

# **Pacifica Dog Park at the Pacifica Center for the Arts Pacifica, CA**

## **Draft Initial Study/ Mitigated Negative Declaration**

Prepared for  
City of Pacifica  
1800 Francisco Blvd.  
Pacifica, CA 94044

Prepared by  
TRA Environmental Sciences, Inc.  
545 Middlefield Road, Suite 200  
Menlo Park, CA 94025  
[www.TRAenviro.com](http://www.TRAenviro.com)

April 2010

## Mitigated Negative Declaration

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Pursuant to the California State Public Resources Code and the California Environmental Quality Act (CEQA) Guidelines, as amended to date, the Lead Agency, City of Pacifica Planning Department (City of Pacifica), submits a Mitigated Negative Declaration for the Pacifica Dog Park at the Pacifica Center for the Arts located in Pacifica, CA.

### PROJECT OVERVIEW

The proposed dog park is located at the Pacifica Center for the Arts, at 1220 Linda Mar Boulevard in Pacifica, San Mateo County. The Pacifica Center for the Arts (hereinafter referred to as “the Arts Center”) is owned and operated by the City of Pacifica’s Department of Parks, Beaches and Recreation. The Arts Center and proposed dog park are located within a residential neighborhood on the south side of Linda Mar Boulevard just before the intersection of Alicante Drive. Significant natural features in the vicinity of the proposed dog park site include San Pedro Creek, approximately 200 feet southwest of the dog park site, and San Pedro Mountain, the foothills of which are located approximately 0.1 mile to the south beyond Rosita Road.

The dog park will provide the public with an enclosed, recreational space where dogs can run and play off-leash. Use of the dog park will be free and open to the public. Currently, dog owners utilize the area behind and alongside the Arts Center for off-leash dog play, although no designation as a dog park has yet been made.

The Arts Center includes several single story buildings that house artists’ studios. An asphalt parking lot borders the buildings to the north, west, and south. The proposed dog park site is in the area to the east of the existing buildings. The project site is currently fairly flat, and covered with turf. Within the planned project area there is a small fenced-in area primarily containing wild, ornamental and non-native plant species.

For the dog park, an area 23,415 square feet in size (roughly half an acre) and rectangular in shape will be enclosed with a green, vinyl-coated chain link fence four feet in height. The ground cover for the dog park will be decomposed granite. The City of Pacifica will provide a dispenser for storing dog-waste bags. The City of Pacifica, in conjunction with the Pacifica Organization of Canine Helpers (POOCH) will provide education materials, free dog-waste bags, and a garbage receptacle that will be emptied weekly. Upon park opening, POOCH stewards will implement a 3-month education campaign where they will hand out free bags and encourage users to keep the park clean. In addition, occasional, unofficial “pooper scooper” services may be performed by one or more POOCH stewards. Finally, the existing parking lot will be increased by nine spaces and will extend to the eastern property line.

## FINDINGS

The City, having reviewed the Initial Study for the proposed project finds that:

Based on the environmental evaluation presented in the Initial Study, the Project will not cause significant adverse effects related to aesthetics, air quality, agricultural resources, hazards and hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, and utilities/service systems. In addition, substantial adverse effects on humans, either direct or indirect, will not occur. The Project does not affect any important examples of the major periods of California prehistory or history. Nor will the project: cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of a rare or endangered plant or animal.

The engineering design of project activities and the implementation of Best Management Practices (BMPs) as contained in this Initial Study Checklist will ensure that no significant impacts occur.

The following mitigation measures will apply:

**Mitigation Measure Bio-1:** The City of Pacifica will combat illegal use of San Pedro Creek by dogs and humans. The City shall:

1. Repair all existing holes in the fence that separate the creek from the Arts Center prior to opening of the dog park;
2. Weekly monitor the fence for future vandalism and making timely repairs of the fence when vandalism occurs (within 3 weeks of occurrence); and
3. Install interpretive signs that educate the public about the ecological importance of San Pedro Creek and how creekside and in-creek trampling by humans and dogs can impact ecological resources.

