Palo Corona Regional Park General Development Plan

Initial Study – Mitigated Negative Declaration

prepared by

Monterey Peninsula Regional Park District
4860 Carmel Valley Road
Carmel, California 93923
Contact: Rafael Payan, General Manager

prepared with the assistance of

Rincon Consultants, Inc.
437 Figueroa Street, Suite 203
Monterey, California 93940

April 2019

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

1. Project Title

Palo Corona Regional Park General Development Plan

2. Lead Agency Name and Address

Monterey Peninsula Regional Park District
4860 Carmel Valley Road
Carmel, California 93923

3. Contact Person and Phone Number

Rafael Payan, General Manager
831-372-3196 ext. 101
payan@mprpd.org

4. Project Location

The proposed General Development Plan (GDP) would apply to the entire Palo Corona Regional Park (Park), located in northwestern Monterey County in the lower reaches of the Carmel Valley. It lies one-half mile east of the city of Carmel-by-the-Sea near the Carmel River and extends approximately five miles into upland areas to the south. Figure 1 shows the regional location and Figure 2 shows the boundaries of the Park Plan Area. The Park is divided into three units: the Front Ranch Unit, which covers approximately 600 acres at the northern end of the park abutting the eastern side of State Route 1 (SR 1); the Back Country Unit, which includes approximately 3,800 acres in the central and southern portions of the park; and the Rancho Cañada Unit, which covers approximately 140 acres located northeast of the Front Ranch Unit and fronting on Carmel Valley Road. Figure 2 shows the boundaries of each unit.

5. Surrounding Land Uses

The Park is surrounded by a variety of land uses, including primarily open space and recreational areas. SR 1, Carmel River State Beach, Point Lobos State Natural Reserve and Ranch, and Carmel Meadows subdivision bound the Front Ranch Unit on the west. On the north are agricultural fields, which are owned by the nonprofit Big Sur Land Trust and a private property owner. This property is protected by agricultural conservation easements and has been leased to Earthbound Farms for Organic farming purposes. The Point Lobos State Natural Reserve and Ranch borders the southwest boundary of the Front Ranch Unit. The 93-acre Fish Ranch in-holding sits in the middle of the Front Ranch Unit. It is the private residential property of Ms. Fish, the former owner of the Fish Ranch, also known as Palo Corona Ranch, which the Monterey Peninsula Park District (District) purchased to form the Park.

Figure 1   Regional Location

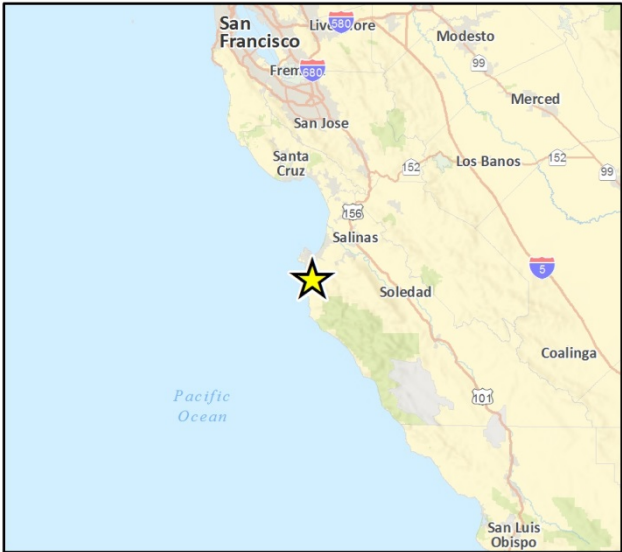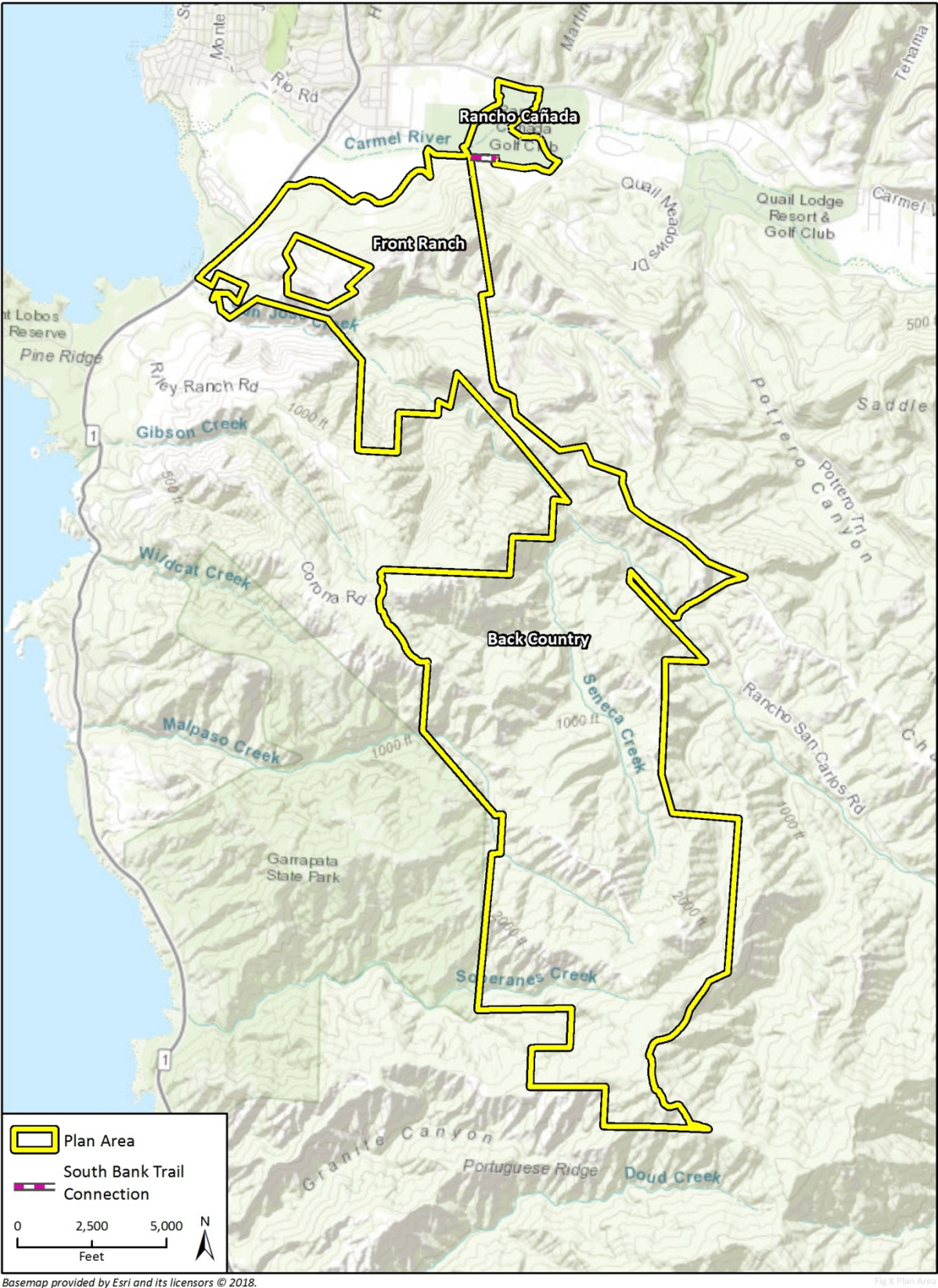*Imagery provided by Esri and its licensors © 2018.*

⭐ Project Location

Figure 2   Plan Area and Park Units

This property uses the old Fish Ranch stone gate entrance off SR 1, which winds up the westerly facing slopes to her private residence. This road is closed for public use.

The Carmelite nuns occupy a monastery, also located to the west of the Front Ranch Unit. To the east of the Park are large privately owned properties, one of which has agricultural operations and a dirt service road that connects to the Park. This service road is part of a County-prepared bicycle and pedestrian plan that would connect SR 1 with Valley Greens Drive farther east. The Rancho Cañada Unit is bordered by Carmel Middle School, commercial land uses and the proposed Rancho Cañada Village to the west, residential development to the east, Carmel Valley Road to the north, and rural residential units to the south. The Rancho Cañada Unit connects to the Front Ranch Unit by the South Bank Trail; a public trail held on an easement by the Big Sur Land Trust and managed by the District. The Back Country Unit is surrounded by open space including Garrapata State Park to the west, Mitteldorf Preserve to the east, Point Lobos Ranch to the north, and the portion of Palo Corona Ranch that transferred to the California Department of Fish and Wildlife (CDFW), known as the Joshua Creek Ecological Reserve, to the south. Surrounding land uses are show in Figure 3.

6.   Setting

Background

The District is entrusted with acquiring and maintaining open space in Monterey County. Land management by the District generally involves environmental protection, public access, and passive recreation.

The Park was acquired in several phases, starting with a partnership between the Nature Conservancy, the Big Sur Land Trust, the State of California, and the District. In 2004, these agencies collectively purchased the approximately 10,000-acre ranch, marking Monterey County's largest land conservation effort to that time. The former Palo Corona Ranch was then devoted to conservation and parkland and divided between MPRPD and CDFW. The southern 5,500 acres of the property was added to CDFW's existing Joshua Creek Ecological Preserve, while the northern 4,350 acres became the District's newest park, Palo Corona Regional Park. In 2009, the Whisler-Wilson Ranch was added to the Park, and in April of 2018, the District completed its acquisition of the Rancho Cañada Unit, marking the second and third phases, respectively, of the parkland acquisition.

The Park sits in an established recreation destination, a region that attracts millions of visitors each year to explore the shoreline and coastal mountain ranges of the Monterey Peninsula and Big Sur. The Park attracts recreation users from local communities and non-resident travelers visiting the region and recreating on public lands. In 2005, the Park officially opened and the northern 600 acres of the Front Ranch Unit were opened for limited public access. There are three public entry points into the Park: SR 1 (just south of the Carmel River Bridge), Carmel Valley Road at the Rancho Cañada Unit, and pedestrian-only access via the South Bank Trailhead at Rancho San Carlos Road. There are four bridges in the Park that cross the Carmel River, providing visitor access to the north and south banks of the river and connectivity between the three units. These bridges are suited for lighter service vehicles. A fifth bridge connects the Rancho Cañada Unit to the proposed Rancho Cañada Village Development. This bridge is suited for heavier vehicles. The bridge is privately owned, but the District is authorized to use it for administrative purposes.

Figure 3   Surrounding Land Uses
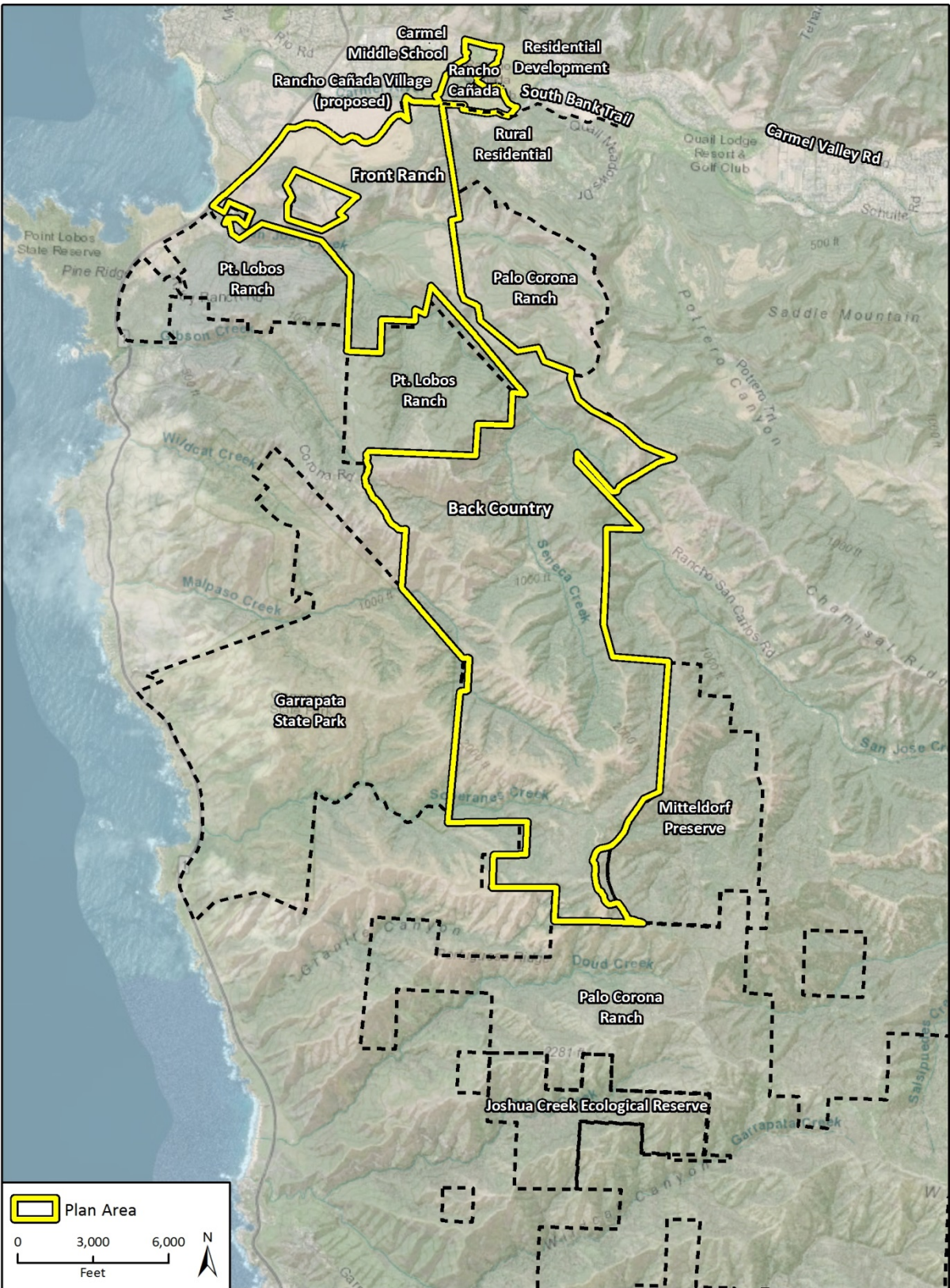
Since opening, the District has received many visitors on the Front Ranch Unit's trail system to enjoy spectacular views from its 600 acres. The Front Ranch Unit is currently accessible by permit only when accessing the Park via SR 1 or the South Bank Trail entrances. The Park can be accessed permit-free when accessed via the Ranch Cañada Unit. The District has experienced an increase in demand for more access, confirming the need to establish expanded parking and accessibility of the Park. The acquisition of the Rancho Cañada Golf Club, thereby creating the Rancho Cañada Unit, addressed this need – particularly considering the prior recreational use.

In 2016, the District initiated a planning process for the Park, with community input gathered from online surveys and three public workshops. On April 11, 2018, the Monterey Peninsula Park District Board of Directors approved a preferred alternative that emerged from the planning process. At their August 8, 2018 meeting the Board of Directors reviewed the preferred alternative and authorized initiation of an environmental review, starting with an Initial Study, to determine the appropriate level of California Environmental Quality Act (CEQA) documentation for adoption of the GDP.

Existing Environmental Setting

As stated above, the Park is connected to several other existing open space and park areas, including: Point Lobos State Natural Reserve and Ranch to the west of the Front Ranch and Back Country Units, Garrapata State Park to the west of the Back Country Unit, Santa Lucia Preserve to the east of the Front Ranch and Back Country Units, Mittledorf Preserve on the eastern border of the southern portion of the Back Country Unit, and Joshua Creek Ecological Reserve to the south of the Back Country Unit. The wide variation in elevation of the Park provides vistas with views of the greater Carmel Valley, the Monterey Bay, and the Pacific Ocean, as well as the adjacent open space areas. Portions of the Park are visible from both SR 1 and Carmel Valley Road.

The topography of the Park is a notable landscape feature. Terrain in the Park rises from near sea level at the Front Ranch Unit to almost 3,000 feet at the Park's highest point, Palo Corona Peak, near its southern boundary. The variety of elevation affords a diversity of experiences, from vistas with views of the ocean and Carmel Valley, to canyons canopied by towering redwoods and pines. The topography of the Front Ranch Unit in the northern portion of the Park terraces down into lower elevation from Gregg's Hill and Inspiration Point, opening up into the Carmel River Floodplain through and adjacent to the property. The Back Country Unit, beyond Animas Pond, is marked by rough, mountainous terrain rolling from rounded ridges down steep slopes of greater than 30 percent into deep river canyons.

The Park includes a variety of vegetation types as a result of the varied terrain. The topography forms the headwaters to thirteen minor watersheds, providing critical habitat to aquatic species such as steelhead trout (*Oncorhynchus mykiss*) and red-legged frog (*Rana draytonii*). Across the Park's expansive landscape, a diverse mosaic of ecosystems supports over 500 species of plants inhabiting streambeds, grasslands, and mixed forests. These varied ecological communities create valuable habitat and wildlife corridor connections. Supported species include California quail (*Callipepla californica*), raptors, bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), and California condor (*Gymnogyps californianus*). The Park's rolling grasslands boast the Central Coast's highest number of different grass and forb species, and support endangered species including Smith's blue butterfly (*Euphilotes enoptes smithi*).

Specific features of each Park unit are described below.

Rancho Cañada Unit

The Rancho Cañada Unit is the former Rancho Cañada Golf Course and contains a clubhouse, parking lot, golf cart paths, pond, and the former 36-hole golf course. The clubhouse is currently used for District administrative offices, as a banquet room and meeting venue operated by a concessionaire, and as a space for the Park's Discovery Center. The golf cart barn has been converted into the Park's operations and maintenance complex. The existing golf cart paths and bridges provide access to the Rancho Cañada Unit, connecting it to the Front Ranch Unit and the lands beyond. The existing bar and grill is used for events such as wedding rehearsal dinners and other public and private function. The clubhouse parking lot now serves as the main point of access to the portions of the Park already opened for public access.

Front Ranch Unit

The Front Ranch Unit contains nine publically assessable gravel trails that wind through the rolling grasslands and oak tree groves with views of the ocean. A historic barn (Front Ranch Barn) is located on the Front Ranch Unit, which is a wooden structure with a corrugated metal roof and a few small windows. Portable toilets have been added to the structure to allow for events. Cattle-grazing is supported in the Front Ranch Unit under a multi-year lease agreement. There are currently fenced test plots in different areas of the Front Ranch to compare the impacts of grazing and non-grazing in the Park.

Back County Unit

The Back Country Unit is not currently open to public access. Many of the existing trails in the Back County Unit are old ranch roads, some of which are still used regularly by ranching vehicles. These trails transverse steep terrain and most are in medium or poor condition because they are subject to rutting and washout. The Corona Homestead is located in the Back Country Unit. The Homestead includes a small standing cabin and blacksmith shop with corrals that open to a field with a historic strand of fruit trees. Additionally, there are two Escobar Homesteads just south of San Jose Creek, both with collapsed structures. A small hunting cabin and nearby bucolic homestead with a remnant orchard are remnants of the former ranch's agricultural past.

Analysis Baseline

CEQA Guidelines Section 15125(a) defines the environmental setting of a project as being:

> "the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective."

The Guidelines state that the "environmental setting will *normally* constitute the baseline physical conditions by which a lead agency determines whether an impact is significant" (emphasis added). In certain instances, the lead agency has the discretion to use a baseline other than existing conditions at the time environmental analysis is commenced, as long as this decision is supported by substantial evidence.

For this Initial Study, the baseline for most issues is the existing condition, as described under *Existing Environmental Setting* above. This includes public recreational use of the Front Ranch Unit and the Front Ranch Barn, portions of the Rancho Cañada Unit, access to the Back Country Unit for

programs led by the District, as well as re-use of the existing clubhouse for District administrative offices, an educational Discovery Center, and banquet space for private and community events.

For three issue areas – transportation/traffic, wastewater generation, and water supply – the baseline for analysis accounts for the prior use of the Rancho Cañada Unit as a 36-hole golf course. This historic use best reflects the trip generation and water demand associated with the site, which was used for 46 years as a golf course, clubhouse, and event facility. The property was specifically acquired by the District for conversion from golf to park use. During the two-year acquisition process, golf use was phased out to generate funding for a portion of the purchase price from Cal-Am, which paid to halt golf use for several years in order that the associated water use would temporarily cease. Use of the clubhouse as an event facility continued during this period, and also generated funding to facilitate the acquisition. In addition, the major granting agencies for the purchase (The Trust for Public Land, California Coastal Conservancy, Wildlife Conservation Board, California Resources Agency, and California Department of Fish and Wildlife) all disregarded the temporary cessation of golf use in their granting decisions and funded the purchase based on the property's 46-year history as a golf course and their desire to see it converted to park use. Given the history of the golf course and the intent of the District and the granting agencies to acquire the property for the purpose of converting it from golf use to park use, it has been determined that the property's 46-year history of use as a golf course is the most appropriate baseline for evaluating vehicle trips and water demand associated with the Plan Area.

It should also be noted that some improvements envisioned under the GDP may be implemented prior to completion of this Initial Study, where such improvements do not meet the definition of a project under CEQA[1] or are otherwise exempt from CEQA. For example, installation of a fence to allow off-leash dog access may not meet the definition of a project, or could be exempt under Class 3 (New Construction or Conversion of Small Structures). Though such minor improvements could occur prior to adoption of this CEQA document, they are included in the analysis here in order to fully evaluate the maximum potential impacts of the entire GDP.

7.   General Plan Designation

The Plan Area has multiple land use designations pursuant to the Monterey County General Plan. Land use designations in the Rancho Cañada Unit include Residential-Low Density, Residential-Medium Density, Visitor Accommodation, and Public/Quasi-Public. The Front Ranch unit includes Residential-Low Density, Rural Grazing, Watershed and Science Conservation, and Public/Quasi-Public designations. The Back County Unit includes Resource Conservation, Permanent Grazing, Rural Grazing, and Public/Quasi-Public designations. The Plan Area would retain these existing land use designations upon project implementation.

8.   Zoning

Zoning designations in the Rancho Cañada Unit include Low Density Residential (LDR), Medium Density Residential (MDR), Open Space (O), Visitor Serving/Professional Office (VO) and

---

[1] Under CEQA, "project" is defined as an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: (a) an activity directly undertaken by any public agency, (b) an activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agency; or (c) an activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies (CEQA § 21065)

Public/Quasi-Public (PQP). Zoning designations in the Front Ranch Unit include LDR, Rural Grazing (RG), Watershed and Scenic Conservation (WSC), and Resource Conservation (RC). Zoning designations in the Back County Unit include RC, WSC, and Permanent Grazing (PG). The Plan Area would retain these existing zoning designations upon project implementation.

9. Description of Project

The proposed GDP was commissioned by the District to investigate the range of recreational opportunities appropriate for the Park through site assessment, master planning, and public outreach. It provides a planning blueprint for conservation, stewardship, and public access to manage the 4,585-acre Park. As stated in the GDP, the Park is to be maintained for public enjoyment and its natural resources protected in perpetuity, and must provide recreation, educational, and research opportunities while conserving and/or restoring the land's valuable natural resources.

The preferred alternative, analyzed herein as the GDP, includes improvements and additions to the Park's trail network, renovation and re-use of facilities, an off-leash dog park, and new community involvement and revenue generation opportunities. These and other improvements outlined in the GDP are described in greater detail below.

Project Components

Park improvements that would occur in Rancho Cañada, Front Ranch, and Back County units are shown in Figure 4, Figure 5, and Figure 6, respectively. The primary focus of the GDP is on hiking and passive recreation on the existing trail network, but also includes plans for expanded day-use amenities and facilities. The discussion below lists GDP components by the type of proposed improvement.

Multi-Use Trails and Trail Connectivity

As part of the GDP, the District examined different trail types and typologies proposed for different locations and potential trail users to determine the most appropriate updates for the Park. For example, a trail hierarchy was developed to identify proposed trail widths and designate which trails would be appropriate for different uses. Through implementation of the GDP, the District would accommodate different users of the Park's trails. This would be executed through the introduction of the following features:

- Multi-use access to the former ranch-road trail network in the Front Ranch and Back Country Units
- Trailheads with information kiosks, near the Rancho Cañada Unit parking lot to serve as the primary access point to the Park's trail network
- New access points and staging areas for the Back Country Unit
- Signage on multi-use trails to educate users, reduce conflicts, and provide right-of-way directions
- Bollard check-points on the steep portions of Palo Corona Trail as a speed-control measure for service vehicles and mountain bikes
- Addition of a second trail parallel to the Palo Corona Trail up the steep slope to Animas Pond, to allow for separation of pedestrians from mountain bikers and equestrians

Figure 4   Rancho Cañada Unit

Source: Design Workshop 2018

Figure 5   Front Ranch Unit
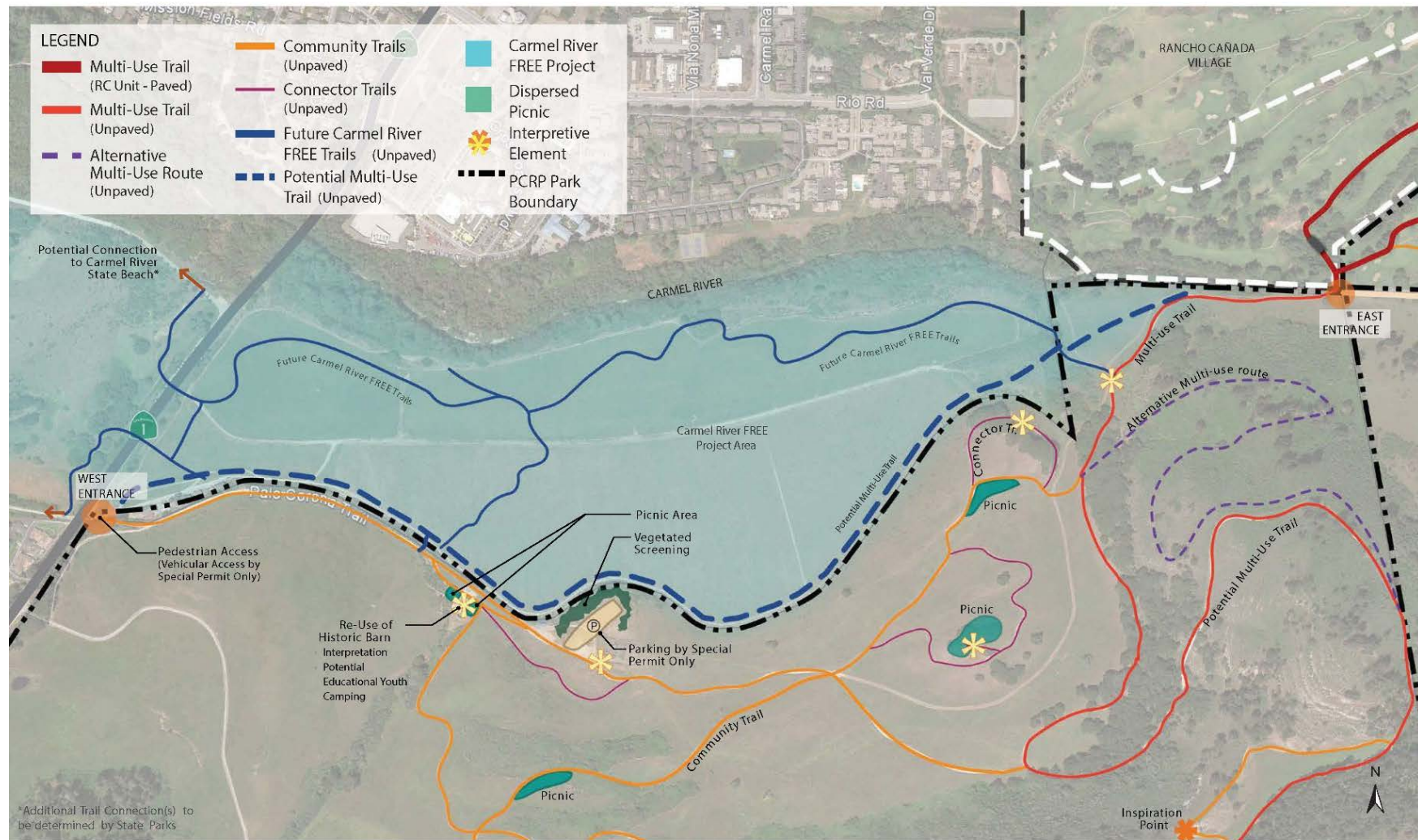
Figure 6   Back Country Unit
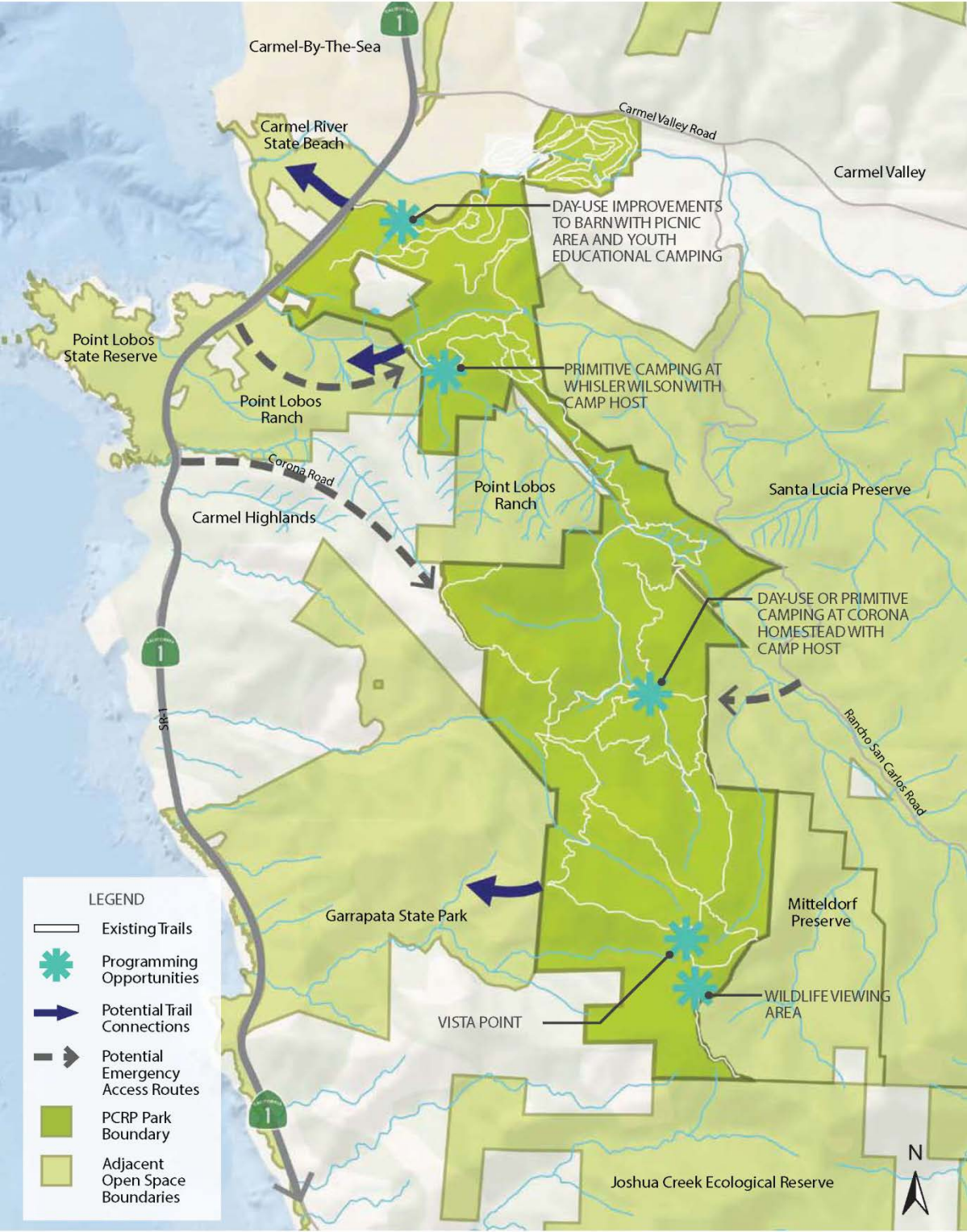
Source: Design Workshop 2018

- Conversion of existing golf cart paths into 10- to 12-foot paved multi-use trail paths via resurfacing, widening, addition of a 6 to 8-foot gravel shoulder, ADA-accessibility measures, and segment realignment or connection. Some trails may be surfaced with gravel or other permeable material.

- Connection of golf cart paths to the South Bank Trail, completing a multi-use loop within the Rancho Cañada Unit

- Connection of the South Bank Trail to the Carmel River FREE project at the Big Sur Land Trust's Odello East property. Combined with SR-1 causeway improvements, a connection would be formed from the Park to the Pacific Ocean at Carmel River State Beach.

- Connection of the South Bank Trail to adjacent neighborhoods, including Hacienda Carmel

- Connections to adjacent parks, including Garrapata State Park and Jack's Peak County Park through Martin Canyon, to establish through-hiking opportunities and wildlife corridors

- Select pedestrian-only community trails throughout the Front Ranch Unit, utilizing the existing trail network, including the Barn Trail, Rumsien Loop, and portions of the Palo Corona and Vista Lobos trails

- Closure of some trail segments to reduce redundancy

- Connector trails throughout the Park, utilizing existing paths or connecting extant trails by addition of new trail segments[2]

- Realignment and grading of trails in the Back Country Unit to decrease slope and improve hiking conditions

- Multi-use trail access to the Back Country Unit with speed control measures for safety

- Potential horse trailer staging areas

- Utilization of trails for "running events" including cross-country, mountain trail runs, and other such events

- Improvements to the Park's bridges, including replacement of wooden rails, bridge-related placard interpretive signage, and structural/approach reinforcement as needed. A new ranger office would be located in the Rañcho Canada Unit to accommodate rangers. The office would be a new building or a new wing to the existing maintenance shop or modification of the existing golf cart building.

- Limited, permit-only rustic camping sites at two locations in the Back County Unit[3]. It is anticipated that approximately 25 passes may be issued at any given time. Overnight stays would be limited to three nights maximum. Three park ranger residential units and a ranger field office would be located in the proximity of the Corona Homestead. It is anticipated that up to three residential structures and one office-type building would be required. Access to the units would be provided by existing ranch roads and park trails. Rangers would reside in the structures full time and would make several trips from the units to the Back Country Unit office and to patrol the site three to 10 times per day rotating so that two rangers would be on-site at any given time. The three ranger units would be either modular travel-trailer type residences or

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[2] Connector trails would serve as secondary circulation routes through the Rancho Cañada and Front Ranch units, and allow pedestrians-only use. Connector trails in the Front Ranch Unit would utilize existing 2 to 4-foot wide trails, including the Laguna Vista and Oak Knoll trails. Connector trails in the Rancho Cañada Unit would mostly utilize existing cart paths, but would involve ADA-accessibility improvements and the replacement of concrete and asphalt with a compacted-earth surface to reduce impervious surface area.

[3] The number, seasonality, and frequency of permits issued would be determined by MPRPD based on the carrying capacity of the natural resources and the recreational facilities.

residences constructed on-site. Energy at the residences would be provided via solar with a backup generator for each unit. The three ranger units would be on a septic system and water would be provided from drilling a well or trucking in water. The ranger field office would not have a restroom, but may utilize a composting toilet or similar unit.

- Up to three on-site campground hosts would be on-site to provide light maintenance and campground control. Campground hosts would be housed in smaller RV's concentrated in one or two areas in close enough proximity to support one another and provide backup assistance.

Recreational, Educational, and Interpretive Uses

- Hunting cabin would not be modified. The cabin would possibly be used as an interpretive site with a plaque of its historic significance.

- Educational signage and interpretation at key wildlife/conservation points and vistas

- Primitive camping sites in the Back Country Unit. Sites would be marked with a post and provide minimal amenities, without facilities that require additional utilities or infrastructure. Potential camping areas include areas near the Whisler-Wilson Ranch and the Corona Homestead. No improvements to the existing structures in these locations are proposed. Camping would be permit-only and Ranger-managed, with a strict no-fire policy and Leave No Trace practices.

- Utilization of existing picnic table areas along trails, including Rumsien Loop and Laguna Vista, for large group reservations, school groups, and informal outdoor classroom space for educational programs. New picnic tables would be added to gathering place areas on the Laguna Vista Loop or the Oak Knoll Loop on the Palo Corona Trail to create more formalized picnic areas in the Front Ranch Unit. Three to six pavilions would be added in the Rancho Cañada Unit.

- A community gathering area on the northwest corner of the Rancho Cañada Unit, adjacent to the former clubhouse and parking lot, to serve as the focal point for community activities in the Rancho Cañada Unit, as shown on Figure 7. This area would include the following components:
  - Three pavilions for picnicking, private events, and educational events
  - Amphitheater to be used for community events
  - Inclusive, exploratory nature play area and playground in proximity to the amphitheater
  - Expansion of the existing retention pond with restoration towards more natural wetland conditions, addition of an observation dock, and youth-based fishing program

- Fishing access on District-managed portions of the Carmel River, with access points from the Rancho Cañada Unit[4]

- Fishing opportunities at existing stormwater retention ponds, including youth learn-to-fish programs

- Continued use of the existing clubhouse for an educational Discovery Center, a gift shop, bar and grill, and banquet space for private and community events, and District administrative and tenant offices.

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[4] Fishing is already allowed on the Carmel River from Carmel Valley Village to the ocean and is regulated by CDFW. Fishing is open during the winter steelhead season on Wednesdays and weekends from December to March and is regulated by low-flow closure and other restrictions to ensure that the activity remains environmentally responsible.

Figure 7   Rancho Cañada Unit Community Activity Areas

Source: DesignWorks

- New restroom to be located near the Rancho Cañada Discovery Center trailhead with three women's stalls, two men's urinals and a stall, plus two "family" restrooms, or a similar configuration. A second new restroom would be located north of the golf cart barn, immediately west of the proposed dog park. The dog park restroom would have two women's stalls, one urinal and stall for men, and one family restroom, or a similar configuration. Two more restrooms would be constructed in the Back County Unit, one per campground. Water for the Back Country Unit restrooms would be provided from a new well, trucked in, or a compost/non-water use restroom. A fifth restroom would be constructed at the trailhead to Inspiration Point in the Front Ranch Unit. A sixth restroom, similar to the proposed dog park restroom, may be constructed near the Front Ranch Barn.

Off-Leash Dog Park and On-Leash Dog Access

- An ADA-compliant, fenced, off-leash dog park located on the stretch of flat turf along Carmel Valley Road, eastwardly adjacent to the existing overflow parking lot
- Use of the existing overflow parking lot for dog park users and other park visitors
- Selective allowance of on-leash dogs on Rancho Cañada trails that would connect visitors from adjacent neighborhoods to the dog park via the South Bank Trail
- Extension of water lines to the dog park area
- Addition of two pavilions and two bench areas, with one of each in a large-dog area and a small-dog area.

Facilities Re-Use/Retrofits and Historic Building Preservation

- Repurposing of the existing Front Ranch Barn for interpretive, educational, and special event uses
- Renovations to the Front Ranch Barn. Improvements would address poor building conditions and structural integrity and would add plumbing, restrooms, and a septic tank system to the Front Ranch Barn. A fiber optic connection would potentially also be added, and electrical service lines would be upgraded.

Emergency Incident Command Center and Staging Area

- The proposed off-leash dog park would be used as a staging area for the California Department of Forestry and Fire Protection (CAL FIRE) and the County during fire and flood emergencies
- Buildings at the Rancho Cañada Unit may also be used by CAL FIRE staff during emergencies
- A helipad would be constructed near the dog park or other suitable site to provide a landing space for CAL FIRE helicopters. The helipad would be paved and around 30 feet by 30 feet to accommodate a helicopter.
- Fire hydrants would be added in the staging area to provide water for CAL FIRE trucks and a syphon station for helicopters.

Program-Level Analysis

Adoption of the proposed GDP would not directly involve the construction of park and recreation projects listed above, but would rather facilitate the future development of such improvements. Thus, this IS-MND evaluates the environmental impacts associated with the GDP at a programmatic level and provides programmatic-level mitigation measures. Individual components of the GDP, as

listed above, may be subject to additional project-specific environmental review, where not exempt from CEQA. Project-specific mitigation measures may be identified, where appropriate. At the time each improvement undergoes project-level engineering and design review, it would be compared to programmatic mitigation measures identified herein. By that time, individual projects would include specific project-level detail such as construction drawings and scheduling information such that individual project-level impacts could be analyzed. At this time, the majority of improvements discussed above are not defined to a level that would allow project-level analysis, thus, it would be speculative to analyze as such. Rather, they are addressed on a programmatic basis.

Actions Not Included

Several potential improvements or land uses considered for the Park in the future are not included in this Initial Study, and would therefore require separate environmental review, where appropriate. This includes:

- Renting office space and tenant improvements on the ground floor within the former clubhouse not used for District administration[5]
- Development and implementation of a Natural Resources and Conservation Plan for the Park and a Habitat Restoration Plan for the ecologically disturbed Rancho Cañada Unit
- Designation of the river corridor in the Rancho Cañada Unit into four zones (re-use zone, transition zone, future restoration zone, and priority restoration zone) to guide the priorities of future projects and Habitat Restoration Plan
- Extending utilities in the Back County Unit
- Modification to existing structures at or near the Whisler-Wilson Ranch or the Corona Homestead

Phasing

The GDP serves as a guide for the planning and development in the Park and development planned by the GDP. The timing and order of improvements would depend upon funding opportunities and Board direction and approval. It is anticipated that improvements would generally be implemented in three phases: short-term (0-2 years), mid-term (3-7 years), and long-term (8 years or more), as described below. In the interim, the Rancho Cañada Unit will continue to offer permit-free access to Palo Corona's trails. Additionally, site improvements that are not considered projects or would be exempt under CEQA, such as installation of a fence to allow off-leash dog access, may occur during the interim phase.

Short-Term[6]

- Relocate District and Palo Corona Regional Park headquarters to the former golf clubhouse complex at the Rancho Cañada Unit (completed May 2018)
- Construct picnic areas and pavilions
- Add connector trails and conduct trail improvements
- Construction of a nature play area

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[5] This exclusion does not include the banquet, grill, and food service for events

[6] As discussed under *Analysis Baseline* in Section 5, several of these short-term components have either been completed as of September 2018 or may be constructed prior to completion of this IS-MND, where such improvements do not meet the definition of a project or are exempt from CEQA.

- Complete initial capital and site improvements at the Discovery Center, trails, and Bridges
- Execute a soft opening of some Rancho Cañada and Front Ranch public access points (completed August 2018)
- Construct CAL FIRE emergency event staging area/off-leash dog park
- Begin interpretive/educational program (effective September 2018)
- Negotiate/develop request for proposal and select firm for concession sales
- Construction of restroom buildings near the Rancho Cañada Discovery Center trailhead and at the dog park
- Develop and begin to implement Habitat Restoration Plan[7]
- Open the former east course for public use
- Bridge improvements
- Continue trail and golf cart path improvements, repairs, connections, and realignments

Mid-Term

- Continue site improvements
- Establishment of staging areas for equestrian and bike access
- Expand environmental research and coordinate with research partners for Discovery Center presentations
- Expansion and improvement of retention pond
- Construction of amphitheater
- Open the park to bike and equestrian use, as appropriate

Long-Term

- Develop back country camping sites, campground host sites, ranger residences, and field offices
- Develop cyclical maintenance program and identify funding
- Adaptive re-use of the Front Ranch Barn

Best Management Practices

The following best management practices (BMPs) are included in the GDP to minimize potential environmental effects associated with implementation of GDP projects.

- BMP-1: Biological Resources Screening Assessment
- BMP-2: Special Status Plan Species Surveys
- BMP-3: Special Status Plan Species Avoidance, Minimization, and Mitigation
- BMP-4: Restoration and Monitoring
- BMP-5: Endangered/Threatened Species Habitat Assessment and Protocol Surveys
- BMP-6: Endangered/Threated Species Avoidance and Minimization
- BMP-7: Non-listed Special Status Species Avoidance and Minimization

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[7] Environmental review of the Habitat Restoration Plan is not included in this IS-MND

- BMP-8: Pre-construction Surveys for Nesting Birds for Construction Occurring within Nesting Season
- BMP-9: Worker Environmental Awareness Program (WEAP)
- BMP-10: Invasive Weed Prevention and Management Program
- BMP-11: Sensitive Natural Community Avoidance
- BMP-12: Restoration for Impacts to Sensitive Natural Communities
- BMP-13: Jurisdictional Delineation
- BMP-14: General Avoidance and Minimization

10.   Other Public Agencies Whose Approval is Required

The GDP requires the adoption of the GDP and approval of an Initial Study-Mitigated Negative Declaration by the District. Because portions of the Plan Area are within the coastal zone, the GDP would also require a Coastal Development Permit from Monterey County. Additionally, some of the specific improvements contained in GDP that would be developed in the future may require approval by other public agencies. The following discretionary approvals from other agencies could potentially be required prior to construction of individual Park improvements:

- U.S. Army Corps of Engineers Section 404 Clean Water Act Permit(s)
- U.S. Fish and Wildlife Service Federal Endangered Species Act authorization or incidental take statement for take of federally listed species
- California Department of Fish and Wildlife Section 1600 California Fish and Game Code Permit(s) (Streambed Alteration Agreement)
- California Department of Fish and Wildlife authorization or permit to take State-listed species subject to the California Endangered Species Act
- Regional Water Quality Control Board Section 401 Clean Water Act Water Quality Certification and/or waste discharge requirement, and coverage under the General Construction Permit for storm water discharges associated with construction activities

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

■ Aesthetics	☐ Agriculture and Forestry Resources	■ Air Quality
☐ Biological Resources	■ Cultural Resources	☐ Energy
■ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
■ Recreation	☐ Transportation	■ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	■ Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____   04.25.2019

Signature   Date

RAFAEL PAYAN   GEN. MGR.

Printed Name   Title

Environmental Checklist

1. Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Except as provided in Public Resources Code Section 21099, would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	■	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	■	☐	☐

This section addresses the impacts of the GDP on the aesthetics of the Plan Area. The analysis of aesthetics focuses on the existing visual character of the site and its surroundings, and the potential for degradation of visual resources.

a. Would the project have a substantial adverse effect on a scenic vista?

Viewpoints that provide expansive views of a highly valued landscape for the benefit of the general public are considered to be scenic vistas. Scenic vistas may be informally recognized, or officially designated by a public agency. The Plan Area is rich in visual resources, thanks to coastal proximity and varied elevation. Scenic vistas from the Park's trails include views of the Pacific Ocean, Carmel Valley, and redwood and pine forests. The Park's vistas are visible from the existing trail network at points of high elevation.

The GDP is a blueprint for Park management and would include protection of scenic vistas. While the GDP would expand visitor access to vistas, measures would be included to prevent adverse

environmental effects, including re-routing trails to avoid sensitive habitats and installing viewing platforms to control drainage and erosion. Development facilitated by the GDP in the Rancho Cañada Unit would be focused in already developed areas, including new facilities in the community gathering area, which is currently developed and landscaped. Physical alterations in the Front Ranch Unit and Back Country Unit would include trail improvements and new trail connections, campsites, renovations to existing buildings, and ranger residences, camp host sites, and a ranger field office in the Back Country Unit. These activities may involve removal of vegetation, and would slightly alter portions of the Park's aesthetics. However, projects in the GDP would occur on a small portion of the Park relative to the Park's overall size. Development would not block any of the expansive views in the Park, but would provide increased access to Park vistas through improvements to the Park's trail network. Other than trails, development would not occur in the vicinity of scenic vistas. Campsites would include minor physical alteration to the land. Campsites and ranger residences would be strategically placed in already cleared or developed sites, such as the Homestead, which are not located near existing scenic vistas.

Development of projects in the GDP would not impact the Park's scenic vistas, but would rather expand public access to these vistas. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b.   Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

A portion of the Park's Front Ranch Unit is bound by SR 1 to the west for approximately one mile. This section of SR 1 is an officially designated State Scenic Highway (Caltrans 2011). Along the stretch of SR 1 that borders the Front Ranch Unit, a mostly undeveloped portion of the park is visible. This area is primarily grassland and includes existing trail segments. The historic Front Ranch Barn is also visible from this stretch SR 1.

Development facilitated by the GDP would not involve new structures visible from SR 1. Structures proposed in the GDP include the two restroom buildings in the Rancho Cañada Unit's community gathering area, and new ranger residences, a ranger field office, a restroom in the Back Country Unit, and a restroom in proximity to the Front Ranch Barn. These structures would not be visible from SR 1. The existing Front Ranch Barn, which is visible from SR 1, would undergo improvements to allow for visitor and staff use. Improvements would not impact the structure's presence or character as a viewshed feature from SR 1. The GDP recognizes both the historic and public-use value of the Front Ranch Barn and seeks to preserve and improve it. The Front Ranch Barn's aesthetics are further discussed in Section 5, *Cultural Resources*. Improvements to the building would not alter its defining visual characteristics, such as façade, size, or color.

Trail improvements could also occur in the portion of the Plan Area visible from SR 1. However, these improvements would utilize the existing trail network and would not impact the viewshed.

The GDP includes stewardship of the Park's natural and scenic resources, including the landscape visible from SR 1. Development facilitated by the GDP would not substantially damage scenic resources within a state scenic highway. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   *Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

The Park is not in an urbanized area. The Monterey County General Plan Conservation and Open Space Element Policy OS-1.9 encourages development that protects and enhances the County's scenic qualities (Monterey County 2010). As a park development plan, the GDP would protect and enhance scenic qualities. All development facilitated by the GDP would be strategically placed in order to enhance public use while balancing the GDP's stewardship objectives.

Preservation of the Park's visual character is a primary facet of the GDP. The District's management of the Park involves both conservation and public use. Therefore, the GDP would add structures that fit the public use needs of the Park's three Units, and would concentrate development in areas that already have structures or cleared/disturbed land. Trail improvements would likewise utilize the existing trail network.

Visual impacts to the three units of the Plan Area are discussed below.

Rancho Cañada Unit

The Rancho Cañada Unit contains the former Rancho Cañada Golf Club. The Unit consists of two areas: the former golf course, and a community gathering area that includes a parking lot, the former golf clubhouse, a retention pond, and landscaping. The physical characteristics of the former golf course, such as cart paths and sand traps, remain visible, but vegetation growth has increased since golf operations ceased.

Although not part of the project during restoration the former golf course would continue to be re-wilded into native habitat over the next two decades. As managed Park habitat, the visual character of the former golf course would shift considerably. Habitat would be improved to match the surrounding area and conditions prior to the site's development.

Development of new structures in the Rancho Cañada Unit would occur in the community gathering area adjacent to the parking lot and former clubhouse. Structures and other new features in this area would include pavilions, an amphitheater, a playground, restrooms, an emergency incident command center/staging area, and a dog park. While these project components would intensify development at this site, they would not degrade the existing visual character, as the site is already developed for public use.

Front Ranch Unit

The Front Ranch Unit is characterized by trails that are easily accessible and provide views of the Pacific Ocean. The Unit also contains the historic Front Ranch Barn.

Changes to the Front Ranch Unit would include trail improvements and renovations to the Front Ranch Barn. Improvements to the Front Ranch Barn would address poor building conditions and structural integrity. These improvements are necessary for upkeep of the structure, and would not degrade the building's historic visual character. Trail improvements would utilize the existing trail network, and restroom facilities would improve the public use experience in the Unit. These improvements would be minor and consistent with the existing open space and parkland character

of the Front Ranch Unit. As such, development facilitated by the GDP within this area would not degrade the existing visual character.

Back Country Unit

The Back Country Unit contains rugged terrain, with forested areas and varying elevation. The visual character is rural and expansive, with minimal development or human influence throughout the Unit's 3,800 acres.

Development within the Back Country Unit would include primitive camping sites, a restroom facility, up to three on-site campground host sites, three ranger residences, and a ranger field office. These improvements would be concentrated near the existing homesteads, which contain standing cabins or collapsed structures, and a hunting cabin. Although these areas are somewhat developed, they retain a rural and bucolic character. Improvements associated with the primitive campsites would be minimal: sites would be marked with a post, potentially cleared or flattened, and would include a bear box for storage of food. This level of development would be consistent with the existing visual character, and would not degrade the site.

The construction of buildings would introduce modern elements in this otherwise rugged area. However, the structures would be small, and designed to minimize disruption of the natural surroundings. Ranger residences, campground host sites, and campgrounds would be clustered to maximize the amount of land left undisturbed. Development in the Back Country Unit would include only a very small portion of the Unit's 3,800 acres. As such, the vast majority of this unit would be untouched, retaining its existing visual character.

Overall, implementation of the GDP would maintain the existing visual character and quality of the Plan Area. Development facilitated by the GDP would be focused primarily in already developed portions of the Park, and the vast majority of the Plan Area would continue as open space. Therefore, development in accordance with the GDP would not substantially degrade the existing visual character of the Park, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Development of new structures and renovations to existing structures facilitated by the GDP would add sources of light to the Plan Area. Existing light and glare is minimal throughout much of the Plan Area, as well as the neighboring protected lands. Most sources of nighttime lighting occur in the Rancho Cañada Unit, which includes the former golf clubhouse and a parking lot. The only lit structure in the Front Ranch Unit is the Front Ranch Barn. The Back Country Unit does not currently contain any lit structures.

The GDP does not include new structures in the Front Ranch Unit, and would add structures to an already developed and lit portion of the Rancho Cañada Unit. However, new development in the Back Country Unit would occur in a remote area that is currently minimally affected by artificial light. Development facilitated by the GDP in this unit includes primitive campsites, three ranger residences, a restroom, ranger field office, and spots for three camp hosts. The Back Country Unit and its neighboring properties are rural and undeveloped, providing the potential for unobstructed night sky viewing. Therefore, adding a small amount of new light may affect surrounding nighttime views in the area, and new lighting could cause a significant impact within the Plan Area as well as on neighboring properties.

While new lighting in the Back Country Unit could impact nighttime views in the area, development in this unit is limited to primitive campsites, campground host sites, and three ranger residences. This development would contribute a minimal amount of lighting and would disrupt only a small area within the Unit's 3,800 acres. However, given the low level of existing artificial light in the area, mitigation measure AES-1 is required to ensure that impacts remain less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

AES-1   Lighting Specifications

Any exterior lighting installed in the Back Country Unit shall be of low intensity, low glare design, and shall be hooded with full cutoff fixtures to direct light downward onto the subject parcel and prevent spillover onto adjacent open space. The lights shall be certified as Dark Sky Friendly by the International Dark-Sky Association.

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2. Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Would the project:

a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	■	☐
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	■	☐
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	■	☐

This section addresses the potential impacts of the GDP on agriculture and forestry resources. Analysis in this section considers components of the project as they relate to agricultural and forest land use designations.

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

The Plan Area does not contain land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the Farmland Mapping and Monitoring Program (California Department

of Conservation [DOC] 2016). Portions of the Front Ranch Unit are currently utilized for cattle grazing, as a tool for managing grassland habitat. Cattle grazing would continue under buildout of the GDP. Development facilitated by the GDP would not involve conversion of Farmland, or changes in the existing environment which could result in conversion of Farmland to non-agricultural use. There would be no impact.

NO IMPACT

b.   *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

The Plan Area includes the following land use designations pursuant to the Monterey County General Plan: Residential-Low Density, Residential-Medium Density, Visitor Accommodation, Public/Quasi-Public, Rural Grazing, Permanent Grazing, Watershed and Science Conservation, and Resource Conservation. Implementation of projects in the GDP would retain these existing zoning designations. There are no Williamson Act contracts within the Park (Monterey County 2010). Development facilitated by the GDP would primarily occur in already-developed portions of the Park. Areas that currently utilize grazing would not be developed, other than improvements to the existing trail network. Therefore, there would be no impact on existing zoning for agricultural use.

NO IMPACT

c.   *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

d.   *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

e.   *Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?*

The Plan Area is not used for timber production. However, some forested areas of the Plan Area do meet the Public Resources Code definition for forest land or timberland. Forest land is land that can support ten percent native tree cover of any species, under natural conditions, and that allows for management of one of more forest resources, including aesthetics, biodiversity, recreation, and other public benefits. Timberland is land that is capable of growing a crop of trees of a commercial species used to produce lumber.

In accordance with the District's mission, the GDP states that the Plan Area's natural resources are to be protected in perpetuity. The GDP includes management and conservation of the Park's biological resources, including its forested areas. Development of projects in the GDP would involve construction and restoration of trails and facilities. Some tree removal could occur as part of trail improvements or to clear space for the new construction in the Back Country Unit, which includes campsites, three ranger residences, three campground host sites, and restrooms. Tree removal for trail improvements would be limited by the GDP's focus on utilizing the existing trail network. Further, phasing out of redundant trail connections would allow for growth of new trees. Development proposed in the Back Country Unit would be sited in areas that are already cleared, disturbed, or developed with homestead structures. Therefore, tree removal would be minimal, and would impact only a very small portion of the Back Country Unit's 3,800 acres.

While a small amount of tree removal could occur, implementation of projects in the GDP would not result in the loss of forest land or conversion of forest land to non-forest use. No zoning changes would occur, and the project would not involve changes in the existing environment that could result in conversion of forest land. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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3. Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	■	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	■

This section addresses the impacts of the GDP on air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. The analysis of emissions focuses on whether the GDP would cause an exceedance of a state or national ambient air quality standard or an exceedance of a threshold recommended by the local air quality agency.

Air Quality Standards and Attainment

Federal and state standards have been established for six criteria pollutants, including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$), and lead (Pb). Table 1 lists the current federal and state standards for criteria pollutants.

Table 1   Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.10 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.14 ppm (24-hr avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	1.5 µg/m3 (calendar quarter)	0.15 µg/m3 (3-month avg)
Particulate Matter (PM10)	150 µg/m3 (24-hr avg)	50 µg/m3 (24-hr avg) 20 µg/m3 (annual avg)
Particulate Matter (PM2.5)	35 µg/m3 (24-hr avg) 12 µg/m3 (annual avg)	12 µg/m3 (annual avg)

ppm= parts per million

µg/m3 = micrograms per cubic meter

Source: California Air Resources Board, www.arb.ca.gov/research/aaqs/aaqs2.pdf, October 12, 2016

Air Quality Management

The Park is located within the North Central Coast Air Basin (the Basin), which is under the jurisdiction of the Monterey Bay Air Resources District (MBARD). As the local air quality management agency, MBARD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether or not the standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-attainment. The Basin is designated in nonattainment-transitional for the state O_3 standard, and nonattainment for the state PM_{10} standard. The Basin is designated unclassifiable/attainment for all other federal and state standards (MBARD 2008). MBARD adopted the Air Quality Management Plan (AQMP) for the Monterey Bay Region in 2008 and updated it in 2017. The plan updated the 2012 AQMP with a revised air quality trends analysis that reflects revisions to the one- and eight-hour standards, as well as an updated emission inventory, which includes the latest information on stationary, area and mobile emission sources (MBARD 2017).

Air Emission Thresholds

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the O_3 standard by generating emissions that equal or exceed the established long term quantitative thresholds for pollutants, or exceed a state

or federal ambient air quality standard for any criteria pollutant. Table 2 shows the significance thresholds that have been recommended by MBARD for projects within the Basin.

