

**Public Draft
INITIAL STUDY/
Negative Declaration**

for

Annual Bike Monkey Annadel XC Mountain Bike Race

in

Annadel State Park



prepared for:

Bike Monkey
PO Box 5318
Santa Rosa, CA 95402

prepared by:

Wynn Coastal Planning
703 North Main Street, Fort Bragg CA 95437
ph: 707-964-2537 fx: 707-964-2622
www.WCPlan.com

July 3, 2015

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NEGATIVE DECLARATION

PROJECT: Annual Bike Monkey Annadel XC Mountain Bike Race

LEAD AGENCY: California Department of Parks and Recreation

AVAILABILITY OF DOCUMENTS:

This Initial Study/Negative Declaration is available for review at:
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall – Suite 410
Sacramento, CA 95814

Bay Area District Office
845 Casa Grande Drive
Petaluma, CA 94954

Annadel State Park
Visitor Center
6201 Channel Drive
Santa Rosa, CA 95409

Sonoma County Library
211 E Street
Santa Rosa, CA 95404

California Department of Parks and Recreation Internet Website
[State Parks CEQA Notices](#)

PROJECT: Bike Monkey, a bicycle event production and management company based in Santa Rosa, proposes to produce the Annual Bike Monkey Annadel XC Mountain Bike Race (Project), to be held yearly in Annadel State Park (ASP), on a Saturday or Sunday in August or September, depending on weather and availability on the event calendar with adjacent Spring Lake Regional Park where the event finishes. This event is a fundraiser for the Park, supporting the Sonoma County Trails Council, with all funds going to support Annadel-specific improvements, primarily trail work.

A copy of the Initial Study is incorporated into this Negative Declaration. Questions or comments regarding this Initial Study/Negative Declaration should be addressed to:

Patricia DuMont
Environmental Coordinator
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 410
Sacramento, California 95814
Fax: 916-445-8883
Email: CEQANSC@parks.ca.gov
Subject line: Annual Bike Monkey Annadel XC Mountain Bike Race

Submissions must be in writing and postmarked or received by fax or email no later than July 30, 2015. The originals of any faxed document must be received by regular mail within ten working days following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include your full name and address. All comments will be included in the final environmental document for this project and will become part of the public record.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (DPR) has independently reviewed and analyzed the Initial Study and Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR.



Patricia DuMont
Environmental Coordinator
Northern Service Center

7.3.15

Date



Danita Rodriguez
District Superintendent
Bay Area District

7/3/15

Date

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CHAPTER 1 – INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/Negative Declaration (IS/ND) has been prepared by Wynn Coastal Planning for Bike Monkey and the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Annual Bike Monkey Annadel XC Mountain Bike Race (hereafter referred to as the proposed project) at Annadel State Park (ASP) within Sonoma County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 et seq., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 et seq.

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, a Negative Declaration (ND) may be prepared instead of an EIR [CEQA Guidelines §15070(a)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/ND conforms to the content requirements under CEQA Guidelines §15071.

1.2 LEAD AGENCY

The Lead Agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is the Department of Parks and Recreation (DPR). The project manager for the lead agency is:

Patricia DuMont
Environmental Coordinator
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 410
Sacramento, California 95814
Phone: 916-445-8883

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Annual Bike Monkey XC Mountain Bike Race (Project). Applicable DPR Standard Project Requirements are identified and will be implemented as part of the project, eliminating any potentially significant adverse impacts or reducing them to a less-than-significant level.

This document is organized as follows:

Chapter 1 - Introduction

This chapter is an introduction to the project and describes the purpose and organization of this document.

Chapter 2 - Project Description

This chapter describes the reasons for the project, scope of the project, project requirements, and project objectives.

Chapter 3 - Environmental Setting, Impacts, and Mitigation Measures

This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. All potentially significant impacts identified in this chapter are considered less than significant or reduced to a less than significant level with implementation of DPR Standard Project Requirements. Therefore, no mitigation measures are required for the proposed project.

Chapter 4 – Mandatory Findings of Significance

This chapter identifies and summarizes the overall significance of any potential impacts to the natural and cultural resources, cumulative impacts and impacts to humans, as identified in the Initial Study.

Chapter 5 - References

This chapter identifies the references and sources used in the preparation of this IS/ND.

Chapter 6 - Report Preparation

This chapter includes a list of report preparers.

1.4 SUMMARY OF FINDINGS

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project.

Based on the Environmental Checklist and the supporting environmental analysis provided in this document, the proposed Annual Bike Monkey Annadel XC Mountain Bike Race would result in less than significant impacts for the following issues: Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Recreation, and Transportation/Traffic.

In accordance with §15064(f)(3) of the CEQA Guidelines, a ND shall be prepared if the proposed project would not have a significant effect on the environment. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that the proposed project would have a significant effect on the environment. It is proposed that a Negative Declaration be adopted in accordance with the CEQA Guidelines.

CHAPTER 2 – PROJECT DESCRIPTION

2.1 INTRODUCTION

This Initial Study is prepared as required by the Conditions of Approval for the Special Event Permit for the 2015 Annual Bike Monkey Annadel XC Mountain Bike Race. Staffing levels at Annadel State Park (Park) are minimal due to budgetary constraints; therefore, this analysis has been prepared by a private consultant at the direction of State Parks staff. This document has been reviewed by State Parks and is presented to the public accordingly as representing the Project, its potential impacts, avoidance and best management practices, including findings that this Project has a less than significant impact to sensitive resources located within the Park.

The following document summarizes the sensitive resources within Annadel State Park (Park), Sonoma County, California, with a particular focus on the Park's designated trails that are to be utilized for the purposes of allowing Bike Monkey's annual trails benefit mountain bike race, the Annual XC Mountain Bike Race (Project). Without avoidance measures, the Project could pose impacts to several of the Park's sensitive resources, particularly Air Quality, Biological Resources, Cultural Resources, Geology & Soils, Hydrology & Water Quality and Recreation. Therefore, this document addresses each of the documented resources and provides avoidance and best management practices to reduce the potential impacts to less than significant. Further detail is presented in Appendix A, which includes the Reports upon which this document has been prepared. These Reports address Biological, Archaeological and Soils resources.

2.2 PROJECT LOCATION

Annadel State Park is located in central Sonoma County, adjacent to eastern Santa Rosa. The approximately 5,500-acre site is a mixed-use park managed by the California Department of Parks and Recreation and used by hikers, runners, mountain bikers, and equestrians. The Park is situated in the Sonoma Mountains, a sub-range of the North Coast Range, with its highest point at Bennett Peak, approximately 1,910 feet above mean sea level. As is typical of the range and intervening valleys of the Sonoma Mountains, the Park runs northwest-southeast. The topography is mixed with high gradient slopes situated throughout, with a general plateau or bench running through the central to northern portion of the Park.

2.3 BACKGROUND AND NEED FOR THE PROJECT

The Annual Bike Monkey Annadel XC Mountain Bike Race was originally presented in 2010 as one discipline in multi-discipline race event at Annadel State Park. In 2011, the cycling portion of the race was separated out from the other disciplines, with the purpose of the event then becoming a fundraiser for the Sonoma County Trails Council, which voluntarily maintains the Park-

designated trails in Annadel State Park. The trail running portion of the 2010 event has continued annually in the spring for approximately 400 runners, as the Annadel Half Marathon. This event is similarly a fundraiser to help build and maintain the trails in Annadel State Park.

The need for the fundraising race became evident during the State Budget Crisis of 2008-2011, which resulted in the State limiting public access to many of its Parks, including the announced closure of 70 parks in 2011. This race became the local bicycling community's way to contribute directly to the needs of the local Park; thereby reducing the burden on State Parks with the goal of keeping the resource open to the public. The Annual Bike Monkey Annadel XC Mountain Bike Race has been produced annually as a fund-raiser ever since.

The Sonoma County Trails Council (SCTC) works in collaboration with others to advocate, plan, build, and maintain an expansive network of sustainable, shared-use public trails for non-motorized recreation throughout Sonoma County, California. In addition, the Sonoma County Trails Council performs regular trail maintenance, which has the added benefit of ensuring that Park-designated trails are ready for recreational traffic, minimizing dust creation and erosion. Slough, tread, and berm maintenance is conducted on areas of the trail that require this type of work; acute problem areas are prioritized. For example, outside berms are made of soil that has built up on the outside of the tread, forming a barrier that prevents water from sheet draining. Outside berm formation is the single largest contributor to erosion of the tread. SCTC additionally performs the following best management practice trail maintenance activities:

- Remove and scatter outside berm material that collects at the outside edge of the trail. Reshape the tread and restore the outslope. Maintain the tread at the designed width.
- Remove slough. Slough is soil, rock, and debris that moved downhill to the inside of the tread, narrowing the tread. (see **Figures 1 & 2**).
- Loosen compacted slough and remove the soil with a shovel; compact the tread thoroughly. Slough that doesn't get removed is the main reason trails "creep" downhill.

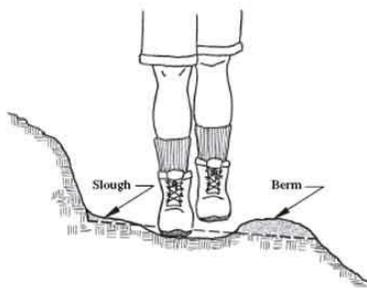


Figure 1 (above). Illustration of common trail degradation components

Figure 2 (right). Newly maintained trail, free of slough, outside berm, and smoothed tread.



SCTC is dedicated to leading the effort to bring together hiking, running, cycling, and equestrian groups to advocate for trails in Sonoma County. Since 1967, the SCTC has successfully represented non-motorized trail users in all Sonoma County trail-planning efforts. Without this fundraiser, SCTC has fewer resources available to achieve these goals.



Figure 3. Bike Monkey Annadel XC Mountain Bike Race (source: Ken Porter, PressDemocrat.com)



Figure 4. Annadel Half Marathon trail running race. (source: AnnadelHalf.com)

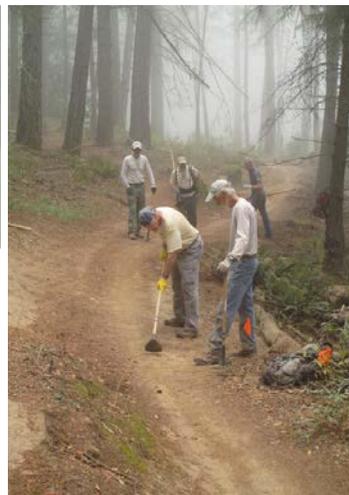


Figure 5. Sonoma County Trails Council Maintaining South Burma Trail, September 2014. (source: SonomaCountyTrailsCouncil.org)

2.4 PROJECT OBJECTIVES

The purpose of the Annual Bike Monkey Annadel XC Mountain Bike Race is to raise funds for the Sonoma County Trails Council, which provides trail maintenance on a volunteer basis for Annadel State Park, as well as to provide a fun and strenuous race event for mountain bikers.

The proposed project objectives are aligned with the mission of DPR: *“To provide for the health, inspiration, and education of the people of California by helping to preserve the state’s extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation.”*

Without this special event to raise trail maintenance funds, Annadel State Park trails would degrade as State Parks continues to be underfunded.

2.5 PROJECT DESCRIPTION

Bike Monkey, a bicycle event production and management company based in Santa Rosa, proposes to produce the Annual Bike Monkey Annadel XC Mountain Bike Race (Project), to be held annually, on a Saturday or Sunday in August or September, from approximately 9:00am to 3:00pm depending on weather and availability of the event calendar with adjacent Spring Lake Regional Park where the event finishes. The event organizers would seek an amendment to this Special Event Permit from State Parks if the format or timing of the proposed event deviates substantially from the approved Project. This event is a fundraiser for the Park through the supporting organization Sonoma County Trails Council, with all funds going to support Annadel-specific improvements, primarily trail work.

The maximum number of participants is 700 mountain bikers divided between two courses, either the long or short courses as shown on course map (See **Chapter 2, Figure 6**, Annual Bike Monkey Annadel XC Mountain Bike Race Course Map). Based on race participation from 2010-2014, bike racers would enter the race divided between two courses, with approximately 35% of bike racers on the short course and 65% of bike racers on the long course. State Parks and Bike Monkey have, in previous years, agreed to limit the number of racers to 700 participants in order to retain control over emergency response and limit race day impacts to other park users. It is expected that this would be the limit to rider participation in the foreseeable future.

The start of the event and associated race parking is located outside of the Park as is the terminus of the race and could vary from year to year. The start of the event takes place either in downtown Santa Rosa near 3rd and D streets or in the neighboring Spring Lake Regional Park. When starting in downtown Santa Rosa, the racers would naturally self-sort during the approximately 3 miles of travel to the State Park, as the racers are of varying fitness and skill levels. The

fastest riders would lead with a faster speed while the slowest would trail off of the back of the group. When starting in Spring Lake Regional Park, rider starts would be staggered by manual means, with the start of the race approximately 1,200 yards from Annadel. Manual staggering is performed by releasing racers in small groups of approximately 30 racers in approximately 5-minute intervals. This ensures that by the time riders reach Annadel State Park that they have spread out and do not clog the trails.

The first riders reach the Park at approximately 9:30am with the majority finishing the long course by approximately 1:00pm. The course consists of the following trails within the Park (**Figure 6, below**), in order: **Cobblestone** (after entering the park via Violetti Rd), **Channel Drive** to ranger station, **Channel Trail** (adjacent to Channel Drive), **Warren Richardson**, **North Burma**, **Live Oak**, **Rough Go**, **Lake Trail** (connecting Rough Go to Canyon), **Canyon Trail**, **Warren Richardson**, **South Burma**, **Marsh**, **Lawndale**, **Schultz**, **Pig Flat**, **Ridge**, **Marsh**, **Canyon**. The short course eliminates Lawndale, Schultz and Pig Flat by remaining on Marsh where it then re-joins the long course at the top of Pig Flat.

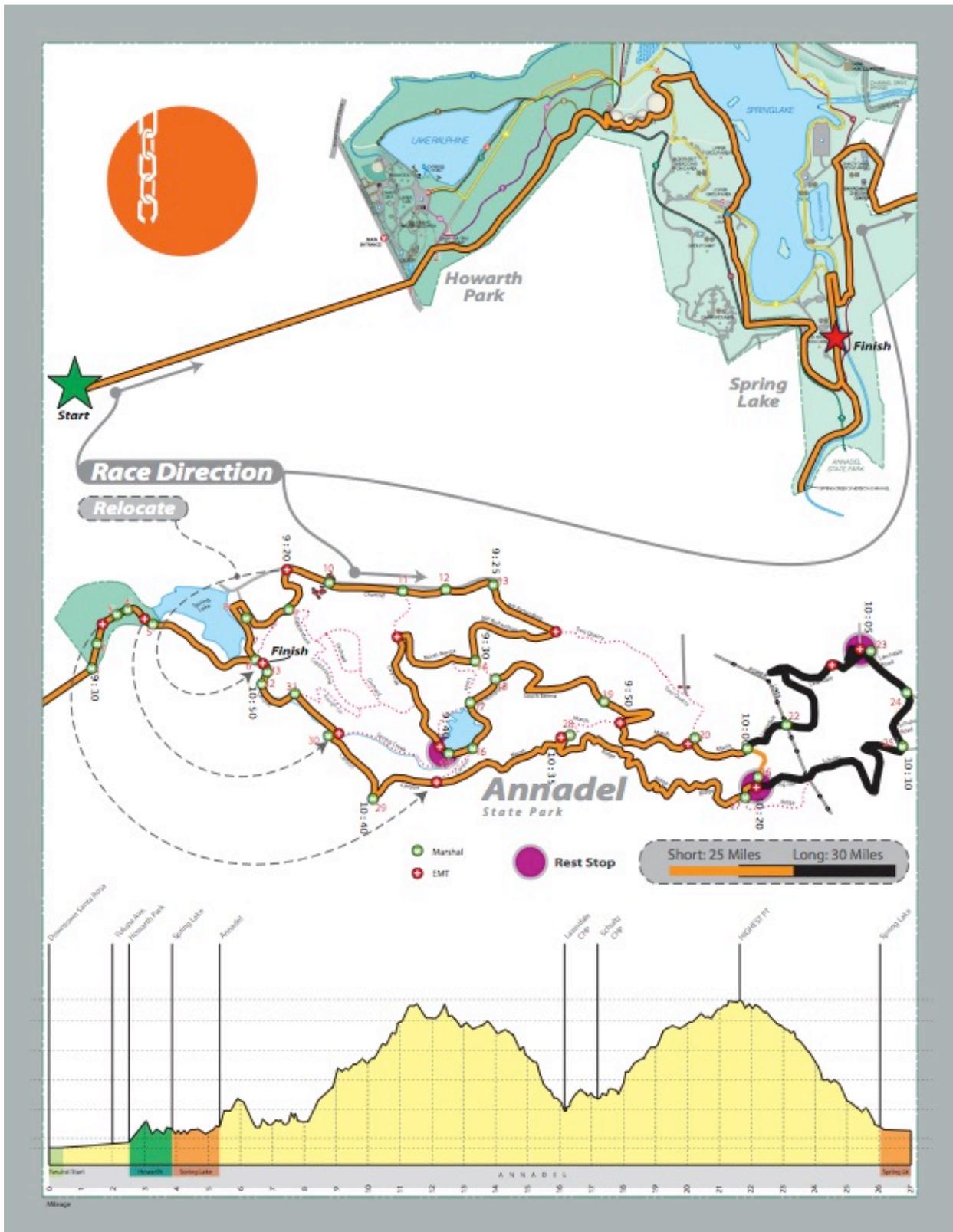
The estimated spectator, volunteer, and support staff attendance would range from 20 to 60 people. Spectators and race personnel would be located at existing picnic tables and at wide points to avoid off-trail activity (see **Figure 6, below**); first aid stations and personnel would be located at existing picnic tables and at wide points to minimize off-trail activity. Historically, there are few to no spectators on course for a cross-country mountain bike event, as this sort of event is not conducive to spectating.

The finish for the event is in neighboring Spring Lake Regional Park; the event organizers file a separate permit with Sonoma County for use of Spring Lake. This is also where any spectators would gather, outside the boundaries of Annadel State Park (ASP or Park).

Prior to and after the race, Race Coordinators would coordinate with Sonoma County Trails Council to ensure that trails utilized for the race course are properly maintained to minimize dust and erosion.

Project requirements have been incorporated into the Project and are detailed in Section 2.6. They include: pre-Project educational outreach to the Project participants, pre-Project inspections, potential sensitive species relocation, flagging sensitive resources to exclude bike or foot traffic, monitoring during the Project, post-Project inspections to identify any need for adaptive management, and post-Project Reports to State Parks. Additionally, the Project has been designed to avoid impacts.

Figure 6. Bike Monkey Annadel XC Mountain Bike Race Course Map



2.6 PROJECT REQUIREMENTS

Under CEQA, the DPR has the distinction of being considered a Lead agency, a Responsible agency, and a Trustee agency. A lead agency is a public agency that has the primary responsibility for carrying out or approving a project and for implementing CEQA, and a Responsible agency is a public agency other than the lead agency that has responsibility for carrying out or approving a project and for complying with CEQA. A Trustee agency is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. With this distinction comes the responsibility to ensure that actions that protect sensitive resources are always implemented on every project. Therefore, DPR maintains a list of Project Requirements that are included in project design to reduce impacts to sensitive resources.

DPR has developed a list of Standard Project Requirements that are actions that have been standardized statewide for the purpose of avoiding significant project-related impacts to the environment in park units. From this list, standard project requirements are assigned, as appropriate to all projects (**Table 1 below**). For example, projects that include ground-disturbing activities, such as trenching, would always include standard project requirements addressing the inadvertent discovery of archaeological artifacts. However, for a project that replaces a roof on an historic structure, ground disturbance would not be necessary; therefore standard project requirements for ground disturbance would not be applicable and would not be assigned to the project.

DPR also makes use of specific project requirements. These are project requirements developed to address project impacts for projects that have unique issues; they would not typically be standardized for projects statewide.

Table 1. Project Requirements	
Issue	Requirement
General	
Specific Requirements 1: General	<ul style="list-style-type: none"> • Prior to the start of the Race, the Race Organizer will consult with the State Parks representative to identify all resources that must be protected. • Prior to the start of the Race, a DPR-qualified Biological and Cultural Resources Specialist will train Event Staff in Natural and Cultural Resource identification and protection procedures. • Prior to the start of the Race, and at the discretion of a State Parks environmental scientist, a qualified biologist will flag protected species; a cultural specialist will flag and/or cordon off cultural resources identified for protection, with buffers of ten feet for avoidance during the Race activities. The Race Organizer will remove the flagging and/or cordon tape after project completion.