**Mitigation Measure Hyd-01:**

1. The City of Pacifica will reduce the amount of fecal matter from the dog park by providing the following:
  - A dog-waste bag dispenser at the site;
  - A trash can at the site that is emptied three times a week by Coastside Scavengers.
2. The City of Pacifica will contract with the Pacifica Organization of Canine Helpers (POOCH), to:
  - Work with City staff to create an interpretive sign that educates the public about the impacts dogs can have to local aquatic and human health;
  - Create and distribute educational brochures that feature more in-depth information regarding the impacts of in-stream dog and person traffic; and
  - Implement an aggressive person-to-person education campaign during the first three months of dog park operation where visitors are given free dog-waste bags, a brochure, and a verbal explanation of the park rules.
3. The City will install a Bacterra Bioretention System (passive-treatment filtration system) manufactured by Filterra (or similar). For more details please see the *Preferred Alternative for Addressing Fecal Coliform Runoff at the Pacifica Center for the Arts Dog Park* (January 6, 2010) (see Appendix B of this Initial Study Checklist). The system shall be installed and maintained by the City per the manufacturer's specifications.

4. The Bacteria Bioretention System will be checked biannually and will be maintained annually by City Public Works staff.
5. Water quality monitoring shall be part of this measure, including baseline monitoring before construction that evaluates turbidity and fecal coliform levels. Monitoring shall be done three times per year for the first three years after construction, in January, March and June, and a report analyzing the effects of this monitoring shall be prepared by the City (or its consultant) and shall be available to the public for review.
6. If the monitoring and associated analysis reveals higher levels of turbidity and fecal coliform than baseline that exceed stated standards, then the dog park shall be temporarily closed until either the filter system is working properly again or another, more effective system is installed.

**Mitigation Hyd-02:** A series of three bioswales shall be constructed at the site, between the parking lot and San Pedro Creek. These bioswales shall have a minimum capacity of 2,025 cubic feet and shall be implemented by utilizing the three existing terraces in the southern corner of the property (see Appendix C for specific details, especially Figure 3 in this Appendix). These bioswales were designed to use the existing topography as much as possible to minimize earthwork. Assuming this preliminary capacity, the bioswale shall contain at least 34% of the 2-yr 24-hour storm event (assuming no infiltration).

The three swale segments shall be oriented along the existing terraces (running in an approximately east-west direction) and shall be in the dimensions and volumes as indicated in Table 4. Excavation of existing material to a depth of approximately 1 foot in some places and the construction of a 1- to 1.5-foot berm shall also be part of this effort.

**Table 4  
Proposed Bioswale Dimensions**

<b>Bioswale</b>	<b>Width (in feet)</b>	<b>Length (in feet)</b>	<b>Volume (cubic feet)</b>
Upper	8	82	656
Middle	6	66	394
Lower	27	36	974
<b>Total volume, all bioswales</b>			<b>2,024</b>

In addition, the following recommendations from the Pacifica Dog Park Biofiltration Swale Technical Memo, Sound Watershed Consulting, LLC shall be implemented as part of this project:

1. A more detailed design shall investigate the infiltration capacity of the onsite soils and subsurface conditions so that a more refined hydrologic estimate can be developed in support of the final design and construction specifications. With sufficient infiltration capacity, the bioswale could treat a larger proportion of the design (2 year) storm. The following design elements shall receive additional consideration by the City of Pacifica's Engineering Department (or qualified consultant) prior to construction of any element of the Dog Park, bioswale, or filter:
  - The configuration of the bioswale, drop inlet location, and drop inlet drain structures
  - Overflow structure design for the bioswale (to prevent erosion on steep slopes)
  - Conveyance features (e.g. either channels, swales, culverts or dispersal structures) at the outlet of the bioswale and drop inlet drain

- Connecting features where concentrated peak flows occur at the confluence with San Pedro Creek (a small channel exists immediately below the line on Figure 5 of this Initial Study).
  - Refine estimates of existing infiltration to determine the need to design infiltration improvements into the swales.
  - Selection of appropriate plant species for the swales that can provide both erosion control treatments, aesthetic values, and desired bioremediation effects.
2. A site survey shall be conducted to clarify how much regrading will need to occur. Regrading the site will ensure that the entire Dog Park footprint drains (sheetflows) directly into the filter system, then is discharged into a swale which flows into San Pedro Creek. The highest point should be at the northeast corner of the Dog Park site, at the residential property line. It is possible that this point needs to be as much as 6 inches higher than existing. This will avoid the puddling and pooling of contaminated water within the fenced-in area of the Dog Park.

