Species Act of 1984

State laws on biological resources are similar to Federal laws. The California Endangered Species Act (CESA) also prohibits the take of a species listed as **endangered** or **threatened**. CESA does not have specific provisions regarding protection of the habitat of listed

species; however, destruction of nesting and foraging habitats necessary to maintain a viable breeding population of State-listed species has been included as an interpretation of take. The California Department of Fish and Game (CDFG) administers the CESA.

Two additional categories of animals are recognized by the CDFG: **Species of Special Concern** and **Special Animals**. Species of special concern receive full protection from unauthorized collection under the CDFG code. Special animals are those taxa that are biologically rare, limited in geographic distribution or associated with a declining habitat. These animals have not statutory protection but are considered to be on a "watch list" and usually receive special consideration during the environmental review process of a project.

The California Native Plant Society (CNPS) also maintains lists of plant species that are rare and often considered during the State environmental review process. The **CNPS List 1B** plants are defined as those that are rare threatened or endangered in California or elsewhere. Although the CNPS maintains other "watch" lists of plants, usually only the plants on List 1B are given special consideration by CDFG during environmental review.

3.2.3 California Fish and Game Code

The CDFG administers the CESA under Section 2081 of the Fish and Game Code. This code requires applicants to consult with CDFG prior to impacting a state-listed species. Due to the project's direct impact to a state-listed plant species, the SCT, the SEIR requires that the portions of the HCP addressing coastal prairie (a sensitive habitat) and the SCT be reviewed and approved by CDFG (under Section 2081 of the Fish and Game Code). Typically, a 2081 permit or "Memorandum of Understanding" is developed between the applicant and CDFG that addresses measures to avoid, minimize or compensate for impacts to State-listed species.

3.2.4 California Native Plant Protection Act

In addition to CESA's protection for endangered and threatened plants, the California Native Plant Protection Act (NPPA) protects endangered and "rare" plants, subspecies and varieties of wild plants native to California. As under CESA, plants are listed by the Commission as endangered or rare after notice and public hearing. NPPA's definitions of "endangered" and "rare" species closely parallel CESA definitions. The NPPA prohibits any person from taking endangered and rare plants, however, like CESA, there are exceptions and exemptions (under Section 1913 of the Fish and Game Code).

3.3 SANTA CRUZ COUNTY REGULATIONS

3.3.1 Santa Cruz County General Plan and Code

Chapter 5 (Conservation and Open Space) of Santa Cruz County's General Plan (1994) and its County Codes (16.30 – Riparian Corridor and Wetlands Protection and 16.32 – Sensitive Habitat Protection) identify protective measures for sensitive habitats and species. County policies preclude development on lands that support coastal prairie and riparian habitats, slopes greater than 30%, listed endangered species such as the OTB and SCT, as well as those that satisfy the definition of rare or endangered species under CEQA, such as the GY. Appendix B (Sensitive Habitat, Plant, and Animal Species) of the 1994 General Plan for Santa Cruz County includes the SCT and GY on its list of rare and endangered plant species.

3.3.2 Santa Cruz County – Central Fire District

Public Resources Code 4291 requires homeowners living in or adjacent to forest or brush-covered lands to maintain a firebreak of not less than 30 feet on all sides around all

structures, or to the property line, whichever is nearer. Firebreaks will be maintained on the nine residential lots rather than in the conserved habitat. The Santa Cruz County – Central Fire District enforces this code in the Live Oak project area. Management activities within the 14.8-acre prairie/grassland management area involve seasonal mowing and/or grazing, which are consistent with current fire prevention actions required by the Fire District.

4.0 BIOLOGY AND COVERED SPECIES

This chapter describes the existing biotic resource conditions at the Santa Cruz Gardens # 12 project site, including both the 2.96-acre impact area and the 55.64-acre conservation area. In addition, it discusses the three species addressed in this HCP, namely the OTB, SCT, and GY (referred to as the covered species), of which the OTB is treated by its associated Section 10(a)(1)(B) permit. The OTB is Federally listed as endangered, while the SCT is Federally listed as threatened and State-listed as endangered. GY is on CNPS List 4. Based on historical and recent observations, all three species are known to occur at the project site and will be directly or indirectly affected by the planned residential development. This section summarizes available information about the taxonomy, identification, distribution, habitat, biology, and conservation of the three covered species.

4.1 HABITATS

Both terrestrial and aquatic habitats occur at the Santa Cruz Gardens #12 project site. Seven distinct terrestrial plant community types occur on the project site: coastal prairie, non-native grassland, mixed grassland, mixed grassland/scrub mosaic, riparian habitat, coast live oak woodland and eucalyptus grove (Parsons Engineering, 1997), as depicted on Figure 5. Aquatic habitat is represented by Rodeo Gulch, which is indicated as a blue-line creek on the Soquel USGS topographic quadrangle, and an intermittent drainage next to Thurber Lane. Figure 5 is a vegetation map of the project site. Table 1 lists the acreage for each habitat type, including existing, impacted, and protected/managed acreages.

4.1.1 Coastal Prairie

The property supports approximately 9.5 acres of coastal prairie. As illustrated in Figure 5, the prairie occurs in two areas: on the central knoll (4.8 acres) and in the northeast corner of the property (near Winkle Avenue) (4.7 acres). Native and non-native grasses and forbs dominate these areas, including California oatgrass (*Danthonia californica*), purple needlegrass (*Nassella pulchra*), soap plant (*Chlorogalum pomeridianum*), lupine (*Lupinus variicolor*) and owl's clover (*Castilleja densiflora*). Other native plant species are also scattered throughout the grassland, including California poppy (*Eschscholtzia californica*), annual lupine (*Lupinus nanus*), sun cups (*Camissonia ovata*), blue dicks (*Dichelostemma capitatum*), and rigid hedge nettle (*Stachys ajugoides* var. *rigida*).

Invasive, non-native plant species occur in the coastal prairie at the property. French boom (*Genista monspessulana*), acacia (*Acacia* sp.), Monterey pine (*Pinus radiata*), cotoneaster (*Cotoneaster* sp.), and young blue gum eucalyptus (*Eucalyptus globulus*) have colonized portions of the prairie, especially along the edges of the central knoll and along the existing gravel emergency access road. Where these species occur within the 9.3-acre prairie/grassland management area, their growth degrades the value of the habitat for the covered species.

On the central knoll, rock outcrops occur at scattered locations throughout the coastal prairie and portions of the mixed grassland-scrub mosaic. These rock outcrops support native wildflowers. The distinguishing characteristic of these areas is a substratum of Purisima sandstone or Santa Cruz mudstone with a thin soil layer. The areas are sparsely vegetated when compared to the adjacent grassland and are the preferred habitat for the OTB. The prairie on the central knoll supports the SCT and GY.

Approximately 8.26 acres of prairie will be conserved within the conservation parcel; 3.56 acres of this habitat type will be managed within the 9.3-acre prairie/grassland management area.

| Table 1. Habitat types of the Santa Cruz Gardens #12 project site and estimates for existing, impacted and preserved acreages for each habitat type. | | | |
|---|---------------------------------------|-----------------|-------------------|
| Habitat Types | Habitat Acreages (approximate) | | |
| | Existing | Impacted | Conserved |
| Coastal prairie (central knoll) | 4.8 | 1.24 | 3.56 ^a |
| Coastal prairie (near Winkle Avenue) | 4.7 | 0 | 4.7 |
| Non-native grassland, mixed grassland and mixed grassland/scrub | 7.6 | 0.87 | 6.73 ^b |
| Coast live oak woodland and eucalyptus groves | 29.4 | 0.65 | 28.75 |
| Freshwater stream and riparian woodland | 11.5 | 0.0 | 11.5 |
| Bare Areas (existing emergency access road) | 0.6 | 0.2 | 0.4 |
| Site Totals | 58.6 | 2.96 | 55.64 |

Notes:

a – approximately 3.56 acres of prairie will be managed for species and habitat values within the 9.3-acre prairie/grassland management area; invasive, non-native plant species are to be removed/controlled from this management area.

b – approximately 5.5 acres of this habitat will be managed for species and habitat values within the 9.3-acre prairie/grassland management area; invasive, non-native plant species are to be removed/controlled from this management area.

4.1.2 Mixed Grassland

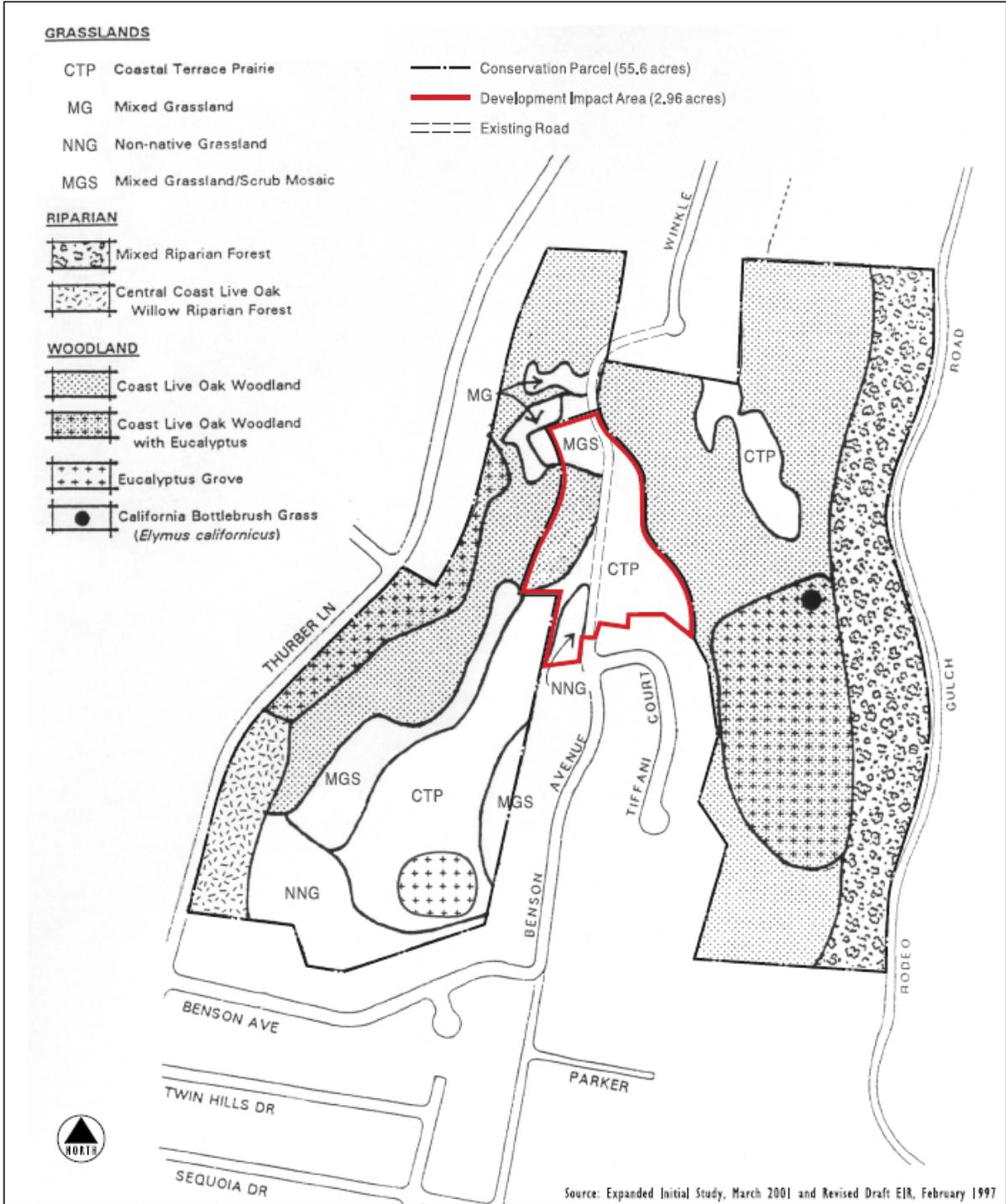
Small portions of the property support a mixture of native and non-native grasses and forbs. These mixed grassland areas encompass approximately 0.7 acre and occur west of the existing gravel access road and on hillsides along the central knoll (Figure 5). Native and non-native grasses dominate these grasslands, including California oatgrass, purple needlegrass, wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), annual ryegrass (*Lolium multiflorum*), and soft chess (*Bromus hordeaceus*). Invasive, non-native plant species occur in this habitat, such as French broom, cotoneaster, Monterey pine, pampas grass, and young eucalyptus. Where these species occur within the 9.3-acre prairie/grassland management area, their growth degrades the value of the habitat for the covered species.

4.1.3 Non-Native Grassland

Annual non-native grasses and weedy forbs dominate portions of the site. These areas occur near the entrance road at Benson Avenue and on hillsides below the central knoll; this habitat type encompasses approximately 2.9 acres. The dominant species include wild oat, ripgut brome, annual ryegrass, and soft chess. Invasive, non-native plant species, such as French broom, cotoneaster, Monterey pine, pampas grass, and young eucalyptus occur in this habitat. Where these species occur within the 9.3-acre prairie/grassland management area, their growth degrades the value of the habitat for the covered species.

4.1.4 Mixed Grassland/Scrub Mosaic

Native and non-native grasses and weedy forbs dominate these grassland areas (approximately 4.0 acres). On the hillsides, native and non-native grasses predominate, yet the slopes also support scrub amid the grasses. The dominant species is coyote brush (*Baccharis pilularis*); in some areas California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*) occur. GY also grows at various locations in this plant community. Invasive, non-native plant species occur in this habitat, such as French broom, cotoneaster, Monterey pine, and pampas grass. Where these species occur within the 9.3-acre prairie/grassland management area, their growth degrades the value of the habitat for the covered species.



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**Santa Cruz Gardens Unit 12
 Habitat Conservation Plan
 Existing Vegetation within Development
 Impact Area and Conservation Parcel**

Figure 5
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4.1.5 Riparian Habitat

Mixed riparian forest occurs along the eastern border of the project site along Rodeo Gulch, totaling approximately 11.5 acres. The meandering creek channel has steep banks. The forest vegetation consists of coast redwood (*Sequoia sempervirens*), California bay (*Umbellularia californica*), buckeye (*Aesculus californicus*), and coast live oak (*Quercus agrifolia*). Shrubs within the understory include hazelnut (*Corylus cornuta*), creek dogwood (*Cornus californicus*), and California blackberry (*Rubus ursinus*). The intermittent drainage near the western boundary of the property supports a mix of arroyo willow (*Salix lasiolepis*) along with coast live oak woodland and blue gum eucalyptus trees (*Eucalyptus globulus*).

4.1.6 Coast Live Oak Woodland/Eucalyptus Groves

Coast live oak woodland, intermixed with groves of blue gum eucalyptus, occurs on the eastern and western slopes of the property and covers approximately 28.8 acres. Dominant species include coast live oak, blue gum eucalyptus, California bay, poison oak, California blackberry, and hazelnut.