Table 2   MBARD Maximum Daily Emissions

Pollutant	Construction Threshold (lbs/day)	Operation Threshold (lbs/day)
VOC	137	137
NO_X	137	137
CO	550	550
SO_X	150	150
PM_{10}	82	82
$PM_{2.5}$	N/A	N/A
Source: MBARD 2008		

Both construction and operational emissions associated with development facilitated by the GDP were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (2016) software. The three ranger residences and the ranger field office were the only land uses modeled because other improvements to the Park, such as the addition of shade structures, would not result in operational emissions or use of heavy duty diesel equipment that would contribute to construction emissions. In addition, the ranger office at the Rañcho Canada Unit was not modeled because it will be either a remodeled structure or a small extension of an existing structure. Both remodeling and an extension of the existing maintenance building would not result in operational emissions or use of heavy duty diesel equipment that would contribute to construction emissions.

It was conservatively assumed that the ranger field office would be approximately 1,000 square feet. The construction activities associated with development of the ranger units and field office would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes haul trucks and forklifts. It is assumed that all of the construction equipment used would be diesel powered.

Operational emissions would be comprised of mobile source emission and area source emissions. Mobile source emissions are generated by motor vehicle trips in the Plan Area associated with up to ten daily ranger patrol trips from the ranger units and model assumptions for vehicle trip rates associated with the field office. As discussed in Section 16, *Transportation and Traffic*, the GDP would reduce traffic as compared to the previous golf course on the Ranch Cañada Unit. Therefore, there would be no additional emissions associated with vehicle trips to and from the Plan Area. Additionally, area source emissions generated by landscape maintenance equipment, consumer products, and architectural coatings were include in CalEEMod (see Appendix A).

To determine whether a significant regional air quality impact would occur, emissions generated by the GDP were compared to the MBARD's recommended regional thresholds for both construction and operational emissions. A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the O_3 standard by releasing emissions that equal or exceed the established long term quantitative thresholds for pollutants, or exceed a state or federal ambient air quality standard for any criterial pollutant.

a.   Would the project conflict with or obstruct implementation of the applicable air quality plan?

Vehicle use, energy consumption, and associated air pollutant emissions are directly related to population growth. A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding the forecasts used in the development of the 2012-2015 AQMP. The current (2018) population of unincorporated Monterey County is 107,264 (DOF 2018). Development proposed by the GPD would result in six new employees, three new rangers and three camp hosts, and would include construction of residences or RV units for these employees to reside in the Park. Assuming that the six new employees would be new county residents, the GDP would increase the Monterey County population to 107,270, an increase of 0.006 percent. This increase is within the 2020 population growth forecast for Monterey County and the project would be consistent with regional growth forecasts. Therefore, the GDP would not result in emission that would conflict with those anticipated in the AQMP.

LESS THAN SIGNIFICANT IMPACT

b.   Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c.   Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction Emission

Construction of the three ranger residences and field office would generate temporary air pollutant emissions. Construction impacts are associated with PM_{10} and exhaust emissions from construction vehicles, in addition to volatile organic compounds (VOCs) that would be released during the drying phase upon application of architectural coatings. Hauling materials to the proposed location for the ranger units and field office and site preparation would involve the largest use of equipment because the structures would be assembled on-site. For the purposes of the model, it was assumed that all construction would be in compliance with MBARD Rules. CalEEmod defaults were used for construction schedule and equipment. Table 3 summarizes the estimated maximum daily emissions of pollutants as a result of project construction.

Table 3   Estimated Construction Emissions

	Estimated Maximum Daily Emissions (lbs/day)				
	VOC	NO_X	CO	SO_2	PM_{10}
Overall Construction Maximum Daily Emissions	4.5	11.7	9.4	<0.1	1.4
MBARD Threshold	137	137	550	150	82
Threshold Exceeded?	No	No	No	No	No

See Appendix A for CalEEMod output. Results show winter and summer "mitigated" emissions, whichever is higher.

As shown in Table 3, daily emissions from construction activities would not exceed MBARD construction thresholds for any pollutants. Other projects listed in the GDP such as addition of shade structures and construction of the dog park would not involve the use of heavy construction

equipment and therefore would not result in substantial emissions.[8] Construction air quality impacts would be less than significant.

Operational Emissions

Long-term emissions associated with operation of projects included in the GDP, as shown in Table 4, would include emissions from ranger patrol trips and trips to the field office (mobile sources), emissions from lighting and operation in the field office (energy sources) and maintenance equipment, consumer products, and architectural coating associated with on-site development (area sources). Operation of the three ranger units would not result in energy use because they would utilize solar panels with a back-up generator for electricity.

Table 4   Estimated Operational Emissions

Source	Estimated Emissions (lbs/day)				
	VOC	NO$_X$	CO	SO$_X$	PM$_{10}$
Area	0.2	<0.1	0.2	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	<0.1	0.2	0.5	<0.1	<0.1
Total Emissions	0.2	0.1	0.5	<0.1	<0.1
MBARD Threshold	137	137	550	150	82
Threshold Exceeded?	No	No	No	No	No

See Appendix A for CalEEMod output. Results show winter and summer "mitigated" emissions, whichever is higher. Numbers may not add up due to rounding.

As shown in Table 4, emissions from development facilitated by the GDP would not exceed MBARD thresholds for any criterial pollutant. Other projects listed in the GDP, such as the dog park and camping sites, would not result in operational emissions because they are active recreational uses. Additionally, as discussed in Section 4.15, *Transportation and Traffic*, implementation of the GDP would reduce vehicle trips to the Plan Area as compared to the sites former use as a golf course. Therefore, there would be no additional mobile emissions generated from park users. Operational air quality impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Development facilitated by the GDP would include improvements and additions to the Park's trail network, renovation and re-use of facilities, an off-leash dog park, and primitive campsites. Substantial odors are normally associated with uses such as agriculture, wastewater treatment, industrial facilities, or landfills. The GDP does not include uses that normally result in odor emission, and would not expose future project residents to substantial odors. There would be no impact.

NO IMPACT

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[8] Although restroom construction would result in criteria pollutant emissions CalEEMod does not have a land use to model restrooms. However, the ranger units were conservatively modeled as single-family units which include multiple restrooms. Therefore, the model overestimates emissions and accounts for emissions that would occur from the proposed restrooms.

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4. Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	■	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

Existing Setting

Literature Review

Rincon conducted a desktop analysis for baseline information on biological resources occurring or potentially occurring in the Plan Area and surrounding open space. The analysis consisted of a query of the relevant agency databases, review of aerial imagery, and review of pertinent literature and existing plans. The queries of agency databases and literature review included the following:

- Occurrence records for special-status plant species contained in the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2018)

- Occurrence records for sensitive biological resources (i.e., special-status plant and animal species, and sensitive terrestrial natural communities) contained in the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) (CDFW 2018a), and *Biogeographic Information and Observation System* (BIOS) (CDFW 2018b)

- U.S. Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* (IPaC) list (USFWS 2018a), geographic distributions for federally listed species and federally designated critical habitat from the USFWS *Critical Habitat Portal* (USFWS 2018b), and the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) *Endangered Species Act Critical Habitat* (NMFS 2018)

- The USFWS *National Wetlands Inventory* (NWI) was reviewed to determine the extent of potentially jurisdictional wetland and non-wetland waters of the U.S. and/or State of California that have been previously documented and mapped in City limits (USFWS 2018c)

- The United States Department of Agriculture's Natural Resources Conservation Service Web Soil survey (USDA 2018)

- The Palo Corona Regional Park GDP (2018), Monterey County General Plan (2010), and local area plans

The Safe Harbor Agreement for Palo Corona Regional Park (USFWS 2011), Grassland Management Plan (McGraw 2007), Whisler-Wilson Ranch Camping Feasibility Report (MPRPD 2013), Invasive Weed Management Plan (Nomad, 2014), and Grassland Monitoring Report Palo Corona Regional Park (Fields 2016), were also reviewed to provide background information on existing conditions.

The queries of biological databases included an area of eleven United States Geological Survey 7.5-minute topographic quadrangles: the four quadrangles on which the Plan Area occurs (*Mt Carmel, Soberanes Point, Monterey, and Seaside*) and the surrounding seven quadrangles (*Marina, Salinas, Spreckels, Carmel Valley, Ventana Cones, Big Sur, and Point Sur*).

Vegetation Communities and Land Cover Types

Vegetation communities and land cover types occurring within the Park were developed based on aerial imagery, data provided by the District, and the Grazing Management Plan (McGraw 2007). Ten major vegetation communities and land cover types were identified, ranging from wetlands to chaparral and woodlands (Figure 8).The vegetation communities are described below.

Native and Annual Grasslands

Native and annual grasslands are found primarily along the canyon slopes and hills of the Back Country Unit. Typical species observed in this habitat type include ripgut brome (*Bromus diandrus*),

Figure 8   Vegetation Communities
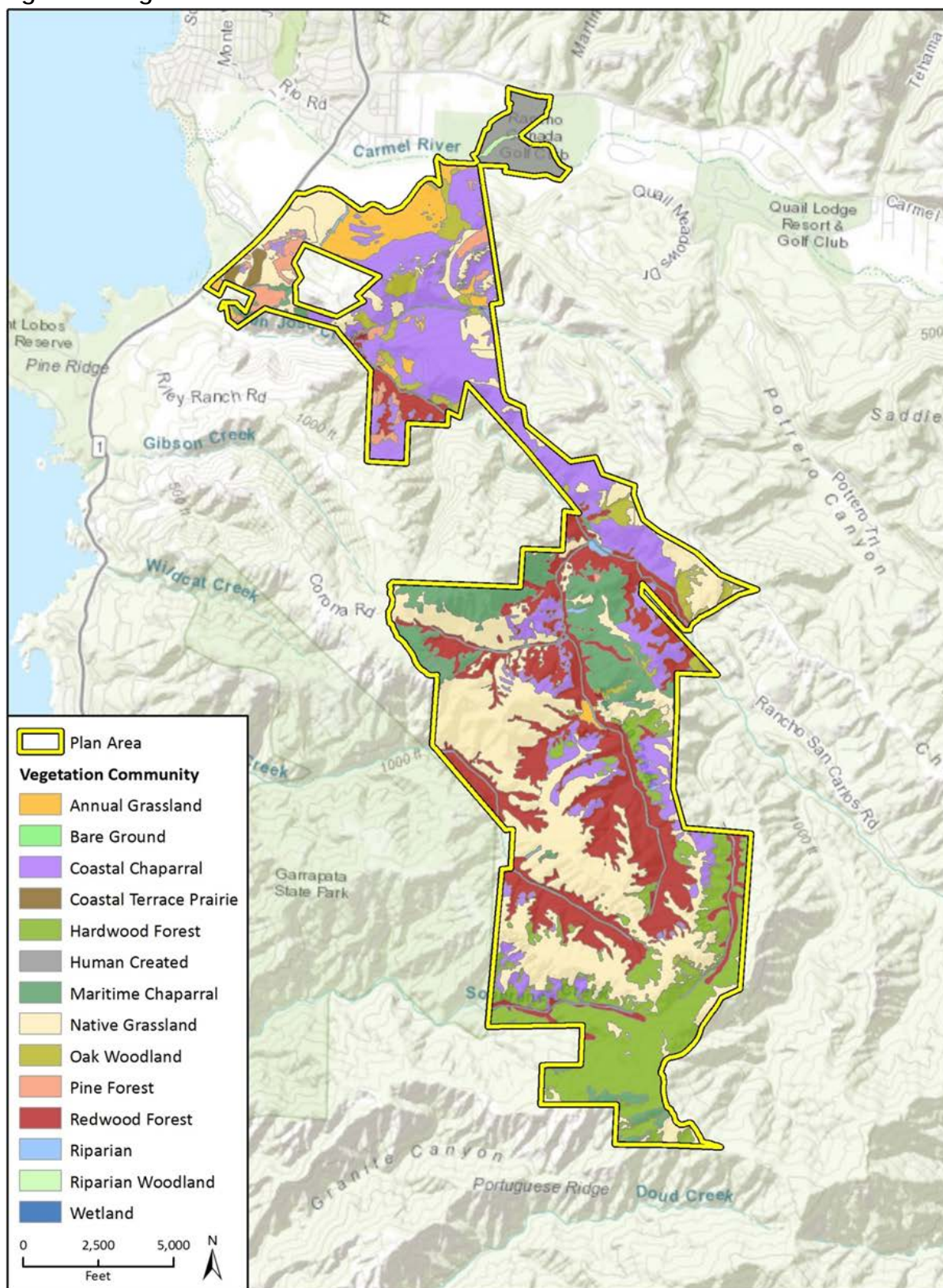
Bristly dogstail grass (*Cynosurus echinatus*), Longbeak Stork's Bill (*Erodium botrys*), Deerweed (*Lotus scoparius*), Sea cliff buckwheat (*Eriogonum parvifolium*), and Sky lupine (*Lupinus nanus*).

Coastal Terrace Prairie

Coastal Terrace Prairie grasslands occur on the slopes of the Front Ranch Unit. These grasslands feature dense tall grasses and patchy rushes. Dominate species in this community include California Oatgrass (*Danthonia californica*) and Italian Ryegrass (*Lolium multiflorum*) and English plantain (*Plantago lanceolate*).

Coast Redwood Forest

Redwood forests occur primarily along the central and southern canyon ridges and slopes. This vegetation community is dominated by second growth Coast Redwoods (*Sequoia sempervirens*), with tanoak (*Lithocarpus densiflorus*), and sword fern (*Polystichum munitum*) redwood sorrel (*Oxalis oregano*), and Pacific starflower (*Trientalis latifolia*) in the understory.

Coastal Chaparral/Scrub

Coastal chaparral and scrub communities occur patchily throughout the Park. Coastal scrub habitats are dominated by short to medium height, soft-woody shrubs such as coyote brush (*Baccharis pilularis*), sticky monkeyflower (*Mimulus aurantiacus*), California sagebrush (*Artemesia californica*), and seacliff buckwheat. Coastal chaparral habitats are dominated by medium to tall, schlerophyllous, woody shrubs. Coastal chaparral within the Park is dominated by chamise (*Adenostoma fasciculatum*).

Maritime Chaparral

Maritime Chaparral is similar in species composition to coast chaparral communities, but occurs within areas influenced by summer fog. Dominant species in this community include Monterey ceanothus (*Ceanothus rigidus*), woolly-leaf manzanita (*Arctostaphylos tomentosa*), and giant chinquapin (*Chrysolepis chrysolphylla* var. *minor*).

Hardwood Forest

Hardwood forests occur primarily on the canyon slopes of the Back Country Unit. This community is characterized by a dense canopy of evergreen, hardwood trees, with a sparse understory. Dominant species in this community include California bay (*Umbellularia californica*), pacific madrone (*Arbutus menziessii*), tan oak (*Lithocarpus densiflorus*), coast live oak (*Quercus agrifolia*), and interior live oak (*Quercus wislizenii*).

Oak Woodland

Oak woodlands occur on ridges and slopes throughout the Park. This community may have a dense to sparse canopy cover, and variable understory ranging from grasslands (savanna) to shade tolerant shrubs and herbs. The dominant species are Coast Live Oak, with poison oak (*Toxicodendron diversilobum*), oso berry (*Oemleria cerasiformes*), baby blue eyes (*Nemophila menziessii*), columbine (*Aquilegia formosa*), and California hedgenettle (*Stachys bullata*) in the understory.

Monterey Pine Forest

Monterey Pine Forest occurs primarily on western slopes and rocky ridgetops of the Front Ranch Unit. This community consists of dense stands of Monterey pine (*Pinus radiata*), with shade tolerant species such as poison oak, coffee berry (*Rhamnus californicus*), fuscia-flowered gooseberry (*Ribes speciosum*), and sticky monkeyflower in the understory.

Riparian Woodland

Riparian Woodlands occur patchily throughout the Park along streams and wetlands. Due to the variability of the hydro period between intermittent, seasonal, and perennial wetlands and streams, the species composition of riparian woodlands is also highly variable. Dominate species include arroyo willow (*Salix lasiolepis*), big leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), California sycamore (*Platanus racemose*), and American dogwood (*Cornus sericea*).

Wetland

Wetlands occur throughout the Park, and include intermittent, seasonal, and perennial ponds and streams, springs, vernal pools, and cattle troughs. Vegetation communities occurring within these wetlands are typically dominated by rushes (*Juncus* spp), duckweed (*Lemn*a ssp), cattail (*Typha* ssp) and arroyo Willow.

Human Created

Human Created areas are those which have been developed or significantly altered through landscaping, and include the golf course at the Rancho Cañada Unit, existing trails, and several historical buildings and structures throughout the Park

Special Status Species

Special Status Plants

A review of resource agency databases and special status plant lists identified 68 special status plant species (Appendix C) known to occur in the region. Based on the size of the Plan Area, and the types and quality of natural vegetation communities within the Park, all 68 special status plant species have some potential to occur within the Plan Area (Table 5).

Table 5   Federal and State Listed Plants with Potential to Occur in the Plan Area

Common Name	Scientific Name	Status
Low Potential to Occur		
Marsh sandwort	*Arenaria paludicola*	Federal and state endangered
Robust spineflower	*Chorizanthe robusta* var. *robusta*	Federally endangered
Menzies' wallflower	*Erysimum menziesii*	Federal and state endangered
Contra Costa goldfields	*Lasthenia conjugens*	Federally endangered
Dudley's lousewort	*Pedicularis dudleyi*	State rare
Adobe sanicle	*Sanicula maritima*	State rare
Moderate Potential to Occur		
Coastal dunes milk-vetch	*Astragalus tener* var. *titi*	Federal and state endangered
Seaside bird's-beak	*Cordylanthus rigidus* ssp. *littoralis*	State endangered
Monterey gilia	*Gilia tenuiflora* ssp. *arenaria*	Federally endangered state threatened
Beach layia	*Layia carnosa*	Federal and state endangered
Tidestrom's lupine	*Lupinus tidestromii*	Federal and state endangered
Hickman's cinquefoil	*Potentilla hickmanii*	Federal and state endangered
Monterey clover	*Trifolium trichocalyx*	Federal and state endangered
High Potential to Occur		
Monterey spineflower	*Chorizanthe pungens* var. *pungens*	Federally threatened
Gowen cypress	*Hesperocyparis goveniana*	Federally threatened

Eight species have been documented within the Park, including federal and state listed species (Table 6). The remaining 45 species with potential to occur have a California Rare Plant Rank (CRPR) of 1B.2.

Table 6   Special Status Plants Documented in the Plan Area

Common Name	Scientific Name	Status
Present		
Yadon's rein orchid	*Piperia yadonii*	Federally endangered
San Francisco popcorn flower*	*Plagiobothrys diffuses*	State endangered
Hooker's manzanita	*Arctostaphylos hookeri* ssp. *hookeri*	1B.2
Jolon clarkia	*Clarkia jolonensis*	1B.2
Hutchinson's larkspur	*Delphinium hutchinsoniae*	1B.2
Pinnacles buckwheat	*Eriogonum nortonii*	1B.3
Carmel Valley bush-mallow	*Malacothamnus palmeri* var. *involucratus*	1B.2
Monterey pine	*Pinus radiate*	1B.1.
* McGraw 2007		

Special Status Animals

The literature review of 11 USGS quadrangles containing and surrounding the Plan Area identified 32 special status animal species (Appendix C). Due to the large size of the Park and presence of natural native vegetation communities, only five species with specific habitat requirements not found in the Park could be excluded. These species generally occur in marine habitats or the Park is outside of the species known range. Eight federal or state listed species have potential to occur in the Plan Area (Table 7).

Table 7   Federal and State Listed Animals with Potential to Occur in the Plan Area

Common Name	Scientific Name	Status
Low Potential to Occur		
Marbled Murrelet (foraging only)	*Brachyramphus marmoratus*	Federally threatened and state endangered
Western snowy plover	*Charadrius alexandrinus nivosus*	Federally threatened
Bank swallow	*Riparia riparia*	State threatened
Foothill yellow-legged frog	*Rana boylii*	State candidate threatened
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally threatened
Moderate Potential to Occur		
Tricolored blackbird	*Agelaius tricolor*	State threatened
California condor (foraging only)	*Gymnogyps californianus*	Federal and state endangered
California black rail	*Laterallus jamaicensis coturniculus*	State threatened

Six special status species have been documented within the Park and are presumed extant (Table 8). The remaining 13 special status species with potential to occur in the Park include California species of special concern and fully protected or watch list species (Appendix C).

Table 8   Special Status Animals Documented in the Plan Area

Common Name	Scientific Name	Status
Present		
California spotted owl	*Strix occidentalis occidentalis*	California species of special concern
California tiger salamander	*Ambystoma californiense*	Federal and state threatened
California red-legged frog	*Rana draytonii*	Federally threatened
Coast Range newt	*Taricha torosa*	California species of special concern
Steelhead - south-central California coast DPS	*Oncorhynchus mykiss irideus*	Federally threatened
Smith's blue butterfly	*Euphilotes enoptes smithi*	Federally endangered

Sensitive Communities and Critical Habitat

Sensitive Communities

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in CNDDB. Sensitive natural communities included in the CNDDB follow the original

methodology according to "*Preliminary Descriptions of the Terrestrial Natural Communities of California*" (Holland 1986). This methodology continues to be revised and is now based on "*the Manual of California Vegetation*" (Sawyer et al. 2009). Communities considered sensitive by CDFW are published in the California Sensitive Natural Communities List (CDFW 2018). Vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Some alliances with the rank of 4 and 5 have also been included in the 2018 sensitive natural communities list under CDFW's revised ranking methodology (CDFW 2018c).

The literature review identified nine sensitive natural communities within the 11 quad search area (Table 9). Only the Northern Coastal Salt Marsh could be eliminated from potentially occurring within the Park, based on the lack of marine habitat within the Plan Area. Many natural communities found in the Park are considered sensitive under CDFW's revised ranking methodology, including a variety of vegetation alliances for each of the following communities: 1) coast live oak; 2) chamise chaparral; 3) woolly-leaf manzanita; 4) coyote brush scrub; 5) ceanothus, California oat grass prairie; 6) California buckeye groves; 7) Black cottonwood forest; and 8) American dogwood. Redwood forest (G3S3) is also considered a sensitive natural community. The current vegetation mapping within the Park limits has been completed at too coarse of a scale to capture these vegetation alliances; however, many of these sensitive vegetation communities are likely to be present within the Park.

Table 9   Sensitive Natural Communities Known to Occur or with Potential to Occur within the Vicinity of the Plan Area

Sensitive Natural Communities	Status
Central Dune Scrub	G2/S2.2
Central Maritime Chaparral	G2/S2.2
Monterey Cypress Forest	G1/S1.2
Monterey Pine Forest	G1/S1.1
Monterey Pygmy Cypress Forest	G1/S1.1
North Central Coast Fall-Run Steelhead Stream	GNR/SNR
Northern Bishop Pine Forest	G2/S2.2
Valley Needlegrass Grassland	G3/S3.1

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind 5.

Sources: CNDDB (CDFW, 2018a)

Critical Habitats

Two critical habitat units occur within the Park boundary: steelhead south-central California coast Distinct Population Segment (DPS), and California red-legged frog. Critical habitat for Yadon's piperia occurs outside the Plan Area but in close proximity to the Front Ranch Unit.

STEELHEAD

The Carmel River, San Jose Creek, and Malpaso Creek are designated critical habitat for south central California coast steelhead. These watersheds provide suitable spawning and rearing sites, with adequate water quality, shade, and submerged logs and debris, which are essential for the conservation of the species. Steelhead are known to occur in the Carmel River, and its lower reaches are identified in the south central California coast steelhead recovery plan as an important corridor

for movement between estuarine and marine habitats and extensive spawning and rearing habitats in the upper watershed.

San Jose Creek is identified as "fair" steelhead habitat due to ground and surface water diversion, old logging roads, and fish passage berries resulting from log jams and other debris remaining from logging activities.

CALIFORNIA RED-LEGGED FROG

Most of the Park falls within California red-legged frog critical habitat unit MNT-2 *Carmel River*, except for the northern corner of the Rancho Cañada Unit and the southwestern corner of the Back Country Unit, south of Malpaso Creek. This critical habitat unit includes the Carmel River and San Jose Creek drainages. California red-legged frog are known to occur in aquatic and upland habitats of MNT-2, and it is the largest critical habitat unit in Monterey County, covering 26,098 acers. Threats identified in the federal designation for this unit include: predation by nonnative species, urbanization, and ground and surface water diversion.

YADON'S PIPERIA

Critical Habitat for Yadon's piperia adjacent to the Front Ranch Unit includes 228 acers of Point Lobos Ranch. Vegetation communities found in this unit include Monterey pine forest, maritime chaparral, Gowen cypress, Bishop pine forest, and redwood forest. Populations of Yadon's piperia in the Front Ranch Unit are likely associated with populations at Point Lobos. Threats identified in the federal designation for this critical habitat unit include the spread of invasive species, development, and erosion.

Jurisdictional Features

Within the Front Ranch and Back County Units there are 24 known springs and 10 ponds, six of which are perennial and four of which are seasonal. All the ponds within the Park are manmade. They were created as stock ponds for cattle through the installation of dams within streams or the outflow of springs, or excavation of catchment basins. Some of these ponds are still used for cattle and have sparser vegetation, and some are fenced and contain higher densities of vegetation. The springs have been developed to provide water for livestock (troughs), likely when the property was first developed as a working ranch.

There are 12 streams within the Front Ranch and Back County Units: Barn Creek, Monastery Creek, Animas Creek, San Jose Creek, Seneca Creek, Panoche Creek, Chavote Creek, Malpaso Creek, Van Winkely Creek, Soberanes Creek, Granite Creek, and Doud Tributary. There are also many unnamed tributaries within the Plan Area. These creeks and streams total 72,129 feet in length within the Park (including the Carmel River) (McGraw 2007).

The Rancho Cañada Unit contains several ponds and wetlands within the former golf course (likely manmade) and the Carmel River.

These wetlands and non-wetland waters are subject to USACE jurisdiction under the Clean Water Act (CWA), RWQCB jurisdiction under the CWA and Porter-Cologne, and CDFW jurisdiction under the CFGC.

Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Wildlife movement corridors can be both large and small scale. Riparian corridors and waterways including the Carmel River and San Jose Creek watersheds provide local-scale opportunities for wildlife movement throughout the Park. Existing trails and roads within the Park also act as corridors for wildlife movement, particularly for relatively disturbance tolerant species such as fox, coyote, raccoon, skunk, deer, and bobcat. On a larger scale, both Natural Landscape Blocks and Essential Connectivity Areas are mapped within the Park in the Biogeographic Information and Observation System (CDFW, 2018b). These landscape blocks and linkages connect Point Lobos State Natural Reserve along the coastline with Big Sur and Los Padres National Forest along the Santa Lucia Mountain Range. The Park represents a large area of relatively undisturbed natural habitat within a broader area of similar natural habitat that extends relatively undisrupted from San Luis Obispo to the Monterey peninsula. Overall, this area represents important natural habitat for a wide range of species, and supports genetic connectivity and movement along much of the central coast of California. However, the Plan Area itself is not a distinct or critical wildlife movement corridor as it is part of this larger region of natural habitat and does not, in and of itself, connect two or more distinct and isolated natural areas. The Park likely includes a wide range of local areas (e.g. streams and associated riparian habitat) that allow wildlife to disperse among similar habitats within the Park, and these corridors would be considered important local wildlife movement corridors.

a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

Sixty-eight (68) special status plants and 32 special status animals are known to occur, or have potential to occur within plan area or its vicinity (Appendix C). Twenty seven of these species (12 animal species and 16 plant species) are given high levels of protection by the federal government through listing under FESA and/or by the state government through listing under CESA or as Fully Protected species (see Appendix C). Fourteen special status species (eight plants and six animals) have been documented within the Park. Special status species could be encountered at locations in the Plan Area where development facilitated by the GDP is projected to occur.

Development facilitated by the GDP includes a mix of low and moderate impact activity with varying levels of potential impacts to special status species. Proposed development such as placement of signage on multi-use trails, information kiosks at parking lots, trail closures and repurposing of existing facilities would be unlikely to result in impacts to special status species. Development proposed for the golf course area such as conversion of existing golf cart paths is also unlikely to impact special status species. Other GDP projects in disturbed areas of the existing golf course have a low potential to impact special status species if there is no associated ground disturbance or vegetation removal. However, development facilitated by the GDP that involves ground disturbance or vegetation removal, even in previously disturbed areas, has the potential to impact special status

species depending on the existing conditions in the disturbance area at the time of development. The Rancho Cañada Unit, no longer maintained as a golf course, is primarily comprised of non-native grasses and emerging weeds. Continued use of the former clubhouse as an event center and office space would not result in impacts to special status plants due to the current level of development at this site. However, fallow areas of the golf course may support special status species. Project development for components such as trail connectors, horse trailer staging areas, new trailheads and new trail access points that would require ground disturbance or vegetation removal in the Rancho Cañada Unit could result in impacts to special status species.

Similarly, development facilitated by the GDP that would involve ground disturbance or vegetation removal in the Front Ranch and Back Country units has a potential for impacts to special status species. GDP components such as new access points and staging areas, connections to adjacent parks, realignment and grading of trails, structural/approach reinforcement of bridges, addition of a second trail parallel to the Palo Corona, and the ranger units are the types of actives that could result in significant impacts to special status species through injury or mortality from construction activity. Additionally, construction of new trails in the immediate vicinity of creeks or streams could result in loss or degradation of aquatic habitat (e.g. by erosion, sedimentation, pollution, or tampering by the public).

Rare and Listed Plants: Impacts to CRPR 1B.1 or 1B.2 plant species would only be considered significant if the loss of individuals in the Plan Area represented a population-level impact that resulted in a loss of, or risk to the entire regional population. Given the size of the Park, quality of habitat, and small impact area for the types of projects proposed (i.e., trail improvements), there is low potential for impacts on a population level. Impacts to individuals of state and federal listed species, or population-level adverse effects to non-listed species would be considered significant, but can be reduced through the design of project elements to avoid special status plants and sensitive vegetation communities, maintenance of trails to manage the spread of weedy species, and education of the public to avoid trampling or removing special status plants. Impacts to federal or state listed species from ground disturbing activity or vegetation removal would be considered significant under CEQA.

Special Status Wildlife: Special status animal species are most likely to occur in natural habitats on the Front Ranch and Back County Units. The expanses of natural, native vegetation provide suitable habitat for California red-legged frog, California tiger salamander, and Smith's blue butterfly. Direct impacts to special status species could include injury or mortality during construction activity associated development facilitated by the GDP that requires ground disturbance or vegetation removal as described above.

Development facilitated by the GDP in the Front Ranch and Back Country Units could result in increased edge effects, such as: habitat fragmentation, particularly for small mammals and amphibians; changes in microclimate; and introduction of corridors for movement of common predator species. The extent of these impacts would depend on the final location and design of individual GDP projects. Increased human presence is also likely to result in some levels of noise disturbance, which may affect nesting birds. Lighting from the proposed restroom, ranger residences and campground host sites, and users of the primitive camping sites (e.g., flashlights) could occur. The lighting mitigation required under Section 1, *Aesthetics*, would reduce impacts from lighting in the Back Country Unit and the Park would implement a "Leave No Trace" policy, with signage encouraging the public to pack out trash.

The majority of proposed activity facilitated by the GDP is not likely to result in significant impacts to special status plants or animals. However, GDP components that would require ground disturbance

or vegetation removal have potential to adversely affect special status species wherever they occur in the plan area. The GDP includes best management practices (BMPs) that would ensure potential impacts to variety of species remain less than significant. For projects that are not expended to result in any ground disturbance or very small disturbance (e.g., installation of signage, information kiosks in disturbed areas, trail improvements that do not involve ground disturbance, trail closures, etc.) and no vegetation removal, there would be no impact. For those projects that would result in ground disturbance through clearing/grading or vegetation trimming or removal (e.g., trail improvements, new trails, connector trails, ranger houses, bridge abutment work, etc.), a project-specific biological assessment, as required by BMP-1 Biological Resources and Screening Assessment in the GDP, would reduce impacts to special status species. Additional BMPs included on pages 112 to 117 the GDP would be implemented based on the results of the project-specific biological analysis, and may include one or more of the following:

- BMP-2: Special Status Plant Species Surveys
- BMP-3: Special Status Plant Species Avoidance, Minimization, and Mitigation
- BMP-4: Restoration and Monitoring
- BMP-5: Endangered/Threatened Species Habitat Assessments and Protocol Surveys
- BMP-6: Endangered/Threatened Species Avoidance and Minimization
- BMP-7: Non-Listed Special Status Animal Species Avoidance and Minimization
- BMP-8: Pre-construction Surveys for Nesting Birds for Construction Occurring within Nesting Season
- BMP-9: Worker Environmental Awareness Program (WEAP)
- BMP-10: Invasive Weed Prevention and Management Program

These BMPs that would be implemented as part of the GDP, and would reduce impacts to sensitive species to a less-than-significant level.

LESS THAN SIGNIFICANT IMPACT

b.   *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

Sensitive natural communities known to occur within the Park which may be impacted by development facilitated by the GDP include redwood forest, maritime chaparral, riparian woodlands, and Monterey pine forest. Other natural communities included in the California Sensitive Natural Communities List are also likely to be present in the Park but have not been mapped on a broad scale. Additionally, two federally designated critical habitat units, for Steelhead and California red-legged frog, occur within the Park and may be affected by implementation of the GDP. Direct impacts to sensitive habitats and critical habitats could occur through direct conversion of habitats to development. Projects facilitated by the GDP with potential to adversely affect sensitive or critical habitat are those projects that would include ground disturbance or vegetation removal in remote areas of the park (e.g., front and back country trail improvements, new trails and trail connectors, facilities re-use/retrofits and historic building preservation that would require outside groundwork, new back country campsites involving ground disturbance, etc.). Indirect impacts could also occur through the trampling of vegetation (e.g. people or horses going off trail), establishment of non-native invasive species, and the introduction of pathogens during restoration and maintenance work. However, implementation of biological BMPs included in the GDP would

avoid sensitive natural communities as identified in biological resources assessments prepared for projects involving ground disturbance. Additional BMPs would include restoration of sensitive natural communities impacted by projects facilitated by the GDP. This would include restoration and monitoring of impacted communities. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   *Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Wetlands and waters are located throughout the Plan Area and may be affected by implementation of projects facilitated by the GDP that would occur within the limits of jurisdictional waters. GDP project components that should be evaluated for potential impacts to federally protected wetlands include trail improvements and new trails where they cross drainages and in areas where vernal pools could be present, and bridge structure/abutment improvements. There are 12 streams located in the Front Ranch and Back County Units, as well as many unnamed tributaries. In addition, there are 10 ponds and 24 springs documented in the Front Ranch and Back County Units. The Rancho Cañada Unit contains a lower reach of the Carmel River and several manmade golf course ponds. These wetlands and non-wetland waters are subject to USACE jurisdiction under the CWA, RWQCB jurisdiction under the CWA and Porter-Cologne, and CDFW jurisdiction under the CFGC. Because of the programmatic nature of the GDP, a precise, project-level analysis of the specific impacts associated with individual projects on potential wetlands is not possible at this time and site-specific analysis is needed to verify if wetlands are present. If projects have the potential to impact federal wetlands, the projects would either be designed to avoid impacts to federal waters, or would implement BMPs identified in the GDP to complete a project specific jurisdictional delamination in accordance with the requirements for CDFW, USACE, and/or RWQCB. If, based on the results of the jurisdictional delineation, it is determined that project activity would result in impacts to waters of the state or waters of the U.S., GDP BMP-13 would be implemented to ensure no net loss of wetlands and ensure impacts to waters of the state or waters of the U.S. are less than significant by completing general avoidance and minimization. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

The Park contains a natural landscape block and linkage connecting Point Lobos and surrounding preserves to natural lands to the south including Los Padres National Forest. The use of existing ranch roads, development of connector trails, primitive camping sites, several small structures, and interpretative elements within the Park are not likely to significantly disrupt the movement of large mammals and birds. Implementation of projects in the GDP, such as trail improvements, may result in minor interference with wildlife movement on a local-scale (local dispersal, foraging) within the approximately 4,585-acre Park, but is not expected to result in significant changes to the genetic connectivity among populations within the Park or broader region or prevent local wildlife movement. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e.   Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Areas of the Park fall within the Carmel Valley Master Plan (CVMP), Carmel Area Land Use Plan (Carmel Area LUP), Greater Monterey Peninsula Plan Area, Big Sur Land Use Plan Area (Big Sur LUP), and the coastal zone. Development for recreational use must be consistent with these plans and Monterey County Ordinance. These plans include policies for the protection and conservation of natural resources, open space, and public use which are consistent with the goals of the GDP.

The Rancho Cañada Unit is located within the CVMP. The CVMP requires that, in places where riparian vegetation has been removed from the Carmel River, it should be replanted to a width of 150 feet from the river bank (CV-3.8), and CV-3.9 requires that willow cover along the banks of the Carmel River be preserved. CV-3.10 requires that landscaping and erosion control plantings consist of species native to Carmel Valley. Additionally, a permit is required for the removal of any healthy native oak, madrone, or redwood tree with a trunk diameter of six inches or greater, two feet above ground level (CV-3.11).

The Front Ranch Unit is within the Carmel Area LUP and coastal zone. Under the Carmel Area LUP. the Front Ranch Unit is primarily designated for resource conservation. Under the California Coastal Act (CCA), the County is responsible for the development and implementation of a Local Coastal Program (LCP) through review and approval of Coastal Development Permit applications. The Carmel Area LUP includes policies for the protection of environmentally sensitive habitats under General policies 2.3.3, including restrictions on development in critical and sensitive habitats and adjacent lands; requirements of field surveys where environmentally sensitive habitats are expected to occur; and County coordination with CDFW in the evaluation of proposed development or increased land use, including public access, recreation, and associated facilities. Specific policies 2.3.4 include a riparian setback of 150 feet for perennial streams, and 50 feet for intermittent streams.

A small area on the west side of the Back Country Unit falls within the Big Sur LUP Area, which also includes the coastal zone. The Big Sur LUP includes many similar measures for the protection of environmentally sensitive habitats, including limiting recreational use. Additionally, County of Monterey Zoning Ordinance 21.64.260 calls for the protection and preservation of oaks and other types of native trees.

Development facilitated by the GDP would be required to comply with these requirements, including via the application for tree removal permits and compliance with associated requirement (e.g., tree replacement) where applicable. Pursuant to compliance with these regulations, impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f.   Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no habitat conservation plans or natural community conservation plans that have been adopted in the Plan Area. Therefore, development facilitated by the GDP would not conflict with any such plans and no impact would occur.

NO IMPACT

5. Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	■	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

This section provides an analysis of the project's impacts on cultural resources, including historical and archaeological resources and human remains. Cultural resources analysis is partially based on the Fish Lower Barn Historic Structure Report as included in Appendix B.

Historical Resources

The Park contains several historic-age built environment properties, including the Rancho Cañada Golf Club, Front Ranch Barn, Whisler-Wilson Cabin, and Corona Homestead. Two of these properties, the former Rancho Cañada Golf Club and Front Ranch Barn, were recorded and evaluated on California Department of Parks and Recreation (DPR) 523 series forms by Rincon, which are included in Appendix B. Constructed in 1929, the Front Ranch Barn (also known as the Fish Lower Ranch Barn) is representative of early twentieth century barns in Monterey County and is an excellent example of a work by master builder M.J. Murphy. As such, it is eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and for designation as a Monterey County historical resource, and is a historical resource for the purposes of CEQA. The former Rancho Cañada Golf Club – including the golf course and buildings - is ineligible for federal, state, or local designation and is therefore not considered a qualifying historical resource. Because no project activities are proposed for the Whisler-Wilson Cabin or Corona Homestead, neither was recorded or evaluated for historical resources eligibility.

Archaeological Resources

The Park contains several known archaeological sites, including bedrock milling features and middens of Native American origin, as well as historic-age sites including sites associated with the lumber trade, and homestead sites (Doane and Breschini 2009). A grizzly bear trap is also recorded within the park, but was previously bulldozed during the Soberanes fire. Additional as-yet unidentified archaeological sites are likely present throughout the Park.

a. *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

The Park contains one known historical resource, the Front Ranch Barn, which is eligible for listing in the NRHP, CRHR, and local designation for its significant historical and architectural associations. Within the GDP, the Front Ranch Barn is proposed to be adaptively reused for interpretive, educational, and special event uses. This may include renovations and improvements to address poor building conditions and structural integrity. These project elements may have the potential to result in a substantial adverse change in the significance of a historical resources should they materially impair, or negatively affect, the physical features that convey the reason for the Front Ranch Barn's significance. To mitigate these impacts, mitigation is included below to ensure that the any alterations to the Front Ranch Barn are consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (*Secretary's Standards*). Under CEQA, a project that is found to comply with the *Secretary's Standards* is generally considered a project that would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)).

The former Rancho Cañada Golf Club is not eligible for federal, state, or local designation, and is not considered a historical resource as defined by CEQA. Therefore, facilitated by the GDPGDP projects in the vicinity of the former Rancho Cañada Golf Club do not have the potential to result in a significant adverse impact to a historical resource.

At present, no GDP-facilitated renovations to the Whisler-Wilson Cabin and the Corona Homestead are envisioned or proposed. These two historic-age properties do not appear to have been formally evaluated for federal, state, or local designation, and their historical resources status has yet to be determined. Should renovations be proposed for either property in the future, separate historic evaluations would be required. Should a property be identified as a historical resource it is recommended that the proposed alterations be reviewed for compliance with the *Secretary's Standards* to in order to avoid and mitigate any potential significant adverse impacts to historical resources.

CUL-1 Architectural History Consultation

During the project planning phase for the Front Ranch Barn (also known as Fish Ranch Barn), the District shall retain a qualified architectural historian or historic architect meeting the Secretary of the Interior's Professional Qualifications Standards to ensure project compliance with the *Secretary's Standards for Rehabilitation*. This individual shall ensure the avoidance of any direct/indirect physical changes to historical resources. The findings and recommendations of the architectural historian or historic architect shall be documented in a Secretary's Standards Project Review Memorandum, at the schematic design phase. This memorandum shall analyze all project components for compliance with the *Secretary's Standards for Rehabilitation*. Project components to be analyzed shall include direct and indirect changes to the character-defining features of the Front Ranch Barn and its setting as identified in the 2007 Historic Structures Report prepared by Architectural Resources Group (Architectural Resources Group 2007). Should design modifications be necessary to bring projects into compliance with the *Secretary's Standards for Rehabilitation*, the memorandum shall document those recommendations.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. *Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?*

The Park has a long cultural history and was home to the Ohlone people prior to settlement by European and American homesteaders. Archaeological materials associated with Native American and early Euro-American occupation exist throughout the Park and have the potential to provide important scientific information regarding history and prehistory.

The majority of GDP projects do not yet have complete design plans or project-specific locations. Therefore, project-specific impacts to archaeological resources cannot be identified at this time. However, development proposed by the GDP may have the potential to damage or destroy archaeological resources, including those that may be considered historical resources. Consequently, damage to or destruction of cultural resources could occur as a result of development under the GDP, and mitigation is necessary to ensure that potential impacts to archaeological resources are reduced to a less-than-significant level.

CUL-2   Archaeological Resources Assessment

In areas where projects will require ground disturbance and/or will result in intensified land use, a site-specific archaeological resources assessment shall be performed under the supervision of an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in either prehistoric or historic archaeology. Assessments shall include, at minimum, a California Historical Resources Information System (CHRIS) records search at the NWIC and of the Sacred Lands File Search maintained by the NAHC. The records searches shall characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated in and around the Plan Area. In areas that have not been subject to archaeological survey within the last five years, the archaeological assessment shall include a Phase I pedestrian survey to locate any surface cultural materials. If the Phase I pedestrian survey or background research indicates a high likelihood of subsurface archaeological resources, extended Phase I testing, consisting of a series of augurs or shovel test pits, may also be necessary. If cultural resources are identified during the Phase I and/or Extended Phase I studies, Mitigations Measures CUL-3 through CUL-6 shall apply.

CUL-3   Archaeological Resource Avoidance

Archaeological sites within the Plan Area shall be avoided wherever feasible.

CUL-4   Archaeological Resource Phase II Evaluation

If the Phase I archaeological survey identifies resources that may be affected by the project and cannot be avoided by project ground disturbance, a Phase II testing and evaluation program shall be implemented. If resources are determined significant or unique through Phase II testing and site avoidance is not possible, appropriate site-specific mitigation measures shall be identified in the Phase II evaluation. These measures may include, but would not be limited to, a Phase III data recovery program, avoidance, or other appropriate actions to be determined by a qualified archaeologist. If significant archaeological resources cannot be avoided, impacts may be reduced to less than significant by filling on top of the sites rather than cutting into the cultural deposits.

CUL-5   Archaeological Resource Monitoring

Project ground disturbance in areas having medium or high archaeological sensitivity and/or in areas within the vicinity of identified archaeological sites shall be observed by a qualified archaeological monitor and, if known or potential resources are of Native American origin, a local Native American representative. Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (NPS 1983).

CUL-6   Inadvertent Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities by the archaeological or Native American monitor or by construction personnel if a monitor is not present, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA, additional work such as data recovery excavation may be warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c.   Disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to be present within or near the Plan Area. If human remains are unearthed, State Health and Safety Code Section 7050.5 requires no further disturbance to occur until the county coroner has made the necessary findings as to the origin and disposition pursuant to the Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site and make recommendations to the landowner within 48 hours of being granted access. With adherence to existing regulations, impacts to human remains would be less than significant.

LESS THAN SIGNIFICANT IMPACT

6. Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	■	☐

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Implementation of the GDP would involve energy use required to construct and maintain new facilities. Construction would involve the use of vehicles and machinery. Following construction, routine use of electricity would occur at new and existing facilities. The majority of the Plan Area would remain undeveloped and managed as open space. New facilities would be constructed and operated only for purposes of managing the land and hosting visitors. Buildout of the GDP would not involve wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Monterey County Municipal Climate Action Plan (MCAP) outlines the County's goal to reduce municipal GHG emissions to 15 percent below 2005 baseline levels by the year 2020 (County of Monterey 2013). The MCAP states that energy efficiency and renewable energy represent the County's best opportunities to reduce GHG emissions.

While implementation of the GDP would require energy use for construction and operation of new buildings, the majority of the Plan Area would remain undeveloped and would require minimal energy use. Furthermore, renewable energy would be utilized by adding solar panels to the ranger residences in the Back Country Unit. Therefore, the GDP would not conflict with or obstruct the MCAP. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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7.   Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Would the project:

a. Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	■
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	■	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

This section addresses the impacts of GDP buildout related to soils and geologic hazards. Analysis in this section focuses on whether or not the GDP would exacerbate the existing geologic risks in the Plan Area.

Paleontological Resources

There are seven geologic units mapped at ground surface within the Plan Area: Cretaceous granodiorite (gdp, gd, qd), Paleocene Carmelo Formation (Tc), Miocene Monterey Formation (Tm), Miocene Marine Sandstone, including the Vaqueros and Temblor Formations (Tus, Tts), Miocene basalt flow breccia (Tvb), older Quaternary flood and stream terrace deposits (Qoa), and younger Quaternary alluvial and stream channel deposits (Qa, Qg, Qls) (Dibblee and Minch 2007a, b). Rincon evaluated the paleontological sensitivity of these geologic units using the results of a paleontological locality search and review of existing information in the primary literature concerning known fossils within those geologic units. The findings of this evaluation are summarized in Table 10, and the geologic units are shown in Figure 9.

Table 10 Paleontological Sensitivity of Geologic Units in the Project Area

Geologic Unit[1]	Symbol	Age	Typical Fossils	Paleontological Sensitivity[2]
Granodiorite	gdp, gd, qd	Cretaceous	None	None
Carmelo Formation	Tc	Paleocene	Reptile, invertebrates, trace fossils	High
Basalt flow and intrusions	Tvb	Miocene	None	None
Undivided Marine Sandstone (including, Vaqueros, Temblor, and Monterey Formations)	Tts, Tus	Miocene	Mammals, fish, plants, invertebrates	High
Monterey Formation	Tm	Miocene	Mammals, fish, plants, invertebrates	High
Quaternary Older Alluvium and Terrace Deposits	Qoa	Pleistocene	Mammals	High
Quaternary Surficial Deposits	Qa, Qg, Qls	Holocene	None	Low

[1]Dibblee and Minch (2007a, b)

[2]SVP (2010)

Based on a museum records search, there are no previously recorded vertebrate localities within the Park; however, many vertebrate localities have been recorded nearby within Carmel Valley, Monterey, the Santa Lucia Range, and western Monterey County. These localities are presented in Table 11.

Figure 9   Geologic Units in Palo Corona Regional Park (Dibblee and Minch 2007a, b)

Project Boundary

Qg, Stream channel gravel and sand, Holocene

Qa, Alluvial gravel, Holocene

Qls, Landslide Debris

Qoa, Older alluvium and terrace deposits, Pleistocene

Tm, White-weathering siliceous shale, Miocene

Tts, Marine Sandstone, undivided, Miocene

Tus, Marine Sandstone, undivided, Miocene

Tvb, Olivine basalt, Miocene

Tc, Granitic conglomerate, Paleocene

gd, Granodiorite to quartz monzonite, Mesozoic

gdp, Granodiorite, porphyritic, Mesozoic

qd, Biotite-hornblende quartz diorite to granodiorite, Mesozoic

Imagery provided by Google and its licensors © 2018.
Geologic base maps provided by Dibblee and Minch. 2007. Geologic map of the Monterey and Seaside quadrangles,
Dibblee Geological Foundation Map DF-346; Dibblee and Minch. 2007. Geologic map of the Soberanes Point and Mount Carmel quadrangles. Dibblee Foundation Map DF-347.

Table 11 Vertebrate Localities near Palo Corona Regional Park

Locality[1]	Geologic Unit	Age	Taxa
V6816	Carmelo Formation	Paleocene	*Trionyx* (soft-shelled turtle)
V6226, V5525, V3340, V3111	Unspecified Miocene sedimentary deposits	Miocene	*Paralabrax* (rock bass), *Carcharodon* (shark), Otariidae (eared seal), *Desmostylus*
V2204, V2304, V77019	Vaqueros Formation	Miocene	*Desmostylus* (herbivorous marine mammal*)*, *Cetotherium furlong* (primitive baleen whale), Cetacea (whale, dolphin, or porpoise)
V1517, V3510	Temblor Formation	Miocene	Unspecified vertebrates
-1299, V6279, V79042, V68140	Monterey Formation	Miocene	*Oligodiodon vetus* (ray-finned fish), pinniped (seal or walrus), and other unidentified vertebrates
V4002, V4856, V4918, V5576	Quaternary sedimentary deposits	Pleistocene	*Equus* (horse), *Glossotherium* (ground sloth), *Camelops* (camel), and *Bison latifrons* (bison)

[1]UCMP (2018)

a.1. Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The Park is not located within an Alquist-Priolo Earthquake Fault Zone (United States Geological Survey [USGS] 2018a). As there are no faults in the Plan Area, there is no potential for surface rupture on the site. Neither the construction of new structures, including ranger residences, nor use of existing or modified structures would be at risk from rupture of a known earthquake fault. There would be no impact.

NO IMPACT

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The Plan Area is located in Monterey County. The San Andreas Fault system, which is the most active fault system in California, runs approximately 15 miles to the east of the Plan Area. Two other active faults, the Palo Colorado-San Gregorio Fault zone and the Monterey Bay-Tularcitor Fault zone, also occur in the County (Monterey County Office of Emergency Services 2018). From 2007 to 2014, Monterey County experienced 47 earthquakes (Monterey County 2014). Earthquakes are classified by magnitude; magnitudes up to 5.9 may be felt but cause only minor damage (USGS 2018b). No earthquakes in Monterey County between 2007 and 2014 had a magnitude of greater than 4.4 or caused any damages, fatalities, or injuries (Monterey County 2014). Research by the United States Geological Survey reported that the San Andreas Fault has a 21 percent probability of a magnitude 6.7 or greater earthquake by 2032, at which could cause structural damage.

The Plan Area could be subject to seismic ground shaking during an earthquake of this magnitude from the San Andreas Fault, or any other active fault in the region. However, individual projects in the GDP would be required to comply with applicable building codes, including Monterey County Code Chapter 16.08, Grading, which prohibits the issuance of grading permits for projects that

would be hazardous by reason of flood, geological hazard, seismic hazard, or unstable soil. The Monterey County Building Code, Chapter 18.02, adopts the California Building Code, which assigns Seismic Design Categories for new construction projects, with earthquake safety regulations commensurate to the earthquake risks associated with a project's use and location. Compliance with these existing regulations would minimize effects associated with strong seismic ground shaking in the Plan Area, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

a.4. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Seismic shaking can cause liquefaction and seismic settlement to occur during earthquake events. Liquefaction is the process by which unconsolidated, saturated soils change to a near-liquid state during groundshaking. Lateral spreading, the sliding movement of an intact block of land that may occur during an earthquake, may cause considerable property damage.

As noted above, earthquakes have the potential to occur in Monterey County. Earthquakes and seismic-related ground failure in the Plan Area could damage proposed structures and trails. Development facilitated by the GDP would include restrooms and minor, unenclosed structures in the Rancho Cañada Unit community gathering area, and new ranger residences, field office, and a restroom in the Back Country Unit. The addition of these structures would result in a greater amount of developed space in the Plan Area that could be damaged by seismic-related ground failure. Human exposure to seismic hazards could also increase as a result of the GDP, due to increased visitation to the Plan Area facilitated by the GDP. However, while exposure to seismic-related hazards is unavoidable in the region, the GDP would not exacerbate existing seismic hazard conditions. Further, adherence to Monterey County Code Chapters 16.08 and 18.02, described above, would minimize impacts.

Development proposed by the GDP would also involve renovation of the Front Ranch Barn. This building is in poor condition, and renovation would improve its structural integrity and earthquake resilience.

Improvements to the Park's trail network would involve trail maintenance and new trail segments. on steep slopes that would be dangerous in the event of seismic-related ground failure. However, new trail construction would be minimal, as the project would focus on the existing trail network. Trail improvements would improve safety conditions, including decreasing the slope of some steep segments. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Development proposed by the GDP would involve grading for the proposed helipad and construction of new structures, including ranger residences, a ranger field office, and restrooms in all three units. While the Back Country Unit is largely undeveloped, new development in this unit would target areas that are most suitable for minimal-impact development, such as homestead sites or flat, grassy areas. Construction in the Rancho Cañada Unit would include the helipad, one restroom near the Discovery Center trailhead, one restroom west of the proposed dog park, a

ranger office building and small, minor structures in the community gathering area, including pavilions and an amphitheater. While development in the Rancho Cañada Unit would be minor and would occur on or near flat, developed land, there would be potential risks of erosion or loss of topsoil. However, all land clearing, grading and construction activities would be required to comply with the Monterey County Ordinance Code, specifically Chapter 16.12, which requires an erosion control plan prior to permit issuance for building, grading, or land clearing. Erosion control plans must comply with Chapter 16.12.070, Runoff Control, and Chapter 16.12.090, which prohibits land clearing or grading between October 15th and April 15th. Chapter 16.12.070 requires the following:

- On highly permeable soils, excess runoff must be retained on site through the use of infiltration basins, percolation pits or trenches, or other suitable means.
- On projects where onsite percolation is not feasible, all runoff must be detained or dispersed over non-erodible vegetated surfaces.
- Concentrated runoff which cannot be effectively detained or dispersed without causing erosion shall be carried in non-erodible channels or conduits to the nearest drainage course designated for such purpose or to onsite percolation devices.
- Runoff from disturbed areas shall be detained or filtered by berms vegetated filter strips, catch basins, or other means as necessary to prevent the escape of sediment from the disturbed area.
- No earth or organic material shall be deposited or placed where it may be directly carried into a body of water.

Additionally, development facilitated by the GDP would involve improvements to the Plan Area's existing trail network. Improvements to existing trails and addition of new trail segments could result in erosion or loss of topsoil. To minimize these impacts, trail improvements would focus on existing trails, with new trail segments added only for connector purposes. New segments would follow existing topography to limit grading. In addition, the District follows the California State Park trails guidelines (2018), which include guidance regarding erosion on trails. The 2007 Grassland Management Plan and the 2008 Biological Report prepared for the Park provide also site-specific guidance on reducing erosion. Best practices for avoiding erosion and topsoil loss from the Park's trails include re-routing trails to avoid steep terrain, and selecting winter-wet soils with California oatgrass present.

Development facilitated by the GDP would comply with the Monterey County Code, and existing land management plans prepared for the Park, as well as the California State Park trails guidelines. Pursuant to guidance with these exiting regulations and guidance documents, impacts on erosion and loss of topsoil would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   Would the project be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

A landslide is a movement of surface material down a slope. Lateral spread and liquefaction are processes in which material flows in a fluid-like movement; lateral spread refers to this movement over a gentle slope during a landslide, and liquefaction refers to water-saturated sediment losing strength due to ground-shaking. Subsidence and collapse refer to the caving in or sinking of land (USGS 2018c). If one of these geologic events could occur as a result of soil destabilization caused by implementation of projects in the GDP, a significant impact would occur.

Development facilitated by the GDP includes new structures in the Rancho Cañada, Front Ranch, and Back Country Units, and improvements to the Park's existing trail network. Construction in the Rancho Cañada Unit would involve adding small structures to a relatively flat area. Development in the Back Country Unit would include the addition of primitive campsites, ranger residences, a ranger field office, and a restroom. Ranger residences would be small, simple units, and would be strategically placed to minimize land clearing, grading, and underlying instability risks. The GDP targets areas with slopes of 0-10 percent for new construction. Further, projects would utilize best construction practices and adhere to Monterey County Code Chapter 16.08, and 16.12, described above.

Development proposed by the GDP would also include improvements to the Park's trail network. Improvements would include resurfacing and realigning existing trails to improve access and safety, constructing new trail segments and parallel trails to improve connectivity and multi-use access, and phasing some trail segments to reduce redundancy. Some of the Park's existing trails traverse elevation changes, including steep and rugged areas in the Back Country Unit. Trail construction or modification on slopes could destabilize soil and increase the risk of landslide or collapse. To minimize risks associated with dangerous slopes, the GDP targets trail construction on slopes of 0-10 percent. Only limited development is recommended on slopes of 10-30 percent, and development is discouraged on slopes above 30 percent. Existing trails in the Back Country Unit with steep slopes would be realigned and graded to decrease slopes, which would reduce instability hazards. Because trail improvements would focus on safety and phasing out of unsafe trails, there would be no net increase in soil stability risks associated with trail improvements.

Because development facilitated by the GDP includes a limited amount of physical development, would focus on reducing safety hazards, and would comply with the Monterey County Ordinance Code, this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Expansive soils are generally clays, which increase in volume when saturated and shrink when dried. The swelling that occurs in expansive soils exerts pressure that can damage the foundation of a building. When expansive soil is present, foundations must be designed to prevent uplift of the supported structure or to resist forces exerted on the foundation due to soil volume changes (International Conference of Building Officials 1994). Soil types existing in the Plan Area are shown in Figure 6 of the GDP. The majority of the Park's soil types are classified as loams, including silt loam, shay clay loam, sandy loam, and gravelly loam.

While clays are not prevalent in the Plan Area, it is possible that some expansive soil is present where new structures would be added. However, the new structures included in the project would be small and would not require deep foundations. Structures would be primarily built on land that is already developed or cleared, and strategically selected for safest geologic conditions. New construction would also be required to comply with California Building Code 1803.5.3, Expansive Soil, which requires soil testing in areas likely to have expansive soil. Chapter 18.02 of the Monterey County Ordinance Code adopts the California Building Code. The County would have authority to require soil testing, if deemed necessary, as a condition for issuance of grading and building permits.