**Mitigation Measure LU-1:** The City of Pacifica will amend Zoning Ordinance 698 to allow for off-leash dog use within parks designated for that specific use. The ordinance will also include language that makes owners responsible for the control of their dog(s) within the park, as well as, for the removal of their dog's feces.

Attached is the Initial Study prepared for the Project. The public can view the documents used in preparation of the Initial Study at the City of Pacifica Planning and Building Division offices, 170 Santa Maria Avenue, Pacifica, CA 94044.

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**Appendix B:** Preferred Alternative for Addressing Fecal Coliform Runoff at the Pacifica Center  
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**Appendix C:** Pacifica Dog Park Biofiltration Swale Technical Memo, Sound Watershed  
Consulting, April 2010

## 1.0 Introduction

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### 1.1 Introduction and Regulatory Guidance

This Initial Study/ Mitigated Negative Declaration (IS/MND) has been prepared by the project applicant and the Lead Agency, the City of Pacifica Planning Department. The purpose of the Initial Study is to evaluate the potential environmental effects of the proposed Pacifica Dog Park on an approximate 0.5-acre site at the Pacifica Center for the Arts in the City of Pacifica (see Figure 1 - Regional Location, Figure 2 - Project Location and Figure 3 - Project Site Plan).

The proposed dog park will be located at 1220 Linda Mar Boulevard and will likely serve the greater Linda Mar Neighborhood. The dog park is expected to increase current on-leash and off-leash use of the Arts Center's grounds and will be open from sunrise to sunset. The grounds of the proposed park are relatively flat and currently covered with turf. The area within and surrounding the project site includes a small, fenced-in area that appears to have once functioned as a community garden; a small, fenced-in play structure to the north; and two baseball diamonds and a large open field to the west (on the other side of the Arts Center from the proposed Dog Park).

Proposed project improvements include the following:

- Installation of a green, vinyl-coated chain link fence four feet in height that will surround the boundary of the 0.5-acre site;
- Installation of a standard garbage bin encased in a stainless-steel housing; and
- Installation of a dog-waste bag dispenser on top of a steel post;
- Installation of a user education board listing park rules and information/rationale regarding the importance of dog-waste pick up and keeping dogs on-leash, away from San Pedro Creek;
- Installation of a water line and faucet;
- Striping of the existing parking area and the addition of nine new parking spaces; and
- Repairing the existing fence that separates the Pacifica Arts Center grounds from San Pedro Creek.

According to CEQA Guidelines Section 15070, a public agency shall prepare a proposed ND or a Mitigated ND when:

- 1) The IS shows 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, or
- 2) The IS identifies potentially significant effects, but:
  - Revisions in the project plans made by, or agreed to by the applicant before a proposed Mitigated ND and IS are released for public review will avoid the effects or mitigate the effects to a point where clearly no significant effects will occur, and
  - There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

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.*

## 1.2 Lead Agency

The lead agency is the public agency with principal responsibility for carrying out or approving the proposed project (CEQA Guidelines §15367). The lead agency for the proposed project is the City of Pacifica Planning Department, the agency that will be approving the project. The contact person for the lead agency regarding the project is:

Mr. Michael Crabtree, Planning Director  
City of Pacifica  
1800 Francisco Blvd.  
Pacifica, CA 94044  
crabtreem@ci.pacifica.ca.us  
Phone: 650-738-7341  
Fax: 650-359-5807

The project is located within the City of Pacifica and is owned by the City of Pacifica, therefore the Project Proponent is also the Lead Agency.

## 1.3 Purpose and Document Organization

The purpose of this document is to evaluate the potential environmental effects of the proposed dog park.

This document is organized as follows:

- Chapter 1.0 – Introduction  
This chapter provides an introduction to the project and describes the purpose and organization of this document.
- Chapter 2.0 – Project Description  
This chapter describes the project location, project area, and site description, objectives, characteristics, and any related projects. This chapter also contains descriptions of Best Management Practices (BMPs) and other mitigation/avoidance protocol incorporated into the project.
- Chapter 3.0 – Environmental Checklist and Responses  
This chapter contains the Environmental (Initial Study) Checklist that identifies the significance of potential environmental impacts (by environmental issue) and a discussion of each impact resulting from implementation of the proposed project. This chapter also contains the Mandatory Findings of Significance.
- Chapter 4.0 – References  
This chapter identifies the references and sources used in the preparation of this IS/MND.
- Chapter 5.0 – Report Preparers  
This chapter identifies the persons who prepared this report.
- Chapter 6.0 – Mitigation, Monitoring and Reporting Plan
- Appendices