4.1.7 Eucalyptus Grove on Central Knoll

The central knoll area supports a eucalyptus grove, which occupies approximately 0.6 acre. Associated species include California blackberry and poison oak. Other invasive plants are scattered in the grove, notably acacia, Monterey pine, French broom, and cotoneaster. The mature eucalyptus tree grove will be retained within the 9.3-acre prairie/grassland management area, however, young trees that extend from the grove and other invasive, non-native plants that degrade the value of the habitat for the covered species will be removed.

4.2 COVERED SPECIES – OHLONE TIGER BEETLE

4.2.1 Conservation Status

The OTB is a federally listed endangered species (U.S. Fish & Wildlife Service 2001a). The primary threats to this species are loss and alteration of its coastal prairie habitat and collectors. Freitag, Kavanaugh, and Morgan (1993), describers of this new beetle species, noted that because of the beetle's apparent restriction to clay-based, marine terraces, which support native grassland remnants in the coastal mid-Santa Cruz County area, much of its former habitat within this portion of the Santa Cruz County and similar areas in neighboring San Mateo and Monterey counties, had already been converted for development or other land uses before the new beetle was recognized as a new species in 1993. For this reason, they suggested that it was unlikely that the OTB would be found in many other places, which indeed has turned out to be the case despite numerous searches.

Threats to the species include loss of habitat, deterioration of suitable habitat through site disturbances (i.e., crushing of larval burrows) and encroachment of vegetation, and illegal collecting. Active conservation is hampered in that little information is available on annual natural population fluctuations related to climatic and biologic factors, let alone what fluctuations are due to habitat management activities.

4.2.2 Description and Taxonomy

Tiger beetles are generally treated as a family, the Cicindelidae, in the insect order Coleoptera; however, some entomologists prefer to recognize tiger beetles as a subfamily (Cicindelinae) or tribe (Cicindelini) of the ground beetle family, Carabidae. Thus, all of these names are encountered in the entomological literature.

The OTB was described in 1993 by Freitag, Kavanaugh, and Morgan (1993). *Cicindela ohlone* is most closely related to *C. purpurea*, but can be distinguished from this and related species by its overall size, 9.5 to 12.5 mm., the color and maculation patterns on its thorax and elytra, and its genitalic features. The OTB's body color is a brilliant green, with gold maculations. Freitag, Kavanaugh, and Morgan (1993) illustrate the maculation pattern characteristic of *C. ohlone* and the diagnostic features of its genitalia. In addition, the winter-spring activity period of the OTB is distinctive, as most tiger beetles in coastal California are active in the spring and summer months (Nagano 1980).

Larvae of tiger beetles are much more uniform in appearance than adults. They have an eruciform (i.e., grub-like) appearance. The head and pronotum are strongly chitinized, and the fifth abdominal segment possesses a pair of medial hooks that are used as anchors to secure the larvae as they reach out from the tunnel to ambush prey. The immature stages (i.e., egg, larva, and pupa) of *C. ohlone* have not been formally described.

4.2.3 Distribution and Habitats

Of the approximately 110 species of tiger beetles that have been described in North America (Boyd and Associates 1982), *Cicindela ohlone* exhibits one of the most restricted geographic ranges. It has been reported at only 15 locations in central and western Santa Cruz County, including the Santa Cruz Gardens #12 site (Figure 6).

The description of this new species was based on specimens collected from three sites in west central Santa Cruz County between 1987 and 1992:

- a) Winkle Ave in Soquel, which is the type locality of the OTB, and is also the Santa Cruz Gardens Unit 12 project site;
- b) In the complex of meadows that are part of the Marshall Fields in the upper portion of the UC Santa Cruz campus; and
- c) The former Bombay property (now the Moore Creek Preserve managed by the City of Santa Cruz) at the western end of Meder Street in Santa Cruz.

Subsequent to the authors' submission of their paper, a fourth site supporting the beetle was discovered above the Vine Hill Elementary School in Scotts Valley, and a fifth site was discovered at Pogonip open space next to the UC Santa Cruz campus. Surveys in the grasslands that lie west and largely down slope of Empire Grade have resulted in several additional OTB locations on the UC Santa Cruz campus, Younger Ranch, an area that includes portions of the Younger and Curran ranches plus a portion of Wilder Ranch State Park, and a second location on the Wilder Ranch State Park. In the spring of 2000, the OTB was discovered at the Gross-Poliski property.

Although the potential exists for this range-limited beetle to occur in other locations in the county supporting similar habitat, to-date the beetle has not been found in other similar areas that have been checked. At this time, the OTB appears to be restricted to coastal terrace situations, at low to mid-elevations (less than 1,200 feet), located between the crest of the Santa Cruz Mountains and the Pacific Ocean.

Cicindela ohlone inhabits areas characterized by remnant stands of native grassland, in particular coastal prairie. California oatgrass (*Danthonia californica*) and purple needlegrass (*Nassella pulchra*) are two native grasses known to occur at all sites. Within these grasslands, the beetle has been observed primarily on level ground and less frequently on slopes, where the vegetation is sparse or bare ground is prevalent. The substrate at each known beetle location

consists of shallow, poorly drained clay or sandy clay soils that have accumulated over a layer of bedrock known as Santa Cruz Mudstone (Freitag, Kavanaugh, and Morgan 1993). The soils at all known OTB sites, as mapped by Bowman et al. (1980), are Watsonville loams.

4.2.4 Natural History

Collection records indicate that most adult *C. ohlone* are active from late January through early May, although the duration and timing of the adult activity period can vary from year-to-year and between places within a particular year. Specific dates of when beetles have been observed range from January 29th through May 3rd (Freitag, Kavanaugh, and Morgan 1993; BUGGY Data Base 2002).

All tiger beetles share some general biological characteristics, which are summarized for the OTB. The diurnally active adults and larvae of *C. ohlone* are associated with sunny areas of bare or sparsely vegetated ground. Adults run rapidly in and near the larval habitat. They are strong flyers for short distances. Because they are cold-blooded, are active during the winter and spring months, and favor microhabitats that are sparsely vegetated and can become quite warm during their activity period, adults and larvae typically spend a considerable portion of their daily activity thermoregulating.

Both adults and larvae of tiger beetles are opportunistic, preying on smaller, soft-bodied insects and invertebrates. Adults possess good visual acuity and are found on sunny glades of bare or sparsely vegetated soil, where they actively search for potential prey. In contrast, larvae remain in their tunnels, and ambush prey that wander within their striking distance. Specific prey items of *C. ohlone* are not well known, but prey for other species of tiger beetles have been identified as ants, adult and larval flies (Diptera), tiny insects, small beetles, and worms (Larochelle 1974). These and other small and generally soft-bodied insects and invertebrates have been observed as prey items of *C. ohlone*.

The larvae of most tiger beetles occur in a narrower range of microhabitats than their adult stages; probably because they tolerate less variation in many physical factors, especially soil moisture, soil composition, and temperature (Pearson 1988; Shelford 1907 and 1909). All known larvae construct a tunnel-like burrow at sites where eggs were laid by the mother beetle. Larvae of other tiger beetle species that live in grasslands typically build their tunnels at the edges of the bare or sparsely vegetated portions of the grassland where adult beetles are most commonly observed (R. Freitag, personal communication). Tunnel length varies depending on the larval developmental stage, species, season, and substrate, but ranges from 15 to 200 centimeters (Pearson 1988; Willis 1967). Larvae of some tiger beetles require two years to complete their development (Lindroth 1974).

Pupation of tiger beetles takes place in the larval burrows. The upper portion of the larval burrow is usually sealed off by the mature larva when it molts or prepares to pupate.

4.2.5 Occurrence at the Project Site and Vicinity

As noted earlier, the Santa Cruz Gardens #12 project site is the type locality for the OTB. Arnold first visited the site in 1994 and has been monitoring the beetle's status there since that time. Adult beetles were confirmed on the site in 2005 yet in fewer numbers than in previous years; beetles were observed on the far knoll and near proposed Lot 9 (Arnold, pers., comm., October, 2005). Although the coastal prairie occurs on about 9.53 acres of the project site, findings from prior surveys indicate that the OTB is restricted to approximately 2.71 acres, primarily on the flatter portions of the terrace as depicted on Figure 6. The population of OTB at

the Santa Cruz Gardens project site is isolated from the majority of known locations at and near the University of California campus in Santa Cruz.

4.3 COVERED SPECIES – SANTA CRUZ TARPLANT

4.3.1 Conservation Status

The Santa Cruz tarplant is State-listed as endangered and federally listed as threatened. The species is currently known from less than 20 native populations and 6 experimental seedings (USFWS, 1998). Seven of the native populations occur around the City of Santa Cruz (USFWS, 2005). Threats to the species include loss of habitat, lack of land management, and growth of non-native plants. Non-native plant species create a dense thicket of herbaceous vegetation that inhibits annual seed germination and subsequent plant growth. Tarplant colonies that appear to be maintaining stable populations are subject to seasonal mowing (e.g., Watsonville Airport, Fairway Drive/Coyote Canyon), periodic grazing (e.g., Fairway Drive/Coyote Canyon), passive recreational access (e.g., Fairway Drive/Coyote Canyon), and/or occur in areas of thin soils that are not conducive to a dense growth of non-native annual species. All of these factors appear to control the growth on annual, non-native grasses and forbs and create open areas suitable for successful tarplant seed germination.

4.3.2 Description and Taxonomy

SCT is a densely leafy annual, 1-5 dm. tall, with stems divaricately branched above the base. The basal leaves are linear, slender toothed and approximately 12 cm. long and 8 cm. wide. The cauline leaves are bract-like with revolute margins. The entire plant is glandular and aromatic. The flower heads form terminal glomerules; the involucre are subglobose. The phyllaries have 25 stout gland-tipped processes. The disk flowers are yellow; the ray flowers are 3-lobed and yellow. The anthers are black. This tarplant blooms from June to September.

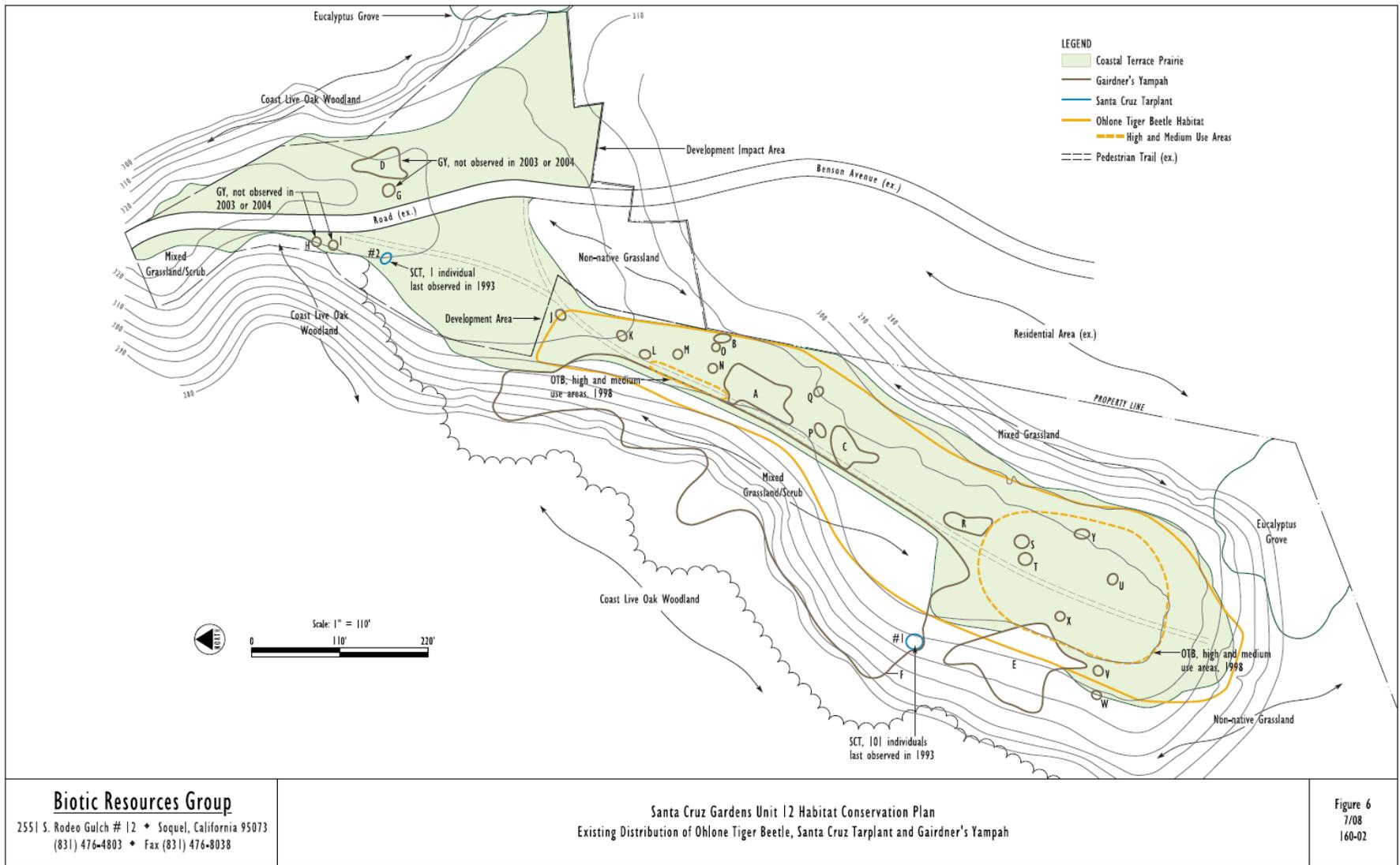
Genetically, SCT is a relatively new species, a recent derivative or coastal ecotype of the interior species *Holocarpha virgata* (Palmer, 1987). SCT evolved as a separate species because of the uplift of the Coast Ranges and the onset of more mesic conditions.

Since the Santa Cruz tarplant is an annual species, the size of the population is dynamic with slight shifts in location according to the environmental conditions of a given year. Seeds from the ray flowers are found to have a short viability, possible 1-2 years; however, seeds from the disk flowers are found to store well in the soil and likely provide most of the seedbank.

4.3.3 Distribution and Habitats

SCT is commonly found on the upper slopes of grassy coastal marine terraces. The soil substrate is often a poorly drained, heavy, clay soil consisting of marine alluvial deposits. It grows in greater densities where the grass is kept short through grazing or environmental constraints. SCT is unable to successfully compete with non-native grasses and tends to be choked out when the density of non-native grasses increases. Known populations of SCT occur on Watsonville loam, 2-15% slope and Watsonville loam, thick surface, 2-15% slope.

Historically, the species occurred amid a coastal prairie and grew in openings amid the perennial bunch grasses and native forbs. Although there is no historical documentation on the pre-European era distribution of the species, many botanists believe the species was more widespread and occurred on both the terrace tops and side slopes in the lower watershed. With the advent of intensive cattle grazing during the land grant/rancho period and subsequent conversion of the flat terrace grasslands to agriculture, it can be speculated that the prairie grasses declined and the tarplant



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Figure 6
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was relegated to the terrace side slopes, where many colonies are found today. In recent history (1900's), cattle grazed these sites, which was a beneficial management regime for the tarplant. As land use patterns changed in the project area and cattle grazing was terminated at most sites, population size decreased due to competition with non-native grasses. The exceptions are sites that have been managed (such as at Watsonville Airport and at Fairway Drive/Coyote Canyon) and the species is persisting.

