

**Low-Effect Habitat Conservation Plan for the
Renovation of the County of Santa Cruz Juvenile Hall
Felton, Santa Cruz County, California**



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December 2019

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Executive Summary

The County of Santa Cruz Probation Department (County) is seeking an incidental take permit, under Section 10(a)(1)(B) of the Federal Endangered Species Act (Act), to cover take of the Mount Hermon June beetle (*Polyphylla barbata*). The take will result from implementation of a series of infrastructure improvements to the existing juvenile detention facility (juvenile hall) located at 3650 Graham Hill Road between the City of Scotts Valley and Felton, an unincorporated town within the County of Santa Cruz in central coastal California (APN: 061-371-16; Figure 1). The infrastructure upgrades, which will occur entirely within the perimeter of the existing improved facility, will renovate the existing kitchen, dining and food storage areas, program rooms, library space, laundry facilities, central control room, intake area, and staff support areas and upgrade the building's electrical, mechanical, plumbing, heating and cooling, structural, stormwater, accessibility, fire protection, life safety, and security systems.

An 12-year permit term is requested to address incidental impacts to the federally-endangered Mount Hermon June beetle associated with implementation of the proposed improvements, which are anticipated to require one year to complete, as well as the short-term, negative impacts to Mount Hermon June beetle that may occur as a result of 10 years of invasive plant removal and related work to enhance 2.5 acres of habitat as part of the plan's conservation strategy.

The renovation project will cause ground disturbance that has the potential to impact Mount Hermon June beetle within a total 11,753 ft² (0.270 acres) of open soil where ground disturbance will occur. Of this area, 7,342 ft² (0.169 acres) of habitat will be permanently removed as it will be covered by impervious surfaces or otherwise managed in a manner that will preclude use of the soil by Mount Hermon June beetle. The remaining 4,411 ft² (0.101 acre) will feature open soil that will be revegetated passively or actively using landscaping elements that will not deter use of the habitat by Mount Hermon June beetle, such that the impacts on habitat will be temporary.

The Mount Hermon June beetle is a fossorial insect that lives in Zayante soils, which support unique communities known as the Zayante (or Santa Cruz) Sandhills (Sandhills). Though other special-status plants and animals are known to occur within the Sandhills (Table 2), only the Mount Hermon June beetle occurs within the area to be impacted by the project (McGraw 2011b; Appendix A).

Due to the small size of proposed improvements within suitable habitat, the project is not anticipated to impact the viability of the Mount Hermon June beetle population within the Mount Hermon area, or the persistence of the species overall.

This plan's conservation strategy includes the following measures designed to minimize the project's impacts on the Mount Hermon June beetle:

1. Construction during the Mount Hermon June beetle flight season (May-August) will be avoided, if at all possible. If soil-disturbing activities occur during the flight season, exposed soil will be covered each night, to prevent beetles from burrowing into the construction site;
2. Vegetation will be pruned but not removed entirely during installation of the perimeter fence;
3. A qualified biologist will monitor soil-disturbing activities and capture and relocate any beetles outside of the Project Area to intact sandhills habitat that supports appropriate soils and vegetation;
4. Exterior lighting will feature bulbs LED or other bulbs that emit wavelengths of light that are less attractant to nocturnal insects; and
5. Landscaping elements that degrade habitat for Mount Hermon June beetle, including invasive plants, plants that are toxic to insects, weed matting, landscape rock, and turf grass, will be avoided.

To mitigate the unavoidable impacts to the listed species, the County will implement one of two alternative mitigation options. In Option 1 On-Site Mitigation, the County will enhance habitat suitable for the Mount Hermon June beetle by conducting invasive plant removal over a ten - year period, within a 2.5-acre portion of the adjacent 6.4-acre parcel owned by the Mount Hermon Association (APN: 061-371-09)¹. Located west of the County's parcel, this 2.5-acre area features dense sand parkland habitat that is of high conservation value for Mount Hermon June beetle. Effects monitoring conducted as part of prior invasive plant removal at the site demonstrated that these treatments increased the cover and richness of native sandhills plants, which provide a source of food for the endangered beetle (McGraw 2012c).

As part of a prior habitat conservation plan for the property (McGraw 2016), the County committed to implementing invasive broom removal annually for ten years, within a 4.3-acre portion of their 28-acre project parcel which is immediately adjacent to the 2.5-acre treatment area proposed for this project (Figure 4). Removing broom on the adjacent parcel owned by the Mount Hermon Association will expand the area of high quality, intact sand parkland habitat atop Mount Hermon, which supports a large population of the Mount Hermon June beetle (J. McGraw, unpublished data). The 10-year treatment duration was determined based on the similar costs as well as conservation value to mitigating the project impacts at a conservation bank as described for Option 2: Off-site Mitigation (Table 4).

The specific methods that will be used to manage and monitor the habitat will be outlined in a habitat management and monitoring plan (HMMP). The HMMP will also describe the measures

¹ Though technically located off the County's parcel, this option is referred to as the "On-Site Option" as it would occur immediately adjacent to the County parcel; this name is used to contrast it with the purchase of conservation credits at the Zayante Sandhills Conservation Bank which is referred to as the "Off-Site Option".

that will be taken to minimize adverse effects to the listed species resulting from the enhancement work. The HMMP will be developed by a qualified biologist within six months of initiating ground-disturbing activities as part of the project and will be subject to approval by the US Fish and Wildlife Service.

In Option 2: Off-Site Mitigation, the County will purchase 11,753 square-foot conservation credits at the Zayante Sandhills Conservation Bank—a conservation bank that conserves, manages, and monitors large, high quality Sandhills habitat preserves, which have high conservation value for the Mount Hermon June beetle and other listed species. The credits will be purchased at a ratio of 1:1 for permanent habitat impacts (7,342 sf credits) and temporary habitat impacts (4,411 sf). Should the County opt to purchase conservation bank credits, rather than conduct habitat enhancement (Option 1), the County will purchase the conservation credits prior to the inception of any project activities that would cause take, including soil disturbance.

The County will fund one of the alternative mitigation methods, as well as all other elements of the proposed conservation strategy. A qualified biologist will conduct monitoring to ensure effective implementation of the conservation strategy, and to evaluate success toward the biological goals and objectives. Monitoring results will be document in annual reports provided to the U.S. Fish and Wildlife Service by January 31 each year that follows a year when the permit is active.

Section 1

Introduction and Background

1.1 Overview and Background

This Habitat Conservation Plan (HCP) for the proposed renovation of the County of Santa Cruz Juvenile Hall Detention Facility at 3650 Graham Hill Road, Felton, Santa Cruz County, California, has been prepared pursuant to the requirements of Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended (Act). The HCP is intended to provide the basis for issuance of a Section 10(a)(1)(B) permit to the County of Santa Cruz, the property owner, to authorize incidental take of the Mount Hermon June beetle (*Polyphylla barbata*), a federally-listed endangered species, that may result from improvements to the developed parcel and also injury or mortality that may result from implementation of the plan's conservation strategy. A qualified biologist determined that the Project Area provides suitable habitat for the Mount Hermon June beetle, a federally-endangered insect (McGraw 2015b; Appendix A). During the course of construction and installation of the various infrastructure improvements, ground-disturbing activities, including excavation and covering of open soil with impervious surfaces and rock, will likely impact individuals of, as well as temporarily and permanently remove habitat for, this fossorial species that feeds on native plant roots and mycorrhizae.

1.2 Permit Holder/Permit Duration

The County of Santa Cruz requests an incidental take permit to cover take of Mount Hermon June beetle for twelve years commencing on the date of permit approval. Project construction is anticipated to require one year; however, seasonal restrictions and other factors may delay the project. Additionally, the County proposes to mitigate the impacts of the project by conducting invasive plant removal on the adjacent property owned by the Mount Hermon Association. As this beneficial work has the potential to cause take of the Mount Hermon June beetle, the County requests that the take permit cover the 10 years of enhancement work, which will be initiated within six months of the inception of ground - disturbing activities as part of the construction project. A 12-year permit is requested to ensure that the covered activities, which may not be initiated immediately following the issuance of the permit, will be implemented during the term of the permit.

1.3 Permit Boundary/Covered Lands

The project site and habitat enhancement area are located within the Felton United States Geological Survey (USGS) topographic quadrangle, near the center of Section 23 of Township 10S, Range 2W of the Mount Diablo Base and Meridian (Figure 1). A permit is requested to authorize the incidental take of Mount Hermon June beetle within the Project Area: an approximately 5.8-acre area centered on the existing facility located in the southwestern corner of the 28-acre parcel (APN: 061-371-16) situated at 3650 Graham Hill Road, Felton, central Santa Cruz County, central coastal California (Section 2.1; Figure 2). The permit is also requested to cover habitat enhancement within an adjacent 2.5-acre habitat enhancement treatment area on site (Section 5.2.2; Figure 4).

1.4 Species to be Covered by Permit

The following species are referred to as a "covered species" related to the Incidental Take Permit if it is issued.

<u>Covered Species</u>	<u>Federal Status/State Status</u>
Mount Hermon June beetle (<i>Polyphylla barbata</i>)	Federally Endangered

The following additional federally-endangered species that occur with the Mount Hermon June beetle at other locations will not be addressed in this HCP or covered under the requested Incidental Take Permit as they do not occur within the Project Area, which lacks suitable habitat (McGraw 2015b; Appendix A):

<u>Additional List Species</u>	<u>Federal Status/State Status</u>
Zayante band-winged grasshopper (<i>Trimerotropis infantilis</i>)	Federally Endangered
Santa Cruz (Ben Lomond) wallflower (<i>Erysimum teretifolium</i>)	Federally Endangered/ CA State Endangered
Ben Lomond spineflower (<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>)	Federally Endangered

1.5 Regulatory Framework

1.5.1 Federal Endangered Species Act

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Pursuant to section 11(a) and (b) of the Act, any person who knowingly violates section 9 of the Act or any permit, certificate, or regulation related to section 9, may be subject to civil penalties of up to \$25,000 for each violation or criminal penalties up to \$50,000 and/or imprisonment of up to one year.

Individuals and State and local agencies proposing an action that is expected to result in the incidental take of federally listed species are encouraged to apply for an incidental take permit under section 10(a)(1)(B) of the Act to be in compliance with the law. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise legal activities. An application for an incidental take permit must be accompanied by a HCP. The regulatory standard under section 10 of the Act is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under section 10 of the Act, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the Act requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. "Jeopardize the continued existence of..." pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit under section 10(a)(1)(B) of the Act by the Service is a Federal action subject to section 7 of the Act. As a Federal agency issuing a discretionary permit, the Service is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a section 10(a)(1)(B) permit application initiates the section 7 consultation process within the Service.

The requirements of section 7 and section 10 substantially overlap. Elements unique to section 7 include analyses of impacts on designated critical habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that

are reasonably certain to occur in the action area, pursuant to section 7(a)(2) of the Act. The action area is defined by the influence of direct and indirect impacts of covered activities. The action area may or may not be solely contained within the HCP boundary. These additional analyses are included in this HCP to meet the requirements of section 7 and to assist the Service with its internal consultation.

1.5.2 The Section 10(a)(1)(B) Process - Habitat Conservation Plan Requirements and Guidelines

The Section 10(a)(1)(B) process for obtaining an incidental take permit has three primary phases: (1) the HCP development phase; (2) the formal permit application 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, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances;
- alternative actions considered that would not result in take; and
- additional measures USFWS 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. A complete application package consists of: 1) an HCP, 2) an Implementing Agreement (IA), 3) a permit application, and 4) a \$100 fee from the applicant, if required. An implementing agreement is not required for an HCP that qualifies as a low-effect HCP. The Service prepares an Intra-Service Section 7 Biological Opinion; and also prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below). An Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement serves as the Service's record of compliance with the National Environmental Policy Act (NEPA). The Service must publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. The draft NEPA document, HCP, and IA (if applicable) are made available for public review during this 30-day to 90-day comment period. A Section 10(a)(1)(B) incidental take permit is granted upon a determination by the Service that all requirements for permit issuance have been met. Statutory and

regulatory criteria for issuance of the permit, pursuant to section 10(a)(2)(b) of the Act and 50 CFR 17.22 (b)(2) and 17.32 (b)(2) specify that:

- 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 the Service requires as being necessary or appropriate; and
- the Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the Permittee and other responsible entities implement the HCP, and USFWS monitors the Permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of permit issuance by means of the Federal Register.

1.5.3 National Environmental Policy Act (NEPA)

The purpose of the National Environmental Policy Act (NEPA) is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (in this case deciding whether to issue an incidental take permit) and to utilize public participation. NEPA serves as an analytical tool on direct, indirect, and cumulative impacts of the proposed project alternatives to help the Service decide whether to issue an incidental take permit (ITP or section 10(a)(1)(B) permit). NEPA analysis must be done by the Service for each HCP as part of the incidental take permit application process.

1.5.4 National Historic Preservation Act

All Federal agencies are required to examine the cultural impacts of their actions (e.g. issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the Service. To complete compliance, the applicants may be required to contract for cultural resource surveys and possibly mitigation.

1.5.5 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) provides for the designation of native

species or subspecies of fish, wildlife, and plants as endangered or threatened (CESA Section 2062-2067). The Mount Hermon June beetle is not listed under CESA. Therefore, this HCP will not further address CESA permitting requirements.

1.5.6 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) (Pub. Res. Code §21000 seq.) requires state and local governmental agencies to complete an environmental review of discretionary projects that could impact environmental resources. CEQA differs from NEPA in that it requires that significant environmental impacts of proposed projects be reduced to a less-than significant level through adoption of feasible avoidance, minimization, or mitigation measures unless overriding considerations are identified and documented. The County prepared an initial study and mitigated negative declaration for the project and will implement the mitigation measures it identified during project implementation (County of Santa Cruz 2015).

1.5.7 County of Santa Cruz Sensitive Habitat Ordinance

The County oversees a Sensitive Habitat Protection Ordinance, which is designed to minimize disturbance in sensitive habitats and to protect these areas for their genetic, scientific, and educational values. The County defines a “sensitive habitat” as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (County of Santa Cruz 1994). Sensitive habitats include, but are not limited to, areas where sensitive species live, areas necessary for the survival of sensitive species, and any location where disturbance is likely to lower population numbers. Based on the findings of a biotic review, the County may require the project proponent to avoid, minimize, and mitigate impacts to the sensitive habitat by: (1) limiting the portion of sensitive habitat to be disturbed; (2) deeding an easement to protect undisturbed portions of this habitat; (3) restoring portions of degraded sensitive habitat; and/or (4) restricting land uses.

Sites that are occupied by the Mount Hermon June beetle are protected under the Sensitive Habitat Protection Ordinance. The conservation strategy developed in this plan, which includes measures to avoid, minimize, and mitigate impacts to the Mount Hermon June beetle, overlaps with requirements of the ordinance. The County has sole authority to determine whether project proponents have complied with the ordinance; however, this plan was designed to protect Zayante Sandhills habitat and fulfill the requirements of the Sensitive Habitat Protection Ordinance.

Section 2

Project Description/ Activities Covered by Permit

2.1 Project Description

The County of Santa Cruz Probation Department (County) is seeking to conduct renovation and upgrades to the existing Santa Cruz County Juvenile Detention Facility (juvenile hall). Built beginning in 1968, the juvenile hall is in the southern portion of the County's 28-acre parcel (APN: 061-371-16) located at 3650 Graham Hill Road, between the town of Felton and the City of Scotts Valley in central Santa Cruz County, central coastal California (Figure 2). The purpose of the project is to renovate and upgrade the existing juvenile hall, including upgrades to outdated kitchen and laundry facilities; renovation of existing day program rooms; heating and cooling improvements; construction of onsite greenhouse and garden plots; replacement of security fencing; and upgrades to building structural, electrical, mechanical, security, accessibility, and fire and life safety systems. The project also includes access upgrades required by local and state fire marshals.

This renovation and associated improvements will occur within the perimeter of the existing juvenile hall facility. The renovation will include improvements to the juvenile hall and adjacent probation offices to provide new and improved programming space for enhanced education, skill building, social skills, and vocational training for in-custody youth. Specifically, the project will renovate the existing kitchen, dining and food storage areas, program rooms, library space, laundry facilities, central control room, intake area, and staff support areas. The project also includes necessary upgrades to the building's electrical, mechanical and plumbing upgrades with heating and cooling improvements, structural, stormwater, accessibility, fire protection, life safety and security systems. Limited site work includes construction of a new onsite greenhouse and outdoor garden with teaching spaces, replacement of an existing storage shed, parking repairs/ repaving with replacement landscaping, new fenced vehicle sally-port at intake, and replacement security fencing.

Table 1 lists the area of the project components that will occur entirely or partially within areas of open soil. The locations of these project elements are illustrated in the project disturbance plan, which is included in Appendix B. The other project elements will not disturb the soil as they will occur entirely within the existing building or on impervious surfaces (i.e., hardscapes).

The Components are smaller than noted in the table, which includes the entire project footprint including the area of the project and the adjacent area that will be affected to construct them.