## 2.0 Project Description

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### 2.1 Project Location and Site Description

The proposed dog park is located at the Pacifica Center for the Arts, 1220 Linda Mar Boulevard in Pacifica, San Mateo County (see Figure 1, Regional Location Map). The Pacifica Center for the Arts (hereinafter referred to as the Arts Center) is a multi-use complex made up of the following visual and performing arts organizations: Sanchez Art Center, Art Guild of Pacifica, Sanchez Studio Artists, Pacifica Performances, Pacifica Credit Union, and Stephen Johnson Photography. The Arts Center is a former elementary school site and thus has, as part of its grounds, ample parking, two baseball diamonds, large open fields, and a small, fenced-in play structure. The Arts Center is owned by the City of Pacifica and is operated by the City of Pacifica Parks, Beaches, and Recreation Department.

The Arts Center and the proposed dog park are located in the eastern portion of Linda Mar Neighborhood, a community of primarily single-family homes built in the 1950s and 1960s. The Alma Heights Christian Academy Junior and High School is located just west of the project site on Linda Mar Boulevard. The nearest traffic light is located approximately 0.5 mile west of The Arts Center, at the intersection of Linda Mar Boulevard with Adobe and Seville Drives (see Figure 2, Project Location Map).

Significant natural features in the vicinity of the proposed dog park site include San Pedro Creek, approximately 200 feet southwest of the dog park site, and San Pedro Mountain, the foothills of which are located approximately 0.1 mile to the south.

### 2.2 Project Objectives

The dog park will provide the public with an enclosed, recreational space where dogs can run and play off-leash. Use of the dog park will be free and open to the public between 7 a.m. and sunset. Currently, dog owners utilize the area behind and alongside the Arts Center for illegal, off-leash dog play.

### 2.3 Project Improvements

For the dog park, an area 23,415 square feet in size (roughly 0.5 acre) and rectangular in shape will be enclosed with vinyl-coated, chain link fence four feet in height (see Photo 1, below, to see the existing condition of the area). The ground within the dog park will be covered by decomposed granite. Four, one-foot deep holes will be dug to sink posts for: a garbage bin, a dog-waste bag dispenser, and a two-poled educational sign. The hole in the fence separating the Arts Center grounds from San Pedro Creek will be repaired.

The existing parking lot will be increased by nine new spaces. Standard Best Management Practices (BMPs) will be employed to reduce and/or avoid impacts to air, noise, and cultural resources (see Section 2.5, below, for a list of BMPs).

### 2.4 Hours of Operation and Expected Number of Park Users

The proposed dog park will be open to users between 7:00 am and sunset. Currently, The Arts Center grounds are used for on- and off-leash dog walking and play. It is estimated that during morning peak-use hours (between 7:30 a.m. and 9:30 a.m.) approximately 10 dogs per hour use the open fields of the Arts Center. Evening use during peak times (between 4:30 p.m. and 6:30 p.m.) is estimated to be higher with approximately 15 dogs per hour using the site. Off-

peak use, between the hours of 9:30 a.m. and 4:30 p.m., is estimated to be approximately 3 dogs per hour (Beverly Kingsbury personal communication). The creation of an enclosed dog park is anticipated to increase the number of users at the park by three dogs per morning during morning peak hours, 5 dogs per hour during evening peak hours, and 1 dog per hour during off-peak times.



**Photo 1. Dog Park Area, Shown in its Current Form.** The site is currently used for dog play.

## **2.5 Best Management Practices (BMPs) and Mitigation Measures Incorporated Into the Project**

The following list contains Best Management Practices (BMPs) that will be incorporated into the project as appropriate to ensure that project-related environmental effects are minimized or avoided altogether. Successful implementation of these BMPs implemented by the City of Pacifica will minimize impacts related to construction dust, increased carbon dioxide from construction vehicles, storm water, and noise impacts to sensitive receptors.

### Air Quality BMPs

The following BMPs will be implemented to minimize PM<sub>10</sub> emissions during construction (BAAQMD 1999).

- 1) Water all construction areas at least twice daily.
- 2) Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.

- 3) Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- 4) Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- 5) Sweep daily (with water sweepers) if visible soil material is carried out onto adjacent public streets.