Compliance with the Monterey County Code would reduce the risks associated with construction activities on expansive soils, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e.   *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Development facilitated by the GDP would include up to six restroom facilities, two in each unit. The other two new restrooms in the Rancho Cañada Unit would connect to existing utilities for sewer access. The remaining restrooms would rely on septic systems as follows: one system for the Front Ranch Barn and Inspiration Point trailhead restrooms, and one system for the two Back County Unit restrooms (if not developed as compost/pit toilets). Considerations for determining the feasibility of adding a septic tank system include slope, small rocks and bedrock, soil type, and groundwater depth. Development under the GDP would be required to comply with Monterey County Code Chapter 15.20, Sewage Disposal, which requires a permit for installation of a septic tank. Septic tank permit applications include a thorough description of the proposed system and the site. Chapter 15.20.060 states that the County will not issue septic tank permits on sites where the soil contains continuous cracks channels, or fractures, or in areas subject to ten year floods. Compliance with Monterey County Code would ensure that the proposed septic systems are installed in soils capable of supporting them. Compliance with this existing requirement would ensure that impacts remain less than significant.

LESS THAN SIGNIFICANT IMPACT

f.   *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*

The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. Most of the projects in the GDP would not involve ground disturbance. Therefore, direct impacts to geologic units with high paleontological sensitivity would be negligible and the likelihood of impacting significant fossils in the Park would be low. However, any project requiring disturbance below ground surface in areas of high paleontological sensitivity may impact paleontological resources. Impacts would be significant if disturbance of paleontological resources results in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data.

The following mitigation measures are required to reduce potential impacts to paleontological resources to a less than significant level. The required mitigation will be different for each project depending on the amount of ground-disturbance proposed for each project.

GEO-1   *Paleontological Resources Survey and Inventory Report*

A qualified paleontologist shall be retained to conduct a field survey of the Park areas with high paleontological sensitivity prior to implementation of GDP projects in those areas that would require ground disturbance. The qualified paleontologist shall have at least a Master's Degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques.

The purpose of the field survey will be to visually inspect the ground surface for exposed fossils or traces thereof and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Park areas underlain by geologic units with high paleontological sensitivity (i.e., the undivided Miocene marine sandstone, Monterey Formation, Carmelo Formation, and Quaternary older alluvium) shall be subject to a pedestrian walkover, excluding those that have been visibly disturbed or are obscured by developments (e.g., existing structure, heavy vegetation, etc.). Particular attention shall be paid to rock outcrops, both within and in the vicinity of the project area, and any areas where geologic sediments are well exposed.

All fossil occurrences observed during the course of fieldwork, significant or not, shall be adequately documented and recorded at the time of discovery. The data collected for each fossil occurrence shall include, at minimum, the following information: Universal Transverse Mercator (UTM) coordinates, approximate elevation, description of taxa, lithologic description, and stratigraphic context (if known). In addition, each locality should be photographically documented with a digital camera. No fossil collection shall occur during the survey.

A final report shall be prepared describing the results of the paleontological resources survey and inventory. The report shall include a summary of the field methods, an overview of the project geology and paleontology, a list of taxa identified (if any), an analysis of fossils identified (if any) and their scientific significance, and project-specific recommendations. In addition, the report shall include the results of a museum records search of previously reported localities in the project area. The record search shall be conducted at the Natural History Museum of Los Angeles County (NHM). The final report shall be submitted to the Monterey Peninsula Regional Park District.

GEO-2 Paleontological Construction Monitoring

Prior to the start of construction, the qualified paleontologist or his or her designee, shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The training shall be fulfilled at the time of a preconstruction meeting.

During construction, ground disturbing activities (including mass grading, trenching, drilling with an auger greater than three feet in diameter, and other excavation) that impact previously undisturbed geologic units with a high paleontological sensitivity (i.e., the undivided Miocene marine sandstone, Monterey Formation, Carmelo Formation, and Quaternary older alluvium) shall be monitored on a full-time basis. Part-time monitoring shall be conducted during ground disturbance deeper than five feet below ground surface in project areas underlain by Quaternary alluvium to determine if the underlying geologic units with high paleontological sensitivity are being impacted by ground disturbance. If it is determined the sensitive units underlying the Quaternary alluvium are being impacted by project ground disturbance, then monitoring shall be conducted full-time.

Paleontological monitoring shall include inspection of exposed rock units and screening of bulk matrix to determine if fossils are present. Monitoring shall be supervised by the Qualified Paleontologist and shall be conducted by a qualified paleontological monitor, who is defined as an individual who meets the minimum qualifications per standards set forth by the SVP (2010), which includes a B.S. or B.A. degree in geology or paleontology with one year of monitoring experience and knowledge of collection and salvage of paleontological resources. The duration and timing of the monitoring shall be determined by the Qualified Paleontologist. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, they may recommend reducing monitoring or ceasing entirely. Monitoring shall be reinstated if any new ground disturbances are

required and reduction or suspension would need to be reconsidered by the Qualified Paleontologist.

In the event that that a paleontological resource is discovered, the monitor shall have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammals) require more extensive excavation and longer salvage periods. In this case, the paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.

Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection (such as the LACM) along with all pertinent field notes, photos, data, and maps. The cost of curation is assessed by the repository and is the responsibility of the project owner.

At the conclusion of laboratory work and museum curation, a final report shall be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the Monterey Peninsula Regional Park District. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8.   Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHGs), gases that trap heat in the atmosphere, analogous to the way in which a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases, and ozone. GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6) (Cal EPA 2015).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (Cal EPA 2015). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for transportation and electricity production, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Thresholds

Pursuant to the requirements of Senate Bill (SB) 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions and analysis of the effects of GHG emissions. The adopted Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

The vast majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a

project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

According to the CEQA Guidelines, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan.[9] This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2016). Monterey County does not currently have a qualified GHG reduction plan. Therefore, this approach is not currently feasible.

To evaluate whether a project may generate a quantity of GHG emissions that may have a significant impact on the environment, a number of operational bright-line significance thresholds have been developed by state agencies. Significance thresholds are numeric mass emissions thresholds which identify the level at which additional analysis of project GHG emissions is necessary. Projects that attain the significance target, with or without mitigation, would result in less than significant GHG emissions. Many significance thresholds have been developed to reflect a 90 percent capture rate tied to the 2020 reduction target established in AB 32. These targets have been identified by numerous lead agencies as appropriate significance screening tools for residential, commercial, industrial, and public land uses and facilities projects with horizon years before 2020.

The State, MBARD, and Monterey County have not adopted GHG emissions thresholds for land use projects. MBARD is evaluating a percentage-based threshold option (MBARD 2013); however, MBARD does not have a formal policy recommending specific thresholds.

Since MBARD has not adopted thresholds, MBARD encourages lead agencies to consider a variety of metrics for evaluating GHG emissions and related mitigation measures as they best apply to the specific project (MBARD 2017). MBARD has recommended using the adopted San Luis Obispo Air Pollution Control District (SLOAPCD) quantitative threshold for land use projects. SLOAPCD is the air district immediately south and adjacent to the MBARD. The use of GHG thresholds developed by the adjoining SLOAPCD is considered appropriate by both MBARD and the District because of the broad similarities between the two air basins. The North Central Coast Air Basin comprises the counties of Santa Cruz, Monterey and San Benito, with a substantial portion of the air basin located within Santa Cruz and Monterey Counties. The portion of the South Central Coast Air Basin that is managed by the SLOAPCD consists of San Luis Obispo County, which is located immediately south of and adjacent to North Central Coast Air Basin. The areas managed by the two air districts, SLOAPCD and MARD, are located in the central coast region of California and have generally similar levels of urbanization and similar economies that include agriculture, forestry, fishing; utilities; recreation; educational services; and construction. Given the similarities between the two regions and direction from MBARD, the District has determined that the thresholds set forth by SLOAPCD are appropriate to use for the GDP.

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[9] This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (2016).

SLOAPCD designed its thresholds to achieve consistency with the state-wide 2020 GHG reduction target set by AB 32 (SLOAPCD 2012), and has not yet updated the thresholds to achieve consistency with the state-wide 2030 GHG reduction target set by SB 32, which requires that the State's 2030 emissions be reduced to 40 percent below the State's 1990 emissions levels.

Long term projects included in the GDP would be operational by 2025. Because emissions associated with development facilitated by the GDP would occur primarily in the years after 2020, to evaluate the project's impact, the District developed a conservative bright-line threshold that is consistent with the direction provided by SB 350 and SB 32. Using the existing SLOAPCD bright-line threshold of 1,150 $MTCO_2e$ per year and the relationship between the targets set forth in AB 32 and SB 32/350, a bright-line threshold for year 2025 was calculated at 920 $MTCO_2e$ per year. According to SB 32, the State's GHG emissions in 2030 should be 40 percent below 1990 levels. Therefore, the 2025 emissions target would be 20 percent below the 1990 levels.

Methods

As discussed in Section 3, *Air Quality*, emissions associated with the development proposed by the GDP were estimated using CalEEMod, specifically construction of the three ranger units and ranger field office.[10] The three ranger units were modeled as single family houses and the field office was modeled as general office building in CalEEMod. Other improvements included in the GPD, such as trail improvements, would not utilize heavy duty diesel equipment that would contribute to construction emissions and would not contribute to operational emissions. In addition, the ranger office at the Rañcho Canada Unit was not modeled because it will be either a remodeled structure or a small extension of an existing structure. Both remodeling and an extension of the existing maintenance building would not result in operational emissions or use of heavy duty diesel equipment that would contribute to construction emissions. Complete CalEEMod results and assumptions are included as Appendix A.

For mobile sources, CO_2 and CH_4 emissions were quantified in CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the California Climate Action Registry General Reporting Protocol (CCAR 2009) direct emissions factors for mobile combustion (see Appendix A). Estimates of vehicle trips associated with implementation of the GDP were calculated based on the assumption that there would be a total of 10 ranger trips per day and each trip would cover approximately 10 miles. Model assumptions were used for vehicle trip estimates from the field office. As discussed in Section 16, *Transportation and Traffic*, buildout of the GDP would result in fewer trips than the previous use of the Ranch Cañada Unit as a 36-hole golf course. Therefore, vehicle trips from park visitors were not included in CalEEMod.

a.   Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction of the three proposed ranger units and field office would produce GHG emissions related to daily operational activities and mobile sources. CalEEMod was used to calculate emissions resulting from both construction and long-term operations of the three ranger units and field office. Construction emissions are confined to a relatively short period of time in relation to the overall life of the GDP. Neither MBARD nor any of the air districts in the state has established thresholds for

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[10] Although restroom construction would result in criteria pollutant emissions CalEEMod does not have a land use to model restrooms. However, the ranger units were conservatively modeled as single-family units which include multiple restrooms. Therefore, the model overestimates emissions and accounts for emissions that would occur from the proposed restrooms.

evaluating the significance of a project's GHG construction emissions (MBARD 2008). However, the South Coast Air Quality Management District (SCAQMD) has adopted an approach for assessing construction emissions that includes amortizing construction emissions over the project's life span, defined as 30 years, then adding those emissions to the project's operational emissions (SCAQMD 2008). This approach has been applied to the project and construction GHG emissions were amortized over a 30-year period to determine the annual construction related GHG emissions over the life of the project. As shown in Table 12 below, the combined annual GHG emissions associated with development of the three ranger units and field office would be approximately 26 metric tons CO_2e. This is approximately 97 percent below the adjusted SLOACPD threshold of 920 MT CO_2e per year. Other projects listed in the GDP, such as the dog park and camping sites, would not result in GHG emissions because they are active recreational uses. Additionally, as discussed in Section 4.15, *Transportation and Traffic*, development facilitated by the GDP would reduce vehicle trips to the Plan Area as compared to the sites former use as a golf course. Therefore, there would be no additional mobile emissions generated from park users. Because emissions shown in Table 12 are approximately 97 percent below the adjusted threshold, GHG impacts from development facilitated by the GDP would be less than significant.

Table 12 Annual Greenhouse Gas Emissions

Emission Source	Annual Emissions (metric tons CO_2e)
Construction	28
Amortized over 30 years	1
Operational	
Area	0.1
Energy[1]	5.6
Waste	1.1
Water	0.5
Mobile	
CO_2 and CH_4	17.2
N_2O	0.8
Total Emissions	26.3
SLOAPCD Threshold - Adjusted	920
Exceed Threshold	No

[1] The three ranger units that were modeled would use solar with back-up generators. Therefore, there would be no electricity use for proposed buildings

See CalEEMod Results, Appendix A

LESS THAN SIGNIFICANT IMPACT

b.   *Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Monterey County does not have a qualified GHG reduction plan, and therefore projects are measured to other metric standards as discussed in this analysis. GHG emissions associated with development facilitated by the GDP would fall below regional GHG thresholds adopted to ensure consistency with state emissions reduction regulations. GDP project features such as solar panels on the three proposed ranger units would further reduce emissions associated with development

facilitated by the GDP. In addition, implementation of projects in the GDO would not result in any new vehicle trips to the site as compared to previous sites use. Therefore, the GDP would not add substantial new transportation emissions. Additionally, under State law the project would be required to comply with all energy standards of Title 24. The 2016 Title 24 standards are approximately 28 percent more efficient than the 2013 standards.

Development facilitated by the GDP would not conflict with any applicable plan, policy, or regulation for the purpose of reducing the emissions of GHGs and would be consistent with the objectives of the RTP/SCS, AB 32, SB 32, SB 97 and SB 375. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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9. Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	■	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	■	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	■	☐

This section addresses impacts of the GDP related to hazardous materials, emergency procedures, and wildland fire hazards.

a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Development facilitated by the GDP would not involve transport, use, or disposal of hazardous materials other than the routine use of maintenance and landscape equipment within the Rancho Cañada Unit. Therefore, implementation of projects in the GDP would not involve the release of hazardous materials. Park visitors would be subject to a small risk of exposure to upset and accident conditions from the release of hazardous materials being transported on adjacent roadways. However, this is not a reasonably foreseeable risk to Park visitors, given that most of the Plan Area far from major roadways and the low probability of such an accident occurring near the site. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Development proposed by the GDP would involve small-scale construction activities, including ranger residences and a ranger field office in the Back Country Unit, restrooms in all three units, and shade structures in the Rancho Cañada Unit community gathering area. Hazardous materials associated with construction, such as chemicals and oils, have the potential to leak or spill during construction with improper handling. Inadvertent release of hazardous materials could adversely impact soils, surface water, and groundwater quality. Construction included in the GDP is not expected to use or involve large quantities of hazardous materials. However, any transport, use, and storage of hazardous materials during construction activities would be conducted in accordance with applicable laws and regulations that limit the risks associated with hazardous materials, including Chapter 10.65, Hazardous Materials Registration, of the Monterey County Code. Operators of materials defined as hazardous[11] are required to file a hazardous material registration form with the Monterey County Department of Health. If any materials involved in implementation of projects in the GDP were determined by the Monterey County Health, the County Health Officer would be authorized to enforce the County's Hazardous Materials Registration provisions.

Because the use of large amounts of hazardous materials is not anticipated, and because future improvements within the Park would be required to comply with County and State regulations, this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

The Park is within 0.25 mile of two adjacent schools, Carmel Middle School to the north and Carmel Adult School Co-op Preschool to the west. Construction activities and Park operations in the Rancho

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[11] Under Chapter 10.65, "hazardous material" is defined as "any material or substance in 'The Directors List of Hazardous Substance' developed by the Director of the Department of Industrial Relations pursuant to the provisions of the Hazardous Substances Information and Training Act (SB 1874) or cited in Article 9, Division 4, Title 22 of the California Administrative Code or is classified by the National Fire Protection Association as either a flammable liquid, a Class II combustible liquid or a Class III-A combustible liquid."

Cañada Unit would occur in the vicinity of these schools. Construction activities would be minor and temporary, and would not result in significant hazardous emissions. Park activities during operation would involve Park management and land stewardship, and would not involve hazardous emissions or materials. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

The following databases compiled pursuant to Government Code Section 65962.5 were checked for known hazardous materials contamination in the Plan Area:

- EnviroStor Database, California Department of Toxic Substances Control
- GeoTracker Database, California State Water Resources Control Board

According to the database search, there are no known hazardous material sites within the Park. The nearest cleanup sites are the Crossroads Shopping Center Safeway (case SLO605371998) and the Arco Service Station #2161 (case T0605300295), both on Rio Road within a mile from the Park. These two cases were completed and closed in 2005 and 1999, respectively (State Water Resources Control Board [SWRCB] 2018). No hazardous materials sites are known to exist in the Plan Area and the nearest hazardous materials cleanup cases have been resolved**.** This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e.   *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

The nearest airport to the Plan Area is the Monterey Regional Airport, located approximately 4.5 miles north of the Park's northern border. The Plan Area is not located within the Airport Land Use Plan (Monterey County Airport Land Use Commission 1987). There are no private airstrips in the area. The project would include the construction of a helipad in the staging area near the proposed dog park, or other suitable site, for use by emergency responders during an emergency. The helipad would only be operated during emergency situations and park users would not be allowed near the staging area during its use by emergency responders, including CAL FIRE. In addition, there are no residences in close proximity to the staging area. Therefore, the helipad would not result in a hazard to people living or working in the project area. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f.   *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The GDP would add new structures to the Plan Area and make improvements to the Park's existing trail network. The GDP would also facilitate increased visitation to remote areas of the Back Country Unit, potentially increasing the risks associated with emergency evacuation.

Development facilitated by the GDP would not involve structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency

evacuation plan. The design of any structures would be reviewed and approved by the County of Monterey to ensure that emergency access meets County standards. The project would also improve the Park's existing trails, allowing safer movement through the Park in case of an emergency. Further, development facilitated by the GDP would include co-use of the Rancho Cañada Unit dog park and the adjacent parking lot as a staging area for flood and fire response, improving emergency response access for the Plan Area and its surroundings. This would include operation of a helipad for emergency responders, including CAL FIRE, helicopters as well as hydrants to provide water for fire trucks and as syphon stations for helicopters. Therefore, the project would improve emergency response capabilities in the project vicinity. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

g.   *Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

Wildfire is an increasing regional threat in California's central coast forests and grasslands. Due to dry summers and an abundance of fuel, fire hazard conditions are severe. In 2016, the Soberanes Fire burned over 132,000 acres along the Big Sur coast (CAL FIRE 2016), including portions of the Plan Area. Therefore, the Plan Area is at risk from wildland fires.

Development facilitated by the GDP would involve new construction, including ranger residences, camp hosts sites, and a ranger field office in the Back Country Unit and structures in the Rancho Cañada Unit community gathering area, including pavilions, an amphitheater, and restrooms. Adding these structures would increase the amount of physical development that could be impacted by a wildland fire. Additionally, implementation of projects in the GDP would result in an increase in visitation to the remote areas of the Back Country Unit. Because the Back Country Unit is vulnerable to wildland fire and has areas that are not directly accessible for emergency personnel, increased visitation to this unit involves increased fire safety hazards.

In 2007, a Grassland Management Plan and a Fire Management Plan were prepared for the Park. The Fire Management Plan evaluated fire susceptibility and recommended mitigation strategies to reduce the risk from wildfires. The recommended fire suppression strategies and post-fire restoration activities include maintenance of roads and trails within the Park, coordination with local Fire Chiefs, and effective vegetation management, such as managed grazing. The Grassland Management Plan provides seasonal grazing strategies that manage the encroachment of invasive species, which are more susceptible to burning. Native coastal habitat communities found in the Park are adapted to fires, which contribute to the natural processes of nutrient cycling and vegetation clearing. Fire suppression can lead to an increase in accumulation of fuel and an invasion of shrubs and trees. Because fires occurring in such conditions are more severe, suppression can increase long-term fire risks. The Grassland Management Plan and Wildfire Management Plan, therefore, include prescribed burns as a strategy for ongoing fire hazard management.

Development facilitated by the GDP would provide visitation opportunities into the Back Country Unit, which is less developed and more susceptible to wildland fire. Thus, in the event of a wildfire, there would be an increased risk of exposure that could result in injury or death. However, the majority of the Park is within a half-mile of a drivable road, allowing for efficient evacuation and emergency response access. The Park's Fire Management Plan provides a detailed report on what roads to maintain for fire response access. The Plan notes that the Park has sufficient access for firefighting and evacuation. Visitation to the Back Country Unit would be limited by the Park's permit limits for camping, and the constant presence of park rangers and camp hosts would help to

prevent and respond to emergency situations related to wildland fire. Additionally, a strict no-fire policy and the requirement of a permit to camp – which would be monitored and enforced by the on-site rangers and camp hosts – would ensure compliance with these requirements and prevent human-caused wildfire. Finally, the GDP includes a staging area for use by CAL FIRE and the County during fire and flood emergencies. Buildings on the Rancho Cañada Unit may also be used by CAL FIRE staff during emergencies. This staging area would allow emergency personnel to mobilize quickly and efficiently, thereby improving response to fire emergencies in the Carmel Valley and Big Sur areas.

The GDP, along with the Park's Grassland Management Plan and Fire Management Plan, includes measures to manage fire risks, prevent human-caused fire, and facilitate effective fire response. Pursuant to compliance with these plans, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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10. Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	■

The California Department of Water Resources (DWR) divides surface watersheds in California into ten Hydrologic Regions (HR). The Park is located in the Central Coast HR and subject to the authority of the Central Coast Regional Water Quality Control Board (CCRWQCB). The region depends heavily on groundwater, which makes up the vast majority of available water supply, but recycled water is becoming a more plentiful supplemental source for agricultural and other non-potable uses (DWR 2009). The DWR subdivides HRs into Hydrologic Units (HU) that are commonly known as watersheds. The majority of the park is in the Santa Lucia HU, a coastal watershed that begins just south of the Carmel River and continues south along the coast to a point just north of the Monterey-San Luis Obispo County line (CDF 2004). HUs contain subwatersheds of various sizes, which are named based on their size (i.e., Hydrologic Areas, Hydrologic Sub-Areas, Super Planning Watersheds [SPW], and Planning Watersheds[PW]). The watersheds and subwatersheds within the Park include the following:

- Santa Lucia HU
  - Carmel Highlands SPW
    - San Jose Creek PW
    - Malpaso Creek PW
    - Granite Canyon PW

- Carmel River HU
  - Carmel-by-the-Sea SPW
    - Carmel Bay PW

The Park contains numerous unnamed streams that flow through canyons and valleys before joining larger streams and eventually discharging to the Pacific Ocean. The Park also contains several named streams, including: the Carmel River, Malpaso Creek, North Fork San Jose Creek, San Jose Creek, Seneca Creek, and Soberanes Creek. The CCRWQCB regulates water quality in the Santa Lucia and Carmel River watersheds and establishes water quality objectives throughout the Basin Plan. The Basin Plan defines beneficial uses for the Carmel River and San Jose Creek (CCRWQCB 2017). No streams in the Park are listed as impaired by water quality pollutants on the 2014 and 2016 California Clean Water Act Section 303(d) List (SWRCB 2018).

Most of the Park is not underlain by a groundwater basin identified by DWR. The northernmost portion of the Park (including the Rancho Cañada Unit and the northern edge of the Front Ranch Unit) is underlain by the Carmel Valley Alluvial Aquifer (CVAA; also referred to as the Carmel Valley Groundwater Basin by DWR). The Carmel River is the primary source of recharge for the basin contributing approximately 85 percent of net recharge (DWR 2004). Groundwater levels typically fluctuate between 5 and 15 feet during normal years and can experience declines up to 50 feet during drought years (DWR 2004). Groundwater quality constituents of concern in the CVAA are nitrates from septic tanks, iron, and manganese (DWR 2014).

The Federal Emergency Management Agency (FEMA) establishes base flood heights for the 100-year flood zone and the 500-year flood zone. The 100-year flood zone is defined as the area that could be inundated by a flood which has a one percent probability of occurring in any given year, or once every 100 years. The 500-year flood zone is defined as the area that could be inundated by a flood which has a 0.2 percent probability of occurring in any given year, or once in 500 years. Almost the entire Park is classified by FEMA as Zone X, Area of Minimal Flood Hazard. A small area in northwest of the Park along San Jose Creek is classified as Zone A, which is the 100-year special flood hazard

area. The northernmost portion of the Park, including the entire Rancho Cañada Unit, is in Zone AE, which is a 100-year regulatory floodway (see Figure 10).

Historical water use in the Park was limited to potable water sourced from wells on private in-holdings. MPRPD recently acquired rights to 15 acre feet per year (AFY) for on-site use through their acquisition of property underlying the Rancho Cañada Unit from the Trust for Public Land (MPRPD 2018). The acquired water rights would be served through existing wells on the Rancho Cañada Unit.

a.   *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Development facilitated by the GDP would involve construction of new structures, including ranger residences, the field office and Rañcho Canada office, restrooms, and campground host sites; construction of a paved helipad; and improvements to the Park's trail network, including new trail connector segments. These activities may result in accelerated erosion and subsequent sedimentation of nearby waterbodies. The topography of the site, the amount of soil disturbance, the duration that disturbed soil would be exposed, the amount of rainfall and wind that would occur during construction, and the proximity of the nearest waterbody all affect the potential for water quality degradation during construction. Accelerated sedimentation could adversely affect defined beneficial uses for the Carmel River and San Jose Creek.

Because construction of projects proposed in the GDP are part of a common plan of development that would disturb one or more acres of land surface, implementation of the GDP would be subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, non-stormwater management controls, and post-construction requirements to maintain pre-project hydrology through runoff reduction techniques analogous in principal to Low Impact Development (LID). Siltation, the process by which water becomes dirty as a result of water-borne silt deposition, would be prevented by the SWPPP's erosion and sediment control measures. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary.

Development facilitated by the GDP that would involve more than 100 cubic yards of grading would require a grading permit and an erosion control plan in accordance with Monterey County Code. The grading permit includes requirements to consistently maintain the construction site to control erosion. The erosion control plan requires control of runoff from a 10-year storm event, and all runoff must be detained or dispersed so that the runoff rate does not exceed the pre-development level. Runoff from disturbed areas must be detained or filtered to prevent the escape of sediment from the disturbed area.

Monterey County General Plan Safety Element Policy S-3.1 requires that post-development, off-site peak flow drainage from the project site would not be greater than pre-development peak flow drainage. General Plan Safety Element Policy S-3.2 requires implementation of BMPs to protect groundwater and surface water quality. Water quality BMPs would be implemented through development of the required SWPPP, which will specify a range of management practices and physical solutions to reduce or prevent polluted runoff from leaving the project site. General Plan

Figure 10 FEMA Flood Hazard Areas
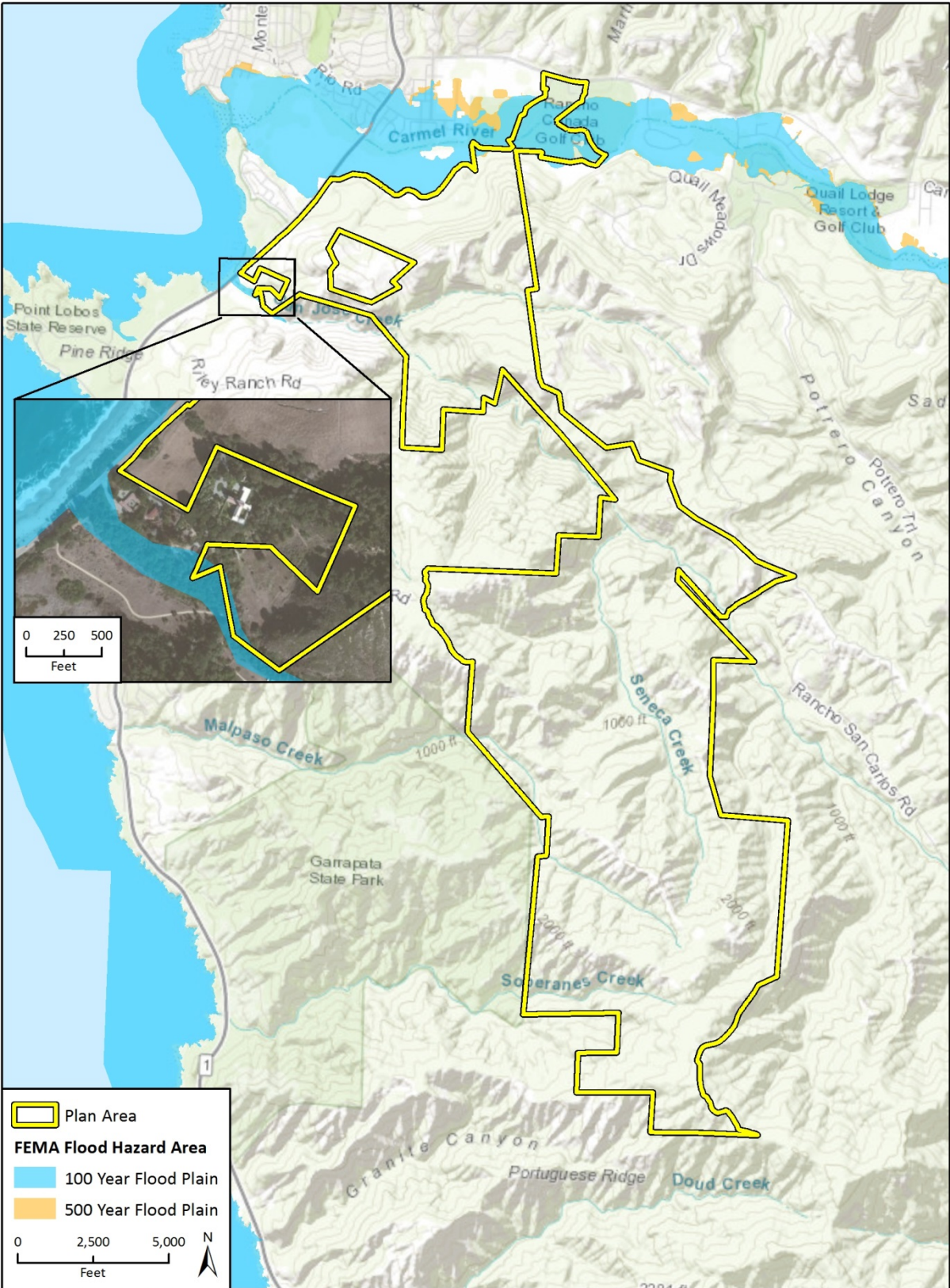
Basemap provided by Esri and its licensors © 2018.
Flood hazard data provided by NFHL/FEMA 2018.

Safety Element Policy S-3.3 requires installation of drainage facilities concurrent with new development to mitigate the post-development peak flow impact of new development. Compliance with the NPDES-required SWPPP would reduce the risk of water quality degradation on- and off-site from soil erosion and other pollutants related to Park operation because a SWPPP requires the design, installation, and maintenance of post-construction stormwater controls.

The construction and operational impacts on water quality from projects facilitated by the GDP would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b.   *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin?*

Water use in the Park would be supplied from the CVAA. The 15 AFY now controlled by the District is sufficient to supply the projected water needs for the Park. Use of the 15 AFY allotment would not adversely affect the CVAA because this amount is substantially lower than past water use from the previous landowners and because the District would dedicate 267.63 AFY of their acquired water rights to instream flow in the Carmel River. Extraction of up to 15 AFY would not result in a net deficit in aquifer volume or a lowering of the local groundwater table level because compared to past use of groundwater in the area the amount of groundwater proposed for extraction to supply existing and proposed uses in the Park is substantially lower. In fact, the most likely result of the District's acquisition and operation of the Rancho Cañada Unit is that the local groundwater table level would rise compared to historical levels due to the substantially reduced extraction of groundwater.

Construction of projects facilitated by the GDP would incrementally increase the amount of impervious surface in the Park. New impervious surfaces would include ranger residences and a field office, restrooms, the paved helipad, and picnic pavilions. New impervious surfaces associated with development facilitated by the GDP would cover fewer than five acres of the 4,585-acre Park and would occupy negligible area compared to the approximately 250-square mile groundwater recharge area for the CVAA. The amount of new impervious surface would not interfere with groundwater recharge such that there would be a net deficit in aquifer volume. Impacts related to interference with groundwater recharge would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.(i)   *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?*

c.(ii)   *Would the project substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

c.(iii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows?

Development facilitated by the GDP would alter existing drainage patterns in the Park through the introduction of new impervious surfaces and infrastructure, as described under threshold *b*. The introduction of new impervious surfaces including the ranger residences, restrooms, and picnic pavilions and the development of other GDP project features, such as new or realigned trails, could increase the rate and/or amount of surface runoff, redirect runoff to different discharge locations, or concentrate runoff from sheet flow to channelized flow. The rate and amount of surface runoff is determined by multiple factors, including the amount and intensity of precipitation, amount of other imported water that enters a watershed, and amount of precipitation and imported water that infiltrates to the groundwater. Infiltration is also determined by several factors, including soil type, antecedent soil moisture, rainfall intensity, the amount of impervious surfaces in a watershed, and topography. The rate of surface runoff is largely determined by topography and the intensity of rainfall over a given period of time.

Development facilitated by the GDP would not alter precipitation amounts or intensities. Additionally, the amount of irrigation in the Park (mainly for landscaping surrounding the former clubhouse) would be substantially lower than what was used for irrigation of the former golf course. Development facilitated by the GDP would include earth-disturbing activities that may affect site-specific infiltration and permeability during construction (temporary) and during operation (permanent). Temporary changes to on-site permeability would be minimal and limited to covered stockpiles and temporarily compacted soils. Permanent impervious areas that would be introduced by the GDP projects would be minimal, as described under threshold *b*.

In addition to increasing the amount of total annual runoff, the introduction of impervious surfaces would increase the rate of peak runoff leaving each of the areas proposed to be developed in the GDP. Increases in the amount and rate of runoff could result in increased erosion and sediment transport off-site. The potential erosion and sedimentation impacts of increased runoff are discussed above under threshold *a*. The magnitude of change in peak runoff that would result from implementation of each GDP project is reasonably assumed to be controllable through implementation of appropriate stormwater control measures, given the small footprint of projects that would include impervious surfaces. In addition to changing the amount and rate of on- and off-site runoff, construction and operation of development facilitated by the GDP would result in changes to drainage patterns at each of the areas proposed to be developed in the GDP. Compliance with the NPDES-required SWPPP would ensure that the pre-project hydrology is maintained through the implementation of stormwater control measures (e.g., LID techniques) where necessary. Therefore, implementation of the GDP would not result in flooding on- or off-site or exceed stormwater drainage capacity.

Impacts related to drainage pattern alteration and creation of additional runoff associated with implementation of projects in the GDP would be less than significant. Compliance with the NPDES-required SWPPP would ensure that construction and operation of GDP projects would not result in the discharge of stormwater that would result in off-site erosion or flooding or exceed the stormwater conveyance capacity of existing or planned stormwater drainage systems. The stormwater control measures would be maintained throughout the operational life of the GDP, so no expansion of the regional stormwater drainage system would be required. SWPPP erosion and sediment control measures, as described above under threshold *a*, would reduce impacts from erosion and siltation to a less than significant level. Because the stormwater control measures

would not result in exceedance of drainage capacity, and would protect water quality, no substantial addition of polluted water runoff would occur. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Seiches are oscillations of the surface of inland bodies of water that vary in period from a few minutes to several hours. These oscillations typically are the result of seismic activity. The Plan Area is not at risk of inundation by seiche because there are no large inland water bodies in the vicinity of the Plan Area. Tsunamis are large sea waves produced by submarine earthquakes or volcanic eruptions. The western edge of the Front Ranch Unit is near a Tsunami Inundation Area, as mapped by the California Department of Conservation (California Department of Conservation 2018). However, no developed or redeveloped structures that would be facilitated by the GDP would be within the Tsunami Inundation Area.

Portions of the Plan Area are located in or near a 100-year flood zone, as delineated by FEMA's Flood Map Service Center (FEMA 2018). These areas include most of the Rancho Cañada Unit and a western portion of the Front Ranch Unit. While public access to these areas currently exists, development facilitated by the GDP would add some small structures to the Plan Area and facilitate increased visitation.

Development of the GDP would occur on only a very small portion of the Park's 4,585 acres. As discussed above under threshold *c*, development would not significantly increase flooding or impede/redirect flood flows. As discussed in Section 9, *Hazards and Hazardous Materials*, implementation of the GDP would not require use or storage of hazardous materials that could be released in the event of inundation due to flood. Therefore, implementation of the GDP would not add a source of pollutants, nor would existing flood risks be significantly exacerbated. Impacts related to pollution due to flooding would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e.   *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The Monterey County Water Resources Agency (MCWRA) is responsible for the management of the water resources for all of Monterey County. MCWRA prepared a groundwater management plan (GWMP) in 2006 to provide a framework for groundwater management. The plan focuses on the Salinas Valley, northeast of the Plan Area, but is the only GWMP prepared to date by MCWRA. The basin management objectives listed in the GWMP are listed below.

- Development of integrated water supplies to meet existing and projected water requirements
- Determination of sustainable yield and avoidance of overdraft
- Preservation of groundwater quality for beneficial use

As described above under threshold *b*, the District controls the rights to a sufficient water supply to meet its needs for the Park. Implementation of the GDP would involve a decrease in water use in the Plan Area compared to the previous golf course use that occurred on the Rancho Cañada Unit.

Therefore, the GDP is likely to be beneficial to groundwater levels in the Plan Area. The GDP would not conflict with or obstruct the GWMP. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

11. Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

a.   Would the project physically divide an established community?

The GDP provides a planning blueprint for conservation, stewardship, and public access to manage the 4,585-acre Park. Development proposed by the GDP would occur within an established park. Implementation of facilitated by the GDP projects would not physically divide an established community, but would rather improve connectivity to existing parks and open space areas including Point Lobos State Natural Reserve and Ranch, Garrapata State Park, Santa Lucia Preserve, Mittledorf Preserve, and Joshua Creek Ecological Reserve. Thus no impact would occur.

NO IMPACT

b.   Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The GDP has been developed in coordination with applicable land use plans and all projects listed in the GDP would be consistent with and comply with applicable ordinances in place in order to mitigate an environmental affect. The Plan Area would retain the existing land use and zoning designations upon individual project implementation. In addition, development facilitated by the GDP would be consistent with the Monterey County General Plan and associated master plans. The GDP is consistent with General Plan Policy of the Carmel Valley Master Plan Policy CV-3.3 to provide and improve public vistas and Policy CV-3.7 to identify and protect areas of biological significance, including riparian habitat. Therefore, the GDP would not cause a significant environmental impact due to a conflict with applicable plans and policies. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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12. Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a.   Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b.   Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

There are three mineral resources identified in the Front Ranch Unit (USGS 2018d). However, the Plan Area is currently a park and not being used for mineral extraction and the Monterey County General Plan does not permit mineral extraction in the Plan Area. The Plan Area is used for public recreation and open space preservation and development facilitated by the GDP would not result in the loss of existing mineral resources. In accordance with the District's mission, the GDP states that the Plan Area's natural resources are to be protected in perpetuity. There would be no impact on mineral resources.

NO IMPACT

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13. Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	■	☐

Noise

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources such as construction equipment. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance, while noise from a point source typically attenuates at about 6 dBA per doubling of distance. Noise levels may also be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by 5 to 10 dBA. The construction style for dwelling units in

California generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (Federal Transit Administration [FTA] 2018).

Some land uses are more sensitive to ambient noise levels than other uses due to the amount of noise exposure and the types of activities involved. For example, residences, motels, hotels, schools, libraries, churches, nursing homes, auditoriums, museums, cultural facilities, parks, and outdoor recreation areas are more sensitive to noise than commercial and industrial land uses.

The Monterey County Health and Safety Noise Control Ordinance, Section 10.60.030 of the Monterey County, regulates noise within the County. The Control Ordinance prohibits the generation of mechanical noise in excess of 85 dBA, measured at 50 feet from the noise source. This ordinance is only applicable to noise generated within 2,500 feet of any occupied dwelling unit and is used to regulate construction-related noise.

The 2010 Monterey County General Plan Safety Element contains guidelines relating to noise. Policy S-7.10 provides standard noise protection measures for construction and Policy S-7.8 requires projects that propose use of heavy construction equipment that has the potential to create vibrations that could cause structural damage to adjacent structures within 100 feet to be required to submit a pre-construction vibration study.

Vibration

Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas sound is simply carried through the air. Thus, vibration is generally felt rather than heard. Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. The ground motion caused by vibration is measured as particle velocity in inches per second and is measured in vibration decibels (VdB).

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Vibration impacts would be significant if they exceed the following FTA thresholds:

- 65 VdB where low ambient vibration is essential for interior operations, such as hospitals and recording studios
- 72 VdB for residences and buildings where people normally sleep, including hotels
- 75 VdB for institutional land uses with primary daytime use, such as churches and schools

In addition to the groundborne vibration thresholds outlined above, the FTA outlined human response to different levels of groundborne vibration, and determined that vibration that is 85 VdB is acceptable only if there are an infrequent number of events per day.

Sensitive Receptors

Noise exposure standards for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Noise sensitive receptors are generally include schools, parks, residential areas, hospitals, churches, courts, libraries, and care facilities. Noise-sensitive receptors nearest to the Plan Area include the Community Church of the Monterey Peninsula and Carmel Middle School westerly adjacent to the Ranch Cañada Unit, residences easterly adjacent to the Ranch Cañada Unit, and residences in the Fish Ranch, near the center of the Front Ranch Unit. Noise

sensitive receptors in the Back Country Unit include homes on the Santa Lucia Preserve. However, these residences would not be impacted by the project because the proposed camp sites, ranger units, camp host sites, and restroom would not be in close proximity to the residences. Existing on-site receptors in the Plan Area include District offices in the Ranch Cañada Unit.

a.   *Would the project result generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies??*

Short-term Noise

Development facilitated by the GDP has the potential to create excessive noise levels above ambient noise conditions and Monterey County standards on a temporary basis. Specifics of each project included in the GDP are not known at this time. Heavy machinery may be used for construction of the three ranger units. However, it is unlikely that construction activity would include the use of heavy machinery for the majority GDP projects including projects such as installation of shade structures, construction of the dog park, and trail maintenance. Table 13 illustrates typical noise levels associated with construction equipment. At a distance of 50 feet from the construction site, noise levels similar to those shown in Table 13 would be expected to occur during construction of individual GDP projects, depending on the types of constructing equipment used.

Table 13 Typical Noise Levels from Equipment at Construction Sites

Equipment	Typical Noise Level (dBA)		
	50 feet from Source	100 feet from Source	200 feet from Source
Air Compressor	80	74	68
Backhoe	80	74	68
Concrete Mixer	85	79	73
Dozer	85	79	73
Generator	82	76	70
Grader	85	79	73
Paver	85	79	73
Saw	76	70	64
Scraper	85	79	73
Truck	84	78	72
Source: FTA, September 2018			

As shown in Table 13, noise levels from construction activity could be as loud as 85 dBA Leq 50 feet from the source. There are no sensitive land uses within 50 feet of projects proposed in the GDP because projects would occur on the interior of the Ranch Cañada Unit or in the Front Ranch and Back Country Units that are not within 50 feet of noise sensitive receptors. As shown in Figure 4, improvements to the Rancho Cañada Unit, including walking trails, would not be within 50 feet of adjacent receptors. The 85 dBA Leq threshold applies to noise within 2,500 feet of any occupied dwelling unit. There are no occupied dwelling units within 2,500 feet of projects proposed in the GDP. Impacts would be less than significant.

Long-term Noise

Development facilitated by the GDP would generate temporary, intermittent noise from hikers, children using play facilities in the Rancho Cañada Unit, dog park activities, and campers. Hikers and campers would use the Front Ranch and Back County Units where there are no nearby sensitive receptors that would be impacted by noise from trail and camp site use. The 93-acre Fish Ranch that sits in the middle of the Front Ranch Unit would not be impacted by operational use of the Front Ranch Unit because no GDP improvements are planned near the Fish Ranch. The nearest trails to the Fish Ranch are at a distance where voices from hikers would not be perceptible at the ranch. There are no sensitive noise receptors in or around the Back Country Unit that would be affected by operational noise from trail use, primitive camping, or ranger patrols. Operational noise impacts in the Front Ranch and Back Country Units would be less than significant.

Operation of the proposed dog park would potentially result in an increase in noise at the Rancho Cañada Unit. Rincon Consultants, Inc. performed noise measurements at the boundary of an off-leash dog park in Santa Barbara, California in 2015. The recorded noise level was 51.8 dBA Leq at a distance of approximately 50 feet (see noise data in Appendix D). The primary noise sources during the noise measurement were intermittent barking from eight dogs and frequent conversations between the six dog owners. Based on these measured levels, pet park-related noise would be approximately 46 dBA Leq at 100 feet at the nearest sensitive receptors, existing District staff offices south of the proposed dog park. Such noise would be imperceptible at the existing offices.

Noise generated by other projects proposed in the Ranch Cañada Unit would consist of noise from the amphitheater, picnic area, nature play area, new trailheads, and helicopters and fire trucks utilizing the staging area during emergencies. Section 10.60.040(C)(3) of the Monterey County Municipal Code exempts noise from emergency vehicles being operated by authorized personnel. Use of the helicopter and fire trucks at the staging area meet the County's definition of emergency, which includes a situation arising from fire that would potentially result in the loss of life, property, or substantial environmental issues.

It is assumed that the amphitheater would host infrequent, organized events at the Park. The nearest noise sensitive receptor to the amphitheater is the Community Church of the Monterey Peninsula approximately 800 feet west. Because events would be infrequent and would not represent daily use of the stage, the amphitheater would not result in a permanent increase in noise of at least 3 dBA on the average day, which is the level of human perception for noise. Operational noise from the picnic area, natural play area, and new trailheads would consist of people conversing. Normal conversational levels are in the 60-65 dBA range (FTA 2018). Therefore, conversational noise in the Rancho Cañada Unit from implementation of projects facilitated by the GDP would not be perceptible at the church approximately 800 feet to the west. Operational noise impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b.   *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

The FTA states that ground-borne vibration levels in excess of 100 VdB would damage fragile buildings and levels in excess of 95 VdB would damage extremely fragile historic buildings. Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy

construction operations can cause substantial vibration near the source. Similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use.

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, and tracked equipment, may also generate substantial vibration in the immediate vicinity, typically within 15 feet of the equipment. Specific details of each improvement proposed in the GDP are not known at this time. However, the majority of improvements are anticipated to involve minor construction and would not require the use of vibratory equipment. Table 14 shows typical vibration levels for construction equipment that may be used for individual improvements within GDP with a reference distance of 25 feet. As shown therein, vibration would range from approximately 70 to 85 VdB at 25 feet. Therefore, vibration would not exceed thresholds for impacts to fragile and extremely fragile buildings. The nearest residences and institutional use, Carmel Middle School and Church of the Monterey Peninsula, are over 500 feet of projects proposed within the GDP. Equipment used for implementation of projects in the GDP with the highest vibrations, pneumatic tools and concrete mixers, would produce vibration levels of approximately 60 VdB at 500 feet. Therefore, impacts would be less than significant.

Table 14 Vibration Source Levels for Construction Equipment

	Approximate VdB
Equipment	**25 feet**
Air Compressor	81
Backhoe	80
Concrete Mixer	85
Dump Truck	76
Excavator	81
Flat Bed Truck	74
Front End Loader	79
Generator	81
Pickup Truck	75
Pneumatic Tools	85
Saw	70
Source: USDOT 1998	

LESS THAN SIGNIFICANT IMPACT

c.   For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The closest public airport to the Plan Area is the Monterey Regional Airport located approximately 4.5 miles northeast. Therefore, the Plan Area is not located in the airport's land use plan. There are no private airstrips in the vicinity of the Plan Area. A helipad would be added to the Rancho Cañada Unit to provide a landing space for helicopters during emergencies. During emergencies park users would not be allowed near the staging area and there are no residences in close proximity to the staging area. In addition, Section 10.60.040(C)(3) of the Monterey County Municipal Code exempts noise from emergency vehicles being operated by authorized personnel. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

14. Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	■	☐

This section addresses the potential of the GDP to impact regional issues related to housing and population growth.

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Development facilitated by the GDP would result in construction of three ranger residences and three camp host sites that would serve a total of six staff members. Therefore, development facilitated by the GDP would not involve the construction of infrastructure that would induce substantial population growth. Infrastructure improvements or additions, such as connector trails, would serve the existing public use of the Park. Development facilitated by the GDP would not displace any housing or people requiring the construction of replacement housing elsewhere because there are no existing occupied residences in the Plan Area. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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15. Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	☐	☐	■	☐
2 Police protection?	☐	☐	■	☐
3 Schools?	☐	☐	☐	■
4 Parks?	☐	☐	☐	■
5 Other public facilities?	☐	☐	■	☐

This section addresses the potential of the GDP to impact the availability, service ratios, or facilities of public services.

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

As discussed in Section 8, *Hazards and Hazardous Materials*, wildland fires are a significant hazard in the Plan Area. The GDP calls for the construction of three ranger residences and three campground host sites, which would generate a population increase of six people. This small increase would not affect service ratios for fire protection. However, the GDP would lead to increased visitation to the Park. An increase in visitors would potentially result in an increase in the risk of a human-caused wildfire, or a greater number of people in need of emergency support during a fire.

To prevent wildfires, camping in the Back Country Unit would require a permit, and a strict no-fire policy would be in effect for campers. Monitoring and enforcement of these requirements by on-site rangers and camp hosts would prevent human-caused wildfire.

Fire services are currently available to the Park, and would continue to be available after buildout of the GDP. The nearest fire station to the Park is the Cypress Fire Protection District's Rio Road Fire

Station, approximately one mile north of the Park's SR 1 access point (Cypress Fire Protection District 2018). Because the GDP would not change service ratios, the project would not require fire services in addition to those that presently exist. To assist fire crews fighting fires within Carmel Valley and the surrounding region, the dog park and the adjacent parking lot would double as a staging area for emergency response. This component of the GDP would improve fire protection services during wildland fires.

Because the GDP would not change service ratios for fire protection, would implement fire-prevention policies, and would develop a fire-response staging area, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Plan Area is currently served by the Monterey County Sheriff's Office. The nearest Sheriff substation is approximately 3.5 miles north of the Park, in the City of Monterey. The Sheriff's Office Patrol Division provides law enforcement and related emergency response services to a resident population of approximately 110,000 citizens in unincorporated Monterey County over an area of 3,325 square miles (Monterey County Sheriff's Office 2016).

The Plan Area spans over 4,500 acres, including 4,000 acres of undeveloped back country. The project would not cause a substantial increase in population, but would provide new hiking and camping opportunities that would increase the amount of visitors and the range of activities in the Park. Visitors to the Back County Unit would be located in areas that would be difficult for emergency personnel to access quickly. However, the three rangers and camp hosts residing within the Park would be available to provide emergency response and would continuously patrol the Plan Area. In addition, the GDP would limit the number of permits to 25 in the Back County Unit to ensure that there is enough staff support for Back County Unit visitors. Rangers would help to prevent emergencies in the Park, and would provide rapid response and emergency personnel coordination in the event of emergencies. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The GDP would facilitate the addition of six new staff positions at the Park. The on-site residences and campground host sites would not be designed explicitly to house families with children and it would not be expected that children would reside on-site. Thus, it is unlikely that the GDP would result in an addition of any school-age children to the area, and new or physically altered schools would not be required. However, implementation of projects proposed in the GDP would facilitate learning opportunities for students of nearby schools. The Park's Discovery Center, community gathering area, and interpretive sites would be utilized for structured learning activities.

Because the GDP would not require new or physically altered schools, and would provide educational opportunities to local students, there would be no impact.

NO IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Development facilitated by the GDP would result in improvements to an existing park, including expanded opportunities for public use and development of the recently acquired Rancho Cañada Unit. Improvements to the Park and expansions of public access would include trail improvements and new trail connections, ADA-accessibility improvements, picnic areas, a dog park, and a community gathering area. Development facilitated by the GDP would improve connectivity with other parks and protected areas, and would allow public use in the Back Country Unit, which is currently closed. Because implementation of the GDP would protect and improve an existing park as well as expand public access to parks, it would not result in the need for new or physically altered parks in order to maintain acceptable service ratios. There would be no impact.

NO IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered public facilities, or the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Development facilitated by the GDP would not facilitate a significant increase in population. The GDP would add up to six new employees, including rangers that would occupy the new ranger residences. This marginal increase would not constitute a change in demand for public facilities such as libraries. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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16. Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	■	☐	☐

a.   Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Development facilitated by the GDP would increase the use of Palo Corona Regional Park through improvement projects including expansions of public access would include trail improvements and new trail connections, ADA-accessibility improvements, picnic areas, a dog park, and a community gathering area. The increase in park usage is not anticipated to significantly accelerate or cause the physical deterioration of the Park and its facilities. Instead, development facilitated by the GDP may reduce the strain on existing nearby parks with high demand, such as Point Lobos Natural Reserve, because the GDP would provide additional park acreage near an existing population and tourist center in Monterey County. Proposed improvements would accommodate for the increase Park usage. There would be no impact.

NO IMPACT

b.   Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The construction of recreational facilities included in the GDP could have potential environmental impacts and are the basis for this Initial Study. As discussed in Section 1, *Aesthetics*, impacts from proposed lighting in the Back County Unit would be potentially significant. As discussed in Section 4, *Biological Resources*, impacts to special status species, nesting birds, protected trees, wetlands, and wildlife movement would be potentially significant. Section 5, *Cultural Resources*, notes that impacts to historical resources, archaeological resources, and paleontological resources would be potentially significant. Lastly, Section 17, *Tribal Cultural Resources,* finds the project could result in potentially significant impacts to tribal cultural resources. Mitigation measures in these respective sections would reduce potential environmental impacts to a less-than-significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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17. Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	■	☐
d. Result in inadequate emergency access?	☐	☐	■	☐

This section provides an analysis of potential impacts of the GDP on traffic and transportation. Current traffic conditions are compared to estimated conditions after GDP implementation.

a.   Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Development facilitated by the GDP would be limited to site-specific improvements and would not diminish or damage the performance or safety of any public transit, bikeway, or pedestrian facility. The GDP would expand public use of an existing Park through improved pedestrian, multi-use, and ADA-accessible routes. Development facilitated by the GDP would improve the existing trail network through routine maintenance and construction of new connector trails. Connectivity with neighboring properties would also improve, and the GDP would contribute to regional connectivity of protected lands. In addition, the GDP would designate specific road bike, mountain bike, and equestrian routes to allow other recreational users to experience the Park. As such, the GDP would not conflict with a program plan, ordinance, or policy addressing the circulation system. There would be no impact.

b.   Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Traffic Baseline

Development facilitated by the GDP would facilitate public use of the Park, resulting in visitor traffic to and from the Plan Area. As described in Section 6, *Setting,* the baseline for this traffic analysis is the prior use of the Rancho Cañada Unit as a 36-hole golf course. This historic use best reflects the trip generation associated with the site, which was used for 46 years as a golf course, clubhouse,

and event facility. The property was specifically acquired by the District for conversion from golf to park use. The property acquired by the District includes all but nine holes of the 36-hole golf course, as well as the clubhouse and related facilities. However, the remaining nine holes are not maintained for golf and there is no golf operation planned in that area. Therefore, it is reasonable for the park use of the Rancho Cañada Unit to be considered as a full replacement for the former 36-holes.

Traffic counts of the former Rancho Cañada Golf Course were conducted in January 2007 as part of the Rancho Cañada Villages Specific Plan EIR (Hexagon Transportation Consultants 2007). These counts determined that the golf course generated 828 trips per day, including 40 AM and 66 PM peak-hour trips for all 36 holes.

Trip Generation

Use of the Rancho Cañada Unit as a park would generate similar traffic to the site's prior golf use because both recreational uses generate traffic dispersed throughout the day (rather than during the peak hour) and generate more traffic on weekends than weekdays. The former golf club included secondary uses such as banquet hall use for private events. Similar secondary uses continue to occur at the former golf clubhouse, and would continue to occur under buildout of the GDP. This includes banquet hall use (weddings and other events), administrative office use (District and tenant offices), and concessionaire use. Therefore, traffic analysis for the GDP involves accounting for trips added by Park use, while accounting for trips eliminated by the closure of the golf course.

A conservative estimate of average daily trips (ADT) generated by GDP buildout are based on the Institute of Transportation Engineers (ITE) *Trip Generation, 9th Edition*. Trip generation rates for the State Park (land use code 417) land use category was applied to the GDP. While the Park is a Regional Park, not a State Park, ITE notes that the regional park trip rate estimates are unreliable due to a small sample size. There are only seven regional park districts in California, each with its own characteristics that are not necessarily applicable to other regional park districts. Therefore, the State Park category is used for this analysis. Due to the Park's large size and proximity to similar parks that are State Parks, this classification provides the best indicator for traffic rate estimates.

Table 15 provides ITE land use quantities, units, and trip generation rates used to determine a conservative estimation for project trip generation. Trip generation estimates from the Rancho Cañada Unit and Front Ranch Unit are based on the acreage of each unit. The Back Country Unit is accessible for public use by foot through the Park's trails and a permit is required to enter. Therefore, trips generated by the Back Country Unit were based on the total number of permits allowed each day. A total of 25 permits would be allowed in the Back Country Unit at one time. Conservatively assuming one trip in and one trip out for a permit each day; the Back Country Unit would add 50 trips to area roadways. The ITE rate for office space is used to account for trips associated with the District administrative offices. The trip generation rate for the concessionaire space was based on the number of concessionaire trips to the site's prior use as a golf course. This number was applied to the Park because the number of concessionaire trips for the Park is anticipated to be similar to trips generated during the site's use as a golf course.

Table 15 Trip Generation for GDP Buildout

Land Use	ITE Land Use Code	Project Size (units)	Daily Trip Rate	Daily Trips[1]	Daily Trips with 80% Reduction
Baseline					
36-Hole Golf Course	n/a[2]	36 (holes)	23.0	828	–
GDP Buildout					
Rancho Cañada Unit (Park)	413 (State Park)	140 (acres)	0.65	91	18
Office Space	710 (General Office)	16.2 (1,000 sf)	11.03	179	36
Concessionaire Space	n/a	9.6 (1,000 sf)	n/a	100[3]	20
Front Ranch Unit	413 (State Park)	600	0.65	390	78
Back Country Unit	N/A	25 (permits)[4]	2.0	50	10
GDP Buildout Total				**810**	**162**

[1] Neither the former golf course use nor the proposed Park use would generate traffic that would be concentrated in peak traffic hours. ITE does not provide peak hour estimates for State Park use. Therefore, traffic analysis for the GDP includes only daily trip totals.

[2] Former golf course trip generation based on traffic counts conducted in January 2007 for the Rancho Cañada Villages Specific Plan EIR (Hexagon Transportation Consultants 2007).

[3] The Rancho Canada Golf Course had a monthly average of 2,000 to 3,000 trips for use of the banquet room, weddings, and event facility users when it was in operation. The GPD anticipates similar usage rates for concessionaire space and there would be up to 100 daily trips from concessionaire services. Source: Zaruka 2019.

[4] Only 25 permits would be allowed in the Back County at one time and would limit trips generated by the Back Country Unit to 25 trips.

Source: ITE Trip Generation Manual, 9th Edition

As shown in Table 15, full buildout of the GDP would result in a maximum of approximately 810 daily trips on area roadways. As described above, this estimate is based on the most relevant ITE rates, which in some cases are exceedingly conservative. As such, 810 trips is a high estimation. In addition, this estimate does not account for the likely redistribution of existing trips from other recreational opportunities in the region. As such, an estimated 80 percent of the trips accounted for in Table 15 would be existing trips redistributed from other recreational opportunities, thus reducing the "new" trips generated by GDP buildout to 162. This assessment is based on an analysis performed by the District, as detailed in Appendix F.