Table 1: Size of proposed project components

Project Component	Area	
	Square Feet	Acres
Garden Area	2,550	0.0585
Walkways Adjacent to the Gym	3,048	0.0700
Tree Removal	178	0.0041
Parking Lot Curb Replacement	945	0.0217
Parking Lot Driveway Widening	555	0.0127
Parking Stall Improvements	3,206	0.0736
Sally-port Tree Removal and Paving	1,015	0.0233
Stairs and Landings	342	0.0079
Landings at Pathway	108	0.0025
Landscape Planting Areas	682	0.0157
Transformer Pads and Conduit	757	0.0174
Light Post and Conduit	99	0.0023
Flag Pole	5	0.0001
Fence Post	8	0.0002
Pedestal and Bollards	5	0.0001
Fire Access Road	3,537	0.0812
Fire and Domestic Water Lines Adjacent to Gym	574	0.0132
New Pathway and Water Lines	970	0.0223
Total	18,584	0.4266

Garden Area: New 2,550 ft² garden area with small greenhouse and tool shed, raised planter beds, trellis arbor, teaching area with mounted wooden benches, and flagstone pathways. Over 25% of this area is currently covered with concrete.

Tree Removal: The project necessitates removing four trees due to significant tree root damage in the front parking lot, two trees to install the sally-port and rear court walkway and stairs, and completely grinding down the large stump at the entry to the Juvenile Hall lobby.

Parking Lot Curb Replacement: A large portion of the curbs in the front parking lot must also be replaced due to significant tree root and other damage over time.

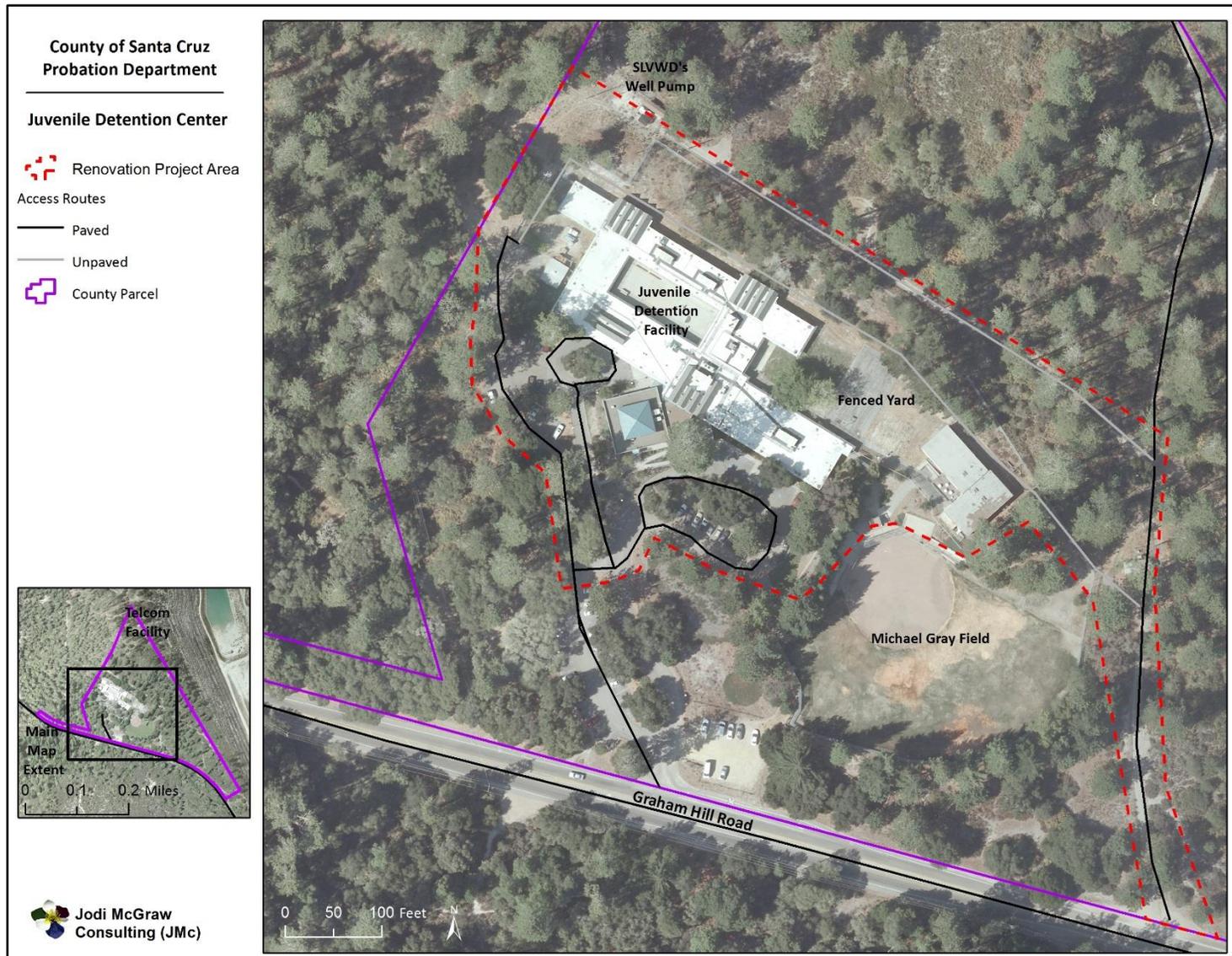


Figure 2: Renovation Project Area at the Santa Cruz Juvenile Detention Center

Parking Lot Driveway Widening: A small area along the front parking lot access driveway needs to be widened in order to fully accommodate fire and emergency vehicle access accommodations.

Parking Stall Improvements: Several parking spaces with the most significant tree root damage must have the asphalt removed and repaved.

Sally-port Tree Removal and Paving: The landscape circle with tree near the Juvenile Hall intake area and the rear of the court building must be removed in order to provide a fenced sally-port area accommodating two van-size vehicles in order to improve safety during transferring youth in and out of the facility.

Stairs and Landings: Improvements are needed to stairs and landings to access the rear Court building door per code requirements.

Landings at Pathway: A small landing is needed out the easterly rear door of the Probation offices side of the building.

Landscape Planting Areas: Landscaping is being added/replaced where old landscaping has died off in the front parking lot landscape islands (no new landscaping areas will be created).

Transformer Pads and Conduit: The existing generator and pad is being replaced with a larger one and a new pad is needed for a new heating, ventilation, and air conditioning (HVAC) chiller to be located there to serve the Juvenile Hall.

Light Posts and Conduit: Light fixtures are being replaced and installed in existing bases in the front parking lot, but there are two that need their bases moved or replaced due to other work onsite. Replacement conduit lines will need to be dug and run to access the two new poles.

Flag Post: The Flag Pole will be moved to the front entryway to the facility with a small paved access pad around it resulting in a 3'-radius circle disturbance area.

Fence Posts: Three new fence posts are needed where the fences must be realigned at the corners to improve security.

Pedestal and Bollards: A pedestal and adjacent bollards are needed to hold the call box for the fenced sally-port to access central control for entry.

Rear Fire Emergency Access Road: The dirt road providing access to the yard from the paved access road on the eastern portion of the Project Area will be re-rocked in order to make it all season, as required by the state and local fire authorities.

Fire and Domestic Water Lines Adjacent to Gym: New underground water lines will be installed adjacent to the new multipurpose facility (gym).

New Pathway and Water Lines: A new pathway will be created to provide firefighter access from the front parking area to the yard, through minor grading to level the path then application of decomposed granite rock; water lines will be installed along the pathway.

2.2 Activities Covered by Permit

An incidental take permit is requested to cover impacts to the Mount Hermon June beetle that could result from implementation of the infrastructure improvements that will disturb open soil which may be inhabited by the Mount Hermon June beetle (Table 1). Specific activities are as follows:

- Vegetation removal including removal and grubbing of native and ornamental herbs, shrubs, and trees;
- Earth work including excavation, grading, and digging;
- Installing plants into landscaped areas, including installation of necessary soil amendments and mulch immediately around the planting holes;
- Compacting and/or covering the soil with impervious surfaces, including concrete, asphalt, pavers, flagstone, planting boxes/garden beds;
- Installation of pedestals, bollards, fence posts, light posts, and flag poles into the ground.

The take permit is also requested to cover impacts to Mount Hermon June beetle that may result from invasive broom removal that the County proposes to conduct over a 10-year period within a 2.5-acre treatment area immediately adjacent to the site, in order to mitigate the impacts of the proposed project. Controlling invasive Portuguese broom (*Cytisus striatus*) and French broom (*Genista monspessulana*) is anticipated to promote populations of the endangered beetle, by increasing the cover and richness of native plants on which the larvae feed. However, the treatments have some limited potential to negatively impact Mount Hermon June beetles inhabiting the soil, which may be disturbed as part of work to uproot the invasive shrubs. These impacts will be limited by cutting (rather than pulling), shrubs that have roots that extend more than 6" below the soil surface—most larvae are encountered at a greater depth within the soil. The Mount Hermon June beetle may also be impacted in the short term by vegetation removal and trampling associated with the treatments, which will increase native plant cover in the long-term (McGraw 2012c). The covered activities are further described in Section 4.1, which assess their impacts on the covered species.

Section 3

Environmental Setting/ Biological Resources

3.1 Environmental Setting

3.1.1 Climate

Located in central Santa Cruz County, the Project Area experiences a Mediterranean climate, characterized by cool, wet winters and hot, dry summers. Summer temperatures range from 45°F to 105°F, with an average of 68°F. Winter temperatures range from 30°F to 65°F, with an average of 51°F.

Annual precipitation is 44 inches, with most falling as rain. The rainy season is from October to May, with the majority of the rainfall occurring between December and March.

3.1.2 Topography/Geology

The project site is located on a relatively flat area, which was previously graded to develop the juvenile hall facility, on a gentle, south-facing slope. The elevation at the center of the Project Area is 730 feet.

The soil in the unpaved portions of the Project Area is sandy and characteristic of the Zayante soils, which are poorly developed, deep, coarse, sand soils derived from the weathering of uplifted marine sediments and sandstones (USDA 1980). The soils vary in color from light grey to medium grey brown, reflecting variability in organic matter; darker soils occur in areas with dense tree cover. Soil ranges from loose and friable, to relatively compact (McGraw 2015b; Appendix A).

3.1.3 Hydrology/Streams, Rivers, Drainages

The project site is located on the western portion of the Lower San Lorenzo River Subwatershed near the border of the Bean Creek Subwatershed of the San Lorenzo Watershed. The San Lorenzo River is located 1.1 miles west of the Project Area; Bean Creek is located 0.71 miles north of the Project Area.

The Project Area is within upland habitat and not within a flood zone or alluvial fan.

3.1.4 Existing Land Use

The proposed project will occur within the 5.8-acre Project Area that is within the County Probation Department's 28-acre parcel (Figure 2). The developed area currently features:

- Juvenile Hall Facility: initially constructed beginning in 1968, this facility currently consists of approximately 30,000 ft² of buildings, an approximately 0.5-acre fenced yard north of the buildings, and approximately 2 acres of asphalt and gravel parking lots used by facility staff and visitors, as well as people using the baseball field; and
- Access Road: An approximately ten-foot-wide, 310-foot long natural surface road that provides emergency, maintenance, and construction access to the fenced yard from a paved access road on the eastern portion of the developed area (Figure 2).

Located outside the 5.8-acre Project Area, but within a larger 6-acre developed area of the parcel, the project site also features Michael Gray Field: an approximately 1.5-acre public park including a baseball field used by the community, which was developed in 1986. The remainder of the 28-acre parcel is largely undeveloped but features the following utility infrastructure:

- The remainder of the paved access road, which provides access to a telecommunications facility located near the northern portion of the parcel; and
- Three water wells operated and a 100,000-gallon storage tank used by the San Lorenzo Valley Water District, as well as dirt roads to provide access to them from the paved access road.

The County parcel is located atop Mount Hermon. On its eastern border is the Hanson Quarry Property, which features a relatively narrow conservation area that separates the County parcel from the approximately 185-acre sand quarry further east. Across Graham Hill Road to the south is the 1,750-acre Henry Cowell State Park. To the west, the parcel is contiguous with open space land managed by the Mount Hermon Association as part of its Ponderosa Camp (Figure 1).

The community of Mount Hermon and the neighborhood known as Whispering Pines, both of which feature relatively high-density residential development, are located just 0.5 miles northwest and 0.3 miles southeast of the proposed Project Area, respectively (Figure 1). These communities, which were developed in early and middle portions of the last century, are included in the "Mount Hermon" and "Whispering Pines" planning units in the *Interim Programmatic Habitat Conservation Plan for the Endangered Mount Hermon June Beetle and Ben Lomond Spineflower* (USFWS et al. 2011).

3.1.5 Vegetation and Other Land Cover

Plant species composition and structure (i.e., vegetation) within unpaved portions of the Project Area varies greatly due primarily to the type and intensity of land use, but also natural variation in plant community structure within the intact habitat. The assessment area features areas of intact native sandhills vegetation, ornamental/landscape plantings, areas of ruderal (disturbance-adapted) vegetation, and paved areas which lack vegetation (McGraw 2015b; Appendix A).

Intact native vegetation includes two native sandhills plant communities: silverleaf manzanita chaparral, which is a type of northern maritime chaparral, and ponderosa pine forest, which is a type of maritime coast range ponderosa pine forest. Both communities are sensitive and protected under the County's Sensitive Habitat Ordinance.

Silverleaf manzanita chaparral occurs along the paved access road to the east, along the northern fence line, and in the northwest corner of the assessment area, south of SLVWD's well. This native plant community is dominated by silverleaf manzanita (*Arctostaphylos silvicola*), yerba santa (*Eriodictyon californicum*), Santa Cruz Mountains manzanita (*Arctostaphylos crustacea* ssp. *crinita*), and sticky monkeyflower (*Mimulus aurantiacus*) with bracken fern (*Pteridium aquilinum* var. *pubescens*) and also supports *Pseudognaphalium* sp. nov., Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*) and hooked pincushionplant (*Navarretia hamata*) occurring in the gaps between shrub canopies. In the sloped area on the northern portion of the fenced yard, the silverleaf manzanita chaparral has been invaded by exotic Portuguese broom (*Cytisus striatus*); elsewhere, this community is largely dominated by native species, due in part to prior invasive plant control projects on the property (McGraw 2006, Burks and McGraw 2012, McGraw 2013).

Ponderosa pine forest borders much of the northern and western perimeter of the site. It features ponderosa pine (*Pinus ponderosa*), coast live oak (*Quercus agrifolia*), and Pacific madrone (*Arbutus menziesii*) in the overstory, with shade-tolerant herbs and shrubs in the understory including poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), California coffee berry (*Frangula californica*), and bracken fern. The parking area and other developed portions of the Project Area feature remnant, mature ponderosa pine and coast live oak and ruderal plant species adapted to disturbance.

Portions of the Project Area feature ornamental plantings including manzanitas (e.g., *Arctostaphylos* cf. *hookeri*), mahonia (*Berberis* sp.), acacias (*Acacia* sp.), and iceplants (*Carpobrotus* spp.). Other areas which have not been planted but are mowed or cleared, such as the flat portion of the fenced yard including the proposed garden area, feature ruderal vegetation characterized by primarily exotic annual grasses and forbs including smooth cat's ears (*Hypochaeris glabra*), rattail fescue (*Festuca myuros*), horsetail (*Erigeron Canadensis*), and sheep sorrel (*Rumex acetosella*).

The northern end of the fenced yard features a slope that supports scattered native trees including coast live oaks (*Quercus agrifolia*), Pacific madrone (*Arbutus menziesii*), and ponderosa pine (*Pinus ponderosa*) with an understory comprised of native sandhills plants as well as invasive Portuguese broom (*Cytisus striatus*). The dirt access road is also lined with these species, and on its eastern end features native Sandhills species including silver bush lupine (*Lupinus albifrons* var. *albifrons*) and golden aster (*Heterotheca sessiliflora* ssp. *echioides*).

3.2 Covered Species: Mount Hermon June beetle (*Polyphylla barbata*)

3.2.1 Status and Distribution

The Mount Hermon June beetle is a member of the family Scarabaeidae (Insecta: Coleoptera; Figure 3). The Mount Hermon June beetle was listed as federally endangered on January 24, 1997 (62 *Federal Register* 3509; Service 1997). Critical habitat has not been designated for this species.

The Mount Hermon June beetle occurs in association with Zayante sand soil in central Santa Cruz County. Outcroppings of Zayante soils support a unique ecosystem known as the Zayante Sandhills (Sandhills). Within the Sandhills, the Mount Hermon June beetle has been recorded from approximately 150 locations in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, and Scotts Valley (Arnold 2004, USFWS et al. 2011).

While the entire known range of the Mount Hermon June beetle encompasses 10,000 acres, suitable habitat for the endangered insect is only known to occur within approximately 2,800 acres (McGraw 2004b) of that area. The amount of habitat which is presently occupied by the Mount Hermon June beetle is unknown.



Figure 3: Mount Hermon June beetle adult male (left) and larva (right). Photographs by Jodi McGraw.