Recent studies have suggested that the seed bank may be viable for as much as 10 to 15 years and tend to occur within one inch of the ground surface (CDFG, 1995). In 1995 experimental grassland management actions (i.e., scraping, burning and hoeing) were conducted by the City of Santa Cruz at the Arana Gulch population that yielded positive results. These activities resulted in positive seedbank expression for a few years after the initial treatment; however, consistent management activities have not been implemented to ascertain the long-term viability of this initial management technique.

4.3.4 Occurrence at the Project Site and Vicinity

The SCT is currently known from 12 populations; these occur in northern Monterey County, the Watsonville area, Soquel area and in the City of Santa Cruz (USFWS, 1998). The population at Santa Cruz Gardens #12 has historically occurred in two colonies (Areas 1 and 2) that collectively cover approximately 0.1 acre. The population was first recorded in the CNDDDB in 1983 (50-100 plants), with subsequent observations in 1984 (10-20 plants), 1985 (75 plants) and 1986 (60 plants in three subpopulations). During construction of an adjacent Santa Cruz Gardens area development in 1986, soil containing tarplant seeds was salvaged and deposited into a pile on the Santa Cruz Gardens #12 site. According to CDFG records, the upper 1-2" of soil was scraped for the salvage and "tarplant grew in the pile" every year until 1994 (CDFG, 1995). In 1991, tarplants were observed in the native colony (101 individuals), yet no individuals were observed at the transplant site (Habitat Restoration Group, 1991). In 1993, approximately 101 individuals were observed at the native colony and one individual was observed at the transplant site. Subsequent surveys have been conducted in 1998, 2004, and 2005 and no individuals have been documented from the native colony or the transplanted colony. Since the early 1990's, horse grazing was terminated and over the next several years the population size decreased, presumably due to competition with non-native grasses and the lack of open areas suitable for the germination of tarplant seeds. The location of the two historic colonies is depicted on Figure 6 and population data is listed on Table 2.

Critical habitat was designated for SCT in 2002. The Santa Cruz Gardens #12 project site is located within Unit F: Rodeo Gulch. This unit was identified as critical habitat because it is one of only seven populations in the cluster of populations that are found on the northern end of Monterey Bay. In addition to the seed bank for this population, this unit supports grassland habitat that provides for future expansion of the population. Also, it is within one half mile of the Soquel Unit and therefore could retain connectivity between the units (Federal Register, 2002).

4.4 COVERED SPECIES - GAIRDNER'S YAMPAH

4.4.1 Conservation Status

GY is on CNPS List 4, referring to plants of limited distribution or infrequent in California. This plant species is not listed by the State of California or by the Service. The species is considered rare under County Code. GY is considered endangered in the southern portion of its range, which includes Santa Cruz County.

4.4.2 Description and Taxonomy

GY originates from a fusiform tuber. The stem is slender and ranges from approximately 2-12 dm tall. The entire, linear to lanceolate leaves are pinnately compound and are 2-12 cm long. The small white flowers are arranged in loose umbels. The styles are long, slender and reflexed. The seeds are laterally flattened. This species blooms from June to July.

4.4.3 Distribution and Habitats

Generally, in Santa Cruz County, GY occurs in grasslands and coastal prairie. Known populations include the Anna Jean Cummings Park in Soquel, Sea Crest development in Soquel, lands northeast of Cabrillo College, Seascape Uplands, the UCSC campus, Wilder State Park, and the Swanton Area. With the exception of the Seascape Uplands population, GY occurs on Watsonville loam, 2-15% slope.

4.4.4 Occurrence at the Project Site and Vicinity

GY occurs within prairie habitat on the knoll portion of the Santa Cruz Gardens Unit 12 property. The species was documented in 1991 with approximately 6, 226 individuals. Similar numbers were documented in 1993. In 1998, approximately 5,328 individuals were documented within sixteen colonies. Approximately 31 individuals were observed within the 2.4-acre development area in 1993 (colonies D, G, H and I); however, a dense infestation of French broom, a non-native shrub, invaded this area. Despite recent removal of the French broom (in 2003 and 2004), no GY individuals were observed within the 2.4 development area in 1998, 2003, 2004, or 2005. The distribution of the GY colonies, based on a 2004 census, is depicted on Figure 6. The population at each colony, based on surveys conducted in 1991, 1993, 1998, and 2004 is listed on Table 2.

| Table 2. Summary of SCT and GY Population, Santa Cruz Gardens # 12 | | | | |
|---|--|--------------------------|--------------------------|--------------------------|
| Colony | Approximate Numbers of Plants Observed by Survey Year | | | |
| | 1991¹ | 1993² | 1998³ | 2004⁴ |
| Gairdner's Yampah | | | | |
| A | 33 | 96 | 24 | 40 |
| B | 2 | 0 | 0 | 0 |
| C | 8 | 34 | 46 | 40 |
| D | 22 | 26 | 0 | 0 |
| E | 161 | 219 | 200 | 225 |
| F | 6000 _± | 6300 _± | 5,000 _± | 5,000 _± |
| G | 0 | 2 | 0 | 0 |
| H | 0 | 1 | 0 | 0 |
| I | 0 | 2 | 0 | 0 |
| J | 0 | 1 | 3 | 2 |
| K | 0 | 2 | 1 | 2 |
| L | 0 | 1 | 3 | 1 |
| M | 0 | 1 | 3 | 2 |
| N | 0 | 1 | 0 | 0 |
| O | 0 | 1 | 0 | 0 |
| P | 0 | 8 | 6 | 5 |
| Q | 0 | 1 | 0 | 0 |
| R | 0 | 33 | 21 | 26 |
| S | 0 | 2 | 2 | 1 |
| T | 0 | 2 | 2 | 3 |
| U | 0 | 1 | 14 | 5 |
| V | 0 | 1 | 0 | 0 |
| W | 0 | 1 | 0 | 0 |
| X | 0 | 0 | 2 | 1 |
| Y | 0 | 0 | 1 | 1 |
| Total of GY | 6,226_± | 6,736_± | 5,328_± | 5,354_± |
| Santa Cruz Tarplant | | | | |
| 1 | 101 | 101 _± | 0 | 0 |
| 2 | 0 | 1 | 0 | 0 |
| Total of SCT | 101 | 101_± | 0 | 0 |

Notes:

1. Habitat Restoration Group, 1991
2. Habitat Restoration Group, 1993
3. Observations by Biotic Resources Group, 1998
4. Observations by Biotic Resources Group, August and September 2004

5.0 IMPACTS AND ENVIRONMENTAL COMPLIANCE

5.1 IMPACT ASSESSMENT

Both temporary and permanent impacts to the covered species are anticipated to occur due to project-related activities. Permanent impacts to the covered species are expected to be confined to the 2.96-acre impact area and will occur during grading, excavation, and other construction activities relating to the residential development. Incidental take of the covered species as a result of these activities is expected to be limited, but for the purposes of this HCP are assumed to occur throughout the entire 2.96-acre impact area, due to the removal of 1.24 acres of coastal prairie, 0.87 acre of mixed grassland, scrub and non-native grassland, and 0.65 acre of coast live oak woodland to accommodate the residential subdivision.

Lesser, temporary impacts to the covered species are expected to occur in the 55.64-acre conservation parcel. Impacts may occur during construction of the adjacent 2.96-acre residential development through inadvertent equipment access into the conservation parcel, unauthorized recreational activities, or during habitat management and monitoring activities.

This section identifies the specific activities that could result in impacts to the OTB, SCT, and GY, as well as their habitats, during the residential construction period (Years 1-6) and during habitat management activities (Year 1-perpetuity).

5.1.1 Impacts to OTB During Residential Construction Period

Known occupied habitat of the OTB will not be directly impacted by development of the nine-lot residential subdivision, however it is possible that a small, but undetermined, number of OTB adults may wander into the impact area during grading and other construction-related activities resulting in incidental take. For example, construction activities, especially at Lots 8 and 9 that border the OTB's habitat, if conducted during the adult flight season, could cause injury, mortality or harm to the OTB if adults are attracted to bare ground at these lots. Similarly, future residential activities on Lots 8 and 9 could result in "take" if beetles established in bare soil within the backyards and these areas were later affected by landscaping or other residential backyard activities.

5.1.2 Impacts to SCT During Residential Construction Period

One colony of SCT (a previous transplant site) is situated within the development impact area. Although no individuals of SCT have been observed at this particular location in over 10 years (one individual was observed in 1993), the project identifies the salvage of this historic site (including any residual seedbank), with placement of the salvaged material into the 9.3-acre prairie/grassland management area of the conservation parcel. Despite the intent of salvaging viable seed, it is possible that the salvage operation could be unsuccessful, resulting in a permanent impact to the species. This could occur if there is no longer any viable seed within this extant colony. In addition, take of SCT could occur during the collection, transport, or placement of the salvaged materials; take could occur if existing seed stock is buried.

A second colony of SCT is located within the 9.3-acre prairie/grassland management area of the conservation parcel. Individuals of SCT could be directly impacted during the residential construction period if construction equipment, construction personnel, or others (i.e., recreational users of the area) damage occupied habitat. Damage could occur in the form of disturbance to the colony site through habitat removal or take of individuals. In addition, inadvertent impacts to SCT individuals and/or habitat could occur if construction or recreational uses cause a wildfire and fire personnel and/or their equipment is required to traverse occupied habitat.

The project will adversely affect 0.1 acres of critical habitat (historic occurrence) within the 2.96 acre development area; however the primary constituent elements at this location are significantly degraded. Soils within the impact area have been modified from past land use activities and plant species usually associated with coastal prairie (i.e., *Nassella* sp. and *Danthonia* sp.) are lacking. Implementation of the management actions within the grassland portion of the conservation parcel will preserve and enhance the remaining critical habitat within this unit.

5.1.3 Impacts to GY During Residential Construction Period

Four colonies of GY, consisting of approximately 31 individuals, have been documented within the development impact area during botanical surveys conducted in 1993. However, these individuals have not been observed during surveys conducted in 1998, 2003 or 2004. If belowground plant parts (i.e., tubers) of the GY are still viable and observable prior to construction activities, the project identifies the salvage of all individuals, with placement of the salvaged plants into the 9.3-acre prairie/grassland management area of the conservation parcel. Despite the intent of salvaging viable plants, it is possible that the salvage operation could be unsuccessful, resulting in a permanent impact to species.

Between 4,000 and 6,000 GY plants grow within the 9.3-acre prairie/grassland management area of the conservation parcel. These individuals could be directly impacted during the residential construction period if construction equipment, construction personnel, or others (i.e., recreational users of the area) damage occupied habitat. Damage could occur in the form of disturbance to plants through habitat removal or take of individuals. In addition, inadvertent impacts to GY individuals and/or habitat could occur if construction or recreational uses cause a wildfire and fire personnel and/or their equipment is required to traverse occupied habitat.

5.1.4 Impacts to Covered Species During Management of 9.3-Acre Prairie/Grassland Management Area

A small, but undetermined, number of OTBs, SCTs, and GYs may be lost outside of the impact parcel during implementation of habitat restoration and management activities conducted in the 9.3-acre prairie/grassland management area of the conservation parcel. Such losses may also occur when fencing to protect the habitat is installed or repaired, during removal of invasive, non-native plants, from authorized or unauthorized recreational access, during implementation of management actions (e.g., seasonal mowing or grazing), and during monitoring.

The County of Santa Cruz and Central Fire District has approved a 30-foot wide fire clearance requirement around the residential structures. These clearance areas do not affect occupied habitat for the covered species. Presently, the Central Fire District requires seasonal mowing of portions of the prairie/grassland management area for fuel reduction and fire prevention. In recent years a non-suction mower has been used during the non-flight season of the OTB to comply with this fire prevention requirement and to avoid adverse impacts to both burrowing and adult OTB. Inadvertent impacts to OTB individuals and/or habitat could occur if the Fire District required mowing earlier in the season (i.e., during flight season of adult OTB) or required the use of a suction-type mower, which could potentially impact OTB larvae. Despite the implementation of fire prevention measures on the site, at least two wildfires have occurred recently within occupied OTB habitat; one fire occurred in August 1994 and a second fire occurred in summer 2005. The 2005 fire occurred in/adjacent to occupied OTB habitat and it is possible that fire personnel and/or their equipment impacted OTB habitat. The fire itself is not expected to have adversely impacted OTB, as OTB individuals are in underground burrows during the summer fire season

and, as such, are protected from significant soil temperature increases. If wildfires occur in the future within the 9.3-acre prairie/grassland management area, fire personnel and/or their equipment may impact OTB habitat.

5.2 DIRECT AND INDIRECT EFFECTS

5.2.1 Direct and Indirect Effects on OTB

Direct and indirect impacts to the OTB are expected to be minimal since all of its primary area of occupied habitat will be avoided during the residential development and protected in the 9.3-acre prairie/grassland management area within the conservation parcel. In addition, a landscape buffer will be established along the edge of Lots 8 and 9 to discourage OTB from establishing on these two residential lots. The Applicant will be responsible for landscaping in these areas concurrent with site development. Nonetheless, a low level of incidental take of OTB may occur throughout the 2.96-acre impact area, particularly in those portions that support coastal prairie. Although this loss of habitat will be permanent, the applicant will permanently protect 3.56 acres of remaining coastal prairie within the 9.3-acre prairie/grassland management area in the conservation parcel, which includes the entire area known to be occupied by the OTB at the project site. The prairie located near Winkle Avenue (4.7 acres) will be located in the conservation parcel.

As discussed under Section 5.1.4, direct and indirect impacts to OTB may occur during implementation of habitat management activities within the 9.3-acre prairie/grassland management area. Such effects may include take of the species during seasonal mowing, grazing, passive recreational uses, wildfire, and monitoring.

5.2.2 Direct and Indirect Effects on SCT and GY

Direct and indirect impacts to the SCT and GY are expected to be minimal. During prior surveys, only one SCT individual (1.0 % of population) was observed growing in the impact area of an estimated 101 individuals of the SCT at the project site (1993 census). However, this individual was not observed during surveys in 1998, 2003 or 2004. Similarly, only 31 individuals (0.4%) of an estimated 6,736 individuals of GY were observed growing in the impact area (1993 census). However, these individuals have not been observed during surveys conducted in 1998, 2003 and 2004. Thus, the conservation parcel will provide habitat protection for approximately 99% of the former SCT population and 99% of the GY population at the project site. Implementation of the management actions within the grassland portion of the conservation parcel will also preserve and enhance the remaining critical habitat for SCT. As discussed under Section 5.1.2 and 5.1.3, however, SCT could be impacted if viable seed within the salvaged colony is damaged during the salvage operation or if there is no longer any viable seed within the extant colony. Take of SCT could occur during the collection, transport or placement of the salvaged materials in the mitigation site; take could occur if existing seed stock is buried. The extant SCT colony within the conservation parcel could also be impacted if management actions are unsuccessful in encouraging the germination of the seedbank, if there is no longer any viable seed within the colony, or viable seed is inadvertently damaged during habitat management activities.