Table 1. Project Requirements	
Issue	Requirement
	<ul style="list-style-type: none"> • Race Coordinators will participate in a post-race walk-through at specific locations, as determined by a DPR Environmental Scientist, to assess resource impacts. Any areas determined to have experienced resource damage will be restored to the pre-race condition. • The Race is scheduled during the dry season of the year and is routed to avoid wet areas, with the wettest location – the Ledson Marsh area – being upwards of 30 meters from the closest point of the course. In coordination with a DPR-Environmental Scientist, the Race coordinators will establish photo points along race trails to record pre- and post- race resource conditions. The DPR Environmental Scientist may specify certain locations and types of photos, for example, to document pre- and post-race dust conditions on vegetation along trail edges.
Specific Requirement 2 Safety	<ul style="list-style-type: none"> • Organizers will provide race monitors and first aid personnel to direct cyclists, forewarn them of challenging trail sections, inform the public of the event in progress so they know which trails are in use, keep cyclists on designated trails and provide basic medical aid. • If a serious medical emergency arises, the event monitors will request DPR staff and 9-1-1 services. Event organizers provide funds to support additional emergency response personnel from DPR staff. • Due to limited cell service in some areas of the park, HAM radio operators are assigned to assist with radio communication throughout the event to keep the organizer and associated medical and volunteer personnel informed of the event's progress. • The park and trails will be open to all users during the event; it is not a closed course. Volunteers assigned by the organizer will be stationed at entry points to the park as well as at intersections adjacent to the course within the park to inform the public of the event in progress and offer recommended alternate routes should visitors wish to avoid the event route. • Project staff will post signage indicating times during which other park users may encounter race traffic as well. These signs are very specific to their locations and confine the time windows for race traffic such that other users' experience is minimally impacted
Aesthetics	
Specific Aesthetics 1: Lighting	<ul style="list-style-type: none"> • Early morning activities could necessitate artificial lighting. These activities will be primarily at the Spring Lake parking lot (Finish line) and early-course Aid Stations (Rest Stops) (see Chapter 2, Figure 6) as the first Marshals set up prior to the race. Lighting shall be limited to head-mounted lamps to reduce light impacts

Table 1. Project Requirements	
Issue	Requirement
	<p>on neighboring properties and wildlife.</p> <ul style="list-style-type: none"> • Head-mounted lamps will have a light output of approximately 40 lumens or less.
Air Quality	
Standard Air Quality 1: Dust Control	<ul style="list-style-type: none"> • Immediately following the Race, vegetation identified by the qualified biologist in the pre-Project plant survey that may have accumulated a concentration of dust due to the race will be brushed lightly to return the dust to the ground.
Biological Resources	
Specific Biological Resources 1: General	<ul style="list-style-type: none"> • Prior to the start of Race activities, the Race Organizer will determine the minimum area required to conduct the Race and define the boundaries of the Race Course on the Race Map and with flagging or cordoning on the ground, as appropriate. • Race Organizer will train support staff and volunteers operating within the Park to keep impacts to a less than significant level and to keep activity entirely within the designated race course; • No living trailside/roadside vegetation will be removed. • No signs or other race materials will be attached to trees, shrubs or other vegetation with nails, or any material that substantially penetrates or damages the plant in any way. No paint will be used on trees, shrubs, or other vegetation. Following the conclusion of the race, Race Coordinators will promptly remove all temporary fencing, signs, race markers, etc
Standard Biological Resources 2: Invasive Plant Species	<ul style="list-style-type: none"> • A pre-project plant survey along the racecourse will be conducted with a focus on invasive species with a Cal-IPC Rank: High, and with the potential to pose a serious threat to the native flora and vegetation of the Park; <ul style="list-style-type: none"> ○ Although invasive species are present within the Park, it is anticipated that most will have gone to seed at the time of the Race; • Where dense populations of invasive species are located within five feet of the race course, temporary, high visibility flagging will be installed to alert race participants of the presence such species; <ul style="list-style-type: none"> ○ Only those species that are in a phenological state capable of spreading (i.e., seed set) will be flagged; ○ Only those populations that are of substantial size (e.g., hundred square feet) will be flagged; ○ Only those populations within ten feet of the Park's trails will be flagged; • Race organizers will inform all race participants of the locations of invasive species and that to cross or pass through the high visibility flagging, typically for the purpose of passing other riders, is forbidden in these locations; • Likewise support staff and volunteers operating within the Park

Table 1. Project Requirements	
Issue	Requirement
	<p>will be informed of the locations of invasive species and will likewise not cross or pass through the high visibility flagging;</p> <ul style="list-style-type: none"> • No living trailside/roadside vegetation shall be removed.
Standard Biological Resources 3: Natural Communities	<ul style="list-style-type: none"> • All race participants shall be briefed by Project staff, either by pre-event email communiqués or handouts, of the Park’s sensitive natural communities and wetlands, and shall at all times be required to limit their travel to the race course, which, within ASP, occurs exclusively on Park-designated trails and roads; • A qualified biologist with a focus on wetlands and other sensitive natural communities within 10 feet of the race course will conduct a pre-project plant survey along the racecourse <ul style="list-style-type: none"> ○ If wetlands within 10 feet of the above-referenced trailside/roadside are saturated and/or contain vegetation susceptible to direct or indirect impacts from the Project, race organizers will install temporary high visibility flagging to alert race participants of the presence of such habitats and the need to follow an alternate route; ○ If sensitive natural communities within 10 feet of the trailside/roadside contain herbaceous vegetation particularly susceptible to direct or indirect impacts from the Project, race organizers will install temporary high visibility flagging to alert race participants of the presence of habitat; ○ Race organizers will inform all race participants of the locations of wetlands and sensitive natural communities, not to cross or pass through the high visibility flagging, and that passing other riders is forbidden in these locations.
Standard Biological Resources 4: Plants	<ul style="list-style-type: none"> • A qualified biologist will conduct a pre- and post-project inspection of documented special-status plant locations to document direct and indirect impacts to special-status plants. Race organizers will video the course one week before the race, the day before the race and the afternoon after the race has been completed; <ul style="list-style-type: none"> ○ If direct impacts occur (e.g., broken branches, trampling), the affected plants will be treated under the direction of a qualified biologist to ensure the continued survival of the special-status plant populations; anticipated treatments include: pruning broken branches and restoring soil cover over exposed roots ; ○ If indirect impacts occur (e.g. dust), the affected plants will be treated under the direction of a qualified biologist to ensure the continued survival of the special-status plant populations; anticipated treatments include: shaking dust out/off of the special-status plants at the time of the post-project inspection.
Specific Biological Resources 5: Plants	<ul style="list-style-type: none"> • A qualified biologist with a focus on those species with the potential to occur within 10 feet of the race course will conduct a pre-project plant survey along the racecourse <ul style="list-style-type: none"> ○ To capture all of the potentially occurring species on the race course trailside/roadside, the survey will be performed when

Table 1. Project Requirements	
Issue	Requirement
	<p>the plants are in a phenological stage conducive to positive identification (i.e., usually during the blooming period for the species);</p> <ul style="list-style-type: none"> • Race organizers will install temporary high visibility flagging where special-status plant species are located within 10 feet of the race course, to alert race participants of the presence of such species and that these areas are to be avoided; • At the discretion of a qualified biologist, race staff will monitor race activities to ensure that impacts to special-status plant species are avoided. • Project staff will brief all race participants either by pre-event email communiqués or handouts, of the locations of special-status plants and that racers will not cross or pass through the high visibility flagging, and that passing other riders is forbidden in these locations; • Likewise support Project staff will brief volunteers operating within the Park, either by pre-event email communiqués or handouts, of the locations of special-status plants and that they likewise will not cross or pass through the high visibility flagging; • Best Management Practices (BMPs) to avoid creation of dust will be employed during all Race activities within ten feet of sensitive-status plants. BMPs for avoiding creation of dust include removing and scattering outside berm material that collects at the outside edge of the trail, and removing the slough (soil, rock and debris that has moved downhill to the inside of trail tread, narrowing the tread) from the tread surface. Trails will be restored to pre-race conditions. • No plant species will be pruned, cut, pulled back, removed, or damaged in any way.
Specific Biological Resources 6: Northern Spotted Owl (NSO)	<ul style="list-style-type: none"> • The Project will occur after the Northern Spotted Owl (NSO) breeding season, typically February 1st – July 31st.
Specific Biological Resources 7: California Red Legged Frog (CRLF) and Western Pond Turtle (WPT)	<ul style="list-style-type: none"> • The Project will occur after the breeding and dispersal season for California Red Legged Frog (CRLF) and Western Pond Turtle (WPT), typically winter and spring, with WPT females migrating near-daily in June; • The Project will begin at least one hour after sunrise and will end at least one hour before sunset to avoid potential impacts to dispersing CRLF and WPT; • A qualified biologist will provide information to all Project staff on the life-cycle and general identification of CRLF and WPT, which will, in turn be provided to volunteers and race participants as part of their pre-race briefing; <ul style="list-style-type: none"> ○ In-depth information will be provided to all Project staff and volunteers; ○ Special attention will be given to Ledson Marsh to inform Project participants of this wetland and the habitat it

Table 1. Project Requirements	
Issue	Requirement
	<p>provides;</p> <ul style="list-style-type: none"> • Within 24 hours prior to the start of the Project, a qualified biologist will conduct a survey for CRLF and WPT in any wet areas within 10 feet of the race course,; <ul style="list-style-type: none"> ○ If individuals of CRLF and/or WPT are observed within 10 feet of the trailside/roadside, Project participants will be delayed until the species moves out of the site on its own accord. • Immediately prior to the start of the Project, a qualified biologist will conduct a visual inspection of the race course. <ul style="list-style-type: none"> ○ If CRLF is found on the race course, racers in the vicinity of the animal will be delayed until the species moves safely off course of its own accord. • Race Coordinators will implement wildlife-friendly (i.e. no trapping of wildlife) Best Management Practices, as necessary, to minimize soil erosion, dust and sedimentation. • All temporary barriers and/or fencing (if used) will incorporate a wildlife friendly design that consists of openings that allow an animal to pass through and will be inspected by a DPR-approved biologist. Any trapped animals will be removed by a DPR-approved biologist according to state and/or federal protocols.
Cultural Resources	
Specific Cultural Resources 1: General	<ul style="list-style-type: none"> • Approximately 50 volunteers trained on exclusion areas as well as State Park Rangers will monitor trail intersections, aid stations, etc, to keep people on the route and address any issues that could arise. • Training of volunteers and participant awareness will be accomplished through website content, a series of email newsletters, and/or onsite briefings that incorporate a statement on the protection of resources (both cultural and natural) and the importance of staying on the designated race course.
Standard Cultural Resources 2: Standard Discovery Clause	<ul style="list-style-type: none"> • If anyone discovers previously undocumented cultural resources during the Race, race participants within 10' of the find will be temporarily halted, or routed away from the resource, until the archaeologist designs and implements appropriate treatments in accordance with the Secretary of the Interiors Standards and Guidelines for archaeological resource protection. • In the event that human remains are discovered, the race will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a

Table 1. Project Requirements	
Issue	Requirement
	Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities. The local County Coroner will make the determination of whether the human bone is of Native American origin.
Standard Cultural Resources 3: Archaeologist's Standard Requirements	<ul style="list-style-type: none"> Event staff and volunteers will monitor sensitive areas and confine race participants to the race course. Observed impacts will be documented with mapping, photography and written notes. A DPR-approved archaeologist will use the documentation to prepare a post-race report with solutions and recommendations for future events. .
Geology and Soils	
Specific Soils 1: Prohibit Off-Trail Travel	<ul style="list-style-type: none"> In areas where the potential for a trail deviation for passing or other advantageous travel exists, Event Staff will place flagging in order to keep participants on the "true trail." (See Figure 1, Chapter 2.3) Passing a fellow racer by deviating from "true trail" will be strictly prohibited. Trail impediments that cause people to seek off-trail travel will be removed (downed trees, etc). Prior to the Race, Race Coordinators will inform participants about prohibited off-trail travel and passing outside of the "true trail." Information dissemination methods will include website, email, and/or handouts given to participants.
Specific Soils 2: Water Crossings	<ul style="list-style-type: none"> The race course has been designed to avoid water crossings to the greatest extent feasible and is scheduled during the dry season.
Specific Soils 3: Slough, Tread & Berm Maintenance	<ul style="list-style-type: none"> Prior to and after the race, Race Coordinators shall coordinate with the Sonoma County Trails Council to ensure that trails utilized for the race course are properly maintained to minimize dust and erosion.
Hazards and Hazardous Materials	
Standard Hazards 1: Fire Safety	<ul style="list-style-type: none"> DPR personnel will have a State Park radio at the Park, which allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.
Hydrology/Water Quality	
Standard Hydrology 1: Water Quality	<p>The project will comply with all applicable water quality standards as specified in the North Coast Regional Water Quality Control Board Basin Plan.</p> <ul style="list-style-type: none"> All Race activities will be suspended during heavy precipitation events (i.e., at least 1-inch of precipitation in a 24-hour period) or when heavy precipitation events are forecast.

Table 1. Project Requirements	
Issue	Requirement
Transportation/Traffic	
Standard Traffic 1: Parking	<ul style="list-style-type: none"> • Parking will be dispersed, within Spring Lake Regional Park and on adjacent surface roads.

2.7 PROJECT IMPLEMENTATION

The Annual Bike Monkey Annadel XC Mountain Bike Race would occur during the dry season, over the course of approximately four to six hours (includes set up, racing, and break down) on one weekend day, either in August or September. Racing would occur only during daylight hours and the course would take place on Park-designated trails (see **Chapter 2.5, Figure 6**).

Avoidance measures and Best Management Practices (BMPs) have been incorporated into this project to ensure that the sensitive resources in and around the project area are adequately protected during the race. The BMPs discussed in this document and used in the implementation of this project are derived from the International Mountain Bike Association’s Trail Maintenance Standards and the recommendations of the project Biologist and Archaeologist, and include: cordoning off sensitive species and habitats that are vulnerable to disturbance from race activities; avoiding sensitive cultural resource areas through course design and choice of spectator, staff and aid station locations; pre- and post-race trail maintenance for dust control and to reduce erosion; and post-race inspections to brush accumulated dust off of any sensitive vegetative species and habitats.

2.8 CONSISTENCY WITH LOCAL PLANS AND POLICIES

The Annual Bike Monkey Annadel XC Mountain Bike Race is consistent with the Sonoma County General Plan and Zoning Ordinance’s Public/Quasi Public zoning designation. The Purpose of the Public/Quasi Public Land Use Designation is to provide sites that serve the community or public need and are owned and operated by government agencies, non-profit entities, or public utilities (Sonoma County General Plan 2020, Land Use Element Section 2.5).

While the DPR does not have a General Plan for Annadel State Park, it has adopted a Trails Master Plan for Annadel State Park (1996). The 30-mile race course (Project) occurs on only Park-designated trails, along a course that is reviewed and approved by DPR. The Project does not propose or involve the construction of any new trails, nor does it take place on any trails that are not sanctioned by DPR. Therefore, the Project is consistent with the Trails Master Plan for Annadel State Park.

2.9 DISCRETIONARY APPROVALS

This IS/ND is an informational document for both agency decision-makers and the public. The State of California Department of Parks and Recreation is the Lead Agency responsible for certification of this Initial Study/ND. The project would be subject to other laws and applicable agency reviews, including, but not limited to: California Public Resources Code 5024 and 5024.5; the Federal and State Endangered Species Acts; Clean Water Act; Migratory Bird Treaty Act; and California Department of Fish and Wildlife Code. California State Parks retains approval authority for the proposed Annual Bike Monkey Annadel XC Mountain Bike Race Project.

Below is a general list of federal, state, and local agencies that could have jurisdiction over the project and could issue permits in connection with site development. This list is not considered exhaustive and additional agencies and/or jurisdictions could have permitting authority.

Federal Agencies

- (none)

State Agencies

- (none, besides DPR)

Local Agencies

- Sonoma County Regional Parks, Spring Lake
- City of Santa Rosa, Transportation and Public Works Department

2.10 CUMULATIVE ANALYSIS

The proposed Annual Bike Monkey Annadel XC Mountain Bike Race would have periodic activity over the course of approximately five hours, and is entirely confined to existing designated trails and roads within the Park. Currently, bicycling is an allowable use on these trails, a use that the Park experiences on a daily basis irrespective of season.

The Race could result in up to 700 racers on the course for an anticipated total duration of approximately four to six hours. Based on anecdotal reports as well as post-Project surveys, the vast majority of racers that are registered for the event regularly ride in Annadel, often every weekend during the year. Therefore, total ridership for the weekend does not increase by the total number of racers, but rather only by the racers that do not otherwise typically ride at Annadel every weekend.

Strava, a popular web tool that collects activity data voluntarily uploaded by athletes of all types (from runners to cyclists), was analyzed to extrapolate user

data for the estimated number of mountain bikers that typically ride on a popular portion of the Canyon Trail within the Park, indicated as the Canyon Climb. Carlos Perez, computer programmer, founder of Bike Monkey, who maintains major involvement in upwards of two-dozen cycling events each year, opines that approximately 30% of mountain bikers in the Bay Area use Strava to document their athletic activities. Mr. Perez created an algorithm that extrapolated user data uploaded to Strava for the purpose of this analysis.

The estimated number of cyclists on Canyon Climb for any given non-race weekend throughout the year ranges from approximately 120 to 530 cyclists. Typical August 2014 non-race weekend ridership on Canyon Climb ranged from 230 to 350 cyclists. Race-weekend ridership on Canyon Climb in August 2014 dropped to 163 cyclists; a 69% decrease from the yearly peak, and a 52% decrease from the non-race August weekend peak. This illustrates that race-weekend could have the effect of reducing ridership on non-race segments of the Park since it is possible that many of the typical weekend Canyon Trail cyclists are potentially participating in the race. According to Greg Fisher, head of marketing at Bike Monkey, registration for the Annual Bike Monkey Annadel XC Mountain Bike Race has historically been approximately 500 cyclists, though the previous agreements with State Parks permit up to 700 racers. Therefore, the increase in race-weekend ridership is likely to be nominal, based on uploaded data from Strava, survey data of rider locality, and anecdotal reports.

As the popularity of mountain biking grows throughout the region, especially in the Santa Rosa area, Annadel State Park has become a destination for Bay Area mountain bikers. As mountain bike events become more popular, ASP may experience increased numbers of cyclists within the Park. As cycling recreation within ASP increases, existing neighborhood or regional parks may experience a nominal increase in cycling, where permissible, as cyclists look for less populated parks to ride in. There is currently no data available to support or contradict this concept.

Based on visitation information from the County of Sonoma, State Parks, and the City of Santa Rosa, there is no indication that the Project, in it's last five years, has contributed to any increase in the usage of ASP or associated parks by any particular trail user. While the Project would continue to celebrate the rich recreational resource of ASP, it seems unlikely that it would directly contribute to excessive usage increases or displacements of other users such that would cause substantial physical deterioration to ASP or the surrounding parks.

CHAPTER 3 – ENVIRONMENTAL CHECKLIST

3.1 PROJECT INFORMATION

1. Project title: Annual Bike Monkey Annadel XC Mountain Bike Race

2. Lead agency name and address:
California State Parks, Bay Area District
845 Casa Grande Road, Petaluma, CA 94954

3. Contact person and phone number: Patricia DuMont (916)445-8883

4. Project location: Annadel State Park, Sonoma County

5. Project sponsor's name and address:
Carlos Perez, Bike Monkey
PO Box 5318, Santa Rosa, CA 95402

6. General plan designation: Public/Quasi Public 7. Zoning: Public/Quasi Public

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)
Annual cross country mountain bike race, taking place largely within the confines of Annadel State Park, with off-site segments on Spring Lake County Park and private property to the east.
Refer also to Chapter 2 of this Document (**Section 2.5, Project Description**)

9. Surrounding land uses and setting: Briefly describe the project's surroundings:
North: Urban Residential (City of Santa Rosa); East: Residential and Diverse Agriculture; South:
Resources & Rural Development and Rural Residential; West: Urban Residential (City of Santa Rosa)

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)
Refer to Chapter 2 of this Document (**Section 2.9, Discretionary Approvals**)

3.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

If implemented as written, this project could result in a "Less than Significant Impact" involving at least one area of the environmental factors checked below, as indicated by the Initial Study and Checklist on the following pages.

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input checked="" type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of 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 in 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 potentially 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.

Signature

Date

Patricia DuMont, Environmental Coordinator
California Department of Parks and Recreation

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance

3.4 CHECKLIST

I. AESTHETICS

ENVIRONMENTAL SETTING

According to the Sonoma County General Plan 2020, there are no officially designated scenic vistas or view corridors in Annadel State Park. Additionally, there are no officially State-designated scenic highways in or adjacent to Annadel State Park. Annadel State Park is located directly adjacent to the City of Santa Rosa, an urban area of approximately 190,000. As such, there are regular viewshed, noise, and light pollution impacts on a regular basis from the surrounding residences and businesses.

The Sonoma County General Plan, Open Space and Conservation Element has, as one of its objectives to “retain a rural, scenic character in Scenic Landscape Units with very low intensities of development. Avoid their inclusion within spheres of influence for public service providers.” One such Scenic Landscape Unit is the Bennett Valley area at the Santa Rosa/Annadel State Park margin. As a temporary project with a very limited duration that represents an established and allowable use of Annadel State Park, the Project is in keeping with the retention of this region’s rural, scenic character.

The General Plan goes on to note that the Santa Rosa region “is projected to add 32,652 people by 2020 and grow to a population of 223,400. Assuming full annexation of Santa Rosa’s Urban Growth Boundary, the City’s population would be 195,300, with the remaining 28,100 people in the unincorporated area.” This population increase would likely affect aesthetic concerns and elevate the baseline currently in place at the interface of the City of Santa Rosa and Annadel State Park.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- and its surroundings?
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Discussion

- a) The proposed project is a temporary event of a short duration. Racers would be moving throughout the park and would not be concentrated in any one location. They would not block any scenic vista. Racers would be limited to riding on the trail surface and accidental off-trail riding would be minimized. Therefore, the race would not affect any scenic vistas.
- b) As stated above, there are no officially State-designated scenic highways in or adjacent to Annadel State Park; therefore, no impact.
- c) The trail system is a part of the aesthetic experience of the trail user and Racers would be utilizing existing trail; however, this is a temporary activity and trails would be returned to pre-race conditions at the end of the day. No impact.
- d) This race is a temporary event of a short duration, hence having minimal impact to day or nighttime views in the area. Early morning activities could require artificial lighting. These activities would be primarily at the Spring Lake parking lot (Finish line) and early-course Aid Station (Rest Stop) setup (see **Chapter 2, Figure 6**) as the first Marshals set up prior to the race. Aid Stations on course would be set up approximately an hour prior to the anticipated arrival of the first racers. ASP is largely wooded. The only Aid Station on course located in an open meadow is located adjacent to Ledson Marsh. The Aid Station is located at existing Picnic Tables, which is nestled into trees. The anticipated arrival time of the earliest racer at this far point in the race is approximately 10:30 am, which would necessitate a 9:30am Aid Station setup. The sun rises between 615am and 715am in August and September; therefore, the need to utilize artificial lighting at this distant Aid Station is unlikely. Nevertheless, should lighting be required, lighting would be limited to head-mounted lamps to reduce light impacts on neighboring properties and wildlife. These lamps would be utilized by three to five staff members for less than two hours, each with a light output of approximately 40 lumens or less. By comparison, a 60-watt household lightbulb produces 800 lumens. Less than significant. Less than significant.