Based on park usage data and information provided by the District, it is anticipated that only 20 percent of visitors would be new visitors coming to the Park (Appendix F). Future park usage and related trips were estimated based on current park usage data and information provided by the District regarding anticipated future Park use. The District's projections are based on its 43-year history of managing parks and open space in the area and knowledge of its park visitors. The District's projections are summarized below.

- **Backpackers and campers.** Access to the Back Country Unit would be limited to a maximum of 25 people with a maximum three night stay. The Park's overnight visitors that would otherwise have camped at the region's other venues are estimated at 5 percent of Park visitation.

- **Bicyclists.** Mountain bike access would likely be limited with a permit system allowing 50 mountain bikes inside the Back Country Unit per day. Mountain bikers would access the Park using several staging areas within the Rancho Cañada Unit. Mountain bikes that would otherwise have ridden at other venues are estimated at 5 percent of the Park's visitation.

- **Day-use hikers.** Current day-use hikers at the Park are predominantly comprised of local visitors that have historically hiked in District properties, or have recreated in other jurisdictions trails

and open space in the surrounding area. Therefore, future Park visitors would be predominantly existing recreators that would utilize the Park as an additional recreation opportunity that is closer to the region's residential communities. Hikers at previously frequented regional and state parks would drive a shorter distance to visit the Park, thus reducing traffic on area roadways. It is estimated that hikers that would have otherwise hiked areas such as Point Lobos, Garrapata, and Big Sur would comprise 85 percent of the Park's total visitation.

- **Dog park users.** The majority of dog park users would be residents living in adjacent neighborhoods that are seeking an alternative dog park to walk their dogs. Local residents that would otherwise use other dog parks in the area are estimated at 2 percent of the Parks visitation.

- **Environmental education.** Some new visitors may come to the Park to use the educational programs and participate in organized events. It is anticipated that the majority of users would be those who already take advantage of existing programs. In addition, the majority of Park programs require reservations and are limited to a specific number of users. The number of visitors attending environmental educational programs is estimated at 2 percent of Park visitation.

- **Equestrian.** Equestrian access will likely be limited with a permit system allowing 50 trail-riders inside the Back Country Unit per day. Trail-riders would access the Park using several staging areas, potentially including the Rancho Cañada Unit. Trail-riders that would otherwise have ridden at other venues are estimated at less than 1 percent of Park visitation.

Traffic Impact

Because an estimated 20 percent of visitors would be new visitors coming to the Park, trip generation estimates shown in Table 15 must be reduced by 80 percent to account for existing trips on area roadways. Therefore, the GDP would generate 162 trips on area roadways. Trips generated by the GDP would not exceed the total number of trips generated by the site's former use as a golf course. Therefore, development facilitated by the GDP would decrease traffic on area roadways in the project vicinity as compared to baseline conditions. As such, the GDP would not conflict with an applicable congestion management plan or any other measure regulating effectiveness of the County's circulation system, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*

Development facilitated by the GDP would not include any design features or incompatible uses that would increase transportation hazards. As part of the GDP, the Park's three existing entry points would not be changed, including the Rancho Cañada Unit entrance from Carmel Valley Road, which formerly served as the entrance to the Rancho Cañada Golf Club. Former golf course parking spaces would serve as Park staging from the Rancho Cañada Unit. Improvements to trails and bridges within the Park would increase the safety conditions for all modes of movement, and no incompatible uses would be introduced to roadways. Multi-use of trails, such as bicycle use, would be introduced in areas deemed safe and appropriate within the Rancho Cañada and Front Ranch Units. Measures such as signage and potential parallel trails to separate uses would prevent multi-use conflicts. The proposed helipad would be used only during emergency situations by emergency operators. The helipad would not increase traffic hazards. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   Would the project result in inadequate emergency access?

Development facilitated by the GDP would expand public use access to the Park, including to remote areas in the Back Country Unit. Increased access could correspond to an increased need for emergency response. However, implementation of project facilitated by the GDP would improve emergency access throughout the Park. Improvements to trails and bridges would decrease safety hazards and improve the safety of routes traveled by pedestrian, vehicle, and multi-use modes such as bicycle. To improve prevention and response outcomes of emergency situations in the Back Country Unit, ranger and campground host staff would reside in the Back County Unit. To improve on-site and regional emergency response access for floods and wildfires, the GDP includes use of the dog park and its adjacent parking lot as a staging area for emergency response crews. As the GDP would facilitate safety improvements through the Park and impacts on emergency access would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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18. Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	■	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe.	☐	■	☐	☐

PRC Section 21074 (a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

Assembly Bill (AB) 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

No tribes have requested to be notified of projects proposed by the District, thus a contact list was requested from the Native American Heritage Commission (NAHC) for the purposes of initiating AB

52 consultation. The District initiated AB 52 consultation with six tribes listed by the NAHC on September 21, 2018 (Appendix F). Under AB 52, tribes have 30 days to respond and request consultation. No tribes responded during the 30 day window to request consultation, thus it is assumed that no known tribal cultural resources are present within the Park.

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1?*

The District initiated AB 52 consultation on Friday, September 21, 2018. No tribes responded to request consultation during the 30 day window. Thus, the District assumes that no known tribal cultural resources are present within or near the Plan Area.

Although no known tribal cultural resources are present on the Park, there is the possibility of encountering unknown tribal cultural resources or known cultural resources that may be identified as tribal cultural resources. Implementation of projects proposed in the GDP has the potential to significantly impact tribal cultural resources through ground disturbance or looting and vandalism that may result from increased use. Mitigation is required to ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level.

TCR-1 Tribal Cultural Resource Plan

During construction of projects facilitated by the GDP if a potential tribal cultural resource not previously known to the District is uncovered that is identified by a local tribe as a tribal cultural resource, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan would include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, and protecting the confidentiality of the resource, or heritage recovery.

TCR-2 Suspension of Work Around Tribal Cultural Resources

In the event that cultural resources of Native American origin are identified during construction, all earth-disturbing work in the vicinity of the find must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find as a cultural resource in accordance with Mitigation Measure CR-6 and an appropriate local Native American representative is consulted. If the District, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan would include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in

coordination with the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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19. Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	■
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	■
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	■
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	■
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	■

This section provides analysis of the GDP's potential impacts on public utilities and service systems, including the capacity of service providers to meet potential demand increases.

a.   *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

c.   *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Development facilitated by the GDP would add two restrooms in the Rancho Cañada Unit, which is served by the Carmel Area Wastewater District (CAWD). Two new restrooms in the Front Ranch Unit would use septic systems, and two restrooms in the Back County Unit would use septic systems or compost/pit toilets. The CAWD treatment plant has a permitted capacity of 3.0 million gallons per day (MGD), with a current average dry weather flow of 1.8 MGD, or 60 percent of its permitted capacity (CAWD 2017). Wastewater generation from the Rancho Cañada Unit after implementation of the GDP would be similar to the site's historic use as a golf course. The addition of two restrooms within this unit would not constitute more than an incremental increase in wastewater treatment demand to the CAWD, which operates within its permitted capacity, as compared to the sites previous use as a golf course. The project would not require or result in the construction of new water or wastewater facilities or the expansion of existing facilities. The CAWD would have adequate capacity to serve the project's demand in addition to existing commitments.

In the Rancho Cañada Unit, new structures would be added to already-developed areas that have existing utility connections. The Back Country Unit would not require utility connections, as the ranger residences and field office would utilize solar panels and generators. Therefore, environmental impacts of energy use in the Back Country Unit would be limited to the new building footprints, which would cover only a very small portion of the Unit. In the Front Ranch Unit, a fiber optic connection would potentially be added to the Front Ranch Barn. Monterey County Code Chapter 19.10.095 requires that all communication cables be installed underground. Therefore, addition of a fiber optic connection would require installing a cable underground. Because the Front Ranch Barn is road-accessible, cable connections would utilize existing access routes to the nearest connection point. Environmental impacts associated with underground tunneling to install cable would be temporary and limited to an existing developed right-of-way. Because implementation of the GDP would not require new or expanded utility access that would result in substantial environmental effects, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b.   *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

As described above in Section 9, *Hydrology and Water Quality*, the District controls a 15 AFY allotment of water from the CVAA. This demand is substantially lower than past use of the Plan Area that included golf course use. Because the current water allotment is sufficient to meet MPRPD's needs under GDP buildout, no new or expanded entitlements would be needed and this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

e.   *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The District is required to comply with Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, which requires 50 percent diversion of solid waste from landfill disposal. In addition, MRWMD has made facilities improvements to ensure that its member agencies achieve the state's 75 percent diversion goal by 2020 (MRWMD 2016).

Development facilitated by the GDP would be served by the Monterey Regional Waste Management District (MRWMD), which operates the Monterey Peninsula Landfill in Marina, approximately 20 miles north of the Plan Area. The facility is permitted to receive a maximum of 3,500 tons of waste per day. The current daily intake is approximately 1,300 tons per day, with a per person rate of six pounds daily (MRWMD 2016). The remaining daily intake capacity at the facility is 2,200 tons. Visitation to the Rancho Cañada Unit would be similar to the site's historic use as a golf course and would thus not result in additional waste as compared to the site's previous use. Visitors in the Park's remote areas would be instructed by signage to follow Leave No Trace principles, which encourage visitors to minimize any physical impacts from their visit, including packing out all trash, leftover food, and litter (Leave No Trace 2012). Development facilitated by the GDP, including ranger residences and increased visitation, would result in an incremental increase in solid waste generation. However, the remaining capacity of the Monterey Peninsula Landfill is sufficient to handle solid waste generated by GDP buildout, including ranger residences, hikers in the Front Ranch Unit, visitors to the Rancho Cañada Unit, and dog park visitors. Because implementation of proposed projects in the GDP would divert waste, be served by MRWMD, and would not violate District guidelines, there would be no impact.

LESS THAN SIGNIFICANT IMPACT

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20. Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	■	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	■	☐
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	■	☐

This section addresses potential impacts of GDP implementation related to wildfire hazards. Analysis in this section discusses the Plan Area's existing wildfire vulnerability, and the potential for the GDP to increase vulnerability or imperil property or human life.

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

The Plan Area is located in a fire hazard State Responsibility Area, classified as Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE 2007). Implementation of the GDP would increase the human presence in the VHFHSZ. Approximately six staff members would reside in the Plan Area, to staff the ranger residences and host campsites, and visitation in the Front Ranch Unit and the Back Country Unit would increase. However, as discussed in Section 17, *Transportation*, total visitation to the Plan Area is not expected to exceed visitation that occurred during the site's former use as a golf course.

As discussed in Section 9, *Hazards and Hazardous Materials*, implementation of the GDP would not involve the addition of structures that would impair emergency response or evacuation. Although

visitation to the Front Ranch and Back Country Units would increase, the GDP includes improvements to the Park's trail system, allowing for safer movement through the Park in the event of an emergency. There would not be an increase in traffic that could result in delays for emergency response or evacuation. Furthermore, the Rancho Cañada Unit dog park and the adjacent parking lot would be utilized as a staging area for fire response, including construction of fire hydrants and a helipad for CAL FIRE helicopters. Therefore, the GDP would not impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b.   *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

The Plan Area is in a VHFHSZ, in a region with a high degree of existing wildfire risks. Fire hazards within the Park are highest in the Back Country Unit, which is largely undeveloped and forested.

Implementation of the GDP would involve development of only a small portion of the Back Country Unit, in order to add ranger residences, campground host sites, a ranger field office, and campsites. The majority of the Back Country Unit would continue to be maintained as open space. The GDP would not result in changes related to slope, winds, or other factors that would exacerbate wildfire risk.

The GDP would add up to six staff members residing in the Back Country Unit, and would increase visitation in the Back Country Unit. However, a strict no-fire policy would be enforced, and, as described above, the GDP includes measures to improve emergency access and evacuation. In addition, the Back Country Unit would include a ranger field office to support rangers on duty in the Back Country Unit. Field rangers stationed at the office or patrolling the Back Country Unit would be available to respond if a fire would occur and help campers evacuate. Finally, the GDP would limit the number of campers in the Back Country Unit to 25, which would control the number of visitors and reduce the exacerbation of wildfire.

Because implementation of the GDP would not exacerbate the Plan Area's existing wildfire risks, and includes measures to prevent and respond to wildfires, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

As discussed in Section 19, *Utilities and Service Systems*, implementation of the GDP would result in addition of the following infrastructure: two restrooms in the Rancho Cañada Unit, septic tank restrooms at the Front Ranch Barn and Inspiration Point trailhead, restrooms in the Back Country Unit using septic systems or pit toilets, solar panels and generators to power Back Country Unit ranger residences, and a fiber optic connection to the Front Ranch Barn. New and expanded trails and infrastructure related utilities, such as those listed above, would not exacerbate fire risk. New and expanded trails would provide for additional evacuation routes from the Park. The GDP includes improved evacuation routes and a strict no fire policy and trail improvement would not exacerbate fire risk. Additional utilities required for individual GDP projects would be constructed in accordance

with the Monterey County Code. All new structures and exterior premises must include fire safety requirements, such as fire-residence ratings and fire protection systems in accordance with Section 18.14.080 of the Monterey County Municipal Code. Therefore, utilities related to proposed infrastructure would not exacerbate fire risk.

The only infrastructure added specifically for fire prevention or fire-fighting purposes would be at the Rancho Cañada Unit dog park, which would be used as a staging area for CAL FIRE during emergencies. The staging area would include fire hydrants and a helipad. The staging area would reduce the Plan Area's fire hazards by allowing for improved emergency response in the event of a fire. The 30 foot by 30 foot helipad would be placed in proximity to the already-developed dog park area, or another suitable site, and would not cause substantial environmental impacts.

Therefore, the project would not require installation or maintenance of infrastructure and impacts related to infrastructure associated with fire hazards would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d.   If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Plan Area is in a VHFHSZ. As discussed in Section 10, the Plan Area is also subject to flooding hazards; a small area in the northwest portion of the Park along San Jose Creek is classified as Zone A, which is the 100-year special flood hazard area, and the northernmost portion of the Park, including the entire Rancho Cañada Unit, is in Zone AE, which is a 100-year regulatory floodway (see Figure 10). Therefore, there is an existing risk for flooding as a result of post-fire slope instability.

Physical development facilitated by the GDP would avoid construction on sloped areas. New structures in the Front Ranch and Back Country units would be placed in areas suitable for minimal-impact development, such as near the Front Ranch Barn, homestead sites or flat, grassy areas. Improvements to the Park's trail system would also focus on minimization of risks associated with dangerous slopes, by targeting trail construction on slopes of 0-10 percent, while phasing out unsafe trails. Furthermore, as discussed in Section 7, *Geology and Soils*, all land clearing, grading and construction activities would be required to comply with the Monterey County Ordinance Code, specifically Chapter 16.12, which requires an erosion control plan prior to permit issuance for building, grading, or land clearing. The erosion control plan would prohibit grading during the rainy season, and include measures to prevent exacerbation of slope instability.

Because implementation of the GDP would include only a small amount of physical development, and would avoid development on slopes or other activity that would exacerbate existing post-fire hazards, this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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21. Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Does the project:

a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	■	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

a. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

As discussed in Section 4, *Biological Resources*, development facilitated by the GDP would have the potential to reduce the habitat of special status species, disrupt nesting birds, alter natural habitat, affect wetlands, and obstruct wildlife movement corridors. However, these impacts would be less than significant level pursuant to compliance with BMPs in the GDP to require surveys for special status species, species avoidances, and restoration and monitoring as appropriate. Additional BMPs would reduce impacts related so sensitive natural communities and wetlands by requiring jurisdictional delineations and avoidance when feasible. As discussed in Section 5, *Cultural*

Resources, implementation of projects in the GDP have the potential to damage historical resources, and archaeological resources. Impacts to historical resources would be reduced to a less than significant level with implementation of Mitigation Measures CUL-1 for architectural history consultation. Therefore, impacts to biological and cultural resources would be reduced to less than significant levels with implementation of identified mitigation measures.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b.   *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

As described in the discussion of environmental checklist Sections 1 through 18, the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated, with respect to all environmental issues. Cumulative impacts of several resource areas have been addressed in the individual resource sections above: Air Quality, Greenhouse Gases, Noise, and Transportation/Traffic (See CEQA Guidelines Section 15064(h)(3)). CalEEMod was utilized to assess the air quality and GHG impacts resulting from the project, concluding that the impacts associated with these two issues were less than significant. Noise analysis concluded that cumulative impacts to this issue area would be less than significant because development of the GDP would not increase traffic on area roadways. As discussed in Section 16, *Transportation/Traffic,* project-related traffic would not exceed baseline traffic conditions. Therefore, the project would not result in a cumulative traffic impact. Other resource areas (agricultural and mineral) were determined to have no impact. Therefore, the project would not contribute to cumulative impacts related to these issues. Several resource issues (e.g., geology, hazards and hazardous materials) are by their nature project-specific and impacts at one location do not add to impacts at other locations or create additive impacts. As such, cumulative impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.   *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in Section 1, *Air Quality*, and Section 12, *Noise,* the development facilitated by the GDP would not result, either directly or indirectly, in significant air quality or noise impacts. Similarly, as discussed in Section 8, *Hazards and Hazardous Materials,* impacts from development of projects proposed in the GDP would not result in any adverse hazards related to hazardous materials. Compliance with applicable rules and regulations related to hazards and hazardous materials would reduce potential impacts on human beings to a less-than-significant level. Impacts to human beings would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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Appendix A

Air Quality and Greenhouse Gas Emissions Modelling Results

Palo Corona General Development Plan
Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1,000.00	0
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)** 3.6	**Precipitation Freq (Days)** 55
Climate Zone	4		**Operational Year** 2020

Utility Company

CO2 Intensity (lb/MWhr) 0   **CH4 Intensity (lb/MWhr)** 0   **N2O Intensity (lb/MWhr)** 0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Ranger units modeled as single family homes. Assume 1,000 sf field office building

Construction Phase - no demo and paving phases. Conservatively assumed that building construction would occur over 50 days and arch coating would occur half way through building construction

Architectural Coating - MBARD Rule 426

Vehicle Trips - Assume 10 total ranger trips per day (3.33 trips per unit) and each trip covering 10 miles (each trip length 5 miles)

Woodstoves - No firepalces or woodstoves in ranger units

Energy Use - Ranger units would be solar powered

Palo Corona General Development Plan - Monterey County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	100.00	50.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,508.00	0.00
tblFireplaces	NumberGas	1.89	0.00
tblFireplaces	NumberNoFireplace	0.18	0.00
tblFireplaces	NumberWood	0.93	0.00
tblLandUse	Population	9.00	3.00
tblVehicleTrips	HO_TL	7.50	5.00
tblVehicleTrips	HS_TL	7.30	5.00
tblVehicleTrips	HW_TL	10.80	5.00
tblVehicleTrips	ST_TR	9.91	3.33
tblVehicleTrips	SU_TR	8.62	3.33
tblVehicleTrips	WD_TR	9.52	3.33
tblWoodstoves	NumberCatalytic	0.09	0.00
tblWoodstoves	NumberNoncatalytic	0.09	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,120.00	0.00

2.0 Emissions Summary

Palo Corona General Development Plan - Monterey County, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4886	11.6612	9.4273	0.0144	0.8349	0.7342	1.3727	0.4356	0.6858	0.9487	0.0000	1,417.6586	1,417.6586	0.3810	0.0000	1,427.1829
Maximum	**4.4886**	**11.6612**	**9.4273**	**0.0144**	**0.8349**	**0.7342**	**1.3727**	**0.4356**	**0.6858**	**0.9487**	**0.0000**	**1,417.6586**	**1,417.6586**	**0.3810**	**0.0000**	**1,427.1829**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4886	11.6612	9.4273	0.0144	0.8349	0.7342	1.3727	0.4356	0.6858	0.9487	0.0000	1,417.6586	1,417.6586	0.3810	0.0000	1,427.1829
Maximum	**4.4886**	**11.6612**	**9.4273**	**0.0144**	**0.8349**	**0.7342**	**1.3727**	**0.4356**	**0.6858**	**0.9487**	**0.0000**	**1,417.6586**	**1,417.6586**	**0.3810**	**0.0000**	**1,427.1829**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Energy	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
Mobile	0.0476	0.1983	0.5444	1.2000e-003	0.0905	1.4400e-003	0.0920	0.0243	1.3500e-003	0.0256		121.2600	121.2600	7.3000e-003		121.4425
Total	**0.2175**	**0.2275**	**0.8059**	**1.3800e-003**	**0.0905**	**4.9200e-003**	**0.0954**	**0.0243**	**4.8300e-003**	**0.0291**	**0.0000**	**155.0872**	**155.0872**	**8.3800e-003**	**6.1000e-004**	**155.4789**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Energy	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
Mobile	0.0476	0.1983	0.5444	1.2000e-003	0.0905	1.4400e-003	0.0920	0.0243	1.3500e-003	0.0256		121.2600	121.2600	7.3000e-003		121.4425
Total	**0.2175**	**0.2275**	**0.8059**	**1.3800e-003**	**0.0905**	**4.9200e-003**	**0.0954**	**0.0243**	**4.8300e-003**	**0.0291**	**0.0000**	**155.0872**	**155.0872**	**8.3800e-003**	**6.1000e-004**	**155.4789**

Palo Corona General Development Plan - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/1/2019	5	1	
2	Grading	Grading	1/2/2019	1/3/2019	5	2	
3	Building Construction	Building Construction	1/4/2019	3/14/2019	5	50	
4	Architectural Coating	Architectural Coating	2/18/2019	2/22/2019	5	25	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 10,935; Residential Outdoor: 3,645; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Palo Corona General Development Plan - Monterey County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Palo Corona General Development Plan - Monterey County, Winter

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.5303**	**0.3672**	**0.8975**	**0.0573**	**0.3378**	**0.3951**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0266	0.0253	0.2137	4.3000e-004	0.0411	3.7000e-004	0.0414	0.0109	3.4000e-004	0.0112		42.7048	42.7048	2.0900e-003		42.7569
Total	**0.0266**	**0.0253**	**0.2137**	**4.3000e-004**	**0.0411**	**3.7000e-004**	**0.0414**	**0.0109**	**3.4000e-004**	**0.0112**		**42.7048**	**42.7048**	**2.0900e-003**		**42.7569**

Palo Corona General Development Plan - Monterey County, Winter

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category							lb/day							lb/day		
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.5303**	**0.3672**	**0.8975**	**0.0573**	**0.3378**	**0.3951**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category							lb/day							lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0266	0.0253	0.2137	4.3000e-004	0.0411	3.7000e-004	0.0414	0.0109	3.4000e-004	0.0112		42.7048	42.7048	2.0900e-003		42.7569
Total	**0.0266**	**0.0253**	**0.2137**	**4.3000e-004**	**0.0411**	**3.7000e-004**	**0.0414**	**0.0109**	**3.4000e-004**	**0.0112**		**42.7048**	**42.7048**	**2.0900e-003**		**42.7569**

Palo Corona General Development Plan - Monterey County, Winter

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7528**	**0.5371**	**1.2898**	**0.4138**	**0.5125**	**0.9263**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0531	0.0507	0.4275	8.6000e-004	0.0822	7.4000e-004	0.0829	0.0218	6.8000e-004	0.0225		85.4095	85.4095	4.1700e-003		85.5138
Total	**0.0531**	**0.0507**	**0.4275**	**8.6000e-004**	**0.0822**	**7.4000e-004**	**0.0829**	**0.0218**	**6.8000e-004**	**0.0225**		**85.4095**	**85.4095**	**4.1700e-003**		**85.5138**

Palo Corona General Development Plan - Monterey County, Winter

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category							lb/day							lb/day		
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7528**	**0.5371**	**1.2898**	**0.4138**	**0.5125**	**0.9263**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category							lb/day							lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0531	0.0507	0.4275	8.6000e-004	0.0822	7.4000e-004	0.0829	0.0218	6.8000e-004	0.0225		85.4095	85.4095	4.1700e-003		85.5138
Total	**0.0531**	**0.0507**	**0.4275**	**8.6000e-004**	**0.0822**	**7.4000e-004**	**0.0829**	**0.0218**	**6.8000e-004**	**0.0225**		**85.4095**	**85.4095**	**4.1700e-003**		**85.5138**

Palo Corona General Development Plan - Monterey County, Winter

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.3100e-003	5.0700e-003	0.0428	9.0000e-005	8.2100e-003	7.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		8.5410	8.5410	4.2000e-004		8.5514
Total	**5.3100e-003**	**5.0700e-003**	**0.0428**	**9.0000e-005**	**8.2100e-003**	**7.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**8.5410**	**8.5410**	**4.2000e-004**		**8.5514**

Palo Corona General Development Plan - Monterey County, Winter

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.3100e-003	5.0700e-003	0.0428	9.0000e-005	8.2100e-003	7.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		8.5410	8.5410	4.2000e-004		8.5514
Total	**5.3100e-003**	**5.0700e-003**	**0.0428**	**9.0000e-005**	**8.2100e-003**	**7.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**8.5410**	**8.5410**	**4.2000e-004**		**8.5514**

3.5 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.2593					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.5258**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Palo Corona General Development Plan - Monterey County, Winter

3.5 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.2593					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.5258**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

Palo Corona General Development Plan - Monterey County, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0476	0.1983	0.5444	1.2000e-003	0.0905	1.4400e-003	0.0920	0.0243	1.3500e-003	0.0256		121.2600	121.2600	7.3000e-003		121.4425
Unmitigated	0.0476	0.1983	0.5444	1.2000e-003	0.0905	1.4400e-003	0.0920	0.0243	1.3500e-003	0.0256		121.2600	121.2600	7.3000e-003		121.4425

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	11.03	2.46	1.05	20,026	20,026
Single Family Housing	9.99	9.99	9.99	16,147	16,147
Total	21.02	12.45	11.04	36,173	36,173

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Single Family Housing	5.00	5.00	5.00	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Palo Corona General Development Plan - Monterey County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
NaturalGas Unmitigated	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	44.8493	4.8000e-004	4.4000e-003	3.6900e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2764	5.2764	1.0000e-004	1.0000e-004	5.3077
Single Family Housing	238.891	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003		28.1048	28.1048	5.4000e-004	5.2000e-004	28.2719
Total		**3.0600e-003**	**0.0264**	**0.0131**	**1.7000e-004**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**		**33.3812**	**33.3812**	**6.4000e-004**	**6.2000e-004**	**33.5796**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.0448493	4.8000e-004	4.4000e-003	3.6900e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2764	5.2764	1.0000e-004	1.0000e-004	5.3077
Single Family Housing	0.238891	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003		28.1048	28.1048	5.4000e-004	5.2000e-004	28.2719
Total		**3.0600e-003**	**0.0264**	**0.0131**	**1.7000e-004**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**		**33.3812**	**33.3812**	**6.4000e-004**	**6.2000e-004**	**33.5796**

6.0 Area Detail

6.1 Mitigation Measures Area

Palo Corona General Development Plan - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Unmitigated	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1370					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5700e-003	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4459	0.4459	4.4000e-004		0.4568
Total	**0.1669**	**2.8700e-003**	**0.2484**	**1.0000e-005**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**0.4459**	**0.4459**	**4.4000e-004**	**0.0000**	**0.4568**

6.2 Area by SubCategory

Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1370					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5700e-003	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4459	0.4459	4.4000e-004		0.4568
Total	**0.1669**	**2.8700e-003**	**0.2484**	**1.0000e-005**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**0.4459**	**0.4459**	**4.4000e-004**	**0.0000**	**0.4568**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palo Corona General Development Plan - Monterey County, Winter

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palo Corona General Development Plan
Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1,000.00	0
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020

Utility Company

CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Ranger units modeled as single family homes. Assume 1,000 sf field office building

Construction Phase - no demo and paving phases. Conservatively assumed that building construction would occur over 50 days and arch coating would occur half way through building construction

Architectural Coating - MBARD Rule 426

Vehicle Trips - Assume 10 total ranger trips per day (3.33 trips per unit) and each trip covering 10 miles (each trip length 5 miles)

Woodstoves - No firepalces or woodstoves in ranger units

Energy Use - Ranger units would be solar powered

Palo Corona General Development Plan - Monterey County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	100.00	50.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,508.00	0.00
tblFireplaces	NumberGas	1.89	0.00
tblFireplaces	NumberNoFireplace	0.18	0.00
tblFireplaces	NumberWood	0.93	0.00
tblLandUse	Population	9.00	3.00
tblVehicleTrips	HO_TL	7.50	5.00
tblVehicleTrips	HS_TL	7.30	5.00
tblVehicleTrips	HW_TL	10.80	5.00
tblVehicleTrips	ST_TR	9.91	3.33
tblVehicleTrips	SU_TR	8.62	3.33
tblVehicleTrips	WD_TR	9.52	3.33
tblWoodstoves	NumberCatalytic	0.09	0.00
tblWoodstoves	NumberNoncatalytic	0.09	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,120.00	0.00

2.0 Emissions Summary

Palo Corona General Development Plan - Monterey County, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year						lb/day								lb/day		
2019	4.4882	11.6601	9.4277	0.0144	0.8349	0.7342	1.3727	0.4356	0.6858	0.9487	0.0000	1,418.2389	1,418.2389	0.3810	0.0000	1,427.7636
Maximum	**4.4882**	**11.6601**	**9.4277**	**0.0144**	**0.8349**	**0.7342**	**1.3727**	**0.4356**	**0.6858**	**0.9487**	**0.0000**	**1,418.2389**	**1,418.2389**	**0.3810**	**0.0000**	**1,427.7636**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year						lb/day								lb/day		
2019	4.4882	11.6601	9.4277	0.0144	0.8349	0.7342	1.3727	0.4356	0.6858	0.9487	0.0000	1,418.2389	1,418.2389	0.3810	0.0000	1,427.7636
Maximum	**4.4882**	**11.6601**	**9.4277**	**0.0144**	**0.8349**	**0.7342**	**1.3727**	**0.4356**	**0.6858**	**0.9487**	**0.0000**	**1,418.2389**	**1,418.2389**	**0.3810**	**0.0000**	**1,427.7636**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Palo Corona General Development Plan - Monterey County, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Energy	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
Mobile	0.0510	0.1850	0.5101	1.2700e-003	0.0905	1.4200e-003	0.0919	0.0243	1.3300e-003	0.0256		128.1056	128.1056	7.1300e-003		128.2839
Total	**0.2209**	**0.2143**	**0.7715**	**1.4500e-003**	**0.0905**	**4.9000e-003**	**0.0954**	**0.0243**	**4.8100e-003**	**0.0291**	**0.0000**	**161.9327**	**161.9327**	**8.2100e-003**	**6.1000e-004**	**162.3202**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Energy	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
Mobile	0.0510	0.1850	0.5101	1.2700e-003	0.0905	1.4200e-003	0.0919	0.0243	1.3300e-003	0.0256		128.1056	128.1056	7.1300e-003		128.2839
Total	**0.2209**	**0.2143**	**0.7715**	**1.4500e-003**	**0.0905**	**4.9000e-003**	**0.0954**	**0.0243**	**4.8100e-003**	**0.0291**	**0.0000**	**161.9327**	**161.9327**	**8.2100e-003**	**6.1000e-004**	**162.3202**

Palo Corona General Development Plan - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/1/2019	5	1	
2	Grading	Grading	1/2/2019	1/3/2019	5	2	
3	Building Construction	Building Construction	1/4/2019	3/14/2019	5	50	
4	Architectural Coating	Architectural Coating	2/18/2019	2/22/2019	5	25	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 10,935; Residential Outdoor: 3,645; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Palo Corona General Development Plan - Monterey County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Palo Corona General Development Plan - Monterey County, Summer

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.5303**	**0.3672**	**0.8975**	**0.0573**	**0.3378**	**0.3951**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0244	0.0201	0.2160	4.6000e-004	0.0411	3.7000e-004	0.0414	0.0109	3.4000e-004	0.0112		45.6061	45.6061	2.1700e-003		45.6604
Total	**0.0244**	**0.0201**	**0.2160**	**4.6000e-004**	**0.0411**	**3.7000e-004**	**0.0414**	**0.0109**	**3.4000e-004**	**0.0112**		**45.6061**	**45.6061**	**2.1700e-003**		**45.6604**

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3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.5303**	**0.3672**	**0.8975**	**0.0573**	**0.3378**	**0.3951**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0244	0.0201	0.2160	4.6000e-004	0.0411	3.7000e-004	0.0414	0.0109	3.4000e-004	0.0112		45.6061	45.6061	2.1700e-003		45.6604
Total	**0.0244**	**0.0201**	**0.2160**	**4.6000e-004**	**0.0411**	**3.7000e-004**	**0.0414**	**0.0109**	**3.4000e-004**	**0.0112**		**45.6061**	**45.6061**	**2.1700e-003**		**45.6604**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7528**	**0.5371**	**1.2898**	**0.4138**	**0.5125**	**0.9263**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0487	0.0403	0.4320	9.2000e-004	0.0822	7.4000e-004	0.0829	0.0218	6.8000e-004	0.0225		91.2122	91.2122	4.3400e-003		91.3208
Total	**0.0487**	**0.0403**	**0.4320**	**9.2000e-004**	**0.0822**	**7.4000e-004**	**0.0829**	**0.0218**	**6.8000e-004**	**0.0225**		**91.2122**	**91.2122**	**4.3400e-003**		**91.3208**

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3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7528**	**0.5371**	**1.2898**	**0.4138**	**0.5125**	**0.9263**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0487	0.0403	0.4320	9.2000e-004	0.0822	7.4000e-004	0.0829	0.0218	6.8000e-004	0.0225		91.2122	91.2122	4.3400e-003		91.3208
Total	**0.0487**	**0.0403**	**0.4320**	**9.2000e-004**	**0.0822**	**7.4000e-004**	**0.0829**	**0.0218**	**6.8000e-004**	**0.0225**		**91.2122**	**91.2122**	**4.3400e-003**		**91.3208**

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3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8700e-003	4.0300e-003	0.0432	9.0000e-005	8.2100e-003	7.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		9.1212	9.1212	4.3000e-004		9.1321
Total	**4.8700e-003**	**4.0300e-003**	**0.0432**	**9.0000e-005**	**8.2100e-003**	**7.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**9.1212**	**9.1212**	**4.3000e-004**		**9.1321**

Palo Corona General Development Plan - Monterey County, Summer

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8700e-003	4.0300e-003	0.0432	9.0000e-005	8.2100e-003	7.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		9.1212	9.1212	4.3000e-004		9.1321
Total	**4.8700e-003**	**4.0300e-003**	**0.0432**	**9.0000e-005**	**8.2100e-003**	**7.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**9.1212**	**9.1212**	**4.3000e-004**		**9.1321**

Palo Corona General Development Plan - Monterey County, Summer

3.5 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.2593					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.5258**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Palo Corona General Development Plan - Monterey County, Summer

3.5 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.2593					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.5258**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

Palo Corona General Development Plan - Monterey County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0510	0.1850	0.5101	1.2700e-003	0.0905	1.4200e-003	0.0919	0.0243	1.3300e-003	0.0256		128.1056	128.1056	7.1300e-003		128.2839
Unmitigated	0.0510	0.1850	0.5101	1.2700e-003	0.0905	1.4200e-003	0.0919	0.0243	1.3300e-003	0.0256		128.1056	128.1056	7.1300e-003		128.2839

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	11.03	2.46	1.05	20,026	20,026
Single Family Housing	9.99	9.99	9.99	16,147	16,147
Total	21.02	12.45	11.04	36,173	36,173

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Single Family Housing	5.00	5.00	5.00	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796
NaturalGas Unmitigated	3.0600e-003	0.0264	0.0131	1.7000e-004		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003		33.3812	33.3812	6.4000e-004	6.1000e-004	33.5796

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5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
General Office Building	44.8493	4.8000e-004	4.4000e-003	3.6900e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2764	5.2764	1.0000e-004	1.0000e-004	5.3077
Single Family Housing	238.891	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003		28.1048	28.1048	5.4000e-004	5.2000e-004	28.2719
Total		**3.0600e-003**	**0.0264**	**0.0131**	**1.7000e-004**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**		**33.3812**	**33.3812**	**6.4000e-004**	**6.2000e-004**	**33.5796**

Mitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
General Office Building	0.0448493	4.8000e-004	4.4000e-003	3.6900e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2764	5.2764	1.0000e-004	1.0000e-004	5.3077
Single Family Housing	0.238891	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003		28.1048	28.1048	5.4000e-004	5.2000e-004	28.2719
Total		**3.0600e-003**	**0.0264**	**0.0131**	**1.7000e-004**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**		**33.3812**	**33.3812**	**6.4000e-004**	**6.2000e-004**	**33.5796**

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568
Unmitigated	0.1669	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	0.4459	0.4459	4.4000e-004	0.0000	0.4568

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1370					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5700e-003	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4459	0.4459	4.4000e-004		0.4568
Total	**0.1669**	**2.8700e-003**	**0.2484**	**1.0000e-005**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**0.4459**	**0.4459**	**4.4000e-004**	**0.0000**	**0.4568**

6.2 Area by SubCategory

Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1370					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5700e-003	2.8700e-003	0.2484	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4459	0.4459	4.4000e-004		0.4568
Total	**0.1669**	**2.8700e-003**	**0.2484**	**1.0000e-005**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**0.4459**	**0.4459**	**4.4000e-004**	**0.0000**	**0.4568**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palo Corona General Development Plan - Monterey County, Summer

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palo Corona General Development Plan - Monterey County, Annual

Palo Corona General Development Plan
Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1,000.00	0
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020

Utility Company

CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Ranger units modeled as single family homes. Assume 1,000 sf field office building

Construction Phase - no demo and paving phases. Conservatively assumed that building construction would occur over 50 days and arch coating would occur half way through building construction

Architectural Coating - MBARD Rule 426

Vehicle Trips - Assume 10 total ranger trips per day (3.33 trips per unit) and each trip covering 10 miles (each trip length 5 miles)

Woodstoves - No firepalces or woodstoves in ranger units

Energy Use - Ranger units would be solar powered

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	100.00	50.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,508.00	0.00
tblFireplaces	NumberGas	1.89	0.00
tblFireplaces	NumberNoFireplace	0.18	0.00
tblFireplaces	NumberWood	0.93	0.00
tblLandUse	Population	9.00	3.00
tblVehicleTrips	HO_TL	7.50	5.00
tblVehicleTrips	HS_TL	7.30	5.00
tblVehicleTrips	HW_TL	10.80	5.00
tblVehicleTrips	ST_TR	9.91	3.33
tblVehicleTrips	SU_TR	8.62	3.33
tblVehicleTrips	WD_TR	9.52	3.33
tblWoodstoves	NumberCatalytic	0.09	0.00
tblWoodstoves	NumberNoncatalytic	0.09	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,120.00	0.00

2.0 Emissions Summary

Palo Corona General Development Plan - Monterey County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year						tons/yr								MT/yr		
2019	0.0343	0.2633	0.2045	3.1000e-004	1.3200e-003	0.0162	0.0175	5.2000e-004	0.0149	0.0155	0.0000	27.9955	27.9955	8.5000e-003	0.0000	28.2080
Maximum	**0.0343**	**0.2633**	**0.2045**	**3.1000e-004**	**1.3200e-003**	**0.0162**	**0.0175**	**5.2000e-004**	**0.0149**	**0.0155**	**0.0000**	**27.9955**	**27.9955**	**8.5000e-003**	**0.0000**	**28.2080**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year						tons/yr								MT/yr		
2019	0.0343	0.2633	0.2045	3.1000e-004	1.3200e-004	0.0162	0.0175	5.2000e-004	0.0149	0.0155	0.0000	27.9955	27.9955	8.5000e-003	0.0000	28.2079
Maximum	**0.0343**	**0.2633**	**0.2045**	**3.1000e-004**	**1.3200e-003**	**0.0162**	**0.0175**	**5.2000e-004**	**0.0149**	**0.0155**	**0.0000**	**27.9955**	**27.9955**	**8.5000e-003**	**0.0000**	**28.2079**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.2896	0.2896
		Highest	0.2896	0.2896

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0300	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518
Energy	5.6000e-004	4.8200e-003	2.3800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	5.5266	5.5266	1.1000e-004	1.0000e-004	5.5595
Mobile	7.4600e-003	0.0303	0.0797	1.9000e-004	0.0136	2.2000e-004	0.0138	3.6500e-003	2.1000e-004	3.8500e-003	0.0000	17.2063	17.2063	1.0100e-003	0.0000	17.2314
Waste						0.0000	0.0000		0.0000	0.0000	0.4567	0.0000	0.4567	0.0270	0.0000	1.1315
Water						0.0000	0.0000		0.0000	0.0000	0.1184	0.0000	0.1184	0.0122	2.9000e-004	0.5080
Total	0.0380	0.0355	0.1132	2.2000e-004	0.0136	7.8000e-004	0.0144	3.6500e-003	7.7000e-004	4.4100e-003	0.5751	22.7835	23.3586	0.0403	3.9000e-004	24.4822

Palo Corona General Development Plan - Monterey County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0300	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518
Energy	5.6000e-004	4.8200e-003	2.3800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	5.5266	5.5266	1.1000e-004	1.0000e-004	5.5595
Mobile	7.4600e-003	0.0303	0.0797	1.9000e-004	0.0136	2.2000e-004	0.0138	3.6500e-003	2.1000e-004	3.8500e-003	0.0000	17.2063	17.2063	1.0100e-003	0.0000	17.2314
Waste						0.0000	0.0000		0.0000	0.0000	0.4567	0.0000	0.4567	0.0270	0.0000	1.1315
Water						0.0000	0.0000		0.0000	0.0000	0.1184	0.0000	0.1184	0.0122	2.9000e-004	0.5080
Total	**0.0380**	**0.0355**	**0.1132**	**2.2000e-004**	**0.0136**	**7.8000e-004**	**0.0144**	**3.6500e-003**	**7.7000e-004**	**4.4100e-003**	**0.5751**	**22.7835**	**23.3586**	**0.0403**	**3.9000e-004**	**24.4822**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/1/2019	5	1	
2	Grading	Grading	1/2/2019	1/3/2019	5	2	
3	Building Construction	Building Construction	1/4/2019	3/14/2019	5	50	
4	Architectural Coating	Architectural Coating	2/18/2019	2/22/2019	5	25	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 10,935; Residential Outdoor: 3,645; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	3.6000e-004	4.4600e-003	2.0700e-003	0.0000	2.7000e-004	1.8000e-004	4.5000e-004	3.0000e-005	1.7000e-004	2.0000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413

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3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0195	0.0195	0.0000	0.0000	0.0195
Total	**1.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0195**	**0.0195**	**0.0000**	**0.0000**	**0.0195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0195	0.0195	0.0000	0.0000	0.0195
Total	**1.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0195**	**0.0195**	**0.0000**	**0.0000**	**0.0195**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**7.5000e-004**	**5.4000e-004**	**1.2900e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	5.0000e-005	4.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0779	0.0779	0.0000	0.0000	0.0780
Total	**5.0000e-005**	**5.0000e-005**	**4.1000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0779**	**0.0779**	**0.0000**	**0.0000**	**0.0780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**7.5000e-004**	**5.4000e-004**	**1.2900e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	5.0000e-005	4.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0779	0.0779	0.0000	0.0000	0.0780
Total	**5.0000e-005**	**5.0000e-005**	**4.1000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0779**	**0.0779**	**0.0000**	**0.0000**	**0.0780**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Off-Road	0.0239	0.2455	0.1886	2.8000e-004		0.0151	0.0151		0.0139	0.0139	0.0000	25.5751	25.5751	8.0900e-003	0.0000	25.7774
Total	**0.0239**	**0.2455**	**0.1886**	**2.8000e-004**		**0.0151**	**0.0151**		**0.0139**	**0.0139**	**0.0000**	**25.5751**	**25.5751**	**8.0900e-003**	**0.0000**	**25.7774**

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3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.2000e-004	1.0300e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1948	0.1948	1.0000e-005	0.0000	0.1951
Total	**1.2000e-004**	**1.2000e-004**	**1.0300e-003**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1948**	**0.1948**	**1.0000e-005**	**0.0000**	**0.1951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0239	0.2455	0.1886	2.8000e-004		0.0151	0.0151		0.0139	0.0139	0.0000	25.5751	25.5751	8.0900e-003	0.0000	25.7774
Total	**0.0239**	**0.2455**	**0.1886**	**2.8000e-004**		**0.0151**	**0.0151**		**0.0139**	**0.0139**	**0.0000**	**25.5751**	**25.5751**	**8.0900e-003**	**0.0000**	**25.7774**

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3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.2000e-004	1.0300e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1948	0.1948	1.0000e-005	0.0000	0.1951
Total	**1.2000e-004**	**1.2000e-004**	**1.0300e-003**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1948**	**0.1948**	**1.0000e-005**	**0.0000**	**0.1951**

3.5 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Archit. Coating	8.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**8.8200e-003**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

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3.5 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Archit. Coating	8.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**8.8200e-003**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

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3.5 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr								MT/yr			
Mitigated	7.4600e-003	0.0303	0.0797	1.9000e-004	0.0136	2.2000e-004	0.0138	3.6500e-003	2.1000e-004	3.8500e-003	0.0000	17.2063	17.2063	1.0100e-003	0.0000	17.2314
Unmitigated	7.4600e-003	0.0303	0.0797	1.9000e-004	0.0136	2.2000e-004	0.0138	3.6500e-003	2.1000e-004	3.8500e-003	0.0000	17.2063	17.2063	1.0100e-003	0.0000	17.2314

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	11.03	2.46	1.05	20,026	20,026
Single Family Housing	9.99	9.99	9.99	16,147	16,147
Total	21.02	12.45	11.04	36,173	36,173

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Single Family Housing	5.00	5.00	5.00	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr								MT/yr			
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	5.6000e-004	4.8200e-003	2.3800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	5.5266	5.5266	1.1000e-004	1.0000e-004	5.5595
NaturalGas Unmitigated	5.6000e-004	4.8200e-003	2.3800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	5.5266	5.5266	1.1000e-004	1.0000e-004	5.5595

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr						tons/yr								MT/yr		
General Office Building	16370	9.0000e-005	8.0000e-004	6.7000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8736	0.8736	2.0000e-005	2.0000e-005	0.8788
Single Family Housing	87195.3	4.7000e-004	4.0200e-003	1.7100e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6531	4.6531	9.0000e-005	9.0000e-005	4.6807
Total		**5.6000e-004**	**4.8200e-003**	**2.3800e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.5266**	**5.5266**	**1.1000e-004**	**1.1000e-004**	**5.5595**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr						tons/yr								MT/yr		
General Office Building	16370	9.0000e-005	8.0000e-004	6.7000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8736	0.8736	2.0000e-005	2.0000e-005	0.8788
Single Family Housing	87195.3	4.7000e-004	4.0200e-003	1.7100e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6531	4.6531	9.0000e-005	9.0000e-005	4.6807
Total		**5.6000e-004**	**4.8200e-003**	**2.3800e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.5266**	**5.5266**	**1.1000e-004**	**1.1000e-004**	**5.5595**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	17830	0.0000	0.0000	0.0000	0.0000
Single Family Housing	24271.7	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	17830	0.0000	0.0000	0.0000	0.0000
Single Family Housing	24271.7	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0300	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518
Unmitigated	0.0300	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.5000e-004	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518
Total	**0.0300**	**3.6000e-004**	**0.0311**	**0.0000**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**0.0506**	**0.0506**	**5.0000e-005**	**0.0000**	**0.0518**

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6.2 Area by SubCategory

Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating	4.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.5000e-004	3.6000e-004	0.0311	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0506	0.0506	5.0000e-005	0.0000	0.0518
Total	**0.0300**	**3.6000e-004**	**0.0311**	**0.0000**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**0.0506**	**0.0506**	**5.0000e-005**	**0.0000**	**0.0518**

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1184	0.0122	2.9000e-004	0.5080
Unmitigated	0.1184	0.0122	2.9000e-004	0.5080

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.177734 / 0.108934	0.0564	5.7900e-003	1.4000e-004	0.2419
Single Family Housing	0.195462 / 0.123226	0.0620	6.3700e-003	1.5000e-004	0.2661
Total		**0.1184**	**0.0122**	**2.9000e-004**	**0.5080**

7.2 Water by Land Use

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
General Office Building	0.177734 / 0.108934	0.0564	5.7900e-003	1.4000e-004	0.2419
Single Family Housing	0.195462 / 0.123226	0.0620	6.3700e-003	1.5000e-004	0.2661
Total		**0.1184**	**0.0122**	**2.9000e-004**	**0.5080**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.4567	0.0270	0.0000	1.1315
Unmitigated	0.4567	0.0270	0.0000	1.1315

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8.2 Waste by Land Use

Unmitigated

Land Use	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Single Family Housing	1.32	0.2680	0.0158	0.0000	0.6638
Total		**0.4567**	**0.0270**	**0.0000**	**1.1315**

Mitigated

Land Use	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Single Family Housing	1.32	0.2680	0.0158	0.0000	0.6638
Total		**0.4567**	**0.0270**	**0.0000**	**1.1315**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Greenhouse Gas Emission Worksheet
N20 Mobile Emissions   Palo Corona Regional Park

From CalEEMod Vehicle Fleet Mix Output:

Annual VMT: 36,173

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	54.7%	0.04	0.0218877	0.04	0.021888
Light Truck < 3750 lbs	4.5%	0.05	0.0022589	0.06	0.002711
Light Truck 3751-5750 lbs	20.3%	0.05	0.0101372	0.06	0.012165
Med Truck 5751-8500 lbs	12.2%	0.12	0.0145812	0.2	0.024302
Lite-Heavy Truck 8501-10,000 lbs	1.6%	0.12	0.0019376	0.2	0.003229
Lite-Heavy Truck 10,001-14,000 lbs	0.6%	0.09	0.0005529	0.125	0.000768
Med-Heavy Truck 14,001-33,000 lbs	2.0%	0.06	0.0011846	0.05	0.000987
Heavy-Heavy Truck 33,001-60,000 lbs	3.0%	0.06	0.0017967	0.05	0.001497
Other Bus	0.2%	0.06	0.0001487	0.05	0.000124
Urban Bus	0.2%	0.06	0.0001362	0.05	0.000114
Motorcycle	0.5%	0.09	0.000457	0.01	5.08E-05
School Bus	0.1%	0.06	4.092E-05	0.05	3.41E-05
Motor Home	0.1%	0.09	8.019E-05	0.125	0.000111
Total	**100.0%**		**0.0551997**		**0.06798**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)
CH4   21 GWP
N2O   310 GWP
1 ton (short, US) =   0.90718474 metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.0025	metric tons N2O	**0.76**	metric tons CO2e
	Project Total:		*0.76*	*metric tons CO2e*

References
* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
   in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
   Assume Model year 2000-present, gasoline fueled.
** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

Appendix B

Fish Lower Barn Historic Structure Report

Fish Lower Barn
Historic Structure Report

Carmel-by-the-Sea, California
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Table of Contents

Appendices

Project Team

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Acknowledgments

Special thanks granted to Tim Jensen of Monterey Peninsula Regional Park District for offering an excellent introduction to the Palo Corona Regional Park. Mr. Jensen also provided proper orientation and access to the Fish Lower Barn during our investigation, as well as a floor plan to compare to our field measurements. He also acted as liaison between ARG and Diana Fish, by supplying us with three historic photographs from the Archives of S. Fish, a private collection. ARG would like to thank Diana Fish for her generosity in providing these three historic photographs for use in this report.

Additionally, we would like to thank Enid Sales, the Executive Director of the Carmel Preservation Foundation, who provided the nomination report for the Monterey County Register of Historic Resources. This report presented a vast historical overview of Palo Corona Ranch site and the Fish Lower Barn, as well as significant information on the master builder M.J. Murphy, which this report's historical context is mainly based on.

I.   EXECUTIVE SUMMARY AND ADMINISTRATIVE DATA

Fish Lower Barn

Architectural Resources Group (ARG) was retained by the Monterey Peninsula Regional Park District (MPRPD) to produce a Historic Structure Report (HSR) for the Fish Lower Barn located in Carmel-by-the-Sea, Monterey County, California. The Historic Structure Report contains a brief history of the structure, an evaluation of the architectural materials and features, an assessment of the existing conditions, and treatment recommendations for the future rehabilitation of the structure into a public historic site. Recommendations also address life and safety issues as well as disabled access to the barn. Keith Abey, structural engineer, was retained by ARG to conduct a structural analysis of the existing structure and provide recommendations for improving the structural roof, floor, and wall-framing systems. The intended purpose of the report is to provide specific recommendations for the rehabilitation of the Fish Lower Barn.

Situated within the Palo Corona Regional Park, the Fish Lower Barn, also known as the Fish Barn or the Lower Barn,[1] was originally constructed in 1929. The barn was commissioned by owner Sidney Fish who purchased the 155-acre Palo Corona Ranch in 1927, a year after moving from New York to California with his wife and son to recover from pneumonia. Once settled in Carmel Valley, Fish left behind his days as a New York lawyer and became a devoted cattleman in Carmel Valley.

The barn today maintains its overall integrity although the original wood shingle roof was later replaced with rolled roofing, possibly to mitigate water infiltration through an aged and deteriorated roof, and in 1999 a concrete slab was poured at the east aisle and rear storage area. Its three-aisle plan, local redwood timbers, original board-and-batten wood siding, sliding doors, and intact hoist for lifting hay through the loft door all contribute to its significance. Its use as a hay barn until 1996 shows not only the durability of the structure, but the fine craftsmanship of a master builder who recognized the importance of good design and the appropriate materials in construction.

The Fish Lower Barn is representative of the barns found in Carmel Valley in the early twentieth century and a fine example of one designed and constructed by Carmel Valley's master builder M.J. Murphy. During a period when ranching was prevalent and when urban sophisticates migrated in search of a life

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[1] Historic Preservation Associates. *Monterey County Register of Historic Resources – Nomination Form, Fish Lower Front Barn.* Carmel: May 30, 2005. 1. Also known as the Stuyvesant Fish Barn.

away from the busy city traffic where they could entertain other socialites, M.J. Murphy was the builder of choice in the community. He constructed ranch houses, barns, and other rural structures for the cattlemen and farmers of Carmel. From the age of nineteen, his skills as a designer and builder contributed tremendously to his career, in which he built more than half of the houses in early Carmel.

In addition to an understanding of the history of the Fish Lower Barn, evaluating the current conditions of the structure is also valuable in considering appropriate treatments for its preservation. In the assessment of the Fish Lower Barn, a few areas of active deterioration were identified; these are considered the highest priority for treatment before work in rehabilitating the structure begins. On the exterior, these conditions include some decayed members of the structural framing systems at the roof, wall, and floors, as well as deteriorated wood rafter ends–resulting from insect damage and exposure to water. On the interior, a few timber columns, roof trusses, and center ridge beam show signs of decay, primarily from insect infestation. Core samples from these members indicate their treatment, coupled with other work to strengthen the structural integrity, is important to the barn's preservation. Additionally, the wood floor area immediately inside the center aisle doors is another critical area in poor condition. As a result of heavy usage, water infiltration from the roof, insect infestation, and storage of heavy materials upon the floorboards and supporting framing, this area is currently reinforced and covered with nailed wood boards. The existing drainage system around the structure is also considered a priority area for treatment since this would alleviate the current problem with water collecting around the barn. Other minor conditions affecting the preservation and current use of the barn include: water infiltration through the exterior wall boards seen as watermarks; foam insulation used to fill in gaps between boards at the south elevation; and backsplash around the base of the building caused by water draining from the shed (or pent) roofs.

The purpose of the recommended treatment is to improve the material and structural deficiencies in order to prolong the life of the structure while retaining the maximum amount of historic fabric and provide recommendations for upgrades required by code for rehabilitating the barn into a public historic site. These treatments include the treatment, repair, or replacement of some members of the existing roof, wall, and floor framing systems and installation of new shingle roofing and drainage systems.

Modifications to improve fire and life safety and disabled accessibility and structural systems for the rehabilitation of the barn are also recommended. The State Historical Building Code (SHBC) should be employed to ensure that future work does not adversely affect the significant historic resources of the barn.

The contents of this HSR are:

- Summary of the methodology used for the field survey;

- Concise historical context for the building;

- Detailed chronology of the buildings development, including alterations made over time;

- Building descriptions;

- List of character-defining features;

- Evaluation of existing conditions;

- Existing conditions drawings; and

- Prioritized recommendations.

Administrative Data

Historic Name(s):	Fish Barn, Lower Barn
Current Name:	Fish Lower Barn
Location:	Highway 1, Carmel-by-the-Sea, California
Property:	Palo Corona Regional Park
Owner:	Monterey Peninsula Regional Park District
Designation:	Monterey County Register of Historic Resources, California Register of Historical Resources (pending)

Overview of Prioritized Recommendations

Repair Recommendations

1. Stabilization of roof framing for pest control access for gable and shed roofs;

2. Treatment of pest infestation for the entire barn;

3. Stabilization of deteriorated floor area in the center aisle;

4. Structural strengthening of roof framing at gable and shed roofs;

5. Replacement of existing corrugated metal roofing with original roofing material;

6. Repair surface decay of timber and wood elements;

7. Repair of the base of exterior wood siding;

8. Refinishing of exterior wood siding;

9. Installation of flashing at the south elevation;

10. Improvement of site drainage; and

11. Removal of vegetation at perimeter of building.

Code Upgrades

1. Structural strengthening of wall framing system for the entire barn;
2. Structural strengthening of floor framing and repair of salvaged floorboards at the center aisle;
3. Fire and life safety changes;
   - Exit sign illumination;
   - Smoke alarm; and
   - Fire sprinkler (if required).
4. Additional means of egress at center aisle;
5. Additional means of egress at office area;
6. Disabled accessibility upgrades:
   - Center aisle space;
   - Office area;
   - East and west aisle areas;
   - Listening devices;
   - Drinking fountains; and
   - Parking space.

The following is the *Preliminary Budget Estimate* for the above mentioned recommendations:

Preliminary Budget Estimate

Repair Recommendations

Repair Item	Estimate
1. Stabilization of roof framing	$ 21,202
2. Pest Control (not included)	$ 0
3. Stabilization of floor area	$ 480
4. Structural strengthening of roof framing	$ 4,160
5. Replacement of roof	$ 48,780
6. Repair timber and wood surface decay	$ 12,000
7. Repair bases of exterior wood siding	$ 3,500
8. Refinishing of exterior wood siding	$ 25,556
9. Installation of flashing at south elevation	$ 880
10. Improvement of site drainage	$ 12,000
11. Removal of vegetation at perimeter of building	$ 1,250

Code Upgrades

Upgrade Item	Estimate
1. Strengthening of wall framing	$ 4,113
2. Strengthening of floor framing	$ 31,893
3. Fire and life safety changes	$ 17,395
■ Exit sign illumination	$ 4,000
■ Smoke alarm	$ 2,800
■ Fire sprinkler (if required)	$ 10,595
4. Additional means of egress at center aisle	$ 4,500
5. Additional means of egress at office area	$ 2,600
6. Disabled accessibility upgrades:	$ 18,125
■ Center aisle space (included above in 3. Fire and Life Safety)	$ 0
■ Office area	$ 7,500
■ East and west aisle areas	$ 1,000
■ Listening devices	$ 3,500
■ Drinking fountains	$ 3,750
■ Parking spaces	$ 2,375
7. Communications	8,190
8. Misc. Improvements for Use	$ 40,000
TOTAL	**$ 256,623**

II.   METHODOLOGY

The purpose of this document is to provide a summary of ARG's: existing conditions assessment of the Fish Lower Barn at the Palo Corona Regional Park; repair recommendations for the preservation of this structure; a code analysis for the future rehabilitation of the structure as a public historic site; and a cost analysis of the different tasks to be undertaken. The conditions assessment is based on the investigation of the overall site, as well as examination of the physical fabric and materials systems of the structure conducted by ARG and its structural engineer consultant. Historical background of the site and barn provided by the Monterey Peninsula Regional Park District and the Monterey County Register of Historic Resources nomination report were excellent resources for better understanding the development of the structure within a greater context of early Carmel history. Other recommendations include the work to be undertaken, should the decision be made to rehabilitate the Fish Lower Barn into a site for public access.