3.2.2 Habitat Characteristics

The Mount Hermon June beetle occurs in the various plant assemblages or communities of the Sandhills, including those broadly categorized as coast range ponderosa pine forest and northern maritime chaparral. The endangered beetle has also been observed in areas where native Sandhills plant species have been removed, including those that are disturbed through development or feature ornamental or other non-native plant species (Arnold 2004). Mount Hermon June beetle also inhabits ecotones between Sandhills communities and non-Sandhills vegetation, including coast live oak woodland and mixed evergreen forests (J. McGraw pers. obs.).

3.2.3 Occurrence within the Project Area

Mount Hermon June beetles have been recorded on the project parcel on numerous occasions; the species occurs at relatively high abundance within the sand parkland community on the northern relatively undisturbed portion of the parcel (Arnold 2004, McGraw 2006, 2010, 2011a, 2012a, 2013, 2014a; USFWS 2009). Given the numerous documented occurrences of Mount Hermon June beetle within the project parcel, and the occurrence of Zayante soils, which provide suitable habitat for the species, within the proposed Project Area, an assessment conducted for the proposed project concluded that the species is likely to occur within sand soil not covered by impervious surfaces within the proposed Project Area (McGraw 2015b; Appendix A).

Habitat for the Mount Hermon June beetle within the Project Area varies from intact to degraded, but throughout is suitable habitat for the species. The ponderosa pine forest and silverleaf manzanita chaparral are intact and feature relatively loose sand soil and diverse assemblages of native species. The entrance area and parking islands are of lesser habitat quality as they feature more compacted soil and limited native plant cover. Area of intermediate habitat quality include the garden area, utility area, and much of the fence alignment where native plant species occur patchily along with exotic plants including ice plant and Portuguese broom (McGraw 2015b; Appendix A). Existing outdoor lights required to maintain security within the facility degrade habitat for Mount Hermon June beetle; like other nocturnal insects, the endangered beetles are attracted to the lights, which disrupt their mating activity.

This fossorial Mount Hermon June beetle has been observed within relatively densely developed areas which feature highly-modified habitat, including at least seven locations within the Whispering Pines Planning Unit of the IPHCP to the east of the Project Area, and nine locations within the Mount Hermon Planning Unit to the west of the Project Area (USFWS et al. 2011).

3.2.4 Life History

The Mount Hermon June beetle is univoltine (i.e., has only one generation per year). The majority of the life cycle of the Mount Hermon June beetle occurs beneath the soil surface. Though little research has been conducted on below-ground stages of the life cycle of the Mount Hermon June beetle (e.g., eggs, larvae, pupae, and portions of the adult stage), information can be cautiously inferred from other species of *Polyphylla* that are well-studied, including the tenlined June beetle (*Polyphylla decemlineata*).

The life cycle of the Mount Hermon June beetle is estimated to require two to three years. After mating during the summer, adult females lay eggs beneath the soil surface on, or in close proximity to, host plant roots. Eggs hatch into larvae that feed on roots of host plants. As the larvae grow, they molt from first to second, and finally third instars. Third instar larvae pupate below the soil surface, and eventually male and female adults emerge from pupae. Adult emergence and seasonal activity often begins in May and continues through about mid-August (activity period). However, seasonal activity may vary from year to year depending on weather conditions (Arnold 2004).

Mount Hermon June beetles are polyphagous, or generalist feeders. Frass pellets of *Polyphylla* larva obtained from Mount Hermon June beetle mating locations contained tissue from flowering plants, ferns, and fungi (Hill and O'Malley 2009).

During the summer, adult Mount Hermon June beetles are active between approximately 7:00 p.m. and 10:00 p.m., with peak activity usually between 8:45 p.m. and 9:30 p.m. At dusk, adult males emerge from the soil, fly up through herbs and shrubs, and then fly low to the ground in search of flightless females, which emerge from the soil but remain on the surface of the ground and can be found by males which sense their pheromones. After mating occurs on the soil surface, females burrow underground where they presumably lay eggs.

A seasonal capture-recapture study suggested that adult males live no longer than eight days and that most males have home ranges of less than a few acres (Arnold 2001). The maximum dispersal distance documented for adult male Mount Hermon June beetles is 923 feet (Arnold 2000). Similar data on lifespan and dispersal of females are lacking at this time because they are so infrequently observed.

The Mount Hermon June beetle can be distinguished from three congeners (species of the same genus) which also occur in central Santa Cruz County by the presence of relatively dense, long, erect hairs that are scattered over the elytra (leathery forewings), and short erect hairs on the pygidium (last abdominal segment) (Young 1967, 1988). Adult males are typically 20 millimeters (mm) long and 9.7 mm wide, while the slightly larger females are approximately 22 mm long and 12 mm wide (Hill and O'Malley 2009).

3.3 Other Sandhills Endangered Species in Region

The Sandhills communities support other special-status plant and animal species, including three other federally-endangered species (Table 2). Focal species surveys revealed that, of these, only the Santa Cruz kangaroo rat (*Dipodomys venustus venustus*) occurs within Project Area (McGraw 2015b; Appendix A, Biosearch Associates 2013 and 2015). This nocturnal small mammal was observed in two traps located 150' north of Graham Hill Road, along the paved access road on the eastern portion of the Project Area and in the northwestern corner of the facility (Biosearch Associates 2013 and 2015). Impacts to this species during construction will be avoided by conducting construction during daylight hours and installing construction fencing (ESA fencing) to restrict vehicle access to the paved roadway; erecting such fencing around the project footprint will prevent impacts to adjacent habitat. In addition, the species protection measures for Santa Cruz kangaroo rat (SCKR) include: conducting a burrow search and live trapping, as needed, and housing captured SCKR in captivity until the project is completed; completely covering trenches and creating escape ramps every 100 feet; and having biologist check trenches each day prior to work (County of Santa Cruz 2015).

The Zayante band-winged grasshopper occupies the open sand parkland habitat atop Mount Hermon, 1,000 feet north of the Project Area (McGraw 2012). It was observed sunning on the parking area near the Probation Water Tank operated by the San Lorenzo Valley Water District on the northern portion of the County's parcel (Arnold and Bandel 2014). However, the species was not observed within the Project Area during a three-day focal species survey during which time 31 Zayante band-winged grasshoppers were observed atop the South Ridge Conservation Area within the Quail Hollow Quarry (McGraw 2015b; Appendix A). Though the proposed Project Area features open conditions required by this species, the intervening area supports dense vegetation, including dense sand parkland, sand chaparral, and ponderosa pine forest, which are unsuitable for this species. Moreover, while the Project Area features some open habitat areas similar to that utilized by the Zayante band-winged grasshopper, the partial pavement, turf grass, ornamental trees, and low cover of native plants, likely render the site unsuitable. These and other modification to the habitat, including mulch added to the soil surface in the garden area, and repeated mowing, likely also explain the absence of the Zayante band-winged grasshopper from the Project Area (Table 2, McGraw 2004a, 2004b, 2015b; Appendix A).

Table 2: Occurrence of special-status species of the Santa Cruz Sandhills with the County of Santa Cruz Juvenile Detention Center Renovation Project Area (County of Santa Cruz 2015, McGraw 2015b).

Common Name	Status	Occurrence Within	
		Project Area	Project Parcel
Santa Cruz kangaroo rat (<i>Dipodomys venustus venustus</i>)	California Species of Special Concern	Present	Present
Mount Hermon June beetle (<i>Polyphylla barbata</i>)	Federally Endangered	Present	Present
Zayante band-winged grasshopper (<i>Trimerotropis infantilis</i>)	Federally Endangered	Absent	Present
Ben Lomond spineflower (<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>)	Federally Endangered; List 1B.1 ¹	Present	Present
Ben Lomond wallflower (<i>Erysimum teretifolium</i>)	Federally Endangered; California Endangered; CRPR 1B.1 ¹	Absent	Absent
silverleaf manzanita (<i>Arctostaphylos silvicola</i>)	CRPR 1B.3 ¹	Present	Present
Ben Lomond buckwheat (<i>Eriogonum nudum</i> var. <i>decurrens</i>)	CRPR 1B.1 ¹	Absent	Present

¹ California Rare Plant Rank (CRPR) 1B: Most rare, threatened, or endangered plants in California and elsewhere (CNPS 2018)

Ben Lomond wallflower and Ben Lomond buckwheat do not occur within the Project Area. The Project Area does feature occurrences of Ben Lomond spineflower and silverleaf manzanita. Ben Lomond spineflower was observed in the northwestern corner of the Project Area, just west of the SLVWD's westernmost well, and also along the paved access road east of the facility. However, the species will not be impacted by the project as only foot traffic will occur along the fence line, where the species was not observed during a follow-up survey conducted on June 14, 2018. Moreover, the access road will be fenced so vehicles do not drive on adjacent occupied habitat.

Likewise, silverleaf manzanita occurs in the northwestern portion of the Project Area, just south of the westernmost well, and along the paved access road on the east side of the Project Area. The rare shrub also occurs inside the northern portion of the perimeter fence (i.e., in the fenced yard). No shrubs occur immediately adjacent to the fence line, where foot traffic and vegetation trimming, but not removal, will occur to retrofit the fence; therefore, this species is not anticipated to be impacted by the project.

Section 4

Potential Biological Impacts/ Take Assessment

4.1 Direct and Indirect Impacts

4.1.1 Project Direct Impacts

The proposed project has the potential to directly, negatively impact Mount Hermon June beetle by causing mortality of individuals and by causing both permanent and temporary habitat loss. Computer aided design (CAD) drawings of the proposed project were used to calculate the following aspects of each project, which are listed in Table 3:

1. **Disturbance Envelope:** The footprint of the project component plus the area adjacent that will be disturbed through its construction/installation.
2. **Non-Habitat within the Disturbance Envelope:** The area within the Disturbance Envelope that does not consist of Mount Hermon June beetle habitat, because it is already covered by existing, impervious surfaces, including buildings and pavement.
3. **Total Habitat Disturbed:** The Disturbance Envelope minus the Non-Habitat within the Disturbance Envelope.
4. **Temporary Habitat Disturbance:** The area of habitat that will be disturbed to construct the project, but will *not* be permanently covered with impervious surfaces, and instead will consist of open sand and therefore will be available to be recolonized by plants following implementation of the project.
5. **Permanent Habitat Disturbance:** The Total Habitat Disturbed minus that area of Temporary Habitat Disturbance.

Impacts to Individuals

Installation and construction of the project components for the renovation project will disturb suitable habitat for the species within a total of 11,753 ft² or 0.270 acres (Table 3). This area is equal to the 18,584 ft² (0.427 acres) within the total project disturbance envelope minus the 6,802 ft² (0.156 acres) of existing impervious surfaces in that area, which include asphalt and pavement (Table 3). This remaining 11,753 ft² (0.270 acres) of open soil within the project disturbance envelop has the potential to support Mount Hermon June beetle. Vegetation removal, excavation, and grading have the potential to cause take in the form of injury or mortality to the fossorial beetles. Individuals that might be found below where soil will be

Table 3: Size (square feet) of temporary and permanent impacts to Mount Hermon June beetle habitat resulting from the proposed project components. The habitat disturbed is the total disturbance envelope minus the area of non-habitat (i.e., existing impervious surfaces) within the disturbance envelope. Habitat that will be covered by impervious surfaces constitutes permanent habitat removal, while adjacent areas of soil disturbance are temporary.

Project Component/ Column Identifier	Project Disturbance Envelope (Square feet)	Non-Habitat within Disturbance Envelope	Habitat Disturbed (square feet)		
			Total (1 - 2)	Temporary	Permanent (3 - 4)
			1	2	3
Garden Area	2,550	679	1,871	0	1,871
Walkways Adjacent to the Gym	3,048	1,609	1,439	906	533
Tree Removal	178	0	178	178	0
Parking Lot Curb Replacement	945	696	249	249	0
Parking Lot Driveway Widening	555	232	323	64	259
Parking Stall Improvements	3,206	2,766	440	177	263
Sally-port Tree Removal and Paving	1,015	475	540	0	540
Stairs and Landings	342	67	275	113	162
Landings at Pathway	108	24	84	21	63
Landscape Planting Areas	682	0	682	682	0
Transformer Pads and Conduit	757	254	503	161	342
Light Post and Conduit	99	0	99	93	6
Flag Pole	5	0	5	2	3
Fence Post	8	0	8	3	5
Pedestal and Bollards	5	0	5	0	5
Fire Access Road	3,537	16	3,521	523	2,998
Fire and Domestic Water Lines	574	0	574	574	0
New Pathway and Water Lines	970	13	957	665	292
Total	18,584	6,831	11,753	4,411	7,342

disturbed could be precluded from emerging by the impervious surfaces that will cover the soil (e.g., hardscapes or planter boxes).

Permanent Habitat Loss

Implementation of the renovation project will result in the permanent loss of 7,342 ft² (0.169 acres) of Mount Hermon June beetle habitat (Table 3). Project implementation will result in the capture and relocation, injury, or mortality of any individual Mount Hermon June beetles that are utilizing this area. This is the area of existing open soil that will be permanently covered by buildings, hardscapes, and the fire access road, where rock placed on the soil surface may inhibit use by Mount Hermon June beetle.

Temporary Habitat Loss

Vegetation removal and soil disturbance are anticipated to cause temporary habitat loss within 4,411 ft² (0.101 acres). Project implementation will result in the capture and relocation, injury, or mortality of any individual Mount Hermon June beetles that are utilizing this area. This primarily includes soil located adjacent to the improvement areas, which may be disturbed during grading or digging as part of construction. It also includes soil disturbance that will be conducted to plant the landscaping areas (Table 3).

Following project implementation, the areas of adjacent soil disturbance are anticipated to be recolonized by plants from adjacent habitat or the soil seed bank. The landscape areas will be planted using plants and other elements that will not deter use by Mount Hermon June beetle. Thus, while the impacts to Mount Hermon June beetles within the soil at the time of the digging will be permanent, the impact of digging on Mount Hermon June beetle habitat will be temporary.

4.1.2 Project Indirect Effects

Indirect impacts are effects caused by covered activities that may occur at a different time or in a different place than the direct impacts. The project is designed to minimize indirect effects for the Mount Hermon June beetle. To prevent disruption of the species' breeding behavior, all new outdoor night lighting installed as part of this project will feature LED bulbs, which generally emit wavelengths that limit attraction by nocturnal insects (Cruz and Lindner 2011). This will reduce the likelihood that males dispersing to breed during the flight season (May – August) will be attracted to the light rather than seeking females, thus avoiding disruption of breeding in habitat adjacent to the Project Area. The following additional steps are being taken to limit the indirect effects of light on Mount Hermon June beetle:

- The parking lot lighting intensity has been reduced by 28% when compared to the existing fixtures;
- All parking lot fixtures will have integral occupancy sensors that will reduce the light output by 50% when the region is unoccupied;
- The light shed in the parking lot will be reduced, by having new fixtures focus the light only where needed such that less light will spill off the property or into adjacent landscape areas compared to current lighting levels.

The new security fence lighting is more intense than existing, as is necessary for enhanced security; the intensity per fixture is increasing 32% from 9,500 Lumens to 12,500 Lumens. Despite this increase, the project will reduce the light emitted overall and thus enhance habitat conditions for Mount Hermon June beetle within the County parcel.

In addition, any exposed soil created during construction within the Mount Hermon June beetle flight season will be covered before 7 p.m. each night with tarps, to prevent dispersing males from burrowing into soil within the Project Area and then being impacted by ongoing construction.

4.1.3 Conservation Strategy

The County proposes to mitigate the above-described impacts of the proposed project on the Mount Hermon June beetle by controlling invasive Portuguese broom (*Cytisus striatus*) and French broom (*Genista monspessulana*) within a 2.5-acre treatment area immediately adjacent to the project parcel (Section 5). These treatments will promote populations of Mount Hermon June beetle in the long term, by increasing the cover and richness of native plants that the species utilizes for food (McGraw 2012b). In the short term, removal of invasive brooms may negatively impact Mount Hermon June beetles by reducing the amount of food (i.e., roots) available.

Invasive plant control also has the potential to negatively impact Mount Hermon June beetle larvae which inhabit the soil and may be disturbed when invasive shrubs are uprooted. These impacts will be limited by cutting (rather than pulling) shrubs that have roots that extend more than 6 inches below the soil surface, where most *Polyphylla* larvae have been observed during soil excavation in the Sandhills (J. McGraw, pers. obs.). Qualified biologists approved by the US Fish and Wildlife Service will be onsite during all habitat management activities that cause soil disturbance, including broom removal, to salvage and relocate out of all harm's way any Mount Hermon June beetles encountered during implementation of the conservation strategy. This and other minimization measures, which will be included in the habitat management plan prepared for the site, will greatly reduce, though not completely eliminate, the potential for take of Mount Hermon June beetle in the form of injury or mortality.

4.2 Anticipated Take of the Covered Species

The proposed project will result in the capture and relocation, injury, or mortality of Mount Hermon June beetles that occur within the 11,753 ft² (0.270 acres) of suitable habitat that will be disturbed and/or covered by as a result of the project. The proposed on-site mitigation, which entails removal of invasive brooms within a 2.5-acre treatment area (Figure 4) also has low probability of causing injury or mortality of Mount Hermon June beetles which could be impacted by soil disturbance or temporary loss of larval food sources (i.e., plant roots).