II. AGRICULTURAL RESOURCES

ENVIRONMENTAL SETTING

There are no Agricultural Resource lands within the project area.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
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Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the Calif. Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220g), timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104g)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

DISCUSSION

a-d) The Project does not occur on Prime Farmland, Unique Farmland or Farmland of Statewide Importance, nor does it occur within agricultural zoning or Williamson Act contracted lands, nor does it occur within or adjacent to agricultural or farmlands, nor would it result in the loss or conversion of forest land.

III. AIR QUALITY

ENVIRONMENTAL SETTING

The State and federal ambient air quality standards cover a wide variety of pollutants. Air pollution control and planning began in earnest in 1967 with the passage of the Federal Clean Air Act. In 1970 the National Ambient Air Quality Standards (NAAQS) were established for six pollutants. These pollutants are commonly referred to as criteria pollutants because criteria documents, which establish the relationship between exposure and effects on human health, have been prepared for each contaminant. The

State has its own air quality standards and air pollution planning programs. In 1988 the California legislature passed the California Clean Air Act, which required air districts to develop air quality plans to meet State standards. ASP is located within the regional Air Quality Basin/District governed by the Bay Area Air Quality Management District (BAAQMD). Only a few of these pollutants are problems in Sonoma County, due to either the extent of emissions or the climate of the region. Following is a description of problem pollutants in Sonoma County.

Ozone

Ozone Ground level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions between nitrogen oxides (NO_x) and reactive organic gases (ROG) in the presence of sunlight. The principal sources of NO_x and ROG, often termed ozone precursors, are combustion processes (e.g., by automobiles and aircraft) and evaporation of solvents, paints, and fuels. Motor vehicles are the single largest source of ozone precursor's emissions in Sonoma County. Exposure to ozone can cause eye irritation, aggravate respiratory diseases, and damage lung tissue, as well as harm vegetation and reduce visibility.

Ozone concentrations in the Bay Area and southern North Coast Air Basin have shown no strong trends over the last ten years. There is considerable year-to-year variation in levels due to the influence of weather.

Particulate Matter

The Bay Area Air Quality Management District (BAAQMD) governs the area in which the race is located. BAAQMD's regulatory authority covers, amongst other things, Fugitive Dust, including coarse particulate matter with a diameter between 2.5 and 10 microns. Particulates are solid or liquid particles, including smoke, dust, aerosols, and metallic oxides that are small enough to remain suspended in the air for a long period of time. PM₁₀ is particulate matter less than ten microns in diameter. PM_{2.5} is particulate matter less than 2.5 microns in diameter. There are many sources of particulate matter emissions, including combustion, industrial processes, grading and construction, farming operations, wind blown dust, and motor vehicles. Of the particulate matter emissions associated with motor vehicle use, some are tailpipe and tire wear emissions, but greater quantities are generated by re-suspended road dust. Mountain biking on dry summer trails could also generate dust. Consequently, improvements in motor vehicle engines and fuels have not reduced particulate matter emissions as significantly as they have reduced emissions of other pollutants.

Wood burning is a significant source of particulate matter, particularly during episodes when levels of particulate concentrations are highest as on a still and cold night. Wood smoke carries other pollutants, including carbon monoxide, nitrogen dioxide, and volatile organic compounds that include dioxin, benzene, and formaldehyde.

Health effects of particulate matter vary depending on a number of factors, including the type and size of the particle. Research has shown a correlation between highly

inhalable particulate matter (PM10) concentrations and increased mortality rates. Elevated levels can also aggravate chronic respiratory illness such as bronchitis and asthma. Fine particulate matter (PM2.5) is a concern because it can bypass the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The largest emission sources for PM10 consist of construction and farming operations, entrained road dust, and wind blown dust. The major sources of PM2.5 are combustion of fuels and smoke. Both PM10 and PM2.5 are also created as secondary pollutants in the atmosphere through chemical and photochemical processes.

Particulate matter concentrations in the Bay Area and southern North Coast Air Basin have shown no strong overall trends over the last ten years. While many stationary sources of particulate matter such as factories and mills have either closed or been controlled, area sources such as vehicle traffic and residential wood-burning have been increasing, off-setting the reductions in the stationary emissions.

Wood Smoke

Wood smoke has long been identified as a significant source of pollutants in urban and suburban areas. Wood smoke contributes to particulate matter and carbon monoxide concentrations, reduces visibility, and contains numerous Toxic Air Contaminants. The particles are composed of organic vapors, carbon, and minerals that are not properly burned in the early phases of a fire. Present State controls on this source include the adoption of emission standards for wood stoves and fireplace inserts. Within the San Francisco Bay Air Basin some jurisdictions have adopted local woodsmoke ordinances, based on the Bay Area Air Quality Management District (BAAQMD) model wood burning ordinance. The Northern Sonoma County Air Pollution Control District's Regulation IV prohibits the installation of conventional fireplaces in new construction and remodels, and requires that any wood-burning devices be certified. Wood smoke regulation is likely to increase with the recent adoption of PM2.5 State and federal standards.

Toxic Air Contaminants

Toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, no safe levels of exposure to TACs can be established. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes (e.g., petroleum refining and chrome plating operations), commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust. Public exposure to TACs can result from emissions resulting from normal operations, as well as accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Other Air Quality Issues

Other air quality issues of concern in the Sonoma County include nuisance impacts of odors and dust. Objectionable odors may be associated with a variety of pollutants and operations. Common sources of odors include concentrated animal operations,

wastewater treatment plants, landfills, composting facilities, and industrial plants. Similarly, nuisance dust may be generated by a variety of sources including mining, agriculture, grading, and construction. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public.

Northeastern Sonoma County contains geothermal resources that are a potential source of an odorous substance, hydrogen sulfide. Rule 455 of the rules and regulations of the Northern Sonoma County Air Pollution Control District contain specific limitations on emissions of hydrogen sulfide from geothermal power plants. The adoption of this regulation and the general decline in geothermal production at the Geyser geothermal field has greatly reduced the potential for odor problems from this source.

The San Francisco Bay Area Air Basin was initially determined to be a state nonattainment area for carbon monoxide, ozone, and PM10 (e.g., solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time). The Bay Area was reclassified as an attainment area for carbon monoxide, but remains an ozone and PM10 nonattainment area. The NSCAPCD portion of the county is nonattainment for the state ozone and PM10 standard. The ozone designation is nonattainment / transitional, denoting that the area is close to attaining the standard.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations (e.g. children, the elderly, individuals with compromised respiratory or immune systems)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The Bay Area Air Quality Management District (BAAQMD) governs the area in which the race is located. BAAQMD's regulatory authority covers Fugitive Dust, including coarse particulate matter with a diameter between 2.5 and 10 microns). The race conforms with the Rules and Regulations adopted by the BAAQMD, from Regulations 1 through 14. The project has been analyzed according to those Rules and Regulations and the BAAQMD's CEQA Guidelines, adopted 5.31.2012.
- b) The Proposed Project is a mountain bike race, which would not involve wood burning or objectionable odors. The Proposed Project would involve a nominal increase in vehicular traffic, as the racers stage themselves for the race. Vehicular use is a contributor to ozone and toxic air contaminants. This is a temporary impact that would occur at the start as racers arrive and at the end as the racers depart.

Coarse Particulate Matter in the form of Fugitive Dust would likely be created by the participants as they race on the course's summer-dry trails. The project description includes methods for controlling dust to the greatest extent practicable. The raising of Coarse Particulate Matter by the riders would be dispersed throughout the course, and would not exceed the Standards in BAAQMD Regulation 6 (Particulate Matter) Rule 1 (General Requirements), 6-1-300, including:

6-1-301 Ringleman No. 1 Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringlemann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

6-1-302 Opacity Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in a any hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by District regulations.

6-1-305 Visible Particles: A person shall not emit particles from any operation in sufficient number to cause annoyance to any other person, which particles are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles. This Section 6-1-305 shall only apply if such particles fall on real property other than that of the person responsible for the emission.

The Proposed Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- c) While there would be a minimal amount of particulate matter in the form of geologic dust generated, the net increase in ridership for race weekend is minimal; therefore, there would not be a cumulatively considerable net increase of any criteria pollutant as identified by the BAAQMD. No impact.
- d) It is expected that the passage of bike tires across the summer-dry trail surface would raise dust off the ground and into the immediate air. Due to the dust's relatively rapid return to the ground, it is expected that air quality would not be impacted by suspended particulate matter in the air. Vegetation, however, may receive a light coating of dust as a result of the passage of racers. Should this coating of dust become too severe, the plant's ability to photosynthesize nutrients could be impacted.

The raising of Coarse Particulate Matter by the riders would be dispersed throughout the course, and is not expected to exceed the Standards in BAAQMD. Particulate Matter in the form of geologic dust may land on vegetation adjacent to the trails used in the course. The Race Organizer would inspect the course following the race; any concentrations of dust sufficient to impact photosynthetic processes that may have accumulated on vegetation due to the race would be brushed lightly to return the dust to the ground.

Cross County mountain bike races are not particularly conducive to spectating: racers are typically dispersed throughout the course, largely racing through areas in small numbers, from single racers to mostly groups of 3-6 racers. Therefore, spectator presence on course would be minimal. Any spectators that are on course would have the ability to position themselves in areas that have low potential for creation of substantial Fugitive Dust and Course Particulate Matter. Population groups that are most sensitive to Particulate Matter, such as children, seniors, pregnant women, and people with existing cardiovascular or respiratory conditions (BAAQMD – Draft Summary of PM Report, 2012) would be unlikely to hike out onto the course to place themselves in the position to incur significant exposure to PM. Therefore, exposure of substantial pollutant concentrations to sensitive receptors would be less than significant.

- e) Examples of land uses that have the potential to generate considerable odors include, but are not limited to: wastewater treatment plants; landfills; confined animal facilities; food manufacturing plants; refineries; and chemical plants (BAAQMD CEQA Guidelines, Chapter 7, Odor Impacts, May 2011). The project does not involve odor sources that would be objectionable. Therefore, the project would not create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES

ENVIRONMENTAL SETTING

WRA, Inc. prepared a Biological Letter Report for the proposed project (**Appendix A, Attachment A**). The emphasis of the study was to describe existing biological resources within and surrounding the project site, identify any special-status species and sensitive habitats within the project area, assess potential impacts that may occur to biological resources, and recommend appropriate avoidance and minimization measures to reduce those impacts in accordance with CEQA and potential permitting requirements.

The Park supports a range of habitats and species, several of which are considered sensitive by federal and/or state regulations. Various sources, including Park Environmental Staff and WRA, Inc, have reported the following sensitive biological resources from the Park:

Sensitive Resources

a. Wetlands and non-wetland waters:

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act and/or state regulations such as the Porter-Cologne Act, the California Department of Fish and Wildlife Streambed Alteration Program, and the California Environmental Quality Act.

For the purposes of this document, a wetland is defined as “an area, under normal circumstances, that (1) is saturated by ground water or inundated by shallow surface water for a duration sufficient to cause anaerobic conditions within the upper substrate; (2) exhibits hydric substrate conditions indicative of such hydrology; and (3) either lacks vegetation or the vegetation is dominated by hydrophytes.” (Technical Memorandum No. 2: Wetland Definition, CA State Water Board, 25 June 2009)

There are several unnamed ephemeral streams within the Park that, during large or successive precipitation events ultimately flow to either Sonoma Creek or the Russian River, both of which are considered “Waters of the U.S.” and fall under the jurisdiction of the Army Corps of Engineers. Lake Ilsanjo and Ledson Marsh are man-made reservoirs that have developed plant and

animal natural communities consistent with those found in naturally occurring perennial wetlands.

Numerous seeps and swales are situated throughout the Park, with Hunter Spring, south of Lake Ilsanjo, being the most prominent. There are a few instances within the Park where the race course, crosses potential jurisdictional wetlands or non-wetland waters; however, the hydroperiod of the majority of the Park's aquatic features is seasonal, with the soils entering an un-saturated period in late spring to early summer. Likewise, with few exceptions, the beds of the Park's streams are dry by late spring depending on spring rainfall. Notable aquatic features crossing or near the Park-designated race course trails include (Figure 6):

- Warren Richardson Trail-Lake Trail-Canyon Trail: encircle the entirety of Lake Ilsanjo including the dam and spillway.
- Marsh Trail-Ridge Trail: abut Ledson Marsh to its north, east, and south including the earthen dam.
- Canyon Trail: Hunter Spring located near the terminus with Marsh Trail.
- South Burma Trail-Marsh Trail: abut Buick Meadow, which is partially composed of a seasonal wet meadow.
- Orchard Trail-Live Oak Trail: abut False Lake Meadow which is partially composed of a seasonal wet meadow / vernal swale complex.

b. Natural Communities:

Sensitive natural communities include those vegetation alliances in the CDFW Natural Communities Lists with a State ("S") rank of S1 through S3 (CDFG 2010, Sawyer et al. 2009). The vegetation or natural communities within the Park is diverse, ranging from extensive open herbaceous communities to dense north-slope forests. In addition to wetlands, streams, and other aquatic habitats, sensitive natural communities documented within the Park include several types of oak woodlands (e.g., Oregon white oak), chaparral situated on rhyolitic and andesitic derived soils, and native grasslands (e.g., California oat grass, purple needlegrass). The race course winds its way through all of these communities with the following notable stands along designated trails and/or known geographical features:

- False Lake Meadow and an unnamed grassland area north of False Lake Meadow: purple needlegrass grassland with other substantial stands of native grasses and wildflowers.
- North Burma Trail-Live Oak Trail-Lake Trail-Warren Richardson Trail-Canyon Trail: Oregon white oak woodlands, California black oak woodlands.
- Shultz Trail-Lawndale Trail: Oregon white oak woodlands, California black oak woodlands.

- North Burma Trail-South Burma Trail-Marsh Trail: volcanic chaparral.

c. Special Status Plant Species:

Several Special Status Plant Species have been documented within the Park. A plant is considered “Special Status” if it’s sufficiently rare that they require special consideration and/or protection and should be, or have been, listed as rare, threatened or endangered by the Federal and/or State governments. In the Park, these would include: Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), Narrow-anthered brodiaea (*Brodiaea leptandra*), Calistoga ceanothus (*Ceanothus divergens*), Sonoma ceanothus (*Ceanothus sonomensis*), Fragrant fritillary (*Fritillaria liliacea*), Jepson’s Leptosiphon (*Leptosiphon jepsonii*), Redwood lily (*Lilium rubescens*), and Baker’s navarretia (*Navarretia leucocephala* ssp. *bakeri*).

Sonoma alopecurus is known from Ledson Marsh where populations are considered extant. This species has no potential to occur within the trail due to repeated disturbance and hydrologic-edaphic conditions insufficient to support it. It is highly unlikely to occur within ten feet of the trail around Ledson Marsh or elsewhere in the Park. Sonoma alopecurus is federally endangered and has a California Rare Plant ranking of 1B.1. Plants ranked 1B.1 are considered **seriously** threatened in California. These rankings are established by the California Native Plant Society (CNPS) Rare Plant Program, operating under a Memorandum of Understanding (MOU) with the [California Department of Fish and Game](#) (DFG). The MOU outlines broad cooperation in rare plant assessment and protection, and formalizes cooperative ventures such as data sharing and production of complementary information sources for rare plants.

Narrow-anthered brodiaea is known from chaparral openings along the South Burma Trail where it is considered extant. This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to thin and/or compacted soils, and repeated foot and wheel traffic. Narrow-anthered brodiaea has a California Rare Plant ranking of 1B.2 and is not listed as either endangered or threatened by either State or Federal resource agencies. Plants ranked 1B.2 by the CNPS Rare Plant Program are considered moderately threatened in California

Calistoga ceanothus is known from the Live Oak, North Burma, and South Burma trails. This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic. Calistoga ceanothus has a California Rare Plant ranking of 1B.2 and is not listed as either endangered or threatened by either State or Federal resource agencies.

Sonoma ceanothus is known from near the Lawndale Trail and the powerlines, and has been observed but not officially documented from the Lawndale Trail near the intersection with the Marsh Trail. This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic. *Sonoma ceanothus* has a California Rare Plant ranking of 1B.2 and is not listed as either endangered or threatened by either State or Federal resource agencies .

Fragrant fritillary is known from the north end of False Lake Meadow, at the intersection of the Live Oak and Rough-Go trails, the North Burma Trail, and the Canyon Trail. This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic. Fragrant fritillary has a California Rare Plant ranking of 1B.2 and is not listed as either endangered or threatened by either State or Federal resource agencies .

Jepson's Leptosiphon is known from near Channel Drive, but population information and specific location information is lacking. This species has a moderate potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic. Jepson's leptosiphon has a California Rare Plant ranking of 1B.2 and is not listed as either endangered or threatened by either State or Federal resource agencies .

Redwood lily is known from the trailside on the Lawndale Trail in a mixed stand of Douglas fir as well as from the lower end of Shultz Canyon. This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic. Redwood lily has a California Rare Plant ranking of 4.2 and is not listed as either endangered or threatened by either State or Federal resource agencies. Plants ranked 4.2 by the CNPS Rare Plant Program are considered "plants of limited distribution. This is the lowest ranking of special concern in the Rare Plant Program.

Baker's navarretia is known from the vernal swale in False Lake Meadow, edge of Ledson Marsh, and the Ridge Trail. This species is highly unlikely to occur within the trail due to repeated disturbance and hydrologic-edaphic conditions insufficient to support it, but may occur in vernal inundated areas along the trailside (e.g., ditches underlain with adobe clay). Baker's navarretia has a California Rare Plant ranking of 1B.1 and is not listed as either endangered or threatened by either State or Federal resource agencies.

d. Special Status Wildlife Species:

Various sources, including State Park Staff and WRA, have documented several Special Status Wildlife Species within the Park including: California red-legged frog (*Rana draytonii*), Western pond turtle (*Actinemys marmorata*), Northern spotted owl (*Strix occidentalis caurina*), and Breeding birds (multiple species), as protected by the Migratory Bird Treaty Act. These species have been known to occur in a variety of habitats within the Park, including: Ledson Marsh, the Park's ephemeral and intermittent streams (CRLF, WPT); near the Lawndale Trail and in the Douglas fir and mixed conifer stands in the southeast portion of the Park (NSO); and a wide variety of trees and shrubs (Breeding birds, multiple species).

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modification, or any species identified as sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the Calif. Dept. of Fish and Game, the U.S. Fish and Wildlife Service, or NOAA Fisheries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 Calif. Dept. of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands, as defined by §404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>policy or ordinance?</p> <p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The Proposed Project incorporates Standard and Specific Project Requirements to protect biological resources, including sensitive, candidate or special status species (plants, wildlife and/or avian) in local or regional plans, policies, or regulations by the CDFW, USFWS or NOAA (see **Chapter 2.6, Table 1**). In large part, staging the race in the dry season of the year would avoid sensitive wildlife. WRA Biological Assessment (see **Appendix A, Attachment A**) builds upon the Biological Report prepared by Roy W. Martin of CA State Parks, August 4, 2014. The event would be monitored by a qualified environmental scientist/biologist, with a Monitoring Report to be submitted to State Parks following the event.
- b) The proposed Project would occur entirely on existing designated trails and roads within the Park. Support staff would be positioned at designated stations (see Project Description) already occupied by existing Park infrastructure, including trail alignments, picnic tables, and park benches. Proposed avoidance and minimization measures would ensure that the Project would not have a substantial adverse effect on sensitive biological communities, such as wetlands, nor other sensitive natural communities (see below). The race course does not pass through riparian or stream habitat.
- c) The Park supports both seasonal and perennial wetlands; however, designated trails and roads have been sited away from areas with perennial hydrology. The proposed Project would occur during the dry season when the seasonal wetlands near the trails would be at their minimum hydroperiod with unsaturated soils. No impact.
- d) The Park does not contain migratory (anadromous) fish habitat; therefore, the Project would not have an effect on migratory fish. Although the Park provides a habitat linkage between Sonoma Mountain and the greater Mayacama Mountains (Merenlander et al. 2010, SLT 2014, BAOSC 2015), the Project would not disrupt or alter this linkage. The Park provides resident and migratory wildlife habitat, but mountain biking is an activity regularly occurring within the Park with no documented disruption or alteration to the Park’s habitat functions at a

landscape scale. Therefore, the Project would not substantially interfere with established native wildlife corridors or impede wildlife nursery sites.

- e) The proposed Project would occur entirely on designated trails and roads, and does not have landscape or resource altering components; therefore, it would not conflict with any local policies or ordinances pertaining to the protection of biological resources.
- f) There are no HCPs or NCCPs within the Project Area; therefore, the proposed Project would not conflict with any HCP or NCCP. The Project is partially within Critical Habitat for CRLF; however, the Project (cycling) is an allowable use within the Park that would be entirely on existing designated trails and roads with no alterations to the landscape or habitats. Therefore, the Project would not conflict with designated CRLF Critical Habitat.

V. CULTURAL RESOURCES

ENVIRONMENTAL SETTING

Archeological and Historic Features

Annadel was a major Native American resource area for obtaining obsidian, chalcedony, andesite, and paint pigments (Parkman, 1981). Porter and Wilbur (1987) suggest that Annadel was extensively used prehistorically for high yields of acorns, grass seed, game animals, and utilitarian plant species.