5.3 CUMULATIVE EFFECTS

The properties surrounding the Santa Cruz Gardens #12 site are residential. The lots are small (less than 0.5 acre), with small, fenced backyards. These properties are all developed, such that no significant new development is likely to occur in the project vicinity. The residences closest to the OTB, SCT and GY habitat on the Santa Cruz Gardens #12 property are located along Benson Avenue, immediately south of the occupied habitats. The existing residential activities on these properties include backyard landscaping, irrigation, and picnic/BBQ uses.

Permanent, solid wood fencing separates these uses from the occupied habitat.

Neighborhood residents currently access the Santa Cruz Gardens #12 site for informal recreation. The most common use is pedestrian and dog access along the knoll; however, some bicycle use and loitering has also been documented. The Santa Cruz Gardens HCP allows for continued pedestrian access along the central knoll as long as this access is compatible with the protection and management of the OTB, SCT and GY. The HCP includes measures to control authorized uses and to discourage unauthorized uses, such as dog and bicycle use. The HCP also includes measures to remove and control invasive, non-native plant species, some of which may have originated in nearby residences. Management measures also include one controlled pedestrian access point, additional fencing to discourage dog and bicycle access, informational signs, and periodic monitoring. The HCP also allows closure of this pedestrian trail if adverse impacts to the covered species are incurred from this use.

No cumulative effects are anticipated by this project. There are no other adopted HCP's for the OTB.

5.4 EFFECTS ON CRITICAL HABITAT

Critical habitat has not been designated for the OTB, but was designated for the SCT (U.S. Fish & Wildlife Service 2001b). Since the GY is not federally listed at this time, critical habitat is not designated for this plant. Thus, of the three covered species, only critical habitat for the SCT will be affected. The Santa Cruz Gardens #12 project site is situated in the Rodeo Gulch unit of the Santa Cruz-Soquel critical habitat zone (U.S. Fish & Wildlife Service 2001b). The project will adversely affect 0.1 acre of critical habitat; however the primary constituent elements at this location are significantly degraded. Soils within the impact area have been modified from past land use activities and plant species usually associated with coastal prairie (i.e., *Nassella* sp. and *Danthonia* sp.) are lacking. Implementation of the management actions within the 9.3-acre prairie/grassland portion of the conservation parcel is intended to preserve and manage the remaining critical habitat that occurs within this unit.

6.0 QUANTIFICATION OF IMPACTS

6.1 OTB

Since there are no accurate estimates of the numbers of OTB that reside at the project site, it is not possible to quantify the exact number of individual beetles that could be taken by the removal of its habitat within the impact area or by long-term habitat management activities within the conservation parcel. For these reasons, acres of habitat will be used as a proxy to quantify incidental take of this species. Therefore we estimate any and all individuals that occur within 2.96 acres of the project area may be incidentally taken through harm, injury or mortality during construction. Incidental take of the OTB could result from removal of coastal prairie and other habitats within the impact area. In addition, OTB eggs, larvae, pupae, or adults may be taken, or directly harmed during initial grading activities or by construction equipment, vehicles, or materials. An undetermined, but limited, number of life stages of the OTB may be lost during habitat management activities within the 9.3-acre prairie/grassland management area, in particular during the removal of non-native plants, grassland management (i.e., mowing, grazing), creation of the 400 square-foot SCT transplant site, installation of salvaged GY plants, and passive recreation activities. Similarly, an undetermined, but limited number of beetles may be lost during monitoring of the covered species within the conservation parcel.

In summary, incidental take of OTB may occur as a result of activities occurring within the following areas:

- 1) Within the boundaries of the 2.96-acre impact parcel at the project site
 - a) Any construction operations including, but not limited to, use of any equipment, vegetation removal, trampling of vegetation, compaction of soils, ground disturbance, grading, or creation of dust;
 - b) Any permanent loss of habitat as a result of development of infrastructure including, but not limited to, buildings, sidewalks, roads, swimming pools, or drainage, and irrigation systems;
 - c) Any activities to manage or enhance habitat including, but not limited to, leveling ground, creating bare ground, planting vegetation, watering vegetation, or removal of exotic plant species;
- 2) Within the boundaries of the 55.64-acre conservation parcel
 - a) Any activities associated with habitat management, enhancement, or species monitoring, including but not limited to: surveys for the OTB, removal of invasive, non-native plant species, seasonal grassland mowing or grazing, installation and repair of fences or signs, patrol on foot of the parcel, passive recreational uses, implementation of erosion control, emergency wildfire containment activities, implementation of management actions for the SCT and GY or other actions required in the HCP or conservation easement.

These incidental take limits are subject to full implementation of all minimization and mitigation measures described in Section 7.0. If any of these take limits are reached, the permit holder shall immediately cease all construction and habitat management operations and contact the Service.

6.2 SCT AND GY

Recent surveys of the numbers of SCT and GY that occur within the impact area have yielded no aboveground plants; however, belowground plant parts may still be present (i.e., seedbank of SCT and tubers of GY). Based on the most recent aboveground records, the level of impact to these species is one individual SCT and 31 individuals of GY. In addition, seeds, flowers, or individuals of both plants may be directly harmed during initial grading activities or by construction equipment, vehicles, or materials.

An undetermined, but limited, number of SCT and GY may be lost during habitat management activities within the 9.3-acre prairie/grassland management area, in particular during the removal of non-native plants and grassland management (i.e., mowing, grazing). In addition, management actions specified for the SCT may be unsuccessful if there is no remaining viable seed of this species or if the viable seed is inadvertently damaged from management actions. Similarly, an undetermined, but limited number of plants may be lost during monitoring of the species within the conservation parcel.

Incidental take of listed plant species is not prohibited under the Act and, as such, the SCT and GY are not subject to levels of take under the Section 10(a)(1)(B) permit. The threatened Santa Cruz tarplant and the unlisted Gairdner's yampah are included on the permit in recognition of the conservation benefits provided for them under the Plan.

7.0 MINIMIZATION AND MITIGATION MEASURES

The following measures have been identified to minimize and mitigate potential incidental take of the OTB, SCT, and GY. The successful implementation of these measures conducted prior to, concurrent with, and following subdivision development, will enable the project to achieve its overall biological goal of the protection and management of the preserved rare plant and insect habitat and their populations

7.1 MINIMIZATION MEASURES DURING RESIDENTIAL PROJECT CONSTRUCTION

The following minimization measures will be implemented during the residential construction-related activities within the 2.96-acre residential development area. These measures are expected to be implemented during Years 1-6.

7.1.1 Construction Monitor

A person knowledgeable about the OTB, SCT, and GY and their habitats, and approved by the Service, shall be present during initial grading and excavation activities (i.e., clearing of vegetation and stripping of the surface soil layer). The monitor shall be present on site beginning with the installation of temporary fencing prior to clearing of vegetation, and shall conduct daily inspections of the project site during the initial grading period to ensure compliance with the minimization measures provided in this HCP. The monitor will also periodically visit the project site throughout the construction period to insure that impacts to the project site are consistent with the project description of this HCP. The monitor shall have authority to immediately stop any activity that is not in compliance with this HCP, and to order any reasonable measure to avoid the OTB, SCT, and GY.

7.1.2 Delineation of Impact Area

Prior to the initiation of construction, the permittee, in conjunction with the construction monitor, will install a permanent fence along the boundaries of the residential development area and post warning signs to alert grader and excavator operators and other construction workers not to proceed beyond the fence. The signs will remain in place until all construction and other site improvements have been completed.

7.1.3 Construction and Operational Requirements

All project-related parking and equipment storage shall be confined to the impact area or existing paved roads in the adjacent neighborhood. Project-related vehicle traffic shall be restricted to established roads that service the impact area.

7.1.4 Contractor and Employee Orientation

The construction monitor shall conduct an orientation program for all persons who will work on-site during construction. The purpose of the orientation will be to inform equipment operators and field supervisors of the grading limits and construction activity restrictions. Also, the program will include a brief presentation on the biology of the OTB, SCT, and GY and the terms of the HCP. The construction monitor will provide these persons with photos of the three covered species.

7.1.5 Access to Project Site

The permit holder shall allow representatives from the U.S. Fish and Wildlife Service access to the project site to monitor compliance with the terms and conditions of this HCP. Also,

since the SCT is a State-listed threatened species, the permit holder shall allow representatives from the California Department of Fish & Game access to the project site to monitor compliance.

7.1.6 Habitat Protection During Construction

Prior to initial grading yet following the salvage of SCT materials, permanent fencing, including an access gate, will be erected around the perimeter of the residential development area to minimize the disturbance upon the 55.64-acre conservation parcel caused from adjacent grading and excavation activities during construction of the new homes. If deemed necessary by the construction monitor, signs will be placed on the fence at locations within 15 feet of the grading footprint, informing operators of the grading equipment of the presence of an endangered species. Signs will include the following language:

"NOTICE: SENSITIVE HABITAT AREA. GRADING PROHIBITED."

All equipment operators and field supervisors will attend a pre-construction conference to be conducted by the construction monitor. The purpose of the conference will be to inform all grading and construction workers of the presence of endangered species on and adjacent to the project site, conduct a site visit to show participants where grading can and cannot occur, identify appropriate dust control measures, inform operators of appropriate protocol should they encounter the OTB, SCT, or GY during grading and construction activities, and to advise operators of the penalties they may incur if harm to either endangered species or in unauthorized areas.

The construction monitor will routinely inspect the site and oversee activities on a regular basis during the grading. Should any violation occur, a "stop work" order will be issued immediately. The Ventura office of the Service will be contacted and the "stop work" order will remain in effect until the issue is resolved.

Because of their proximity to occupied OTB habitat, the grading of Lots 8 and 9 will be scheduled to occur between June 15th and January 15th, which is outside the flight season of the OTB (adult flight season is January 15th through June 15th), unless adult OTB activity has ceased at an earlier date as determined by surveys of a Service-approved entomologist. Furthermore, landscaping of Lots 8 and 9 will be installed prior to January 15th so no bare ground is evident during the OTB's flight season. In addition, within the boundaries of Lots 8 and 9 a landscape buffer zone, measuring 15 feet wide, will be established along the common border with the conservation parcel. Fencing, landscaping, and appurtenant structures at Lots 8 and 9 will be designed to not cast shade onto the neighboring conservation parcel.

7.1.7 Salvage of SCT and GY

Sample soil borings will be taken prior to finalization of the SCT and GY receiver sites. Borings will be made to a depth of 10-18" (depending upon the soil conditions) to confirm that suitable soil properties (i.e., presence of Watsonville loam) are present. The receiver sites will be identified and marked in the field with plastic temporary fencing prior to receipt of salvaged material. The preliminary receiver sites are shown on Figure 7.

In the August preceding construction, all available GY plants within the impact area (approximately 31) will be marked using flagged metal staples. The flagging and staples will be used to identify the plant locations during the plants winter dormant period. In the following December, the marked plants will be excavated, using hand labor to dig up the plant roots and the surrounding soil. Efforts will be made to keep the rootball and soil intact. Each plant will be placed into a 1-gallon container and watered. The salvaged plants will be transplanted into the

designated transplant receiver sites within the 9.3-acre prairie/grassland management area within 2 days of salvage. Standard planting techniques will be employed. Installed transplants will be watered-in and flagged for purposes of monitoring plant growth and survival in the subsequent summer. All salvage and transplant work will occur prior to January 15th, which is the beginning of the adult OTB flight season.

In September or October preceding construction, soil and seedbank materials from the approximately 400 square-foot historic tarplant site will be salvaged and transferred to the designated tarplant receiver site within the 9.3-acre prairie/grassland management area. Prior to the salvage, the approximately 400 square-foot receiver site will be prepared. The upper 1-2” of soil at the receiver site will be scraped from the site and removed from the project site. The upper 1-2” of soil from the salvage site will be scraped and deposited onto the prepared receiver site. A rubber-tire bulldozer, or similar equipment, will be used for the soil removal/salvage work. Equipment access within the management area will be limited to the existing pathway, to the greatest extent feasible. The work will be conducted prior to January 15th, so as to not occur during the adult OTB flight season. The SCT receiver site is located within an area considered a low use area for the OTB. The receiver site will be surrounded by plastic construction fencing (with T-posts) to provide temporary protection of the treated area. The SCT salvage and receiver areas are depicted on Figure 7.

7.1.8 Construction Grading

Although the impact area of the project site is fairly level, some grading for the new homes and other amenities will occur. Grading and backfill operations will be conducted to avoid slope failures in neighboring, protected habitat areas of the conservation parcel. A permanent fence will be constructed around the perimeter of the residential development area at the project site. Heavy equipment will not be permitted beyond the fence. Equipment operators will be informed of the reasons for installation of the fence and will be required to stop work and notify the project’s construction monitor and engineer immediately should activities threaten to impact the mitigation area of the project site.

7.2 MITIGATION MEASURES

The intent of the mitigation program is to establish native plant communities that will be self-perpetuating and support the OTB, SCT, and GY. The following mitigation measures will occur within the 9.3-acre prairie/grassland management within the 55.64-acre conservation parcel.

7.2.1 Mitigation Site Location

The applicant wishes to record a perpetual conservation easement on 55.64 acres. To offset the anticipated impacts to the OTB, SCT, and GY, and their habitats at their project site, the Applicant will preserve and ensure that 9.3 acres that are occupied by the covered species within the 55.64 acre area and the two landscape easement areas on Lots 8 and 9 will be actively managed for the benefit of the covered species. The conservation easement will be held by the CNLM. As described in Section 4.0, all three covered species have been observed within a 9.3-acre prairie/grassland portion of the conservation parcel.

As detailed in Table 1 and illustrated in Figure 5, the conservation parcel site consists of approx. 8.26 acres of coastal prairie, approx. 6.73 acres of non-native grassland, mixed grassland, and mixed grassland and scrub, approx. 28.75 acres of coast live oak woodland and eucalyptus groves, and approx. 11.5 acres of riparian woodland. The site also includes invasive, non-native plant species which will be removed from the 9.3-acre prairie/grassland management area. Young

eucalyptus trees (≤ 6 -inch dbh) that establish outside of the existing grove will be removed. A legal description of the conservation parcel is an attachment to the conservation easement contained in Appendix A.

7.2.2 Conservation Easement

The HOA will retain fee title of the 58.6 acres and all necessary landscape easements of portions of Lots 8 and 9 to mitigate for the loss of 2.96 acres of degraded habitat within the impact area of their project site. CNLM, California Department of Fish and Game (CDFG), or another entity approved by USFWS and CDFG with language approved by USFWS and CDFG, will hold the conservation easement prior to project impacts. As described in the attached conservation easement (Appendix A), the Applicant is the grantor of the easement and CNLM is the grantee of the easement.