4.3 Effects on Critical Habitat

Critical habitat has not been designated for the Mount Hermon June beetle. In designating critical habitat for the Zayante band-winged grasshopper, the Service included 10,560 acres of land in central Santa Cruz County. This area represents the boundaries of the known distribution of the endangered insect. The primary constituent elements of critical habitat for the Zayante band-winged grasshopper are the presence of Zayante soils, the occurrence of Zayante Sandhills habitat and the associated plant species, and certain microhabitat conditions, including areas that receive large amounts of sunlight, widely scattered tree and shrub cover, bare or sparsely vegetated ground, and loose sand (USFWS 2001).

This proposed project occurs within the boundaries of designated critical habitat for the Zayante band-winged grasshopper. However, the project component areas do not feature the primary constituent elements for the Zayante band-winged grasshopper. Instead, the unpaved habitat within the disturbance envelopes of the project components features one or more of the following which limit use of habitat by Zayante band-winged grasshopper (McGraw 2015b; Appendix A):

- Relative dense canopy cover by native shrubs and trees, including coast live oak, ponderosa pine, and silverleaf manzanita, which feature dense leaf litter on the soil surface below and adjacent to their canopies;
- Ornamental plant species and associated landscaping elements, including mulch; and
- Dense exotic plant species including Portuguese and French broom.

Therefore, the proposed project will not impact critical habitat.

4.4 Anticipated Impacts of the Taking

Neither the mortality of Mount Hermon June beetles potentially occupying the 11,753 ft² (0.270 acres) of suitable habitat proposed to be disturbed by the project, nor the permanent removal of 7,342 ft² (0.169 acres) of habitat that will be covered with impervious surfaces or otherwise rendered unsuitable for use by the endangered beetle, are anticipated to affect the persistence of the Mount Hermon June beetle population in the Mount Hermon region or persistence of the species as a whole. The project impacts are unlikely to influence successful recovery of the endangered species. This assessment is made based on two interrelated factors:

1. The small area of habitat that will be removed, and
2. The insect's apparent ability to persist within partially fragmented habitats.

As a result of historic land use, Mount Hermon June beetle habitat within the Project Area is largely highly degraded by soil and vegetation modifications. Despite this, the habitat may support persisting populations of the endangered insect, which lives 99% of its live cycle below ground. Occurrence of the Project Area within an existing facility greatly limits opportunities for permanent conservation through acquisition or conservation easements.

Remaining intact habitat on the County parcel is of very high conservation value as it is largely intact (i.e., features natural soils and native plant species) and supports six of the seven endemic Sandhills species (Table 2). Importantly, repeated surveys of the site suggest that the density of Mount Hermon June beetle within the parcel is high (J. McGraw, unpublished data). Though the broom removal proposed as mitigation may cause limited, short-term negative impacts to individuals due to invasive plant removal and soil disturbance, it is anticipated to promote the long-term viability of the population, by preventing the site from being further degraded by the ongoing invasion and spread of exotic plants which outcompete native plants and alter the open structure of the sand parkland community.

Given the apparently large population, the relatively large size of the parcel, the intact nature of the habitat, and its location adjacent to other protected habitat (Henry Cowell State Park and Hanson Quarry Conservation Area), maintaining remaining habitat within and adjacent to the County parcel can promote persistence of the Mount Hermon June beetle, as well as other special-status species (Table 2). Throughout their limited ranges, these species face numerous threats from on-going activities associated with development and associated land use, including: landscaping, irrigation, and mowing; night lighting; existing infrastructure, including buildings, recreational areas (swimming pool and play fields), and paths (USFWS et al. 2011).

4.5 Cumulative Impacts

In contrast with the analysis of cumulative impacts under section 7, section 10 of the Act and HCPs analyze cumulative impacts as incremental impacts of the action on the environment when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The geographic area for analysis should be defined by the manifestation of direct or indirect impacts as a result of covered activities. Cumulative impacts under section 10 of the Act can result from individually minor but collectively significant actions taking place over a period of time.

The impacts of the proposed project on the persistence of the endangered Mount Hermon June beetle are very low, owing not only to the small size of the project, but also its occurrence in a partially already developed portion of the County's parcel. Other activities on the site are anticipated to reduce habitat for the species. These include:

- Construction of a multipurpose recreation facility within the fenced yard inside Juvenile Hall Facility (McGraw 2016);
- Replacement of the water tank at the northern end of the parcel (McGraw 2017a);
- Maintenance of existing public water supply water wells; and
- Maintenance and expansion of the telecommunications facility at the northern end of the parcel (McGraw 2017b).

Of these projects, two are being mitigated on the County Parcel, where the County has agreed to remove invasive broom species in a 4.3-acre area for 10 years (2017 - 2026), and the San Lorenzo Valley Water District will restore habitat degraded through replacement of the water tank and maintenance of the wells. As a result, the condition of the remaining habitat is anticipated to be improved following implementation of these infrastructure projects. Moreover, the adjacency of the County parcel to protected lands, including Henry Cowell State Park and the Hanson Quarry Conservation Areas, renders it is very unlikely that facility development and infrastructure improvements within the County parcel will extirpate the Mount Hermon June beetle from the patch of sandhills habitat on which it occurs. As a result, the cumulative impacts of this project on the persistence of the Mount Hermon June beetle are anticipated to be small.

Section 5

Conservation Program/ Measures to Minimize and Mitigate for Impacts

5.1 Biological Goals and Objectives

Section 10(a)(2)(A) of the Act requires that an HCP specify the measures that the permittee will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan.

As part of the “Five Point” Policy adopted by the Service in 2000, HCPs must establish biological goals and objectives (65 *Federal Register* 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary.

These goals were developed based upon the species’ biology, threats to the species, the potential effects of the Covered Activities, and the scope of the HCP.

Goal 1: Avoid and minimize take of the Mount Hermon June beetle within the project site.

Objective 1.1: Minimize the project disturbance footprint by limiting soil disturbance and plant removal.

Objective 1.2: During any portion of construction occurring during the flight season of the Mount Hermon June beetle, use plastic to cover exposed soil in areas that previously were covered with impervious surfaces to prevent dispersing males from burrowing into these areas and being impacted by construction

Objective 1.3: Capture and relocate any Mount Hermon June beetles observed during construction to intact habitat within the project parcel, but away from the construction activities.

Objective 1.4: Avoid landscaping with turf grass, or plants that are invasive or toxic to insects, and avoid using amendments and other landscaping elements that inhibit soil use and emergence by Mount Hermon June beetle.

Objective 1.5: Minimize night lighting during the flight season of the Mount Hermon June beetle.

Goal 2: Enhance habitat for the Mount Hermon June beetle on site, or protect habitat at an off-site location of high long-term conservation value to the species.

Objective 2.1: Control invasive Portuguese broom (*Cytisus striatus*) and French broom (*Genista monspessulana*) within a 2.5-acre area immediately adjacent to the site to promote the cover and richness of native plants, which provide food for the Mount Hermon June beetle. Alternatively, fund the protection, management, and monitoring of habitat for the Mount Hermon June beetle through the purchase of conservation credits at the Zayante Sandhills Conservation Bank.

5.2 Avoidance, Minimization, and Mitigation Measures

Section 10 of the Act requires that all applicants submit HCPs that “minimize and mitigate” the impacts of take authorized by an incidental take permit, and that issuance of the permit will not “appreciably reduce the likelihood of the survival and recovery of the species in the wild.” In general, HCPs should include mitigation programs that are based on sound biological rationale, practicable, and commensurate with the impacts of the project on species for which take is requested. Additionally, the Service encourages applicants to develop HCPs that contribute to the recovery of a listed species. If the proposed project is expected to result in permanent habitat loss, then the mitigation strategy must include compensatory mitigation consisting of the permanent preservation of suitable habitat or similar measures.

In accordance with these guidelines and the requirements of the Endangered Species Act, the Conservation Program of this HCP is intended to achieve its biological goals and objectives and to ensure that the impacts of covered activities on the Mount Hermon June beetle are minimized and mitigated to the maximum extent practicable.

5.2.1 Measures to Minimize Impacts to Mount Hermon June Beetle

The following measures are designed to minimize impacts resulting from covered activities on the Mount Hermon June beetle by reducing impacts on individuals and habitat adjacent to the Project Area and existing development.

5.2.1.1: Fence the perimeter of the project footprint to prevent inadvertent impacts to adjacent habitat.

Prior to initiation of ground-disturbing activities, the perimeter of the Project Area will be fenced using orange construction fencing, in order to ensure that all ground-disturbance is confined to the impact area.

5.2.1.2: If ground disturbing activities are conducted during the flight season of the adult Mount Hermon June beetle, exposed soil will be covered in order to avoid impacts to dispersing males.

Adult male Mount Hermon June beetles actively search for mates and breed during the evenings for approximately 12-14 weeks sometime between May 1 and August 30. During this period, males and females may burrow into duff and soils at relatively shallow depths for protection during the daytime hours. Every attempt will be made to conduct soil disturbing aspects of the project outside of the adult flight season. If construction occurs during any part of the flight season, tarps or other impermeable material will be used to cover open soil each night by 7:00 p.m. This will prevent adult males from burrowing into the exposed area and then being impacted by subsequent soil disturbance (digging, grading, or covering).

5.2.1.3: A qualified biologist will provide a training to all construction personnel regarding the Mount Hermon June beetle, and be on site during all ground-disturbing activities during which the species has the potential to be observed. The biologist will relocate any larva or adult of the Mount Hermon June beetle (Figure 3) encountered in an area to be impacted by the covered activities to the intact habitat north of the impact area and re-buried at the approximate depth at which it was unearthed. If an adult Mount Hermon June beetle is found on the soil surface, then it will be relocated to a portion of the project site outside of the impact area and left on the soil surface in a location protected by vegetation.

A qualified biologist will be on-site during all ground-disturbing activities when Mount Hermon June beetles have the potential to be observed. During pre-construction trainings, construction personnel will be shown pictures of Mount Hermon June beetle larva and adults (Figure 3), and instructed to cease construction activities if they are found until the biologist can translocate to appropriate habitat featuring loose, Zayante soils and native Sandhills plant species within the parcel. This measure will minimize take of the Mount Hermon June beetle by reducing the number of individuals that could be injured or killed as a result of project-related activities.

5.2.1.4: Minimize the use of outdoor lighting.

Adult Mount Hermon June beetles are distracted by light during the night, which can disrupt breeding activity. As part of this project, outdoor night lights installed to illuminate the multi-use facility and paths will feature light-emitting diode (LED) that emit wavelengths of light that less likely to attract nocturnal insects (wavelengths >550 NM; Cruz and Lindner 2011).

5.2.1.5: Minimize landscaping elements that degrade Mount Hermon June beetle habitat.

Because adult Mount Hermon June beetles emerge from under the soil surface to

attract and locate mates, turf grass, dense ground cover plants (e.g., ivy), weed matting, aggregate, and mulch can degrade habitat for this endangered insect, which consumes plant roots and fungi. To minimize impacts of landscaping on this species, plants species will be native to the sandhills, whenever possible; if suitable sandhills native plants are not available, the plant species installed will be non-invasive and non-toxic to insects. Additionally, turf grass, dense ground cover plants (e.g. ivy), weed matting, and aggregate, will be avoided and only a thin (<3" deep) layer of mulch will be applied immediately around the planting hole for each installed plant, where mulch is deemed essential to plant survivorship.

5.2.2 Measure to Mitigate Unavoidable Impacts

5.2.2.1 Mitigate the direct impacts to Mount Hermon June beetle individuals and impacts to Mount Hermon June beetle habitat that will occur in a total of 11,753 ft² (0.270 acre) of habitat by either enhancing 2.5 acres of habitat immediately adjacent to the site over a 10-year period, or purchasing conservation credits at the Zayante Sandhills Conservation Bank at a 1:1 ratio.

To mitigate the unavoidable impacts to the listed species, the County will implement one of two alternative mitigation options. In Option 1 On-Site Mitigation, the County will enhance habitat suitable for the Mount Hermon June beetle within a 2.5-acre portion of the Mount Hermon Association's adjacent 6.4-acre parcel (APN: 061-371-09) by conducting invasive plant removal and/or other appropriate habitat enhancement over a 10-year period (Figure 4). In Option 2 Off-Site Mitigation, the County will purchase conservation credits from the Zayante Sandhills Conservation Bank.

Option 1: On-Site Mitigation

Located west of the County's parcel, this 2.5-acre area features dense sand parkland habitat that is of high conservation value for Mount Hermon June beetle. Effects monitoring conducted as part of prior invasive plant removal projects at the site demonstrated that invasive broom removal increased the cover and richness of native sandhills plants, which provide a source of food for the endangered beetle (McGraw 2012c). As part of a prior habitat conservation plan (McGraw 2016), the County committed to implementing invasive broom removal annually for ten years (2017-2026) within a 4.3-acre portion of their 28-acre project parcel which is immediately adjacent to the 2.5-acre treatment area proposed for this project (Figure 4). Removing broom on the adjacent parcel owned by the Mount Hermon Association will expand the area of high quality, intact sand parkland habitat atop Mount Hermon, which supports a large population of the Mount Hermon June beetle (J. McGraw, unpublished data).

The ten-year treatment duration was determined by the County based on the similar costs to mitigating the project impacts at a conservation bank as described for Option

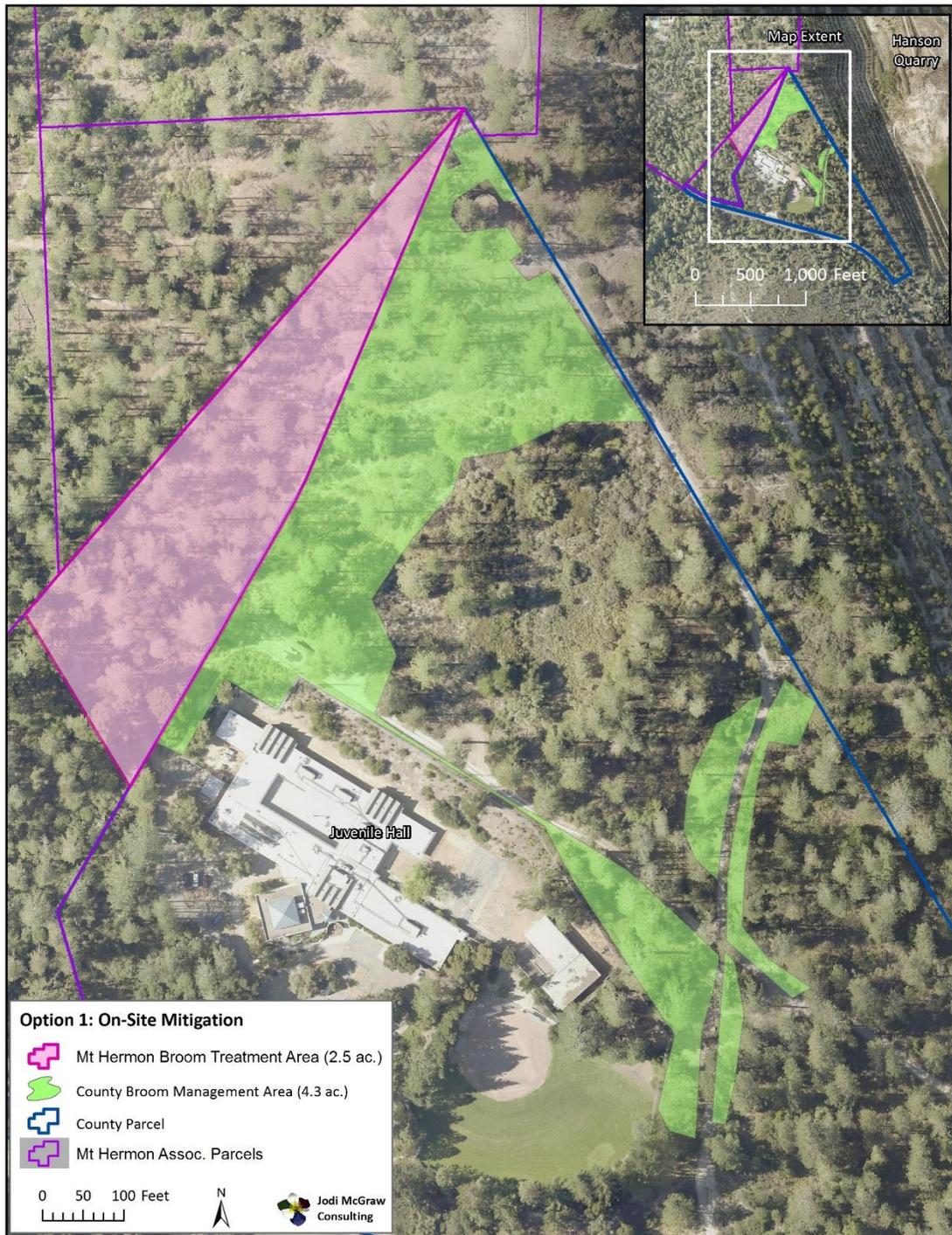


Figure 4: The 2.5-acre area where the County proposes to remove invasive plants to enhance Mount Hermon June beetle habitat adjacent to the Juvenile Hall Detention Center showing the Existing 4.3-acre habitat enhancement area.