Field investigation of the Fish Lower Barn was conducted on March 14 and 15, 2007 by an ARG project team consisting of architects and conservators including Glenn David Mathews, Kelly Wong, and Lisa Kusik. Additionally, a structural examination was undertaken by Keith Abey of Keith Abey Structural Engineer to determine the conditions of the existing structural members. On-site investigation not only provided important information on the current building conditions, but also an insight to the building chronology and site development of the Palo Corona Ranch. Since drawings were not provided for our investigation, documentation began with hand drawings of the site and building plan, exterior and interior elevations, and sections of the barn, followed by field measuring using tapes and a hand-held laser meter DISTO. Once the drawings were complete, photocopies of each drawing were made, on which existing conditions were then recorded. These drawings and conditions were created in CAD and can be found in Appendix C. Exterior conditions were assessed on foot and with the use of binoculars. Interior conditions were examined on foot and with the use of a 35-foot scissor lift. Special care in protecting the existing historic wood floors was taken by placing a layer of 1-1/2 inch thick plywood under the area where the lift sat during the investigation. Due to the fragility of certain areas of the interior floor, we limited our investigation to the areas where the floor was considered stable and able to withstand the load of the lift. Probes of the wood members were performed to provide further information on the condition of the structure. Where probes showed a prevalence of deterioration, core sampling of the wood member were conducted using a 3/4-inch diameter drill to verify the extent (or depth) of the deterioration. Results from these probes and the core sampling are included in the condition assessment section of this report.

The historical overview section of this report is based on the compilation of information, including the personal interview with Tim Jensen of the MPRPD, a personal narrative by Enid Sales, Executive Director of Carmel Preservation Foundation, and the Monterey County Register of Historic Resources nomination report. The nomination report not only provided a historical development of the ownership and uses of the site and barn, but also an explanation of the background and significance of the master builder.

In addition to providing ARG with a contextual background of the site, the MPRPD also offered a brief history of the uses of the Fish Lower Barn. They also expressed their desire to develop the barn into a public historic site where they can use it as a community space for educational and recreational purposes.

MPRPD informed ARG that Diana Fish, the daughter-in-law of the original owner, Sydney Fish, currently resides on a private property situated on the hill above the barn and possesses a photographic archive of the original Fish property, including the Fish Lower Barn. Although we were provided three historical photographs that show the vast pastoral landscape of the Palo Coronal Ranch site; they unfortunately do not provide any close range view of the Fish Lower Barn or any of its significant architectural details.

Treatment recommendations were developed based on the assessment of existing conditions, consideration of the barn's historical significance, as well as the potential future reuse of the structure as a public historic site. The recommended repair approach is intended to preserve as much of the historic fabric as possible, while repairing the structural deficiencies at the Fish Lower Barn. Treatments have been prioritized based on the severity of the existing conditions. The relationship of the Fish Lower Barn and its context within the greater Palo Corona Regional Park was also considered when developing the recommendations.

III.   HISTORICAL OVERVIEW AND CONTEXT

Site Development

The property on which the Fish Lower Barn is located dates back to as early as 1835, when Governor Jose Figueroa granted the parcel of land, called San Jose y Sur Chiquito to Teodoro Gonzales following Mexico's independence from Spain. When the land was re-granted to Marcelino Escobar in 1839, the property was used as a ranch for cattle herding and farming. It should be noted that this was not the beginning of cattle herding in Monterey County; the first supply of cattle arrived in the area in 1771 when Father Junipero Serra established the Mission San Carlos down the road (presently Highway 1). Between 1839 and 1890, the ranch changed ownership several times until it was purchased by Joseph W. Gregg from the Carmelo Land and Coal Company. The 1,200 acres of land, in addition to other parcels of land owned by Gregg, became to be known as Gregg's Ranch. In 1904, Gregg granted the northeastern 155 acres, including the current Fish Lower Barn site, to his three daughters Elizabeth Ann, Lola Mary, and Mary Ann Steadman. This parcel of land purchased by Sidney Fish in 1926 from Elizabeth Ann Gregg Oliver, along with additional adjacent properties became known as the Palo Corona Ranch.

Building Development

Leaving behind his life as a lawyer on the East Coast in order to recuperate from pneumonia, Sidney Fish began a new life of cattle herding in Monterey. Sidney Fish commissioned M.J. Murphy to design the Fish Lower Barn in 1927 after he, his wife Olga, and son Stuyvesant moved from New York to California. Two years later, in 1929, the three-aisle timber framed barn was constructed on the lower bluff of the Palo Corona Ranch by Murphy at the peak of his career. The barn was used primarily for storing hay, but also served to house ranch animals and store ranch equipment. The loft doors located below the gabled roof at both north and south elevations of the barn allowed transport of hay in and out of the center aisle by way of a hoist hanging from a square beam above. The openings of these doors appear to have been altered, as evidenced by the filled opening below. Stalls in the west aisle were used to shelter work horses. On the interior, the low wall opened at the top, located between the center and west aisles, permitted easy transfer of hay from the center aisle to the wooden trough along the eastern west aisle wall where the horsed were fed. The remainder of the building was used to store ranch equipment such as wagons and tools. The feed silos sitting on top of a stone retaining wall at the rear of the barn

indicate that the barn once housed other ranch animals, such as Russian wild boar, which Sidney Fish was well known for.[2]

The structure is typical of the Midwest style of barns built in California at the end of the 19th century. These barns were known as the Midwest 3-portal style, or the transverse frame barns, and consist of a central aisle and enclosed side aisles.[3] They typically have a hay hood and large gable-end loft doors, and were found throughout the Salinas Valley where dairy farms were prevalent.

Upon Sidney Fish's death in 1954, the Ranch was inherited by his son Stuyvesant Fish. In 1988, after the death of Stuyvesant Fish, the property passed to his wife, Diana Fish. For almost a decade, between 1988 and 1996, Mrs. Fish maintained the Palo Corona Ranch compound, managing the working cattle operation and the barn corrals. Little record of the history of the Lower Fish Barn exists [as public record] between the year it was built in 1929 and when part of the Palo Corona Ranch was sold to Craig Mc Craw, under the name of Fish Land Trust, in 1996. At an unknown date between 1929 and 1996, rolled roofing was installed on top of the original roof. It is also unknown by whom this work was undertaken.

The Fish Land Trust purchase included the Palo Corona Ranch, less the 93 acres on which the Fish family home and compound sat, which were retained by Diana Fish. In 1999, improvements to the Fish Lower Barn were undertaken by the Fish Land Trust including the replacement of the previous roof (rolled roofing, which was installed on top of the original roof) with a new corrugated metal roof. This new roof necessitated the installation of new wood rafters and sleepers. At this time, new reinforced concrete slabs were poured in the east aisle and the rear storage rooms. Above the concrete slab at the southeast corner of the barn, a raised floor was built to support the kitchen and bathroom. It is probable that at this time, the concrete perimeter footing around the west aisle was also poured. The French drain installed along the exterior west elevation was undertaken in 2007 to improve drainage in this area. The Fish Lower Barn continued to be used as hay storage at the center aisle, shelter for horses at the west aisle, and storage for ranch equipment at the east aisle. However, the rear storage areas served a new function with the construction of a new kitchen and bathroom. While the work performed added to the comfort of the

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[2] Tim Jensen (Planning and Programs Manager, Monterey Peninsula Regional Park District). In discussion with the author, March 14, 2007.

user, by not keeping with the nature of the historic building material deems it non-historic and thus, specifically not included in the building's period of significance. Additionally, the rolled metal roofing that was installed in the 1940's also broaches the same issue of not maintaining the historic character of the original construction and therefore, also considered to not be a part of the period of significance.[4]

In 2002, the Nature Conservancy and the Big Sur Land Trust purchased the Palo Corona Ranch. It is unknown whether any work to the barn was undertaken under their ownership.

Two years later, on April 2, 2004, Monterey Peninsula Regional Park District (MPRPD) purchased the northern most 680 acres of the 10,000-acre Palo Corona Ranch, including the Fish Lower Barn, for permanent public ownership as a Regional Park on April 2, 2004. Soon after, the ranch allocated the southern half of the ranch to the California Department of Fish & Game and becomes the current co-owners with the MPRPD of the Palo Corona Regional Park. The MPRPD recently completed the installation of the French drain along the west elevation, in 2007, and retained ARG to produce this Historic Structure Report in order to research the possibility of developing the Fish Lower Barn into a public historic site.

An understanding of the development of the Palo Corona Ranch and the history of the Fish Lower Barn is a critical to the assessing existing materials and designing appropriate treatments. The background information provided in this section is not intended to be a complete and comprehensive history of the Fish Lower Barn, but rather a contextual overview for the conditions and treatment recommendations discussed later in the report.

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[3] Noble, Allen G. and Richard K. Cleek. *The Old Barn Book: A Field Guide to North American Barns & Other Farm Structures.* New Brunswick, New Jersey: Rutgers University Press, 2004. 74.
[4] Email correspondence between Tim Jensen and Diana Fish on May 13, 2007 revealed that according to long-time neighbor Bill Askew, the original shingled roof was changed to corrugated metal in the 1940's.

IV.   SIGNIFICANCE AND INTEGRITY EVALUATION

"Barns are visible links to a way of life that is rapidly disappearing." [5]

-- Allen G. Noble and Richard K. Cleek

Introduction

The Fish Lower Barn is an excellent example of a work by Master builder M.J. Murphy and is representative of the type of barns found in Monterey County in the early 20th century. Its period of significance is the date of construction, 1929.

Statement of Significance

The Fish Lower Barn was built on the lower bluff of the Palo Corona Ranch to support the Fish Family cattle herding operation in Carmel Valley. Of historic significance, the property is associated with people and events that have made a considerable contribution to California's coastal ranching and cattle herding industry.

In terms of its form, massing, detail, and materials, the building is typical of the Midwest 3-portal style barns, which arrived in California at the end of the 19th century. The predominant use of wood as a building material is noteworthy. The Fish Lower Barn was built to serve a multitude of tasks including storage of hay at the center aisle, shelter for workhorses and other ranch animals at the west aisle, and storage of ranch equipment throughout the rest of the building. The design is similar to the dairy farms found throughout the Salinas Valley, and the barn's survival in its current form is remarkable because of the ephemeral nature of its building material. Not only is the barn representative of a period when ranching and cattle herding was popular in the Carmel Valley, but the Fish Lower Barn also signifies the importance of a Master Builder, M.J. Murphy who helped create architecture of the California Central Coast in the early 20th century.

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[5] Noble, Allen G. and Richard K. Cleek. *The Old Barn Book: A Field Guide to North American Barns & Other Farm Structures*. New Brunswick, New Jersey: Rutgers University Press, 2004. 2.

The Fish Lower Barn exemplifies a utilitarian building type:

- Local materials are incorporated;
- Site location dependent upon the proximity to the Carmel River, the flood plain, the quarry, and overall Palo Corona Ranch;
- Construction methods are typical of the era – by M.J. Murphy; and
- Inventive use of materials.

Background of Site

The period of significance of the Fish Lower Barn is associated to the period of time when Carmel Valley was a focus of the California coastal cattle herding and ranching industry. The property's significance is also associated with M.J. Murphy, who constructed the Lower Fish Barn in 1929 to support the Fish family business.

When Sidney Fish purchased the land from one of Gregg's daughters in 1927, Fish established his property as the Palo Corona Ranch or then known as Rancho Pescado y Palo Corona. The Fish Lower Barn was built in 1929 to accommodate the cattle herding at the northern region of the ranch. Upon his death in 1954, the Ranch was taken over by his son Stuyvesant Fish who resumed his father's operations. More than thirty years later, upon Stuyvesant's death in 1988, the property was left to his wife, Diana Fish, who continues to maintain the working cattle operation and barn corrals of the Palo Corona Ranch compound. The sale of the property to the Fish Land Trust in 1996 marked the termination of the cattle herding operation at the Palo Corona Ranch, and when the Fish family relinquished control over the barn. Beginning in 1996, when the property was under the aegis of the Fish Land Trust, a series of improvements were undertaken to modernize the barn including structural and electrical upgrades.

Evaluation of Integrity / Condition

Integrity is the authenticity of a historic resource's physical identity, embodied in characteristics that existed during the resource's period of significance. The elements of integrity are: location, design, setting, materials, workmanship, feeling, and association. These aspects of integrity are closely related to the resource's significance and must remain primarily intact for the resource to possess integrity.

The location and setting of the timber frame structure have remained primarily unchanged since construction. The building sits on its original footprint, and the natural environment surrounding it is

essentially as it was at the time of construction; no structures outside the barn area encroach on the building. The wood fencing, stone retaining walls, silos, and nearby horse corral are all extant and contribute to the barn's function as a auxiliary building within the northern region of the Palo Corona Ranch. The survival of these buildings and site elements and the Fish Lower Barn conveys the pastoral landscape within the context of the ranching history in the early twentieth century Monterey County.

The Fish Lower Barn was maintained in basic working condition for daily utilitarian uses throughout its history. As a result, the building was minimally altered and retains integrity of design, materials, and workmanship. The design of the Fish Lower Barn speaks to the building traditions of the M.J. Murphy. Most of the building's materials are in fair to good condition, but more fragile features constructed of wood such roof rafter tails and tongue-and-groove floor have been adversely impacted, largely by weathering and aging. The workmanship of the original structure is evidenced by the scarf joints at the beams, roof truss framing at both gable and shed roofs, as well as sliding window and door openings, and craftsmanship of the wood trough at the west aisle stalls.

Period of Significance
The period of significance for the Fish Lower Barn is 1929, the year the structure was built by M.J. Murphy. Structures like the Fish Lower Barn became necessary to support the growing cattle herding and ranching industry in the Carmel Valley.

Character-Defining Features
Character-defining features are used to identify the elements that characterize a building, including its overall shape, massing, materials, craftsmanship, functional and decorative details, interior proportions, spaces, and attributes, as well as relation to the site, landscaping, and environment. Creating a list of character-defining features is the first step in ascertaining a structure's original essence and is a standard component of a typical Historic Structure Report. It serves as a useful tool in enumerating distinguishing traits and is essential in understanding a building's historic character. Occasionally, features that are no longer extant or have been altered appear on the list when their reintroduction would be beneficial to understanding the building's historic character during a specific time period. While the Fish Lower Barn has been altered, it retains a high level of its original design integrity. The following is a list of character-defining-features that should be carefully preserved during maintenance, repair, or rehabilitation efforts.

Site Character-Defining Features

- Pastoral landscape features (dirt road, horse corral, land for cattle grazing);

- Location on the lower bluff of the original Fish Ranch property;

- Rubble masonry retaining wall south of the barn;

- Silos on the masonry retaining wall;

- Wood fence at the perimeter of the barn; and

- Wood shed in front of the retaining wall.

Exterior Character-Defining Features

- Midwest 3-portal style configuration;

- Large center-aisle, gable-roof, form and lower shed-roof forms at side aisles and rear storage areas;

- Board-and-batten siding;

- Hopper hay loft doors at both north and south elevations;

- Window openings of 4-and 8-lite on overhead rails with trim, at the rear storage areas; and

- Sliding barn door and window openings.

Interior Character-Defining Features

- Exposed wall and roof framing construction;

- Exposed and unfinished redwood interiors;

- Horse stall, trough, and dirt floor at west aisle;

- Low wall (creating visual connection) between center and west aisles;

- Sliding window openings in the west aisle;

- Hoist and guide system for transporting hay in and out of barn; and

- Wood slats nailed on columns (ladder) at the north and south elevations of the center aisle for climbing to the hay loft doors.

V.   CHRONOLOGY AND DEVELOPMENT OF USE

This section summarizes the historical development of the land on which the Fish Lower Barn is located and its surrounding area, as well as the physical construction, modification, and use of the building. The information presented is based on historical documentation with corroboration from first-hand observation and limited materials analysis. Changes to the barn for which chronological documentation is not available are noted and explained at the end of the chronology. The basic chronological information has been provided primarily by the California Registry of Historic Resources nomination report.

Chronology of Use

The Fish Lower Barn was originally built as a cattle herding facility to serve the Palo Corona Ranch in the lower Carmel Valley (Figs. 1 & 2). The barn provided space for storing hay, housing animals, and storing ranch vehicles and equipment. The center aisle was reserved for hay storage, the west aisle for sheltering work horses and perhaps previously wild hogs, and the open east aisle for wagon and other vehicular storage. In terms of occupancy, the Fish Lower Barn has been in continuous use up until the present.

Chronological Development of the Site and Building/Alterations

1771	Mission San Carlos established by Father Junipero Serra. Arrival of the first supply of cattle for the Mission; the beginning of ranching in the area.
1794	Restoration at the Mission, including quarry of stone from a short distance east of the barn.
Pre 1835	Distribution of land by Mexican governors to former soldiers and others upon independence from Spain.
1835	Governor Jose Figueroa granted two-league San Jose y Sur Chiquito to Teodoro Gonzales, (the ranch) where the barn lies at the extreme northeasterly arm.
1839	The ranch at large re-granted to Marcelino Escobar.
1839-1841	Marcelino Escobar and family lived in an adobe house near San Jose Creek. He farmed a parcel of land, operated a tannery, and herded about 200 cattle and more than 30 horses.
1841	Death of Marcelino Escobar. Ranch inherited by sons, Juan and Augustin. Ranch sold to Josefa Estrada de Abrego for $250.
1844	Ranch purchased by Lt. Jose Castro for $800. Petition filed with the U.S. for ownership.

1855	Petition by Jose Castro rejected.
1863	Arrival of Joseph W. Gregg in Monterey, who becomes a subsequent owner of the Ranch.
1874	Coal seam discovered in upper Malpaso Canyon and within Ranch. Mining becomes part of Ranch history. The Carmelo Land and Coal Company become principal claimants of land grant.
1884/1885	Date of patent registration for the ranch, San Jose y Sur Chiquito.
1888	Purchase of the ranch for $900 and corporation stock by the Coal Company's Board of Directors; J.S. Emery, W.J. Baggett, Abner Bassett, and Charles T. Johnson. Abner Bassett becomes Superintendent of Operations. U.S. patent to the ranch completed by J.S. Emery and N.W. Spaulding and required both to be administrators for the wills of Bassett and his widowed wife, Mary Ann Bassett.
1890	1,200 acres of the ranch purchased by Joseph W. Gregg of Monterey from the Carmelo Land and Coal Company. In addition to this land, other parcels acquired were used for cattle grazing and farming and became known as Gregg's Ranch.
1904	J.W. Gregg grants northeastern 155 acres of his land holdings, including the current Fish Lower Barn site, to his three daughters Elizabeth Ann, Lola Mary, and Mary Ann Steadman.
Pre 1926	Improvements at Ranch San Carlos, owned and developed by George Gordon Moore, are completed by M.J. Murphy.
1926	Arrival of Sidney Fish, wife Olga, and son Stuyvesant in California from New York.
1927	Purchase of the 155 acres "Parcel VII" by Sidney Fish from Elizabeth Ann Gregg Oliver. This land, along with additional adjacent land acquired by Sidney Fish became the Palo Corona Ranch. Properties owned by Sidney Fish were called Rancho Pescado y Palo Corona.
	M.J. Murphy commissioned by Sidney Fish to design and build the Fish Lower Barn.
1929	Lower Fish Barn built by M.J. Murphy for Sidney Fish's cattle ranching operation on the lower, north, grazing lands.
1937	Construction of Highway 1 completed.

circa 1940's	Placement of rolled roofing over wood shingle roof (date unknown).[6]
1954	Death of Sidney Fish. His son, Stuyvesant Fish inherits the Palo Corona Ranch.
1988	Death of Stuyvesant Fish. Stuyvesant's wife, Diana Fish inherits the Palo Corona Ranch.
1988-1996	Mrs. Fish maintains the Palo Corona Ranch compound including the working cattle operation and barn corrals.
1996	Purchase by Craig McCraw, under the name of Fish Land Trust of the Palo Corona Ranch less the 93 acres consisting of the Fish family home and compound retained by Mrs. Fish.
1999	Improvements of the Fish Lower Barn are made by the Fish Land Trust, including the replacement of rolled roofing with a new corrugated metal roof, electrical upgrades, and installation of the reinforced concrete slab at east aisle and rear storage areas and concrete perimeter foundation at the west aisle. Also the assumed period of the bathroom and kitchen installation at the rear storage area.

Uses included continued hay storage at the center aisle, horses at the west aisle, ranch and equipment storage at the east aisle and rear storage rooms, as well as a kitchen and restroom. |
2002	Palo Corona Ranch purchased by the Nature Conservancy and the Big Sur Land Trust.
2004	Purchase of the northern most 680 acres of the 10,000-acre Palo Corona Ranch including the Fish Lower Barn by the Monterey Peninsula Regional Park District (MPRPD) for permanent public ownership as a Regional Park. The ranch is later transferred to its current owners, the northern half to the MPRPD and the southern half to the California Department of Fish & Game.
2007	Construction of the French drain at the west elevation, undertaken by the MPRPD.

Undated Alterations

- One significant alteration undertaken at the Fish Lower Barn at an unknown time was the removal of the original roof. According to Diana Fish, the daughter-in-law of Sidney Fish and last member of the Fish family to own the Fish Lower Barn, the roof was originally wood

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[6] Email correspondence between Tim Jensen and Diana Fish on May 13, 2007 revealed that according to long-time neighbor Bill Askew, the original shingled roof was changed to corrugated metal in the 1940's.

shingled. Long-time neighbor and friend, Bill Askew concurred with Diana Fish's memory of the original roof and that the change to a corrugated metal roof occurred in the 1940's.[7] Additionally, the Monterey County Register of Historic Resources nomination report also states in the construction history that rolled roofing was installed over the "original shingle roof," and that this rolled roofing was eventually removed in 1999 and new "metal roofing" was installed.[8] Within the context of historic structures in California, original shingle roofs generally refer to a roof built of wood shingles. Based on its early 20th century construction date, it is likely that the roof was originally covered with wood shingles.

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[7] Email correspondence between Tim Jensen and Diana Fish on May 13, 2007 revealed that according to long-time neighbor Bill Askew, the original shingled roof was changed to corrugated metal in the 1940's.
[8] Historic Preservation Associates. *Monterey County Register of Historic Resources – Nomination Form, Fish Lower Front Barn*. Carmel: May 30, 2005, page 1.

IV.   PHYSICAL DESCRIPTION

Site

The Fish Lower Barn is situated within the Palo Corona Regional Park, one of the most significant open spaces belonging to the California Central Coast (Fig. 3). Located at the lower bluff of the historic Fish Ranch property, the barn is bordered on the south by a sloping field leading to a private house and barn on the hill, a horse coral on the east, agricultural fields on the north, and Highway 1 on the west (Figs. 4 & 5). On the northern edge of the fields, the Carmel River borders the land. Access to the barn along a dirt road is less than one mile from Highway 1. The dirt road is gated and public access is available only during park hours (Fig. 6). The drive to the barn along the dirt road passes by smaller barn-like structures on the north and provides a unique experience in a pastoral historic landscape with views overlooking the vast fields below. Space flanking the east and west of the barn is currently used for parking.

A wood and barbed wire fence encloses the property and separates it from the adjacent dirt road and agricultural fields below. The barn stands alone on this lower bluff of the hill. Within the fence at the south end of the enclosure sits a low stone retaining wall constructed most likely of limestone (Fig. 7). Between the two sections of the retaining wall a gate leads to the house and barn on the hill. Two painted green grain silos used to storing barley for the Russian wild boars that once inhabited part of the site. They are labeled "Columbia, Red Top Bin, Columbia Steel Tank Co., Tanks for the World" and were most likely placed in its current location on the eastern masonry wall in the 1960s during the time of Stuyvesant Fish's boar business (Fig. 8). Immediately in front of the silos is a small, painted green wood shed with a shed roof, also from the same period of Stuyvesant's boar business. Various ranch equipment found below the tanks next to the shed appear to be weathered and corroded. One piece of equipment is labeled "Square D, Electrical Equipment, Square D Co., Wisconsin Industrial," a company established in 1904.[9]

Tightly packed dirt surrounds the barn, with predominantly wild grown grass and other low-height vegetation maintained several feet away. A recently constructed French drain system, with gravel surface, is positioned along the western perimeter of the barn to divert water from the structure (Fig. 9).

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[9] Email correspondence between Tim Jensen and Diana Fish on November 14, 2007 explained that the silos were put behind the barn at the time of Stuyvesant Fish's boar business in the 1960s and that the bins were used for barley, when they had to be ground. Diana Fish also noted that the shed below the silos may also date from the same period of Stuyvesant's business along with all other barley grinding related equipment found nearby. Columbia Steel Tank Co., Kansas, MO were known to be at the Panama-Pacific Exposition in 1916.

The entrance of the Fish Lower Barn is oriented to the north; the horse stalls to the west; open bay equipment storage and parking to the east; and office and additional storage rooms to the south (see Sheet A1.0 in Appendix C). With a gable roof, the entrance leads into a large, open, high-ceiling room, which hovers above the shed roofs covering the ancillary spaces around the perimeter.

Building Design and Organization

Built in 1929 by M.J. Murphy, the Fish Lower Barn is representative of a Midwest 3-portal style barn used primarily for hay storage and feeding livestock. Consisting of three aisles extending through the barn parallel to the roof ridge, this one-story structure has a gabled roof along the center aisle and shed roofs at the two flanking aisles and at the rear storage areas (see Floor Plan in Appendix C). Almost square in plan with its longitudinal axis oriented north-south, the barn measures approximately 56-feet in length by 60-feet wide. The structure and roof framing is constructed entirely of dimensional and saw-cut wood with the exception of the painted corrugated sheet metal roof installed in 1999, the second metal roof installed since the replacement of the original wood shake roof. Exterior walls are typically constructed of redwood board-and-battens. The boards measure 12-inch wide by 1-inch thick and the battens are typically 3-inch wide by 2-inch thick. An 8-inch high baseboard is found at the perimeter of the barn. All exterior walls are finished with white paint and the gabled and shed roofs green. Interior walls are generally unfinished redwood.

On the north is the entrance to the central aisle where hay is stored. Above the entrance is a large hay door used for transporting hay in and out of the center aisle. Evidence around the hay door, the deteriorated rail and open slots for wood members found above the door, show that a hood may have once existed. Side doors flanking the central entrance allow access on the west to the horse stalls and on the east to the concrete paved four-bay, open-sided aisle. However, the east aisle is open all along the side. From the east aisle, a single door leads to the kitchen and bathroom of the rear storage area; another single door exits this area on the south. The rear storage area consists of four rooms in total, one kitchen and bathroom area and the other three used for storage.

On the south elevation, the rear storage area comprises of a pair of doors leading to the largest storage room, and to its west is a single door to the second largest storage room. The third and smallest storage room is accessible from the exterior through a sliding door on the west elevation, and from the interior

through another sliding door between the room and the west aisle. There are two main entrances to the west aisle, both through single sliding doors, one located next to the western storage room on the west elevation and one west of the primary entrance to the center aisle. Sash windows found at the rear storage area, range from one- to eight-paned were custom built during the 1999 restoration to resemble the original barn windows.

Entrance to the 28 feet tall central aisle is over an 8-inch threshold and through a pair of sliding board-and-batten doors. Each door slides away from the center to form an 8 feet wide opening. Although divided by a continuous low interior wall measuring 4-1/2 feet in height, the horse stalls in the west aisle is visibly open from the central aisle. On the other side, a wall with three upper openings measuring 2 feet by 4 feet separates the center aisle from the eastern aisle, used for storing tractors and other ranch equipment, thus creating a visual barrier between the two spaces.

Exterior Description–General
The Fish Lower Barn sits independently from the rest of the site features. It is a large timber framed structure with wood siding and metal roofing (Fig. 10). Standing almost 30 feet in height, its gabled center aisle and large span of over 60 feet wide gives the barn a monumental presence as it sits up on a bluff above the adjacent road. However, its side shed roofs bring the structure closer to the ground, to human scale over the east and west aisles. The gabled roof has an overhang of approximately 2-1/2 feet on the north and south elevations and 3 feet on the east and west elevations. The shed roofs overhang approximately 2-1/2 feet on the north and 1-1/2 feet on the south, east, and west elevations.

The exterior walls of the barn are constructed of redwood board-and-battens and in various states of preservation. The interior sides of these walls are not finished. All exterior elements are painted white, whereas the interior left without a finish. In general, vegetation of mainly grass appears prevalent in the areas immediately surrounding the building except on the western elevation where the French drain is located.

Exterior North Elevation Description
The exterior north elevation of the Fish Lower Barn faces the agricultural fields below and is the primary façade of the structure with three ground level doorways and one hay loft door (Fig. 11). The majority of the north elevation is comprised almost entirely of the original board-and-battens, with the exception of

the area immediately above the main entrance where the hay loft door is located. From our observations, it is likely that the hay loft door above the double sliding doors of the main entrance may have originally been much larger than its current size. In our investigation, we found the area immediately above the main entrance doors to be replacement wood and the horizontal architectural detail extending across the entire width of the center aisle is discontinuous at this specific location. It is unknown when this occurred, if in fact a change was undertaken. As mentioned earlier, evidence around the hay door shows that a hood may have once existed. Our observation of a barn similar in style perched above the Fish Lower Barn showed a hay loft door the size of what we believe to be the original opening for this barn (Fig. 12).

The main entrance into the center aisle is through a pair of rectangular doors constructed of 1-foot wide boards that slide away from one another to form an eight feet wide opening (Fig. 13). Each door is 4-feet wide by 9-feet tall and hung from above exposed sliding door hardware painted black. The hay loft door is board-and-batten, but a pentagonal shaped hopper door, hinged at three points along the base, and with an opening measuring 10-feet wide by 8-feet tall at the sides and 10-feet tall at the center. The hay door is large enough for the hay to be lifted by the fork and was used before the invention of the hay baler and compact bale of hay.[10] A horizontal wood water table is found across the entire width of the center aisle, discontinuous in the area below the hay loft door. The ends of this detail demarcate the center aisle from the two flanking west and east aisles.

On each side of the main entrance, at the outer edge of the building there are single doors leading into the side aisles. Similar in construction to the center aisle doors, the west door is a single rectangular sliding door hung from exposed sliding door hardware painted black (Fig. 14). Measuring 5-feet wide by 8-feet high, this swing door is reinforced on its exterior with four horizontal wood boards and leads into the west aisle where the horse stalls are located. The eastern door is a 3-feet wide by 6-feet high board-and-batten door leading into the open-sided east aisle (Fig. 15). This door is kept locked and may be a remnant of a once enclosed eastern aisle later opened for storage of heavy ranch equipment. The swing door indicates the east elevation originally had board-and-batten siding like the west elevation.

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[10] Arthur, Eric and Dudley Witney. *The Barn: A Vanishing Landmark in North America.* Ontario, Canada: M.F. Feheley Arts Company Limited, 1972. 224.

Exterior East Elevation Description

The east elevation of the Fish Lower Barn is distinct from the rest of the exterior elevations with its open-sided east aisle. While the rest of the building is entirely enclosed, the east elevation is open on the side along the four-bay, open-sided east aisle but enclosed above by the shed roof (Fig. 16). A concrete floor slab poured approximately 4 inches above grade in 1999 is currently used for storing heavy ranch equipment. The shed roof is supported by an exposed wood post and truss system providing a low 8-feet high opening at the open-sided east aisle. Extending above the shed roof is the continuation of the exterior east wall of the center aisle, which ends at the center gabled roof. All roof rafters, trusses, posts, and wood elements within the open-sided east aisle area are painted white and open to the exterior. Ends of roof rafters not sheltered by the corrugated metal roof are visible and left exposed.

On the southern end of the east elevation is the enclosed rear storage area. From the open-sided east aisle, a single sliding wood door leads into a room containing both the bathroom and kitchen (Fig. 17). Measuring 3-feet wide by 7-feet high, this door is constructed in the traditional barn style of 1-foot vertical boards and hung from exposed sliding door hardware painted black. Two wood sash windows, the northern one four-lite and the southern one eight-lite are found side by side on the east elevation of the rear storage area (Fig. 18). The awning windows were custom built in 1999 to emulate the original ones designed with wide wood surrounds, slender mullions, hinged on top at two points, and thick wood sills positioned approximately 5 feet above grade. Between the windows is a plastic vent pipe. North of the windows is a 1-1/2 inch deep wood cabinet, measuring 4-feet wide by 3-feet tall containing a fire hose (Fig. 19).

Exterior South Elevation Description

The south elevation of the Fish Lower Barn faces the hillside behind the retaining wall where Diana Fish currently resides. Below the southern end of the central gabled roof is a shed roof that connects the east and west aisle roofs (Fig. 20). Currently, there is a blue tarp covering the entire length of the shed roof over the width of the center aisle. At ground level, the rear storage area occupies the entire elevation and in the area above the shed roof and beneath the gable roof is a hay loft door with dimensions 3-1/2 feet wide by 4 -1/2 feet high at the sides and 5 -1/2 feet high at the center, about half the size of the one found above the main entrance on the north elevation.

The rear storage area consists of two single hinged doors, one pair of hinged doors, and four eight-lite sash windows. The awning windows on the south elevation are typical in size, 4-1/2inch wide by 2 inch high with sills positioned approximately 5 feet above grade. The first opening on the east is a five-paneled hinged door over a 10-inch threshold leading into the room where the kitchen and bathroom are located. Immediately west of this door is the first sash window that looks into the first storage room. Between this first window and the next is a pair of hinged doors at grade built of vertical 1-foot wide boards centered in this room. Each door measures 4-feet wide by 7-feet high. Access to the second storage room located directly west of the first storage room is through a single hinged 3-feet wide by 7-feet tall door at grade. From the appearance of the surround above the door, both in its width and extension past the single opening, it is likely this door was modified at a later date. In addition to the single hinged door, there is also a sash window that looks into the second storage room. The remaining sash window on the western edge of the south elevation belongs to the third storage room at the southwest corner of the barn. Below the upper gable roof is a hay loft door, similar in construction as the one found at the north elevation, but smaller (Fig. 21). Attached to the western edge of the south elevation is one side of a painted white wood fenced opening separating the western parking area from the rear area behind the Fish Lower Barn.

Exterior West Elevation Description

The north elevation of the Fish Lower Barn consists mainly of openings that lead to the horse stalls located within the west aisle (Fig. 22). However, the southernmost opening is a single 4-feet wide by 7-1/2-feet high sliding door constructed of 1-foot wide vertical boards and hung from exposed sliding door hardware leads into the third storage room of the rear storage area. Directly north of this door is another sliding single door of the same construction, but larger, measuring 6-feet wide by 7-1/2-feet high. Both doors have thresholds of approximately 4 inches. North of the larger door leading to the west aisle are three square panel sliding windows, all without sashes and positioned with the bottom of the openings at approximately 4 feet above grade. The 2-1/2 feet square panels slide in different directions, depending on the opening, and the wood sill is missing from the southern window (Fig. 23).

Interior Description–General

The interior of the Fish Lower Barn is divided into three aisles at the north and a rear storage area at the south (see Sheet A1.0 in Appendix C). The major entrance into the barn is through a large 8-feet wide door on the north face and leads into the gabled interior of the center aisle. The center and west aisles are

visually connected spaces, but physically separated by a low 4-feet tall wall. The east aisle is open to the exterior and separated from the center aisle by a wall almost 17-feet tall. Three openings however penetrate this wall at approximately 7 feet above floor level. Although the east wall is fully paneled, and the west wall is partially open, both are part of the same structural framing system that creates the barn.

The center aisle wall framing is an exposed timber post and beam system, which is used to support the lower shed roof framing (see Sections in Appendix C). The beautifully fitted beams span between each of the four bays and show that each beam is let into the post by use of notching. Underside of all metal roofing is exposed from within the structure.

The interiors all have unfinished wood and structural elements (Fig. 24). It is apparent from the interior that the boards do not neatly abut one another and the use of battens was to fill in the gaps. However, there are areas where the wood boards are so deteriorated that gaps are large and no longer function to keep water or any other agents out.

Center Aisle

The rectangular center aisle measures 28-1/2-feet wide by 40-feet long and has a lofty ceiling height of about 28 feet at the center and 19 feet at the sides (Fig. 25). The four-bay timber construction consists of five 6-inch by 6-inch square timber posts and with 4-inch by 6-inch beams spanning between posts at 7 feet, 15 feet, and 19 feet above floor level. Floor level is approximately 8 inches above grade and constructed of 1-1/2-inch tongue-and-groove fir boards over 2-inch by 6-inch floor joists running east-west at 1 foot on center (Fig 26). Each of the four square timber posts support a roof truss connected to the roof frame at 6 feet from the ridge beam. The trusses connect to the posts at 7-1/4 feet and to the roof frame at 24 feet in height. The ridge beam is 3-inch by 6-inch and supports a hanging 4-inch by 4-inch center beam, the hoist rail, from which the hay loft hoist is channeled (Fig. 27). A metal chain spans between the northwestern truss and the north wall, presumably used in the past for reinforcing the gable end wall.

At the west is a low 4 feet tall wall (Fig. 28). Above this point, the west wall opens until it reaches the 4-inch by 6-inch beams located 15 feet above floor level and is again enclosed by exterior board-and-battens. The east wall is covered almost entirely of 1-foot wide vertical boards, with the exception of the rectangular 2-feet wide by 4-feet high window openings immediately above the lower 4-inch by 6-inch

beams positioned 7-1/2 feet above floor level (Fig. 29). Above the 4-inch by 6-inch beams positioned at 15 feet above floor level is a 7-inch opening where the side aisle shed roof rafters are situated at both east and west walls. On the east wall, the area above the 7-inch opening is boarded until the wall ends beneath the upper 4-inch by 6-inch beam. Diagonal bracing is found at both the east and west interior walls. Its function is questionable since two of the members are discontinuous at two of the window openings on the east wall.

The north and south walls are comprised of four 6-inch by 6-inch timber posts and the same 4-inch by 6-inch beams at 7 feet, 15 feet, and 19 feet above floor level. Both walls show the unfinished backside of the exterior board-and-batten walls. The north wall is composed of the double sliding doors hung from exposed sliding door hardware. The doors are both diagonally braced on the interior. Above these doors is a cross-braced hay loft door used for transporting hay in and out of the barn. A little ledge projecting approximately 2 feet sits at the base of the loft door and is accessible by a series of 1-inch thick by 3-inch wide wood planks nailed to the adjacent 6 inch by 6-inch post. At the south wall, in the area above the rear storage area, the gaps between the wood boards are filled with orange colored insulating expanding foam.

West Aisle

Like the center aisle, the west and east aisles are composed of four equal bays. However, both aisles have lower roofs and are rectangular spaces of approximately 16-feet wide by 40-feet long. The west aisle is unique in its use in sheltering workhorses, with a total of six horse stalls (Fig. 30). A dividing wall is located at the center and a feeding trough along the eastern edge of the low wall, overlooking the center aisle. At the west wall, there are three sliding square window openings. There are two single sliding doors, one located on the north wall and the other on the west wall. Both doors lead to the exterior. The west aisle is the only room in the barn with an unfinished dirt floor (Fig. 31). The exposed roof trusses and rafters create a low space above the uneven floor ranging from 7 to 8 feet in height, but the room opens up to an approximate 15 feet under the shed roof. The unleveled dirt floor slopes downward from north to south, as well as east to west. In the area directly in front of both entrances, the floor is heavily worn by foot traffic. A beam, to which the horse stalls once attached, is oriented north-south and sits on the timber post located at the center of the west aisle.

There are two entrances to the west aisle located on the west and north elevations. Both single sliding doors are hung from exposed sliding door hardware and built of 1-foot wide vertical boards. There is a 4-inch threshold over the west opening and a 6-inch one at the north. Besides the one door opening at the north wall the underside of the exterior board-and-batten wall is visible. The south wall however shows the face of a board-and-batten constructed wall and has an interior door that leads to a rear storage room. The door is also a single, sliding 4-feet wide by 7-feet high door built of 1-foot vertical boards leading to a rear storage room.

East Aisle (Exterior)

While similar in footprint, the east aisle is different from the west in its leveled concrete floor and its four-bay, open-sided east aisle configuration. With a height reaching almost 8 feet at the bottom of the roof trusses and 16 feet at the pitch of the shed roof, the east aisle is physically and visually separated from the center aisle by a board-and-batten wall at the west (Fig. 32). Although there are three 2-feet wide by 4-feet tall openings located between the first three bays from the north, they all begin at the height of the trusses and thus are out of the sight line (Fig. 33). Three 6-inch by 6-inch square columns installed during the 1999 restoration sit on the concrete floor support the shed roof (Fig. 34). The floor sits approximately 4 inches above grade and is used a storage area for heavy agricultural equipment and other items. Since all walls are exposed to the exterior, they are finished with white paint.

The north wall is again, like at the west aisle, the unfinished side of the board-and-batten exterior walls but with a single hinged door that is padlocked located at the eastern edge of the wall. This door appears to stay locked as a result of its disuse as an entryway since the east aisle is open and accessible from the east. Even though padlocked in its closed position, a gap remains because of the deteriorated condition of the adjacent vertical board at the door. A cross-brace is found at the western side of the north wall.

The west wall is board-and-batten construction with the previously mentioned upper three openings. A fire extinguisher and the building's main electrical panel are located at the southern end of the wall, presumably mounted also during the 1999 restoration to replace a previous electrical system (Fig. 35).

A single, sliding barn door is located on the eastern edge of the south wall and leads into the bathroom of the rear storage area. The door is built of 1-foot wide vertical boards and hung from a black, painted metal track above.

Rear Storage Area

The rear storage area consists of four rooms in total (see Floor Plan in Appendix C). All rear storage area interior walls are unfinished 1-foot wide vertical boards, exposing the underside of exterior board-and-batten walls.

The southeastern room at the corner is essentially two spaces separated by an opening, a bathroom at the north and a kitchen at the south (Figs. 36 & 37). Both bathroom and kitchen rooms are finished with a plywood sheeted sloped ceiling and laminate wood flooring. Accessible from the open-sided east aisle on the north over a 6-inch step, the 6-feet by 9-feet bathroom consists of a composting toilet located west of the door opening at the north wall and a standing sink at the center of the east wall. Above the sink is a simple, square framed four-lite window. While the 2-1/2 feet opening at the western end of the south wall leads into the kitchen, another opening approximately 2¼ feet wide at the northern end of the west wall leads to the adjacent storage room. The kitchen is furnished with an L-shaped laminate counter at the northeast corner with wood casework below and a sink on the east leg most likely installed during the 1999 restoration. Mounted above the north counter is a simply constructed 2-shelf wood open cabinet, and above the kitchen sink is a rectangular eight-lite window. At the southeast corner of the room sits a free standing three door cabinet (Fig. 38).

The three remaining rooms in the rear storage area are all used for storage and are finished with concrete floors, exposed roof framing showing the underside of the corrugated metal roofing, and unfinished wood wall boards (Figs. 39-41). The rectangular storage room adjacent to the kitchen and bathroom measures 21 feet by 15-1/2 feet and has two rectangular eight-lite windows constructed in 1999 that flank a pair of hinged doors at the south wall. Besides these two windows and door openings, the only other opening found is the one at the east wall that leads to the bathroom. West of this room is another storage room, more square in plan, measuring 15 feet by 15-1/2 feet, with openings also at the south wall. Although similar in construction, the one hinged door is much smaller. Located at the eastern edge of the south wall, the door sits east of the eight-lite window. Other than the openings on the south wall and an opening located on the west wall leading to the last storage room, there are no other penetrations in walls found in this room. Spaces within the first storage room and this second storage room are not connected or shared. There is, however, a 3-1/2 feet wide opening between the second storage room and the adjacent third storage room. The third storage room of the rear storage area is located at the southwestern corner of the barn. Unlike the other storage rooms, all walls within this last storage room have an

opening. In addition to the opening leading to the adjacent storage room, there is a door directly across from this one on the west wall, a 4-1/2 feet wide single, sliding door leading to the exterior of the building. Tangent to this door, at the western end of the north wall, is another similar single, sliding door, measuring 4-1/2 feet in width that leads to the west aisle. Both doors hang from above along a metal track and are built of 1-foot wide vertical boards reinforced with cross bracing members.

VII.   CONDITIONS ASSESSMENT

Conditions Introduction

The following section provides an assessment of conditions found at the time of our investigation of the different building systems and materials comprising the Fish Lower Barn. Photographs in Appendix B show the typical conditions identified at the building; the location of these conditions are noted on the Existing Conditions Plan in Appendix C. The assessment of the existing conditions was developed through an on-site investigation of the structure, wherever accessible by foot, ladders, and scissor lift. The assessment of the structural conditions is summarized in this section and supported by an in depth report by a licensed structural engineer. Detailed structural conditions and recommendations can be found in Appendix D. Recommendations and structural upgrades are found in the Treatment Recommendations of this report. At several locations, probes by drilling or insertion of metal rods into timber and wood elements were performed where accessible (Fig. 42). The condition of the timber or wood was assessed based on the resistance of a material to the metal probe.

Site Conditions
Perimeter Fence, Retaining Wall, Silos, and Other Site Features
The Fish Lower Barn property is enclosed by a perimeter wood fence, which appears to be in good condition. Although the barn sits at the base of a hill, its location on a raised bluff above the adjacent road and lower agricultural fields helps water drain away from the site and keeps the wood posts dry and durable. In addition to its location, the gravel floor covering surrounding the barn keeps the structure free from standing water. However, the area along the south elevation, where water has more difficulty draining, will be discussed in the site drainage section.

The dry-stacked masonry retaining wall at a slope towards the hill south of the barn is separated into two sections – east and west walls – to make room for an opening where a gate now is. The wall was either built at a slight incline against the hill or shifted as a result of a combination of erosion and the settlement of the masonry units. Several factors contribute to the poorer condition at the east wall including pressure from the concrete base of the two silos, the close proximity of the small shed to the wall, as well as the stacking of other equipment against the wall (Fig. 43). Individual masonry blocks do not show any major signs of deterioration. At both walls, vegetation around the wall and at the joints between the individual blocks was observed during our investigation. If clearing of this growth is not maintained, especially

within the area between masonry joints, it can contribute to the weakening of the assembly. The east wall is much more soiled than the west, due primarily to the proximity of structures around this wall.

Above the east retaining wall, the two painted, metal silos appear to be in fair condition. They sit on a layer of wood boards and share a thick 2 feet high concrete base. A white discoloration, most likely corrosion, was found around the sharp edges of the single hinged doors and horizontal seams of the structure. This was caused by exposure of the metal to weathering, where paint has peeled away and no longer protects the metal. Biological growth at the base between the metal and wood was also observed during our survey. The structural integrity of these silos is unknown and was not included within the scope of this report. Furthermore, the small wood shed in front of the east retaining wall was not accessible during our investigation and thus, its condition was not surveyed.

Site Drainage

Due to its location at the base of a hill, site drainage at the Fish Lower Barn is of great importance. Water that drains down from the hill will has the tendency to collect and pool around the barn, especially at the south elevation, accelerating the deterioration of the wood structure. Although no standing water was observed during our investigation, the soil to wood contact around the entire building and is contributing to the cultivation of vegetation (Fig. 44). A continuous foundation around the building exists, but on the west elevation, where the French drain is located, the foundation is below grade and allows moisture from the soil to become absorbed by the wood siding. Additionally, wood floor members were also observed to be in close contact with grade. These areas showed signs of deterioration. Site drainage that is well designed and maintained can prevent deterioration of the structure.

Conclusions

- Soil to wood contact around perimeter of structure is causing deterioration of the wood siding;
- Vegetation between masonry joints can contribute to de-stabilization of the retaining walls; and
- Corrosion at the silos will further deteriorate if not properly protected.

Building System Conditions

Foundations

The foundations at the Lower Fish Barn are constructed primarily of concrete but also include wood in various places and vary in construction type depending on area and usage. The

majority of the structure has a poured concrete slab foundation, at the east aisle and all of the rear storage area at the south of the barn. Only a concrete perimeter foundation exists along the western edge of the west aisle. The perimeter foundation is below grade and considered deficient for preventing water from coming in contact with the base of the wood siding, causing deterioration of the wood members (Fig. 45). See Appendix D for the Structural Engineer Report for details. The center aisle wood floor framing system is supported by 6-inch by 6-inch posts on concrete piers. In the areas of the poured concrete slab, the foundations sufficiently support the floor above.

Conclusions

- Concrete slab foundations at east aisle and rear storage areas show no deficiencies;
- Foundation at center aisle may be insufficient; and
- Perimeter foundation around the west aisle is below grade and considered deficient.

Exterior Walls

All exterior walls of the Fish Lower Barn are constructed of wood, board-and-batten siding nailed to the exterior face of the structural framing system. The redwood boards are typically 12-inches wide by 1-inch thick abutted vertically and overlaid with the 3-inches wide by 2-inches thick battens at the abutments. At all exterior areas where the Fish Lower Barn is protected from direct water, wind-driven rain, or sunlight, appears in good condition.

From the exterior, the siding appears to be in fair condition showing only some soiling along the base of the barn caused either by insufficient drainage around the structure and/or the combination of the backsplash of water draining from the shed roofs above (Fig. 46). Insufficient drainage around the site contributes to the constant absorption of water by the wood siding through capillary rise, creating both a moist environment for biological growth to occur on the boards as well as an area for ground vegetation (Fig. 47). Where the ground covering is currently gravel at the French drain on the west elevation, backsplash off the large granules of the coarse gravel is suspected to be contributing to the biological growth at the base of the wood siding. Deterioration is also found where the metal shed roof meets the exterior siding of the central aisle at the south elevation. Again, this condition is a result of the backsplash; water draining from the gabled roof above pours down to the hard surface of the metal, shed roof and splashes up against the wood siding on the south elevation, most likely penetrating the area

between the roof and siding (Fig. 48). The condition is exacerbated by the height of the gabled roof ridge over the shed roof below. Due to this height, any water draining directly from this area creates at larger backsplash because of the distance and velocity of water travel. Its southward facing orientation continually exposes this siding to weathering, contributing to its overall deterioration by constant expansion and contraction. Additionally, large gaps between boards were observed at the west elevation where the horse stalls are located. The area below the window adjacent to the sliding barn door is in particularly poor condition. Minor chipping of the exterior white paint and indentation of exterior wood siding from general use was also observed during our investigation. Bird nests found at various locations around the exterior of the barn and do not appear to pose any problems (Fig. 49).

From the interior, it is more apparent that the exterior redwood boards do not align exactly. Light coming through the gaps between the vertical boards and battens are visible and show the greater extent the deterioration. From the interior central aisle space, gaps at the upper exposed exterior south elevation are filled with expandable insulating foam (Fig. 50). The south elevation is the most vulnerable of elevations since it experiences the entire range of weathering: rain, wind, and intense sunlight. These elements contribute to the constant expansion and contraction of the natural redwood, creating more gaps between the boards and weakening their stability over time (Fig. 51). Also visible throughout the barn, but more apparent in the center aisle, are watermarks on the underside of the exterior board siding (Fig. 52). While wood on south facing facades are more susceptible to shrinkage because of sun exposure, wood on northern exposures becomes more vulnerable to biological growth because of the constant moisture and lack of sunlight to dry the boards.

The structural framing system to which the exterior siding is nailed consists of 6-inch by 6-inch wood posts with 4-inch by 6-inch beams running between the posts. Testing by probing and core sampling were performed at several locations around the Fish Lower Barn to determine the general condition and integrity of the framing system (Figs. 53 & 54). Visually, approximately 40% of the wood members showed deterioration by insect damage, water penetration, or natural weathering shown as large splits (cracks along the wood grain) of the timber posts (Fig. 55). Core samples using a 1-inch diameter drill bit were taken to a maximum of 2 inches in depth or until reaching solid wood within the posts to analyze the condition of the timber structure. According to the structural analysis, the core samples showed only surface deterioration and thus the structural framing members retain only 75% of its original capacity.

Conclusions

- Exterior board-and-batten siding is in overall fair condition, with the exception of active deterioration at the base of the structure and extensive deterioration at the south elevation;

- Gaps between vertical boards are prevalent throughout the barn and allow water to penetrate the structure;

- Biological growth at the base of the siding along the French drain at the west elevation caused by backsplash of coarse granules;

- Deterioration of the siding at the south elevation where the metal shed roof meets the wall; and

- Testing by probing and core samples determined that the structural framing system retains only 75% of its original capacity.

Roof System

There are two separate roof systems at the Fish Lower Barn, a gable roof over the center aisle and connecting shed roofs over the east aisle, rear storage area, and west aisle.

The center gable consists of a truss frame construction reaching a peak height of 29 feet and a corrugated metal roof attached to 2-inch by 4-inch sleepers positioned at 24-inch centers. Full dimension 2-inch by 6-inch wood rafters at 24 centers support the sleepers and span between the exterior east and west walls to the center 4-inch by 6-inch ridge beam. Supporting the ridge beam are five wood trusses, which bear on the 6-inch by 6-inch timber posts at 10-foot centers. Running between the 6-inch by 6-inch columns are 4-inch by 6-inch wood beams, where the highest beams serve as a sill plate for rafters to rest upon. Not part of the structural system, but supported and hanging from the ridge beam on 1/2-inch diameter iron rods, is a 4-inch by 4-inch square wood beam, or hoist rail, consisting of a few separate timber members used to support the wheels of the hoist for transporting hay in and out of the barn loft doors. This square north-south member extends past the hay loft doors at the north and south elevations.

According to the structural analysis, the wood members only retain 75% of their original capacity. Their reduced structural integrity is attributed to the surface deterioration found during the investigation, caused mainly by exposure to moisture and insect damage. From the interior, probing and core sampling of wood members found the ridge beam, as well as many rafters, especially deteriorated in certain sections (Figs. 56 & 57). However, the hanging hoist rail members used for the hoist appeared to be relatively stable and in fair condition. Water damage to the rafters at the northeastern corner of the gable roof was found where water has penetrated the roof at the overlapping joints of the corrugated, metal sheets. Signs of surface deterioration, as well as bird droppings and usage, were found along the ledge of the highest 4-

inch by 6-inch beams approximately 19-1/2 feet above floor level. At the exterior, the rafter tails, as well the skipped sheathing sitting on top all showed a great degree of deterioration (Figs. 58-61). Rafters at the shed roofs are overall in fair condition, with the exception of some members found at the rear storage area and at the east aisle where the wood members appear to be heavily damaged by water infiltration. A bird nest nestled within the roof framing was observed during our investigation (Fig. 62).

The current roof system does not provide adequate protection and drainage from the building. Flashing is needed in the area where the corrugated metal shed roof meets the face of the exterior siding, an area particularly susceptible to moisture penetration. The French drain system constructed along the base of the west elevation has helped divert water from the building. Deterioration of the wood siding before the installation of the French drain is still visible. Currently, the water shedding directly off the roof collects around the perimeter of the building, as evidenced by the intense growth of vegetation in these areas. A properly designed roof drainage system to redirect water is a critical step toward the preservation of the Fish Lower Barn.

Conclusions
- Structural analysis concluded that wood members only retain 75% of their original capacity;
- Ridge beam and roof rafters show deterioration;
- There is wood decay at roof framing at northeast corner of gable roof;
- Surface deterioration by insect damage and bird usage is located at sill plate;
- Rafter tails are deteriorated at the south elevation of the shed roof;
- Rafters are damaged by water infiltration at rear storage area and east aisle;
- Flashing needed at the area where the shed roofs meet the wood siding; and
- Only a French drain at the west elevation is used for drainage away from site.

Floors
The floors at the Fish Lower Barn vary in material by location. At the open-sided east aisle and rear storage area are concrete floors, with the exception of a raised wood floor in the kitchen and bathroom. The concrete floors poured in 1999 and the raised wood floors are in good.

The center aisle floor is constructed of 1-inch thick tongue-and-groove wood boards laid north-south and used for storing hay. The west aisle floor is unleveled and composed of built up organic material, from

the use of the barn as horse stalls. In addition to the already sub-grade concrete perimeter footing, the west aisle floor should be re-graded to protect the historic siding from coming in contact with the organic matter.

The original center aisle wood floor is raised approximately 8 inches off grade to create an air space between the floor and the dirt grade and prevents moisture from reaching the stored hay. The first 8 to 10 feet of the wood floor from the north entrance of the center aisle is in very poor condition. Whether from constant use, excessive loads, exposure to water through the large opening, this area of the wood floor is deteriorated and is currently covered with several sheets of plywood (Fig. 63). The plywood appears to be old and during our investigation appeared vulnerable to the weight of one person. This is also the area where water may be actively infiltrating the roof above. The observation was made by the numerous watermarks along the underside of the boards at the north and east walls (Fig. 64). Additionally, a rectangular 6-inch by 12-inch hole cut at the eastern edge of the wood floor is adjacent to the center post and shows the connection of the timber post and concrete pier.

Conclusions
- Concrete floors are in good condition; and
- First 8 to 10 feet of the wood floor from the entrance of the center aisle are in very poor condition.

Interior Walls

With the exception of the backside of the exterior board-and-batten siding, there are very few interior walls in the Fish Lower Barn. A total of five interior walls exist, and all are adjacent or part of the rear storage area. At the south elevation wall in the center aisle, expanding foam insulation is used to fill the gaps found between boards of the exterior siding. Only one interior wall shows the face of the board-and-battens the south wall of the west aisle. This is also the only interior wall that shows minor deterioration caused by its proximity to the dirt floor, which at times becomes wet and contributes capillary rise of moisture at its base. All other protected interior walls built on concrete or other raised floors are in good condition.

Conclusions

- Interior board-and-batten wall at the south elevation of the west aisle shows minor deterioration; and
- Expanding foam insulation used to temporarily fill the gaps between boards of the exterior siding at the south elevation is not considered a proper treatment for historic fabric.

Ceilings

All ceilings in the Fish Lower Barn are open to the underside of the roof framing and corrugated metal roofing except in the rear storage area kitchen and bathroom (Fig. 65). In those spaces, the shared ceiling consists of stained plywood sheets nailed to the underside of the roof framing and finished with wood trim at the seams. The ceilings appear new in construction, dating possibly to the 1999 restoration period and are in good condition.

Conclusions

• Finished plywood ceilings in kitchen and bathroom areas in good condition.

Doors and Windows

Four types of doors are found at the Fish Lower Barn, but the most common is the barn sliding door constructed of 1-foot wide vertical boards. Barn doors are hung from sliding barn door hardware above and along a bottom track built of 2-inch by 4-inch wood members. Variations of this door style typically seen as additional horizontal boards or cross-bracing on the interior for reinforcement. Another door type is a similarly constructed door but hinged at one side. The only difference found in these hinged doors is the use of battens at the seams of the typical vertical 1-foot wide boards. The third and most unique type is the shedagonal hay loft door found at both the north and south elevations. These hopper doors are hinged at their base, have rectangular openings at the top center to accommodate the protruding 4-inch by 4-inch square member used to channel the hoist for transporting hay in and out of the barn (Fig. 66). The last type of door found is a hinged, five-panel door at the south elevation. All doors are constructed of wood and painted on the exterior. Wood thresholds over the sliding doors at the west aisles appeared greatly worn and almost non-extant.