Briefly, the terms of this easement can be summarized by stating that grantor grants to the grantee a perpetual conservation easement for the purpose of assuring that the easement property (i.e., the conservation parcel at the Santa Cruz Gardens #12 project site) will be retained forever in a natural and open space condition to protect the biological resources there. Furthermore, the CNLM, CDFG, or another CDFG and USFWS approved entity is granted various rights and assumes obligations to protect the 9.3-acre prairie/grassland management area within the conservation parcel and to manage this area to benefit the covered species. The conservation easement prohibits activities within the 9.3-acre prairie/grassland management area that are incompatible with the preservation and management efforts for the covered species. An existing foot trail that traverses the 9.3-acre prairie/grassland management area will be retained as long as there are no adverse impacts to the covered species or their habitats from trail use.

7.2.3 Habitat Protection, Management, and Monitoring Activities

In addition to donating dedicating a conservation easement on the conservation parcel and portions of Lots 8 and 9, the permittees, HOA and CNLM (CDFG or another approved entity) will insure that the 9.3-acre prairie/grassland management area within the conservation parcel is managed to benefit the OTB, SCT, and GY in perpetuity. The permittees have been advised by their environmental consultants and the Service that the habitat at the conservation parcel supports the covered species, but that the quality of the habitat can be improved to benefit all three covered species. Best management plan actions have been developed that avoid or minimize impact to the OTB during project implementation

A Property Analysis Record (“PAR”) was completed by the CNLM to determine the costs of initial management and compliance activities as well as the yearly fees necessary to fund perpetual activities within the 9.3-acre management area of the conservation parcel. A copy of the PAR (Sections 8, 9 and 10) is presented in Appendix B. The permittee has provided funding to the CNLM to carry out the following management activities, as identified in the PAR, in perpetuity:

The following Management Actions will be completed in Year 1:

- 1) Installation of fencing (4-5 ft. tall) and maintenance access gate to protect the 9.3-acre management area.
- 2) Installation of four (4) signs along the boundaries of the 9.3-acre management area and six (6) signs along the boundaries of the conservation parcel and elsewhere to inform area residents and others on the purpose of the management area and conservation parcel and all use restrictions.
- 3) Salvage and transplant of available GT plants from the development area.

- 4) Salvage and relocation of SCT soils and seedbank from the development area.
- 5) In October of Year 1, hand scrape and hoe the extant SCT colony to remove all herbaceous plant cover and scarify the soil surface a minimum of one inch in an attempt to revitalize the seedbed. Place removed plant material down slope of colony for temporary erosion control.
- 6) Removal of invasive, non-native plant occurrences from the 9.3-acre prairie/grassland management area and a 100-foot wide band of hillside that extends south and west from the management area. Invasive plant occurrences (as of summer 2005) to be removed include:
 - a) Approximately 12 young eucalyptus trees and one large eucalyptus tree (trees cut to base, materials removed and stumps treated with herbicide).
 - b) Approximately 20 Monterey pines (trees cut to base, materials removed and stumps treated with herbicide).
 - c) Approximately 75 cotoneaster shrubs (shrubs cut to base, materials removed and stumps treated with herbicide).
 - d) Approximately 4,000 square feet of French broom (plants pulled and/or cut, materials removed from site).
 - e) Approximately 10 pampas grass plants (plants removed).

The following Management Actions will occur in perpetuity:

- 1) Conduct quarterly site inspections of the 9.3-acre prairie/grassland management area and an annual visit to other areas of the 55.64-acre conservation parcel to document any significant impact to habitats from unauthorized access/ trespass, condition of fencing, and inspections of any necessary repairs. If impacts from trespassing (e.g., motorbike riders, mountain bike riders, hikers) is occurring, CNLM will post additional signs, fencing, or install other barriers (i.e., logs, brush) to discourage these unauthorized activities.
- 2) Once a year, remove any illegally dumped items and on-going debris removal from the 55.64-acre conservation parcel; if such debris originates from the 9-lot subdivision, the HOA shall reimburse CNLM for the removal costs.
- 3) Within the 9.3-acre prairie/grassland management area, implement the following:
 - a) Remove/control the growth of invasive, non-native plants by appropriate eradication procedures, with efforts focused on, but not limited to eucalyptus, Monterey pine, acacia, French broom, cotoneaster, pampas grass, and invasive, non-native annual or perennial grasses/ forbs. Pesticides (their use is not a covered activity under this HCP) use will be limited to topical applications on stumps of non-native trees to avoid airborne drift and potential impacts to OTB. Invasive, non-native plant species will be controlled so that by the end of Year 6, they comprise less than 5% of total plant cover, as determined by visual estimate.
- 4) Implement seasonal mowing or grazing to manage the grassland/prairie habitat to promote the growth of prairie dependent plant species (including the extant and transplanted SCT and GY), maintain areas of barren or sparsely-vegetated ground for OTB, reduce the cover of non-native grasses/forbs (no more 25% relative coverage based on an average of randomly-selected sampling points), and provide fire prevention. If mowing is used as a management tool, mow the OTB habitat areas, as depicted on Figure 6, immediately after the OTB adult flight season (i.e., typically after June 15th). Mow herbaceous plant cover to approximately four (4) inches in height. Mowing within OTB habitat shall be limited to a non-suction type mower. Mow surrounding grassland areas (with the exception of the extant and transplanted SCT areas) between June 15th and July 1 to a height of 6 inches to control non-native

plant growth and to meet fire prevention requirements. Mowing at a 6-inch height is not expected to adversely affect GY or SCT. If grazing is used as a management tool, grazing should occur after seed set of the SCT and GY, yet prior to the adult flight season of the OTB. Grazing would be acceptable in October or November, which is after seed release of GY and SCT yet prior to winter rains and outside the adult OTB flight season. Grazing at this time may not meet fire prevention requirements. If necessary for suitable fire protection, a firebreak, measuring 25 feet in width will be maintained by mowing (disking is not allowed). Firebreak mowing will be conducted under the direction of a qualified botanist/revegetation specialist to ensure that sensitive botanical resources are not adversely affected by the mowing. The botanist/revegetation specialist will confer with the project entomologist on specific site conditions relating to the management of areas for the Ohlone tiger beetle, such as timing of mowing, height of grasses, and other revegetation actions.

- 5) In July of Year 2 census the SCT colonies to document presence of tarplant. If tarplants are present at the extant colony, extend the scrape and hoe treatment area 50 feet outward of the Year 1 treatment area to create additional suitable habitat. If no individuals of SCT are detected in the summer of Year 3, the extant colony site will be prepared to receive SCT seeds from an off-site locality. In summer of Year 3, seeds from an extant colony will be collected and in October of the same year hand-broadcast onto the prepared seedbed (i.e., soil surface hoed/raked to depth of 1 inch). A minimum of 200 seeds will be collected from an extant site, with site preference (in order of preference, based on similarity of site conditions and substrates) are Santa Cruz Amory (DeLaveaga Park), Twin Lakes State Beach, or Fairway Drive/Coyote Canyon and subject to approval from the applicable landowners. In October of Year 3, the seeds will be broadcast onto the site. The seeded area will be monitored in Year 4 for individuals of SCT. The long-term goal for the CST colony is to meet or exceed the population levels recorded from 1991 (101 individuals).
- 6) In August of every year, document the continued presence of GY within the management area by a census of the population, with the long-term goal to maintain between 4,000 and 6,000 individuals.
- 7) At each quarterly site visit, document the condition of the management area in photographs. Use the photographs to document changes in vegetation and other site conditions.
- 8) At yearly intervals, document the continued presence of the OTB within the management area through presence/absence information and population estimates. During Year 1, initiate a 6-year study to establish the baseline population of adults and larval burrows. At Year 6, evaluate the population data, and develop a seasonal population curve. Beginning in Year 7, implement yearly adult population counts.

The permittee has been advised that by implementing these activities at the frequencies listed above, habitat that presently supports the covered species will likely be maintained in its current condition or improved as a result of increased management activities.

7.2.4 Species Monitoring Activities

Presently, the 9.3-acre prairie/grassland management area with the conservation parcel supports coastal prairie and mixed grassland-scrub mosaic habitats that support populations of the OTB, SCT and GY. Management activities will be performed to maintain the quality of habitat within this area to benefit the covered species. For this reason, monitoring of the covered species will be an important component of the mitigation efforts to demonstrate that the management actions maintain these species, to document the success of the mitigation program, and to identify

remedial actions or contingency measures if the planned mitigation activities do not meet the biological goals. Therefore, the permittee will provide funds to the CNLM for the maintenance, protection, management, and monitoring of covered species within the 9.3-acre prairie/grassland management area in perpetuity. Monitoring of the covered species during the life of the permit will provide data to assure that the biological goals of this HCP will be met and will provide additional information to the Service regarding the distribution and abundance of the OTB, SCT, and GY.

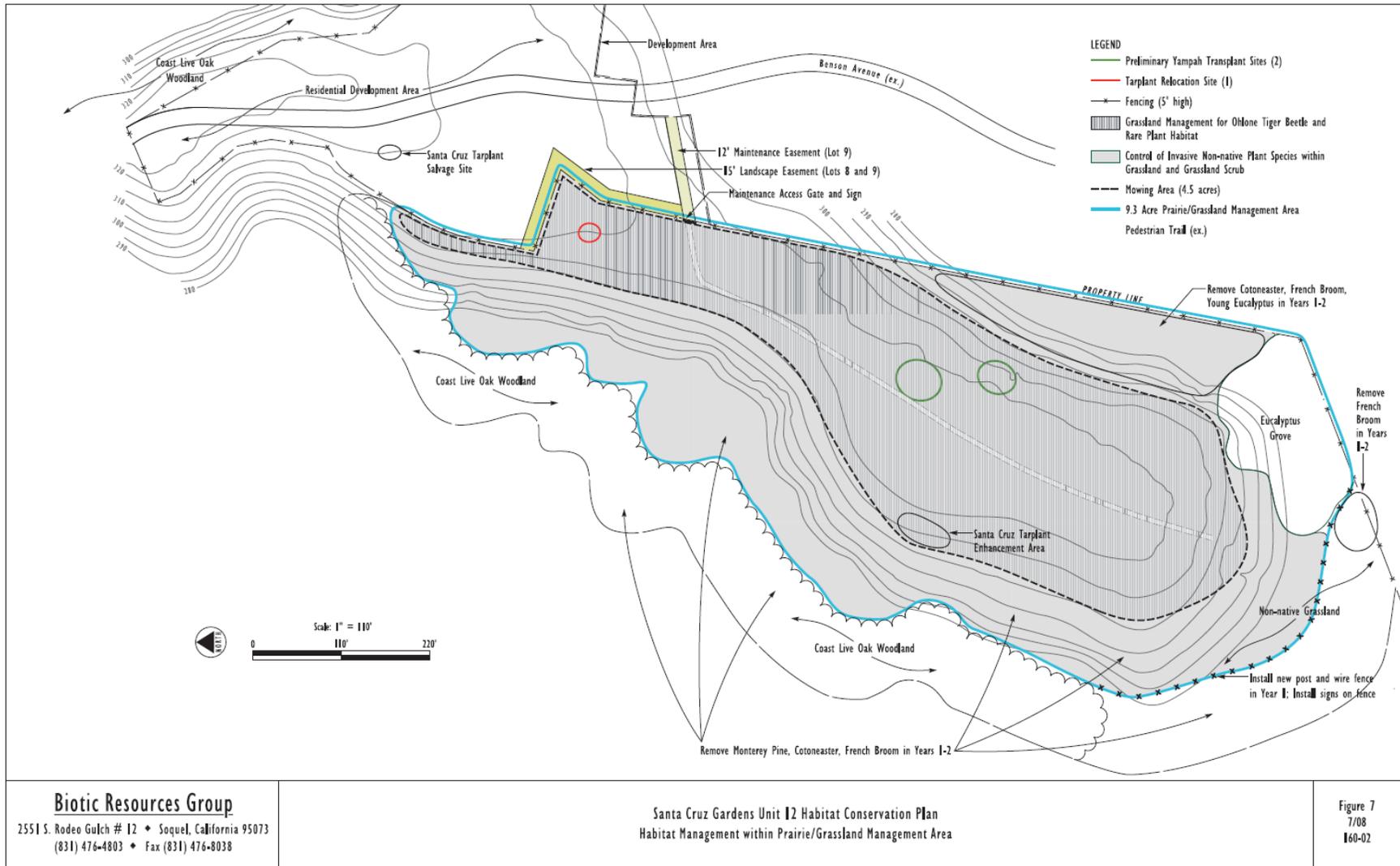
The individual(s) who conduct the OTB monitoring for the Applicant and/or the CNLM will perform this work under the take permit issued to the permittee. No permits are necessary to monitor the SCT and GY.

7.2.4.1 Ohlone Tiger Beetle

Existing baseline data on the OTB consists primarily of presence-absence information, which was used to identify occupied habitat. Prior surveys for the OTB have not included accurate population estimates of any life stage of the beetle, so during Year 1-6, baseline population data will be gathered for OTB adult and larval burrows. These population estimates will be used to determine what the normal range of population fluctuation is versus a decline that may be due to deteriorating habitat conditions or an increase due to improving habitat conditions. Baseline numbers will be obtained for both adults and larval burrows, because at this time it is not known which life stage may provide a more reliable indication of how the OTB population is faring.

In order to produce population data that will support management thresholds, monitoring of the OTB will occur during its adult and larval life stages. Adults of the OTB are active for about six weeks, usually between mid January and mid May. Adult activity occurs during the warmest part of the day. During the adult activity season, adult numbers will be monitored by transect counts in areas of the 9.3-acre prairie/grassland management area that are known to support OTB. One or more transects will be established and counts of adults will be performed on days when weather conditions are appropriate for adult OTB activity. A GPS will be used to record the positional coordinates of every adult OTB that is observed. Transect counts, conducted at approximately 5-7 day intervals from the beginning through the end of the annual adult activity period will provide information on the seasonal occurrence of the beetle, its population curve, and the total numbers per season. If males and females can be accurately distinguished during the counts, then these factors can be estimated for each sex, otherwise both sexes will be combined to estimate these parameters.

In addition, monitoring of larval and adult burrows will be conducted in conjunction with monitoring of the habitat features (e.g., extent of bare ground, weed cover vs. cover of bunch grasses) to detect and correlate OTB responses to habitat management actions. Egg and larval burrows will be marked as they are initially detected in the field using a numbered aluminum tag that is nailed to the ground. During subsequent beetle monitoring visits, the numbered burrows will be checked to determine occupancy by the OTB and diameters at the surface of the soil. Any obvious signs of mortality or damage to burrows will also be recorded. Monitoring of eggs and first instar larvae will continue at weekly intervals during the adult activity period. Monitoring of second and third instar larvae will continue throughout the summer and fall to assess survivorship and to identify any potential impacts of management activities. As new larval burrows are detected they will be tagged like the egg burrows. Site visits will occur at monthly intervals until larval activity ceases with the first ground-soaking rains. The numbers and locations of observed OTB life stages and burrows will be mapped. Accumulation of the observations throughout the



year will provide information on survival rates, as well as the timing and duration of immature stages.

Data gathered during Years 1-6 will be used to develop a seasonal population curve and to estimate the OTB's annual adult population and survival rates. The field surveys to document OTB presence on the site in conjunction with monitoring the habitat features (e.g., extent of bare ground, weed cover vs. cover of bunch grasses) will be used to detect and correlate OTB responses to habitat management actions.