2: Off-site Mitigation. The specific methods that will be used to manage and monitor the habitat will be outlined in a habitat management and monitoring plan (HMMP). The HMMP will also describe the measures that will be taken to minimize adverse effects to the listed species resulting from the enhancement work. The HMMP will be developed by a qualified biologist within six months of initiating ground-disturbing activities as part of the project permit issuance and will be subject to approval by the US Fish and Wildlife Service. It will include the following elements:

- A description of the habitat and listed species within the site and the ecological factors that are affecting their populations;
- A description of the prior management of the site, including history of invasive plant removal and related habitat management, including litter (i.e., duff) removal;
- Biological goals and objectives for the habitat and species, which reflect its desired future conditions;
- Strategies for how to achieve the goals through management, which will include invasive plant removal and/or raking to simulate the beneficial effects of fire;
- Monitoring methods that will be used to evaluate effectiveness of the treatments at creating the desired habitat conditions; and
- An adaptive management framework that will be used to adjust management, as needed, to achieve the goals and objectives.

If the County chooses to mitigate on site in this manner, it will ensure that the mitigation treatment areas and strategy are documented in the sandhills projects database, a geographic information system database that was created to facilitate US Fish and Wildlife Service tracking of sandhills conservation and mitigation projects (McGraw 2015c).

The Mount Hermon Association has committed to entering into an access agreement that will enable the County and its contractors to implement broom removal and related habitat management for three years; at Mount Hermon Association's discretion, the agreement will be renewed annually for seven years for a total of 10 years. If at any time following the initial three-year treatment period the Mount Hermon Association chooses not to renew the access agreement with the County, such that ongoing broom removal and related habitat management in the 2.5-acre area is not feasible, the County will instead conduct additional years of habitat management and monitoring within the 4.3-acre habitat treatment area located on the County parcel (Figure 4). As described above, as part of the habitat conservation plan for the multipurpose facility (McGraw 2016; permit TE 12342C-0), the County has committed to implementing habitat management and monitoring for 10 years within the 4.3-acre treatment area; that work began in 2017 and thus will continue through 2026. The County will extend the treatment period if/when the Mount

Hermon Associations declines to extend the annual access agreement after the initial three-year term. The number of additional years will be equivalent to the number of years remaining in the 10-year commitment for this project, as the broom removal proposed at the Mount Hermon parcel is roughly equivalent, in terms of its conservation value for the Mount Hermon June beetle, to that which is occurring within the County's parcel. While this alternative has been identified to provide assurances that high conservation value habitat management will be conducted to mitigate the impacts of this project on the Mount Hermon June beetle, the County will only substitute additional years of broom removal on the County property if/when the Mount Hermon Associations declines to extend the access agreement that will otherwise enable the County to conduct broom removal on the 2.5-acre portion on the Mount Hermon Association property.

Option 2: Off-Site Mitigation

As an alternative to broom removal on site, the County will mitigate the project impacts off-site by purchasing 11,753 square-foot conservation credits at the Zayante Sandhills Conservation Bank—a conservation bank that conserves, manages, and monitors large, high-quality Sandhills habitat preserves, which have high conservation value for the Mount Hermon June beetle and other listed species. The conservation bank is currently selling credits for the 23-acre Ben Lomond Sandhills Preserve, which is located 2.25 miles north of the proposed Project Area, in Ben Lomond CA (Figure 5). If the County opts to mitigate the project impacts off-site, it will purchase credits at a ratio of 1:1 for habitat impacts (11,753 sf credits). This ratio is appropriate, given the fragmented nature of habitat that will be impacted by the project. Should the County opt to purchase conservation bank credits, rather than conduct on-site habitat enhancement, the County will purchase the conservation credits prior to the inception of any project activities that would cause take, including soil disturbance. While this alternative has been identified to provide assurances that mitigation of high conservation value will be completed as part of the project, the County will only substitute the purchase of conservation credits for on-site habitat management if it is unable to finalize the initial three-year agreement with the Mount Hermon Associations to conduct broom removal on the 2.5-acre portion of their property as outlined above for the Option 1: On-Site Mitigation.

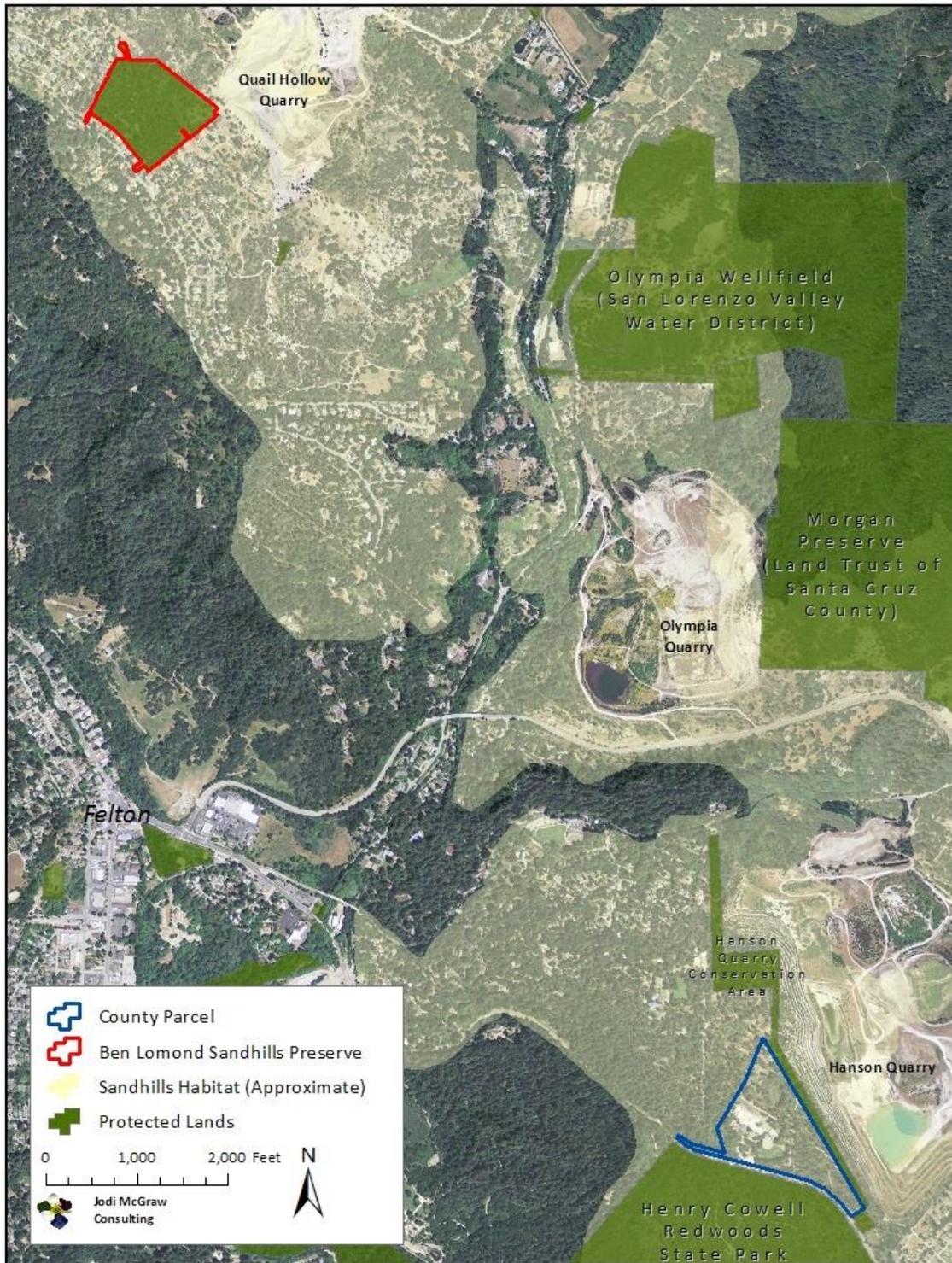


Figure 5: The Ben Lomond Preserve of the Zayante Sandhills Conservation Bank where the County may elect to purchase conservation credits rather than mitigating on site.

5.3 MONITORING

Monitoring tracks compliance with the terms and conditions of the HCP and permit. This project will include compliance monitoring to track the permit holder's compliance with the requirements specified in the HCP and permit, as described below. It will also include biological effectiveness monitoring to evaluate effects of the habitat enhancement on-site, unless the County elects to instead purchase conservation credits from the Zayante Sandhills Conservation Bank, in which case monitoring will be the responsibility of the bank operator.

5.3.1 Construction and Compliance Monitoring

Pre-construction Orientation: Prior to construction, a qualified biologist will conduct a construction crew training, in which individuals involved in construction will be provided a brief presentation about the biology of the Mount Hermon June beetle and will be shown pictures of the species during its various life stages (Figure 3) in order to aid identification during construction. Construction personnel will be directed to cease work and immediately contact a biologist permitted to handle and relocate Mount Hermon June beetle individuals (larvae, pupae, or adults), should they be observed within the project site.

Construction Monitoring: A qualified biologist will be present on-site during ground-disturbing activities to salvage and relocate any larva or adults observed, to ensure that the project impacts are confined to designated areas, and to ensure that open soil is covered nightly during the flight season to prevent Mount Hermon June beetles from entering the soil.

5.3.2 Effects Monitoring

To quantify the incidental take at the end of the project, a qualified biologist will calculate the area of soil disturbance and thus incidental take, and count the number of larvae, pupae, and adult Mount Hermon June beetle that were found and translocated during construction.

Should the County opt to mitigate the project impacts on-site, habitat-based monitoring will be used to document effectiveness of the habitat enhancement treatments annually. The Habitat Management and Monitoring Plan developed within six months of initiating ground-disturbing activities as part of the project will describe the monitoring protocol and how its results will be used to inform ongoing habitat enhancement.

Should the County opt to mitigate the project impacts by purchasing conservation credits at the Zayante Sandhills Conservation Bank, the bank operators will be responsible for annual monitoring at the Ben Lomond Sandhills Preserve.

5.3.3 Access to Project Site

The permit holder shall allow representatives from the Service access to the project site to monitoring compliance with the terms and conditions of the HCP, and the effects of the project. As part of the access agreement within the Mount Hermon Association, the County will work to ensure the Service is granted access to the 2.5-acre on-site mitigation area during the period of active habitat management.

5.4 Reporting

By January 31 following each year of the permit, a qualified biologist will submit a report to the US Fish and Wildlife Service in order to document the status of the project. The report will include:

1. A brief summary of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities);
2. Project impacts;
3. Description of take that occurred (based on disturbance envelope);
4. Observations of any Mount Hermon June beetle adults, larvae, or pupae;
5. Brief description of conservation strategy implemented;
6. Compliance monitoring results;
7. Description of any changed or unforeseen circumstances that occurred and how they were addressed;
8. Funding expenditures, balance, and accrual; and
9. Description of any minor or major amendments.

Should the County opt to mitigate impacts of the project on-site (Mitigation Option 1), the report will also describe the habitat enhancement work conducted each year, the results of annual monitoring, and the plan for habitat enhancement work the following year. The Habitat Management and Monitoring Plan prepared within 6-months of the inception of ground-disturbing activities as part of the project will describe these and other contents of the annual report that will be prepared to document such on-site habitat mitigation. If the County instead elects to purchase conservation credits from the Zayante Sandhills Conservation Bank (Mitigation Option 2), monitoring and reporting will be the responsibility of the bank operator. The applicant understands that if the Service does not receive the report, the applicant's permit will not be in compliance and will not be renewed.

Section 6

Plan Implementation

6.1 Plan Implementation

The project will be implemented by the applicant, the County of Santa Cruz (County), and its contractors. Precise timing of the project will depend on when the incidental take permit is issued, with efforts made to avoid ground-disturbing activities during the flight season (Section 5.2.1).

6.2 Changed Circumstances

6.2.1 Summary of Circumstances

Section 10 regulations (69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2)) 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 HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the 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.

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 species, a fire, or other natural catastrophic event in areas prone to such 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 management 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 fully implemented).

Foreseeable changed circumstances within the Project Area of this HCP include:

- the new listing of a species; and
- the discovery of another federally-listed species (Table 2) within the Project Area.

6.2.2 Newly listed species

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 of the newly-listed species or adverse modification of any newly designated critical habitat. The County shall implement the modifications to the HCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take of the newly listed species or adverse modification of newly designated critical habitat. The County shall continue to implement such modifications until such time as the County has applied for and the Service has approved an amendment of the Section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies the County in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species or adverse modification of newly designated critical habitat.

The occurrence of a newly listed species at the project site during the course of the requested 12-year permit is unlikely due to the small size of the Project Area, the degraded and fragmented nature of the habitat, and the land use history of the site.

6.2.3 Discovery of other currently listed species at the project site

In the event that one or more other already-listed endangered species are found at the site, the applicant will cease project activities that would likely result in incidental take of newly-discovered listed species, and apply for a permit amendment. It is unlikely that other listed species will be discovered at the project site, due to the inappropriate habitat conditions (i.e. dense tree canopy cover), the duration of the project permit, and the recent negative survey results (McGraw 2015b; Appendix A).

6.3 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 HCP'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 Act 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 case of an unforeseen event, the permittee shall immediately notify the Service staff who have functioned as the principal contacts for the proposed HCP or their designee. 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 circumstances 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 original terms of the HCP only with the consent of the permittee.

6.4 Amendments

6.4.1 Minor Amendments

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the Service's Field Office.

6.4.2 Major Amendments

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the Service's decision documents, including the NEPA document, the biological opinion, and findings and recommendations document. Major amendments will often require additional public review and comment.

6.5 Suspension/Revocation

The Service may suspend or revoke their permit if the County fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the Service shall be in accordance with 50 CFR 13.27-29, 17.32 (b)(8).

6.6 Permit Renewal

The applicant requests a 12-year permit to ensure there is sufficient time to implement the covered activities. Construction will require approximately one year, though may not be initiated immediately following permitting. The 10-year habitat enhancement work will be initiated prior to or within six months of the inception of ground-disturbing activities as part of the construction project.

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, the property owner shall submit to the Service, in writing:

- a request to renew the permit with reference to the original permit number;
- certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing permit;
- a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover; and
- evidence that annual reports have been timely submitted.

If the Service concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If the property owners file a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permits expiration, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, the property owner may not take listed species beyond the quantity authorized by the original permit. If the property owner fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. The County must have complied with all annual reporting requirements to qualify for a permit renewal. Should the County utilize the conservation bank for off-site mitigation, then the conservation bank operators must similarly have complied with all annual reporting requirements for the County's permit to be renewed.

6.7 Permit Transfer

If the proposed permit holder, the County of Santa Cruz, transfers the property to another party during the period of the permit and that party agrees to implement the project and comply with the terms of the HCP, the permit can be transferred to the new landowner.

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(s). The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this HCP unless otherwise specified in the Assumption Agreement and agreed to in advance by the Service.

Section 7

Funding

7.1 Costs of HCP Implementation

Costs to implement the conservation strategy described in this plan are estimated in Table 4, which reflects costs for two alternative mitigation approaches. In Option 1, the County will conduct 10 years of invasive plant removal and related habitat enhancement to enhance Mount Hermon June beetle habitat within a 2.5-acre area adjacent to the site. In Option 2, the County will purchase conservation credits at the Zayante sandhills conservation bank (Section 5).

7.2 Funding Source(s)

As the landowner and applicant, the County of Santa Cruz will pay for all costs associated with implementing the HCP (Table 4). Funds will be derived from the Santa Cruz County Probation Department and Santa Cruz County general fund.

The County understands that failure to provide adequate funding and consequent failure to implement the terms of this HCP in full could result in temporary permit suspension or permit revocation. The County will prepare and submit to the USFWS annual reports that demonstrate implementation of the conservation strategy. As noted previously, the County will submit to the USFWS for review the Habitat Management and Monitoring Plan prior to or within six months of initiating ground-disturbing activities as part of the project. The County will begin implementing habitat enhancement prior to or within six months of the ground-disturbing activities. Alternatively, the County will purchase the conservation credits prior to initiation of ground-disturbing activities.

Table 4: Estimated costs to implement the conservation strategy.

Element	Strategy	Type	Units		Costs (\$)	
			Number	Per Unit	Total	
Minimization Measure 5.2.1.1	Fence the perimeter of the project component footprints using orange construction fencing (ESA fence)	Orange Construction fence (100' roll)	15	30	450	
Minimization Measure 5.2.1.2	Cover open soil in previously impervious portion(s) of Project Area with tarps to prevent burrowing during flight season	Tarps or other Impermeable Material	10	20	200	
Minimization Measure 5.2.1.2	Biologist will conduct a pre-construction training and monitor ground-disturbing activities to capture and relocate any MHJB observed.	labor hours	80	105	8,400	
Subtotal: Minimization Measures					9,050	
On-Site Mitigation (Option 1)	Control invasive broom in 2.5-acre treatment area and conduct habitat-based monitoring for three years	3 years of treatment and reports	1	42,889	42,889	
	Conduct annual invasive broom removal in 2.5-acre treatment area and annual habitat-based monitoring for seven years	1 year of treatment, monitoring, and reporting	7	7,841	54,886	
Subtotal: On-site Mitigation (Option 1)					97,775	
Off-Site Mitigation (Option 2)	Purchase 11,753 square foot conservation credits at the Zayante Sandhills Conservation Bank	conservation credits	11,753	8.74	102,721	
	Hire biologist to conduct biological effects monitoring in Project Area and prepare three annual reports to USFWS	1 year of annual reporting	1	1,764	1,764	
Subtotal: Off-Site Mitigation (Option 2)					104,486	
Total Costs with On-Site Mitigation (Option 1)					106,825	
Total Costs with Off-Site Mitigation (Option 2)					113,536	

Section 8

Alternatives

8.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed. The following sections outline three alternatives, one of which is the proposed project.