The historic Euro-American sites found within Annadel State Park consist of andesite and basalt quarries, rock walls, fence lines, homestead foundations, and access roads. The earliest use of the land by Euro-Americans was for grazing purposes when the area was part of the Los Guilicos Rancho in the early nineteenth century. During the end of the nineteenth century and the first part of the twentieth century extensive quarrying was conducted throughout the park to provide building stone and street paving for San Francisco and the Bay Area. There are hundreds of abandoned pits in the park that date back to this period. Both lakes in the park were constructed: Ledson Marsh in 1930 and Lake Ilsanjo in 1953, and are considered historic resources.

History of Resource Use

Annadel State Park is located within the ethnographic territory of the Southern Pomo. Both the Coast Miwok of Marin and southern Sonoma County and the Wappo of Napa and southeast Sonoma County shared a boundary with the Southern Pomo near Annadel. At least three major villages existed in the general region of the City of Santa Rosa (Barrett, 1908). The population of the Southern Pomo has been estimated between 3,950 and 6,300 individuals. Kunkel (1962) estimates population densities to be as high as 8-12 persons per square mile. This is perhaps the highest Native American population in California.

The history of the Euro-American resource use in Annadel follows three main phases: The rancho period, the quarrying period, and a period of light grazing and neglect. A long ranching history impacted the current park with the construction of the network of roads and trails, and the construction of Lake Ilsanjo. After a series of complicated land transactions in the 1960's, the central portion of Annadel (4,100 acres) was purchased by State Parks.

Resource Location Information and Consultation with Local Native American Tribes

Resource location information and site records were supplied to the project archaeologist by Breck Parkman, Senior State Archaeologist, Bay Area District of California State Parks. Additional information was obtained through contacts with other researchers, including Gilbert Browning's draft Master's thesis regarding recommended updates for a Cultural Resources Plan for Annadel State Park.

Local Native American Tribal representatives were contacted by letter for information about cultural/traditional resources and any concerns about their management (see Appendix A, Attachment B-C). The letters were written to tribes identified by Breck Parkman, who approved the content of the letters. A teleconference was conducted with Nick Tipon of the Federated Indians of Graton Rancheria with notes from that discussion forwarded to Breck Parkman for the purposes of furthering consultation with that tribe. Mr. Tipon requested that his tribe receive a copy of the final report documenting the archaeological sites to be inspected, along with photos showing the conditions of the sites.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) There are no historical resources within the planned race course.

- b) Due to the location of sensitive resources, it is highly unlikely that cultural resources would be impacted by the proposed Project activities. Nevertheless, avoidance measures and pre- and post-race monitoring would be performed to document for any potential disturbances to cultural resources (Refer to Appendix A, Attachment B-C).
- c) The race course is on designated trails, integration of project requirements (see Chapter 2, Table 1) insure that project impacts would remain at a less than significant level
- d) There are no known human remains on the race course, and the race would not perform any landform alteration or grading. Integration of project requirements, including the Standard Discovery Clause as noted in Standard Cultural Resource Requirement 2 (see Chapter 2, Table 1) insure that project impacts would remain at a less than significant level.

VI. GEOLOGY AND SOILS

ENVIRONMENTAL SETTING

According to USGS soil surveys of the Park, sandstone is the dominant rock type. One of the major soil associations within the park is Goulding cobbly clay loam, which contains roughly 25 percent cobblestones with some basaltic exposures, evidence of the volcanic origins of the Sonoma Mountains. Typical soil depths are 14 to 20 inches. Soil surveys indicate that this soil association can be moderate to heavily erosive with a water capacity of 3 to 3.5 inches.

Earthquake Hazards

Sonoma County is bounded on the west and the east by earthquake faults. Four active or potentially active earthquake faults are identified within the County's boundaries by the AlquistPriolo Earthquake Fault Maps, including the Rodgers Creek Fault, which enters Sonoma County at San Pablo Bay and extends northward through the City of Santa Rosa, where it meets up with the Healdsburg Fault, which continues northward passing east of the Town of Windsor. ASP lies with three miles of the Rodgers Creek Fault. All of the faults within Sonoma County are right lateral strike-slip faults, meaning that the land on the western side of the fault moves north in an earthquake. Other active regional faults, such as the Hayward Fault to the south, could affect Sonoma County, as could potential unknown faults that may exist but have not been identified or mapped.

The adverse effects of earthquakes result from physical effects of: ground shaking, surface fault rupture, liquefaction, and earthquake induced-landslides and/or secondary effects such as fires, tsunamis, and hazardous material releases.

- **Ground Shaking:** The most significant physical characteristic of a major earthquake is ground shaking. According to the State Hazard Mitigation Plan, damage due to ground shaking produces over 98 percent of all building losses in a typical earthquake. During an earthquake, the ground can shake for a few seconds or over a minute. The strength and duration of ground shaking is affected by many factors. Distance from the fault is the most significant factor; however, geologic conditions, direction of the fault rupture, magnitude and depth are also critical. Shaking, particularly horizontal shaking, causes most earthquake damage, because structures often have inadequate resistance to this type of motion. The strongest shaking is typically close to the fault where the earthquake occurs. Weak soils, such as valley alluvium or soils along river and stream beds, also experience strong shaking in earthquakes, even from distant quakes. ASP is within an area mapped as being in a Very Strong Ground Shaking Probability area, according to the Modified Mercalli Intensity (MMI) Scale.
- **Surface Fault Rupture:** Surface fault ruptures can result from large magnitude earthquakes. Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Structures located within the fault rupture zone are subjected to excessive ground deformations. Most structures are not designed to withstand such large deformations and experience major damage. During the 1906 San Francisco earthquake horizontal displacement along the San Andreas Fault averaged 15 feet in Sonoma County. The Healdsburg, Rodgers Creek and Maacama faults also show evidence of surface displacement during the past 11,000 years.

Surface rupture is the most easily avoided seismic hazard. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. Its main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. ASP is not located on a known earthquake fault, according to the latest Alquist-Priolo Fault data.

- **Liquefaction:** Three ingredients are necessary for liquefaction to occur: a high water table, layers of loose sand, and moderate or greater earthquake shaking. When shaken, the soil grains consolidate, pushing water towards the surface and causing a loss of strength in the soil. The soil surface may sink or spread laterally. Structures located on liquefiable soils can sink, tip unevenly, or even collapse. The potential for liquefaction in Sonoma County exists primarily in the wetlands areas adjacent to San Pablo Bay; along the Russian and Petaluma Rivers and Santa Rosa and Sonoma Creeks; the Laguna de Santa Rosa and Santa Rosa Plains.

Within ASP, False Lake Meadow and Lake Ilsanjo along with its accompanying meadow are mapped as being within areas having medium vulnerability for liquefaction. The Canyon Trail is a graveled Fire Road located along the southeasterly edge of Lake Ilsanjo. Spouts of sand and mud have been reported to eject through gravel roadbeds (Tasman District Council). Nearly all earthquake danger is from buildings falling, roadways collapsing, or from the fires and tsunamis that occur after the shaking ceases. There is no data regarding reported injuries to persons standing in open areas experiencing liquefaction.

- **Landslides:** Seismically triggered landslides are a concern in areas with steep and unstable slopes. Two types of landslides can cause damage to the built environment. The first, disrupted slides and falls, includes rock falls, soil falls, disrupted soils slides, and rock slides, and generally impacts buildings or infrastructure from above. The second type, called coherent slides, includes rock slumps, soil slumps, rock block slides, and slow earth flows, and generally affects property and infrastructure from below. Falls can occur on slopes greater than seventy percent, and slides can occur on slopes of greater than thirty percent, when exposed to ground shaking intensity of more than MMI VIII. Earthquake-induced landslides can also be exacerbated during periods of high rainfall, where the ground is saturated and even normally stable materials can fail. These slides could result in significant property and infrastructure damage, and potential injury and loss of life in many areas of the County.
- **Post-Earthquake Fire:** Fire often accompanies earthquakes, caused by breaks in natural gas lines, damaged electrical systems, or toppled appliances with pilot lights. Fire following an earthquake is particularly difficult to suppress because of the likelihood of numerous simultaneous ignitions, broken water mains, blocked or damaged routes for evacuation and firefighter access, and other demands on fire personnel. This threat was tragically demonstrated in the 1906 earthquake in both San Francisco and Santa Rosa, the 1989 Loma Prieta earthquake in the San Francisco Marina District, and the 1995 Kobe, Japan earthquake. Densely populated neighborhoods with wooden homes, such as many of the residential areas in Sonoma County, are most at risk, along with utility systems, and other infrastructure. ASP is not located within a densely populated neighborhood.
- **Tsunami:** Damaging tsunami waves can be caused by large distant or near shore earthquakes. A tsunami is a series of traveling ocean waves generated by undersea earthquakes or landslides. Tsunamis wave height at the shore can range from inches to in excess of 50 feet. Factors influencing the size and speed of a tsunami include the source and

magnitude of the triggering event, and off-shore and on-shore topography. When the tsunami enters shallow coastal waters, its speed decreases and the wave height increases. This creates the large wave that becomes a threat to life and property. Following the arrival of the first wave, subsequent waves may increase in height and arrive minutes to hours later. ASP is situated more than 25 miles from the Pacific Ocean and more than 30 miles from San Pablo Bay, well outside of mapped tsunami hazard zones.

- **Hazardous Materials Release:** Another secondary hazard created by an earthquake is the potential for hazardous materials releases. Releases can occur at fixed locations, such as manufacturing plants or storage facilities, or during transport. Hazardous materials accidents or releases can occur at any time, and when limited to single events, are generally contained by facility owners or community hazardous materials response teams. In an earthquake, there is the potential for numerous simultaneous hazardous materials releases that are not detected immediately, lead to fire ignitions, or overwhelm resources due to competing priorities. ASP does not contain any facilities housing hazardous materials within its boundaries.

Landslide

The rolling hills, coastal ranges, and steep canyons that characterize Sonoma County's landscape contribute to a widespread landslide hazard. There are areas within ASP that have Very High Landslide Susceptibility, which are classified as having a combination of moderate to steep slopes and/or moderate to weak rock strength. Landslides are described as downward movement of earth materials under the force of gravity. In addition to the influence of gravity and seismic shaking, landslides can result from rainfall saturation of soils, and excavation or erosions, which undercut slopes or banks causing slope failure. Extended periods of intense rainfall during the winter months is the primary cause of landslides in the County. The main types of landslide activity that can impact Sonoma County include:

- **Slides:** Mass movements, where there is a distinct zone of weakness that separates the slide material from more stable underlying material.
- **Falls:** Abrupt movements of masses of geologic materials, including rocks and boulders, that become detached from steep slopes or cliffs.
- **Debris Flows:** Rapid mass movement of a combination of loose soil, rock, organic matter, air, and water that mobilize as a slurry flowing downslope. These are most often caused by heavy precipitation and intense surface water runoff in steep gullies.

- Mudflows: Earthflow consisting of material that is wet enough to flow rapidly and contains at least 50 percent sand, silt, and clay sized particles. Mudflows can travel at speeds of 35 mph or greater.
- Creep: Imperceptibly slow, steady, downward movement of slope-forming soil or rock.
- Coastal bluff collapse: The collapse of coastal bluffs due to undercutting erosive forces of wave action is considered another type of slope failure

Natural factors that contribute to landslides include the cohesive strength and shrink-swell characteristics of the affected earth materials, the orientation of joints and planes of weakness between slide material and bedrock, the steepness of slopes, the degree of saturation of ground materials, and the density of vegetation.

Human factors that can further cause or exacerbate landslides risks include the over-steepening and overloading of slopes through construction activities, the removal of natural vegetation, and improper drainage.

Erosion

Wynn Coastal Planning prepared a Sediment and Erosion Control Management Plan (**Appendix A, Attachment D**) to address potential impacts that the Project may have on soils within the Park, recommending avoidance and minimization measures to reduce those potential impacts to a level that is less than significant according to CEQA. There are four common forms of soil degradation on trails: compaction, muddiness, displacement and erosion.

- Compaction: Soil compaction is caused by the weight of the mountain biker and their bike, which passes through tires to the tread surface. Compacted soils are denser and less permeable to water, which increases water runoff. However, compacted soils also resist erosion and soil displacement and provide durable treads that support traffic. From this perspective, soil compaction is considered beneficial, and it is an unavoidable form of trail impact. Furthermore, a primary resource protection goal is to limit trailside impacts by concentrating traffic on a narrow tread. Success in achieving this objective will necessarily result in higher levels of soil compaction.
- Displacement: Trail users can also push soil laterally, causing displacement and development of ruts, berms, or cupped treads. Soil displacement is particularly evident when soils are damp or loose and when users are moving at higher rates of speed, turning, braking, or other movements that create more lateral force. Soil can also be caught in tire treads, flicked to the side or carried some distance and dropped.

Regardless of the mechanism, soil is generally displaced from the tread center to the sides, elevating inslopes or berms, and compounding drainage problems.

- **Muddiness:** When trails are located in areas of poor drainage or across highly organic soils that hold moisture, tread muddiness can become a persistent problem. Muddiness is most commonly associated with locations where water flows across or becomes trapped within flat or low-lying areas. Soil compaction, displacement, and erosion can exacerbate or create problems with muddiness by causing cupped treads that collect water during precipitation events. Thus, muddiness can occur even along trails where there is sufficient natural drainage. Subsequent traffic skirts these problem spots, compacting soils along the edges, widening mud holes and tread width, and sometimes creating braided trails that circumvent muddy sections.
- **Erosion:** Soil erosion is an indirect and largely avoidable impact of trails and trail use. Soil can be eroded by wind, but generally, erosion is caused by flowing water. To avoid erosion, sustainable trails are generally constructed with a slightly crowned (flat terrain) or outsloped (sloping terrain) tread. However, subsequent use compacts and/or displaces soils over time to create a cupped or insloped tread surface that intercepts and carries water. The concentrated run-off picks up and carries soil particles downhill, eroding the tread surface. Loose, uncompacted soil particles are most prone to soil erosion, so trail uses that loosen or detach soils contribute to higher erosion rates. (Marion & Wimpey, 2007)

There are two types of forces exerted by bike tires on soil surfaces: The downward compaction force from the weight of the rider and bike, and the rotational shearing force from the turning rear wheel. Mountain bikers generate the greatest torque, with potential tread abrasion due to slippage, during uphill travel. Wheel slippage and abrasion occur only on wet or loose surfaces. Tread impact associated with downhill travel is generally minimal due to the lack of torque and lower ground pressures. Exceptions include when riders brake hard enough to cause skidding, which displaces soil downslope, or bank at higher speeds around turns, which displaces soil to the outside of the turn. Impacts in flatter terrain are also generally minimal, except when soils are wet or uncompacted and rutting occurs. Downhill slopes and curves are the most susceptible to erosion.

Expansive Soils

Expansive soils, which are found in various parts of Sonoma County, greatly increase in volume when they absorb water and shrink when they dry out. Site-specific soil properties vary widely throughout Sonoma County and require site-specific investigation to develop a project or implement a land use that will

perform properly. When buildings are placed on expansive soils, foundations may rise each wet season and fall each dry season. Roadways, pavements, and other flat construction are highly susceptible to damage from expansive soils. Movements may vary under different parts of a building with the result that foundations crack, various structural portions of the building are distorted, and doors and windows are warped so that they do not function properly. Where expansive soils are located on hill slopes, which are common in parts of Sonoma County, they undergo a process of seasonal down slope movement called “soil creep”. Soil creep forces can be substantial and need to be evaluated to determine their effects on foundation elements, retaining walls and other structures.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving:				
i) 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? (Refer to Division of Mines and Geology Special Publication 42)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic related ground failure including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on or off-site landslide, lateral spreading subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1997) creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) No impact.
- i. The proposed project, a mountain bike race, with racers riding on surface features does not occur on a known earthquake fault.
 - ii. The proposed project, a mountain bike race occurs on surface features in an open landscape. The race does not occur on a known earthquake fault nor would the riders be near any structures that could injure them in the event of a seismic event.
 - iii. The proposed project is a mountain bike race, with racers riding on surface features in an open landscape. The race does not occur on a known earthquake fault area. The race course passes alongside False Lake Meadow and Lake Ilsanjo and its meadow, which are areas mapped as being within areas having medium liquefaction tendencies. Racers would be riding in the open landscape, on regularly travelled trails, and not in a built environment. Riders would be riding on a gravel Fire Road (Canyon Trail), adjacent to Lake Ilsanjo. Riders may be exposed momentarily to spouts of sand and mud in the event of an earthquake-induced liquefaction. However, riders would be moving through the area of vulnerability and would not be expected to experience any injury due to the seismic-induced liquefaction. Therefore, the potential impacts associated with the exposure of people to substantial adverse effects of seismic induced liquefaction are considered less than significant.
 - iv. Racers would be limited to racing on a course, on designated Park trails that are currently monitored by DPR Staff and Sonoma County Trails Council volunteers for landslide activity, should they occur.
- b) The proposed project would utilize existing Park trails, and is scheduled during the dry season, which drastically minimizes precipitation as a significant cause of soil erosion. No trail construction or vegetation removal is proposed. Even though precipitation is not an immediate concern, preventative BMPs, education and outreach BMPs, and post-race trail maintenance BMPs would be implemented. Implementing BMPs would prevent and reduce trail degradation, and keep impacts at a less than significant level.

Racers would be limited to riding on designated Park trails that are largely hard-packed. Minimal soil displacement would occur. In addition, pre-race monitoring would be performed to identify and perform any trail maintenance necessary to minimize potential soil displacement; post-race monitoring would be performed to identify any soil displacement and return the affected trail to its pre-project state.

Integration of Project Requirement, Specific Soils 1, Prohibit Off-Trail Travel; Specific Soils 2, Water Crossings; and Specific Soils 3, Slough, Tread and Berm

Maintenance (see Chapter 2, Table 1) into project implementation would insure conditions remain at a less than significant level.

- c) The project is located with an area mapped as being in a Very Strong Ground Shaking Probability Area. The race does not occur on a known earthquake fault nor would the riders be near any structures that could injure them in the event of a seismic event.
- d) Though the proposed project may traverse areas of expansive soils, the proposed project does not propose development of any structures that would be vulnerable to damage caused by expansive soils. No impact.
- e) Not applicable. Project does not incorporate septic or wastewater disposal systems.

VII. GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL SETTING

Greenhouse Gas

The greenhouse effect is a natural process by which some of the radiant heat from the sun is captured in the lower atmosphere of the earth, thus maintaining the temperature and making the earth habitable. The gases that help capture the heat are called greenhouse gases (GHGs). Some GHGs occur naturally in the atmosphere, including water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Other GHGs result from human activities. Of these gases, carbon dioxide (CO₂) and methane (CH₄) are emitted in the greatest quantities from human activities over natural processes. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills.

Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Different types of GHGs have varying global warming potentials. The global warming potential of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere. Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as “carbon dioxide equivalent” (CDE), and is the amount of a GHG emitted multiplied by its global warming potential.

According to the ARB, some of the potential impacts in California of global warming may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. While these potential impacts identify the possible effects of climate change at a

global and potentially statewide level, in general, scientific modeling tools are currently unable to precisely predict what impacts would occur locally.

Greenhouse Gas Emissions and Links to Global Climate Change

With regard to climate change impacts, no air district in California, including the BAAQMD, has identified a significance threshold for greenhouse gas (GHG) emissions or a methodology for analyzing air quality impacts related to greenhouse gas emissions. The Sonoma County Regional Climate Protection Authority (RCPA) is currently working towards completing a Community Climate Action Plan (CCAP), called Climate Action 2020, with the goal of adopting the Final CCAP in Winter 2015 or Spring 2016.

The State has identified 1990 emission levels as a goal through adoption of AB 32. To meet this goal, California would need to generate lower levels of GHG emissions than current levels. However, no standards have yet been adopted quantifying 1990 emission targets. In 2008, the Climate Protection Campaign, which now works collaboratively with RCPA, recommended GHG-reduction measures to the communities of Sonoma County; however, the plan was never formally adopted by the municipalities. The City of Santa Rosa has recently adopted a CCAP and subsequent CEQA document for their community, but will participate with the RCPA program to ensure collaboration amongst all jurisdictions and to further the implementation of their CCAP and sustainable communities planning efforts.

For this analysis, the proposed project's contribution to global climate change would be considered significant if it would be inconsistent with AB 32's goal of reducing 2020 greenhouse gas emissions to 1990 levels from sources associated with projected growth (i.e., motor vehicles, direct energy use, waste-related activities) or expose persons to significant risks associated with the effects of global climate change.

Human activities that add to the levels of most of the naturally occurring GHGs include:

- Carbon dioxide (CO₂) is released to the atmosphere when solid waste, fossil fuels (oil, natural gas, and coal), and wood and wood products are burned.
- Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in solid waste landfills and from the raising of livestock.
- Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- High global warming potential (GWP) gases that are not naturally occurring, including hydro fluorocarbons (HFCs), per fluorocarbons

(PFCs), and sulfur hexafluoride (SF₆), are generated in a variety of industrial processes.

Each GHG differs in its ability to absorb heat in the atmosphere. High GWP gases such as HFCs, PFCs, and SF₆ are the most heat-absorbent. Methane traps over 21 times more heat per molecule than CO₂, and N₂O absorbs 310 times more heat per molecule than CO₂. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weight each gas by its GWP. Table 4 shows the GWP for different GHGs for a 100-year time horizon.

Table 4. Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous Dioxide (N ₂ O)	310
Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs)	6,500
Sulfur Hexafluoride (SF ₆)	23,900

Since global climate change is certainly a cumulative impact, this analysis considers that the proposed project would have a significant impact if it would:

- Result in substantial net increases in greenhouse gases and CO₂e emissions. In the absence of generally accepted thresholds of significance for projects, a substantial increase, for purposes of this analysis, occurs when a project exceeds thresholds of significance for criteria pollutants. This approach is consistent with guidance from the California Air Pollution Control Officers' Association (CAPCOA), which notes that implementing CEQA without an explicit threshold prior to formal guidance from the State of California's Office of Planning and Research is appropriate. In fact, this approach is consistent with CAPCOA's belief that by defining substantial emissions of GHGs to performance standards (e.g., criteria pollutant emission thresholds), lead agencies would amass information and experience with specific project categories that would support establishing explicit thresholds in the future.
- Expose persons to significant risk associated with the effects of global climate change.
- Conflict with or obstruct implementation of the goals or strategies of Executive Order S-3-05.
- Be inconsistent with the Air Resources Board's 44 Early Action Measures for AB 32 compliance.
- Be subject to the California Air Resources Board's (CARB) mandatory reporting requirements (generally required for projects producing more than 25,000 annual metric tons of CO₂e).