Beginning in Year 7, adult population counts will be conducted for the OTB, following the protocol implemented in Years 1-6. Field surveys will be conducted during the adult activity period to document the OTB adult population. In conjunction with monitoring the habitat features (e.g., extent of bare ground, weed cover vs. cover of bunch grasses), the yearly population data will be used to detect and correlate OTB responses to habitat management actions. Management thresholds will serve as a guide to adjusting management actions for OTB within the 9.3-acre prairie/grassland management area. Because field information on the OTB is limited, these thresholds can be modified as more information on the species is gathered.

Preliminary Management Thresholds for OTB:

1. Increase intensity of mowing or grazing if any of the following preliminary thresholds are measured in vegetation transects or estimated within the occupied OTB habitat:
 - a. More than 25% increase in coverage by annual grasses or low-growing herbaceous species within occupied OTB habitat
 - b. Establishment of any invasive, non-native forbs within bare areas of occupied OTB habitat.
2. Decrease intensity of mowing or grazing if any of the following preliminary thresholds are measured in vegetation transects or estimated within the occupied OTB habitat:
 - a. More than 25% increase in bare ground within grassland area.

7.2.4.2 Santa Cruz Tarplant and Gairdner's Yampah

Existing baseline data on the SCT consists of population data from 1993, which was the last date aboveground plants were documented from the site (15 years ago). At that time, one individual of SCT was documented from the salvage colony and 100 individuals from the extant colony. These data represent the highest population numbers recorded for the site, since the site was first recorded by the CNDDDB in 1983. Viable seed is still expected to be present at both sites, as in-ground seed viability for the species (ray seeds) is believed to be between 10-15 years (Bainbridge, pers. com.). Following implementation of the salvage and relocation of the impact area SCT colony and implementation of habitat management actions within the extant SCT colony in Year 1, a Year 2 survey of the colonies will be conducted to ascertain presence/absence of the species. The survey will be conducted in June and July of Year 2, wherein the number of SCT plants within each colony will be counted. If no SCTs are detected in Year 2, the habitat areas will be mowed and censused in Year 3. If no individuals of SCT are detected in Year 3, the extant colony site will be seeded with SCT seeds from an off-site locality, as discussed in Section 7.2.3. In June and July of Year 3, the seeded area will be surveyed to identify any individuals of SCT. If SCT plants are detected, population surveys will be conducted at yearly intervals. If no individuals of SCT are documented, no additional surveys for this species will be required and the species will have been determined to be extirpated from the site.

The population of GY will be documented during its peak flowering period (i.e., August). Patches of GY will be demarcated on the project base map and the population of each patch estimated

The suitability of the 9.3-acre prairie/grassland management area for the SCT and GY will be evaluated during the summer of each year. The yearly population data will be used to detect and correlate SCT and GY responses to habitat management actions. Management thresholds will serve as a guide to adjusting management actions for SCT and GY within the 9.3-acre prairie/grassland management area. Because field information on the SCT and GY is limited, these thresholds can be modified as more information on the species is gathered.

Preliminary Management Thresholds for SCT and GY:

1. Increase intensity of mowing, grazing, or other management action if any of the following preliminary thresholds are measured in populations of GY:
 - a) More than 25% decrease in population of GY from 2004 level.
 - b) Establishment of any invasive, non-native trees, shrubs or sub shrubs within areas occupied by GY.
2. Increase intensity of mowing, grazing or other management action (i.e., hand scraping the soil surface) if any of the following preliminary thresholds are measured in populations of SCT:
 - a) More than 25% decrease in population of SCT from Year 2 baseline level within extant and salvaged colony.
 - b) No germinated individuals for two consecutive years and coverage by annual grasses has not increased.
 - c) Establishment of any invasive, non-native species within areas occupied by SCT.

7.2.4.3 Annual Monitoring Report

An annual monitoring report will be prepared by the Applicant in Years 1 and 2 and by the CNLM thereafter for submission to the Service, the permittees, CDFG, and the County of Santa Cruz. The responsibility for preparing the annual monitoring report and the information that will be included in the report are described in Section 8.6.2.

7.3 SCHEDULE FOR IMPLEMENTATION

Upon issuance of the incidental take permit, the various minimization and mitigation measures described in the prior sections of this HCP will occur at the project site in both the impact area as well as the adjacent conservation parcel. The various management techniques described in this document will be implemented according to the schedule detailed in Table 4.

7.3.1 Years 1 and 2

The conservation parcel will be protected permanently under a conservation easement (deeded to the CNLM) before any construction activities at the project site commence. Soil and seedbank collection for the SCT and salvage of all available GY plants from the impact area will occur prior to grading within the impact area. Permanent fencing will be erected around the perimeter of the impact area to protect the 9.3-acre prairie/grassland management area of the conservation parcel prior to the start of grading at the impact area. The construction monitor will assist in staking the limit of grading and the alignment of the fence. This monitor will conduct pre-construction meetings with grading and construction personnel to inform them about the presence of special status species at the project site and appropriate protocol should the OTB, SCT, or GY be encountered. The monitor will periodically visit the site to insure that all grading and construction activities comply with the parameters established in this HCP. The monitor will

also implement the Year 1 and 2 monitoring of OTB, SCT and GY within the 9.3-acre prairie/grassland management area, oversee the landscaping of the conservation easements on Lots 8 and 9 and oversee the initial removal of invasive, non-native plant species from the management area and surrounding 100-foot zone.

During Years 1 and 2, an annual report will be prepared by the Applicant and submitted to the CNLM, the Service, CDFG and the County of Santa Cruz. This report will describe the monitoring activities performed, the results, and recommendations for any necessary remedial actions to achieve the goals of the HCP. Reporting requirements are discussed further in Section 8.6.

7.3.2 Years 3 to Perpetuity

Habitat management activities will focus upon re-establishment of the SCT, maintenance of the coastal prairie/grassland mosaic to benefit the covered species, and control of invasive, non-native plant species within the 9.3-acre prairie/grassland management area. Control of invasive, non-native plant species within the 9.3-acre prairie/grassland management area will be achieved by manual removal methods appropriate for each target invasive species, and habitat management techniques, such as seasonal mowing or grazing to favor the indigenous plant species. Eucalyptus, acacia, Monterey pine, French broom, cotoneaster, pampas grass and other invasive plant species will be removed from the 9.3-acre prairie/grassland management areas of the conservation parcel. To some degree, these techniques will be experimental, especially during the initial years of the habitat management efforts to identify the particular methods plus their timing(s) and intensities to achieve the biological goals of this HCP in a cost-effective manner and, if necessary, identify appropriate remedial actions.

Annual monitoring of the conservation parcel and the status of the three covered species within the 9.3-acre prairie/grassland management area will occur in perpetuity. During Years 3-6, field surveys will be conducted during the OTB adult activity period and egg/burrow stage to establish a seasonal population curve and estimate the OTB's annual adult population. OTB presence on the site in conjunction with monitoring the habitat features (i.e., extent of bare ground, weed cover vs. cover of bunch grasses, etc.) will be used to detect and correlate OTB responses to habitat management actions. Monitoring of SCT and GY will be conducted during the peak flowering periods wherein the plant populations will be recorded. SCT and GY population data in conjunction with the amount of plant cover will be used to detect and correlate SCT and GY responses to habitat management actions.

From Years 3 through Year 10, an annual report will be prepared by the CNLM and submitted to the Service, CDFG, the County of Santa Cruz, and the permittee (i.e., Applicant and/or HOA). This report will describe the monitoring activities performed, the results, and recommendations for any necessary remedial actions to achieve the goals of the HCP. Reporting requirements are discussed further in Section 8.6.

Table 3. Implementation Schedule for Habitat Management Activities at the Santa Cruz Gardens #12 Project Site (Years 1-perpetuity)

| Management Action | Year 0 | | | | Year 1 | | | | Years 2-Perpetuity | | | |
|---|--------|---|---|---|--------|---|---|---|--------------------|---|---|---|
| | W | S | S | F | W | S | S | F | W | S | S | F |
| Mark Available GY Plants for Salvage (August)* | | | ■ | | | | | | | | | |
| Install Permanent Fencing, Access Gate and Signs around Impact Parcel | | | | ■ | | | | | | | | |
| Install Signs around Portions of Conservation Parcel | | | | ■ | | | | | | | | |
| Transplant GY into Conservation Parcel (prior to January 15 th) | | | | ■ | | | | | | | | |
| Prepare SCT Receiver Site, Salvage and Transplant Soil and Seedbank Materials of SCT, Install Temporary Fencing | | | | ■ | | | | | | | | |
| Scrape and Hoe Extant SCT Colony | | | | ■ | | | | | | | | |
| Monitor grading of 2.4-acre development area (April – October) | | | | | ■ | ■ | ■ | ■ | | | | |
| Monitor grading and landscaping of Lots 8 and 9 (June 15 – January 15) | | | | | | | ■ | ■ | | | | |
| Implement Seasonal Mowing or Grazing of Grassland within Conservation Parcel (after June 15 th) | | | | | | | ■ | | | | ■ | |
| Remove Invasive, Non-Native Plant Species from 9.3-acre Prairie/Grassland Management Area and 100-foot Zone | | | | ■ | | ■ | | | | ■ | | |
| Monitoring for OTB (Population Survey in Years 1-6; Adult Survey after Year 6) | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Monitoring for SCT and GY | | | | | | | ■ | | | | ■ | |
| Removal of Young Eucalyptus Trees that Spread from Existing Groves | | | | | | | | | | | ■ | |

Note: W= Winter, S=Spring, S=Summer, F=Fall

* - No GY plants were observed within the impact area in 2004.

8.0 PLAN IMPLEMENTATION

8.1 BIOLOGICAL GOALS AND OBJECTIVES

The primary goals and objectives of this HCP are as follows:

Goal 1: Permanently preserve upland habitats for Ohlone tiger beetle, Santa Cruz tarplant and Gairdner's yampah.

Objective 1: Establish a Conservation Easement on 55.64 acres of the property that includes a 9.3-acre prairie/grassland management area. The 9.3-acre management area shall be managed in perpetuity by the CNLM.

Goal 2: Manage conserved lands to benefit the OTB, SCT, and GY.

Objective 2: Remove invasive, non-native plant species annually from the 9.3-acre prairie/grassland management area, install protective fencing to prohibit unauthorized access to the 9.3-acre coastal prairie/grassland management area, implement a managed mowing/grazing regime, remove invasive, non-native plants that establish within the management area.

Goal 3: Implement actions that will protect SCT and GY during construction activities.

Objective 3A: Salvage soil and seedbank materials from an historic SCT colony located within the development area, salvage GY plants, and distribute these materials (and replant GY plants) in the 9.3-acre prairie/grassland management area.

Objective 3B: Conduct an orientation program for all persons who will work on-site. During construction activities, demarcate construction boundaries.

Goal 4: Determine status of OTB, SCT and GY populations at the Santa Cruz Gardens site.

Objective 4: Conduct presence/absence surveys and population estimates of OTB, SCT, and GY at the Santa Cruz Gardens site by conducting annual surveys for these species within the management area.

8.2 IDENTIFICATION OF PROJECT REPRESENTATIVE

Prior to initiating ground-disturbing activities, the permittees shall designate a representative responsible for communications with the Service and for overseeing compliance with the Section 10(a)(1)(B) permit. Initially, the designated representative is Brent Aasen, Equus Group, 1120 Second Street, Brentwood, CA 94513, phone (925) 634-6023 (voice), equusba@goldstate.net. If a substitute representative is designated, the Service shall be notified in writing of the representative's name and contact information.

8.3 IDENTIFICATION OF CONSTRUCTION AND BIOLOGICAL MONITORS

Subject to approval by the Service, Kathleen Lyons will be the construction monitor for this project during Years 1-2. She can be contacted at the Biotic Resources Group, 2551 S. Rodeo Gulch Road #12, Soquel, CA 95073, phone (831) 476-4803, fax (831) 476-8038, and via email at brg@cruzio.com. Dr. Richard Arnold will assist Ms. Lyons on matters pertaining to the OTB. He can be contacted at Entomological Consulting Services, Ltd., 104 Mountain View Court, Pleasant Hill, CA 94523, phone (925) 825-3784, fax (925) 827-1809, and via email at bugdctr@attbi.com.

The designated land management agency is the Center for Natural Lands Management. The CNLM will assume monitoring and management responsibilities after Year 2. The contact for CNLM is Edward Stanton, Center for Natural Lands Management, 425 E. Alvarado St., Suite H, Fallbrook, CA 20028, phone 760-731-7790, fax 760-731-7791, and email at estanton@cnlm.org.

8.4 RESPONSIBILITIES

The permittees understand that they are responsible for implementing this HCP in accordance with the specifications for mitigation. The permittees will satisfy their mitigation responsibilities by permanently protecting 55.64 acres of habitat, including 9.3 acres supporting the three covered species on the neighboring conservation parcel and providing the funds described in the PAR analysis (Appendix B) to CNLM to perform the various habitat protection, management, restoration, and monitoring activities.

All habitats within the conservation parcel will be protected via a conservation easement (Appendix A), held by the CNLM, which will assume all responsibilities for annual monitoring and reporting, as described herein. It will also complete all obligations assigned to it within the Section 10 permit and the HCP.

8.5 PLAN DURATION

The Applicant seeks a permit from the Service for six years to cover those activities associated with the incidental take of OTB on the 2.96-acre impact area at their project site and implementation of long-term habitat management activities within the 55.64-acre conservation parcel. This period is necessary because all nine new homes may not be built simultaneously and initial management and monitoring of the covered species within the 9.3-acre prairie/grassland management area may result in take of the species.

8.6 REPORTING

8.6.1 Post-Construction Compliance Report

A post-construction compliance report prepared by the construction monitor shall be forwarded to the CNLM, Service (Ventura office), CDFG (Monterey office), and County of Santa Cruz (Planning Department) within 60 calendar days of the completion of construction. This report shall provide the following information:

1. Dates that construction occurred;
2. Pertinent information concerning the permittee's success in meeting the project's mitigation measures;
3. An explanation of failure to meet such measures, if any;
4. Known project effects on Federally-listed species, if any;
5. Occurrences of incidental take of Federally listed species, if any; and
6. Other pertinent information.

8.6.2 Annual Mitigation Monitoring Reports

Site inspections, non-native plant removal/control, re-establishment of salvaged plant species, habitat management activities, fence repairs, and monitoring for the OTB, SCT, and GY will occur annually within the 9.3-acre prairie/grassland management area of the conservation parcel in perpetuity. An annual monitoring report will be prepared by the Applicant in Years 1 and 2, with monitoring reports submitted to the CNLM (or other approved entity), Service (Ventura office), CDFG (Monterey office), and County of Santa Cruz (Planning Department) by December 31st of the monitoring year. During Years 3-10, monitoring reports will be prepared annually by the CNLM (or other approved entity), and submitted to the Service (Ventura office), CDFG (Monterey office), and County of Santa Cruz (Planning Department) by December 31st of the monitoring year. This report shall include:

1. An assessment of the condition of the habitat within the 9.3-acre prairie/grassland management area;
2. Dates and results of OTB monitoring;
3. Dates and results of SCT and GY monitoring;
4. A brief discussion of other monitoring efforts that occurred during the past year and whether habitat management goals are being achieved;
5. Incidental take occurrences;
6. Identify any problems and any corrective measures undertaken to insure that the biological goals are met;
7. Recommendations to solve existing or anticipated problems;
8. Copies of any photos used for photo-documentation purposes; and
9. A copy of the Letter of Credit reflecting the fund balance for the given year to implement the HCP.