8.2 No Action Alternative

Under the No Action Alternative, the County would not renovate the juvenile hall facilities (Table 1) and an incidental take permit would not be requested or issued. The 11,753 ft² (0.270 ac) of suitable habitat in and around the existing facilities where improvements are proposed would remain undisturbed by construction activities and the County's goals for the renovation project would not be achieved.

Under the No Action Alternative, the conservation measures proposed in this HCP would not be implemented. Accordingly, Portuguese broom and French broom will not be controlled within the 2.5-acre habitat enhancement area proposed for the mitigation (Figure 4). As these invasive shrubs produce abundant, well-dispersed seed, they will likely increase their density as well as spread into adjacent areas, unless another mechanism is identified to fund or otherwise implement their control.

Likewise, 11,753 ft² of conservation credits would not be purchased at the Zayante Sandhills Conservation Bank. This would reduce funds available for preservation, management, and monitoring of the high-quality preserve established to protect the Mount Hermon June beetle and other endangered Sandhills species (Table 2).

Because project implementation would not be accomplished and the benefits of the HCP conservation measures outweigh the impacts of the project on the Mount Hermon June beetle, the No Action alternative has been rejected.

8.3 Alternative 2: Redesign Project (Reduce Take)

Under this alternative, the new facilities would be developed as in the proposed project, except the walkways would not be built adjacent to the gym and the planting areas would not be re-landscaped within the parking lot and existing landscape planting areas (Table 1).

This alternative would reduce the total area of impacted habitat by 2,121 ft² or by 18%. Eliminating the walkways would reduce the accessibility of the site and in particular, the new gym facility. Avoiding landscaping would limit the amount of soil that is temporarily disturbed through installation of the plants; however, the existing ornamental plants would remain in the existing planters.

Under this option, the County would control invasive plants within the habitat adjacent to the site for two fewer years (i.e., eight years rather than ten years) if they opt to mitigate the project impacts using Option 1 (Table 4). Similarly, the County would purchase 18% fewer conservation credits from the Zayante Sandhills Conservation Bank, should the County opt to mitigate the project impacts off-site as part of Option 2 (Table 4). This would reduce funds to preserve the high-quality habitat it contains. This redesign would present a significant burden on the County of Santa Cruz Probation Department, and the population it serves at the Juvenile Hall Facility, which is the only one in the county, without significantly reducing the project impacts on the Mount Hermon June beetle. For these reasons, this redesign alternative has been rejected.

8.4 Alternative 3: Proposed Action (Permit Issuance)

Under the proposed action alternative, the County would implement the series of improvements to enhance the juvenile detention center as described in Section 2. The proposed action will require the issuance of a Section 10(a)(1)(B) permit in order that the project can be implemented in compliance with the federal Endangered Species Act. The project could cause mortality to individuals potentially occurring within the 11,753 ft² (0.270) area that will be disturbed.

However, the conservation measures proposed in the HCP would provide for greater conservation benefit to the Mount Hermon June beetle than that which would result from the No Action alternative. Specifically, under the Proposed Action, the County will enhance habitat for the Mount Hermon June beetle by controlling invasive plants for 10 years within a 2.5-acre area on site, where the species is observed at relatively high density (McGraw 2009, 2010, 2011a, 2012a, 2013, 2014a, 2015a). Alternatively, the County will secure 11,753 ft² conservation credits in the Zayante Sandhills Conservation Bank, thus ensuring the preservation, management, and monitoring of Mount Hermon June beetle in the Ben Lomond Sandhills Preserve—a relatively large, contiguous, and high-quality habitat. The Proposed Action thus provides greater conservation benefits than the No Action and Redesigned Project Alternative, while best meeting the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

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APPENDIX A: Habitat Assessment and Survey for 3650 Graham Hill Road, Felton, CA (McGraw 2015b)



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August 7, 2015

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RE: Biological Report for Juvenile Detention Center Site, 3650 Graham Hill Road Felton, CA (APN: 061-371-16). *Survey conducted under US Fish and Wildlife Service Recovery Permit TE 118641-2.*

Dear Ms. Allen:

I am writing to provide you with a report of my assessment and survey of the rare and endangered species and sensitive habitat within and near the County of Santa Cruz Probation Department's Juvenile Detention Center facility. The facility is located in the southern portion of the County's approximately 28-acre parcel (APN: 061-371-16) at 3650 Graham Hill Road in the unincorporated portion of Santa Cruz County between Felton and Scotts Valley, California. The parcel supports special-status plants and animals that occur within the Santa Cruz Sandhills—an ecosystem that occurs on Zayante sand soil within central Santa Cruz County (Table 1; McGraw 2008, 2011, Arnold and Blandel 2014).

At the request of the Probation Department, I completed in July 2015 a draft Habitat Conservation plan to cover impacts to the federally-endangered Mount Hermon June beetle that would result from the Probation Department's proposed development of a multipurpose facility in the fenced yard north of the detention center buildings.

Based on our conversations and correspondence, I understand that the Probation Department has since been offered state funding to improve the interior of the buildings as well as enhance outside infrastructure. Potential project elements include the following:

1. Renovating and upgrading the facility including to kitchen, dining area, seismic/structural bracing, mechanical and plumbing, security and fire safety;
2. Developing a 'seed to table garden' in the fenced yard;
3. Replacing the existing perimeter fence to enhance security;
4. Repaving the existing paved parking lot and removing trees that have uplifted the pavement through their root growth and eliminating parking 'islands' that once featured trees that have been removed or will be removed;
5. Making necessary upgrades to equipment in the generator utility area west of the building;
6. Enhancing the wastewater treatment system; and
7. Removing a large ponderosa pine stump near the entrance of the building; and

8. Possibly installing a sally port to promote secure drop off in the police entrance located on the western portion of the building.

The improvements listed under item 1 above will occur in the interior of the facility and not affect open soil within the property.

The purpose of my assessment was to evaluate whether the other project components (2-8 above) would impact special-status species. In the approximate locations of the project component areas as well as along the access routes that would be used during construction (Table 2, Figure 1), I implemented the following:

1. An assessment of habitat including soils and vegetation;
2. A survey for the rare plants; and
3. A three-day, presence/absence survey for the Zayante band-winged grasshopper.

A survey for the Mount Hermon June beetle were not conducted, as the habitat assessment identified that all unpaved areas are likely to support the species (Table 2). Surveys for Santa Cruz kangaroo rat were recommended and I understand they were implemented concurrently by biologists from Biosearch, who will provide the Probation Department their findings and recommendations in a separate report.

The 4.3-acre area that was assessed and surveyed for this report includes most of the Juvenile Detention facility (Figure 1). Additional parking areas to the south were not assessed as no off-pavement work is anticipated in this area, nor is work anticipated to occur in Michael Gray Field—the park (ballfield) located east of the facility and west of the paved access road.

This report describes the assessment and survey methodology and then provides the results, which are summarized in Table 2. It also identifies associated permit requirements, and provides initial recommendations for how the County can avoid and minimize the impacts.

Existing Development and Land Use

The assessment and survey area features a range of facilities including buildings, paved parking lots, a fenced yard with a paved basketball court and a mowed area, ornamental trees and other plantings, and planter boxes. The roads east of the facility, which are anticipated to be used in construction, include: 1) a paved road that ascends Mount Hermon and terminates at the telecommunications facility at the northern end of the County's parcel, 2) an unpaved (natural surface) road north of the fenced perimeter which terminates at the San Lorenzo Valley Water District's (SLVWD's) Pasatiempo Well, and 3) a separate unpaved road that provides access to the east end of the fenced yard.

Soils

As mapped by the Soil Conservation Service, the subject parcel contains Zayante soils, which are poorly developed, deep, coarse, sand soils derived from the weathering of uplifted marine sediments and sandstones (USDA 1980). Some project areas feature areas of pavement (i.e. asphalt or concrete); they include the parking area, sally port area, and utility area (Table 2). Unpaved areas feature sand soil characteristic of the Zayante series. The soil varies in color from light grey to medium grey brown, reflecting variability in organic matter; darker soils occur in areas with dense tree cover (Table 2). Soil ranges from loose and friable, to relatively compact (Table 2).

Vegetation

Plant species composition and structure (i.e. vegetation) within the assessment and survey area varies greatly due primarily to the type and intensity of land use, but also natural variation in plant community structure within the intact habitat. The assessment area features areas of intact native sandhills vegetation, ornamental/landscape plantings, areas of ruderal (disturbance-adapted) vegetation, and paved areas which lack vegetation (Table 2).

Intact native vegetation includes two native sandhills plant communities: silverleaf manzanita chaparral, which is a type of northern maritime chaparral, and ponderosa pine forest, which is a type of maritime coast range ponderosa pine forest. Both communities are sensitive and protected under the County's Sensitive Habitat Ordinance.

Silverleaf manzanita chaparral occurs along the paved access road to the east, along the northern fence line, and in the northwest corner of the assessment area, south of SLVWD's well. Silverleaf manzanita chaparral is dominated by native shrubs including silverleaf manzanita (*Arcostaphylos silvicola*), yerba santa (*Eriodictyon californicum*), Santa Cruz Mountains manzanita (*Arctostaphylos crustacea* ssp. *crinita*), and sticky monkeyflower (*Mimulus aurantiacus*) with bracken fern (*Pteridium aquilinum* var. *pubescens*) and herbs such as *Pseudognaphalium* sp. nov., Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*) and hooked pincushionplant (*Navarretia hamate*) occurring in the gaps between shrub canopies. In the sloped area on the northern portion of the fenced yard, the silverleaf manzanita chaparral has been invaded by exotic Portuguese broom (*Cytisus striatus*); elsewhere, this community is largely dominated by native species, due in part to prior invasive plant control projects on the property (McGraw 2006, Burks and McGraw 2012, McGraw 2013).

Ponderosa pine forest occurs along much of the northern and western perimeter of the site. It features ponderosa pine (*Pinus ponderosa*), coast live oak (*Quercus agrifolia*), and Pacific madrone (*Arbutus menziesii*) in the overstory, with shade-tolerant herbs and shrubs in the understory including poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), California coffee berry (*Frangula californica*), and bracken fern. The parking area and other more developed portions of the project area feature remnant, mature ponderosa pine and coast live oak with more ruderal vegetation consisting of plant species adapted to disturbance.

Portions of the project area feature ornamental plantings including manzanitas (e.g. *Arctostaphylos* cf. *hookeri*), mahonia (*Berberis* sp.), acacias (*Acacia* sp.), and iceplants (*Carpobrotus* spp.). Other areas which have not been planted but are mowed or cleared, such as the flat portion of the fenced yard including the proposed garden area, feature ruderal vegetation characterized by primarily exotic annual grasses and forbs including smooth cat's ears (*Hypochaeris glabra*), rattail fescue (*Festuca myuros*), horsetail (*Erigeron Canadensis*), and sheep sorrel (*Rumex acetosella*).

Special-Status Plants

The assessment area features occurrences of two special-status plant species: Ben Lomond spineflower and silverleaf manzanita. Ben Lomond spineflower was observed in the northwestern corner of the assessment area, just west of the SLVWD's well, and also along the paved access road east of the facility. Likewise, silverleaf manzanita occurs in the northwest portion of the assessment area, just south of the well, and along the paved access road. The rare shrub also occurs inside the northern portion of the perimeter fence.

I did not observe Ben Lomond wallflower and Ben Lomond buckwheat in the assessment area.

Special-Status Animals

Mount Hermon June Beetle

All of the unpaved portions of the proposed project areas likely support the Mount Hermon June beetle—an insect that feeds as a fossorial larva on plant roots and associated mycorrhizae, and then emerges as an adult in late spring and summer in order to mate. This species occurs in areas with Zayante soils that feature a variety of vegetation, including not only native Sandhills communities but also landscape and ornamental vegetation. Perhaps because it lives 99% of its life belowground, the Mount Hermon June beetle has been found within developed areas and other areas impacted by human uses, including mowed areas subject to recreation and denuded areas, such as vehicle turnouts along Graham Hill Road. The Mount Hermon June beetle is known to occupy the intact habitat within the subject parcel, where intact Sandhills habitat on the northern portion supports a relatively high abundance of the species (J. McGraw, unpublished data).

Habitat for the Mount Hermon June beetle within the project areas varies from intact to highly degraded (Table 2). The ponderosa pine forest and silverleaf manzanita chaparral are intact and feature relatively loose sand soil and diverse assemblages of native species. The entrance area and parking islands are highly degraded as they feature more compacted soil and limited native plant cover. Area of intermediate habitat quality include the garden area, utility area, and much of the fence alignment where native plant species occur patchily along with exotic plants including ice plant and Portuguese broom.

Zayante Band-Winged Grasshopper

Some project areas had limited potential to provide habitat for the Zayante band-winged grasshopper—an insect that requires open sunlit, sparsely vegetated areas in Zayante soils. Specifically, the garden area, utility area, and western fence alignment all feature these conditions. Mowing and related land-use activities likely degrade habitat, which is also small (<0.25 acre) and isolated from other suitable habitat by dense forest. The Zayante band-winged grasshopper is known to occur within the habitat set-asides surrounding the Hanson Quarry, approximately 800 feet northeast of the project site (USFWS 2009) and has been reported near the San Lorenzo Valley Water District's water tank in the northern portion of the parcel (Arnold and Blandel 2014).

Based on these factors indicating the site had some ability to support the Zayante band-winged grasshopper, I recommended that a presence/absence survey be used to evaluate whether the project area is occupied by the endangered insect. I received permission from Douglass Cooper, Deputy Assistant Field Supervisor with the U.S. Fish and Wildlife Service to conduct the presence/absence survey under my recovery permit for the Mount Hermon June beetle and Zayante band-winged grasshopper (TE 118641-2).

The survey area included all potentially suitable habitat within the 4.3 acre assessment area (Figure 1). I conducted the presence/absence survey on three days during the species' adult activity period this year (Table 3), which I determined through ongoing, weekly monitoring of the species since June 2015 at the Quail Hollow Quarry Conservation Areas, located two miles north-northwest of the project area. This 'control' population was examined each day of the survey to verify that the survey occurred on a day when the Zayante band-winged grasshopper was active, and thus more likely to be detected within the proposed project area if it is present.

Surveys occurred on days with weather conditions conducive to the species' activity; temperatures were between 84 °F and 92 °F and there was little wind (Table 3). The three surveys were conducted across a range of times of the day during which the species is active (i.e. 11:30 a.m. to 4 p.m.) to ensure that sunlight fell on each portion of the ground through the surrounding tree canopy in each area during at least one survey.

On each survey day, I walked parallel, contiguous, approximately 10-wide belt transects throughout the survey area in search of grasshoppers. Surveys of the project areas required one hour, as did the survey of the control (Table 3).

During the three-day survey, I did not observe any Zayante band-winged grasshoppers within the proposed project areas (Tables 3). During the three days, I observed a total of 31 of the endangered grasshoppers at the reference site during the approximately same period of time spent searching (Table 3).

Potential Project Impacts

Based on my survey results and observations of the habitat conditions within the proposed project area, and known information about the distribution and ecology of the special-status species, the proposed new improvements to the Juvenile Detention Center will likely impact the Mount Hermon June beetle. Individuals that occur underground can be killed during soil excavation for the fence and wastewater treatment system upgrade. The project will also impact the species by permanently covering habitat within the portion of open soil within the project disturbance envelopes, such as through installation of the garden facilities (greenhouses and raised beds), fence footings and piers, and additional pavement, if any, in the parking area. Approximately 10-15% of the proposed project area features asphalt (parking area and eastern access road) or concrete (utility area) which already precludes use of habitat below by the Mount Hermon June beetle. Much of the unpaved areas including the dirt portion of the access route contain habitat that has been degraded by soil compaction and vegetation modifications associated with use of the property. Portions of the project area include relatively intact habitat characterized by loose sand soil and native plant cover.

Removal of trees associated with the wastewater treatment upgrades and parking area enhancement would further impact the species by reducing roots upon which it feeds. The project improvements also have the potential to indirectly impact Mount Hermon June beetle, by promoting the invasion and spread of exotic plants that can be facilitated by disturbance. The nocturnal beetles can also be impacted if the project improvements increase the size, number, or frequency of use of outdoor night lighting, which attracts male beetles and disrupts breeding. These impacts could be reduced by utilizing night lights that emit wavelengths that do not attract nocturnal insects.