To minimize emissions from construction vehicle operation, the City will:

- Use alternative fueled construction equipment.
- Minimize idling time (e.g. 5-minute maximum).
- Maintain properly tuned equipment.
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.

### Storm Water Control BMPs

The project requires compliance with the City of Pacifica's National Pollution Discharge Elimination System (NPDES) permit. Compliance with the NPDES permit requires the project proponent, the City of Pacifica, to fill out a NPDES checklist. The checklist requires the City of Pacifica to consider the following measures for the reduction of runoff to local waters: site design, source control, treatment control, and erosion and sediment control. In addition, the City of Pacifica must incorporate the Construction BMPs listed on the checklist as well as those listed by the San Mateo Countywide Water Pollution Prevention Program (<http://www.flowstobay.org/documents/business/construction/SWPPP.pdf>). The following BMPs are those listed on the City of Pacifica's NPDES checklist:

- 1) Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
- 2) Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, washwater or sediments, and non-stormwater discharges to storm drains and watercourses.
- 3) Use sediment controls or filtration to remove sediment when dewatering site and obtain all necessary permits.
- 4) Avoid cleaning, fueling, or maintaining vehicles on-site, except in a designated area where washwater is contained and treated.
- 5) Delineate with field markers limits on clearing, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
- 6) Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures, as appropriate.
- 7) Perform clearing and earth moving activities only during dry weather.
- 8) Limit and time applications of pesticides and fertilizers to prevent polluted runoff.
- 9) Limit construction access routes and stabilize designated access points.
- 10) Avoid tracking dirt or other materials offsite; clean off-site paved areas and sidewalks using dry sweeping methods.
- 11) The Contractor shall train and provide instruction to all employees and subcontractors regarding the construction BMPs.

## Cultural Resources

The City of Pacifica General Plan Historic Preservation Element (1980) identifies a list of historic resources in the City of Pacifica. There are two mapped resources that occur near the project site – The Sanchez Adobe and St. Peter’s Church – neither of which will be impacted by the project. No known prehistoric or historic resources occur within the project site.

Creekside areas are known to be areas of congregation for indigenous Californians. However, the developed, degraded nature of the site makes it unlikely for cultural artifacts or remains to be present or unearthed during construction of the Dog Park.

No archaeological or historical resource is known or expected to occur within the project site. The following BMPs shall apply to any cultural artifacts found during site construction:

- 1) Since the site has been extensively disturbed by the construction and operation of the Sanchez Arts Center and School, it is not likely that cultural artifacts or remains are present at the site. Regardless of these findings, archaeological monitoring shall be conducted during excavation of any open trenches and pits as part of this project. An archaeological monitoring schedule shall be established prior to the implementation of any project-related ground disturbing activity. Prior to actual monitoring, a “tailgate” meeting shall be held to educate City construction workers regarding inadvertent discovery of buried cultural resources.
- 2) If paleontological resources (i.e., fossils) are inadvertently discovered during ground disturbing activity, work shall be halted immediately within 50 feet of the discovery, and a professional paleontologist shall be retained to determine the significance of the discovery. Implementation of this mitigation measure will reduce any potential impacts to inadvertently discovered paleontological resources to less than significant.
- 3) If archaeological resources or human remains are inadvertently discovered during ground disturbing activity associated with the dog park installation, work shall be halted immediately within 50 feet of the discovery. The County Coroner must be notified according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California’s Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Implementation of this mitigation measure will reduce any potential impacts to any inadvertently discovered human remains to less than significant.

## Hydrology

The proposed project has the potential to increase the level of canine fecal matter in San Pedro Creek. Canine feces has been shown to be the second most abundant source of *e. coli* in San Pedro Creek in both the wet and dry seasons (Davis and Chan 2006). Despite best efforts to encourage the public to pick up after their pets through education and a free dog-waste bag program, dog waste will inevitably be overlooked and during the rainy season this material, or components of the material, could be washed into San Pedro Creek.

For the purposes of avoiding impacts to San Pedro Creek, the City of Pacifica shall create a water retention swale (bioswale) that will be capable of holding dog park runoff (see Hydrology section for a complete discussion how the retention swale capacity was determined). The swale will capture runoff, allowing the water to be naturally filtered by the soil as it slowly infiltrates into the groundwater table. This swale will be planted with a mixture of sedges, rushes, and grasses that naturally occur within riparian corridors along portions of San Pedro Creek. These include rush (*Juncus effusus*), nutsedge (*Cyperus eragrostis*), Slough sedge (*Carex obnupta*), and

California fescue (*Festuca californica*). All plants will be purchased from and installed into the swale by a qualified professional.