8.7 FUNDING

The permittee will provide all funding for implementation of the HCP, including take avoidance, minimization, and mitigation measures, and monitoring, and reporting as specified in this HCP. The permittee understands that a failure to provide adequate funding, and a consequent failure to implement the terms of this HCP in full, could result in temporary permit suspension or permit revocation.

All funds required for the habitat preservation, as well as the initial maintenance and monitoring activities will be provided by the permittee. The permittees will record a conservation easement, to be held by the CNLM, to protect the 55.64-acre conservation parcel and portions of Lots 8 and 9 in perpetuity.

The permittee will provide all funds required for habitat management and monitoring in perpetuity in the form of an endowment payable to the CNLM (or other approved entity), holder of the conservation easement. Habitat management activities within the 9.3-acre prairie/grassland management area of the conservation parcel will include, but will not be limited to: site inspections, removal and control of invasive, non-native plant species, seasonal mowing or grazing of the grassland, fence repairs, monitoring of the OTB, SCT, and GY, and preparation of annual reports of such activities, as necessary to maintain the management area in conditions suitable for the protection of its habitat value in perpetuity.

The permittee and CNLM has established a budget to fund all tasks described in this HCP. The budget identifies the Initial and Capital costs during project construction (i.e., construction monitoring, plant salvage and transplanting) and for the first 6 years of habitat management (i.e., Years 1-6). The budget also identifies the cost of Ongoing Tasks and identifies the amount necessary to fund these management activities. Funding of the permit term management and monitoring activities will be guaranteed through the posting of a letter of credit in favor of the USFWS. The letter of credit for the first 6 years of HCP implementation will be for \$227,135 and is included in Appendix C of this document. The letter of credit will be renewed annually and reduced by the amount of the cost of tasks accomplished during the previous year. The renewed Letter of Credit will be included in the annual report.

Estimated costs for the implementation, habitat maintenance, and monitoring activities described in this HCP during the 6-year term of the ITP (Years 1-6) are summarized in Table 4 and listed in Section 8 of the PAR (Appendix B). The estimated cost for implementation tasks for

habitat management and species monitoring during Years 1-6 (i.e., Initial & Capital Tasks and Costs) is \$227,135.

Table 4. Summary of Tasks and Costs During 6-Year Term of the ITP

| Task | Unit Cost | Interval/Term | Total Cost |
|--|------------------|----------------------|-------------------|
| Site Construction and Maintenance | | | |
| Salvage GY Plant Materials | \$1,420 | 1 | \$1,420 |
| Salvage SCT Plant Materials (includes staff time and materials for flagging plants, and construction worker orientation) | \$2,350 | 2 | \$4,700 |
| Fencing | \$5,140 | 1 | \$5,140 |
| Fence Maintenance | \$400 | 2 | \$800 |
| Subtotal | | | \$12,060 |
| Biotic Surveys | | | |
| Project Management | \$260 | 3 | \$780 |
| Plant Surveys | \$1,140 | 3 | \$3,420 |
| OTB Surveys (includes construction worker orientation) | \$12,500 | 6 | \$75,000 |
| Planning | \$520 | 3 | \$1,560 |
| Adaptive Management Allowance | \$1,000 | 3 | \$3,000 |
| Subtotal | | | \$83,760 |
| Habitat Restoration and Maintenance | | | |
| Revitalize SCT | \$1,180 | 2 | \$2,360 |
| Invasive Plant Removal, Initial | \$25,025 | 1 | \$25,025 |
| Invasive Plant Removal, Follow-up | \$2,450 | 5 | \$12,250 |
| Prairie/Grassland Mowing | \$900 | 3 | \$2,700 |
| Subtotal | | | \$42,335 |
| Patrolling, Monitoring, Outreach | | | |
| Trespass Control | \$2,980 | 3 | \$8,940 |
| Signs | \$770 | 1 | \$770 |
| Meetings with HOA | \$520 | 1 | \$520 |
| Trash Collection and Disposal | \$280 | 3 | \$840 |
| Subtotal | | | \$11,070 |
| Reporting, Equipment, Operations | | | |
| Works Plan, Annuals Reports | \$1,950 | 3 | \$5,850 |
| Operation Fees, Mileage | \$11,446 | 1 | \$11,446 |
| Contingency and Administration | | | \$60,614 |
| Subtotal | | | \$77,910 |
| TOTAL | \$72,231 | | \$227,135 |

The estimated cost for on-going maintenance and monitoring (beginning in Year 7) are summarized in Table 5 and Section 9 of the PAR (Appendix B). The annual on-going cost for species monitoring and habitat maintenance tasks beginning in Year 7 (i.e., Ongoing Tasks and Costs) is \$21,642. In order to generate the aforementioned \$21,642 per year, an endowment of \$480,933 will be established within the first year of permit issuance to generate 4.5 % interest per year yielding \$21,642. This cost analysis is presented in Section 10 of the PAR (Appendix B). In addition, the PAR factors in over 10 percent of the total for contingencies. Since costs associated with changed circumstances of \$1,520 are included under Reporting, Equipment and Operations (\$1,950) during the permit term, the approximate 10% funding allocation for contingencies from the endowment is expected to meet any changes in costs due to inflation over the long term. Upon conveyance of the conservation easement to CNLM (or CDFG, or other acceptable entity to the Service and CDFG), the property owner will convey the nonwasting endowment to CNLM

(or CDFG, or other acceptable entity) with the understanding that no funds will be expended from the endowment during the first 6 years to allow for the principle to accrue to a sufficient amount to meet annual plan implementation costs starting in year 7 to perpetuity. A copy of the endowment will be provided to the Service and form Appendix D of the HCP within the first year from permit issuance.

Table 5. Summary of Annual Tasks and Costs Beginning in Year 7

| Task | Total | Interval (years) | Annual Cost |
|--|-----------------|-------------------------|--------------------|
| Site Construction and Maintenance | | | |
| Fencing | \$5,140 | 25 | \$205.60 |
| Fence Maintenance | \$400 | 2 | \$200 |
| Subtotal | | | \$405.60 |
| Biotic Surveys | | | |
| Project Management | \$260 | 1 | \$260 |
| Plant Surveys | \$1,140 | 1 | \$1,140 |
| OTB Surveys | \$3,000 | 1 | \$3,000 |
| Planning | \$520 | 1 | \$520 |
| Adaptive Management Allowance | \$1,000 | 1 | \$1,000 |
| Subtotal | | | \$5,920 |
| Habitat Restoration and Maintenance | | | |
| Invasive Plant Removal, Follow-up | \$1,400 | 1 | \$1,400 |
| Prairie/Grassland Mowing | \$900 | 1 | \$900 |
| Subtotal | | | \$2,300 |
| Patrolling, Monitoring, Outreach | | | |
| Trespass Control | \$2,980 | 1 | \$2,980 |
| Signs | \$120 | 6 | \$20 |
| Signs, interpretive | \$650 | 8 | \$81.25 |
| Meetings with HOA | \$520 | 1 | \$520 |
| Trash Collection and Disposal | \$280 | 1 | \$280 |
| Subtotal | | | \$3,881.25 |
| Reporting, Equipment, Operations | | | |
| Works Plan, Annuals Reports | \$1,950 | 1 | \$1,950 |
| Operation Fees, Mileage | \$1,409.49 | 1 | \$1,409.49 |
| Contingency and Administration | \$5,775.34 | 1 | \$5,775.34 |
| Subtotal | | | \$9,134.83 |
| TOTAL | \$27,445 | | \$21,641.68 |

8.8 DISPOSITION OF DEAD OR INJURED SPECIMENS

Dead or injured specimens of the OTB will be submitted to a designated repository. The designated repository is the Essig Museum at University of California, Berkeley.

9.0 CHANGED AND UNFORSEEN CIRCUMSTANCES

Section 10 regulations [50 CFR 17.22 (b)(2)(iii)] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (No Surprises) Rule [50 CFR 17.2, 17.22 (b)(5) and (6); 63 F.R.8859] defines changed and unforeseen circumstances and describes the obligations of the permittee and the Service. The purpose of the Assurances Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

9.1 CHANGED CIRCUMSTANCES

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of a species, a fire, or other natural catastrophic event in areas prone to such an event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP), then the permittee will implement those measures as specified in the plan. However, if additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP have been or are being fully implemented).

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Federal ESA during the term of the section 10 permit, the section 10 permit will be reevaluated by the Service and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to jeopardize or result in the take or adverse modification of any designated critical habitat of the newly listed species. The permittee shall implement the modifications to the HCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take or adverse modification of the designated critical habitat of the newly listed species. The permittee shall continue to implement such modifications until such time as the permittee has applied for and the Service has approved an amendment of the Section 10 permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies the permittee in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy or adverse modification of designated critical habitat of the newly listed species.

As to other potential changed circumstances (e.g., wildfire, erosion, extended drought, earthquake or other natural disaster, or dissolution of non-profit conservation organization) there is likelihood that one of these phenomena may cause substantial changes to this site during the permit period. Furthermore, some types of changed circumstances, for example a wildfire, may actually enhance habitat values in the long term because native grasses and shrubs of the coastal prairie and scrub plant communities regenerate well after such fires. Nonetheless, in the event of

a wildfire, some intrusion into the protected habitat area may be necessary to protect the new residences. Winter storms or earthquakes could cause landslide or erosion problems in habitat areas that would require subsequent repairs, such as slope stabilization, and revegetation. For minor changes, the ongoing management of the protected conservation parcel will allow for appropriate responses to changed circumstances during the life of the permit. If the entity holding the conservation easement, as designated at the adoption of the HCP, dissolves during the implementation of the HCP, the Applicant will find an appropriate replacement that is agreeable to the Service. In the event that any of the aforementioned natural occurrences significantly damage the 9.3 acre management area, the permit holder will restore the area to its original condition. If a wildfire occurs, restoration activities will include site protection measures that allow natural recovery of the grassland/prairie habitat. Such measures may include temporary fencing to protect the site and allow natural recovery processes to occur. If seed has been collected for the SCT, seed will be broadcast into appropriate areas to benefit the species. If significant site erosion occurs, control measures will be implemented to reduce and control the problem. Such measures may include installation of straw wattles, application of straw mulch, or erosion control seeding (with locally native species). Costs associated with implementing these actions will entail approximately 16 personnel hours and approximately \$560 in materials, totaling \$1,520, which is approximately 7% of the total budget. This cost is included under Reporting, Equipment and Operations. During Years 7-10 the cost will be from the contingency line item; after Year 10 the cost will be from the work plans/annual report line item since annual reports will not be required after Year 10.

9.2 UNFORESEEN CIRCUMSTANCES

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the plan's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In the case of an unforeseen event, the current permit holder shall immediately notify the Service staff that has functioned as the principal contacts for the proposed action. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstance where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that are already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or

other natural resources otherwise available for development or use under the original terms of the HCP only with the consent of the permittee.

10.0 PERMIT AMENDMENT/RENEWAL PROCESS

10.1 AMENDMENTS TO THE PERMIT

During the specified permit period (6 years), amendment of the Section 10(a)(1)(B) permit for the Santa Cruz Gardens #12 project would be required for any of the following changes:

- a) Significant revision of the permit area boundary;
- b) The listing under the ESA of a new species not currently addressed in this HCP that may be taken by project activities;
- c) Modification of any important project action or mitigation component under the HCP, including funding, that may significantly affect authorized take levels, effects of the project, or the nature or scope of the mitigation program; or
- d) Any other modification of the project likely to result in significant adverse effects to the OTB not addressed in the original HCP and permit application.

10.2 AMENDMENTS TO THE HCP

This HCP may, under certain circumstances, be amended without amending its associated permit, provided that such amendments are of a minor or technical nature and that the effect on the species involved and the levels of take resulting from the amendment are not significantly different from those described in the original HCP. Examples of minor amendments to the HCP for the Santa Cruz Gardens #12 project that would not require permit amendment include:

- a) Minor revisions to monitoring or reporting protocols;
- b) Minor revisions of the HCP's plan area or boundaries; and
- c) Minor revisions in project design and construction procedures.

To amend the HCP without amending the permit, the permittee must submit to the Service in writing a description of the proposed amendment, an explanation of why the amendment is necessary or desirable, and an explanation of why the effects of the proposed amendment are believed not to be significantly different from those described in the original HCP. If the Service concurs with the amendment proposal, it shall authorize the HCP amendment in writing, and the amendment shall be considered effective upon the date of the Service's written authorization.

10.3 PERMIT RENEWAL

The permit is for six years. If permit renewal is required, the permit holder must submit to the Service in writing a request of the proposed renewal, an explanation of why the renewal is necessary or desirable, and an explanation of if the effects of the proposed renewal are believed not to be significantly different from those described in the original HCP. If the Service concurs with the renewal proposal, it shall authorize the ITP renewal in writing, and the ITP renewal shall be considered effective upon the date of the Service's written authorization.

10.4 PERMIT TRANSFER

In the event of sale or transfer of ownership of the property during the life of the permit, a new permit application, permit fee, and an Assumption Agreement will be submitted to the Service by the new owner. The new owner will commit to all requirements regarding take authorization and mitigation obligations of this HCP unless otherwise specified in the Assumption Agreement and agreed to in advance with the Service.

11.0 ALTERNATIVES CONSIDERED

11.1 ALTERNATIVE #1: NO-ACTION

Under the No-action alternative, the Santa Cruz Gardens project would not be implemented. As a result, incidental take of OTB, SCT, GY associated with removal of vegetation from the property and from initial grading activities would be avoided, and no Section 10(a)(1)(B) permit would be required. However, impacts to the three covered species may be greater in the absence of this HCP. Currently, habitat conditions at the 55.64-acre conservation parcel are somewhat degraded due to the presence and abundance of various non-native plants. Without the HCP, habitat quality would probably continue to decline and no prime habitat would be protected to benefit both endangered species and the GY. Therefore, the No-action Alternative is concluded to be of lesser conservation value to the covered species than the proposed project and accompanying HCP. It would also result in an unnecessary economic burden on the applicants. For these reasons, the no-action alternative has been rejected.

11.2 ALTERNATIVE #2: REDESIGNED PROJECT (REDUCED TAKE)

Under this alternative, the development footprint of the project would be reduced or relocated to another portion of the site, thereby reducing the loss of potential habitat for the three covered species. Although a Section 10(a)(1)(B) permit would still be required, the amount of mitigation would be less than that provided for the project as proposed. A reduction in the development would not significantly improve onsite habitat for the covered species and there would still be an increase in human activity that could affect individual animals that may be using the areas. Even with a redesigned project, incidental take of OTB and SCT could still occur during initial grading activities. Furthermore, inherent characteristics of the project site, such as its steep slopes, plus the riparian and coastal prairie habitats, limit where development can actually occur. Thus, the gains in reduction of take of the covered species and reduced modification of the covered species habitat would not be significant; furthermore this alternative would also result in unnecessary economic burdens to the applicants. For these reasons, this alternative has been rejected.