- Be inconsistent with the recommended global warming mitigation measures from the Attorney General, CAPCOA, Office of Planning and Research, or other appropriate sources.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The proposed project would involve a nominal increase in traffic, as the racers stage themselves for the race. This is a temporary impact that would occur at the start as racers arrive and at the end as the racers depart. Therefore, the proposed project would not generate a significant number of new vehicle trips or otherwise generate a new permanent stationary or mobile source of greenhouse gas emissions from operations.
- b) While the City of Santa Rosa adopted a Climate Action Plan (2012), no regional plans to reduce GHG emission are currently in place. Therefore, the project does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG, and no mitigation measures are required.

VIII. HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL SETTING

Hazardous Sites and Materials

The Department of Toxic Substances Control (DTSC) manages a Hazardous Waste and Substance Sites List. There are two sites on that list within the County of Sonoma, both of which are active: one within the City of Santa Rosa city limits, and one within the City of Windsor city limits. Both sites are currently being remediated. The DTSC EnviroStor website shows that the closest remediation site is within the City of Santa Rosa, more than five miles away from the Project area. The City of Windsor site is more than 12 miles away from the Project area.

Airport Safety

The region surrounding ASP hosts two small airports. The Graywood Ranch Airport is a private airport approximately 5 miles easterly of ASP, having a dirt runway, offering no fuel or airport communications. The Sonoma County Airport is a County airport, approximately ten miles northwesterly of ASP, having two paved runway approaches, offering jet fuel and Air Tower communications. Sonoma County Airport experiences approximately 200 aircraft operations a day; air traffic data at the Graywood Ranch Airport is limited to infrequent flights of single-engine planes. ASP does not fall within the airport land use planning areas or runway protection zones of either of these airports.

Fire

Dry weather conditions, heat, wind, and abundant dead vegetation make fire one of the highest priority natural hazards for the area. Climate change will exacerbate these conditions, and climate models have predicted a significant increase in risk through 2085. ASP and the area to its southwest are within the State Responsibility Area, and are designated as a “high” fire hazard zone; the area to the northwest of ASP, across from State Route 12, also in a State Responsibility Area, is designated a “very high” fire hazard zone.

High Fire Hazard Severity Zones include: a) Wildland areas supporting medium to high fire behavior and roughly average burn probabilities; and b) developed/urban areas with more limited non-burnable surfaces and moderate vegetation cover. Very High Fire Hazard Severity Zones include: a) wildland areas supporting high to extreme fire behavior resulting from by well developed surface fuels and forests where fire in tree crowns (portions of trees above the trunks) is likely; and b) developed/urbanized areas with high vegetation density and fuel continuity, allowing flame to spread over much of the area with little impediment from non-burnable surfaces. Additional site elements include steep and mixed topography and seasonally extreme conditions of strong winds and dry fuel moistures. The highest fire hazard is found in mountainous areas with dry summers, plenty of fuel, and steep slopes.

The populated areas surrounding ASP are in a “wild land urban interface,” where structures are considered vulnerable to fire damage. Wildland fire hazards cannot be eliminated entirely but may be reduced with a vegetation management to reduce fuel loads, installation of dependable water systems, and participation in Community Wildfire Protection Plans.

Schools

Schools are specially regulated by State and Federal Agencies for protection against risks of damage and injury, reducing risks to acceptable levels, requiring special permit review procedures and construction standards. There are numerous schools within two miles of ASP, including 6 elementary schools, two middle schools and two high schools.

There are no hazardous waste repositories, incinerators, facilities that use substantial quantities of hazardous materials, or other similar facilities intended primarily for hazardous waste disposal within ASP.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code §65962.5 and as a result create a significant hazard to the public or environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>from wildland fires, including areas where wildlands are adjacent to urbanized areas of where residences are intermixed with wildlands?</p>				

DISCUSSION

- a-c) No hazardous materials would be utilized or released into the environment.
- d) The site is not known to include hazardous materials.
- e-f) Project is not within an airport land use plan area, nor a private airstrip area.
- g) Project would not impair implementation of nor physically interfere with an adopted emergency response plan or emergency evacuation plan.
- h) The proposed project occurs in a park with an abundant supply of fuels. Although the proposed project does not involve fire ignition elements, integration of Standard Project Requirement, Hazards 1, Fire Safety (see Chapter 2, Table 1) would maintain safety precautions at a high level and keep impacts to a less than significant level..

IX. HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL SETTING

The Park is situated between the Valley of the Moon (Sonoma Valley) and the Santa Rosa Plain (Russian River Valley), and consequently contains headwaters within both watersheds, with majority in the Santa Rosa Plain watershed. There are several ephemeral streams, no intermittent streams, and only one named stream, Spring Creek (USGS 1954a, USGS 1954b). There are two man-made reservoirs, Lake Ilsanjo and Ledson Marsh, with the latter containing very shallow surface waters. The climate of Santa Rosa (CIMIS Station #83) is strongly seasonal, with cool wet winters and warm dry summers. Precipitation falls predominantly as rainfall with an annual average of 30.74 inches, with infrequent short duration snowfalls (NOAA 2015).

The North Coast Regional Water Quality Control Board is the local Water Resources Control Board governing the area within which ASP is located; the Basin Plan is the Board’s Water quality control plan, providing the basis for protecting water quality in California.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area including through alteration of the course of a stream or river in a manner, which would result in substantial on or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area including through alteration of the course of a stream or river in a manner, which would result in substantial on or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The proposed Project occurs during the dry season and the course avoids water crossings to minimize sedimentation. The project would comply with all applicable water quality standards as specified in the North Coast Regional Water Quality Control Board Basin Plan. Integration of Project Requirement, Standard Hydrology 1, Water Quality (see Chapter 2, Table 1) into project implementation would insure conditions remain at a less than significant level.
- b) Any water use by Project organizers would rely upon the on-site water supplies, which are of sufficient capacity accommodate temporary events of this size.
- c) Cyclists would use existing designated trails that avoid direct travel through wet areas. No new trails would be created, and no stream or river courses would be altered. No impact.
- d) Cyclists would use existing, designated trails. No stream or river courses would be altered, nor would surface runoff be increased in a manner that would result in flooding on or off-site. No impact.
- e) Runoff water would not be created as the result of the proposed project.
- f) Water quality would not be degraded as no water features would be impacted by this project.
- g-h) No structures are proposed.
- i) Proposed Project does not take place in a flood zone, nor would it result in the failure of a levee or dam. No impact.
- j) Proposed Project does not occur in an area prone to seiche, tsunami or mudflow. No impact.

X. LAND USE AND PLANNING

ENVIRONMENTAL SETTING

Sonoma County, the most northerly of the nine counties in the San Francisco Bay Region, is located along the Pacific coastline about forty miles north of San

Francisco and the Golden Gate Bridge. The County is just over 1,500 square miles, making it the largest of the nine Bay Area counties.

Sonoma County is bordered by the Pacific Ocean on the west, Marin County and San Pablo Bay to the south, Solano, Napa and Lake Counties to the east, and Mendocino County to the north.

Sonoma County's 1,500 square miles include a diverse mosaic of landforms, environments, and human settlements. The broad, flat Santa Rosa Plain, which lies between the Sonoma Mountains on the east and low coastal hills on the west, contains the cities of Santa Rosa, Rohnert Park, and Cotati. The sparsely settled western margin of the county, along the Pacific coastline, includes the redwood and mixed conifer forests of the Mendocino Highlands in the north and rolling oak studded hills, dairylands, and coastal prairies in the south. The Mayacamas Range forms the eastern boundary of the county. Along with the Sonoma Mountain range, it encloses the Sonoma Valley or "Valley of the Moon," a scenic valley which extends from near Santa Rosa southeastward to the City of Sonoma and the marshlands of San Pablo Bay. Bennett Mountain forms a scenic backdrop from Bennett Valley Road. This area defines Santa Rosa's southeastern boundary and also abuts Annadel State Park. In the north, the Mayacamas Range and Mendocino Highlands enclose the farming regions of Alexander and Dry Creek Valleys. In the far northeast, the remote interior of the Mayacamas Range contains the Geysers geothermal steam field.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) Project is a temporary event. No impact.

- b) Project is in compliance with allowable uses in the designated land use zone. No impact.
- c) There is no applicable habitat conservation plan or natural community conservation plan written that incorporates the Park. No impact.

XI. MINERAL RESOURCES

ENVIRONMENTAL SETTING

During the end of the nineteenth century and the first part of the twentieth century extensive quarrying was conducted throughout the park to provide building stone and street paving for San Francisco and the Bay Area. There are hundreds of abandoned pits in the park that date back to this period.

Mineral resource extraction is not permitted within Annadel State Park property.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a & b) The proposed project, a mountain bike race in Annadel State Park, would not result in the loss of known mineral resources nor would it result in the loss of availability of a locally important mineral resource. No impact.

XII. NOISE

ENVIRONMENTAL SETTING

Annadel State Park is a largely undeveloped park on the edge of a developing urban/suburban area. The park has more than 5,500 acres of rolling hills, seasonal streams, meadows and woodlands free from modern intrusions. The edges of the park abut relatively low-density residential neighborhoods on the

easterly, southerly and westerly sides; the northwesterly side of the park abuts a popular regional park.

Sources of noise in the park are largely limited to various suburban noises from the adjacent residential uses and regional park. The areas of the park that are most impacted by noise is the northwesterly portion of the park that abuts the regional park, which supports picnic grounds, trails and a lake that accommodates fishing and swimming, all of which are easily accessible from the parking area.

Little noise is generated within the park. There is no public vehicular traffic permitted within ASP. Lake Ilsanjo is a quiet feature, accessible only by trail, and does not permit motorboat activity.

The nearest railway is operated by the Northwest Pacific Railroad, roughly paralleling Highway 101 approximately 5 miles westerly of the Park. Railroad operations during the last decade consisted of sporadic through freight and local switching operations. At distances of about 100' from the tracks, maximum noise levels from trains would range from 80 to 90 dBA; rail noise is largely buffered from park visitors by topography, vegetation and distance.

Bennett Valley Road, near the southwesterly boundary of ASP, is considered by the County to be a Noise-Impacted Road Segment, meaning that it projects noise levels exceeding 60 dB Ldn (Day-Night Noise Level, as measured utilizing the Federal Highway Administration Traffic Noise Prediction Model), and has average daily traffic volumes greater than 5,000 vehicles per day. Roadway noise is largely buffered from park visitors by topography, vegetation and distance.

The region surrounding ASP hosts two small airports, which modestly affect the noise environment within the Park. The Graywood Ranch Airport is a private airport approximately 5 miles easterly of ASP, having a dirt runway, offering no fuel or airport communications. The Sonoma County Airport is a County airport, approximately ten miles northwesterly of ASP, having two paved runway approaches, offering jet fuel and Air Tower communications. Sonoma County Airport experiences approximately 200 aircraft operations a day, with the majority of the airport activity being relatively quiet single-engine aircraft. Airport noise itself is largely buffered from park visitors by distance; ASP is several miles beyond Sonoma County Airport's lowest noise contour of 55 dB CNEL, as mapped utilizing the Community Noise Equivalent Level (CNEL) metric as required by the California Airport Noise Regulations. Although ASP does receive some noise from aircraft using these facilities, it does not fall within the airport land use planning areas, runway protection zones, or the noise contours of either of these airports.

There are no Heavy Commercial and Industrial land uses located in close proximity of the Park, mostly being located westerly of Highway 101.

The location of a noise receptor relative to noise producers can result in the production of unwanted noise. While land use planning and zoning attempts to separate sensitive noise receptors from noise producers, noise conflicts may still arise.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generate or expose people to excessive groundbourne vibrations or groundbourne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Be 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? If so, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The proposed cycling event is a temporary, relatively quick endeavor that includes exuberant shouts of encouragement and jubilation as well as cycling equipment noises as riders complete the course. While this noise level would be an increase from an average weekend day at the park, it would be temporary.

Noise levels would return to baseline conditions after the race. Less than significant..

- b) Cycling does not generate excessive groundborne vibration or noise levels; nor does the race expose participants to same.
- c) Project is a temporary cycling event. No impact.
- d) No. Event includes minor use of amplification for the purpose of communicating to racers at the start and announcing awards at the finish. There may also be music played through speakers, but at a level not to exceed 85 dBA, which is the standard acceptable noise level over an eight-hour duration as established by the National Institute for Occupational Safety and Health (NIOSH). No impact.
- e) N/A. Project is not within 2 miles of an airport.
- f) N/A. Project is not within the immediate vicinity of a private airstrip.

XIII. POPULATION AND HOUSING

ENVIRONMENTAL SETTING

The *2010 Census* shows that the population of Sonoma County was 483,880 in 2010. The US Census Bureau's estimated population of Sonoma County for 2014 is 500,292. In comparison to the Census from 2010, the estimated population of Sonoma County has increased by 3.4 percent.

Similarly, the *2010 Census* shows that the population of the City of Santa Rosa was 167,815 in 2010. The US Census Bureau's estimated population of the City of Santa Rosa for 2013 is 171,990. In comparison to the Census from 2010, the estimated population of the City of Santa Rosa has increased by 2.5 percent.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing necessitating the construction of replacement housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- elsewhere?
- c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

DISCUSSION

a-c) The proposed Project is a temporary cycling event; it would not induce substantial growth nor would it displace existing housing or numbers of people. No impact..

XIII. PUBLIC SERVICES

ENVIRONMENTAL SETTING

The Sonoma County Department of Emergency Services – Fire Prevention Division, is primarily responsible for programs, procedures, and projects for preventing the outbreak of fires within the unincorporated areas of the county and for minimizing the danger to persons and damage to property caused by fires that do occur. The Sonoma County Sheriff’s Office is responsible for primary law enforcement services of the unincorporated area and the cities of Windsor and Sonoma. Sonoma County is divided into 40 school districts for kindergarten through twelfth-grade (K-12) educational services. ASP is within the Santa Rosa City High School District. Annadel State Park is the largest public park situated in close proximity to the City of Santa Rosa.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for any of the public service:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) No new facilities are planned nor required for this temporary race. The proposed project occurs in a park with an abundant supply of fuels. Although the proposed project does not involve fire ignition elements, integration of Standard Project Requirement, Hazards 1, Fire Safety (see Chapter 2, Table 1) would maintain safety precautions at a high level and keep impacts to a less than significant level..

XIV. RECREATION

ENVIRONMENTAL SETTING

Annadel State Park is a 5,200-acre park located on the eastern edge of the City of Santa Rosa and offers over 40 miles of trails for hiking, mountain biking and horseback riding.

Howarth Park, a 152-acre City of Santa Rosa Park located adjacent to Spring Lake Regional Park, offers a variety of recreation options, including a lake for fishing and boating, a softball field, tennis courts, picnic areas, playground structures, a miniature train ride, carousel, animal farm with pony rides and approximately 10 miles of hiking and biking trails, with no equestrians permitted.

Spring Lake Regional Park, which is a 320-acre County Park, easily accessible to residents of the City of Santa Rosa and located immediately adjacent to the northwesterly portion of ASP, offering just less than 10 miles of multi-use trails frequently used by recreationalists as an extension to ASP.

Both Howarth Park and Spring Lake Regional Park host bicycle race events throughout the calendar year, including the weekly mountain bike race, the Dirt Crits, which is now its tenth year.

Shiloh Ranch Regional Park is an 850-acre park, located in nearby east Windsor, offers 7.9 miles of trails, all of which are open to cyclists as well as hikers and equestrians.

Hood Mountain Regional Park is a 1,750-acre park located just two miles northeasterly of ASP, offering 19 miles of trails, which are a combination of hiking-only and multi-use trails.

Sonoma Valley Regional Park is a 202-acre County Park located a few miles southeast of ASP, offering approximately four miles of trail, most of which are multi-use.

Sugarloaf Ridge State Park and its McCormick Addition are adjacent to Hood Mountain Regional Park, and offers a combined 21 miles of hiking trails, some of

which are also accessible to equestrians; cyclists are only permitted on paved and unpaved roads within this park.

Jack London State Historic Park is a 1,400-acre park located a few miles southeast of ASP, near Glen Ellen and westerly of Sonoma Valley Regional Park, offering more than 20 miles of trails, which are a combination of hiking-only and multi-use trails.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The proposed Annual Bike Monkey Annadel XC Mountain Bike Race would have periodic activity over the course of approximately five hours, and is entirely confined to existing designated trails and roads within the Park. Currently, bicycling is an allowable use on these trails, a use that the Park experiences on a daily basis irrespective of season.

Howarth Park and Spring Lake Regional Park are adjacent to Annadel State Park. Both Howarth Park and Spring Lake Regional Park allow off-road cycling and both host bicycle race events throughout the calendar year. Based on Strava data and anecdotal accounts, many bicycle riders utilizing Annadel State Park enter ASP through either or both of these parks. Based on further anecdotal accounts, the bicyclists in ASP view all three parks as part of one recreational complex, rather than three disparate entities.

As the popularity of mountain biking grows throughout the region, especially in the Santa Rosa area, Annadel State Park has become a destination for Bay Area mountain bikers. As mountain bike events become more popular, ASP may experience increased numbers of cyclists interested in using the trails within the Park. In addition, these cyclists may ride at faster speeds than the average mountain biker. As cycling recreation within ASP increases, existing neighborhood or regional parks may experience a nominal increase in cycling,

where permissible, as cyclists look for less populated parks to ride in. There is currently no data available to support or contradict this concept.

Based on visitation information from the County of Sonoma, State Parks, and the City of Santa Rosa, there is no indication that the Project, in its last five years, has contributed to any increase in the usage of ASP or associated parks by any particular trail user. While the Project would continue to celebrate the rich recreational resource of ASP, it seems unlikely that it would directly contribute to excessive usage increases or displacements of other users such that would cause substantial physical deterioration to ASP or the surrounding parks.

- b) The project utilizes existing recreational facilities and does not require the creation or expansion of same.

XV. TRANSPORTATION/TRAFFIC

ENVIRONMENTAL SETTING

Traffic conditions in the vicinity of ASP operate at LOS (Level of Service) C or better during peak weekday hours. LOS is a qualitative measure used to relate the quality of traffic service. LOS is used to analyze roadways by categorizing traffic flow and assigning quality levels of traffic based on performance measures like speed, density, etc. LOS Level C is classified as having stable flow, at or near free flow. The ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Minimum vehicle spacing is about 220 ft (67 m) or 11 car lengths. Most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident. This is the target LOS for some urban and most rural highways.

The Sonoma County General Plan Circulation and Transit Element suggests no new Transportation Network Improvements to any of the local roadway system that feeds into ASP. Biking and pedestrian facilities are discussed; the County has Goals for increasing trail connectivity to ASP, including the development of the Taylor Mountain Trail and the Hood Mountain-Annadel Trail.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) There would be a nominal increase in traffic, as the racers stage themselves for the race. This is a temporary impact that would occur at the start as racers arrive and at the end as the racers depart.
- b) There would be a nominal increase in traffic. The adjacent roadway system is operating at a LOS C or better, which therefore can accommodate this nominal increase in traffic.
- c) No air traffic patterns would be affected by the cyclists riding within the park.

- d) No traffic or trail features would be changed for this project. No incompatible uses are proposed for this project.
- e) Emergency access would remain open.
- f) Parking would be dispersed, within Spring Lake Regional Park and on adjacent surface roads.
- g) Event incorporates alternative transportation in the form of cycling.

XVI. UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL SETTING

Potable water is available within ASP at the Oak Knolls Picnic Area, the Park Entrance on Channel Drive and at the easterly terminus of Channel Drive at the Warren Richardson Trail. Restrooms for park visitors are located at the Oak Knolls Picnic Area, Channel Drive at its easterly terminus at the Warren Richardson Trail, Lake Ilsanjo and on Marsh Trail at its intersection with Two Quarry Trail.

The Sonoma County Waste Management Authority and the Sonoma County Waste Management Agency is a joint powers authority whose mission is to implement waste diversion programs as required by State law. The Integrated Waste division of Transportation & Public Works operates a large central landfill, located outside of Petaluma as well as four smaller transfer stations, located in Annapolis, Guerneville, Healdsburg, and Sonoma. The majority of solid waste in eastern Sonoma County is taken to the Central Disposal Site in Petaluma.

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment restriction or standards of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations as they relate to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-g) The Project would not exceed wastewater treatment restriction standards, require additional water or wastewater treatment facilities, require additional stormwater drainage facilities, or require additional water entitlements due to the use of on-site portable restrooms and existing water facilities whose capacity is suitable to temporary events like the Project. In addition to the use of existing water facilities, supplemental water would be brought in from off-site to ensure proper participant and staff hydration. Due to the Project's schedule during the dry season and temporary event status, stormwater drainage is not expected to be a concern. All trash would be collected on-site and disposed at the local landfill. The trash generated by the Project would not exceed the capacity of local landfill operations. All federal, state, and local statutes and regulations would be complied with by Project staff and participants.

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CHAPTER 4 – MANDATORY FINDINGS OF SIGNIFICANCE

Would the project	Potentially Significant Impact	Less than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects that would cause substantial adverse effects on humans, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

DISCUSSION

- a) The proposed project was evaluated for potential significant adverse impacts to the natural environment and cultural resources. It has been determined that, with full implementation and adherence to the Standard and Specific Project Requirements,, the proposed project would result in less than significant impacts to biological and cultural resources.
- b) The proposed project would result in less than significant impacts to aesthetics, air quality, biological resources, cultural resources, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, noise, public services, and transportation/traffic. When considered cumulatively along with past, current, and probable future projects (as identified in Section 2.11), the proposed project’s contribution is considered negligible and would not be cumulatively considerable.