Windows styles also vary, but the majority are the typical awning 8-lite windows with wood surround and projecting sills produced in 1999 to match the historic windows. The windows consist of two rows of four square glass panes separated by slender muntins. One 4-lite window of the same design also exists at the Fish Lower Barn. These pane windows are found at the east, south, and west elevations of the rear storage area. Three 2-feet wide by 4-feet tall rectangular openings at the east wall of the center aisle is visible only from within the open-sided east aisle. Each opening is built of 2-inch by 4-inch wood members with an extended lintel and sits on the 4x6 beams positioned at 7-1/4 feet above the center aisle floor level. At the west elevation are three 2-1/2 feet by 2-1/2 feet sliding square windows with surrounds

similar to the wood pane windows. These square windows are constructed similarly to the exterior siding of vertical board-and-batten and slide along a track built using slender pieces of wood.

Overall, the doors are functional and in fair condition. However, the bottom tracks of the sliding doors are in poor condition due either to excessive use or natural weathering. Where the bottom tracks are deteriorated or non-extant, the interior of the barn is accessible by lifting out the bottom of the door. Additionally, the bottom of the very right vertical board of the north elevation door leading to the west aisle horse stalls is worn to the point of making two visible openings, which allow small creatures to enter the interior of the barn. Other common but minor conditions found at the doors are cracking along the grains of the vertical boards and biogrowth at the base of the boards caused by proximity to growing vegetation or the blacksplash of water draining from the roof.

All windows seemed to operate property and are in good condition. In areas surrounding some windows, such as around the paned windows, only slight water penetration at the adjacent wood boards was visible. The sliding square windows at the horse stalls also showed water penetration at the wood boards. Furthermore, since the rectangular openings are protected by the east aisle shed roof, all members and surroundings were in good condition.

Conclusions

- All doors are in fair condition;
- Bottom tracks of the sliding doors are in either poor condition or non-extant and cracking along vertical boards;
- All windows are in good condition; and
- Vertical wood siding surrounding window openings show slight water penetration.

Light Fixtures and Electrical System

A new electrical system was installed during the restoration in 1999. This upgrade was most likely the period when all the interior single-bulb light fixtures were installed at the rear storage area, as well as the pair of bare-lamp spotlights at the center aisle and the four pendant fixtures at the east portico. The main control panel providing electrical power for the entire barn is located on the exterior east wall of the center aisle and is accessible from the east aisle. In general, the single incandescent fixtures found at the center of each rear storage room appear to be functional. One circular shaped, wall-mounted light fixture

was also found above the window in the kitchen. The pair of floodlights used to illuminate the center aisle is mounted to the center 6-inch by 6-inch wood post at the west side and also functioned properly. The west aisle is also illuminated, but with only one incandescent light bulb. At the exterior east portico, an industrial pendant fixture hangs from rafters between each of the four bays. All electrical conduits are exposed and visible. Available outlets are found throughout the entire barn including at the center, west, and east aisles. An electrical upgrade is not anticipated unless the current system cannot sustain the additional egress signs and listening devices required by code.

Mechanical Systems
The Fish Lower Barn currently has no functioning heating or ventilation system. Because windows are operable, a heating and ventilation system is not necessary. However, if the rear storage area is rehabilitated into office space and the occupant load increases, requirement for both heating and ventilation systems may be required.

Plumbing Systems
The property is currently not served by a septic system or a public sewer system. However, the on site plumbing system does provide hot and cold water to the bathroom and kitchen areas. Although an artesian well located behind the barn is currently not in service, it may be possible to reestablish this in the future to provide another source of water to the site. A composting toilet in the bathroom does not require water and has a vertical ventilation pipe attached to the top of the fixture. An exterior faucet is found outside the east elevation of the rear storage area. There were no gas lines observed at the Fish Lower Barn. An upgrade of the current plumbing system will be necessary to support the bathroom facilities and drinking fountains required by code (see Building Code Review section below), as well as a fire-sprinkler system. MPRPD is currently working with CalAm Water to investigate the potential to pipe the public utility water to the site from the main line that runs along Highway 1.

VIII. BUILDING CODE REVIEW

Building Summary

Location:	Highway 1, Carmel-by-the-Sea, California
Area:	Palo Corona Regional Park
Date of Construction:	1929
Historic Structure:	Yes (Monterey County Register of Historic Resources)
Historic Use:	Barn
Proposed Use:	Public Historic Site (assembly, exhibit, offices)
Number of Floors:	1 story
1st Floor Area:	3,388 sq. ft.
Center Aisle:	1,140 sq. ft.
West Aisle:	640 sq. ft.
East Aisle:	640 sq. ft.
Rear Storage:	968 sq. ft.
Exterior Materials:	Wood board-and-batten siding
Roofing / Framing:	Corrugated metal / Wood truss frame
Construction Frame:	Wood post and beam system
Foundation:	
Center Aisle:	Wood post on concrete piers
West Aisle:	Perimeter concrete
East Aisle & Rear Storage:	Poured-in-pace, reinforced concrete slab on grade

Fire Rating/Life Safety Evaluation

The Fish Lower Barn, constructed in 1929, is a one-story unsprinklered building. The building has a gross area of 3,388 square feet and consists of three types of foundations: slab on grade at the east aisle and rear storage rooms, raised wood framing at the center aisle on concrete piers, and dirt at the west aisle. The structure and cladding is board-and-batten wood siding nailed to a wood post and beam wall system connected to a wood roof framing system. The barn is currently classified as U occupancy (utility) and Type V-N (non-fire rated) construction. The following review is based on the proposed rehabilitation of the barn to a public historic site. The building will remain a Type V-N construction, but rehabilitation will change the occupancies to an A occupancy (assembly), specifically A-3 at the center aisle as an assembly area and a B occupancy (office) for the remainder of the building for use as interpretive exhibits, office, and storage spaces.

The building was reviewed for general code compliance with the provisions of the 2001 California Building Code (CBC) in conjunction with the California's State Historical Building Code (SHBC). In

circumstances where compliance with the provisions outlined by the CBC would cause damage to the historic features of a qualified historic building, the SHBC allows for consideration of alternate means of meeting the performance objectives of the CBC. According to section 8-102.1:

"These regulations are applicable for all issues regarding building code compliance for qualified historical buildings or properties. These regulations are to be used in conjunction with the regular code to provide alternatives to the regular code to facilitate the preservation of qualified historical buildings or properties. These regulations shall be used whenever compliance with the regular code is required for qualified historical buildings or properties."

The following areas are considered deficient in complying with current codes if the Fish Lower Barn will be used as a public historic site. Recommendations addressing these deficiencies are listed in the following section.

Maximum Occupancy Loads: Section 1007.2.6 of the CBC requires a sign with the maximum room capacity to be posted in a conspicuous place near the main exit or exit-access doorway. Additionally, the sign should be durable, contrasting color from the background where posted.

Fire Suppression System: Currently, there is no smoke detection, fire alarm, or fire suppression system in the building. Although fire sprinklers are not required by the 2001 CBC it is strongly recommended that a fire suppression system be installed to protect the valuable historic resources found at the Fish Lower Barn, a building constructed entirely of wood.

Means of Egress: Table 10-A of Section 1004.2.3.2 of the CBC requires a minimum of two means of egress where the number of occupants is at least 50 for an assembly area. Section 1004.2.4 requires that at least two of the exits shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area served. For non-sprinklered buildings, Section 1004.2.5.2.1 requires that the travel distance to at least one exit shall not exceed 200 feet. Currently, the center aisle space has only one exit.

Means of Egress Identification: Section 1003.2.8.2 of the CBC requires exit signs to be located along the path of exit travel and within the exit. Section 1003.2.8.4 requires exit signs to have an intensity of five foot candles.

Means of Egress Illumination: Section 1003.9 of the CBC requires emergency exit path illumination to have an intensity of one foot candle at floor level. Section 1003.2 requires the installation of an emergency source of power to illuminate means of egress for a continual duration of 1-1/2 hours minimum in case of primary power loss. There is currently no provision for emergency lighting in the barn.

Door Landings: CBC section 1003.3.1.6.1a requires a level landing on each side of an exit door. However, according to Section 1003.3.1.6 floor levels are permitted to be a maximum of 1/2 inches below the threshold and floor levels of exterior landings shall not have slopes greater than 2 percent. The landing should be 48 inches in length away form the direction of door swing (see CBC section 1133B2.9.2) and 60 inches in length in the direction of door swing. CBC section 1133B.2.4.2 requires the level landing to extend 18 inches beyond the latch side of the door at all interior exit doors and 24 inches beyond the latch side of the door at all exterior exit doors.

Restrooms: Section 2905 of the CBC requires a minimum number of plumbing fixtures to serve the occupants of a building. Table A-29-A in Section 2905 enumerates the required fixtures and is based on a calculation of 50-percent male and 50-percent female per occupant load. The following chart shows the minimum number of fixtures required for the Fish Lower Barn based on the 163 people for Group A and 8 people for Group B. If unisex restrooms are provided, Section 1105.2.4.5.1 permits only one water closet and only one lavatory in each unisex toilet room.

Occupancy	Occupant Load	Sex	Water Closets	Lavatories
Group A	82	Male	2	1
	82	Female	4	1
Group B	4	Male	1	1
	4	Female	1	1
Total:			**8**	**4**

Drinking Fountains: Section 2905 of the CBC requires for occupant loads over 30 to have one drinking fountain for each 150 occupants. Where drinking fountains are provided, Section 1105.4.1 requires that at least 50 percent should be made accessible. Currently, there are no drinking fountains at the site. Although the site currently does not have a septic system or public sewer system, provisions for one in the future will be necessary to provide the above mentioned restroom facilities and drinking fountains.

Roofing: New shingles installed to replace the current corrugated metal roof should be a Class A treated shingles, as required by the Fire Marshall.

Disabled Accessibility

Requirements for disabled accessibility are governed by the CBC and the SHBC for a public historic site. Additional parallel requirements are provided by the Americans with Disabilities Act (ADA), a federal civil rights law that governs accessibility to buildings for the disabled. If the decision to rehabilitate the Fish Lower Barn into a public building occurs, the ADA law will apply and non-compliance with the requirements will place the building owner at risk to potential litigation. Where alterations are undertaken to a qualified historic building, such as a building listed in the Monterey County Register of Historic Resources, and where the State Historic Preservation Officer or Advisory Council on Historic Preservation agrees that full compliance with the requirements for accessible routes (exterior and interior), ramps, entrances, or toilets would threaten or destroy the historic significance of the building or facility, alternative requirements of compliance may be used.

The scope of this disabled accessibility evaluation is for the Fish Lower Barn and will include the full range or issues including disabled parking, path of travel throughout the site including appropriate entrance and egress, restroom facilities, and interpretive and programmatic features. The following are principal areas where the Fish Lower Barn is considered deficient in meeting accessibility requirements of the CBC if the Fish Lower Barn is rehabilitated as a public building. Recommendations addressing these deficiencies are listed in the following section.

Site Access: Section 1127.1 of the CBC requires the site to be designed to provide access to all building entrances and ground floor exits. CBC section 1129.1 requires accessible parking to be provided. Currently, there is neither accessible parking nor an accessible path of travel to all building entrances/exits.

Building Access: As mentioned above in the Means of Egress under Fire Rating/Life Safety Evaluation, Section 1004.2.3.2 of the CBC requires a minimum of two means of egress for the Center Aisle. When more than one exit is required for any accessible space, Section 1104.1.1 of the CBC requires any accessible space to be served by not less than two accessible means of egress. See door landings under Fire Rating/Life Safety Evaluation for further discussion of this item.

Wheelchair Spaces: CBC section 1105.4.8.1 requires a minimum of four wheelchair spaces for a room with a capacity of seating between 51 and 300.

Door Hardware: Section 1003.3.1.9 requires all door hardware to be operable with a single effort and without requiring the ability to grasp the opening hardware. Section 1007.2.5 requires that exit doors be provided with a latch or lock, with an exception for A-3 occupancies. This exception specifies that a key-locking device may be used in place of the panic hardware, if a readily visible and durable sign is provided adjacent to the doorway stating:

"THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS," or if required by the State Fire Marshall, "THIS DOOR SHALL REMAIN UNLOCKED WHENEVER THE BUILDING IS OCCUPIED."

Restrooms: Section 1105.2.2 of the CBC requires that each toilet room be made accessible and within these a minimum of one fixture of each type be accessible. Section 1115B requires that a minimum of one unisex facility be provided for persons with disabilities within close proximity to a non-accessible facility.

Accessible Route: Section 1114B.1.2 requires an accessible route of travel to all portions of the building which are required to be accessible. Currently there is no accessible path of travel through the building and no floors are accessible.

Assisted-listening Systems: According to CBC section 1104B.2, an assisted-listening system is required for a minimum of 4% of the total seats provided in assembly areas. Locations where devices are available should be posted prominently with the international symbol for hearing loss and wording "Assistive-

listening System Available." Listening devices should be made available within 50 feet of the performing area and can be portable since they serve less than 50 occupants.

IX.   TREATMENT RECOMMENDATIONS

Introduction

In the future, the Fish Lower Barn will probably be used as a public historic site with spaces for recreation and interpretation, offices for staff, and storage. Under this scenario, the center aisle will be used as an assembly space, the west and east aisles as interpretive spaces, and the rear storage areas as offices and storage. The proposed uses are compatible with the historical uses of the building; the proposed change in use will not require dramatic changes to the historic features. In addition to the system-related work described above, work required by the change in use to correct deficiencies is described below.

This report contains recommendations based on *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (The Standards)* and on the Code of Ethics of the American Institute for the Conservation of Historic and Artistic Works (AIC).

The Standards provide general information for stewards of historic resources to determine appropriate treatments. They are intentionally broad in scope to apply to a wide range of circumstances, and are designed to enhance the understanding of basic preservation principles. *The Standards* are neither technical nor prescriptive, but are intended to promote responsible preservation practices that ensure continued protection of historic resources. Any alterations to the significant character-defining features should be approached carefully and sensitively, following *The Standards*. Based on the combination of the extant nature of the overall design and style of the original structure and the Owner's desire to transform the barn into a public historic site, the rehabilitation guidelines are appropriate for the Fish Lower Barn. These *Standards* define Rehabilitation as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values. Alteration of significant character-defining features will require consultation with the California Office of Historic Preservation.

Information presented in this section is intended to provide recommendations for the future treatment, maintenance, rehabilitation, and adaptive use of the Fish Lower Barn. It is assumed that the current uses

as a private storage facility for hay and other ranch equipment, as well as shelter for horses, will change to a public space for recreational and educational purposes. Additionally, the kitchen, bathroom and rear storage area are assumed to change into ancillary spaces such as offices and interpretation areas. Given the proposed uses of the barn and the integrity of materials and systems, rehabilitation is the appropriate treatment. The recommendations provided in this report include actions that should be carried out when the decision is made to rehabilitate the current structure into a public historic site. The recommendations are prioritized by critical actions that should be carried out to address life-safety issues and severely deteriorated conditions, and those preservation treatments recommended to conserve the historic materials and integrity of the barn.

General Recommendations

Any work including repair, restoration, rehabilitation, replication, or maintenance should have a minimal impact on the historic fabric of the Fish Lower Barn. Deficiencies threatening life and safety, or that may cause further deterioration should be corrected as soon as possible. The value of any other improvements should be weighed against potential impacts to the building's historic integrity. The historic fabric and character-defining features have been described in previous sections of this report.

Initial measures should focus on the ongoing maintenance and repair of historic fabric to protect and stabilize the property. The conversion of the structure from a privately used space into a public building will entail some alterations to the original fabric in order to comply with current building regulations. Although new additions are not required, sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make the properties functional is necessary.

Further, the Code of the Ethics of AIC calls for treatments to be "suitable to the preservation of the aesthetic, conceptual, and physical characteristics of the cultural property." In some cases, nonintervention is the most appropriate treatment for the preservation of a feature or structure. The Code of Ethics also requires an "informed respect for the cultural property, its unique character and significance, and the people or person who created it." In the case of the Fish Lower Barn, this respect for the history of the building applies to the previous restorations and alterations that have contributed to the barn in its current form.

Code Upgrades

This section addresses physical changes needed to make the building compliant with current required codes. The following text outlines code-related upgrades that will be required for the Fish Lower Barn for the rehabilitation of the structure as historic site accessible to the public. The treatments recommended in this report will have effects on the cultural resource; however, it is intended that the treatments will result in benefits providing for a higher level of resource preservation than is now provided. One of the most important design criteria, however, is that the modifications be designed to minimize these effects, both physically and visually. Providing an improved environment for the building's preservation and the safety of its users will reduce negative impacts on the structure and occupants. Further evaluation will be necessary when the recommendations are developed to a level of design detail specific enough to definitively identify particular building fabric treatments.

Fire and Life Safety

Maximum Occupancy Loads

- Occupancy of the center aisle should be limited to a maximum of 163 people as indicated by appropriate signage at the entrance. Occupancy of the rear storage area to be converted into office spaces should be limited to a maximum of 8 people and not accessible to the public.
- Install an approved sign showing the room capacity for each public room.

Fire Suppression System

- Provide a single line fire suppression system in the building.
- Initiate regular program of annual inspection and maintenance of extinguishers.

Means of Egress

- Provide a minimum of two means of egress for the center aisle of the Fish Lower Barn located at a minimum distance of 24 feet apart.
- Provide one means of egress to the office space at the rear storage area.
- Exit locations should be limited to a travel distance of 200 feet.

Means of Egress Identification

- Add readily visible exit signs; design and location of exit signs and emergency lighting should be carefully coordinated to minimize their impact on the historic fabric and setting of the barn.

Means of Egress Illumination

- Means of egress should be illuminated as specified by code.
- Provide emergency electrical system that supplies enough power for a minimum of 1-1/2 hours.

Door Landings

- Install code compliant landings at all exit doors.

Restrooms:

- Provide the required number of restrooms in the Fish Lower Barn. See Disability Accessibility section below for accessibility requirements.

Drinking Fountains

- Provide two drinking fountains for the occupants at the Fish Lower Barn. See Disability Accessibility section below for accessibility requirements.

Roofing

- If replacement of the current corrugated roofing with a wood roof occurs, provide Class A treated wood shingles.

Disabled Accessibility

Site Access

- Provide one code compliant accessible parking, if parking is provided.
- Provide access to all building entrances/ground floor exits.

Building Access

- Provide two means of egress into the center aisle of the Fish Lower Barn where occupancy is greater than 50.
- Provide one means of egress into the office space at the rear storage area.

Wheelchair Spaces

- If the center aisle is used for events with seating, provide four wheelchair spaces.

Door Hardware

- Option 1: Provide code compliant door hardware at all doors, which will be used for entrance and egress in the design of the re-use.

- Option 2: Keep exit doors open during business hours and provide a readily visible and durable sign adjacent to the doorway stating:

  "THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS," or if required by the State Fire Marshall, "THIS DOOR SHALL REAMIN UNLOCKED WHENEVER THE BUILDING IS OCCUPIED." *

  * Note: A discussion with the building department will be necessary to clarify the acceptable door hardware required for the building.

Restrooms:

- Remove existing restroom and provide new restrooms (e.g. portable toilets).

Accessible Route

- Provide an accessible route of travel to all portions of the building, which are required to be accessible.

Assisted-listening Systems

- Provide a minimum of four assisted-listening devices.

- Provide a proper sign indicating the availability of an assisted-listening system.

Drinking Fountains

- One of the two required drinking fountains provided shall be made accessible.

PRIORITIZED RECOMMENDATIONS

Repair Recommendations

The following repairs are considered critical because of their role in addressing life-safety concerns. Due either to the severity of their existing condition or their capacity to greatly compromise the overall structural integrity of the building, the repairs are of highest priority in stabilizing the barn and should be undertaken before any other work is executed. The repairs are listed in order of priority.

1. **Stabilize roof framing for pest control access:** The current roof framing should be stabilized in order to support the load of a working platform for pest control access. A reinforcement program consisting of three 6x8 sleepers installed between the existing truss chords of the center gable roof

placed at four even spaces from the exterior wall to the roof ridge would form adequate support for a platform. Additionally, the same system of reinforcement can also be applied at shed roofs to provide access to the gable roof.

2. **Fumigate wood structure:** In order to prevent further deterioration of the structural framing systems at the Fish Lower Barn, fumigation of the entire structure is recommended.

3. **Stabilize floor at center aisle:** Before any of the structural strengthening work at the floor framing is undertaken, the initial ten feet of the wood floor within the area immediately inside the center aisle doors should be removed and reinforced with new temporary plywood sheathing to provide adequate support for anyone walking through this space. Refer to the structural report in Appendix D.

4. **Improve structural strengthening at roof framing:** The current roof framing installed in 1999 should be reinforced with 3/4-inch truss rods with turnbuckles tied to the roof trusses using a 3/4-inch thru bolt and in the area above the truss chords. The goal of the reinforcement is to reduce the probability of collapse and failure. Refer to the structural report in Appendix D.

5. **Replace existing corrugated metal roofing with original roofing material:** Exploratory demolition should be conducted to determine the original type of roof that existed in 1929. Determination of this material will enable for replacement of the current roof, which was installed in 1999. If it is determined that the roof was originally wood shingle, the new roof will require reinforcement of the diaphragm at both the gable and shed roofs for transferring wind and seismic loads to the shear walls. There are two alternatives for this reinforcement: 1) Reinforcement by 1-inch thick diagonal braces running under the existing 2-inch thick rafters can connect to the exterior walls at the existing top beams or 2) Diagonal rods installed just below the roof rafters. Refer to the structural report in Appendix D. New shingles installed should be a Class A treated shingles.

6. **Repair timber and wood surface decay:** Surface treatment of any deteriorated timber and wood members with an appropriate and approved epoxy repair solution. Although reinforcement is not required, careful attention to the aesthetics of the material should be undertaken during the repair to preserve the historic integrity of the members.

7. **Repair base and exterior siding:** Water damaged bases of exterior wood siding should be treated with consolidant. Application of a new paint coating is also recommended for further protection.

8. **Refinish paint at exterior:** Remove peeling paint at the exterior board-and-batten walls at walls and refinish with a new application of paint coatings.

   WARNING: Existing painted surfaces may contain lead. Testing for lead in the paint was not part of the scope of this report. It is suggested that the Owner pursue testing of the paint for lead content.

9. **Install flashing at south elevation where shed roof meets wood siding:** At the south elevation, protect wood siding from backsplash caused by water draining from above gable roof and landing on shed roof below. Install flashing where the shed roof meets the wood siding to prevent water from infiltrating at this joint.

10. **Improve site drainage:** Re-grade around the perimeter of the building at the south and west elevations. Construct French drains at perimeter of the rest of the barn to prevent water absorption by

wood siding by redirecting water draining from the shed roofs away from the structure. Provide smaller granules of gravel at top layer of French drain to prevent backsplash on historic wood siding.

11. **Remove vegetation:** In areas immediately around the building, remove cultivating vegetation and maintain cleared to prevent development of moist environment at and near the wood siding. This will prevent biological growth and further deterioration of the wood found at the barn.

Code Upgrades

Code upgrades are necessary only if the decision to rehabilitate the Fish Lower Barn into a public historic site. The recommended repairs listed below are based on the assessment of the existing conditions and should be undertaken to preserve the overall integrity of the materials and building systems of the building. The repairs are grouped by material and systems and are not listed in any order of importance.

1. **Improve structural strengthening at wall framing:** To resist wind and earthquake loads, board-and-batten siding can be stapled at the batten overlap to provide additional shear strength. Sheer walls will require new wood sills as well as blocking at the shed roof connection and the high roof to wall connection. To improve the connection of these braces to the wood posts and wood diaphragm, metal connectors on the shed side of these walls will be used. Refer to the structural report in Appendix D.

2. **Improve structural strengthening at floor framing:** After (temporary) stabilization of the floor surface at the center aisle is undertaken, work to structurally strengthen the entire floor framing system will include the installation of a new reinforced concrete slab with thickened edges. Additionally, installation of new tongue-and-groove flooring where boards are too deteriorated to salvage and reuse. New boards to match existing. Salvaged boards should be repaired by consolidation or epoxy treatment. Refer to the structural report in Appendix D.

3. **Fire and life safety changes:**

    a. **Exit sign illumination:** Provide power source for illumination of exit signs.

    b. **Smoke alarm:** Provide smoke alarms.

    c. **Fire sprinkler:** Provide fire sprinklers throughout the building.

4. **Additional means of egress at center aisle:** Provide an exit for the center aisle space.

5. **Additional means of egress at office area:** Provide an exit for the new office space.

6. **Disabled accessibility upgrades:**

    a. **Center Aisle:** Provide power for illumination of exit sign

    b. **Office Area:** Provide accessible work area for the new office space.

    c. **East and west aisle areas:** Provide accessible thresholds to the east and west aisle spaces.

    d. **Listening devices:** Provide an assistive listening system for visitors.

    e. **Drinking fountains:** Provide one accessible drinking fountain at the site.

    f. **Parking space:** Provide one code-compliant accessible parking space.

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Personal Communication

Jenson, Tim (Planning and Programs Manager, Monterey Peninsula Regional Park District). In discussion with the author, March 14, 2007.

Sales, Enid (Executive Director, Carmel Preservation Foundation). In discussion with the author, March 14, 2007.

Email correspondence between Tim Jensen and Diana Fish on May 13, 2007.

Email correspondence between Tim Jensen and Diana Fish on November 14, 2007.

Appendix A. Historic Photographs of Fish Lower Barn

Figure 1. View of the Palo Corona Ranch (undated). Courtesy of Archives of S. Fish.

Figure 2. View of the Palo Corona Ranch (undated). Courtesy of Archives of S. Fish.

Appendix B. Photographs of Existing Conditions

Figure 3. View of Fish Lower Barn from adjacent road.

Figure 4. Adjacent road immediately north of the Fish Lower Barn.

Figure 5. Northern fields below the Fish Lower Barn.

Figure 6. Aerial view of the Fish Lower Barn showing adjacent roads. Courtesy of Google Earth.

Figure 7. Stone retaining wall located at the south of the barn .

Figure 8. Silos sitting on top of the eastern portion of the retaining wall. Small shed, sign, and other ranch equipment leaning against wall.

Figure 9. French Drain at the west elevation.

Figure 10. Overall view of the Fish Lower Barn from the east.

Figure 11. North elevation.

Figure 12. Hay loft door located below the gable roof at the north elevation.

Figure 13. Sliding barn doors at the north elevation leading to the center aisle.

Figure 14. Sliding barn door at the north elevation leading to the west aisle horse stalls.

Figure 15. Hinged door leading to the east aisle.

Figure 16. East elevation showing the open-sided east aisle and rear storage area.

Figure 17. Sliding door leading to the bathroom and kitchen from the east aisle.

Figure 18. Windows at the east elevation of the rear storage area.

Figure 19. Fire hose located in a cabinet on the east elevation.

Figure 20. South elevation (photo montage).

Figure 21. Hay loft door at the south elevation.

Figure 22. West elevation.

Figure 23. Typical sliding window at the west elevation.

Figure 24.Interior view of the south wall and roof framing from the center aisle.

Figure 25. Wall and roof framing systems at the center aisle.

Figure 26. Threshold to the center aisle sliding barn doors.

Figure 27. Roof framing system at the center aisle showing where rafters join the ridge beam. Square member below used as a track for the hoist.

Figure 28. Low interior wall between the center aisle and west aisle horse stalls. View from the center aisle.

Figure 29. Openings at the east interior elevation wall in the center aisle.

Figure 30. Dividing horse stall wall at the west aisle.

Figure 31. Horse trough along the lower east wall in the west aisle.

Figure 32. Roof framing system at the east aisle.

*Figure 33. Opening at the east elevation wall in the
east aisle looking into the center aisle.*

Figure 34. Structural framing system of the east aisle.

Figure 35. Main electrical panel located on the west elevation wall of the east aisle.

Figure 36. Bathroom in the rear storage area.

Figure 37.Kitchen in the rear storage area.

Figure 38. Cabinet located in the southeast corner of the kitchen.

Figure 39. Rear storage room #1 used for storing ranch equipment.

Figure 40. Rear storage room #2.

Figure 41. Rear storage room #3.

Figure 42. Testing by probes conducted during the field investigation. View of a rafter exposed to the exterior.

Figure 43. Silo sitting on top of the stone retaining wall.

Figure 44. Vegetation cultivating in area immediately surrounding the barn.

Figure 45. Subgrade perimeter foundation at the west elevation.

Figure 46. Soiling at the base of the exterior siding.

Figure 47. Soiling at the base of the wood siding.
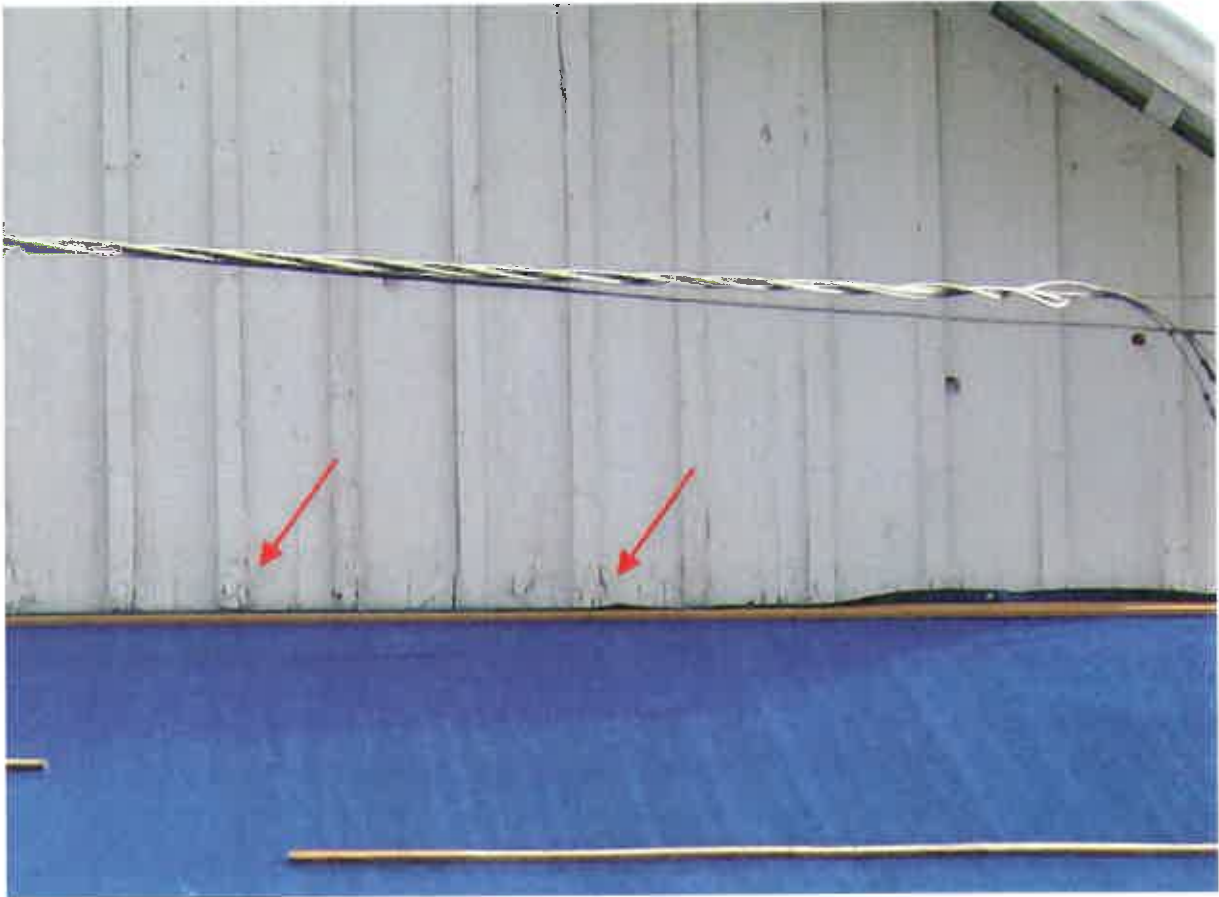
Figure 48. Deterioration in the area where the corrugated shed roof meets the exterior wood siding at the south elevation.

Figure 49. Bird nest found near the roof framing system at the exterior south elevation .

Figure 50. Expandable foam insulation used to fill gaps between exterior siding at the south elevation of the center aisle.

Figure 51. Typical gap between exterior siding.

Figure 52. Watermarks found throughout the interior face of the wood siding.

Figure 53. Typical surface deterioration from insect infestation at the timber posts.

Figure 54. Detail view of the surface deterioration caused by insect infestation.

Figure 55. Splits found on timber posts.

Figure 56. Deterioration at the roof framing system.

Figure 57. Surface deterioration showing separation of wood fibers at the hoist rail used to move the hay fork.

Figure 58. Typical deterioration of roof rafter ends.

Figure 59. Deterioration of sleepers at roof framing system.

Figure 60. Detail view of deterioration at sleepers.

Figure 61. Deterioration of roof framing system at the east aisle caused by pests.

Figure 62. Bird nest found nestled within roof framing system at the center aisle.

Figure 63. Deteriorated floorboards at the center aisle.

Figure 64. Water stains on the wood boards at the northeast corner of the center aisle. And old rail track stored on the fragile floorboards in the center aisle.

Figure 65. Deterioration of the roof framing system at the rear storage areas.

Figure 66. Hoist at the center aisle used to transfer hay in and out of the Fish Lower Barn. The hoist rides along the square beam hung from the ridge beam above.

Appendix C. Existing Conditions Drawings
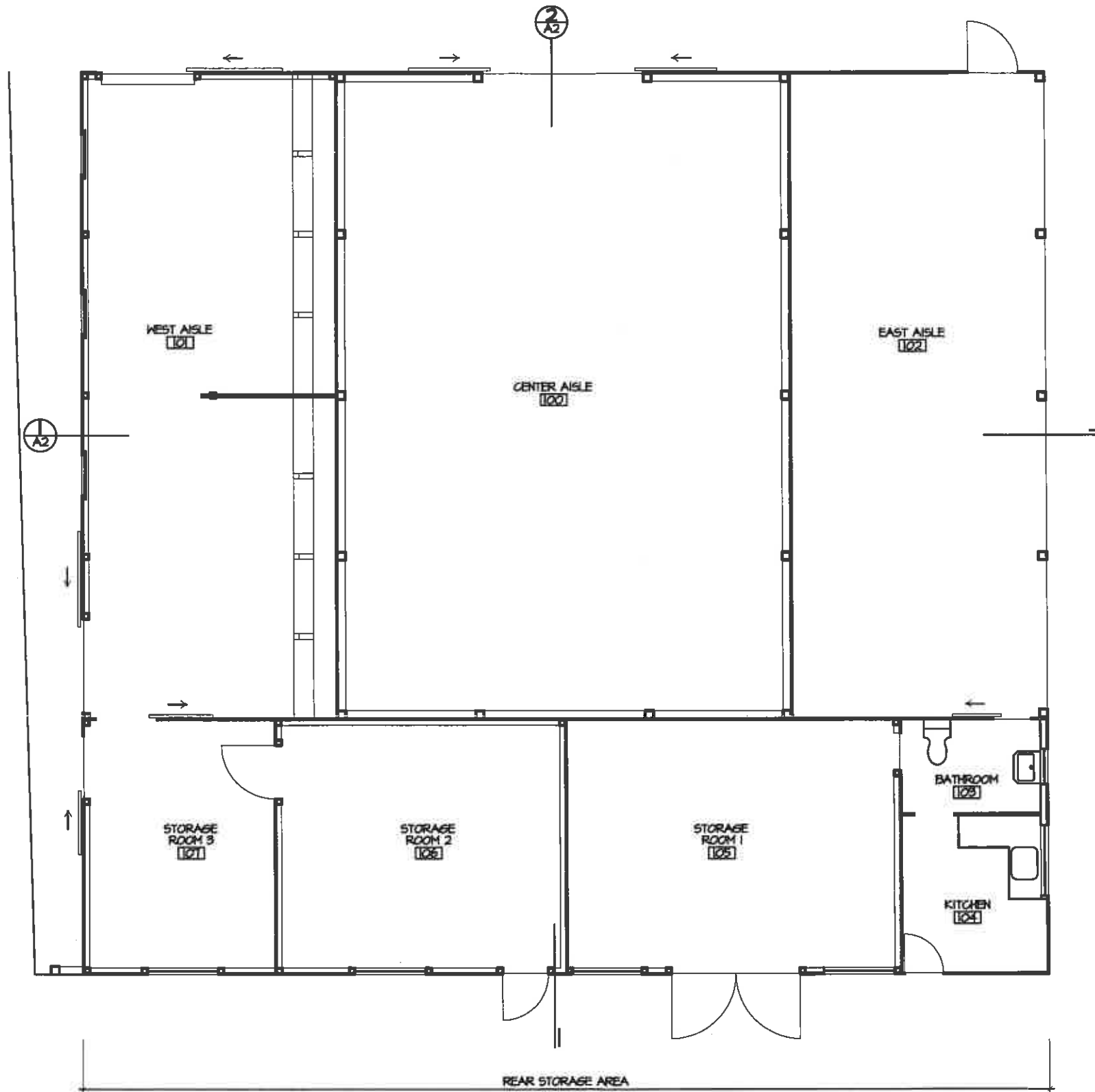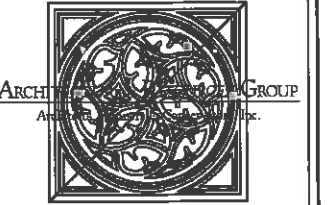
WEST AISLE
101

EAST AISLE
102

CENTER AISLE
100

BATHROOM
106

STORAGE ROOM 3
107

STORAGE ROOM 2
108

STORAGE ROOM 1
105

KITCHEN
104

REAR STORAGE AREA

PLAN
SCALE: 1/8" = 1'-0"

TRUE NORTH

PROJECT NORTH

NO.	DESCRIPTION	DATE

REVISIONS

FISH LOWER BARN

PALO CORONA REGIONAL PARK

HIGHWAY 1
CARMEL-BY-THE-SEA, CALIFORNIA

SHEET TITLE

PLAN

ISSUANCE
EXISTING CONDITIONS

DATE
MAY 20, 2007

PROJ. NO.
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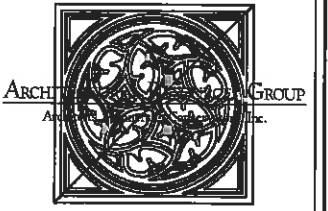
(4) HAY BEAM ←

WEST AISLE
101

CENTER AISLE
103

EAST AISLE
102

STORAGE
ROOM 3
107

STORAGE
ROOM 2
106

STORAGE
ROOM 1
105

BATHROOM
108

KITCHEN
104

REAR STORAGE AREA

PLAN
SCALE: 1/8" = 1'-0"

LEGEND

▬▬ WALLS
☐ COLUMNS
=== ROOF FRAMING ABOVE
▨ DETERIORATED WOOD FLOORBOARDS

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GENERAL PLAN NOTES

PLAN KEY NOTES

① DETERIORATED WOOD FLOORING SHOWN HATCHED
② DETERIORATED FLOOR JOISTS
③ DETERIORATED RAFTER ABOVE
④ DETERIORATED RAFTER TAIL ABOVE
⑤ DETERIORATED BEAM ABOVE
⑥ DAMAGED BARGE BOARD ABOVE
⑦ DETERIORATED POST
⑧
⑨
⑩
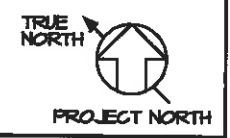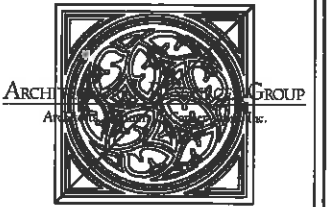
TRUE NORTH

PROJECT NORTH

NO.	DESCRIPTION	DATE

REVISIONS

FISH LOWER BARN

PALO CORONA REGIONAL PARK

HIGHWAY 1
CARMEL-BY-THE-SEA, CALIFORNIA

SHEET TITLE

CONDITIONS PLAN

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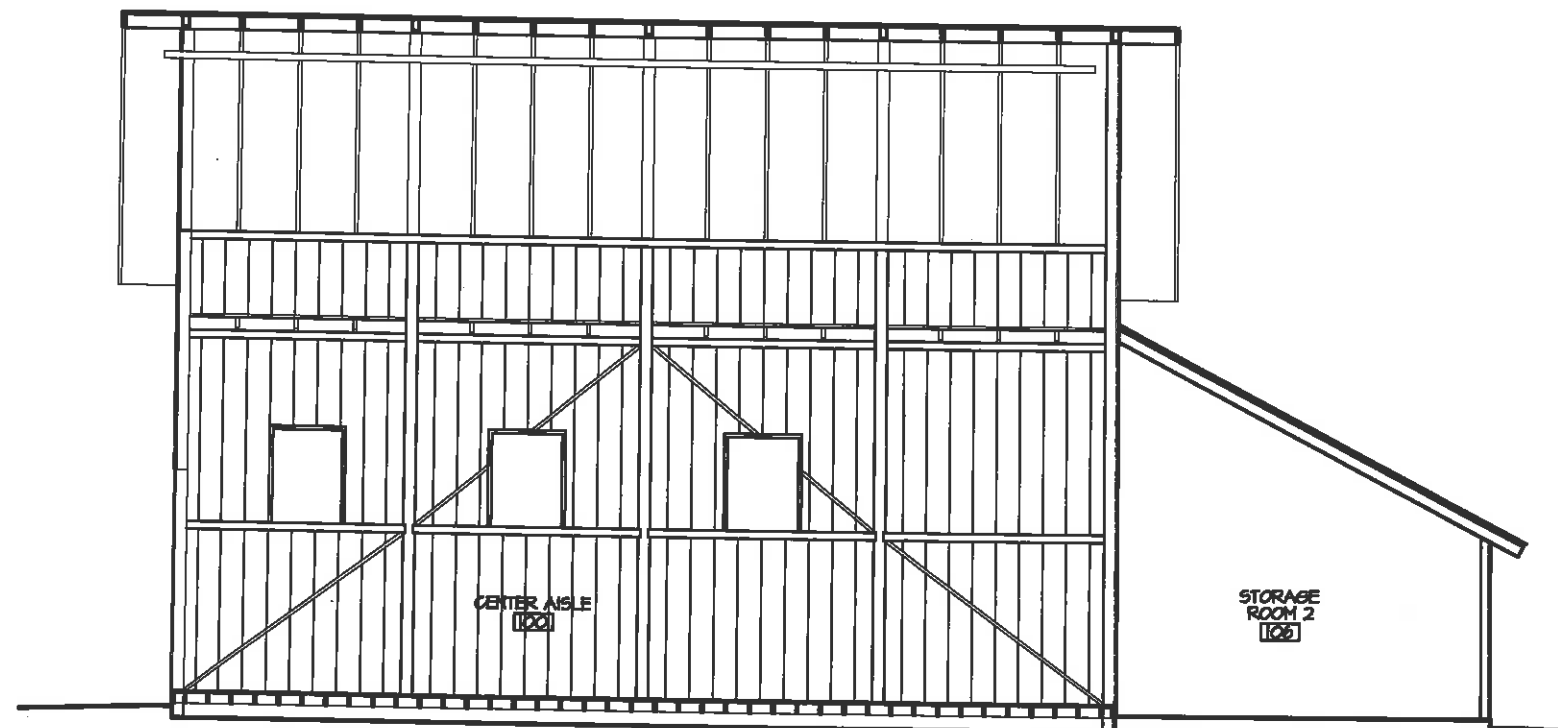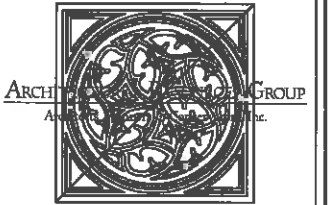
WEST AISLE
101

CENTER AISLE
100

EAST AISLE
102

2 **SECTION**
A2 SCALE: 1/8"= 1'-0"

CENTER AISLE
100

STORAGE
ROOM 2
108

NO.	DESCRIPTION	DATE

REVISIONS

FISH LOWER BARN

PALO CORONA REGIONAL PARK

HIGHWAY 1
CARMEL-BY-THE-SEA, CALIFORNIA

SHEET TITLE

SECTIONS

ISSUANCE
EXISTING CONDITIONS

DATE
MAY 20, 2007

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06196

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① NORTH ELEVATION
A3 SCALE: 1/8" = 1'-0"

② WEST ELEVATION
A3 SCALE: 1/8" = 1'-0"

ARCHITECTURAL RESOURCES GROUP
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REVISIONS

FISH LOWER BARN

PALO CORONA REGIONAL PARK

HIGHWAY 1
CARMEL-BY-THE-SEA, CALIFORNIA

SHEET TITLE

NORTH AND WEST ELEVATIONS

ISSUANCE

EXISTING CONDITIONS

DATE

MAY 20, 2007

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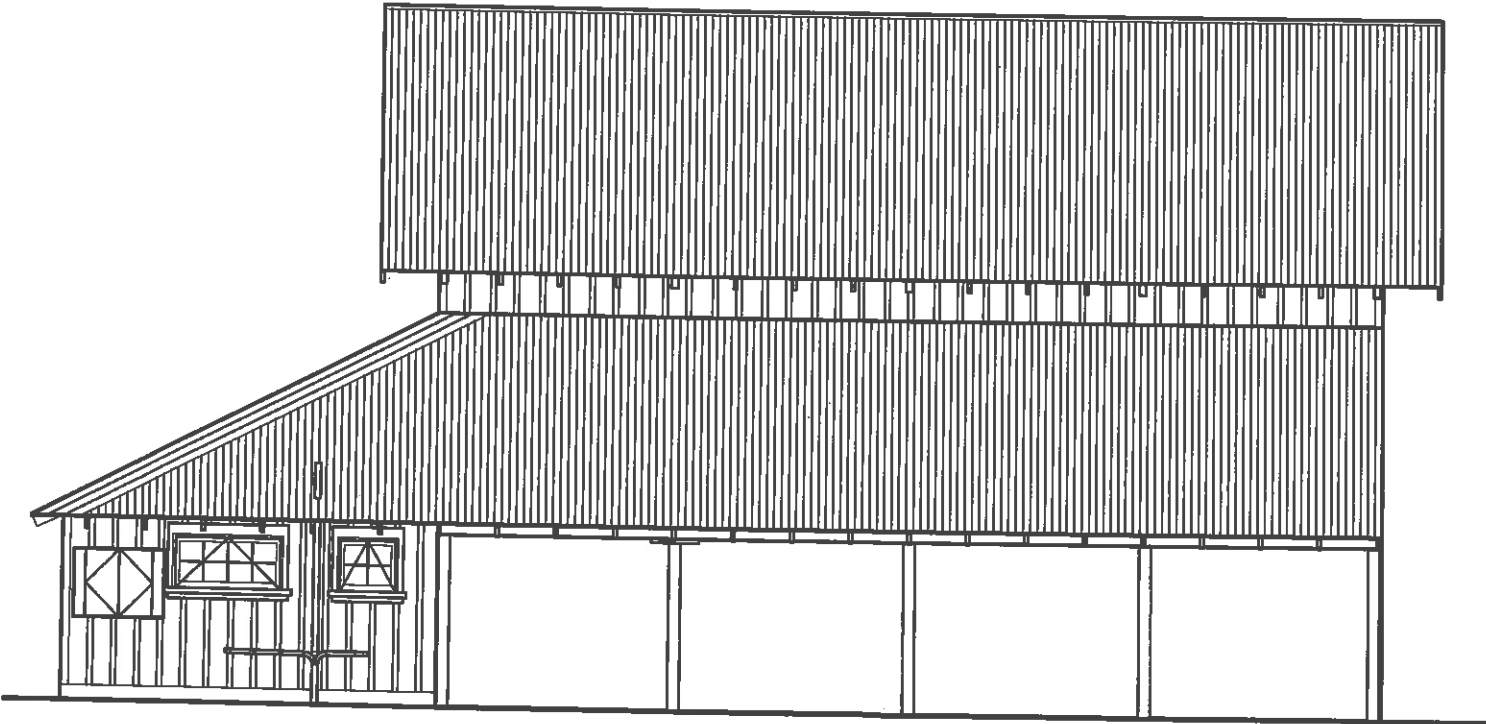
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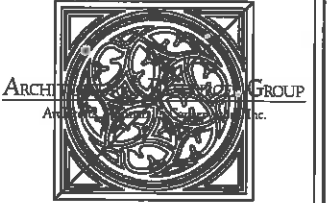
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NO.	DESCRIPTION	DATE
	REVISIONS	

FISH LOWER BARN

PALO CORONA REGIONAL PARK

HIGHWAY 1
CARMEL-BY-THE-SEA, CALIFORNIA

SHEET TITLE

SOUTH AND EAST ELEVATIONS

ISSUANCE
EXISTING CONDITIONS

DATE
MAY 20, 2001

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GDM

DRAWING NO.

A4.0

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Appendix D. Keith Abey Engineer Structural Assessment Report

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PRELIMINARY STURCTURAL EVALUATION AND STABILIZATION RECOMMENDATIONS FOR THE LOWER FISH BARN CARMEL BY THE SEA, CA

Introduction

The Lower Fish Barn is a single story wood framed agricultural storage building located on Highway 1 in Carmel by the Sea and originally built in 1929.

The purpose of this preliminary structural evaluation is to assess the structural condition of the referenced building and to make recommendations for structural stabilization and to provide roof access for insect abatement work. A second phase of this evaluation involves structural renovation required for change of use occupancy that will provide life safety protection in the event of a major earthquake.

This evaluation has been performed based on a visual inspection of the buildings from our March 2007 site visit and on engineering experience with other similar structures. Limited material sampling of wood decay was performed and no existing finishes were removed. Recommendations included in this report are based on the California State Historical Building Code, however these recommendations are preliminary and a more detailed analysis and will be required to prepare construction documents for the scope of work outlined.

Barn Structure

The barn structure consists of a truss framed main storage area with plan dimensions of 28.5 ft by 40 ft. The roof of this main section is 29 ft high at the peak and consists of a corrugated metal roof attached to 1x sleepers at 24 inch centers. The sleepers are supported by 2x6 full dimension rafters at 24 inch centers spanning from the exterior walls to a central 4x6 ridge member. This ridge member is then supported by wood trusses at 10 foot centers.

The roof trusses bear on 6x6 wood posts that extend full height. The wall structure consists of 4x6 beams running between posts at approximately 8 foot centers vertically. Siding consists of 1x board and baton that is attached between wood beams to form the exterior walls. Each longitudinal wall contains 2 -2x4 let-in braces between posts and beams.
The floor structure consists of 2x6 joists at 16 inch centers supporting 1x floor sheathing.

There are storage areas at the rear and on both sides of the main building with shed roofs that meet the exterior wall of the main building section approximately 3ft below the upper eave line on each side forming a rake wall on the two long sides of the barn. The rear shed roof meets the side sheds in roof hips.

The typical shed roof consist of 2x6 rafters at 24" these rafters are supported by a horizontal 4x6 beam between the 6x6 columns of the main building. The side shed roof also have carpenters trusses at 10 foot centers, cycling with the existing main building posts, 1x6 bottom chords and one diagonal kicker form these trusses.

At the west shed, these trusses also provide support for existing partial height horse stalls. The exterior wall of the west shed consists of post and beam framing with 1x board and baton siding. This shed was used as the horse stable and has a dirt floor that extends above the wood sill.

The east shed is a machine storage area with a newer concrete slab on grade and only 6x6 posts at 10 ft centers supporting the exterior roof beam.

The rear shed has a more conventional stud wall at the exterior with 1x siding board and baton siding and a concrete slab at grade. The upper end of the rear shed is supported at the rear pediment wall on a 4x6 vertical beam between 6x6 vertical posts.

Structural Condition

Insect damage was observed at a number of locations in the main structure and the sheds. Surface probing and limited core samples indicated that the termite damage was largely limited to the outer surface of the wood members. With the exception of shed roof rafters noted on the roof plan Sketch 1, the remainder of the wood framing members retain approximately 75% of the original capacity. Preliminary roof framing and truss analysis has been performed based on this 75% design capacity.

Wood siding appeared to be in generally fair condition. The boards and batons have separated in some places especially on the upper areas of the south wall. This upper siding was not assessable, and may have been more deteriorated.

Wood floor members are in close contact with grade and although most floor framing could not be observed, the existing floor appeared to be soft in places and showed signs of deterioration. There appears to be a continuous footing around the perimeter of the structure, however the top of this footing is close to and in some cases below grade. The existing wood sills are deteriorated in most places where there is wood to soil contact and no sill bolting of the foundation was observed.

Recommendations.

Stabilization for Pest Control Access

It is my understanding that the referenced structure will be tented for insect abatement and that roof access will be required to perform this tenting. Analysis of the existing truss framing indicates that three 6x8 sleepers placed between existing truss chords in four even spaces from the exterior wall to the roof ridge will provide support for a working platform able to support live loads of tenting construction. Details for this sleeper attachment are included in this report.

Structural Improvements for Change of Occupancy Upgrades.

The following recommendations are intended to provide structural improvements based on the California Unified Code of Building Conservation which provides life safety design for earthquake and wind loading required for change of occupancy uses.

Preliminary analysis of the existing roof trusses indicates that the trusses in their current damaged condition are approximately 30% over stressed for code required dead and full roof live loads. Also because these trusses do not have a true bottom chord, they resist gravity loads by thrust action at the bottom kicker against 6x6 posts and the shed roof diaphragms. To increase truss capacity and reduce the thrust effects on the shed roof sections I recommend installing at rod tie between the intersections of the top and bottom truss chords as shown on sketches 6 and 11. This tie rod will reduce the bending forces on the top chord and also reduce the axial load in the bottom chord.

The existing wood floor is very close to grade and existing wood posts are also in close proximity to grade. I recommend removing the existing floor sheathing and joist and placing a concrete slab with thickened edge footings under the main structure. Wood sleepers can then be placed on this slab and new flooring can then be installed. Alternately, the existing floor sheathing may be saved and reinstalled. Using a concrete slab on grade will save excavation required for a crawlspace and can provide a waterproof barrier for the wood floor. The thickened edge of the slab will provide foundation support for the existing wood posts and exterior walls. Details for shoring and placement of this slab are shown on Sketches 8-10. Grade at the horse stables is also at or above the wood sill at the exterior wall. I recommend that grade be lowered on both the interior and exterior sides of this wall to prevent moisture damage at the wood sill.

Board and baton siding can be stapled at the baton overlap to provide additional shear strength to resist wind and earthquake loads. Walls to be used as shear walls will also require new wood sills as well as blocking at the shed roof connection and the high roof to wall connection.

The open, west wall of the main structure will be braced using the existing wood diagonal let in braces. The connection of these braces to the wood posts and wood diaphragm will be improved using metal connectors on the shed side of this wall. The extent of wall reinforcement is shown on Sketch 4.

It is my understanding that the proposed roof will be a wood shake roof with skip sheathing support. The roof diaphragm should be reinforced in order to transfer wind and earthquake loads to the new shear walls. This diaphragm reinforcement could consist of 1x diagonal braces running under the existing 2x rafters and connecting to the exterior walls at the existing top wall beams. Alternately, 1/8" steel strap diagonals may be placed on top of the 1x sheathing and attached with screws to the sheathing from above. Roofing material could then be placed over the strap and skip sheathing. This steel strapping connection may be preferable because connections will be concealed above the roof sheathing.. This reinforcement will also be required at the side shed roofs in order to transfer the truss trust action to the existing end walls.