11.3 ALTERNATIVE #3: PROPOSED ACTION (PERMIT ISSUANCE)

Under the Proposed Action alternative, the Santa Cruz Gardens project would be developed as described in Section 2.0. The Proposed Action would require the issuance of a Section 10(a)(1)(B) permit to allow construction of the project. The project would result in the loss of approximately 2.96 acres of degraded habitat for the OTB, SCT, and GY. However, conservation measures as proposed in the HCP would result in greater habitat value for the covered species than currently exists on the project site, due to the presence of invasive, non-native plant species that can outcompete the SCT and GY and degrade the quality of habitat for the OTB. The Proposed Action thus provides greater habitat conservation benefits than the No Action and Redesigned project alternatives, and also best meets the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

12.0 HABITAT CONSERVATION PLAN PREPARERS

Dr. Richard A. Arnold and Kathleen Lyons prepared this HCP. Dr. Arnold is the President of Entomological Consulting Services, Ltd., of Pleasant Hill, CA. Ms. Lyons is the principal of the Biotic Resources Group, of Soquel, CA.

13.0 REFERENCES CITED

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Appendix A
Conservation Easement

Appendix B
Property Analysis Record (PAR)

PAR

Habitat Planning In Perpetuity

The Property Analysis Record

Title Santa Cruz Gardens
Dataset CA005
ID P188V2
Prepared by David Laabs
Date 07/13/2006

The Center for Natural Lands Management prepared this software to assist conservation planners develop the management tasks and costs of long-term stewardship. While the sources are thought to be reliable, the Center makes no representations about the accuracy of cost estimates. The date of the cost information is 2000. The operation of the program is not guaranteed by the Center. Management requirements are determined by the user. Users should consult with their own financial advisors before relying on the results of their analysis.

Property Analysis Record Ver. 2.07.e 10/23/2003 (C) 1999 - 2003 Center for Natural Lands
425 E. Alvarado St., Suite H, Fallbrook, CA 92028-2960

Section 8 - Initial & Capital Tasks and Costs

Property Title: Santa Cruz Gardens

Dataset: CA005

PAR ID: P188V2

07/13/2006

Budget: PAR

| Task list | Specificaton | Unit | Number of Units | Cost / Unit | Annual Cost | Times Years | Total Cost |
|---------------------------------|-------------------------------|----------|-----------------|-------------|-------------|-------------|------------|
| SITE CONSTRUCTION/MAINT. | | | | | | | |
| Salvage Plant Materials | Salvage GY - Botanist | C. Hours | 12.00 | 95.00 | 1,140.00 | 1.0 | 1,140.00 |
| Salvage Plant Materials | Salvage GY - Laborer | C. Hours | 8.00 | 35.00 | 280.00 | 1.0 | 280.00 |
| Salvage Plant Materials | Salvage SCT - Botanist | C Hours | 6.00 | 95.00 | 570.00 | 2.0 | 1,140.00 |
| Salvage Plant Materials | Salvage SCT - Laborer | C Hours | 8.00 | 35.00 | 280.00 | 2.0 | 560.00 |
| Salvage Plant Materials | Salvage SCT - Equip Rental | Day | 1.00 | 1,500.00 | 1,500.00 | 2.0 | 3,000.00 |
| Fence - Installed | Post and cable | Lin. Ft. | 400.00 | 12.85 | 5,140.00 | 1.0 | 5,140.00 |
| Fence - Installed | Maintenance | Lin. Ft. | 400.00 | 1.00 | 400.00 | 2.0 | 800.00 |
| Sub-Total | | | | | | | 12,060.00 |
| BIOTIC SURVEYS | | | | | | | |
| Project Management | Supervise/coordinate | L. Hours | 4.00 | 65.00 | 260.00 | 3.0 | 780.00 |
| Plant Ecologist | SCT & GY Survey | C. Hours | 12.00 | 95.00 | 1,140.00 | 3.0 | 3,420.00 |
| Entomologist | OTB Surveys Yrs 1-6 | C. Hours | 100.00 | 125.00 | 12,500.00 | 6.0 | 75,000.00 |
| Science Director | Planning and Review | Hours | 10.00 | 52.00 | 520.00 | 3.0 | 1,560.00 |
| Other | Adaptive Management | Year | 1.00 | 1,000.00 | 1,000.00 | 3.0 | 3,000.00 |
| Sub-Total | | | | | | | 83,760.00 |
| HABITAT RESTORATION | | | | | | | |
| Fine Grading | Revitalize SCT Colony | C. Hours | 8.00 | 95.00 | 760.00 | 2.0 | 1,520.00 |
| Fine Grading | Revitalize SCT Colony | L. Hours | 12.00 | 35.00 | 420.00 | 2.0 | 840.00 |
| Exotic Plant Control | Hand Removal, Labor - Initial | L. Hours | 715.00 | 35.00 | 25,025.00 | 1.0 | 25,025.00 |
| Exotic Plant Control | Hand Removal, Labor - Yrs | L. Hours | 70.00 | 35.00 | 2,450.00 | 5.0 | 12,250.00 |
| Sub-Total | | | | | | | 39,635.00 |
| HABITAT MAINTENANCE | | | | | | | |
| Mower, Tractor | Hire Mower Service | Acre | 4.50 | 200.00 | 900.00 | 3.0 | 2,700.00 |
| Sub-Total | | | | | | | 2,700.00 |
| PUBLIC SERVICES | | | | | | | |
| Patrolling | CE Compliance Monitoring | L. Hours | 20.00 | 65.00 | 1,300.00 | 3.0 | 3,900.00 |
| Patrolling | Trespass control | L. Hours | 48.00 | 35.00 | 1,680.00 | 3.0 | 5,040.00 |
| Sign, Aluminum | Boundary, installed | Item | 8.00 | 15.00 | 120.00 | 1.0 | 120.00 |
| Sign, Redwood | Interpretive 4'X 6' | Item | 1.00 | 650.00 | 650.00 | 1.0 | 650.00 |
| Owner Contact | Meetings w/ HOA | L. Hours | 8.00 | 65.00 | 520.00 | 1.0 | 520.00 |
| Sub-Total | | | | | | | 10,230.00 |

| Task list | Specificaton | Unit | Number of Units | Cost / Unit | Annual Cost | Times Years | Total Cost |
|---|-------------------------|-----------|-----------------|-------------|-------------|-------------|-------------------|
| GENERAL MAINTENANCE | | | | | | | |
| Sanitation Control | Collection and disposal | L. Hours | 8.00 | 35.00 | 280.00 | 3.0 | 840.00 |
| Sub-Total | | | | | | | 840.00 |
| REPORTING | | | | | | | |
| GIS/CAD Management | Data Management | L. Hours | 6.00 | 65.00 | 390.00 | 3.0 | 1,170.00 |
| Annual Reports | Report to USFWS/City | L. Hours | 16.00 | 65.00 | 1,040.00 | 3.0 | 3,120.00 |
| Annual Work Plan | Plan and PAR Budget | L. Hours | 8.00 | 65.00 | 520.00 | 3.0 | 1,560.00 |
| Sub-Total | | | | | | | 5,850.00 |
| FIELD EQUIPMENT | | | | | | | |
| Vehicle | Mileage | Mile | 1,500.00 | 0.55 | 825.00 | 1.0 | 825.00 |
| Sub-Total | | | | | | | 825.00 |
| OPERATIONS | | | | | | | |
| Audit | CPA Audit | Item | 55.60 | 0.52 | 28.91 | 1.0 | 28.91 |
| Insurance | Liability | Per Acre | 55.60 | 0.55 | 30.58 | 1.0 | 30.58 |
| Insurance | Renewal Fee | Year | 1.00 | 300.00 | 300.00 | 1.0 | 300.00 |
| Legal Fund | Establish fund | 1% endow. | 0.01 | 501,844.00 | 5,018.44 | 1.0 | 5,018.44 |
| Supervisor Site Visit | Site visits | L. Hours | 3.00 | 75.00 | 225.00 | 1.0 | 225.00 |
| Other | R & D Fund | 1% endow. | 0.01 | 501,844.00 | 5,018.44 | 1.0 | 5,018.44 |
| Sub-Total | | | | | | | 10,621.37 |
| CONTINGENCY & ADMINISTRATION | | | | | | | |
| Contingency | | | | | | | 16,652.14 |
| Administration | | | | | | | 43,961.64 |
| Sub-Total | | | | | | | 60,613.78 |
| Total | | | | | | | 227,135.15 |

Section 9 - Ongoing Tasks and Costs

Property Title: Santa Cruz Gardens

Dataset: CA005

PAR ID: P188V2

07/13/2006

Budget: PAR

| Task list | Specificaton | Unit | Number of Units | Cost / Unit | Annual Cost | Divide Years | Total Cost |
|---------------------------------|-----------------------------|----------|-----------------|-------------|-------------|--------------|------------|
| SITE CONSTRUCTION/MAINT. | | | | | | | |
| Fence - Installed | Post and cable | Lin. Ft. | 400.00 | 12.85 | 5,140.00 | 25 | 205.60 |
| Fence - Installed | Maintenance | Lin. Ft. | 400.00 | 1.00 | 400.00 | 2 | 200.00 |
| Sub-Total | | | | | | | 405.60 |
| BIOTIC SURVEYS | | | | | | | |
| Project Management | Supervise/coordinate | L. Hours | 4.00 | 65.00 | 260.00 | 1 | 260.00 |
| Plant Ecologist | SCT & GY Survey | C. Hours | 12.00 | 95.00 | 1,140.00 | 1 | 1,140.00 |
| Entomologist | OTB Surveys Yrs 7 + | C. Hours | 24.00 | 125.00 | 3,000.00 | 1 | 3,000.00 |
| Science Director | Planning and Review | Hours | 10.00 | 52.00 | 520.00 | 1 | 520.00 |
| Other | Adaptive Management | Year | 1.00 | 1,000.00 | 1,000.00 | 1 | 1,000.00 |
| Sub-Total | | | | | | | 5,920.00 |
| HABITAT RESTORATION | | | | | | | |
| Exotic Plant Control | Hand Removal, Labor - Yrs 7 | L. Hours | 40.00 | 35.00 | 1,400.00 | 1 | 1,400.00 |
| Sub-Total | | | | | | | 1,400.00 |
| HABITAT MAINTENANCE | | | | | | | |
| Mower, Tractor | Hire Mower Service | Acres | 4.50 | 200.00 | 900.00 | 1 | 900.00 |
| Sub-Total | | | | | | | 900.00 |
| PUBLIC SERVICES | | | | | | | |
| Patrolling | CE Compliance Monitoring | L. Hours | 20.00 | 65.00 | 1,300.00 | 1 | 1,300.00 |
| Patrolling | Trespass control | L. Hours | 48.00 | 35.00 | 1,680.00 | 1 | 1,680.00 |
| Sign, Aluminum | Boundary, installed | Item | 8.00 | 15.00 | 120.00 | 6 | 20.00 |
| Sign, Redwood | Interpretive 4'X 6' | Item | 1.00 | 650.00 | 650.00 | 8 | 81.25 |
| Owner Contact | Meetings w/ HOA | L. Hours | 8.00 | 65.00 | 520.00 | 1 | 520.00 |
| Sub-Total | | | | | | | 3,601.25 |
| GENERAL MAINTENANCE | | | | | | | |
| Sanitation Control | Collection and disposal | L. Hours | 8.00 | 35.00 | 280.00 | 1 | 280.00 |
| Sub-Total | | | | | | | 280.00 |

| Task list | Specificaton | Unit | Number of Units | Cost / Unit | Annual Cost | Divide Years | Total Cost |
|---|----------------------|----------|-----------------|-------------|-------------|--------------|------------|
| REPORTING | | | | | | | |
| GIS/CAD Management | Data Management | L. Hours | 6.00 | 65.00 | 390.00 | 1 | 390.00 |
| Annual Reports | Report to USFWS/City | L. Hours | 16.00 | 65.00 | 1,040.00 | 1 | 1,040.00 |
| Annual Work Plan | Plan and PAR Budget | L. Hours | 8.00 | 65.00 | 520.00 | 1 | 520.00 |
| Sub-Total | | | | | | | 1,950.00 |
| FIELD EQUIPMENT | | | | | | | |
| Vehicle | Mileage | Mile | 1,500.00 | 0.55 | 825.00 | 1 | 825.00 |
| Sub-Total | | | | | | | 825.00 |
| OPERATIONS | | | | | | | |
| Audit | CPA Audit | Item | 55.60 | 0.52 | 28.91 | 1 | 28.91 |
| Insurance | Liability | Per Acre | 55.60 | 0.55 | 30.58 | 1 | 30.58 |
| Insurance | Renewal Fee | Year | 1.00 | 300.00 | 300.00 | 1 | 300.00 |
| Supervisor Site Visit | Site visits | L. Hours | 3.00 | 75.00 | 225.00 | 1 | 225.00 |
| Sub-Total | | | | | | | 584.49 |
| CONTINGENCY & ADMINISTRATION | | | | | | | |
| Contingency | | | | | | | 1,586.63 |
| Administration | | | | | | | 4,188.71 |
| Sub-Total | | | | | | | 5,775.34 |
| Total | | | | | | | 21,641.68 |

Section 10 - Financial Summary

Property Title: Santa Cruz Gardens

Dataset: CA005

PAR ID: P188V2

07/13/2006

PAR(56 ac.)

| | Rate % | Total \$ |
|--|-----------|-------------|
| INITIAL FINANCIAL REQUIREMENTS | | |
| I & C Revenue | | 0 |
| I & C Management Costs | | 166,521 |
| I & C Contingency Expense | 10.00 | 16,652 |
| Total I & C Management Costs | | 183,173 |
| I & C Administrative Costs of Total I & C Management Costs | 24.00 | 43,962 |
| Total I & C Costs | | 227,135 |
| Net I & C Management and Administrative Costs | | 227,135 |
| ANNUAL ONGOING FINANCIAL REQUIREMENTS | | |
| Ongoing Costs | | 15,866 |
| Ongoing Contingency Expense | 10.00 | 1,587 |
| Total Ongoing Management Costs | | 17,453 |
| Ongoing Administrative Costs of Total Ongoing Management costs | 24.00 | 4,189 |
| Total Ongoing Costs | | 21,642 |
| ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP | | |
| Endowment to Provide Income of \$ 21,642 | | 480,933 |
| Endowment per Acre is \$ 8,650. | | |
| Ongoing Management Costs Based on 4.50% of Endowment per Year. | | |
| Ongoing Management Funding is \$ 21,642 per Year Resulting in \$389 per Acre per Year. | | |
| TOTAL CONTRIBUTION | | 708,068 |

Appendix C
Letter of Credit

Appendix D
Copy of Endowment