- c) All of the environmental effects have been determined to pose a less than significant impact on humans. The project is designed to reduce adverse effects to humans to the greatest extent possible. Potential impacts would be reduced to a less than significant level with the integration of all project requirements during project implementation.

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CHAPTER 6 – REPORT PREPARATION

California Department of Parks and Recreation

Patricia DuMont, Park Staff and Recreation Specialist

Cyndy Shafer, Environmental Coordinator

Breck Parkman, Senior State Archaeologist

Van Bueren Archaeology

Thad Van Bueren, Archaeologist and Historian

WRA, Inc.

Aaron Arthur, Associate Plant Ecologist,

Phil Greer, Principal, Senior Biologist

Wynn Coastal Planning

Amy Wynn, Principal, Environmental Planner

Michaela Biaggi, Soils Scientist

Frank Lynch, Senior Planner

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APPENDIX A

Supplemental Documents

A	WRA Biological Letter Report
B	Van Bueren Archaeological Letter Report - confidential not included
C	Van Bueren Archaeological Tribal Outreach
D	Wynn Coastal Planning Sediment & Erosion Control BMPs

Appendix A



Amy Wynn
Wynn Coastal Planning
703 North Main Street
Fort Bragg, CA 95437
707.964.2537

Amy,

The following letter is intended to address biological resources for Annadel State Park and the proposed annual benefit race hosted by Bike Monkey.

INTRODUCTION

The following document summarizes the sensitive biological resources within Annadel State Park (Park) with a particular focus on the Park's trails, Sonoma County, California for the purposes of allowing Bike Monkey's annual trails benefit mountain bike race (Project). Without avoidance measures, the Project could pose impacts to several of the Park's sensitive biological resources; therefore, this document addresses each of the documented resources and provides avoidance and best management practices to reduce the potential impacts to less than significant.

PROJECT DESCRIPTION

The annual Annadel Mountain Bike Race (Project) will be held annually, on a Saturday or Sunday in August or September, from 9:00am to 3:00pm depending on weather and availability on the event calendar with adjacent Spring Lake Regional Park where the event finishes. This yearly event is organized by Bike Monkey of Santa Rosa and they will obtain a Special Event Permit from State Parks. This event is a fundraiser for the Park, supporting the Sonoma County Trails Council, with all funds going to support Annadel-specific improvements, primarily trail work. Similar mountain bike races along the same course route, and with the same constraints outlined below, are also covered as part of the Project.

The maximum number of participants is 700 mountain bikers divided between two courses, either the long or short courses as shown on course maps. It is estimated that the bike racers will enter the race divided up with approximately 450 bike racers for the short course and 250 bike racers for the long course. The start of the event and associated race parking is located outside of the Park, as is the terminus of the race. Race participants will be staggered such that they will be spread out and will not clog the Park's trails. The estimated attendance of spectators, volunteers, and support staff will be in the range of 20 to 60. Spectators typically

gather at trail intersections and wide points; and first aid stations and personnel will be located at existing picnic tables and at wide points to minimize off-trail activity.

The first riders reach the Park at approximately 9:30am with the majority finishing the long course by approximately 1:00pm. The course consists of the following trails within the Park, in order: **Cobblestone** (after entering the park via Violetti Rd), **Channel Drive** to ranger station, **Channel Trail** (adjacent to Channel Drive), **Warren Richardson**, **North Burma**, **Live Oak**, **Rough Go**, **Lake Trail** (connecting Rough Go to Canyon), **Canyon Trail**, **Warren Richardson**, **South Burma**, **Marsh**, **Lawndale**, **Schultz**, **Pig Flat**, **Ridge**, **Marsh**, **Canyon**. The short course eliminates Lawndale, Schultz and Pig Flat by remaining on Marsh where it then re-joins the long course at the top of Pig Flat.

SITE BACKGROUND

Annadel State Park is located in central Sonoma County, adjacent to eastern Santa Rosa. The approximately 5,500-acre site is a mixed use park managed by the California Department of Parks and Recreation and used by hikers, runners, mountain bicyclists, and equestrians. The Park is situated in the Sonoma Mountains, a sub-range of the North Coast Ranges, with its highest point at Bennett Peak, approximately 1,910 feet above mean sea level. As is typical of the ranges and intervening valleys of the Sonoma Mountains, the Park runs northwest-southeast. The topography is mixed with high gradient slopes situated throughout, with a general plateau or bench running through the central to northern portion of the Park.

The Park is situated between the Valley of the Moon (Sonoma Valley) and the Santa Rosa Plain (Russian River Valley), and consequently contains headwaters within both watersheds, with majority in the Santa Rosa Plain watershed. There are several dashed blue-line streams, no solid blue-line streams, and only one named stream, Spring Creek (USGS 1954a, USGS 1954b). There are two man-made reservoirs, Lake Ilsanjo and Ledson Marsh, with the latter containing very shallow surface waters. The climate of Santa Rosa (CIMIS Station #83) is strongly seasonal, with cool wet winters and warm dry summers. Precipitation falls predominantly as rainfall with an annual average of 30.74 inches, with infrequent short duration snowfalls (NOAA 2015).

The geology of the Park is of Miocene-Pliocene volcanics, primarily of andesitic and rhyolitic rocks deposited as lava flows, ash flows, and ash falls (Weaver 1949, Delattre et al. 2007). Consequently, the soils are predominantly clay and clay loams weathered from andesites and rhyolites, with the *Soil Survey of Sonoma County* (USDA 1977) documenting nine soil series: Goulding, Pleasanton, Spreckels, Positas, Kidd, Laniger, Laughlin, Toomes, and Manzanita. The Goulding series is the most prevalent occupying over half of the Park (USDA 1977, CSRL 2015).

The topography, elevation, aspect, geology and soils, and climatic variability contribute to the diversity of the Park's vegetation. The Park supports forests, woodland, scrubs, herb-dominated upland, and herb-dominated wetland natural communities. The forests and woodlands include stands dominated by one or more the following species, coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), California bay (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), blue oak (*Q. douglasii*), Oregon white oak (*Q. garryana*), California black oak (*Q. kelloggii*), and/or valley oak (*Q. lobata*). The rhyolitic substrates frequently support unique chaparral dominated or characterized by native shrubs including chamise (*Adenostoma fasciculatum*), Eastwood's manzanita (*Arctostaphylos*

glandulosa), redberry (*Rhamnus crocea*), sticky monkeyflower (*Mimulus aurantiacus*), interior live oak (*Quercus wislizenii*), and poison oak (*Toxicodendron diversilobum*). The Park contains several extensive relatively intact native grasslands, primarily purple needlegrass (*Stipa pulchra*). Non-native grasslands are dominated by annuals from the Mediterranean region, but contain a prevalence of native annual and perennial wildflowers. The fringe of Lake Ilsanjo, Ledson Marsh, and smaller wetlands contain a diversity of native hydrophytes including hardstem bulrush (*Schoenoplectus acutus*), creeping spikerush (*Eleocharis macrostachya*), Pacific rush (*Juncus effusus*), common rush (*J. patens*), brownhead rush (*J. phaeocephalus*), and cattail (*Typha latifolia*).

SENSITIVE BIOLOGICAL RESOURCES

The Park supports a range of habitats and species, several of which are considered sensitive by federal and/or state regulations. The following sensitive biological resources have been reported from the Park.

Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act and/or state regulations such as the Porter-Cologne Act, the California Department of Fish and Wildlife (CDFW¹) Streambed Alteration Program, and the California Environmental Quality Act (CEQA).

Wetlands and Non-wetland Waters

The Park contains numerous aquatic features potentially jurisdictional under Section 404 Clean Water Act and/or Section 1600 of the California Fish and Game Code. Several unnamed dashed blue-line streams arise within the Park and ultimately flow to either Sonoma Creek or the Russian River. Lake Ilsanjo and Ledson Marsh are man-made reservoirs that have developed natural communities, predominantly of native hydrophytes, with Ledson Marsh supporting the federally endangered California red-legged frog (*Rana draytonii*) and Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*). False Lake Meadow, situated north of Lake Ilsanjo contains a wet meadow / vernal swale complex dominated by native herbaceous species including the rare Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*) and fragrant fritillary (*Fritillaria liliacea*). Numerous seeps and swales are situated through the Park, with Hunter Spring, south of Lake Ilsanjo, the most prominent. All of these features serve high quality functions and values for water quality, soil moisture retention, wildlife habitat, and the regional flora.

To WRA's knowledge, a formal wetland delineation following the guidelines outlined by the U.S. Army Corps of Engineers (Corps) has not been performed within the Park. There are few instances within the Park where the trails cross potential jurisdictional wetlands or non-wetland waters (e.g., streams); however, the hydroperiod of the majority of the Park's aquatic features is seasonal, with the soils entering a un-saturated period in late spring to early summer. Likewise,

¹ California Department of Fish and Game (CDFG) changed their official title to California Department of Fish Wildlife (CDFW) January 1, 2013. CDFG is used herein only for publications prior to January 1, 2013, otherwise CDFW is used for all other references to the agency as well as publications dated post January 1, 2013.

with few exceptions, the beds of the Park's streams are dry by late spring depending on spring rainfall. Notable aquatic features crossing or near the Park's designated trails include:

- Warren Richardson Trail-Lake Trail-Canyon Trail: encircle the entirety of Lake Ilsanjo including the dam and spillway.
- Marsh Trail-Ridge Trail: abut Ledson Marsh to its north, east, and south including the earthen dam.
- Canyon Trail: Hunter Spring located near the terminus with Marsh Trail.
- South Burma Trail-Marsh Trail: abut Buick Meadow which is partially composed of a seasonal wet meadow.
- Orchard Trail-Live Oak Trail: abut False Lake Meadow which is partially composed of a seasonal wet meadow / vernal swale complex.

Natural Communities

Sensitive natural communities include those vegetation alliances in the CDFW Natural Communities Lists with a State ("S") rank of S1 through S3 (CDFG 2010, Sawyer et al. 2009). The vegetation or natural communities within the Park is diverse, ranging from extensive open herbaceous communities to dense north-slope forests. In addition to wetlands, streams, and other aquatic habitats, sensitive natural communities documented from the Park include several types of oak woodlands (e.g., Oregon white oak), chaparral situated on rhyolitic and andesitic derived soils, and native grasslands (e.g., California oat grass, purple needlegrass) (State Parks undated, Sawyer et al. 2009, Holland 1986, CDFW 2015, personal observation 2015). The Park's trails wend their way through all of these communities with the following notable stands along designated trails and/or known geographical features:

- False Lake Meadow and unnamed grassland area north of False Lake Meadow: purple needlegrass grassland with other substantial stands of native grasses and wildflowers.
- North Burma Trail-Live Oak Trail-Lake Trail-Warren Richardson Trail-Canyon Trail: Oregon white oak woodlands, California black oak woodlands.
- Shultz Trail-Lawndale Trail: Oregon white oak woodlands, California black oak woodlands.
- North Burma Trail-South Burma Trail-Marsh Trail: volcanic chaparral.

Special-status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the CEQA. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918 as well as the California Fish and Game Code (CFGF). Under this legislation, destroying active nests, eggs, and young is illegal.

Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) with California Rare Plant Rank (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Very few Rank 3 or Rank 4 plants meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the CDFW Code that outlines the CESA. However, CNPS and CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation relating to CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant, for populations at the periphery of a species range or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates.

Special-status Plant Species

Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*). Federal Endangered, CNPS Rank 1B. Sonoma alopecurus is a perennial herb in the grass family (Poaceae) that blooms from May to July. It typically occurs in wet areas in freshwater marsh and riparian habitat at elevations ranging from 15 to 1,200 feet (CDFW 2014, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Soil survey data at known locations in Sonoma County suggest that this species is typically located on moderately strongly acid (pH 5.0) to neutral (pH 6.7) loams, often mixed with larger textures derived from sandstone or other sedimentary rock (CDFW 2015, CSRL 2015). This species is an obligate (OBL) wetland plant (Lichvar 2012), with no vernal pool indicator status (Keeler-Wolf et al. 1998). Observed associated species include rushes (*Juncus* spp.), sedges (*Carex* spp.), rabbit's-foot grass (*Polypogon monspeliensis*), water pepper (*Polygonum hydropiperoides*), western manna grass (*Glyceria occidentalis*), water parsley (*Oenanthe sarmentosa*), and false manna grass (*Torreyochloa pallida*) (CDFW 2015). Sonoma alopecurus is known from Ledson Marsh where populations are considered extant (CDFW 2015, Martin 2014). This species has no potential to occur within the trail due to repeated disturbance and hydrologic-edaphic conditions insufficient to support it. It is highly unlikely to occur within ten feet of the trail around Ledson Marsh or elsewhere in the Park (Martin 2014).

Narrow-anthered brodiaea (*Brodiaea leptandra*). CNPS Rank 1B. Narrow-anthered brodiaea is a bulbiferous perennial herb in the brodiaea family (Themidaceae) that blooms from May to July. It typically occurs in broadleaf upland forest, chaparral, and lower montane coniferous forest habitat at elevations ranging from 360 to 3,000 feet (CDFW 2015, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Soil survey data from documented locations suggest this species is associated with gravelly loam and clay loam substrates derived from rhyolites, metavolcanics, and serpentine (CSRL 2015, CDFW 2015). This species has a serpentine affinity rank of weak indicator (2.0) (Safford et al. 2005). Observed associated species include chamise (*Adenostoma fasciculatum*), mountain mahogany (*Cercocarpus betuloides*), scrub oak (*Quercus berberidifolia*), white oak (*Q. garryana*), Ponderosa pine (*Pinus ponderosa*), knobcone pine (*P. attenuata*), Pacific madrone (*Arbutus menziesii*), manzanitas (*Arctostaphylos* spp.), buck brush (*Ceanothus cuneatus*), harvest brodiaea (*Brodiaea elegans*), California oat grass (*Danthonia californica*), narrow leaf mules ears (*Wyethia angustifolia*), and Sonoma sage (*Salvia sonomensis*) (CDFW 2015, personal observations 2011-2014). Narrow-anthered brodiaea is known from chaparral openings along the South Burma Trail where it is considered extant (CDFW 2015). This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to thin and/or compacted soils, and repeated foot and wheel traffic.

Calistoga ceanothus (*Ceanothus divergens*). CNPS Rank 1B. *Calistoga ceanothus* is an evergreen shrub in the buckthorn family (Rhamnaceae) that blooms from February to April. It typically occurs on rocky sites in chaparral and cismontane woodland habitat at elevations ranging from 550 to 3,100 feet (CDFW 2015, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Soil survey data at known locations suggest that this species is typically located on moderately acid (pH 5.6) to neutral (pH 7.2) cobbly and gravelly loams derived from basic igneous rock, rhyolites, and serpentine (CDFW 2015, CSRL 2015). Observed associated species include chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus cuneatus*), deer brush (*C. integerrimus*), prostrate ceanothus (*C. prostratus*), musk brush (*C. jepsonii*), canyon live oak (*Quercus chrysolepis*), Stanford's manzanita (*Arctostaphylos stanfordiana*), hoary manzanita (*A. canescens*), Eastwood manzanita (*A. glandulosa*), Douglas fir (*Pseudotsuga menziesii*), toyon (*Heteromeles arbutifolia*), and Sonoma sage (*Salvia sonomensis*) (CDFW 2015, personal observations 2009-2014). *Calistoga ceanothus* is known from the Live Oak, North Burma, and South Burma trails (CDFW 2015, personal observation). This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic.

Sonoma ceanothus (*Ceanothus sonomensis*). CNPS Rank 1B. *Sonoma ceanothus* is an evergreen shrub in the buckhorn family (Rhamnaceae) that blooms from February to April, but is typically identifiable by vegetative structures throughout the year. It typically occurs on sandy, gravelly substrate derived from serpentine or volcanic in chaparral habitat at elevations ranging from 695 to 2,600 feet (CDFW 2014, CNPS 2014, Baldwin et al. 2012, Best et al. 1996). Observed associated species include Stanford manzanita (*Arctostaphylos stanfordiana*), hoary manzanita (*A. canescens*), common manzanita (*A. manzanita*), chamise (*Adenostoma fasciculatum*), wavy-leaf ceanothus (*Ceanothus foliosus*), toyon (*Heteromeles arbutifolia*), and goldenwire (*Hypericum concinnum*) (CDFW 2015, personal observations 2009-2015). *Sonoma ceanothus* is known from near the Lawndale Trail and the powerlines (CDFW 2015), and has been observed but not officially documented from the Lawndale Trail near the intersection with the Marsh Trail (personal observation 2012). This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic.

Fragrant fritillary (*Fritillaria liliacea*). CNPS Rank 1B. *Fragrant fritillary* is a low-growing, bulbiferous perennial herb in the lily family (Liliaceae) that blooms from February to April. It typically occurs in open, grassy areas in valley and foothill grassland, coastal scrub, and coastal prairie habitat at elevations ranging from 10 to 1,345 feet (CDFW 2015, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Soil survey data at known locations suggest that this species is typically located on moderately acid (pH 5.8) to neutral (pH 6.7) clay loams to clays derived from volcanics or serpentine (CDFW 2015, CSRL 2015). This species has a serpentine affinity rank of weak indicator (1.8) (Safford et al. 2005). Observed associated species include soap plant (*Chlorogalum pomeridianum* var. *pomeridianum*), coyote brush (*Baccharis pilularis*), purple needlegrass (*Stipa pulchra*), California oat grass (*Danthonia californica*), large flowered star tulip (*Calochortus uniflorus*), California buttercup (*Ranunculus californicus*), sun cups (*Camissonia ovata*), shooting stars (*Dodecatheon hendersonii*), needleleaf pincushion plant (*Navarretia intertexta*), one-sided bluegrass (*Poa secunda*), and Greene's popcornflower (*Plagiobothrys greenei*) (CDFW 2015, personal observations 2008-2015). *Fragrant fritillary* is known from the north end of False Lake Meadow, at the intersection of the Live Oak and Rough-Go trails, the North Burma Trail, and the Canyon Trail (CDFW 2015, personal observations 2009-2012, Peter Warner pers. comm. 2015). This species has a high potential to

occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic.

Jepson's Leptosiphon (*Leptosiphon jepsonii*). CNPS Rank 1B. Jepson's Leptosiphon is an annual herb in the phlox family (Polemoniaceae) that blooms from March to May. It typically occurs in open to partially shaded areas on volcanic or serpentine substrate in chaparral and cismontane woodland habitat at elevations ranging from 325 to 1,650 feet (CDFW 2015, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Observed associated species include California bay (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), toyon (*Heteromeles arbutifolia*), purple needlegrass (*Stipa pulchra*), Idaho fescue (*Festuca idahoensis*), California oat grass (*Danthonia californica*), and non-native annual grasses (CDFW 2015, personal observations 2011-2013). Jepson's Leptosiphon is known from near Channel Drive, but population information and specific location information is lacking (CDFW 2015). This species has a moderate potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic.

Redwood lily (*Lilium rubescens*). CNPS Rank 4. Redwood lily is a bulbiferous perennial herb in the lily family (Liliaceae) that blooms from April to September. It typically occurs in openings, roadsides, and trailsides, often on serpentine and volcanic substrates in broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, and North Coast coniferous forest habitat at elevations ranging from 95 to 6,210 feet (CNPS 2015, Baldwin et al. 2012, Best et al. 1996). Observed associated species include California bay (*Umbellularia californica*), coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), knobcone pine (*Pinus attenuata*), canyon live oak (*Quercus chrysolepis*), Sargent cypress (*Hesperocyparis sargentii*), MacNab cypress (*H. macnabiana*), chamise (*Adenostoma fasciculatum*), hoary manzanita (*Arctostaphylos canescens*), bush poppy (*Dendromecon rigida*), yerba santa (*Eriodictyon californicum*), and Sonoma sage (*Salvia sonomensis*) (personal observation 2012, 2014, 2015). Redwood lily is known from the trailside on the Lawndale Trail in a mixed stand of Douglas fir (personal observation 2012) as well as from the lower end of Shultz Canyon (Best et al. 1996). This species has a high potential to occur immediately adjacent to the trail, but is unlikely to occur directly within the trail itself due to repeated foot and wheel traffic.

Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*). CNPS Rank 1B. Baker's navarretia is an annual herb in the phlox family (Polemoniaceae) that blooms from April to June. It typically occurs in vernal wet areas underlain by adobe and/or alkaline substrates in cismontane woodland, meadow, seep, vernal pool, valley and foothill grassland, and lower montane coniferous forest habitat at elevations ranging from 15 to 5,710 feet (CDFW 2015, CNPS 2015, Baldwin et al. 2012, Best et al. 1996). This species is an obligate (OBL) wetland plant (Lichvar 2012), and is restricted to vernal pool habitat (VPI) (Keeler-Wolf et al. 1998). Observed associated species include pillwort (*Pilularia americana*), Douglas' mesamint (*Pogogyne douglasii*), tricolor monkeyflower (*Mimulus tricolor*), pennyroyal (*Mentha pulegium*), calicoflowers (*Downingia concolor*, *D. pusilla*), semaphore grass (*Pleuropogon californicus*), Lobb's buttercup (*Ranunculus lobbii*), and non-native annual grasses (CDFW 2015, personal observations 2012-2013). Baker's navarretia is known from the vernal swale in False Lake Meadow, edge of Ledson Marsh, and the Ridge Trail (CDFW 2015, personal observation 2009). This species is highly unlikely to occur within the trail due to repeated disturbance and hydrologic-edaphic conditions insufficient to support it, but may occur in vernal inundated areas along the trailside (e.g., ditches underlain with adobe clay).