The project components may also impact silverleaf manzanita, individuals of which may be killed as a result of work to replace the fence. Such impacts could potentially be avoided if the plants are flagged for avoidance by crews when installing the fence. Silverleaf manzanita could also be impacted as a result of construction along the access road, though such impacts could similarly be avoided by installing fences to prevent off-road vehicle use.

Construction fences would similarly likely be sufficient to avoid impacts to Ben Lomond spineflower along the access road. Fences or symbolic fencing could also be used to alert crews to the population west of the SLVWD's well, should foot travel need to occur in that area as part of work to install the fence.

The other rare and endangered plants and animals of the Sandhills do not occur within or adjacent to the project footprint; therefore, the project is not anticipated to impact the Zayante band-winged grasshopper, Ben Lomond wallflower, or Ben Lomond buckwheat.

Project Permitting Requirements and Processes

The federal Endangered Species Act makes it illegal to ‘take’ (kill, harm, harass, etc.) endangered animals including the Mount Hermon June beetle (MHJB). However, the U.S. Fish and Wildlife Service (USFWS), which administers the Act, can permit take of the endangered insect that might occur incidentally during the course of otherwise lawful projects, such as facility improvements, by issuing what is known as an ‘incidental take permit’ (ITP).

In order to receive an ITP under Section 10 of the Endangered Species Act, project proponents must complete a Habitat Conservation Plan (HCP), which outlines how they will mitigate the project’s negative effects on the endangered species. Mitigation must include steps to avoid, minimize, and repair impacts at the project site, as well as efforts to compensate for them by benefiting similar habitat elsewhere. Given the modest size of the proposed project and low anticipated impacts to the MHJB as well as other environmental resources, it could potentially receive an ITP through preparation of a low-effect HCP, which can be more rapidly reviewed and permitted by the USFWS relative to a regular HCP.

At the Probation Department’s request, the proposed project improvements could be incorporated into the existing, administrative draft HCP for the multipurpose room proposed for construction in the fenced yard. This would delay submittal of the existing HCP, as additional information about the new, proposed facility improvements would need to be developed in order to describe them and characterize their impacts in the HCP. Having a single HCP could reduce some costs including administration relative to having two separate HCPs and resulting federal permits for the same site.

I note that, if the proposed project were to involve an act of the federal government, such as provision of federal funding or permits, then the project would be subject to an intra-agency consultation between the USFWS and the other federal agency involved in the project. Rather than preparing an HCP, the County would consult with the USFWS, which would then issue a biological opinion that describes project avoidance, minimization, and mitigation measures designed to reduce impacts. An act of the federal government that would create the nexus that would trigger such a Section 7 consultation can include funding for the project (e.g. grants) and federal agency regulatory oversight or jurisdiction. I understand from our communications that this project does not have federal funding or a federal nexus, and that a Section 10 permit will need to be sought by preparing an HCP.

Finally, the County’s Sensitive Habitat Ordinance also regulates activities that occur within Sandhills habitat supporting rare species. Steps taken to avoid, minimize, and mitigate project impacts as part of compliance with the federal Endangered Species Act often satisfy the County’s own requirements, though this is not always the case, making it important to coordinate project permitting with the County to ensure compliance with the ordinance.

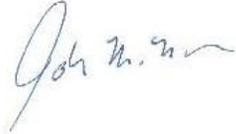
Next Steps

This initial information is provided to assist evaluation of the proposed project. Should you decide to pursue the project, I recommend that you contact the U.S. Fish and Wildlife Service, which administers the Endangered Species Act, and the County of Santa Cruz Planning Department, which implements the County’s Sensitive Habitat Ordinance. Precise aspects of the project and its conservation strategy should be developed as part of a more detailed planning process conducted in coordination with representatives of these agencies (Table 4).

I would be happy to assist the County further with project permitting for this project, by either revising the existing draft HCP for the property, or preparing a new HCP for this project.

Please do not hesitate to contact me if you have any questions regarding the habitat assessment or if I can assist you further.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jodi M. McGraw".

Jodi M. McGraw

References

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Tables and Figures

Table 1: Occurrence of special-status species of the Santa Cruz Sandhills within the County of Santa Cruz Parcel and Proposed Improvement Areas.

Common Name	Status	Occurrence Within	
		Project Area	Project Parcel
Santa Cruz kangaroo rat (<i>Dipodomys venustus venustus</i>)	California Species of Special Concern	Present Along Eastern Access Road	Present
Mount Hermon June beetle (<i>Polyphylla barbata</i>)	Federally Endangered	Present	Present
Zayante band-winged grasshopper (<i>Trimerotropis infantilis</i>)	Federally Endangered	Absent	Present
Ben Lomond spineflower (<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>)	Federally Endangered; List 1B.1 ¹	Absent	Present
Santa Cruz wallflower (<i>Erysimum teretifolium</i>)	Federally Endangered; California Endangered; List 1B.1	Absent	Absent
silverleaf manzanita (<i>Arctostaphylos silvicola</i>)	List 1B.3	Present	Present
Ben Lomond buckwheat (<i>Eriogonum nudum</i> var. <i>decurrens</i>)	List 1B.1	Absent	Present

¹ Most rare, threatened, or endangered plants in California and elsewhere (CNPS 2015)

Table 2: Habitat assessment of the project areas (Figure 1).

Project Component	Description	Soil Conditions	Vegetation Type and Dominant Species	Rare Species Occurrences and Habitat
Garden Area	Install raised beds, small greenhouses, a utility shed, and other improvements.	Partially paved (~50%) with concrete; light grey, medium grain sand soil of the Zayante series elsewhere.	Ruderal: Primarily non-native species adapted to disturbance including smooth cat's ears, horsetail, and sheep sorrel. Ornamental shrubs and a California coffee berry occur adjacent to the building.	Degraded habitat for the Mount Hermon June beetle.
Enhanced Wastewater Treatment System	Remove 1-2 ponderosa pine trees and install enhanced wastewater system (~40' x 25') where existing concrete tanks occur; install new tanks in adjacent paved parking lot.	Medium grey loose fine sand soil of the Zayante series, which is covered with dense litter (except where gopher mounds). Concrete tanks are approximately 2-4 feet deep.	Ponderosa Pine/Ornamental: Overstory of ponderosa pine and ornamental trees (e.g. <i>Acacia</i> sp.) with very sparse cover understory including poison oak. Ornamental juniper shrubs nearby.	Highly degraded habitat for the Mount Hermon June beetle.
Detention Fence	Replace existing fence with 16.5' tall no-climb fence with 'Candy Cane' top and 5' deep posts and continuous footings. Also relocate existing light standards (approx. 5-7) inside of the fenced yard and remove segment of fence connecting perimeter fence to building. Fence installation will likely require pruning or removing mature trees (coast live oak and ponderosa pine) as well as other vegetation.	Variable along perimeter, but generally light to medium grey sand of the Zayante series, that is darker and also more compacted near buildings on the southeast.	Variable: The fence traverses a range of vegetation along its length. The western and northern fence features silverleaf manzanita chaparral and ponderosa pine forest including: silverleaf manzanita, yerba santa, sticky monkeyflower, wedgelead horkelia (<i>Horkelia cuneata</i> ssp. <i>cuneata</i>) and bracken fern. Inside the yard, habitat on the northern boundary is infested by invasive Portuguese broom which has been controlled on the exterior. The eastern portion of the fence features native ponderosa pine with poison oak and bracken fern outside the yard, and ornamental species including ice plant inside the yard.	Mount Hermon June beetle habitat, which ranges from largely intact to degraded. Silverleaf manzanita present in northwestern portion of fence alignment. Ben Lomond spineflower was observed nearby the pump station adjacent approximately 75' feet northwest of the northwestern fence corner, but not observed in the area and therefore not anticipated to be impacted.

Table 2: Habitat assessment of the project areas (Figure 1).

Project Component	Description	Soil Conditions	Vegetation Type and Dominant Species	Rare Species Occurrences and Habitat
Parking Lot and Entrance	Remove parking island and ponderosa pine as well as perhaps coast live oak trees adjacent to the lot that are causing asphalt to buckle with root growth. Remove previously cut ponderosa pine stump near flag pole to beautify entry	Parking islands and entrance area feature light to medium grey to tan sand soil of the Zayante series, which is compacted in places. Parking area features asphalt.	Ruderal/Ornamental: Parking island is largely denuded and features sparse non-native annual grasses and forbs including smooth cat's ears and rattail fescue. The entrance area features a native coffee berry and planted ornamental manzanita (<i>Arctostaphylos cf. hookeri</i>) and English ivy (<i>Hedera helix</i>). Trees in and around parking area including ponderosa pine and coast live oak.	Highly degraded Mount Hermon June beetle habitat.
Utility Area	Make necessary upgrades to utilities within the fenced enclosure which currently features a generator, fire suppression equipment, and other equipment.	Existing equipment is on concrete pads, surrounded by light grey, moderately loose sand soil of the Zayante series.	Disturbed Sandhills: Native species that occur in a range of sandhills communities surround the existing infrastructure, and include sticky monkeyflower, sand aster (<i>Corethrogyne filaginifolia</i>), golden aster (<i>Heterotheca sessiliflora ssp. echioides</i>), and silverleaf manzanita. Non-native species include Portuguese broom, sheep sorrel, and English plantain (<i>Plantago lanceolata</i>)	Degraded Mount Hermon June beetle habitat.
Sally Port	Install a fence at the entrance to the employee parking area/police entrance area southwest of the southwestern corner of the building, and/or install a fence along the western edge of the parking area.	Parking area is paved. Adjacent habitat features medium grey sand soil of the Zayante series.	Ponderosa Pine Forest: The area west of the parking lot features intact vegetation dominated by ponderosa pine, coast live oak, Pacific madrone, bracken fern, California blackberry (<i>Rubus ursinus</i>), and poison oak. Closer to the police entrance, the area features mostly pavement with a large coast live oak and landscaping beds including mahonia, ornamental manzanita, and coast live oak.	Relatively Intact Mount Hermon June beetle habitat west of the parking area; highly degraded Mount Hermon June beetle habitat within the landscaping beds.

Table 3: Number of Zayante band-winged grasshoppers (ZBWG) observed during three survey days within the County's proposed project areas (Figure 1) and the South Ridge Conservation Area of the Quail Hollow Quarry in Ben Lomond, CA. Survey details provided in text.

Survey Day	County Project Area				South Ridge Conservation Area			
	Time	Temp (°F)	Wind (mph)	ZBWG (n)	Time	Temp (°F)	Wind (mph)	ZBWG (n)
July 22, 2015	1400-1530	86	0-2	0	1530-1630	85	1-3	15
July 30, 2015	1530-1700	92	0-2	0	1230-1330	88	0-2	17
August 5, 2015	1200-1300	84	0-3	0	1400-1515	89	0-2	19
Total				0				31

Table 4: Representatives of the federal and local agencies that can assist with project permitting

U.S. Fish and Wildlife Service	County of Santa Cruz
Douglas Cooper Deputy Assistant Field Supervisor US Fish and Wildlife Service 2493 Portola Road, Suite B Ventura, CA 93003 (805) 644-1766 x272 Douglass_Cooper@fws.gov	Matt Johnston Environmental Coordinator County of Santa Cruz 701 Ocean Street Santa Cruz, CA 95060 (831) 454-3114 PLN458@co.santa-cruz.ca.us

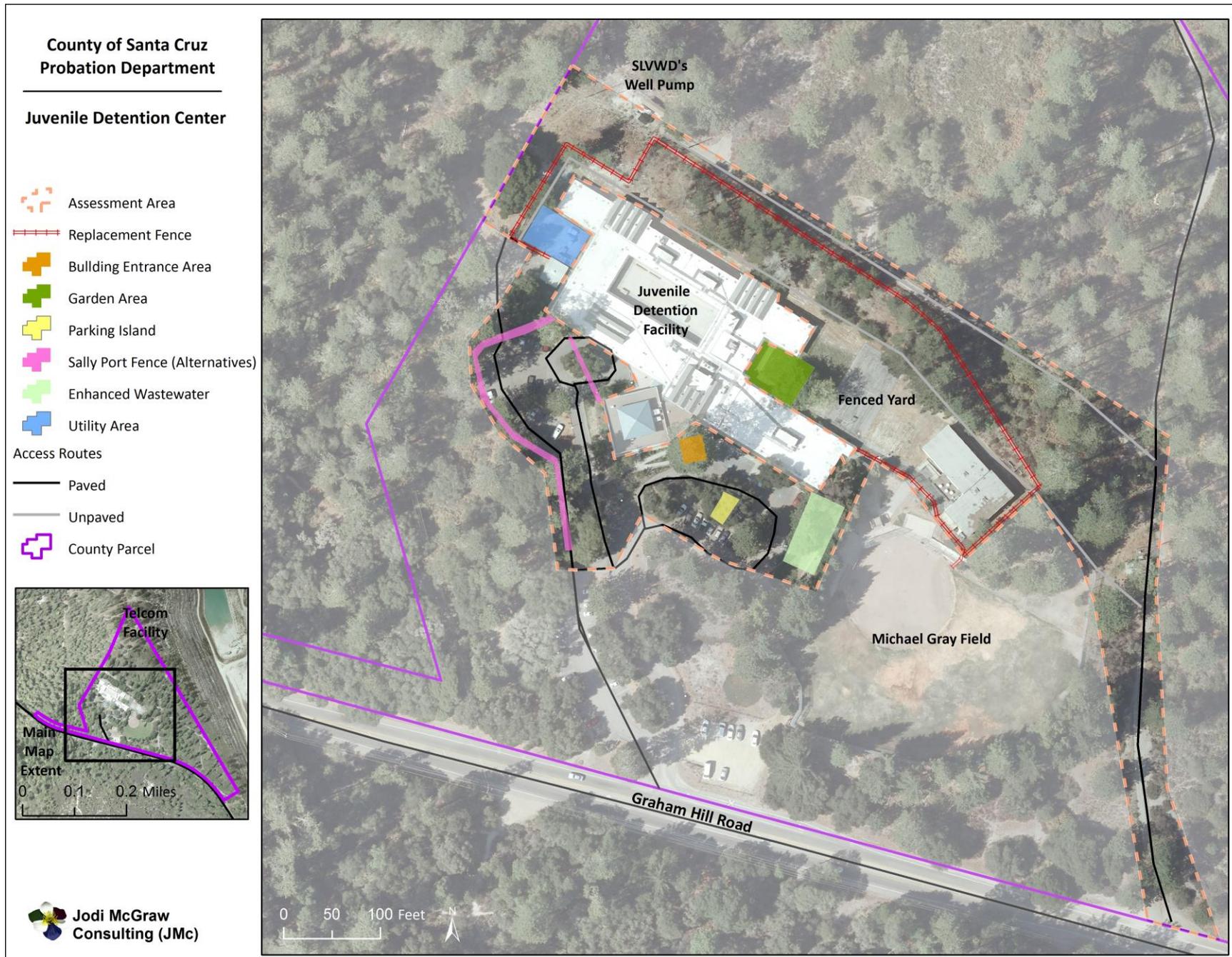


Figure 1: County of Santa Cruz Juvenile Detention Facility Assessment Area and Project Areas

APPENDIX B: County of Santa Cruz Juvenile Hall Renovation Project Disturbance Plan



CGL COMPANIES
2485 NATOMAS PARK DR., SUITE 300
SACRAMENTO, CA 95833

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
1011 CEDAR STREET
SANTA CRUZ, CA 95060
(831) 426-3560

LICENSED PROFESSIONAL



CONSTRUCTION DOCUMENTS

PROJECT

SANTA CRUZ
JUVENILE HALL
RENOVATION AND
UPGRADES
3650 GRAHAM HILL
ROAD
FELTON, CA
95018

CLIENT

SANTA CRUZ
COUNTY
PROBATION
DEPARTMENT
P.O. BOX 1812
SANTA CRUZ, CA
95061

KEY PLAN

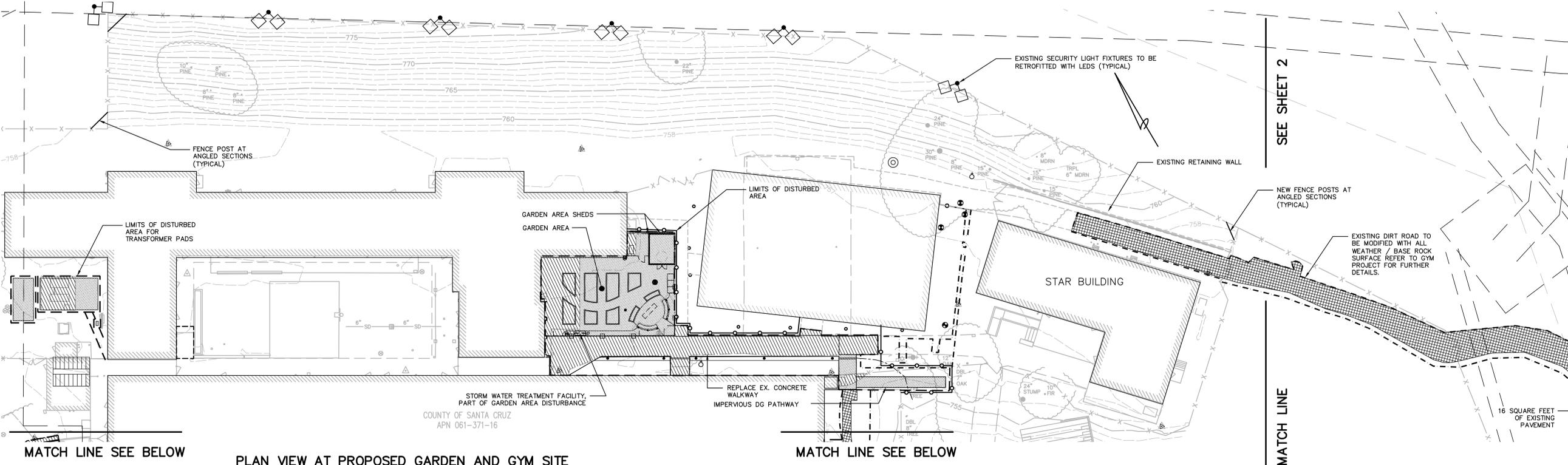
DISTURBANCE
PLAN

PROJECT NUMBER 26816.01

DATE JUNE 26, 2019

1 OF 2

SCALE: 1" = 20'