6X6 SLEEPERS
ABOVE ROOF
AS REQ'D FOR
INSECT ABATEMENT
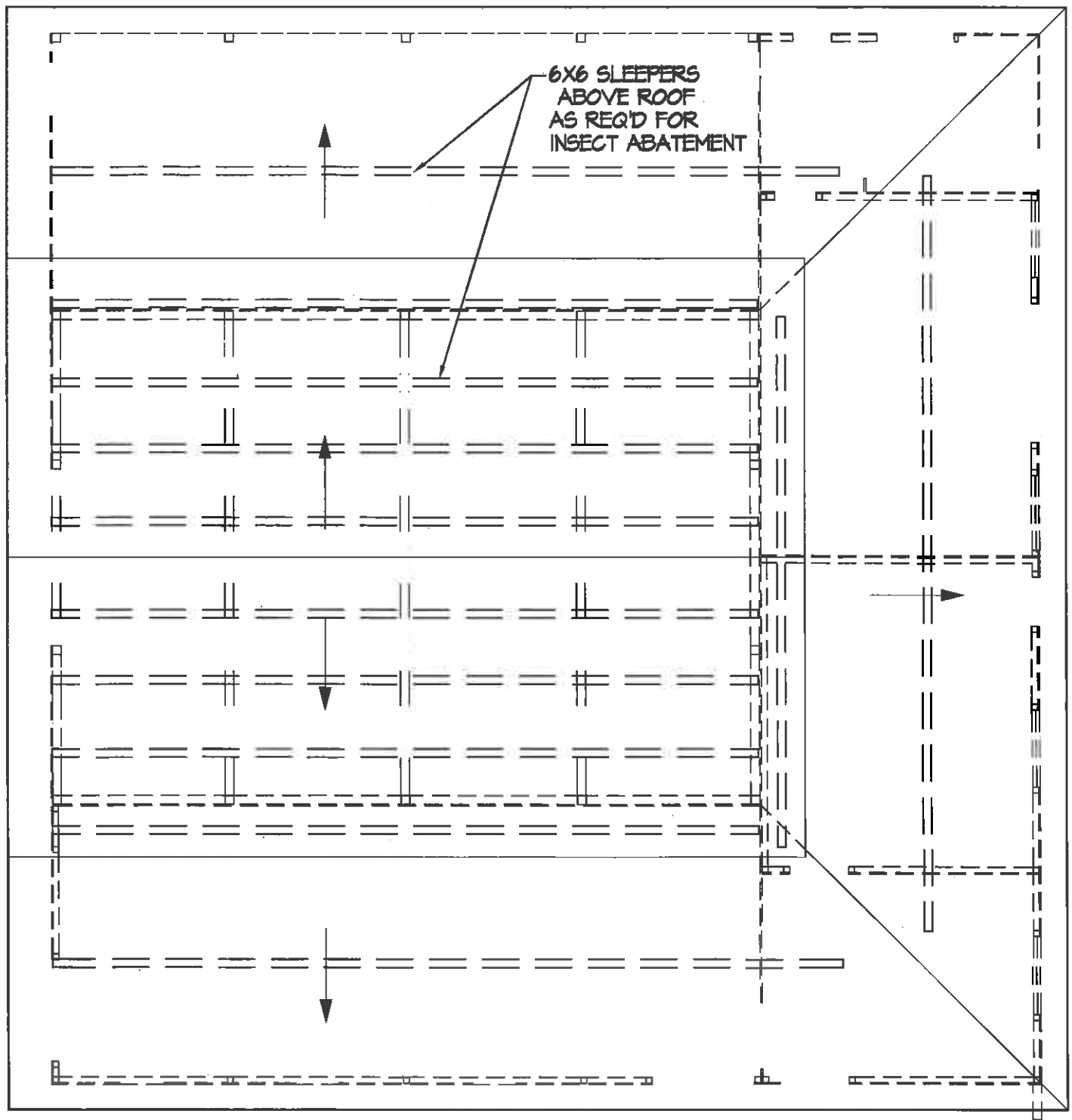
LOWER FISH BARN	Sketch - 1 SLEEPERS FOR ROOF ACCESS May 11, 2007	Keith Abey Structural Engineer 446 17th Street, Oakland (510) 595-8265

6X6 SLEEPER AS REQUIRED FOR INSECT ABATEMENT ACCESS

(E) WOOD TRUSSES
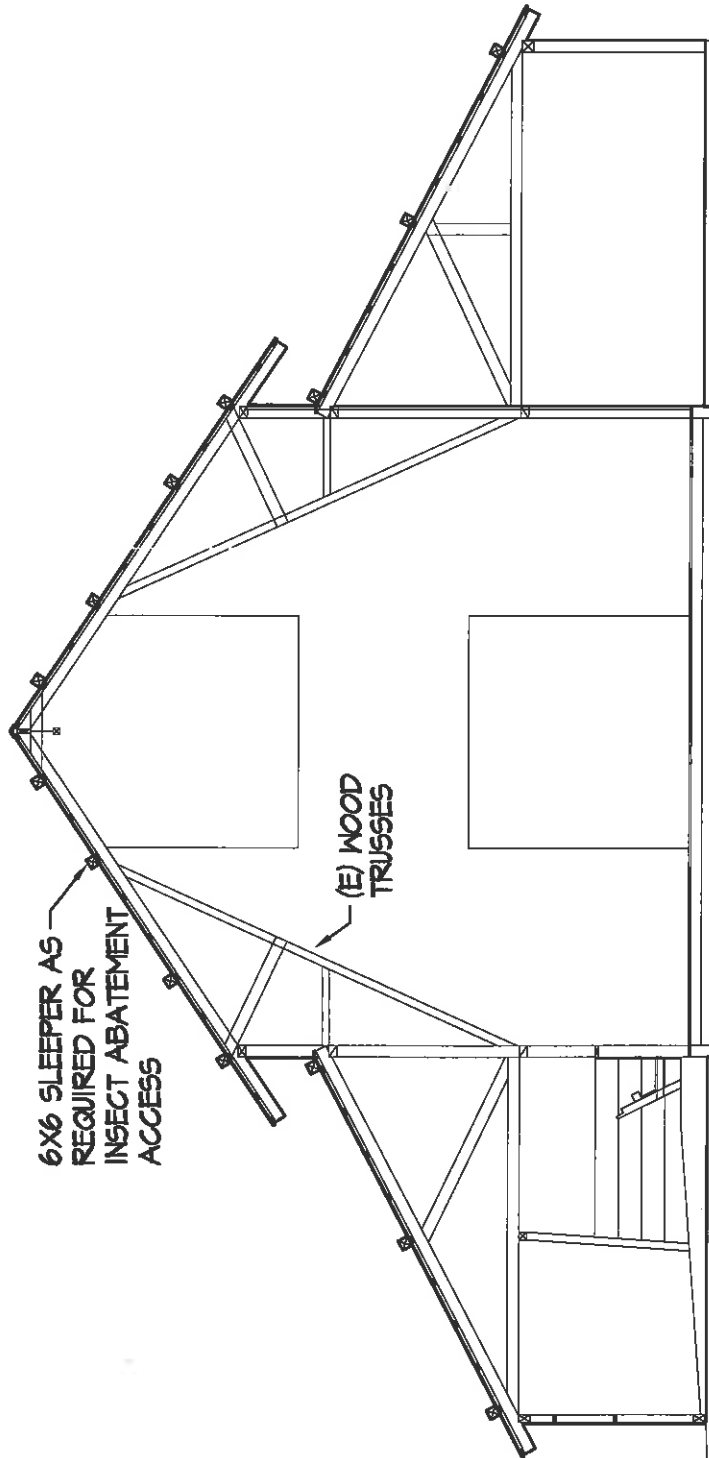
LOWER FISH BARN

Sketch - 2
ROOF ACCESS SLEEPERS

May 11, 2007

Keith Abey
Structural Engineer
446 17th Street, Oakland
(510) 595-8265

(E) TOP CHORD

⅝" LAG X12"
SLEEPER TO TRUSS
CYCLE W/ (E) 2X

BLK SHAPE AT
CORRIGATED ROOFING
TO BEAR ON 2X BELOW

(E) BOTT
CHORD
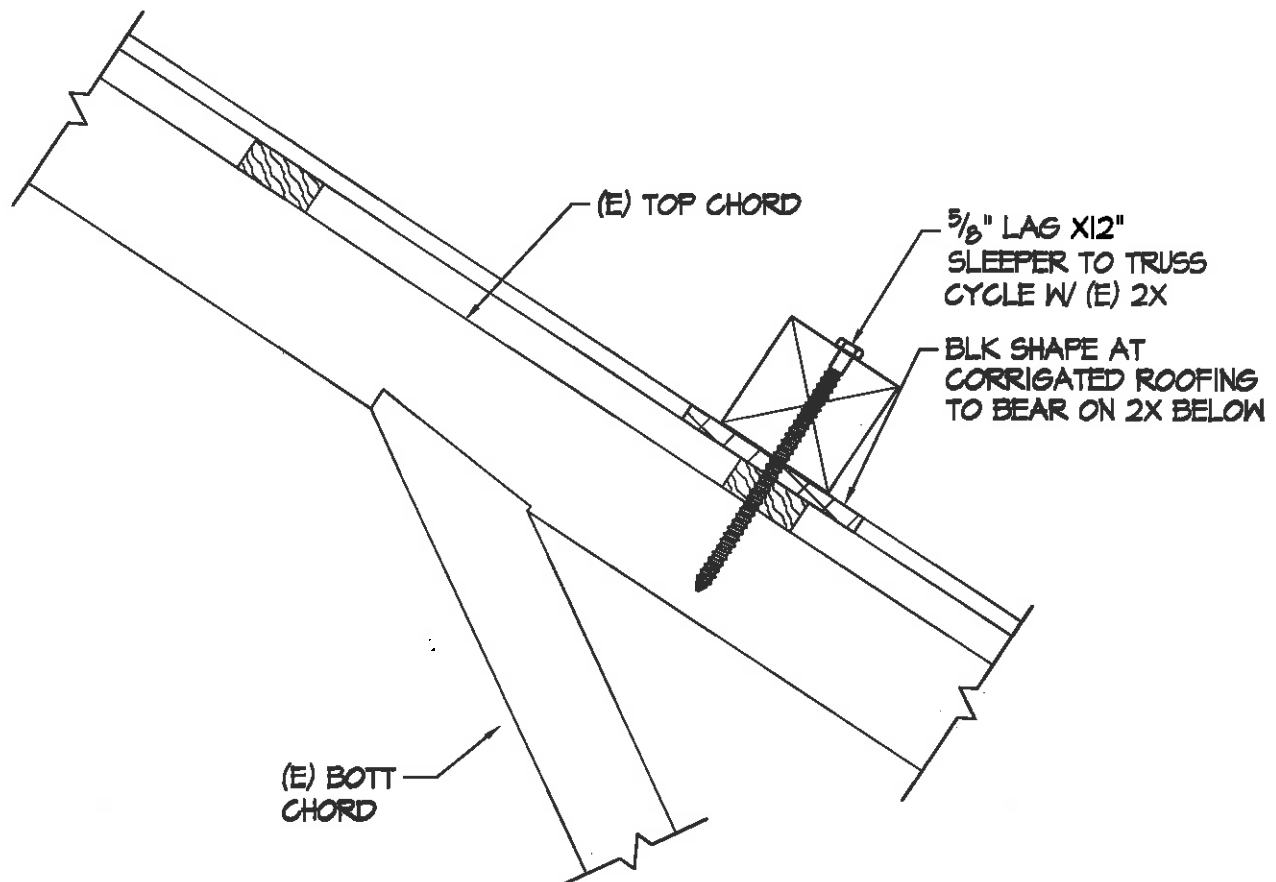
LOWER FISH BARN	Sketch - 3 ROOF ACCESS SLEEPER May 11, 2007	Keith Abey Structural Engineer 446 17th Street, Oakland (510) 595-8265

STAPLE BOARDS
AND BATONS

(N) REINFORCED
CONCRETE SLAB
WITH THICKENED EDGE
UNDER (N) OR (E) WOOD FLOOR

STAPLE BOARDS
AND BATONS

STAPLE BOARDS
AND BATONS

(E) FTG

LOWER (E) GRADE AT (E) WOOD WALL

STAPLE BOARDS
AND BATONS
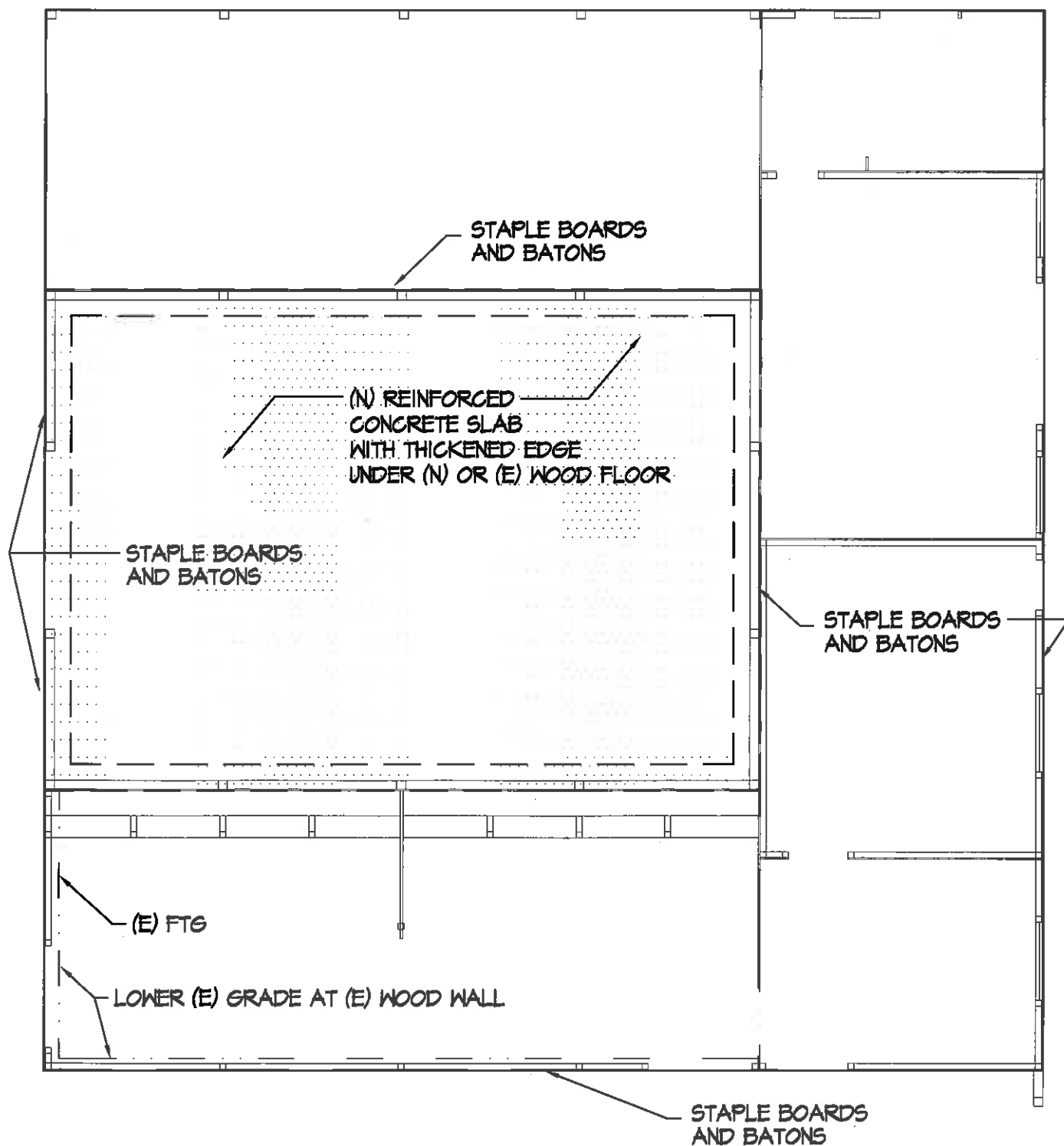
| LOWER FISH BARN | Sketch - 4 FOUNDATION REINFORCMENT PLAN May 11, 2007 | Keith Abey Structural Engineer 446 17th Street, Oakland (510) 595-8265 |

WOOD OR
STEEL STRAP
BRACING AT ROOF

(E) ROOF
TRUSSES
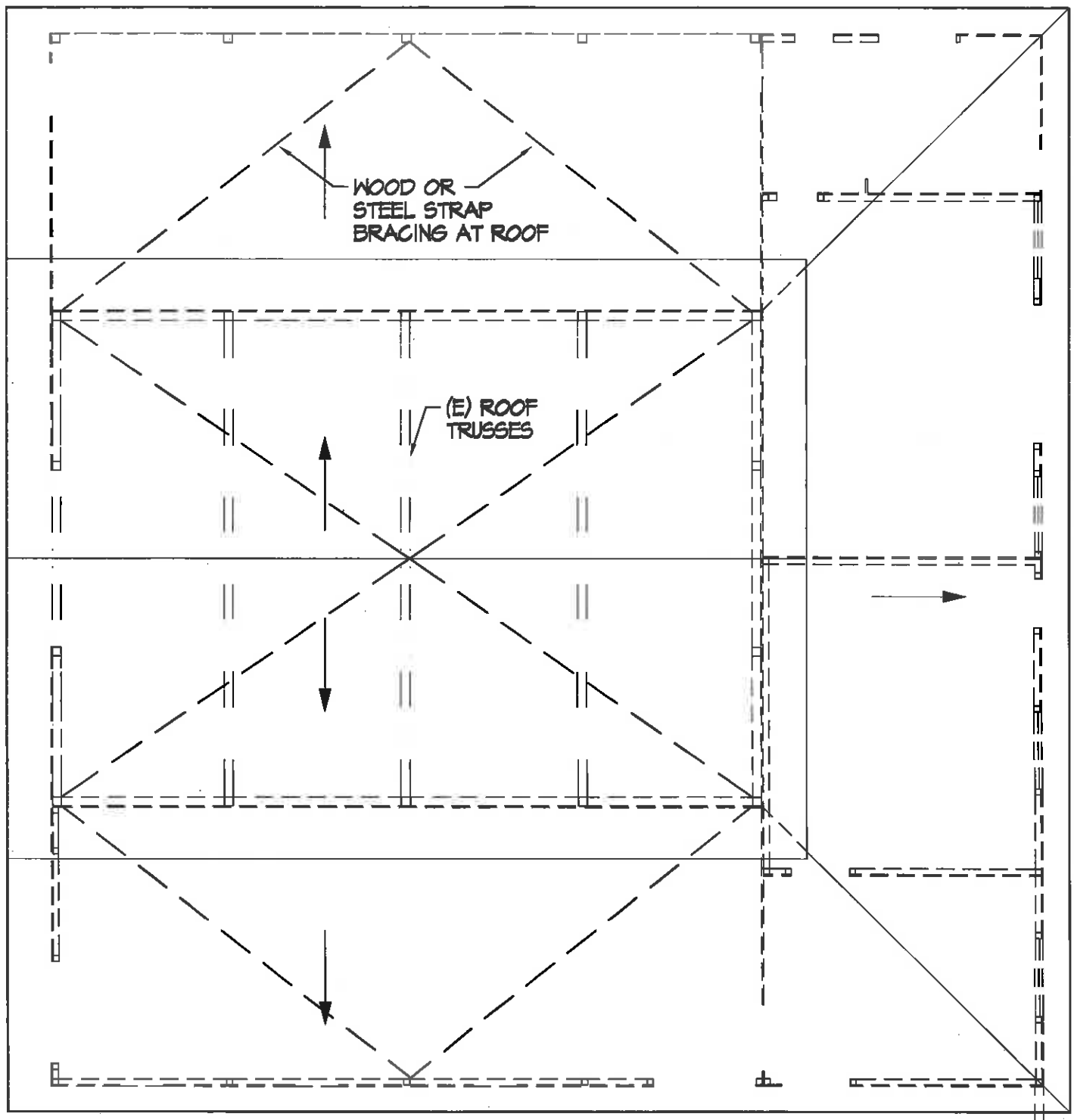
| LOWER FISH BARN | Sketch - 5 ROOF DIAPRHAM REINFORCMENT PLAN May 11, 2007 | Keith Abey Structural Engineer 446 17th Street, Oakland (510) 595-8265 |

(E) CONC SLAB TO REMAIN

THICKENED SLAB AT (E) BEARING WALL

TIE ROD AT TRUSS TYP

CONC SLAB UNDER 2X SLEEPERS

(N) OR (E) FLOORING

GRAVEL FILL UNDER SLAB AS REQD

(E) FTG LOWER GRADE 6" AT HORSE STABLE
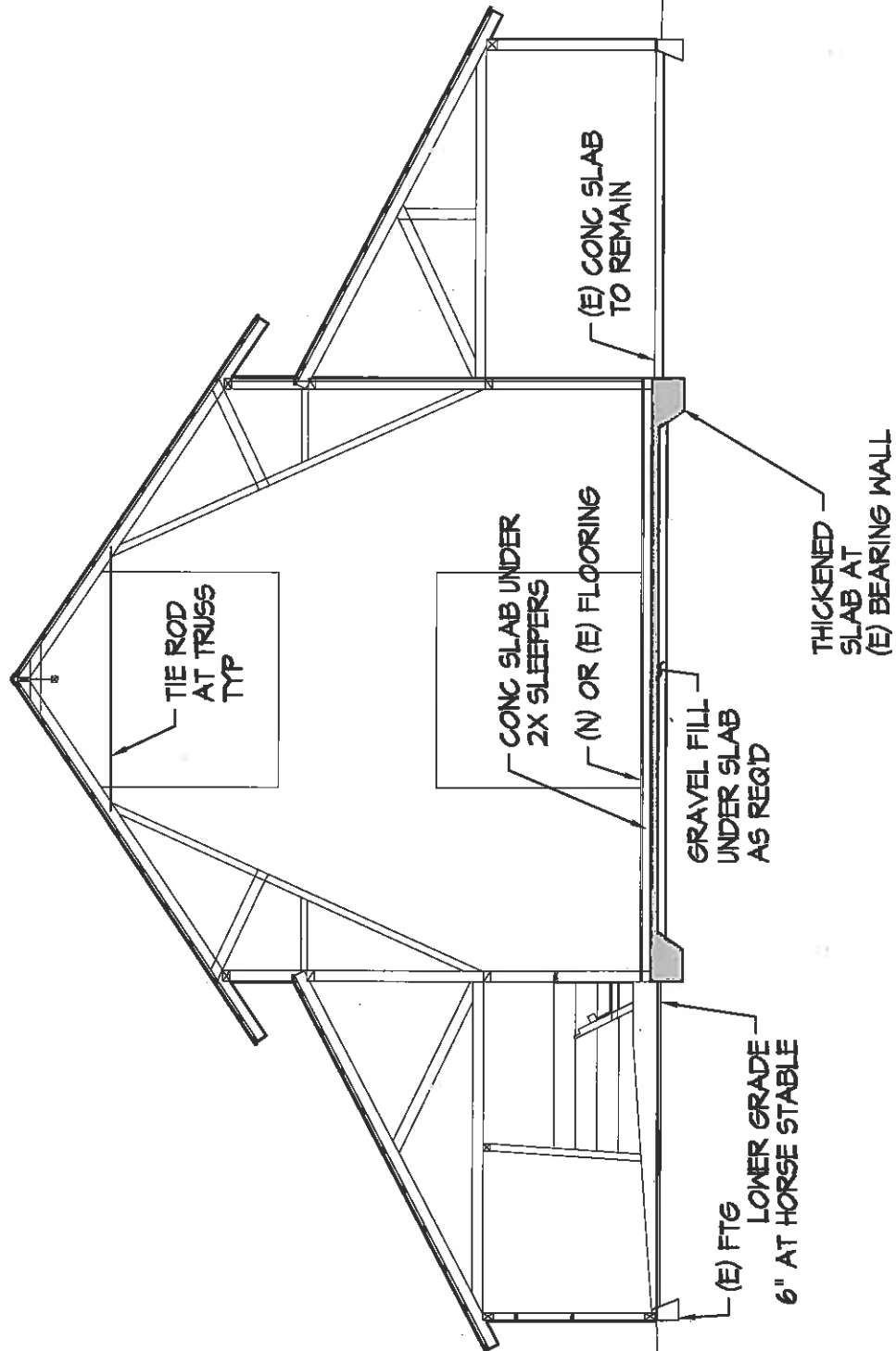
| LOWER FISH BARN | Sketch - 6 TRANSVERSE SECTION

May 11, 2007 | Keith Abey
Structural Engineer
446 17th Street, Oakland
(510) 595-8265 |

THICKENED
SLAB AT
(E) BEARING WALL

(E) 6x6 COL

CONC SLAB UNDER
2X SLEEPERS

REINFORCE
BRACE CONN
AT WEST WALL
TYP EA END

(E) CONC SLAB
TO REMAIN

(E) 6X6 POST

4X SHORING
EA SIDE W/ THRU BOLTS

4X6 POST
ONTO CRIBBING

(E) 6X6 POST

PB66 POST BASE

BLOCK OUT
IN SLAB FOR
SHORING

(N) CONC SLAB
W/ THICKENED
EDGE
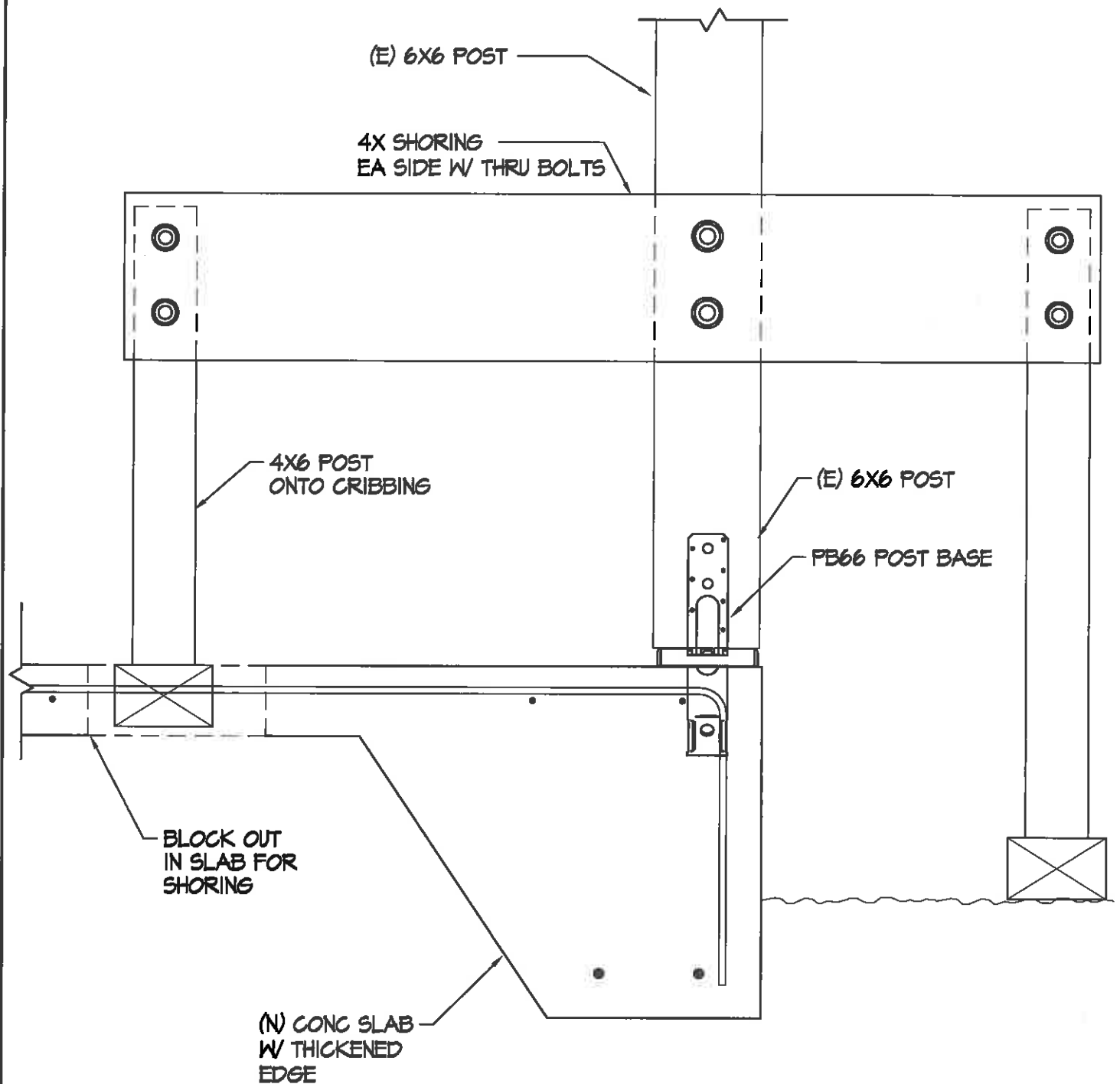
LOWER FISH BARN	Sketch - 8 POST SHORING	Keith Abey Structural Engineer
	May 11, 2007	446 17th Street, Oakland (510) 595-8265

(N) OR (E) FLOOR
SHEATHING

2X P.T. SLEEPERS
TO (N) CONC SLAB

(E) 6X6 POST

PB66 POST BASE

(N) CONC SLAB
W/ THICKENED
EDGE

Appendix E. Preliminary Budget Estimate

The following is a preliminary budget estimate for the recommended treatment repairs and code upgrade work described in this report.

Fish Lower Barn

Palo Corona Regional Park, Carmel-by-the-Sea, CA

Conceptual Estimate

Historic Structure Report   December 21, 2007

Item	Quantity	Unit	Unit Cost	TOTAL
Repair				
1. Stabilization of Roof Framing				
Temporary 6x6 sleepers	793	lf	$10.00	$7,930
Install and remove temp. work platform on sleepers at roof	3,792	sf	$3.50	$13,272
				$21,202
1. Stabilization of Roof Framing	**6,795**	**sf**	**$3.12**	**$21,202**
2. Pest Control				
2. Pest Control				
3. Stabilization of Floor Area				
New temporary plywood over existing floor	192	sf	$2.50	$480
				$480
3. Stabilization of Floor Area	**6,795**	**sf**	**$0.07**	**$480**
4. Strengthen Roof Framing				
Brace roof framing with diagonal strap or blocks and tie rods at trusses.				
Scaffold or lift for access	2,000	bgt	$1.00	$2,000
3/4" Tie rods at trusses	3	ea	$300.00	$900
Blocking and/or strapping at roof diagonals	168	lf	$7.50	$1,260
				$4,160
4. Strengthen Roof Framing	**2,400**	**sf**	**$1.73**	**$4,160**
5. Roofing				
Replace roofing with fire treated wood shingles				
Roofing demo	5,040	sf	$1.50	$7,560
Repairs to skip sheathing	300	sf	$3.00	$900
Fire treated shingles	5,040	sf	$8.00	$40,320
				$48,780
5. Roofing	**5,040**	**sfrf**	**$9.68**	**$48,780**
6. Repair Timber and Wood Surface Decay				
Epoxy repairs				
Repair or replace deteriorated post	3	ea	$350.00	$1,050
Repair or replace deteriorated rafters	6	ea	$500.00	$3,000
Replace deteriorated barge board	2	ea	$250.00	$500
Replace deteriorated sleeper at rafter tails	45	lf	$10.00	$450
Misc. epoxy repairs at surface deterioration	3,500	bgt	$1.00	$3,500
Repair or replace deteriorated rafter tails	14	ea	$250.00	$3,500
				$12,000

Fish Lower Barn
Palo Corona Regional Park, Carmel-by-the-Sea, CA

Conceptual Estimate
Historic Structure Report   December 21, 2007

Item	Quantity	Unit	Unit Cost	TOTAL
6. Repair Timber and Wood Surface Decay				**$12,000**
7. Repair Base and Exterior Siding				
Repairs to redwood siding & base where failing	350	sf	$10.00	$3,500
				$3,500
7. Repair Base and Exterior Siding				**$3,500**
8. Refinish Paint at Exterior				
Repair & refinish wood siding, bases and flashing				
Misc. repairs to siding & base	2,500	bgt	$1.00	$2,500
Fill staple holes, prep and paint	5,425	sf	$3.75	$20,344
Add for exisiting lead paint conditions	5,425	sf	$0.50	$2,713
				$25,556
8. Refinish Paint at Exterior	**5,425**	**sfwl**	**$4.71**	**$25,556**
9. Install Flashing South Roof to Wall Joint				
Remove expansion foam at upper wall	110	lf	$3.00	$330
Flashing joint with upper roof	110	lf	$5.00	$550
				$880
9. Install Flashing South Roof to Wall Joint				**$880**
10. Improvement of Site Drainage				
Excavate and level perimeter of building	2,500	sf	$1.50	$3,750
3" Gravel base at perim. as path and splash protection	15	cy	$150.00	$2,250
French drains at perimeter	240	lf	$25.00	$6,000
				$12,000
10. Improvement of Site Drainage	**2,500**	**sf**	**$4.80**	**$12,000**
11. Removal of Vegetation at Perimeter of Building				
Clear vegetation from perimeter	2,500	sf	$0.50	$1,250
				$1,250
11. Removal of Vegetation at Perimeter of Building	**2,500**	**sf**	**$0.50**	**$1,250**

Upgrade

1. Strengthen Wall Framing
Diagonal braces at 3 walls, staple siding

Item	Quantity	Unit	Unit Cost	TOTAL
Diagonal braces	140	lf	$10.00	$1,400
Staple siding to existing framing	5,425	sf	$0.50	$2,713

Fish Lower Barn

Palo Corona Regional Park, Carmel-by-the-Sea, CA

Conceptual Estimate

Historic Structure Report

December 21, 2007

Item	Quantity	Unit	Unit Cost	TOTAL
				$4,113
1. Strengthen Wall Framing	**5,425**	**sfwl**	**$0.76**	**$4,113**
2. Strengthen Floor Framing				
Replace Center aisle floor framing & post bases with concrete slab and footing. Salvage and reinstall flooring with some new.				
Salvage center aisle flooring and demo framing — all of center aisle	1,100	sf	$3.00	$3,300
Shoring at 6x6 posts	13	loc	$125.00	$1,625
Hand excavation for thickened slab	5	cy	$250.00	$1,250
Base course at slab	1,100	sf	$1.00	$1,100
Blockouts for cribbing	13	ea	$35.00	$455
Thickened slab edge: incl, form, rebar & concrete	134	lf	$40.00	$5,360
New 5" slab incl. rebar,	1,100	sf	$6.00	$6,600
Post bases	13	ea	$20.00	$260
Anchor bolts	54	ea	$12.50	$675
New PT sill	122	lf	$3.75	$458
Remove and reattach siding at new sills	122	lf	$5.00	$610
Purchase new 1 1/2" T&G fir flooring to match damaged	250	sf	$10.00	$2,500
Replace salvaged floor, install on new sleepers	1,100	sf	$7.00	$7,700
				$31,893
2. Strengthen Floor Framing	**1,100**	**sf**	**$28.99**	**$31,893**
3. Fire and Life Safety				
A. Exit Sign Illumination				
Illuminated exit signs and wiring	8	ea	$500.00	$4,000
				$4,000
B. Smoke Alarm				
Smoke alarm devices and wiring	8	ea	$350.00	$2,800
				$2,800
C. Fire Sprinkler				
Fire sprinklers throughout	3,260	sf	$3.25	$10,595
				$10,595
3. Fire and Life Safety	**3,260**	**sf**	**$5.34**	**$17,395**
4. Additional Means of Egress at Center Aisle				
Exit to east aisle				
New exterior door	2,500	bgt	$1.00	$2,500
Reconfigure for door	2,000	bgt	$1.00	$2,000
				$4,500
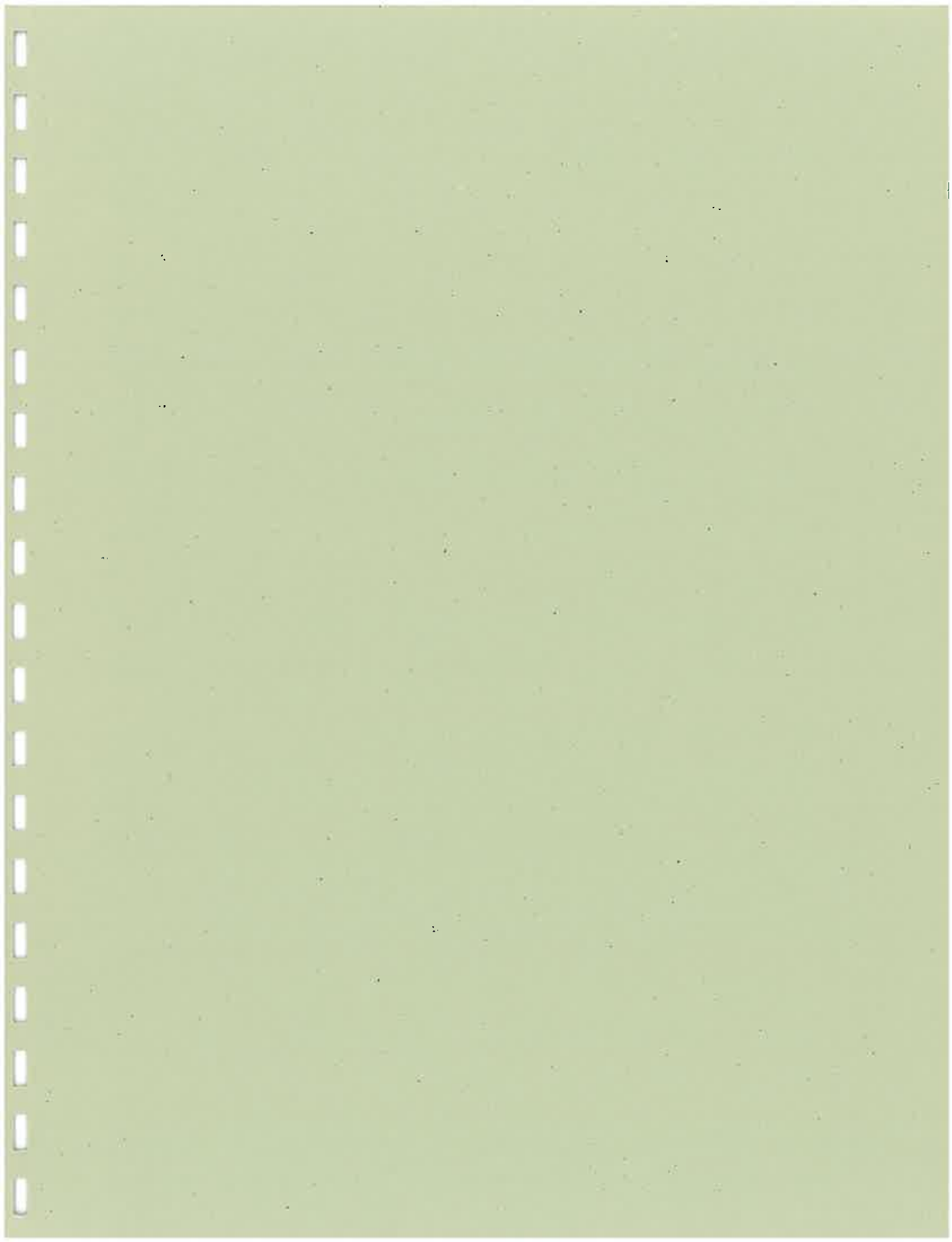
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Appendix C

Special Status Species Evaluation Tables

Special Status Plant Species in the Regional Vicinity (12 Quad) of the General Development Plan Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Abies bracteata bristlecone fir	None/None G2G3/S2S3 1B.3	Lower montane coniferous forest, broadleafed upland forest, chaparral, riparian woodland. Rocky sites in Monterey and San Luis Obispo counties. Sometimes serpentine. 150-1465 m. perennial evergreen tree.	Low Potential	Suitable habitat on rocky slopes are likely to be present in the park, but there are no known occurrences within 5 miles.	Coast Redwood Forest Monterey Pine Forest Riparian Woodland
Agrostis lacuna-vernalis vernal pool bent grass	None/None G1/S1 1B.1	Vernal pools. In mima mound areas or on the margins of vernal pools. 125-150 m. annual herb. Blooms Apr-May	Low Potential	Vernal pools are present, but there are no known occurrences within 5 miles.	Wetland Native and Annual Grasslands
Allium hickmanii Hickman's onion	None/None G2/S2 1B.2	Closed-cone coniferous forest, chaparral, coastal scrub, coastal prairie, cismontane woodland. Sandy loam, damp ground and vernal swales; mostly in grassland though can be associated with chaparral or woodland. 5-200 m. perennial bulbiferous herb. Blooms Mar-May	Moderate Potential	Suitable habitats are present and there are 14 known occurrences within 5 miles. These occurrences are all from north of the Carmel River.	All
Arctostaphylos edmundsii Little Sur manzanita	None/None G2/S2 1B.2	Coastal bluff scrub, chaparral. Forming mounds on sandy terraces on ocean bluffs. 30-95 m. perennial evergreen shrub. Blooms Nov-Apr(May)	Moderate Potential	Suitable habitats are present and there are 2 known occurrences within 5 miles.	Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	None/None G3T2/S2 1B.2	Chaparral, coastal scrub, closed-cone coniferous forest, cismontane woodland. Sandy soils, sandy shales, sandstone outcrops. 30-550 m. perennial evergreen shrub. Blooms Jan-Jun	Present	Four known occurrences within the Park (#13, 11, 12, and 15)	Coast Redwood Forest Monterey Pine Forest Riparian Woodland Coastal Terrace Prairie Coastal Chaparral/ Scrub Maritime Chaparral
Arctostaphylos montereyensis Toro manzanita	None/None G2?/S2? 1B.2	Chaparral, cismontane woodland, coastal scrub. Sandy soil, usually with chaparral associates. 45-765 m. perennial evergreen shrub. Blooms Feb-Mar	Moderate Potential	Suitable habitats are present and there are 4 known occurrences within 5 miles. These occurrences are all from north of the Carmel River.	Coast Redwood Forest Monterey Pine Forest Riparian Woodland Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Arctostaphylos pajaroensis Pajaro manzanita	None/None G1/S1 1B.1	Chaparral. Sandy soils. 30-155 m. perennial evergreen shrub. Blooms Dec-Mar	Moderate Potential	Suitable habitats with sandy soils are present and there are 2 known occurrences within 5 miles. These occurrences are from north of the Carmel River.	Coastal Chaparral/Scrub Maritime Chaparral
Arctostaphylos pumila sandmat manzanita	None/None G1/S1 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal dunes, coastal scrub. On sandy soil with other chaparral associates. 3-210 m. perennial evergreen shrub. Blooms Feb-May	Moderate Potential	Suitable habitats are present and there are 9 known occurrences within 5 miles. These occurrences are all from north of the Carmel River.	Coastal Chaparral/Scrub Maritime Chaparral
Arenaria paludicola Marsh sandwort	Endangered/ Endangered G1/S1 1B.1	Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m. perennial stoloniferous herb. Blooms May-Aug	Low Potential	Wetlands are present, but there are no known occurrences within 5 miles.	Wetland
Astragalus tener var. tener alkali milk-vetch	None/None G2T2/S2 1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 m. annual herb. Blooms Mar-Jun	Low Potential	Vernal pools are present, but alkali soils may not be, and there are no known occurrences within 5 miles.	Wetland Native and Annual Grasslands Coastal Terrace Prairie
Astragalus tener var. *titi* coastal dunes milk-vetch	Endangered/ Endangered G2T1/S1 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie. Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace. 1-45 m. annual herb. Blooms Mar-May	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Bryoria spiralifera twisted horsehair lichen	None/None G3/S1S2 1B.1	North coast coniferous forest. Usually on conifers. 0-30 m. fruticose lichen (epiphytic).	High Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from Point Lobos, just west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest Riparian Woodland Oak woodland Maritime Chaparral Hardwood Forest
Carex obispoensis San Luis Obispo sedge	None/None G3?/S3? 1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Usually in transition zone on sand, clay, serpentine, or gabbro. In seeps. 5-845 m. perennial herb. Blooms Apr-Jun	Low Potential	Suitable habitats and sandy and clay soils are present, but there are no known occurrences within 5 miles.	All

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Carlquistia muirii Muir's tarplant	None/None G2/S2 1B.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest. Crevices of granite ledges and dry sandy soils. 1185-2500 m. perennial rhizomatous herb. Blooms Jul-Aug(Oct)	Low Potential	Suitable habitats and sandy and clay soils are present, but there are no known occurrences within 5 miles.	Coast Redwood Forest Monterey Pine Forest
Castilleja ambigua var. *insalutata* pink Johnny-nip	None/None G4T2/S2 1B.1	Coastal bluff scrub, coastal prairie. 0-100 m. annual herb (hemiparasitic). Blooms May-Aug	High Potential	Suitable habitats are present and there are 7 known occurrences within 5 miles. Two of these occurrences are from Point Lobos, just west of the Front Ranch unit.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None/None G3T2/S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m. annual herb. Blooms May-Oct(Nov)	Low Potential	Suitable habitats are present, but alkali soils may not be, and there are no known occurrences within 5 miles	Native and Annual Grasslands Coastal Terrace Prairie
Chorizanthe minutiflora Fort Ord spineflower	None/None G1/S1 1B.2	Coastal scrub, chaparral (maritime). Sandy, openings. 60-145 m. annual herb. Blooms Apr-Jul	Low Potential	Suitable habitats and sandy and soils are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Chorizanthe pungens var. *pungens* Monterey spineflower	Threatened/ None G2T2/S2 1B.2	Coastal dunes, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Sandy soils in coastal dunes or more inland within chaparral or other habitats. 0-170 m. annual herb. Blooms Apr-Jun(Jul-Aug)	High Potential	Suitable habitats are present and there are 6 known occurrences within 5 miles. One of which is from Point Lobos, just west of the Front Ranch unit.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Chorizanthe robusta var. *robusta* robust spineflower	Endangered/ None G2T1/S1 1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 m. annual herb. Blooms Apr-Sep	Low Potential	Suitable habitats and sandy and soils are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Coast Redwood Forest Monterey Pine Forest Riparian Woodland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Cirsium occidentale var. *compactum* compact cobwebby thistle	None/None G3G4T2/S2 1B.2	Chaparral, coastal dunes, coastal prairie, coastal scrub. On dunes and on clay in chaparral; also in grassland. 5-245 m. perennial herb. Blooms Apr-Jun	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Clarkia jolonensis Jolon clarkia	None/None G2/S2 1B.2	Cismontane woodland, chaparral, coastal scrub, riparian woodland. 10-1280 m. annual herb. Blooms Apr-Jun	Present	One known occurrence within the Park (#16)	Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Coast Redwood Forest Monterey Pine Forest Riparian Woodland Hardwood Forest
Collinsia multicolor San Francisco collinsia	None/None G2/S2 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 30-275 m. annual herb. Blooms (Feb)Mar-May	Low Potential	Suitable habitats are present and soils may be present, there are two known occurrences within 5 miles.	Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Coast Redwood Forest Monterey Pine Forest Riparian Woodland Hardwood Forest
Cordylanthus rigidus ssp. *littoralis* seaside bird's-beak	None/ Endangered G5T2/S2 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, coastal dunes. Sandy, often disturbed sites, usually within chaparral or coastal scrub. 30-520 m. annual herb (hemiparasitic). Blooms Apr-Oct	Moderate Potential	Suitable habitats and soils are present and there are 4 known occurrences within 5 miles. These occurrences are from north of the Carmel River.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Dacryophyllum falcifolium tear drop moss	None/None G2/S2 1B.3	North Coast coniferous forest. Limestone substrates and rock outcrops. 50-275 m. moss.	Moderate Potential	Suitable habitats are present and soils may be present. There are no known occurrences within 5 miles, however this species was first described in 2004, and is known to occur in Big Sur.	Coast Redwood Forest Monterey Pine Forest

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	None/None G3T3/S3 1B.2	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1095 m. perennial herb. Blooms Apr-Jun	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrences is from east of the Park along the Carmel River.	Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Coast Redwood Forest Monterey Pine Forest Riparian Woodland
Delphinium hutchinsoniae Hutchinson's larkspur	None/None G2/S2 1B.2	Broadleafed upland forest, chaparral, coastal prairie, coastal scrub. On semi-shaded, slightly moist slopes, usually west-facing. 15-535 m. perennial herb. Blooms Mar-Jun	Present	There are four known occurrences within the Park (#25, 24, 23, and 30)	Oak Woodland Riparian Woodland Hardwood Forest Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Delphinium umbraculorum umbrella larkspur	None/None G3/S3 1B.3	Cismontane woodland, chaparral. Mesic sites. 215-2075 m. perennial herb. Blooms Apr-Jun	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Oak Woodland Riparian Woodland Hardwood Forest Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Wetland
Ericameria fasciculata Eastwood's goldenbush	None/None G2/S2 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal scrub, coastal dunes. In sandy openings. 30-215 m. perennial evergreen shrub. Blooms Jul-Oct	High Potential	Suitable habitats are present and there are 7 known occurrences within 5 miles. One of which is from Carmel-by-the-Sea, just west of the Front Ranch unit.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Eriogonum nortonii Pinnacles buckwheat	None/None G2/S2 1B.3	Chaparral, valley and foothill grassland. Sandy soils; often on recent burns; western Santa Lucias. 90-975 m. annual herb. Blooms (Apr)May-Aug(Sep)	Present	Two known occurrences within the Park (#23 and 25)	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Erysimum ammophilum sand-loving wallflower	None/None G2/S2 1B.2	Chaparral (maritime), coastal dunes, coastal scrub. Sandy openings. 5-130 m. perennial herb. Blooms Feb-Jun	High Potential	Suitable habitats are present and there are 5 known occurrences within 5 miles. One of which is from Garrapata State Park, west of the Back Country unit.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Erysimum menziesii Menzies' wallflower	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Localized on dunes and coastal strand. 1-25 m. perennial herb. Blooms Mar-Sep	Low Potential	Suitable habitats are present in the Front Ranch Unit, and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Fritillaria falcata talus fritillary	None/None G2/S2 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Mostly on serpentine talus, but occasionally found on granitics. 425-1435 m. perennial bulbiferous herb. Blooms Mar-May	Low Potential	Suitable habitats are present and soils may be present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Fritillaria liliacea fragrant fritillary	None/None G2/S2 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 m. perennial bulbiferous herb. Blooms Feb-Apr	Low Potential	Suitable habitats are present, and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Hardwood Forest
Galium californicum ssp. *luciense* Cone Peak bedstraw	None/None G5T3/S3 1B.3	Broadleafed upland forest, lower montane coniferous forest, cismontane woodland, chaparral. In forest duff or gravelly talus of pine and oak forest, in partial shade. 400-1525 m. perennial herb. Blooms Mar-Sep	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Oak Woodland Hardwood Forest Coast Redwood Forest Monterey Pine Forest
Galium clementis Santa Lucia bedstraw	None/None G3/S3 1B.3	Lower montane coniferous forest, upper montane coniferous forest. Forming soft mats in shady rocky patches; on granite or serpentine; mostly on exposed peaks. 975-1645 m. perennial herb. Blooms (Apr)May-Jul	Low Potential	Suitable habitats and granite soils are present, but there are no known occurrences within 5 miles.	Coast Redwood Forest Monterey Pine Forest
Gilia tenuiflora ssp. *arenaria* Monterey gilia	Endangered/ Threatened G3G4T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral (maritime), cismontane woodland. Sandy openings in bare, wind-sheltered areas. Often near dune summit or in the hind dunes; two records from Pleistocene inland dunes. 5-245 m. annual herb. Blooms Apr-Jun	Moderate Potential	Suitable habitats are present and there are 3 known occurrences within 5 miles. These occurrences are from north of the Carmel River.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Hesperocyparis goveniana Gowen cypress	Threatened/ None G1/S1 1B.2	Closed-cone coniferous forest, chaparral. Coastal terraces; usually in sandy soils; sometimes with Monterey pine, bishop pine. 100-125 m. perennial evergreen tree.	High Potential	Suitable habitats are present and there are 4 known occurrences within 5 miles. One of which is from Point Lobos, west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest
Hesperocyparis macrocarpa Monterey cypress	None/None G1/S1 1B.2	Closed-cone coniferous forest. Granitic soils. 10-20 m. perennial evergreen tree.	High Potential	Suitable habitats are present and there are 2 known occurrences within 5 miles. One of which is from Point Lobos, west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest
Horkelia cuneata var. *sericea* Kellogg's horkelia	None/None G4T1?/S1? 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 m. perennial herb. Blooms Apr-Sep	High Potential	Suitable habitats are present and there are 4 known occurrences within 5 miles. One of which is from Carmel-by-the-Sea, just west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Horkelia marinensis Point Reyes horkelia	None/None G2/S2 1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m. perennial herb. Blooms May-Sep	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Lasthenia conjugens Contra Costa goldfields	Endangered/ None G1/S1 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-450 m. annual herb. Blooms Mar-Jun	Low Potential	Suitable habitats are present, but alkali soils may not be, and there are no known occurrences within 5 miles	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland Wetland Riparian Woodland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Layia carnosa beach layia	Endangered/ Endangered G2/S2 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m. annual herb. Blooms Mar-Jul	Moderate Potential	Suitable habitats are present and there are 2 known occurrences within 5 miles. These occurrences are from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral
Legenere limosa legenere	None/None G2/S2 1B.1	Vernal pools. In beds of vernal pools. 1-1005 m. annual herb. Blooms Apr-Jun	Low Potential	Vernal pools are present, but there are no known occurrences within 5 miles.	Wetland
Lupinus tidestromii Tidestrom's lupine	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Partially stabilized dunes, immediately near the ocean. 4-25 m. perennial rhizomatous herb. Blooms Apr-Jun	Moderate Potential	Suitable habitats are present and there are 2 known occurrences within 5 miles. These occurrences are from the Monterey Peninsula.	Coastal Terrace Prairie Coastal Chaparral/Scrub
Malacothamnus palmeri var. *involucratus* Carmel Valley bush-mallow	None/None G3T2Q/S2 1B.2	Cismontane woodland, chaparral, coastal scrub. Talus hilltops and slopes, sometimes on serpentine. Fire dependent. 5-520 m. perennial deciduous shrub. Blooms Apr-Oct	Present	Known occurrences within the Park (#30)	Coast Redwood Forest Monterey Pine Forest Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Malacothamnus palmeri var. *lucianus* Arroyo Seco bush-mallow	None/None G3T1Q/S1 1B.2	Chaparral, cismontane woodland, meadows and seeps. Gravel banks and sandstone rocks on west-facing slopes in full sun. 10-1160 m. perennial deciduous shrub. Blooms (Apr)May-Aug	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Coast Redwood Forest Monterey Pine Forest Maritime Chaparral Oak Woodland Wetland
Malacothamnus palmeri var. *palmeri* Santa Lucia bush-mallow	None/None G3T2Q/S2 1B.2	Chaparral. Dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea. 3-670 m. perennial deciduous shrub. Blooms May-Jul	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Maritime Chaparral Coastal Chaparral/Scrub
Malacothrix saxatilis var. *arachnoidea* Carmel Valley malacothrix	None/None G5T2/S2 1B.2	Chaparral, coastal scrub. Rock outcrops or steep rocky roadcuts. 30-1040 m. perennial rhizomatous herb. Blooms (Mar)Jun-Dec	Moderate Potential	Suitable habitats are present and there are 3 known occurrences within 5 miles. These occurrences are from the Carmel Valley east of the Park.	Maritime Chaparral Coastal Chaparral/Scrub

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Meconella oregana Oregon meconella	None/None G2G3/S2 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 m. annual herb. Blooms Mar-Apr	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub
Microseris paludosa marsh microseris	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 3-610 m. perennial herb. Blooms Apr-Jun(Jul)	High Potential	Suitable habitats are present and there are 7 known occurrences within 5 miles. One of which is from Point Lobos, just west of the Front Ranch unit.	All
Monardella sinuata ssp. *nigrescens* northern curly-leaved monardella	None/None G3T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 10-245 m. annual herb. Blooms (Apr)May-Jul(Aug-Sep)	Moderate Potential	Suitable habitats are present and there are 3 known occurrences within 5 miles. These occurrences are from north of the Carmel River.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Coast Redwood Forest Monterey Pine Forest
Monolopia gracilens woodland woollythreads	None/None G3/S3 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 120-975 m. annual herb. Blooms (Feb)Mar-Jul	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	All
Pedicularis dudleyi Dudley's lousewort	None/Rare G2/S2 1B.2	Chaparral, cismontane woodland, North Coast coniferous forest, valley and foothill grassland. Deep shady woods of older coast redwood forests; also in maritime chaparral. 60-330 m. perennial herb. Blooms Apr-Jun	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	All
Pinus radiata Monterey pine	None/None G1/S1 1B.1	Closed-cone coniferous forest, cismontane woodland. Three primary stands are native to California. Dry bluffs and slopes. 60-125 m. perennial evergreen tree.	Present	Two known occurrences within the Park (#3 and 4)	Monterey Pine Forest

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Piperia yadonii Yadon's rein orchid	Endangered/ None G1/S1 1B.1	Closed-cone coniferous forest, chaparral, coastal bluff scrub. On sandstone and sandy soil, but poorly drained and often dry. 10-505 m. perennial herb. Blooms (Feb)May-Aug	Present	One known occurrence within the Park (#25)	Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Coast Redwood Forest Monterey Pine Forest
Plagiobothrys chorisianus var. *chorisianus* Choris' popcorn flower	None/None G3T2Q/S2 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 2-705 m. annual herb. Blooms Mar-Jun	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub wetland
Plagiobothrys diffusus San Francisco popcorn flower	None/ Endangered G1Q/S21 1B.21	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 m. annual herb. Blooms Mar-Jun	Present	Suitable habitats are present and there is 1 known occurrence within the Front Ranch Unit (McGraw 2007).	Native and Annual Grasslands Coastal Terrace Prairie
Plagiobothrys uncinatus hooked popcorn flower	None/None G2/S2 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Sandstone outcrops and canyon sides; often in burned or disturbed areas. 210-855 m. annual herb. Blooms Apr-May	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is near Cushing Mountain, south of the Back Country Unit.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Coast Redwood Forest Monterey Pine Forest Oak Woodland Hardwood Forest
Potentilla hickmanii Hickman's cinquefoil	Endangered/ Endangered G1/S1 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps. Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125 m. perennial herb. Blooms Apr-Aug	Moderate Potential	Suitable habitats are present and there are 3 known occurrences within 5 miles. These occurrences are from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Wetland Coast Redwood Forest Monterey Pine Forest Oak Woodland Riparian Woodland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Ramalina thrausta angel's hair lichen	None/None G5/S2? 2B.1	North coast coniferous forest. On dead twigs and other lichens. 75-430 m. fruticose lichen (epiphytic).	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Maritime Chaparral Coast Redwood Forest Monterey Pine Forest
Rosa pinetorum pine rose	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland. 5-1090 m. perennial shrub. Blooms May,Jul	High Potential	Suitable habitats are present and there are 8 known occurrences within 5 miles. Three of which are from Point Lobos, just west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest Oak Woodland
Sanicula maritima adobe sanicle	None/Rare G2/S2 1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 15-215 m. perennial herb. Blooms Feb-May	Low Potential	Suitable habitats are present, but there are no known occurrences within 5 miles.	All
Stebbinsoseris decipiens Santa Cruz microseris	None/None G2/S2 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 90-750 m. annual herb. Blooms Apr-May	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is just south of Del Rey Oaks.	All
Tortula californica California screw moss	None/None G2G3/S2S3 1B.2	Chenopod scrub, valley and foothill grassland. Moss growing on sandy soil. 10-1460 m. moss.	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is near Lobos Rock, west of the Back Country Unit.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub
Trifolium buckwestiorum Santa Cruz clover	None/None G2/S2 1B.1	Coastal prairie, broadleafed upland forest, cismontane woodland. Moist grassland. Gravelly margins. 30-550 m. annual herb. Blooms Apr-Oct	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is just south of Del Rey Oaks.	Native and Annual Grasslands Coastal Terrace Prairie Oak Woodland Hardwood Forest
Trifolium hydrophilum saline clover	None/None G2/S2 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1-335 m. annual herb. Blooms Apr-Jun	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Native and Annual Grasslands Coastal Terrace Prairie Wetland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale	Vegetation Association
Trifolium polyodon Pacific Grove clover	None/Rare G1/S1 1B.1	Closed-cone coniferous forest, meadows and seeps, coastal prairie, valley and foothill grassland. Along small springs and seeps in grassy openings. 5-260 m. annual herb. Blooms Apr-Jun(Jul)	High Potential	Suitable habitats are present and there are 9 known occurrences within 5 miles. One of which is from Point Lobos, just west of the Front Ranch unit.	Coast Redwood Forest Monterey Pine Forest Native and Annual Grasslands Coastal Terrace Prairie Wetland
Trifolium trichocalyx Monterey clover	Endangered/ Endangered G1/S1 1B.1	Closed-cone coniferous forest. Openings, burned areas, and roadsides. Sandy soils. 60-210 m. annual herb. Blooms Apr-Jun	Moderate Potential	Suitable habitats are present and there are 2 known occurrences within 5 miles. These occurrences are from the Monterey Peninsula.	Coast Redwood Forest Monterey Pine Forest

Regional Vicinity refers to within a [5] mile radius of site.

FE = Federally Endangered   FT = Federally Threatened

SE = State Endangered   ST = State Threatened   SR = State Rare

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.