Special-status Wildlife Species

California red-legged frog (*Rana draytonii*). Federal Endangered, CDFW Species of Special Concern. California Red-legged Frog (CRLF) was listed as Federally Threatened May 23, 1996 (61 FR 25813-25833). Critical Habitat for CRLF was designated on March 17, 2010 (75 FR 12815 12959). A Recovery Plan for CRLF was published by the USFWS on May 28, 2002. There are four Primary Constituent Elements (PCEs) that are considered essential for the conservation or survival of this species: (1) aquatic breeding habitat; (2) non-breeding aquatic habitat; (3) upland habitat; and (4) dispersal habitat (USFWS 2006). Aquatic breeding habitat consists of low-gradient fresh water bodies including natural and manmade ponds, pools in perennial streams, marshes, lagoons, and dune ponds with still or slow-moving water, and dense vegetation (Hayes and Jennings 1986, Jennings 1988, Jennings and Hayes 1994). Aquatic breeding habitat must hold water for a minimum of 20 weeks in most years to allow for egg, larvae, and tadpole development (USFWS 2006). Aquatic non-breeding habitat provides shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult CRLF. These waterbodies include plunge pools within intermittent creeks, seeps, quiet water refugia during high water flows, and springs of sufficient flow to withstand the summer dry period. CRLF can use large cracks in the bottom of dried ponds as refugia to maintain moisture and avoid heat and solar exposure (Alvarez 2004).

Upland habitats (e.g., grasslands, woodlands) provide shelter, forage, and cover, and include areas within 200 to 300 feet of suitable aquatic habitat. These habitats are utilized during climatic/seasonal conditions suitable for CRLF to be away from standing water, such as during or following rains, dense fog, and cool, moist nights (Fellers and Kleeman 2007, USFWS 2006). Upland habitat can include structural features such as boulders, rocks, downed trees, and shrubby thickets, as well as small mammal burrows and moist leaf litter (USFWS 2006). Dispersal habitat includes accessible upland or riparian habitats between occupied locations within 0.7 mile of each other that allow for movement between these sites, but dispersal of up to 1.8 miles has been documented (USFWS 2002, Fellers and Kleeman 2007). Moderate to high density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2006). Short-distance dispersal movements are generally straight-line movements, and dispersal typically occurs at night during wet weather (Bulger et al. 2003, USFWS 2002, Bulger et al. 2003, Fellers and Kleeman 2007). California red-legged frogs tend to remain very close to a water source during dry weather; however, overland dispersal may occur in response to receding water, but will occur only when temperatures are low and moisture is high, particularly at night and/or with heavy fog (USFWS 2002, Fellers and Kleeman 2007, Cook and Jennings 2001).

Ledson Marsh in the southern end of the Park supports a well-documented population of CRLF. The marsh itself and extending outward for approximately 3,700-foot from its shore, form USFWS designated Critical Habitat (USFWS 2006). Ledson Marsh is considered high quality aquatic breeding habitat for CRLF, and the Park's ephemeral and intermittent streams provide suitable migration corridors for this species during the winter and spring months (Cook and Jennings 2007, Cook and Currylow 2014).

Western pond turtle (*Actinemys marmorata*). CDFW Species of Special Concern: Western pond turtle (WPT) is the only freshwater aquatic turtle native to California. This species is associated with rivers, creeks, lakes, and ponds throughout much of the state, with typical habitat featuring stagnant or low gradient water, aquatic vegetation, and emergent basking sites

such as logs, rocks, and mud-banks. Adult females excavate nests in riparian and upland areas in the spring or early summer, and typically return to their nearby aquatic habitat (Reese and Welsh 1997). Nest sites are generally located on sunlit slopes, and require friable soil that is sufficiently dry to promote successful egg development (Holland 1994). The young generally hatch and overwinter in the nest, emerging in early spring to seek aquatic habitat (Jennings and Hayes 1994, Reese and Welsh 1997). Reese and Welsh (1997) observed that males do not move from their aquatic habitat in July or August, and that females may move infrequently to tend to their nests, particularly in June, but generally terrestrial activity lulled in mid- to late-summer. WPT is a dietary generalist, subsisting principally on invertebrates as well as plant material and carrion. This species has been documented from Ledson Marsh 1996-1998 (CDFW 2015).

Northern spotted owl (*Strix occidentalis caurina*). Federal Endangered, State Candidate. The northern spotted owl (NSO) is the resident spotted owl subspecies found in cool temperate forests of California in the North Coast Range, Klamath Range, and Cascade Range, from Marin County northward (USFWS 2011). Typical habitat consists of old-growth coniferous forests, or mixed stands of old-growth and mature trees; younger (second-growth) forest with patches of large trees are also occasionally used. High-quality breeding habitat features a tall, multi-tiered, multi-species canopy dominated by large trees, trees with cavities and/or broken tops, and woody debris and space under the canopy (Ripple et al. 1991). However, at their southern limit (Marin County, Sonoma County?), NSO utilize more heterogeneous and/or younger stands of mixed conifer-hardwood (Chow 2001, Stralberg et al. 2009).

NSO breeding pairs are frequently monogamous and demonstrate high site fidelity, maintaining nesting territories and home ranges across years (Gutiérrez et al. 1995). Breeding occurs in the spring, with young typically fledging in the mid- to late-summer (July-August). Nesting occurs on platform-like substrates and/or sizable tree cavities in the forest canopy with nest substrates typically of tree cavities, epicormic branching (i.e., multiple branches forming from a single node), broken tree tops, large horizontal branches, and old nests built by other birds or squirrels (USFWS 2011, Gutiérrez et al. 1995, Forsman et al. 1984). NSOs forage for nocturnal mammals with dusky-footed woodrats (*Neotoma fuscipes*) constituting the primary prey in California (Gutiérrez et al. 1995).

NSO have been documented from the Park on several occasions over the past two decades. A nesting pair was documented in 1990 near the Lawndale Trail, while non-breeding individuals and pairs have been detected in the Douglas fir and mixed conifer stands in the southeast portion of the Park (CDFW 2015).

Breeding birds (multiple species). A wide variety of native bird species (with baseline legal protections) are presumed to nest in the Park; these species include both year-round residents, and migratory species that breed in the region but spend the winter outside of it (typically at lower latitudes). General substrates used for nesting include trees (nearly all portions, including cavities), shrubbery, grassland, emergent wetland and herbaceous vegetation, ruderal areas (with disturbed vegetation), and even buildings and other anthropogenic structures. The regulatory agencies typically treat the bird nesting season as occurring from February 1 through mid- to late August in northern California, and virtually all local bird nesting occurs during this period. Although there are exceptions, resident birds typically initiate nesting earlier in the season (e.g., March), and migratory species later (e.g, May). Additionally, some bird species may re-nest immediately after successfully nesting a first time (within the same breeding

season), whereas other species typically only nest once. Regardless, most bird young have fledged (i.e., are capable of independent flight and movement) by mid-July, and nests that remain active into August will be in a relatively advanced state in nearly all cases.

POTENTIAL IMPACT TO SENSITIVE BIOLOGICAL RESOURCES

The Project is a mountain bike race that will have periodic activity over the course of approximately eight hours, and is entirely confined to existing designated trails and roads within the Park. Currently, bicycling is an allowable use on these trails, a use that the Park experiences on a daily basis irrespective of season. Strava, a popular web tool that collects activity data uploaded by athletes of all types (from runners to equestrians to cyclists), was analyzed to extrapolate user data for the estimated number of mountain bikers that typically ride on Canyon Climb Trail within the Park, which is particular trail that is popular with mountain bikers. The estimated number of cyclists on Canyon Climb Trail for any given non-race weekend throughout the year ranges from approximately 120 to 530 cyclists. Typical August 2014 non-race weekend ridership on Canyon Climb Trail ranged from 230 to 350 cyclists. Race-weekend ridership on Canyon Climb Trail in August 2014 dropped to 163 cyclists; a 69% decrease from the yearly peak, and a 52% decrease from the non-race August weekend peak. This illustrates that race-weekend has the effect of reducing ridership on non-race segments of the Park while many of the typical weekend Canyon Climb cyclists are consequently participating in the race. Thus far, there is no documentation of substantial adverse effects on the Park's sensitive biological resources from the daily use on designated trails or the past races hosted by Bike Monkey. The following sections identify potential direct and indirect biological impacts of the project, along with avoidance and minimization measures to ensure the continued protection of the Park's sensitive biological resources.

Would the Project 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 CDFW or USFWS?

Special-status Plants

Potential impacts to special status plant species can be addressed by considering plants species grouped by growth form. The eight special-status plant species documented from the Park can be classified in to four growth forms: (1) two annual forbs; (2) three perennial geophytes; (3) one perennial grass; and (4) two evergreen shrubs.

The annual forbs, Baker's navarretia and Jepson's Leptosiphon will have senesced after completing their life-cycle several months before the Project. Additionally, Baker's navarretia is limited to the wetted portions of vernal pool, vernal swale, and other seasonal wetlands and is highly unlikely to be on or within 25 feet of the Park's trails. Similarly, the perennial grass, Sonoma alopecurus, is situated away from the trail in perennially to strongly seasonally saturated soils around Ledson Marsh. Therefore, the Project will not have a substantial adverse effect on any of these annual species.

Similar to the annual forbs, the perennial geophyte, fragrant fritillary will have senesced in early spring remaining dormant from spring through late fall. Although this species is situated adjacent to the proposed Project route, the Project is highly unlikely to have a substantial adverse effect on this species because this species will be dormant and below-ground at the time of the Project. Narrow-anthered brodiaea typically senesces in mid-summer (July),

following seed-set, while redwood lily will typically senesce in late summer (August-September). Although standing fruits may be present at the time of the Project, flowering is unlikely to continue past July (JFP 2015). Because it is these species are not situated within the trail itself, trampling is unlikely to effect to these species; however, settling dust could be an indirect effect, particularly for narrow-anthered brodiaea and redwood lily. Proposed avoidance and minimization measures will ensure that the Project will not have a substantial adverse effect on narrow-anthered brodiaea (see below).

The two evergreen shrubs, *Calistoga ceanothus* and *Sonoma ceanothus*, will not be in flower at the time of the Project, but may have unsenesced fruits on the stem. More importantly, these species are evergreen and therefore are active year-round. Additionally, *Calistoga ceanothus* has been documented from the trailside of the South Burma Trail, North Burma Trail, and Live Oak Trail, while exact location of *Sonoma ceanothus* has not been reported. Potential direct impacts include trampling or abrasion, while indirect impacts include dust. Proposed avoidance and minimization measures will ensure that the Project will not have a substantial adverse effect on *Calistoga* and/or *Sonoma ceanothus* (see below).

Special-status Wildlife

The Project will occur in August which is generally regarded as the end of the breeding bird season, including for northern spotted owl. The most crucial timing of breeding birds' life-cycle will have been completed by the time of the Project. Should NSO continue to breed within the Park, their young will have likely fledged the nest by August and begun to forage along with their parents. Likewise, other birds protected under the MBTA and CFGC will have hatched, and most yearling birds will have fledged their nests to forage on their own. Additionally, any yearling birds that have yet to fledge would be unlikely to occur along the Park's designated trails. Therefore, the Project will not have a substantial adverse effect on NSO or other breeding birds.

Racers will pass-by Ledson Marsh on the Marsh Trail and Ridge Trail. Because the race will occur during daylight hours during the driest time of the year with high evaporation rates and the annual highest daytime temperatures, it is highly unlikely that CRLF or WPT will be away from the wetted portions of Ledson Marsh. In a study at Point Reyes, Fellers and Kleeman (2007) found that CRLF will migrate during the dry season, but only when evaporation was low, typically at night and during days with heavy fog. Although advection fog is common in central Sonoma County during the summer, it typically recedes by early- to mid-morning, and it is unlikely that CRLF will migrate in the relatively xeric conditions of the Park comparative to coastal Marin County. Although it is unlikely that either of these species would be on the trail during the Project, proposed avoidance and minimization measures will ensure that the Project will not have a substantial adverse effect on CRLF or WPT (see below).

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

The Project will occur entirely on existing designated trails and roads within the Park. Support staff will be positioned at designated stations (see Project Description) and entirely within the trail. Proposed avoidance and minimization measures will ensure that the Project will not have a substantial adverse effect on riparian habitat or other sensitive natural communities (see below).

Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The Park supports both seasonal and perennial wetlands; however, designated trails and roads have been sited away from areas with perennial hydrology. The Project will occur during the dry season when the seasonal wetlands near the trails will be at their minimum hydroperiod with unsaturated soils.

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 does not contain migratory (anadromous) fish habitat; therefore, the Project will not have an effect on migratory fish. Although the Park provides a habitat linkage between Sonoma Mountain the greater Mayacama Mountains (Merenlander et al. 2010, SLT 2014, BAOSC 2015), the Project would not disrupt or alter this linkage. The Park provides resident and migratory wildlife habitat, but mountain biking is an activity regularly occurring within the Park with no documented disruption or alteration to the Park's habitat functions at a landscape scale. Therefore, the Project would not substantially interfere with established native wildlife corridors or impede wildlife nursery sites.

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

The Project will occur entirely on designated trails and roads, and does not have landscape or resource altering components; therefore, it will not conflict with any local policies or ordinances pertaining to the protection of biological resources.

Would the Project conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan?

The Project will not conflict with any HCP or NCCP. The Project is partially within Critical Habitat for CRLF; however, the Project (cycling) is an allowable use within the Park that will be entirely on existing designated trails and roads with no alterations to the landscape or habitats. Therefore, the Project will not conflict with designated CRLF Critical Habitat.

RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

The following measures are intended to avoid and/or minimize impacts to sensitive biological resources within the Park to less than significant. These include general measures for the Park's biological resources, as well as specific measures for sensitive habitats (including wetlands), and special-status plant and wildlife species.

General Avoidance and Minimization Measures

The following measures shall be deployed to ensure avoidance and/or minimization of potential impacts to the Park's biological resources:

- Support staff and volunteers operating within the Park shall perform their duties to the greatest extent feasible entirely within the Park's designated trails and/or roads; trampling of trailside vegetation shall be minimized;
- A pre-project plant survey along the racecourse will be conducted with a focus on invasive species with a Cal-IPC Rank: High, Klamath weed (*Hypericum perforatum*), an invasive species (Cal-IPC Rank: Moderate (Cal-IPC 2006)), and all other invasive species with the potential to pose a serious threat to the native flora and vegetation of the Park;
 - Although invasive species are present within the Park, it is anticipated that most will have gone to seed at the time of the Race;
- Where dense populations of invasive species are located within five feet of the Park's trails and roads, high visibility flagging will be temporarily installed to alert race participants of the presence such species;
 - Only those species that are in a phenological state capable of spreading (i.e., seed set) will be flagged;
 - Only those populations that are of substantial size (e.g., hundred square feet) will be flagged;
 - Only those populations within ten feet of the Park's trails will be flagged;
- All race participants will be informed of the locations of invasive species and that to cross or pass through the high visibility flagging, typically for the purpose of passing other riders, is forbidden in these locations;
- Likewise support staff and volunteers operating within the Park shall be informed of the locations of invasive species and shall likewise not cross or pass through the high visibility flagging;
- No living trailside/roadside vegetation shall be removed.

Sensitive Habitat Avoidance and Minimization Measures

The following measures shall be deployed to ensure avoidance and/or minimization of potential impacts to the Park's sensitive habitats:

- All race participants shall be informed of the Park's sensitive natural communities and wetlands, and shall at all times be required to limit their travel to the Park's designated trails and roads;
- A pre-project plant survey along the racecourse shall be conducted by a qualified biologist with a focus on wetlands and other sensitive natural communities within 10 feet of the Park's trails and roads being utilized for the Project;
 - If wetlands within 10 feet of the trailside/roadside are saturated and/or contain vegetation susceptible to direct or indirect impacts from the Project, high visibility flagging shall be temporarily installed to alert race participants of the presence such habitats;
 - If sensitive natural communities within 10 feet of the trailside/roadside contain herbaceous vegetation particularly susceptible to direct or indirect impacts from the Project, high visibility flagging shall be temporarily installed to alert race participants of the presence such habitats;
 - All race participants shall be informed of the locations of wetlands and sensitive natural communities, and shall not cross or pass through the high visibility flagging, and that passing other riders is forbidden in these locations;

Special-status Plant Species Avoidance and Minimization Measures

The following measures shall be deployed to ensure avoidance and/or minimization of potential impacts to the Park's special-status plants:

- A pre-project plant survey along the racecourse shall be conducted by a qualified biologist with a focus on those species with the potential to occur within 10 feet of the Park's trails and roads (see Sensitive Biological Resources above);
 - To capture all of the potentially occurring species on the trailside/roadside, the survey shall be performed between June and August;
- Where special-status plant species are located within 10 feet of the Park's trails and roads, high visibility flagging shall be temporarily installed to alert race participants of the presence such species;
- All race participants shall be informed of the locations of special-status plants and shall not cross or pass through the high visibility flagging, and that passing other riders is forbidden in these locations;
- Likewise support staff and volunteers operating within the Park shall be informed of the locations of special-status plants and shall likewise not cross or pass through the high visibility flagging;
- A post-project inspection of documented special-status plant locations shall be performed by a qualified biologist to document direct or indirect impacts to special-status plants;
 - If direct impacts occur (e.g., broken branches, trampling), the affected individuals shall be treated under the direction of a qualified biologist to ensure the continued survival of the special-status plant populations; anticipated treatments include: pruning broken branches and restoring soil cover over any roots exposed by direct impacts;
 - If indirect impacts occur (e.g. dust), the affected individuals shall be treated under the direction of a qualified biologist to ensure the continued survival of the special-status plant populations; anticipated treatments include: shaking dust out/off of the special-status plants under the direction of a the qualified biologist at the time of the post-project inspection.

Special-status Wildlife Avoidance and Minimization Measures

The following measures shall be deployed to ensure avoidance and/or minimization of potential impacts to the Park's special-status wildlife:

- The Project shall occur near the end or after the breeding bird season, including for NSO, typically February 1st – July 31st;
- The Project shall occur after the breeding and dispersal season for CRLF and WPT, typically winter and spring, with WPT females migrating near-daily in June;
- The Project shall begin at least one hour after sunrise and shall end at least one hour before sunset to avoid potential impacts to dispersing CRLF and WPT;
- A qualified biologist shall provide information to all Project participants (racers, volunteers, staff, etc.) on the life-cycle and general identification of CRLF and WPT;
 - In-depth information will be provided to all Project staff and volunteers;
 - Special attention shall be drawn to Ledson Marsh and abutting trails to inform Project participants of this wetland and the habitat it provides;

- Within 24 hours prior to the start of the Project, a qualified biologist shall conduct a survey for CRLF and WPT in any wet areas within 10 feet of the trailside/roadside;
- If individuals of CRLF and/or WPT are observed within 10 feet of the trailside/roadside, Project participants shall be delayed until such time that the species moves out of the site on its own accord.

If you have questions or require additional information, please contact us. Sincerely,



Aaron Arthur – Associate Plant Ecologist
arthur@wra-ca.com
WRA, Inc.
2169-G East Francisco Blvd.
San Rafael, California 94901

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Personal Observations / Personal Communications

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Appendix C

Thad M. Van Bueren, M.A.

Professional Archaeologist & Historian

(707) 964-7272
thad@mcn.org

P.O. Box 326
Westport CA 95488
FAX by arrangement

April 20, 2015

Federated Indians of Graton Rancheria
Sacred Sites Committee
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: Special Use Permit for Annadel Cross Country Mountain Bike Race, August 15, 2015

Dear Sacred Sites Committee:

I am writing to ask if your tribe, its governing council, and tribal members have any concerns or input regarding a proposed Special Use Permit for an event planned in Annadel State Park. The event is a cross country bicycle race planned for August 15, 2015 on existing trails within Annadel State Park. A map of the race route is attached for your reference. The permit will require the event applicant (Bike Monkey) to ensure special precautions are taken to avoid impacts to cultural resources.

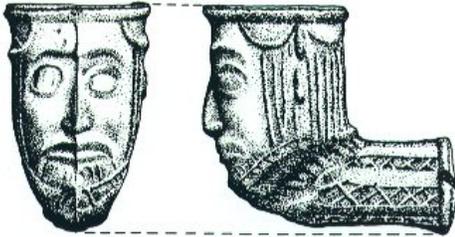
Those special provisions will include coordination between a State Parks archaeologist and Bike Monkey's professional archaeologist prior to the planned event and the design of temporary protection measures and event monitoring procedures. Event organizers will be trained to carry out those resource protection measures and Bike Monkey's hired archaeologist will monitor the event and prepare a follow up assessment. Temporary protection measures such as fencing or cones will be removed at the conclusion of the race event.

If you have any concerns or input, please contact senior State Archaeologist Breck Parkman at Edward.Parkman@parks.ca.gov or (707) 769-5652 extension 216.

Respectfully yours,

Thad M. Van Bueren, M.A.
Registered Professional Archaeologist

Enclosed: map showing race course



(707) 964-7272
thad@mcn.org

Thad M. Van Bueren, M.A.

Professional Archaeologist & Historian

P.O. Box 326
Westport CA 95488
FAX by arrangement

April 20, 2015

Lytton Band of Pomo Indians
437 Aviation Blvd.
Santa Rosa, CA 95403

Re: Special Use Permit for Annadel Cross Country Mountain Bike Race, August 15, 2015

Dear Lytton Band of Pomo Indians:

I am writing to ask if your tribe, its governing council, and tribal members have any concerns or input regarding a proposed Special Use Permit for an event planned in Annadel State Park. The event is a cross country bicycle race planned for August 15, 2015 on existing trails within Annadel State Park. A map of the race route is attached for your reference. The permit will require the event applicant (Bike Monkey) to ensure special precautions are taken to avoid impacts to cultural resources.