PLAN VIEW AT PROPOSED GARDEN AND GYM SITE

ASSUMPTIONS:

- PERMANENTLY DISTURBED AREAS INCLUDE IMPERVIOUS SURFACES (SIDEWALKS, EXTERIOR LANDINGS, FLAGSTONE, DECOMPOSED GRANITE, BENCHES, AND GREENHOUSE).
- THE EXISTING CONCRETE AND ASPHALT CONCRETE SURFACES ARE COUNTED AS NON-HABITAT AREAS.
- THE PLANTING AREA WITHIN THE GARDEN AREA IS CONSIDERED UNSUITABLE AREA FOR HABITAT AND IS COUNTED AS PERMANENTLY DISTURBED.
- TREE REMOVAL DISTURBANCE AREA IS ROUGHLY 3 TO 5 FOOT DIAMETER CIRCULAR AREA TEMPORARY DISTURBED FOR PURPOSES OF STUMP REMOVAL.
- PARKING LOT CURB REPLACEMENT HAS A TEMPORARY DISTURBANCE AREA BASED ON WIDTH OF 1 FOOT MEASURED FROM BACK OF EXISTING CURB AND RUNNING LENGTH OF PROPOSED CURB REPLACEMENT.
- THE STAIRWAY AND LANDINGS HAVE TEMPORARY DISTURBANCE AREA BASED ON 2 FEET OF DISTURBANCE ON EACH SIDE ON THE PROPOSED STAIR AND LANDING LAYOUT THAT IS ADJACENT TO SOIL.
- POST AND POLES HAVE A DISTURBANCE AREA BASED ON THE FOUNDATION DIAMETER TIMES 50 PERCENT.
- TRANSFORMER PADS HAVE A DISTURBANCE AREA MEASURED 1 FOOT BEYOND THE PAD DIMENSIONS.
- LANDSCAPING TEMPORARY DISTURBANCE AREA IS BASED ON THE PLANT POT DIAMETER TIMES 2 AND TABULATION OF POTTED PLANTS SHOWN ON THE LANDSCAPE PLANS.
- MULTI-USE RECREATION AND PROGRAM FACILITY AREAS ARE BASED ON THE DISTURBANCE PLAN BY WHITSON ENGINEERS, DATED 6/12/17 AND UPGRADE PLANS BY CGL.

MINIMAL IMPACT PLANTING CRITERIA

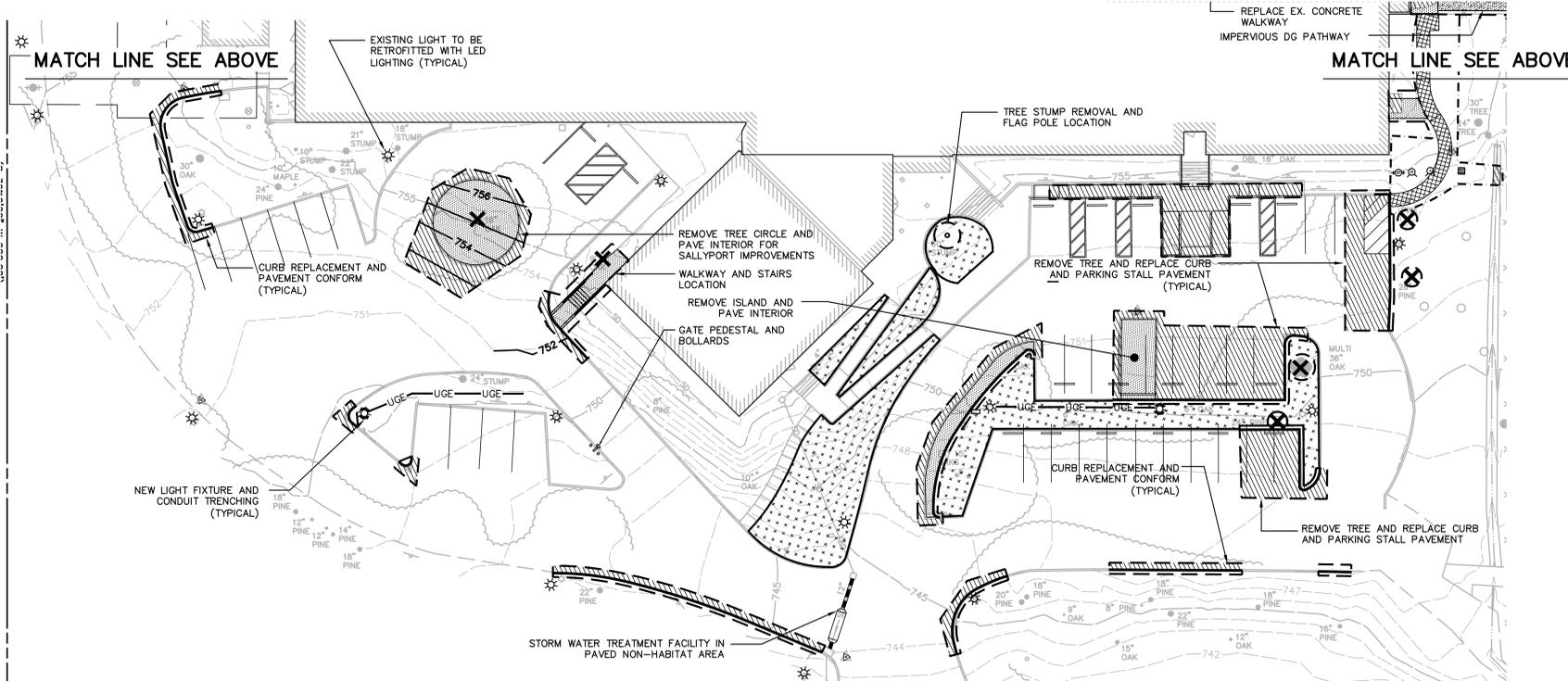
- PRUNING OF EXISTING PLANTS IS PERMITTED FOR INSTALLATION OF FENCING. THE REMOVAL OF EXISTING PLANTS IS NOT PERMITTED.
- SOIL AMENDMENTS SHALL BE MINIMAL OR IF POSSIBLE AVOIDED. PLACEMENT OF SOIL AMENDMENTS AROUND THE INDIVIDUAL PLANTING HOLES IS ACCEPTABLE. AVOID BLANKETING AMENDMENTS THROUGHOUT THE PLANTING AREA.
- AVOID GROUND COVERS THAT INHIBIT EMERGENCE. IF MULCH IS NEEDED, PLACE IT ONLY IMMEDIATELY AROUND AREA BOUNDED BY THE INDIVIDUAL PLANTING HOLE DIAMETER.
- USE OF NATIVE SANDHILLS PLANTS IS RECOMMENDED.
- AVOID THE INTRODUCTION OF INVASIVE PLANTS INTO THE SANDHILLS HABITAT.
- AVOID PLANTS THAT ARE TOXIC TO INSECTS.

MINIMAL IMPACT LIGHTING CRITERIA

- REPLACE EXTERIOR LIGHTING WITH LED FIXTURES WITH WARM COLOR TEMPERATURE (2700 KELVIN) AND WAVELENGTH GREATER THAN 550 NANOMETERS.
- ALL PARKING LOT FIXTURES SHALL HAVE INTEGRAL OCCUPANCY SENSORS THAT WILL REDUCE OUTPUT BY 50 PERCENT WHEN REGION IS UNOCCUPIED.
- THE REPLACEMENT OF EXISTING SECURITY LIGHT FIXTURES (NO NEW LOCATIONS) SHALL NOT EXCEED 12,500 LUMENS PER FIXTURE.

LEGEND

- UGE — ELECTRICAL CONDUIT
- X- EXISTING SITE FENCE
- 720- EXISTING CONTOUR
- INSTALLATION OF TEMPORARY ESA FENCING, SEE DETAIL 1/2
- - - LIMITS OF TEMPORARY SITE DISTURBANCE
- - - - - LIMITS OF TEMPORARY SITE DISTURBANCE (FIRE ADDENDUM)
- [Hatched Box] EXISTING IMPERVIOUS SURFACE TO BE REMOVED AND REPLACED WITH NEW IMPERVIOUS SURFACE
- [Solid Box] NEW IMPERVIOUS SURFACE
- [Dotted Box] NEW IMPERVIOUS SURFACE (FIRE ADDENDUM)
- [Dotted Box] PLANTING AREA
- X TREES TO BE REMOVED, SEE LANDSCAPE PLAN FOR REPLACEMENT LOCATIONS



PLAN VIEW AT PARKING LOT SITE IMPROVEMENTS

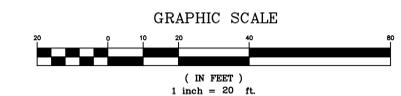
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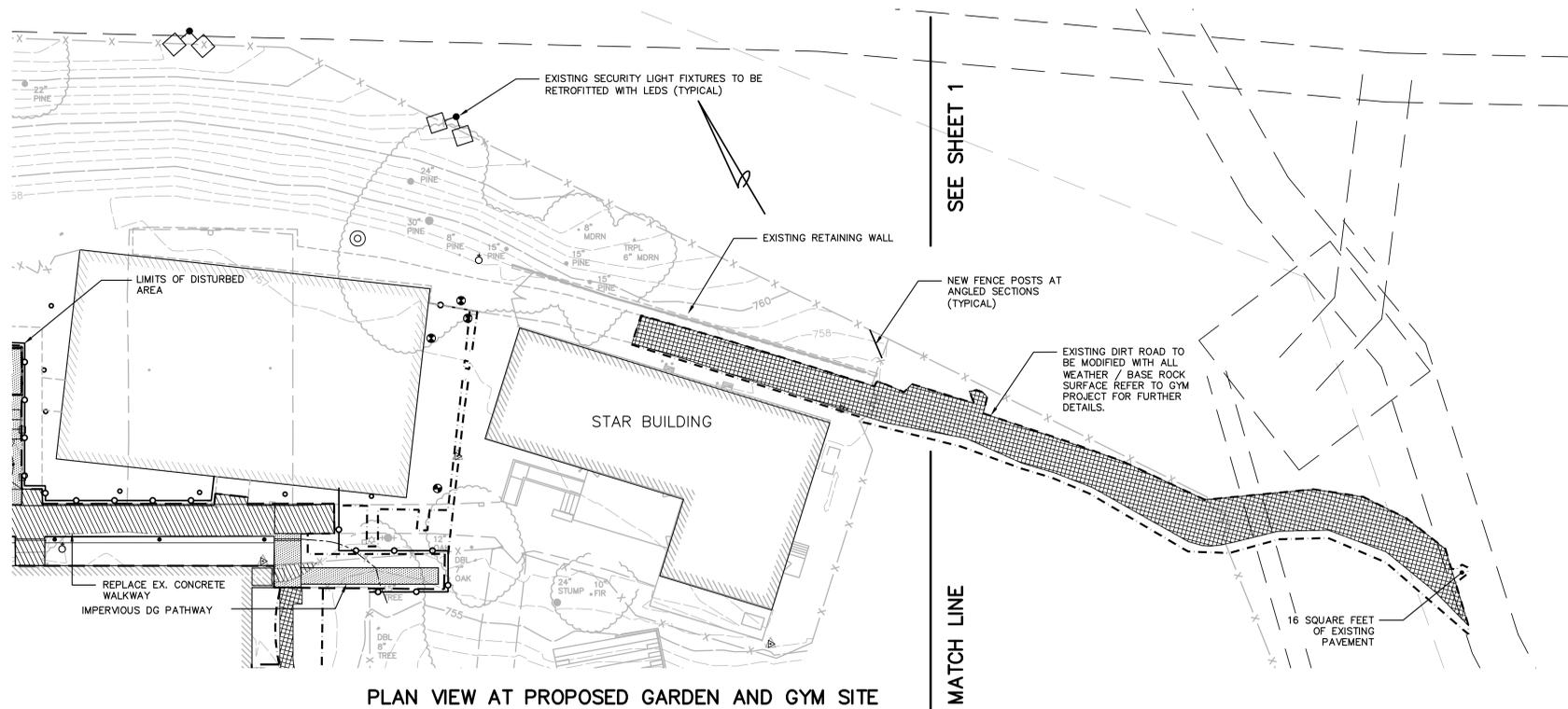
COLUMN IDENTIFIER	PROJECT AREA (SQUARE FEET)		HABITAT DISTURBED (SQUARE FEET)		
	1	2	3	4	5
	TOTAL DISTURBANCE ENVELOPE	NON-HABITAT WITHIN DISTURBANCE ENVELOPE	TOTAL DISTURBED HABITAT (1-2)	TEMPORARY	PERMANENT (3-4)
GARDEN AREA	2,550	679	1,871	-	1,871
WALKWAYS ADJACENT TO GYM SITE	3,048	1,609	1,439	906	533
TREE REMOVAL	178	-	178	178	-
PARKING LOT CURB REPLACEMENT	945	696	249	249	-
PARKING LOT DRIVEWAY WIDENING	555	232	323	64	259
PARKING STALL IMPROVEMENTS	3,208	2,766	440	177	263
SALLYPORT TREE REMOVAL AND PAVING	1,015	475	540	-	540
STAIRS AND LANDINGS	342	67	275	113	162
LANDING AT PATHWAY	108	24	84	21	63
PLANTING	683	-	683	1,198	(515)
TRANSFORMER PADS AND CONDUIT	757	254	503	161	342
LIGHT POST (2) AND CONDUIT	99	-	99	93	6
FLAG POLE	5	-	5	2	3
FENCE POST (3)	8	-	8	3	5
PEDESTAL AND (2) BOLLARDS	5	-	5	-	5
TOTAL	13,904	6,802	6,702	3,165	3,537

FIRE ADDENDUM DISTURBANCE SUMMARY (PERMIT NUMBER TE12342C-0):

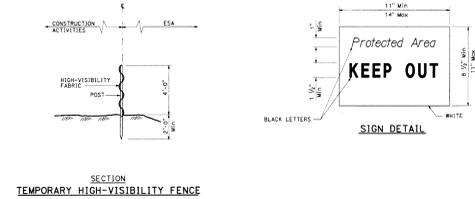
COLUMN IDENTIFIER	PROJECT AREA (SQUARE FEET)		HABITAT DISTURBED (SQUARE FEET)		
	1	2	3	4	5
	TOTAL DISTURBANCE ENVELOPE	NON-HABITAT WITHIN DISTURBANCE ENVELOPE	TOTAL DISTURBED HABITAT (1-2)	TEMPORARY	PERMANENT (3-4)
FIRE ACCESS ROAD	3,537	16	3,521	523	2,998
FIRE AND DOMESTIC WATER LINES ADJACENT TO GYM	574	-	574	574	-
NEW PATHWAY AND WATER LINES	970	13	957	665	292
TOTAL	5,081	29	5,052	1,762	3,290

NOTE: FIRE ADDENDUM AREAS SHOWN ABOVE ARE ASSOCIATED WITH, BUT BEYOND THE DISTURBANCE LIMITS SET IN PERMIT TE12342C-0.

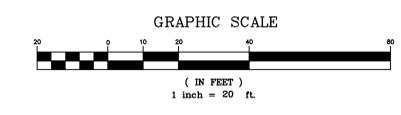




PLAN VIEW AT PROPOSED GARDEN AND GYM SITE

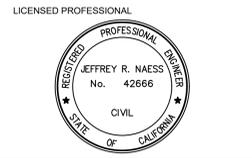


1
2
ESA FENCING DETAIL
(REFER TO CALTRANS STD. PLAN. RSP T65)



CGL COMPANIES
2485 NATOMAS PARK DR., SUITE 300
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CONSTRUCTION DOCUMENTS

PROJECT

SANTA CRUZ JUVENILE HALL RENOVATION AND UPGRADES

3650 GRAHAM HILL ROAD
FELTON, CA 95018

CLIENT

SANTA CRUZ COUNTY PROBATION DEPARTMENT

P.O. BOX 1812
SANTA CRUZ, CA 95061

KEY PLAN

DISTURBANCE PLAN

PROJECT NUMBER 26816.01
DATE JUNE 26, 2019