CRPR (CNPS California Rare Plant Rank)

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3=Need more information (a Review List)

4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension

.1=Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Special Status Animal Species in the Regional Vicinity (12 Quads) of the General Development Plan Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Mammals					
Corynorhinus townsendii Townsend's big-eared bat	None/None G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	High Potential	Suitable habitat and abandoned buildings are present, and there is one known occurrence within 5 miles. This occurrence is west of the Back Country Unit near Hwy 1.	All
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	High Potential	Suitable habitat is present, and there is 1 known occurrence within 5 miles. This occurrence is in Seaside.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Birds					
Agelaius tricolor tricolored blackbird	None/Threatened G2G3/S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Moderate Potential	Suitable habitats are present and there are 4 known occurrences within 5 miles. These occurrences are from small ponds east of the Back Country Unit.	Native and Annual Grasslands Coastal Terrace Prairie Wetland
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Moderate Potential	Suitable habitat is present, and there is 1 known occurrence within 5 miles. This occurrence is in Seaside.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Brachyramphus marmoratus Marbled Murrelet	Threatened/Endangered G3G4/S1	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	Low Potential (Foraging Only)	This species is known to forage along the coast, but the nearest suitable old growth forests are in Santa Cruz.	Coast Redwood Forest Monterey Pine Forest

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Low Potential (Wintering)	Suitable habitats are present, and this species has been reported on ebird during the winter within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Charadrius alexandrinus nivosus western snowy plover	Threatened/None G3T3/S2S3 SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Low Potential	Sandy, gravelly or friable soils are present and this species is known to occur at the mouth of the Carmel River.	Wetland
Coturnicops noveboracensis yellow rail	None/None G4/S1S2 SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Wetland
Cypseloides niger black swift	None/None G4/S2 SSC	Coastal belt of Santa Cruz and Monterey counties; central & southern Sierra Nevada; San Bernardino & San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	Moderate Potential	Suitable habitats may be present and there is 1 known occurrence within 5 miles. This occurrence is from Point Lobos, just west of the Front Ranch unit.	All
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Moderate Potential	Suitable habitats are present, and this species has been reported on ebird within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Coastal Chaparral/Scrub Maritime Chaparral Oak Woodland
Falco mexicanus prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Moderate Potential	Suitable habitats are present, and this species has been reported on ebird within 5 miles.	All

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Fratercula cirrhata tufted puffin	None/None G5/S1S2 SSC	Open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs. Requires sod or earth into which the birds can burrow, on island cliffs or grassy island slopes.	Not Expected	Suitable marine habitats are not present.	None
Gymnogyps californianus California condor	Endangered/ Endangered G1/S1 FP	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	Moderate Potential (Foraging Only)	Suitable habitats are present, and this species has been reported on ebird within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Wetland Coast Redwood Forest Monterey Pine Forest Oak Woodland Riparian Woodland
Laterallus jamaicensis coturniculus California black rail	None/ Threatened G3G4T1/S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Moderate Potential	Suitable habitats are present and there is 1 known occurrence within 5 miles. This occurrence is from the Monterey Peninsula.	Wetland
Oceanodroma homochroa ashy storm-petrel	None/None G2/S2 SSC	Colonial nester on off-shore islands. Usually nests on driest part of islands. Forages over open ocean. Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	Not Expected	Suitable marine habitats are not present.	None
Pelecanus occidentalis californicus California brown pelican	Delisted/Delisted G4T3/S3 FP	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	Not Expected	Suitable marine habitats are not present.	None

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Riparia riparia bank swallow	None/ Threatened G5/S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Low Potential	Suitable habitats may be present, and this species has been reported on ebird within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub Wetland Oak Woodland Riparian Woodland Wetland
Strix occidentalis occidentalis California spotted owl	None/None G3G4T3/S3 SSC	Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure >40%. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Present	This species is known to occur in the San Jose Creek watershed.	Coast Redwood Forest Monterey Pine Forest Oak Woodland Hardwood Forest
Vireo bellii pusillus Least Bell's Vireo	Endangered/ Endangered G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Not Expected	Suitable habitats may be present; however there are no known occurrences within 5 miles and the park is out of this species known range.	Riparian Woodland
Reptiles					
Anniella pulchra northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	High Potential	Suitable habitat is likely present, and there are 12 known occurrences within 5 miles.	All
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	High Potential	Suitable habitat is present, and there are 5 known occurrences within 5 miles. Four (4) of which are from the Carmel River.	Native and Annual Grasslands Coastal Terrace Prairie Riparian Woodland Wetland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Phrynosoma blainvillii coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	High Potential	Suitable habitat is present, and there is 1 known occurrence within 5 miles from the Chamisal Ridge.	Native and Annual Grasslands Coastal Terrace Prairie Riparian Woodland Oak Woodland Maritime Chaparral Coastal Chaparral/Scrub
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	High Potential	Suitable habitat is present, and this species is known to occur in Monterey County.	Riparian Woodland Wetland
Amphibians					
Ambystoma californiense California tiger salamander	Threatened/ Threatened G2G3/S2S3 WL	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Present	There are two known occurrences within the Park, back country unit (#834, and 833), and 7 occurrences within 5 miles.	Native and Annual Grasslands Coastal Terrace Prairie Riparian Woodland Oak Woodland Maritime Chaparral Coastal Chaparral/Scrub Wetland
Rana boylii foothill yellow-legged frog	None/Candidate Threatened G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Low Potential	Suitable habitat is present and there is one known occurrence within 5 miles, however this occurrence was from 1899 and the population may be extirpated.	Riparian Woodland Wetland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Rana draytonii California red-legged frog	Threatened/ None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Present	There are 6 known occurrences within the Park (#863, 764, 765, 763, 68, and 1107), and 24 occurrences within 5 miles. These occurrences are primarily from the front ranch unit and Rancho Cañada Unit along the Carmel River. Most of the park also falls within critical habitat unit MNT-2.	Native and Annual Grasslands Coastal Terrace Prairie Riparian Woodland Oak Woodland Maritime Chaparral Coastal Chaparral/Scrub Wetland
Taricha torosa coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	Present	There are 2 known occurrences within the Park, back country unit.	All
Fish					
Eucyclogobius newberryi tidewater goby	Endangered/ None G3/S3 SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Not Expected	There are no known occurrences in the Carmel River.	None
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	Threatened/None G5T2Q/S2	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	Present	There is 1 known occurrence within the Park (#24) from the Carmel River, and one occurrence within five miles from Garrapata Creek. Additionally, the Carmel River, San Jose Creek, and Malpaso Creek are designated critical habitat for steelhead.	Wetland

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence	Vegetation Association
Invertebrates					
Branchinecta lynchi Vernal Pool Fairy Shrimp	Threatened/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Low Potential	Vernal pools are present and the species is known to occur in Monterey County; however there are no known occurrences within 5 miles.	Wetland Native and Annual Grasslands Coastal Terrace Prairie
Danaus plexippus pop. 1 monarch - California overwintering population	None/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	High Potential	Suitable habitat is present, and there are 8 known occurrences within 5 miles, 5 of which are from Point Lobos and Carmel-by-the-sea.	Coast Redwood Forest Monterey Pine Forest Oak Woodland Hardwood Forest
Euphilotes enoptes smithi Smith's blue butterfly	Endangered/ None G5T1T2/S1S2	Most commonly associated with coastal dunes & coastal sage scrub plant communities in Monterey & Santa Cruz counties. Hostplant: *Eriogonum latifolium* and *Eriogonum parvifolium* are utilized as both larval and adult food plants.	Present	There are 11 known occurrences within the Park (#19, 60, 59, 57, 56, 63, 58, 65, 62, 61, and 55), from the front ranch and back country units.	Native and Annual Grasslands Coastal Terrace Prairie Maritime Chaparral Coastal Chaparral/Scrub

Regional Vicinity refers to within a [5] mile radius of site.

FT = Federally Threatened   SE = State Endangered

FC = Federal Candidate Species   ST = State Threatened

FE = Federally Endangered   SR = State Rare

FS=Federally Sensitive   SS=State Sensitive

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3

SC = CDFW Species of Special Concern

FP = Fully Protected

WL = Watch List

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Appendix D

Dog Park Reference Noise Level

```
-    Freq Weight : A
-    Time Weight : FAST
-    Level Range : 40-100
-    Max dB : 83.8 - 2017/03/08 16:55:42
-    Level Range : 40-100
-    SEL : 99.5
-    Leq : 70.0
-

     No.s            Date Time         (dB)
     ----------------------------------------------------------------------
        1  2017/03/08 16:46:16       62.0
        2  2017/03/08 16:46:17       58.0
        3  2017/03/08 16:46:18       56.1
        4  2017/03/08 16:46:19       55.5
        5  2017/03/08 16:46:20       56.5
        6  2017/03/08 16:46:21       58.1
        7  2017/03/08 16:46:22       59.3
        8  2017/03/08 16:46:23       62.2
        9  2017/03/08 16:46:24       63.8
       10  2017/03/08 16:46:25       62.6
       11  2017/03/08 16:46:26       65.6
       12  2017/03/08 16:46:27       67.1
       13  2017/03/08 16:46:28       66.1
       14  2017/03/08 16:46:29       63.7
       15  2017/03/08 16:46:30       62.6
       16  2017/03/08 16:46:31       62.4
       17  2017/03/08 16:46:32       61.7
       18  2017/03/08 16:46:33       60.1
       19  2017/03/08 16:46:34       59.0
       20  2017/03/08 16:46:35       59.0
       21  2017/03/08 16:46:36       59.1
       22  2017/03/08 16:46:37       58.1
       23  2017/03/08 16:46:38       58.4
       24  2017/03/08 16:46:39       58.0
       25  2017/03/08 16:46:40       57.8
       26  2017/03/08 16:46:41       61.7
       27  2017/03/08 16:46:42       58.5
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       34  2017/03/08 16:46:49       56.8
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       37  2017/03/08 16:46:52       58.1
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       44  2017/03/08 16:46:59       54.9
       45  2017/03/08 16:47:00       55.4
       46  2017/03/08 16:47:01       54.2
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       48  2017/03/08 16:47:03       55.5
       49  2017/03/08 16:47:04       53.9
       50  2017/03/08 16:47:05       54.0
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       52  2017/03/08 16:47:07       56.5
       53  2017/03/08 16:47:08       54.9
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       61  2017/03/08 16:47:16       68.0
       62  2017/03/08 16:47:17       76.3
       63  2017/03/08 16:47:18       72.8
       64  2017/03/08 16:47:19       74.0
       65  2017/03/08 16:47:20       75.2
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       71  2017/03/08 16:47:26       72.0
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       83  2017/03/08 16:47:38       66.4
       84  2017/03/08 16:47:39       65.7
       85  2017/03/08 16:47:40       70.5
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368	2017/03/08 16:52:23	70.7
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376	2017/03/08 16:52:31	68.7
377	2017/03/08 16:52:32	69.1
378	2017/03/08 16:52:33	67.4
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391	2017/03/08	16:52:46	66.9
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797	2017/03/08 16:59:32	67.9
798	2017/03/08 16:59:33	68.0
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802	2017/03/08 16:59:37	69.4
803	2017/03/08 16:59:38	73.3
804	2017/03/08 16:59:39	72.2
805	2017/03/08 16:59:40	69.8
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808	2017/03/08 16:59:43	81.2
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814	2017/03/08 16:59:49	59.2
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816	2017/03/08 16:59:51	59.9
817	2017/03/08 16:59:52	59.6
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819	2017/03/08 16:59:54	62.0
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822	2017/03/08 16:59:57	64.6
823	2017/03/08 16:59:58	62.8
824	2017/03/08 16:59:59	61.1
825	2017/03/08 17:00:00	59.6
826	2017/03/08 17:00:01	59.1
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828	2017/03/08 17:00:03	58.9
829	2017/03/08 17:00:04	58.9
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831	2017/03/08 17:00:06	59.2
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887	2017/03/08 17:01:02	72.6
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892	2017/03/08 17:01:07	73.1
893	2017/03/08 17:01:08	71.0
894	2017/03/08 17:01:09	70.0
895	2017/03/08 17:01:10	72.5
896	2017/03/08 17:01:11	69.9
897	2017/03/08 17:01:12	69.5
898	2017/03/08 17:01:13	71.1
899	2017/03/08 17:01:14	72.1
900	2017/03/08 17:01:15	73.4

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-      Time Weight : FAST
-      Level Range : 40-100
-      Max dB : 80.0 - 2017/03/08 17:28:01          Measurement Location 2
-      Level Range : 40-100
-      SEL : 96.3
-      Leq : 66.8
-
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894	2017/03/08 17:41:48	59.7
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704	2017/03/08	18:06:17	69.1
705	2017/03/08	18:06:18	72.5
706	2017/03/08	18:06:19	68.2
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708	2017/03/08	18:06:21	68.0
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710	2017/03/08	18:06:23	68.2
711	2017/03/08	18:06:24	74.0
712	2017/03/08	18:06:25	73.3
713	2017/03/08	18:06:26	72.6
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716	2017/03/08	18:06:29	64.8
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725	2017/03/08	18:06:38	68.3
726	2017/03/08	18:06:39	69.1
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732	2017/03/08	18:06:45	59.0
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752	2017/03/08	18:07:05	68.3
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763	2017/03/08	18:07:16	56.4
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805	2017/03/08 18:07:58	72.4
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812	2017/03/08 18:08:05	74.4
813	2017/03/08 18:08:06	75.2
814	2017/03/08 18:08:07	74.0
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894	2017/03/08 18:09:27	68.4
895	2017/03/08 18:09:28	63.7
896	2017/03/08 18:09:29	61.2
897	2017/03/08 18:09:30	54.8
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-     Time Weight : FAST
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-     Max dB : 81.4 - 2017/03/08 17:07:05
-     Level Range : 40-100
-     SEL : 96.3
-     Leq : 66.8
-
      No.s          Date Time        (dB)
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         2  2017/03/08 17:04:44      60.7
         3  2017/03/08 17:04:45      63.1
         4  2017/03/08 17:04:46      66.1
         5  2017/03/08 17:04:47      67.5
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         7  2017/03/08 17:04:49      67.8
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664	2017/03/08	17:15:46	58.2
665	2017/03/08	17:15:47	58.5
666	2017/03/08	17:15:48	58.3
667	2017/03/08	17:15:49	59.3
668	2017/03/08	17:15:50	59.0
669	2017/03/08	17:15:51	58.3
670	2017/03/08	17:15:52	61.6
671	2017/03/08	17:15:53	61.5
672	2017/03/08	17:15:54	62.2
673	2017/03/08	17:15:55	60.3
674	2017/03/08	17:15:56	62.2
675	2017/03/08	17:15:57	66.0
676	2017/03/08	17:15:58	68.0
677	2017/03/08	17:15:59	69.0
678	2017/03/08	17:16:00	65.7
679	2017/03/08	17:16:01	65.8

680	2017/03/08	17:16:02	62.9
681	2017/03/08	17:16:03	63.6
682	2017/03/08	17:16:04	61.6
683	2017/03/08	17:16:05	61.2
684	2017/03/08	17:16:06	61.8
685	2017/03/08	17:16:07	60.6
686	2017/03/08	17:16:08	60.5
687	2017/03/08	17:16:09	61.0
688	2017/03/08	17:16:10	61.4
689	2017/03/08	17:16:11	63.8
690	2017/03/08	17:16:12	61.7
691	2017/03/08	17:16:13	62.1
692	2017/03/08	17:16:14	65.2
693	2017/03/08	17:16:15	63.6
694	2017/03/08	17:16:16	71.3
695	2017/03/08	17:16:17	68.2
696	2017/03/08	17:16:18	66.6
697	2017/03/08	17:16:19	68.9
698	2017/03/08	17:16:20	70.0
699	2017/03/08	17:16:21	67.9
700	2017/03/08	17:16:22	68.3
701	2017/03/08	17:16:23	68.9
702	2017/03/08	17:16:24	72.7
703	2017/03/08	17:16:25	73.2
704	2017/03/08	17:16:26	71.6
705	2017/03/08	17:16:27	71.6
706	2017/03/08	17:16:28	71.7
707	2017/03/08	17:16:29	72.8
708	2017/03/08	17:16:30	76.1
709	2017/03/08	17:16:31	77.5
710	2017/03/08	17:16:32	79.0
711	2017/03/08	17:16:33	72.4
712	2017/03/08	17:16:34	69.9
713	2017/03/08	17:16:35	68.1
714	2017/03/08	17:16:36	69.4
715	2017/03/08	17:16:37	67.8
716	2017/03/08	17:16:38	65.0
717	2017/03/08	17:16:39	63.7
718	2017/03/08	17:16:40	62.8
719	2017/03/08	17:16:41	61.1
720	2017/03/08	17:16:42	61.0
721	2017/03/08	17:16:43	61.0
722	2017/03/08	17:16:44	60.3
723	2017/03/08	17:16:45	60.2
724	2017/03/08	17:16:46	60.6
725	2017/03/08	17:16:47	61.7
726	2017/03/08	17:16:48	61.4
727	2017/03/08	17:16:49	60.8
728	2017/03/08	17:16:50	59.5
729	2017/03/08	17:16:51	60.1
730	2017/03/08	17:16:52	63.7
731	2017/03/08	17:16:53	64.9
732	2017/03/08	17:16:54	63.8
733	2017/03/08	17:16:55	65.5
734	2017/03/08	17:16:56	66.9
735	2017/03/08	17:16:57	67.5
736	2017/03/08	17:16:58	67.9
737	2017/03/08	17:16:59	69.2
738	2017/03/08	17:17:00	67.9
739	2017/03/08	17:17:01	68.7
740	2017/03/08	17:17:02	67.1
741	2017/03/08	17:17:03	70.8
742	2017/03/08	17:17:04	74.1
743	2017/03/08	17:17:05	79.4
744	2017/03/08	17:17:06	75.1
745	2017/03/08	17:17:07	71.8
746	2017/03/08	17:17:08	69.8
747	2017/03/08	17:17:09	70.0
748	2017/03/08	17:17:10	69.0
749	2017/03/08	17:17:11	67.7
750	2017/03/08	17:17:12	68.2
751	2017/03/08	17:17:13	71.2
752	2017/03/08	17:17:14	69.9
753	2017/03/08	17:17:15	70.2
754	2017/03/08	17:17:16	68.2
755	2017/03/08	17:17:17	66.1
756	2017/03/08	17:17:18	67.0
757	2017/03/08	17:17:19	66.6
758	2017/03/08	17:17:20	67.2
759	2017/03/08	17:17:21	67.0
760	2017/03/08	17:17:22	68.0
761	2017/03/08	17:17:23	66.4
762	2017/03/08	17:17:24	65.0
763	2017/03/08	17:17:25	62.2
764	2017/03/08	17:17:26	61.2
765	2017/03/08	17:17:27	62.2
766	2017/03/08	17:17:28	63.2
767	2017/03/08	17:17:29	63.3
768	2017/03/08	17:17:30	64.2
769	2017/03/08	17:17:31	62.6
770	2017/03/08	17:17:32	62.0
771	2017/03/08	17:17:33	62.3
772	2017/03/08	17:17:34	60.9
773	2017/03/08	17:17:35	61.8
774	2017/03/08	17:17:36	60.8
775	2017/03/08	17:17:37	61.5
776	2017/03/08	17:17:38	61.1
777	2017/03/08	17:17:39	62.9
778	2017/03/08	17:17:40	64.9

779	2017/03/08	17:17:41	65.3
780	2017/03/08	17:17:42	64.3
781	2017/03/08	17:17:43	64.9
782	2017/03/08	17:17:44	63.2
783	2017/03/08	17:17:45	62.8
784	2017/03/08	17:17:46	63.1
785	2017/03/08	17:17:47	61.8
786	2017/03/08	17:17:48	61.6
787	2017/03/08	17:17:49	63.3
788	2017/03/08	17:17:50	64.1
789	2017/03/08	17:17:51	64.4
790	2017/03/08	17:17:52	66.4
791	2017/03/08	17:17:53	67.1
792	2017/03/08	17:17:54	65.5
793	2017/03/08	17:17:55	65.0
794	2017/03/08	17:17:56	62.8
795	2017/03/08	17:17:57	62.0
796	2017/03/08	17:17:58	62.7
797	2017/03/08	17:17:59	62.3
798	2017/03/08	17:18:00	61.8
799	2017/03/08	17:18:01	62.1
800	2017/03/08	17:18:02	62.7
801	2017/03/08	17:18:03	65.2
802	2017/03/08	17:18:04	67.1
803	2017/03/08	17:18:05	66.3
804	2017/03/08	17:18:06	62.5
805	2017/03/08	17:18:07	63.4
806	2017/03/08	17:18:08	64.1
807	2017/03/08	17:18:09	64.5
808	2017/03/08	17:18:10	65.3
809	2017/03/08	17:18:11	66.6
810	2017/03/08	17:18:12	67.5
811	2017/03/08	17:18:13	66.5
812	2017/03/08	17:18:14	66.7
813	2017/03/08	17:18:15	66.0
814	2017/03/08	17:18:16	66.5
815	2017/03/08	17:18:17	70.6
816	2017/03/08	17:18:18	70.5
817	2017/03/08	17:18:19	71.6
818	2017/03/08	17:18:20	68.9
819	2017/03/08	17:18:21	68.5
820	2017/03/08	17:18:22	67.5
821	2017/03/08	17:18:23	65.1
822	2017/03/08	17:18:24	64.4
823	2017/03/08	17:18:25	65.1
824	2017/03/08	17:18:26	65.1
825	2017/03/08	17:18:27	67.3
826	2017/03/08	17:18:28	67.8
827	2017/03/08	17:18:29	67.2
828	2017/03/08	17:18:30	65.4
829	2017/03/08	17:18:31	61.5
830	2017/03/08	17:18:32	58.9
831	2017/03/08	17:18:33	58.4
832	2017/03/08	17:18:34	56.6
833	2017/03/08	17:18:35	55.6
834	2017/03/08	17:18:36	55.4
835	2017/03/08	17:18:37	55.9
836	2017/03/08	17:18:38	55.0
837	2017/03/08	17:18:39	56.0
838	2017/03/08	17:18:40	57.2
839	2017/03/08	17:18:41	58.4
840	2017/03/08	17:18:42	60.0
841	2017/03/08	17:18:43	63.7
842	2017/03/08	17:18:44	66.0
843	2017/03/08	17:18:45	68.9
844	2017/03/08	17:18:46	70.9
845	2017/03/08	17:18:47	72.3
846	2017/03/08	17:18:48	70.1
847	2017/03/08	17:18:49	65.9
848	2017/03/08	17:18:50	63.7
849	2017/03/08	17:18:51	62.8
850	2017/03/08	17:18:52	65.4
851	2017/03/08	17:18:53	67.1
852	2017/03/08	17:18:54	65.7
853	2017/03/08	17:18:55	64.8
854	2017/03/08	17:18:56	68.4
855	2017/03/08	17:18:57	70.3
856	2017/03/08	17:18:58	71.9
857	2017/03/08	17:18:59	69.8
858	2017/03/08	17:19:00	68.1
859	2017/03/08	17:19:01	67.6
860	2017/03/08	17:19:02	68.5
861	2017/03/08	17:19:03	66.5
862	2017/03/08	17:19:04	64.3
863	2017/03/08	17:19:05	62.7
864	2017/03/08	17:19:06	61.4
865	2017/03/08	17:19:07	59.9
866	2017/03/08	17:19:08	60.5
867	2017/03/08	17:19:09	58.9
868	2017/03/08	17:19:10	58.1
869	2017/03/08	17:19:11	58.1
870	2017/03/08	17:19:12	62.5
871	2017/03/08	17:19:13	59.1
872	2017/03/08	17:19:14	58.7
873	2017/03/08	17:19:15	58.8
874	2017/03/08	17:19:16	58.8
875	2017/03/08	17:19:17	59.1
876	2017/03/08	17:19:18	56.4
877	2017/03/08	17:19:19	56.7

878	2017/03/08 17:19:20	57.4
879	2017/03/08 17:19:21	58.7
880	2017/03/08 17:19:22	60.8
881	2017/03/08 17:19:23	60.1
882	2017/03/08 17:19:24	62.3
883	2017/03/08 17:19:25	63.6
884	2017/03/08 17:19:26	66.9
885	2017/03/08 17:19:27	73.9
886	2017/03/08 17:19:28	69.4
887	2017/03/08 17:19:29	66.1
888	2017/03/08 17:19:30	63.4
889	2017/03/08 17:19:31	60.6
890	2017/03/08 17:19:32	58.8
891	2017/03/08 17:19:33	59.3
892	2017/03/08 17:19:34	61.9
893	2017/03/08 17:19:35	62.3
894	2017/03/08 17:19:36	65.6
895	2017/03/08 17:19:37	64.8
896	2017/03/08 17:19:38	64.7
897	2017/03/08 17:19:39	63.8
898	2017/03/08 17:19:40	62.5
899	2017/03/08 17:19:41	61.9
900	2017/03/08 17:19:42	62.0

Santa Barbara dog park - noise measurement

Address	Time	Measurme	LAeq	LAE	LAmax	LAmin	LA10	LA33
1	6:11:50 AM	0:15:00	51.8	81.3	79.3	34.6	48.8	43

LA50	LA90	LA95	Lppeak	Over	Under	Pause
41.7	38.4	37.5	92.1	-	-	-

No.s	Date Time	(dB)
1	2015/09/12 09:38:09	39.7
2	2015/09/12 09:38:10	38.2
3	2015/09/12 09:38:11	37.1
4	2015/09/12 09:38:12	39.7
5	2015/09/12 09:38:13	41.9
6	2015/09/12 09:38:14	41.1
7	2015/09/12 09:38:15	37.3
8	2015/09/12 09:38:16	40.0
9	2015/09/12 09:38:17	40.0
10	2015/09/12 09:38:18	39.9
11	2015/09/12 09:38:19	41.6
12	2015/09/12 09:38:20	41.5
13	2015/09/12 09:38:21	45.4
14	2015/09/12 09:38:22	43.5
15	2015/09/12 09:38:23	44.4
16	2015/09/12 09:38:24	42.0
17	2015/09/12 09:38:25	42.2
18	2015/09/12 09:38:26	43.2
19	2015/09/12 09:38:27	41.6
20	2015/09/12 09:38:28	42.4
21	2015/09/12 09:38:29	42.6
22	2015/09/12 09:38:30	42.8
23	2015/09/12 09:38:31	43.3
24	2015/09/12 09:38:32	41.5
25	2015/09/12 09:38:33	43.2
26	2015/09/12 09:38:34	42.0
27	2015/09/12 09:38:35	41.5
28	2015/09/12 09:38:36	47.7
29	2015/09/12 09:38:37	41.5
30	2015/09/12 09:38:38	44.4
31	2015/09/12 09:38:39	43.8
32	2015/09/12 09:38:40	45.8
33	2015/09/12 09:38:41	39.9
34	2015/09/12 09:38:42	40.6
35	2015/09/12 09:38:43	41.0
36	2015/09/12 09:38:44	41.6
37	2015/09/12 09:38:45	42.1
38	2015/09/12 09:38:46	43.5
39	2015/09/12 09:38:47	42.7
40	2015/09/12 09:38:48	49.5
41	2015/09/12 09:38:49	46.5
42	2015/09/12 09:38:50	39.7
43	2015/09/12 09:38:51	39.7
44	2015/09/12 09:38:52	40.0
45	2015/09/12 09:38:53	55.6
46	2015/09/12 09:38:54	39.8
47	2015/09/12 09:38:55	54.1
48	2015/09/12 09:38:56	60.3
49	2015/09/12 09:38:57	53.4
50	2015/09/12 09:38:58	41.1
51	2015/09/12 09:38:59	55.2
52	2015/09/12 09:39:00	45.9
53	2015/09/12 09:39:01	40.9
54	2015/09/12 09:39:02	73.0
55	2015/09/12 09:39:03	70.0
56	2015/09/12 09:39:04	42.8
57	2015/09/12 09:39:05	42.2
58	2015/09/12 09:39:06	45.0
59	2015/09/12 09:39:07	62.4
60	2015/09/12 09:39:08	75.0
61	2015/09/12 09:39:09	70.4
62	2015/09/12 09:39:10	46.9
63	2015/09/12 09:39:11	39.2
64	2015/09/12 09:39:12	43.4
65	2015/09/12 09:39:13	40.4
66	2015/09/12 09:39:14	43.0
67	2015/09/12 09:39:15	47.7
68	2015/09/12 09:39:16	42.2
69	2015/09/12 09:39:17	41.7
70	2015/09/12 09:39:18	45.1
71	2015/09/12 09:39:19	47.4
72	2015/09/12 09:39:20	44.4
73	2015/09/12 09:39:21	42.4
74	2015/09/12 09:39:22	41.8
75	2015/09/12 09:39:23	40.1
76	2015/09/12 09:39:24	39.8
77	2015/09/12 09:39:25	40.0
78	2015/09/12 09:39:26	44.1
79	2015/09/12 09:39:27	52.8
80	2015/09/12 09:39:28	47.1
81	2015/09/12 09:39:29	44.1
82	2015/09/12 09:39:30	45.9
83	2015/09/12 09:39:31	42.0
84	2015/09/12 09:39:32	47.4
85	2015/09/12 09:39:33	60.3

86	2015/09/12 09:39:34	38.2
87	2015/09/12 09:39:35	38.4
88	2015/09/12 09:39:36	37.5
89	2015/09/12 09:39:37	36.7
90	2015/09/12 09:39:38	41.6
91	2015/09/12 09:39:39	44.8
92	2015/09/12 09:39:40	37.9
93	2015/09/12 09:39:41	41.8
94	2015/09/12 09:39:42	41.9
95	2015/09/12 09:39:43	39.7
96	2015/09/12 09:39:44	40.0
97	2015/09/12 09:39:45	39.3
98	2015/09/12 09:39:46	38.3
99	2015/09/12 09:39:47	38.9
100	2015/09/12 09:39:48	39.8
101	2015/09/12 09:39:49	39.4
102	2015/09/12 09:39:50	41.5
103	2015/09/12 09:39:51	42.2
104	2015/09/12 09:39:52	42.9
105	2015/09/12 09:39:53	42.2
106	2015/09/12 09:39:54	41.4
107	2015/09/12 09:39:55	43.3
108	2015/09/12 09:39:56	41.0
109	2015/09/12 09:39:57	49.0
110	2015/09/12 09:39:58	40.6
111	2015/09/12 09:39:59	42.0
112	2015/09/12 09:40:00	39.5
113	2015/09/12 09:40:01	41.1
114	2015/09/12 09:40:02	41.5
115	2015/09/12 09:40:03	40.9
116	2015/09/12 09:40:04	44.1
117	2015/09/12 09:40:05	41.2
118	2015/09/12 09:40:06	43.4
119	2015/09/12 09:40:07	41.5
120	2015/09/12 09:40:08	45.3
121	2015/09/12 09:40:09	43.2
122	2015/09/12 09:40:10	44.5
123	2015/09/12 09:40:11	43.4
124	2015/09/12 09:40:12	44.2
125	2015/09/12 09:40:13	43.2
126	2015/09/12 09:40:14	42.1
127	2015/09/12 09:40:15	41.7
128	2015/09/12 09:40:16	41.6
129	2015/09/12 09:40:17	47.3
130	2015/09/12 09:40:18	42.2
131	2015/09/12 09:40:19	47.1
132	2015/09/12 09:40:20	39.7
133	2015/09/12 09:40:21	41.4
134	2015/09/12 09:40:22	39.1
135	2015/09/12 09:40:23	41.0
136	2015/09/12 09:40:24	38.0
137	2015/09/12 09:40:25	38.9
138	2015/09/12 09:40:26	46.4
139	2015/09/12 09:40:27	37.0
140	2015/09/12 09:40:28	43.7
141	2015/09/12 09:40:29	39.9
142	2015/09/12 09:40:30	47.4
143	2015/09/12 09:40:31	37.4
144	2015/09/12 09:40:32	51.2
145	2015/09/12 09:40:33	41.9
146	2015/09/12 09:40:34	44.2
147	2015/09/12 09:40:35	56.7
148	2015/09/12 09:40:36	46.7
149	2015/09/12 09:40:37	47.0
150	2015/09/12 09:40:38	45.0
151	2015/09/12 09:40:39	43.3
152	2015/09/12 09:40:40	41.2
153	2015/09/12 09:40:41	43.6
154	2015/09/12 09:40:42	43.8
155	2015/09/12 09:40:43	40.8
156	2015/09/12 09:40:44	46.0
157	2015/09/12 09:40:45	43.5
158	2015/09/12 09:40:46	40.2
159	2015/09/12 09:40:47	43.4
160	2015/09/12 09:40:48	42.3
161	2015/09/12 09:40:49	43.0
162	2015/09/12 09:40:50	39.6
163	2015/09/12 09:40:51	52.3
164	2015/09/12 09:40:52	41.4
165	2015/09/12 09:40:53	45.8
166	2015/09/12 09:40:54	45.6
167	2015/09/12 09:40:55	41.0
168	2015/09/12 09:40:56	43.4
169	2015/09/12 09:40:57	39.8
170	2015/09/12 09:40:58	39.5
171	2015/09/12 09:40:59	44.3
172	2015/09/12 09:41:00	40.7
173	2015/09/12 09:41:01	40.2
174	2015/09/12 09:41:02	44.8
175	2015/09/12 09:41:03	41.8
176	2015/09/12 09:41:04	42.0
177	2015/09/12 09:41:05	46.1
178	2015/09/12 09:41:06	53.3
179	2015/09/12 09:41:07	42.4
180	2015/09/12 09:41:08	39.2
181	2015/09/12 09:41:09	40.6
182	2015/09/12 09:41:10	49.7
183	2015/09/12 09:41:11	42.1
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185	2015/09/12 09:41:13	43.5
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188	2015/09/12 09:41:16	40.1
189	2015/09/12 09:41:17	40.1
190	2015/09/12 09:41:18	43.0
191	2015/09/12 09:41:19	40.4
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195	2015/09/12	09:59:06	39.8
196	2015/09/12	09:59:07	39.7
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227	2015/09/12	09:59:38	39.6
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586	2015/09/12	10:05:37	37.4
587	2015/09/12	10:05:38	40.1
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615	2015/09/12	10:06:06	35.2
616	2015/09/12	10:06:07	34.7
617	2015/09/12	10:06:08	35.4
618	2015/09/12	10:06:09	34.6
619	2015/09/12	10:06:10	38.3
620	2015/09/12	10:06:11	40.7
621	2015/09/12	10:06:12	39.3
622	2015/09/12	10:06:13	40.8
623	2015/09/12	10:06:14	42.0
624	2015/09/12	10:06:15	42.8
625	2015/09/12	10:06:16	41.1
626	2015/09/12	10:06:17	39.8
627	2015/09/12	10:06:18	40.2
628	2015/09/12	10:06:19	40.1
629	2015/09/12	10:06:20	39.0
630	2015/09/12	10:06:21	40.0
631	2015/09/12	10:06:22	37.4
632	2015/09/12	10:06:23	37.5
633	2015/09/12	10:06:24	36.9
634	2015/09/12	10:06:25	36.7
635	2015/09/12	10:06:26	38.5
636	2015/09/12	10:06:27	37.5
637	2015/09/12	10:06:28	37.1
638	2015/09/12	10:06:29	38.0
639	2015/09/12	10:06:30	38.3
640	2015/09/12	10:06:31	41.6
641	2015/09/12	10:06:32	40.9
642	2015/09/12	10:06:33	40.6
643	2015/09/12	10:06:34	40.6
644	2015/09/12	10:06:35	40.4
645	2015/09/12	10:06:36	41.3
646	2015/09/12	10:06:37	40.2
647	2015/09/12	10:06:38	40.3
648	2015/09/12	10:06:39	40.6
649	2015/09/12	10:06:40	40.9
650	2015/09/12	10:06:41	42.2
651	2015/09/12	10:06:42	41.5
652	2015/09/12	10:06:43	42.7
653	2015/09/12	10:06:44	43.0
654	2015/09/12	10:06:45	42.9
655	2015/09/12	10:06:46	44.6
656	2015/09/12	10:06:47	43.4
657	2015/09/12	10:06:48	42.8
658	2015/09/12	10:06:49	42.1
659	2015/09/12	10:06:50	40.3
660	2015/09/12	10:06:51	40.8
661	2015/09/12	10:06:52	39.1
662	2015/09/12	10:06:53	40.4
663	2015/09/12	10:06:54	40.4
664	2015/09/12	10:06:55	39.4
665	2015/09/12	10:06:56	41.8
666	2015/09/12	10:06:57	38.7
667	2015/09/12	10:06:58	37.9
668	2015/09/12	10:06:59	38.2
669	2015/09/12	10:07:00	39.1
670	2015/09/12	10:07:01	39.2
671	2015/09/12	10:07:02	38.6
672	2015/09/12	10:07:03	41.4
673	2015/09/12	10:07:04	40.2
674	2015/09/12	10:07:05	41.3
675	2015/09/12	10:07:06	41.3
676	2015/09/12	10:07:07	40.9
677	2015/09/12	10:07:08	41.5
678	2015/09/12	10:07:09	41.5
679	2015/09/12	10:07:10	41.7

680	2015/09/12	10:07:11	40.3
681	2015/09/12	10:07:12	39.4
682	2015/09/12	10:07:13	36.7
683	2015/09/12	10:07:14	36.4
684	2015/09/12	10:07:15	35.5
685	2015/09/12	10:07:16	34.7
686	2015/09/12	10:07:17	35.3
687	2015/09/12	10:07:18	37.7
688	2015/09/12	10:07:19	35.8
689	2015/09/12	10:07:20	35.9
690	2015/09/12	10:07:21	36.0
691	2015/09/12	10:07:22	35.9
692	2015/09/12	10:07:23	35.7
693	2015/09/12	10:07:24	39.5
694	2015/09/12	10:07:25	36.9
695	2015/09/12	10:07:26	36.8
696	2015/09/12	10:07:27	36.7
697	2015/09/12	10:07:28	37.5
698	2015/09/12	10:07:29	39.3
699	2015/09/12	10:07:30	39.0
700	2015/09/12	10:07:31	37.8
701	2015/09/12	10:07:32	39.5
702	2015/09/12	10:07:33	38.2
703	2015/09/12	10:07:34	39.2
704	2015/09/12	10:07:35	38.3
705	2015/09/12	10:07:36	39.1
706	2015/09/12	10:07:37	36.7
707	2015/09/12	10:07:38	37.5
708	2015/09/12	10:07:39	37.9
709	2015/09/12	10:07:40	36.6
710	2015/09/12	10:07:41	35.5
711	2015/09/12	10:07:42	38.1
712	2015/09/12	10:07:43	37.8
713	2015/09/12	10:07:44	39.0
714	2015/09/12	10:07:45	38.7
715	2015/09/12	10:07:46	39.8
716	2015/09/12	10:07:47	38.3
717	2015/09/12	10:07:48	38.6
718	2015/09/12	10:07:49	39.0
719	2015/09/12	10:07:50	38.8
720	2015/09/12	10:07:51	40.1
721	2015/09/12	10:07:52	40.8
722	2015/09/12	10:07:53	42.9

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 4/3/2017
Case Descr Merrill Gardens Assisted Living Demolition

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	70	45	40

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	150	0
Concrete Saw	No	20		89.6	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0

Results

Calculated (dBA)   Noise Limits (dBA)

Equipment	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	72.1	68.1	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	80	73	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Total	80	75.4	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
West Covin	Residential	66.8	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	650	0
Concrete Saw	No	20		89.6	650	0
Backhoe	No	40		77.6	650	0
Backhoe	No	40		77.6	650	0
Backhoe	No	40		77.6	650	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	67.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	55.3	51.3	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	55.3	51.3	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	55.3	51.3	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.3	62.6	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Descriptior	Land Use	Daytime	Evening	Night
Residences	Residential	70	45	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	500	0
Concrete Saw	No	20		89.6	500	0
Backhoe	No	40		77.6	500	0
Backhoe	No	40		77.6	500	0
Backhoe	No	40		77.6	500	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	61.7	57.7	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	69.6	62.6	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.6	64.9	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/6/2017
Case Description: Merrill Gardens Assisted Living Grading

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on South Sunset Ave.	Residential	70	45	40

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	150	0
Concrete Saw	No	20		89.6	150	0
Backhoe	No	40		77.6	150	0

Results

Equipment		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer		72.1	68.1	N/A	N/A	N/A	N/A
Concrete Saw		80	73	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A
	Total	80	74.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
West Covina Library	Residential	66.8	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	650	0
Concrete Saw	No	20		89.6	650	0
Backhoe	No	40		77.6	650	0

Results

Equipment		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer		59.4	55.4	N/A	N/A	N/A	N/A
Concrete Saw		67.3	60.3	N/A	N/A	N/A	N/A

Equipment							
Backhoe		55.3	51.3 N/A	N/A	N/A	N/A
Total		67.3	62.6 N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on West Covina Pkwy	Residential	70	45	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	500	0
Concrete Saw	No	20		89.6	500	0
Backhoe	No	40		77.6	500	0

Results

	Calculated (dBA)				Noise Limits (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	61.7	57.7	N/A	N/A	N/A	N/A
Concrete Saw	69.6	62.6	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A
Total	69.6	64.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/6/2017
    Case   Merrill Gardens Assisted Living Building Construction
    Description:

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on South Sunset Ave.	Residential	70	45	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Forklift	No	50		0	150	0
Crane	No	16		80.6	150	0
Generator	No	50		80.6	150	0
Backhoe	No	40		77.6	150	0
Welder / Torch	No	40		74	150	0
Welder / Torch	No	40		74	150	0
Welder / Torch	No	40		74	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Forklift	-9.5	-12.6	N/A	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A
Welder / Torch	64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch	64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch	64.5	60.5	N/A	N/A	N/A	N/A	N/A
Total	71.1	71.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
West Covina Library	Residential	66.8	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Forklift	No	50		0	650	0
Crane	No	16		80.6	650	0
Generator	No	50		80.6	650	0
Backhoe	No	40		77.6	650	0
Welder / Torch	No	40		74	650	0
Welder / Torch	No	40		74	650	0
Welder / Torch	No	40		74	650	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Forklift	-22.3	-25.3	N/A	N/A	N/A	N/A	N/A
Crane	58.3	50.3	N/A	N/A	N/A	N/A	N/A
Generator	58.4	55.3	N/A	N/A	N/A	N/A	N/A
Backhoe	55.3	51.3	N/A	N/A	N/A	N/A	N/A
Welder / Torch	51.7	47.7	N/A	N/A	N/A	N/A	N/A
Welder / Torch	51.7	47.7	N/A	N/A	N/A	N/A	N/A
Welder / Torch	51.7	47.7	N/A	N/A	N/A	N/A	N/A
Total	58.4	58.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on West Covina	Residential	70	45	40

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Forklift	No	50		0	500	0
Crane	No	16		80.6	500	0
Generator	No	50		80.6	500	0
Backhoe	No	40		77.6	500	0
Welder / Torch	No	40		74	500	0
Welder / Torch	No	40		74	500	0
Welder / Torch	No	40		74	500	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Forklift	-20	-23	N/A	N/A	N/A	N/A	N/A
Crane	60.6	52.6	N/A	N/A	N/A	N/A	N/A
Generator	60.6	57.6	N/A	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A	N/A

Welder / Torch	54	50	N/A	N/A	N/A	N/A	N/A
Welder / Torch	54	50	N/A	N/A	N/A	N/A	N/A
Welder / Torch	54	50	N/A	N/A	N/A	N/A	N/A
Total	60.6	61.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/6/2017
     Case   Merrill Gardens Assisted Living Paving
Description:

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on South Sunset	Residential	70	45	40

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	150	0
Concrete Mixer Truck	No	40		78.8	150	0
Paver	No	50		77.2	150	0
Roller	No	20		80	150	0
Backhoe	No	40		77.6	150	0
Forklift	No	50		0	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Paver	67.7	64.7	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	69.3	65.3	N/A	N/A	N/A	N/A	N/A
Paver	67.7	64.7	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A
Forklift	-9.5	-12.6	N/A	N/A	N/A	N/A	N/A
Total	70.5	71.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
West Covina Library	Residential	66.8	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	650	0
Concrete Mixer Truck	No	40		78.8	650	0
Paver	No	50		77.2	650	0
Roller	No	20		80	650	0

Equipment	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	650	0
Forklift	No	50		0	650	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	
Paver	58.4	55.3	N/A	N/A	N/A	N/A	N/A	
Concrete Mixer Truck	58.3	50.3	N/A	N/A	N/A	N/A	N/A	
Paver	55.3	51.3	N/A	N/A	N/A	N/A	N/A	
Roller	51.7	47.7	N/A	N/A	N/A	N/A	N/A	
Backhoe	51.7	47.7	N/A	N/A	N/A	N/A	N/A	
Forklift	-22.3	-25.3	N/A	N/A	N/A	N/A	N/A	
Total	58.4	58.8	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences on West Covina	Residential	70	45	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	500	0
Concrete Mixer Truck	No	40		78.8	500	0
Paver	No	50		77.2	500	0
Roller	No	20		80	500	0
Backhoe	No	40		77.6	500	0
Forklift	No	50		0	500	0

			Results				
	Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Paver	60.6	57.6	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	60.6	52.6	N/A	N/A	N/A	N/A	N/A
Paver	57.6	53.6	N/A	N/A	N/A	N/A	N/A
Roller	54	50	N/A	N/A	N/A	N/A	N/A
Backhoe	54	50	N/A	N/A	N/A	N/A	N/A
Forklift	-20	-23	N/A	N/A	N/A	N/A	N/A
Total	60.6	61.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	70	45	40

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	71	63	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.1	73.5	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
West Covin	Residential	66.8	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	650	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	55.4	51.4	N/A	N/A	N/A	N/A	N/A	N/A
Total	55.4	51.4	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	70	45	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	500	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

DNL Calculator

Site ID	Merrill Gardens Assisted Living Existing Conditions
Record Date	04/10/2017
User's Name	

Road # 1 Name:	West Covina Parkway North of Project Site

Road #1

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	35	35	35
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	14330	30	40
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	68.2	41.4	63.1
Calculate Road #1 DNL	69.4	Reset	

Road # 2 Name: West Covina Parkway at Project Site

Road #2

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	30	30	30
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	14140	30	40
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	69.1	42.4	64.1
Calculate Road #2 DNL	70.3	Reset	

Road # 3 Name: Sunset Avenue

Road #3

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	35	35	35
Distance to Stop Sign			
Average Speed	40	40	40
Average Daily Trips (ADT)	20940	40	60
Night Fraction of ADT	15	15	15

Road Gradient (%)			2
Vehicle DNL	71	43.8	64.8
Calculate Road #1 DNL	72	Reset	

Road # 2 Name:	West Covina Parkway South of Site

Road #2

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	30	30	30
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	11120	30	20
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	68.1	42.4	61.1
Calculate Road #2 DNL	68.9	Reset	

Add Road Source   Add Rail Source

Airport Noise Level	
Loud Impulse Sounds?	○ Yes ○ No

DNL Calculator

Site ID	Merrill Gardens Assisted Living Existing plus Project Conditions
Record Date	06/26/2017
User's Name	

Road # 1 Name:	**West Covina Parkway North of Project Site**

Road #1

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	35	35	35
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	14390	30	40
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	68.2	41.4	63.1
Calculate Road #1 DNL	69.4	Reset	

Road # 2 Name:	West Covina Parkway at Project Site

Road #2

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	30	30	30
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	14240	30	40
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	69.2	42.4	64.1
Calculate Road #2 DNL	70.4	Reset	

Road # 3 Name:	Sunset Avenue

Road #3

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	35	35	35
Distance to Stop Sign			
Average Speed	40	40	40
Average Daily Trips (ADT)	20950	40	60
Night Fraction of ADT	15	15	15

Road Gradient (%)			2
Vehicle DNL	71	43.8	64.8
Calculate Road #3 DNL	72	Reset	

Road # 4 Name:	West Covina Parkway South of Site

Road #4

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	30	30	30
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	11140	30	20
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	68.1	42.4	61.1
Calculate Road #4 DNL	68.9	Reset	

Add Road Source   Add Rail Source

Airport Noise Level	
Loud Impulse Sounds?	○Yes ○No

Appendix E

Monterey Peninsula Regional Park District Park Usage Letter

Monterey Peninsula Regional Park District

P.O. Box 223340 • Carmel, California 93922 I 4860 Carmel Valley Road • Carmel, California 93923

BOARD OF DIRECTORS
Kelly Sorenson – Ward 1
ksorenson@mprpd.org
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Seaside, northern Sand City,
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Katie Pofahl – Ward 3
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Monterey, southwest Seaside,
southern Sand City, Del Rey Oaks

Kathleen Lee – Ward 4
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northern Pebble Beach

Monta Potter – Ward 5
mpotter@mprpd.org
Carmel, Carmel Valley,
Big Sur, southern Pebble Beach

GENERAL MANAGER
Rafael Payan, PhD
payan@mprpd.org

March 25, 2019

Megan Jones
Rincon Consultants
437 Figueroa Street, Suite 203
Monterey, CA 93940

Dear Megan:

Thank you for helping the Monterey Peninsula Regional Park District (MPRPD) advance Palo Corona Regional Park's general development plan CEQA analysis.

I have had the honor and pleasure of working on many acquisition, research, planning, development, and operations projects throughout the western United States. Many of these projects were very similar in scope and dimension to Palo Corona Regional Park (PCRP), and several were award-winning. In 2001, the American Planning Association awarded Pima County, Arizona (my former employer) the nation's top environmental planning award for the Sonoran Desert Conservation Plan. In December 1988, National Geographic's 100-year anniversary edition featured Kartchner Caverns State Park. As Arizona State Park's Deputy Director, I led this park's acquisition, environmental research, planning, design and development projects, and formulated and implemented its operations model based on the site's delicate carrying capacity. Earlier in my career, while working as a Ranger for the United States National Park Service, I worked on sustainable trail improvements in critical habitat, monitored endangered and invasive flora and fauna, and assisted with analysis and design leading to the reintroduction of the Grand Canyon Railroad.

MPRPD is excited to provide our region's residents and visitors high quality environmental education and passive recreation experiences. Some of the uses we have proposed at PCRP are new, others offer alternatives to uses that may already be provided by other organizations. Because of PCRP's proximity or adjacency to Monterey County's coastal and inland communities, the benefits proposed at this park are many.

The region's public will play a key role by directly participating in the former Rancho Canada Golf Course's transformation; helping MPRPD restore the golf links into native habitat. This transformation will include reintroducing native vegetation, restoring portions of the Carmel River, reestablishing wildlife corridors, and attracting the region's native common, threatened and endangered fauna to this and adjacent sites. This park will greatly enhance public health by making available the park's expansive trail network. Many of the park's extant trails, formerly ranch roads and active fire breaks, may connect to other organizations' trails and attractions. These

adjacent properties include California State Parks' Point Lobos Natural Preserve, Jacks Peak County Park, Big Sur, and other sites.

PCRP's proximity to the region's coastal and exurban communities may help to meaningfully reduce traffic on Highway 1 and Carmel Valley Road. This will be accomplished through a redistribution of users. Visitors that may have historically used or are presently using other organizations' open space and recreation lands – which may be distantly located along the Highway 1 and Carmel Valley Road corridors - may opt to visit PCRP. Time and fuel saved by visitors foregoing longer drives allows more time spent enjoying the outdoors while reducing traffic, and vehicle-caused emissions. Visitors will find that PCRP offers high-quality facilities, vistas, recreation, and environmental education opportunities, typically without the long drive. Based upon projected use as described in more detail below, MPRPD estimates that no more than 20% of PCRP visitors will be new visitors coming to PCRP via Highway 1 over Carmel Hill.

The following briefly describes proposed new uses at Palo Corona Regional Park.

1.   BACKPACKERS/CAMPERS: Camping is not presently allowed at PCRP however, it is anticipated that if this use is made available, backpackers/campers will comprise a very small percentage of PCRP's total users. Camping at PCRP is identified in the park's General Development Plan.

Access to the backcountry's two proposed campgrounds will likely be limited to a maximum of 25 people per day, per campground, with a maximum three-night stay. It is anticipated that during the rainy season and the middle of the work week, fewer backpackers/campers will visit PCRP's backcountry. The majority of PCRP's overnight users will likely be visitors that presently camp at Andrew Molera, Pfeiffer Redwood and Julia Pfeiffer state parks, or other similar public and private venues presently located along Highway 1. As previously mentioned, this small number of backpackers/campers will likely desire visiting PCRP due to trailheads and campgrounds being closer to our region's communities, and the world-class views of Monterey Bay from the park's trails.

Summary: PCRP's overnight visitors that would have otherwise camped at the region's other public and private venues are estimated at 5% of PCRP's total visitation.

2.   BICYCLISTS (Mountain and Road Bikes): Bicycles are not presently allowed at PCRP however, there has been quite a bit of interest from the bicyclists. Bike use at PCRP is identified in the park's General Development Plan.

a.   Mountain Bikes: The California Coastal Conservancy, numerous mountain bike enthusiasts, and several clubs have requested MPRPD's authorization to access the park's backcountry via bicycles. The potential of a one-day, 14 to 20-mile roundtrip hike may not be realistic for many visitors. Thus, mountain bikes may greatly enhance our patrons' ability to visit this expansive park. Mountain bikes would be required to use the established routes, which are typically extant ranch roads and fire breaks. Offering "bike-camping" at the proposed campgrounds would enhance our visitors' options in how they can enjoy their park.

MPRPD is contemplating the use of a permit system for mountain bikes at this park. A permit system would help MPRPD control the number of mountain bikes entering the park and aid in making modifications to that number on an as needed basis. Mountain bike access will likely be limited to a maximum of 50 mountain bikes, inside the backcountry, per day. Mountain bike access may utilize several staging areas including the Rancho Canada and Wisler-Wilson units. Access may potentially also be allowed from suitable adjacent public and private properties. A permit would be required when entering the park from these properties. This proposed use will attract a small number of mountain bikers who are presently accessing some of the region's other bike-friendly parks.

Summary: Mountain bikers that would have otherwise ridden at Fort Ord National Monument, Toro County Park, or another venue anyway are estimated at less than 5% of PCRP's total visitation.

b.   Road Bikes: Numerous road bike and alternative transportation enthusiasts have requested MPRPD's authorization to access the park's Rancho Canada Unit via road bikes. Extant golf cart paths within the park would be identified as bike routes. Connectivity between the park and adjacent residential neighborhoods, the city of Carmel-by-the-Sea, and Carmel Middle School would be established while simultaneously creating a multi-modal transportation corridor, thereby reducing vehicular traffic on Highway 1 and Carmel Valley Road.

Summary: The number of potential road bikers that would have otherwise ridden along portions of Carmel Valley Road and Highway 1 anyway are not estimated as their use may be to simply pass through the property.

3.   DAY-USE HIKERS: PCRP's current day-use hikers are, and in the future will likely continue to be, predominantly comprised of local visitors that have historically hiked MPRPD's properties including Palo Corona, Garland Ranch, Mill Creek, and Kahn Ranch regional parks, or have recreated on other jurisdictions' tails and open spaces including, Carmel River, Point Lobos, Garrapata, Andrew Molera, Pfeiffer Big Sur, and Julia Pfeiffer state parks. The recent acquisition and opening of PCRP's Rancho Canada Unit provides public access to PCRP, which, as previously noted, is in very close proximity to the region's coastal and inland communities. Access to the park via the Rancho Canada Unit has not increased traffic to either Highway 1 or Carmel Valley Road. PCRP's hiking enthusiasts are not new visitors travelling Highway 1 or Carmel Valley Road to visit the park; rather, they are visitors coming to the area anyway, and just enjoying another park option that is easily accessible and closer in proximity to our region's visitor accommodations and residential communities. Hikers that previously frequented the aforementioned regional and state parks are now driving less of a distance, thereby reducing traffic on Highway 1 and Carmel Valley Road, by shifting their hikes to PCRP.

Summary: Hikers that would have otherwise hiked at Point Lobos, Garrapata, Big Sur and other state parks, and Garland, Kahn, Mill Creek and other regional parks anyway are estimated at 85% of PCRP's total visitation.

4.   DOG PARK USERS: The majority of dog park users will be residents living in adjacent neighborhoods, some of whom presently utilize the extant dog park at the Quail Lodge residential community. Dog park users have been informed that Quail Lodge may soon adaptively repurpose their dog park. In response to this notice, canine enthusiasts are seeking an alternative dog park they can walk to in a similar manner to that which they presently enjoy. The proposed dog park at PCRP's Rancho Canada Unit may satisfy this use. Other local canine enthusiasts whom presently exercise their dogs a Garland Ranch Regional Park and Carmel Beach State Park may help reduce traffic on Highway 1 and Carmel Valley Road by utilizing the proposed facility.

Summary: Local residents that would have otherwise exercised their dogs at Quail Lodge, Garland Ranch, and Carmel State Beach anyway are estimated at 2% of PCRP's total visitation.

5.   ENVIRONMENTAL EDUCATION and ORGANIZED ACTIVITIES: Some new visitors may be coming to take advantage of PCRP educational programs and organized activities (e.g. amphitheater events) however, there may not be a substantial increase of users in addition to those visitors whom are already taking advantage of existing programs. Most of MPRPD's programs require reservations and are limited to a specific number of users due in part to the limited number of personnel available to offer classes and programs, each class' and program's carrying capacity to eliminate overcrowding and enhance the instructor-to-pupil ratio, and to not overwhelm the park's environmental carrying capacity.

Summary: The number of visitors attending environmental education and other programs offered at PCRP is not expected to increase and are estimated at 2% of PCRP's total visitation.

6.   EQUESTRIAN: Equestrian trail-ride enthusiasts have requested MPRPD's authorization to ride a personal or rental horse. This would provide some visitors access the park's backcountry. The California Coastal Conservancy has discussed their desire to enhance backcountry access and has identified equestrian trail rides as

an appropriate option. The potential of a one-day, 14 to 20-mile roundtrip hike may not be realistic for many visitors. Thus, equestrian trail rides may greatly enhance our patrons' ability to visit this expansive park. Equestrians would be required to utilize the established routes, which are typically extant ranch roads and fire breaks. Offering "horse-camping" at the proposed campgrounds may supplement our visitors' options in how they can enjoy their park.

MPRPD is contemplating the use of a permit system for equestrian trail riders at this park. A permit system would help MPRPD control the number of trail riders entering the park and aid in making modifications to that number on an as needed basis. Equestrian access will likely be limited to a maximum of 50 trail-riders, inside the backcountry, per day. Trail-ride access may utilize several staging areas including the Rancho Canada and Wisler-Wilson units. Access may potentially also be allowed from suitable adjacent public and private properties. A permit would be required when entering the park from these properties. This proposed use will attract a small number of equestrians who are presently accessing some of the region's other horse-friendly parks.

Summary: Equestrian access at Palo Corona will attract a small number of trail-riders who may already be accessing some of the region's other trails or beaches, including county, state, and federal properties along the Highway 1 and Carmel Valley Road corridors. Trail riders are estimated at less than 1% of PRCP's total visitation.

Please let me know if you require additional information or clarification.

Thanks for your help,

Rafael Payan

Appendix F

Tribal Consultation

Palo Corona Regional Park General Development Plan AB 52 Correspondence

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Esselen Tribe of Monterey County Tom Little Bear Nason 38655 Tassajara Road Carmel Valley, CA 93942 (408) 659-2153	9/21/18		Return receipt received
Costanoan Rumsen Carmel Tribe Tony Cerda, Chairperson 244 E. 1st Street Pomona, CA 91766 rumsen@aol.com (909) 524-8041 (cell) (909) 629-6081	9/21/18		Letter returned unclaimed
Ohlone/Costanoan-Esselen Nation Louise Miranda-Ramirez, Chairperson P.O. Box 1301 Monterey, CA 93942 Ramirez.louise@yahoo.com (408) 629-5189 (408) 661-2486 (cell)	9/21/18		Return receipt received
Amah Mutsun Tribal Band Valentin Lopez, Chairperson P.O. Box 5272 Galt, CA 95632 vlopez@amahmutsun.org (916) 743-5833	9/21/18		Return receipt received
Amah Mutsun Tribal Band of Mission San Juan Bautista Irenne Zwierlein, Chairperson	9/21/18		

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
789 Canada Road Woodside, CA 94062 amahmutsuntribal@gmail.com (650) 851-7489 (cell) (650) 851-7747 (office) (650) 332-1526 (fax)			
Indian Canyon Mutsun Band of Coastanoan Ann Marie Sayers, Chairperson P.O. Box 28 Hollister, CA 95024 ams@indiancanyon.org (831) 637-4238	9/21/18		Return receipt received

Local Government Tribal Consultation List Request
Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☒ **CEQA Tribal Consultation List (AB 52)** – *Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2*

☐ **General Plan (SB 18)** - *Per Government Code § 65352.3.*
      Local Action Type:
           ___ **General Plan** ___ **General Plan Element** ___ **General Plan Amendment**

           ___ **Specific Plan** ___ **Specific Plan Amendment** ___ **Pre-planning Outreach Activity**

Required Information

Project Title: _Palo Corona Regional Park General Development Plan__

Local Government/Lead Agency: _Monterey Peninsula Regional Park District__

Contact Person: _Hannah Haas__

Street Address: _4825 J Street, Suite 200__

City: _Sacramento, CA__ **Zip:** _95816___

Phone: _916-706-1374___ **Fax:**_____

Email: _hhaas@rinconconsultants.com___

Specific Area Subject to Proposed Action

    County: _Monterey__ **City/Community:** _____

Project Description:

The project consists of the preparation of a General Development Plan to guide future projects at Palo Corona Regional Park

Additional Request

☒ **Sacred Lands File Search** - *Required Information:*

USGS Quadrangle Name(s): _Monterey_____

Township: 16S	**Range: 1E**	**Section(s): 18, 19**
Township: 16S	**Range: 1W**	**Section(s): 13, 24, 25, 30**