Those special provisions will include coordination between a State Parks archaeologist and Bike Monkey's professional archaeologist prior to the planned event and the design of temporary protection measures and event monitoring procedures. Event organizers will be trained to carry out those resource protection measures and Bike Monkey's hired archaeologist will monitor the event and prepare a follow up assessment. Temporary protection measures such as fencing or cones will be removed at the conclusion of the race event.

If you have any concerns or input, please contact senior State Archaeologist Breck Parkman at Edward.Parkman@parks.ca.gov or (707) 769-5652 extension 216.

Respectfully yours,

Thad M. Van Bueren, M.A.
Registered Professional Archaeologist

Enclosed: map showing project area



(707) 964-7272
thad@mcn.org

Thad M. Van Bueren, M.A.

Professional Archaeologist & Historian

P.O. Box 326
Westport CA 95488
FAX by arrangement

April 20, 2015

Cloverdale Rancheria of Pomo Indians
555 South Cloverdale Blvd., Suite A
Cloverdale, CA 95425

Re: Special Use Permit for Annadel Cross Country Mountain Bike Race, August 15, 2015

Dear Cloverdale Rancheria of Pomo Indians:

I am writing to ask if your tribe, its governing council, and tribal members have any concerns or input regarding a proposed Special Use Permit for an event planned in Annadel State Park. The event is a cross country bicycle race planned for August 15, 2015 on existing trails within Annadel State Park. A map of the race route is attached for your reference. The permit will require the event applicant (Bike Monkey) to ensure special precautions are taken to avoid impacts to cultural resources.

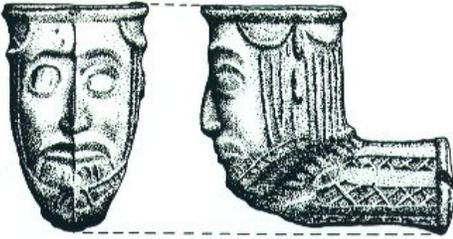
Those special provisions will include coordination between a State Parks archaeologist and Bike Monkey's professional archaeologist prior to the planned event and the design of temporary protection measures and event monitoring procedures. Event organizers will be trained to carry out those resource protection measures and Bike Monkey's hired archaeologist will monitor the event and prepare a follow up assessment. Temporary protection measures such as fencing or cones will be removed at the conclusion of the race event.

If you have any concerns or input, please contact senior State Archaeologist Breck Parkman at Edward.Parkman@parks.ca.gov or (707) 769-5652 extension 216.

Respectfully yours,

Thad M. Van Bueren, M.A.
Registered Professional Archaeologist

Enclosed: map showing project area



(707) 964-7272
thad@mcn.org

Thad M. Van Bueren, M.A.

Professional Archaeologist & Historian

P.O. Box 326
Westport CA 95488
FAX by arrangement

April 20, 2015

Dry Creek Rancheria of Pomo Indians
P.O. Box 607
Geyserville, CA 95441

Re: Special Use Permit for Annadel Cross Country Mountain Bike Race, August 15, 2015

Dear Dry Creek Rancheria of Pomo Indians:

I am writing to ask if your tribe, its governing council, and tribal members have any concerns or input regarding a proposed Special Use Permit for an event planned in Annadel State Park. The event is a cross country bicycle race planned for August 15, 2015 on existing trails within Annadel State Park. A map of the race route is attached for your reference. The permit will require the event applicant (Bike Monkey) to ensure special precautions are taken to avoid impacts to cultural resources.

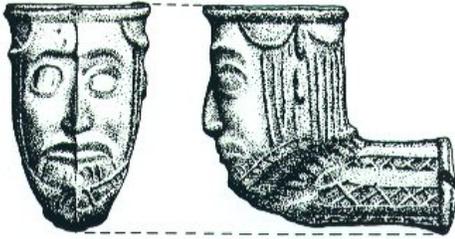
Those special provisions will include coordination between a State Parks archaeologist and Bike Monkey's professional archaeologist prior to the planned event and the design of temporary protection measures and event monitoring procedures. Event organizers will be trained to carry out those resource protection measures and Bike Monkey's hired archaeologist will monitor the event and prepare a follow up assessment. Temporary protection measures such as fencing or cones will be removed at the conclusion of the race event.

If you have any concerns or input, please contact senior State Archaeologist Breck Parkman at Edward.Parkman@parks.ca.gov or (707) 769-5652 extension 216.

Respectfully yours,

Thad M. Van Bueren, M.A.
Registered Professional Archaeologist

Enclosed: map showing project area



(707) 964-7272
thad@mcn.org

Thad M. Van Bueren, M.A.

Professional Archaeologist & Historian

P.O. Box 326
Westport CA 95488
FAX by arrangement

April 20, 2015

Kashia Band of Pomo Indians
3535 Industrial Drive, Suite B2
Santa Rosa, CA 95403

Re: Special Use Permit for Annadel Cross Country Mountain Bike Race, August 15, 2015

Dear Kashia Band of Pomo Indians:

I am writing to ask if your tribe, its governing council, and tribal members have any concerns or input regarding a proposed Special Use Permit for an event planned in Annadel State Park. The event is a cross country bicycle race planned for August 15, 2015 on existing trails within Annadel State Park. A map of the race route is attached for your reference. The permit will require the event applicant (Bike Monkey) to ensure special precautions are taken to avoid impacts to cultural resources.

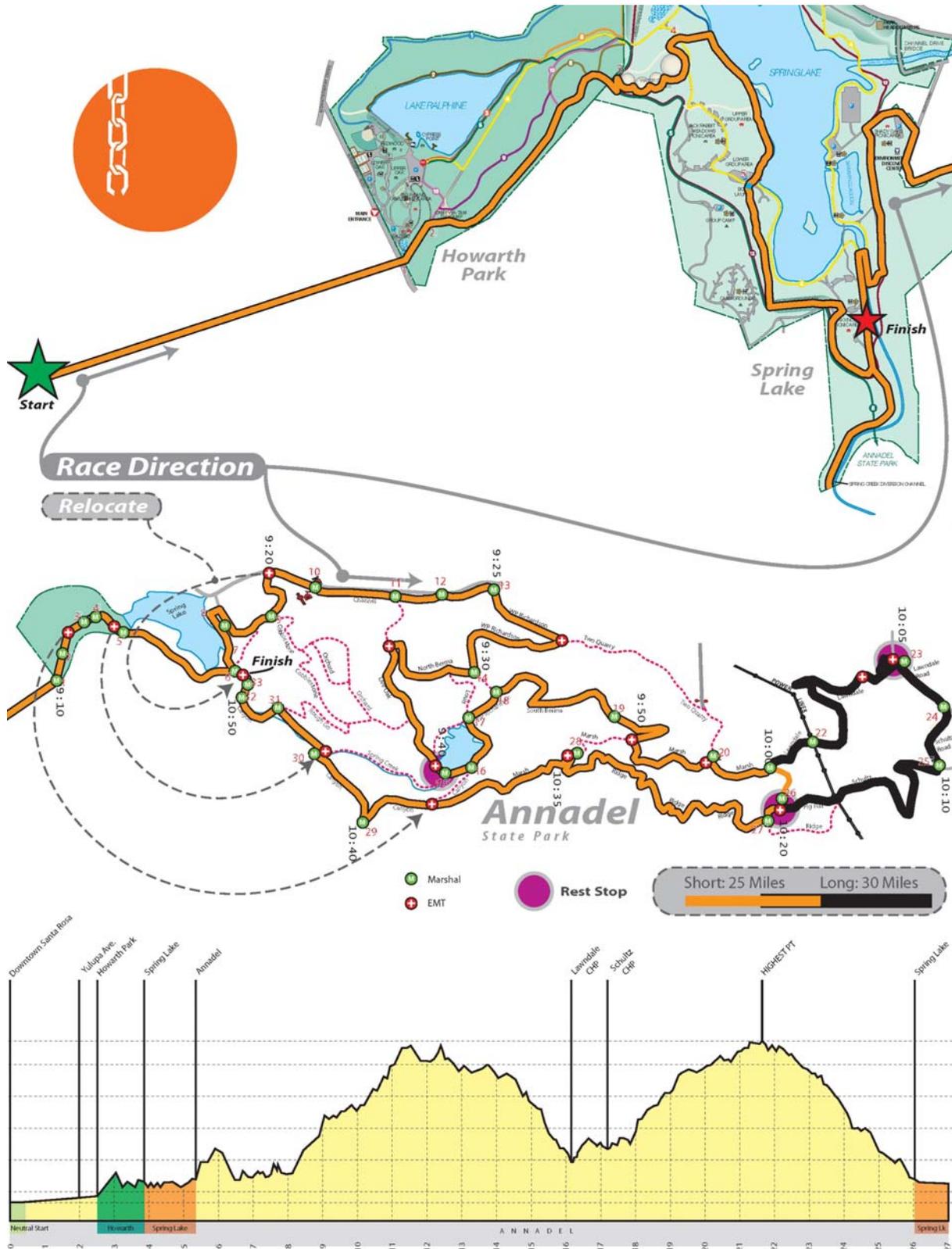
Those special provisions will include coordination between a State Parks archaeologist and Bike Monkey's professional archaeologist prior to the planned event and the design of temporary protection measures and event monitoring procedures. Event organizers will be trained to carry out those resource protection measures and Bike Monkey's hired archaeologist will monitor the event and prepare a follow up assessment. Temporary protection measures such as fencing or cones will be removed at the conclusion of the race event.

If you have any concerns or input, please contact senior State Archaeologist Breck Parkman at Edward.Parkman@parks.ca.gov or (707) 769-5652 extension 216.

Respectfully yours,

Thad M. Van Bueren, M.A.
Registered Professional Archaeologist

Enclosed: map showing project area



Proposed Race Route within Annadel State Park.

Appendix D
**SEDIMENT and EROSION CONTROL
MANAGEMENT PLAN**

for

Annual Annadel XC Mountain Bike Race

in

Annadel State Park



prepared for:

Bike Monkey
PO Box 5318
Santa Rosa, CA 95402

prepared by:

Wynn Coastal Planning
Michaela Biaggi, Environmental Scientist
703 North Main Street, Fort Bragg CA 95437
ph: 707-964-2537 fx: 707-964-2622
www.WCPlan.com

May 8, 2015

This Sediment and Erosion Control Management Plan explains the specific impacts that mountain bikes and mountain bike races can have on trails. It also includes a list of best management practices (BMPs), intended to minimize and restore the impacts bikes may have on trails.

The annual Annadel XC Mountain Bike Race is scheduled to take place during the designated dry season, with a scheduled race date of August of each year. Being that the race is scheduled during the dry season, this eliminates one of the largest drivers of erosion, the impact of precipitation events on disturbed and displaced soils. Even though precipitation is not an immediate concern, preventative BMPs, education and outreach BMPs, and post-race trail maintenance BMPs, are advised for implementation. Implementing BMPs will prevent and reduce trail degradation, and help return trails to pre-race conditions.

The Four Common Forms of Soil Degradation on Trails:

- Compaction
- Muddiness
- Displacement
- Erosion

Compaction: Soil compaction is caused by the weight of the mountain biker and their bike, which passes through tires to the tread surface.

Compacted soils are denser and less permeable to water, which increases water runoff. However, compacted soils also resist erosion and soil displacement and provide durable treads that support traffic. From this perspective, soil compaction is considered beneficial, and it is an unavoidable form of trail impact. Furthermore, a primary resource protection goal is to limit trailside impacts by concentrating traffic on a narrow tread. Success in achieving this objective will necessarily result in higher levels of soil compaction.

Displacement: Trail users can also push soil laterally, causing displacement and development of ruts, berms, or cupped treads. Soil displacement is particularly evident when soils are damp or loose and when users are moving at higher rates of speed, turning, braking, or other movements that create more lateral force. Soil can also be caught in tire treads, flicked to the side or carried some distance and dropped. Regardless of the mechanism, soil is generally displaced from the tread center to the sides, elevating inslopes or berms, and compounding drainage problems.

Muddiness: When trails are located in areas of poor drainage or across highly organic soils that hold moisture, tread muddiness can become a persistent problem. Muddiness is most commonly associated with locations where water flows across or becomes trapped within flat or low-lying areas. Soil compaction, displacement, and erosion can exacerbate or create problems with muddiness by causing cupped treads that collect water during precipitation events. Thus, muddiness can occur

even along trails where there is sufficient natural drainage. Subsequent traffic skirts these problem spots, compacting soils along the edges, widening mud holes and tread width, and sometimes creating braided trails that circumvent muddy sections.

Erosion: Soil erosion is an indirect and largely avoidable impact of trails and trail use. Soil can be eroded by wind, but generally, erosion is caused by flowing water. To avoid erosion, sustainable trails are generally constructed with a slightly crowned (flat terrain) or outsloped (sloping terrain) tread. However, subsequent use compacts and/or displaces soils over time to create a cupped or insloped tread surface that intercepts and carries water. The concentrated run-off picks up and carries soil particles downhill, eroding the tread surface. Loose, uncompacted soil particles are most prone to soil erosion, so trail uses that loosen or detach soils contribute to higher erosion rates. (Marion & Wimpey, 2007)

How Mountain Bikes Impact The Soil Surface

There are two types of forces exerted by bike tires on soil surfaces: The downward compaction force from the weight of the rider and bike, and the rotational shearing force from the turning rear wheel. Mountain bikers generate the greatest torque, with potential tread abrasion due to slippage, during uphill travel. Wheel slippage and abrasion occur only on wet or loose surfaces. Tread impact associated with downhill travel is generally minimal due to the lack of torque and lower ground pressures. Exceptions include when riders brake hard enough to cause skidding, which displaces soil downslope, or bank at higher speeds around turns, which displaces soil to the outside of the turn. Impacts in flatter terrain are also generally minimal, except when soils are wet or uncompacted and rutting occurs. Downhill slopes and curves are the most susceptible to erosion. (Marion & Wimpey, 2007)

Best Management Practices (BMPs)

The below listed best management practices (BMPs) should be implemented to the fullest extent feasible, when necessary (pre and or post race), to prevent, minimize, and restore the trails impacted by the racers and their bikes.

1.1 Prohibit Off-Trail Travel

Informal trails created by off-trail travel frequently have steep grades and fall-line alignments that quickly erode, particularly in the absence of tread maintenance. Exceptions include areas of solid rock or non-vegetated cobble. Many environmental impacts can be avoided when traffic is restricted to the “true trail”, so that the trail is kept to its original margins (preferably narrow). *(These are preventive BMPs)*

- Flagging the trail is a temporary means of defining the trail border. This should be prioritized on course areas where a “side trail” or potential for a trail deviation from the “true trail” exists. (see example, Fig 1.1.1)
- Defining trail borders with more permanent features such as logs, rocks, or other objects that won't impede drainage, will keep trail course narrow to reduce the total area of intensive tread disturbance. (see example, Fig 1.1.2)
- Passing a fellow racer by deviating from “true trail” should be strictly prohibited.
- Remove trail impediments that cause people to seek off-trail travel (low lying branches, poison oak, overgrown vegetation, etc), off-trail travel will be lessened.
- Prior to the Race, Race Coordinators should inform participants about prohibited off-trail travel and passing outside of the “true trail”. Information dissemination methods may include website, email, and/or handouts given to participants.



(Fig 1.1.1) Stakes and tape to keep racers on trail.



1.2 Water Crossings

The race director should avoid creating a race course with water crossings, if possible. Rerouting the course away from water crossings will create less of an impact to the stream environment. (*These are preventative BMPs.*)

- If water crossings are absolutely necessary, then first minimize the number of crossings on the race course.
- Stepping stones installed in a water crossing are the option of least environmental impact. Stepping stones accomplishes the objective of protecting the environment and providing dry passage. (see example, Fig 1.2.1)
- If stepping stones are not an option, then choose a best crossing by scouting the stream carefully to select the most resistant location. Look for rocky banks and soils that provide durable surfaces. (see example, Fig 1.2.2)
- Design race course water crossings so the trail descends into and climbs out of the steam crossing, preventing stream water from flowing down the trail.
- If necessary, armor trails at stream crossings with rock or gravel to prevent erosion. (Note: approval by land managers/park personnel required)



(Fig 1.2.1) Rocks used for “stepping stone” creek crossing

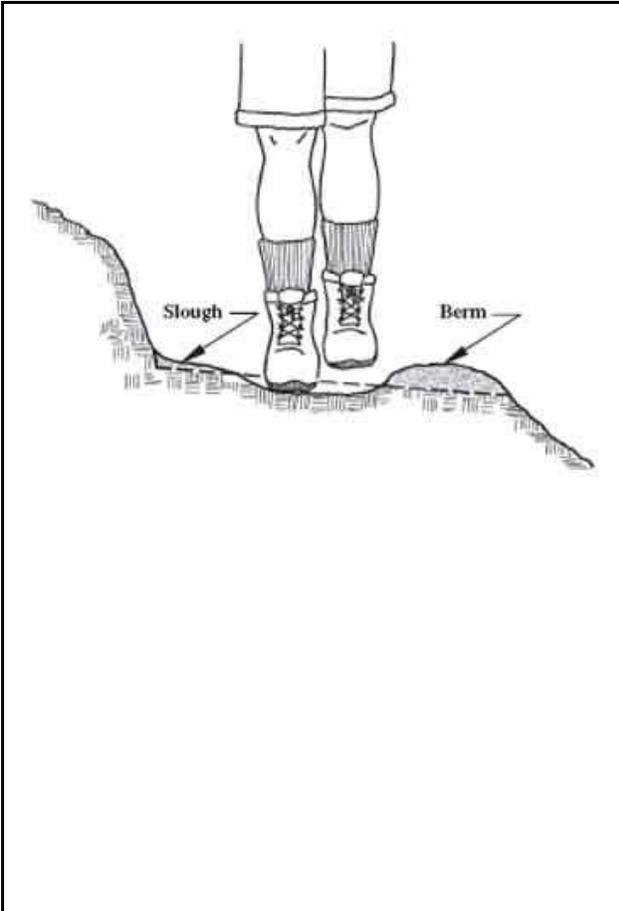


(Fig 1.2.2) Riders using most resistant crossing/rockiest location for stream crossing

1.3 Slough, Tread, and Berm Maintenance:

Prior to and after the race, slough, tread, and berm maintenance should be conducted on areas of the trail requiring this type of trail maintenance. Acute problem areas should be prioritized. Outside berms are made of soil that has built up on the outside of the tread, forming a barrier that prevents water from sheeting off. Outside berm formation is the single largest contributor to erosion of the tread. (These are preventative and post race maintenance BMPs.)

- Remove and scatter outside berm material that collects at the outside edge of the trail. Reshape the tread and restore the outslope. Maintain the tread at the designed width.
- Slough is soil, rock, and debris that has moved downhill to the inside of the tread, narrowing the tread. Slough needs to be removed (see Illustration, Ills 1.3.1).
- Slough that doesn't get removed is the main reason trails "creep" downhill. Loosen compacted slough and remove the soil with a shovel. Remember to compact the tread thoroughly.
- Trails should be restored to pre-race conditions. (see example, Fig 1.3.2)



(Ills 1.3.1) Illustration of common trail degradation components



(Fig 1.3.2) Newly maintained trail, free of slough, outside berm, and smoothed tread.

1.4 Impacts to Vegetation and Sensitive Species

Park officials and scientists should advise the race director about sensitive vegetation, species and areas, and ideally in advance of the race course selection. If possible, the race course should avoid sensitive vegetation, species, and areas in the park. These BMPs are advisable, when avoiding such can't be achieved.

(These are preventative and public education and outreach BMPs)

- Keep trail course narrow to reduce the total area of intensive tread disturbance.
- The race course should avoid riparian or wetland areas.
- Prior to the Race, Race Coordinators will inform participants of the presence and type of sensitive species that are located in the Park and along the race course. Information dissemination methods may include website, email, and/or handouts given to participants.
- Park officials and scientists in coordination with the race coordinator, should utilize flagging to identify sensitive areas and plants in close proximity to the race course, thereby limiting off-trail impacts to the park's natural and cultural resources.
- A post-race walk through with a qualified biologist may result in recommendations and required actions that attempt to restore sensitive species to pre-race conditions. For example, settled dust as a result of the race may be found on special-status plants, in which case the biologist may shake the dust from these plants, or oversee or suggest this remediation by others.

SOURCES

Marion, Jeff, and Jeremy Wimpey. "Environmental Impacts of Mountain Biking: Science Review and Best Practices." *This article was originally published in Managing Mountain Biking: IMBA's Guide to Providing Great Riding, a 256-page book produced by IMBA in 2007.*

Davies, Mary Ann, and Hesselbarth, Woody, and Vachowski Brian. "Trail Construction and Maintenance Notebook" US Department of Transportation Federal Highway Administration, July 2007.

APPENDIX A

Below is verbiage that can be used by the Race Director for email, flyers, or any other communication measure deemed appropriate. The intent of this verbiage is to educate riders about the impact that they and their bike have on the trail system, and why it's important for riders to stay on the race course, at all times.

Dear Racers,

Our primary resource protection goal is to minimize and prevent trail degradation, to the fullest extent possible. Soil displacement and trail degradation will happen, and particularly when riders are moving at higher rates of speed, turning, braking, or other movements that create more lateral force. Downhill slopes and curves are the most susceptible to erosion. We expect that trail degradation will occur at certain places on the course, and we are prepared to restore trails, as necessary, after the race. However, you can do your part to help minimize your impact to the trail system (and our post-race work!) by adhering to the following rules.

- We are requiring that riders keep on the prescribed race course and trail surface, and this responsibility rests with each rider. A rider may not leave the prescribed course unless ordered to do so by public authorities or a race official.
- Passing a fellow racer by deviating from the race course and trail surface is strictly prohibited.
- Race coordinators may utilize flagging to identify sensitive areas and vegetation in close proximity to the race course, please stay on course to limit your impact in sensitive areas and reduce our workload after the race.

One of our main drivers for keeping racers on the prescribed course, is to limit trailside impacts by concentrating traffic on a narrow trail/tread. Please know that these rules are in the best interest of the riders, the trails, and the surrounding environment.