Figure 1. Regional Location Map

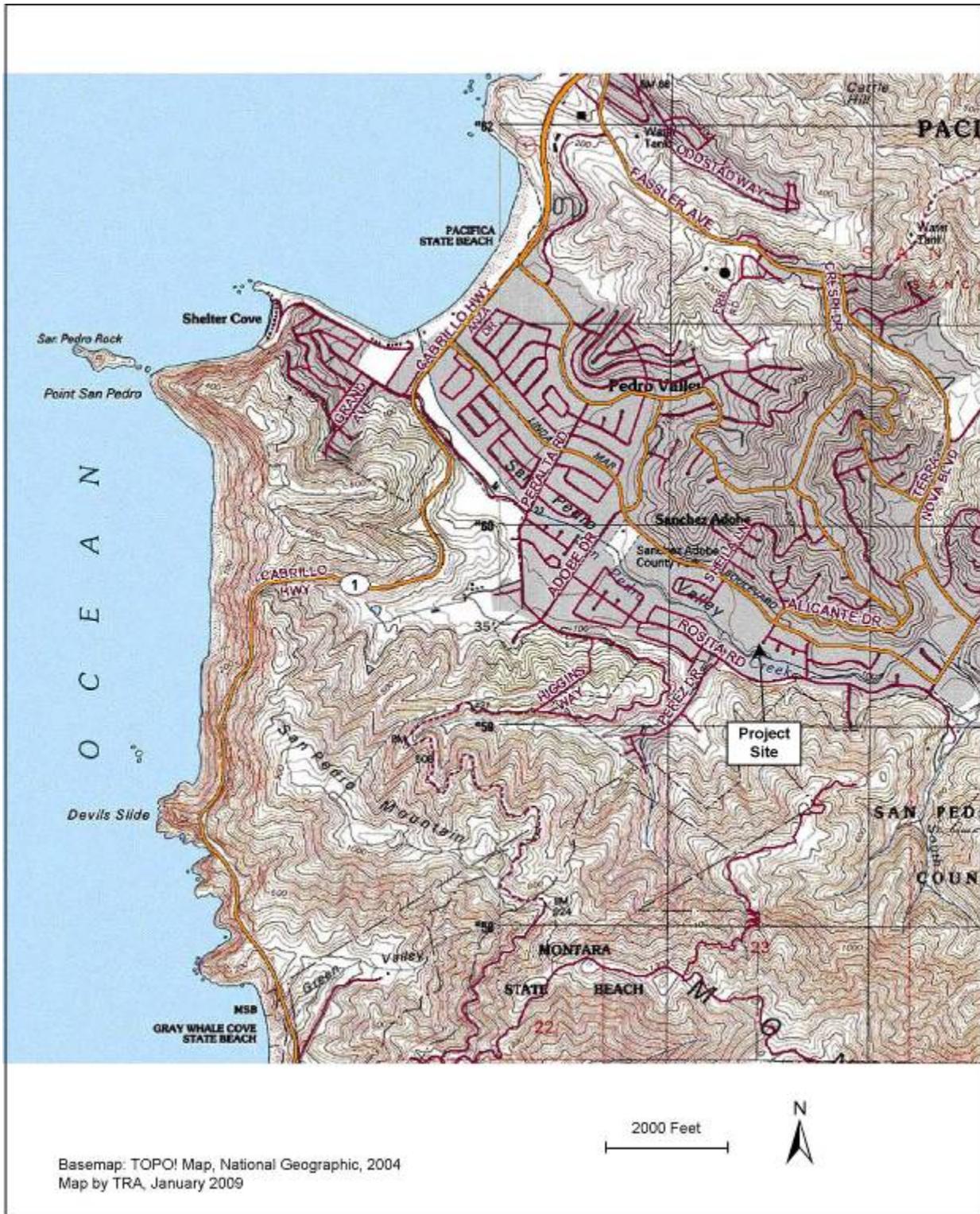


Figure 2. Aerial View of Project Location





Figure 4. Zoomed View of Project Site Features

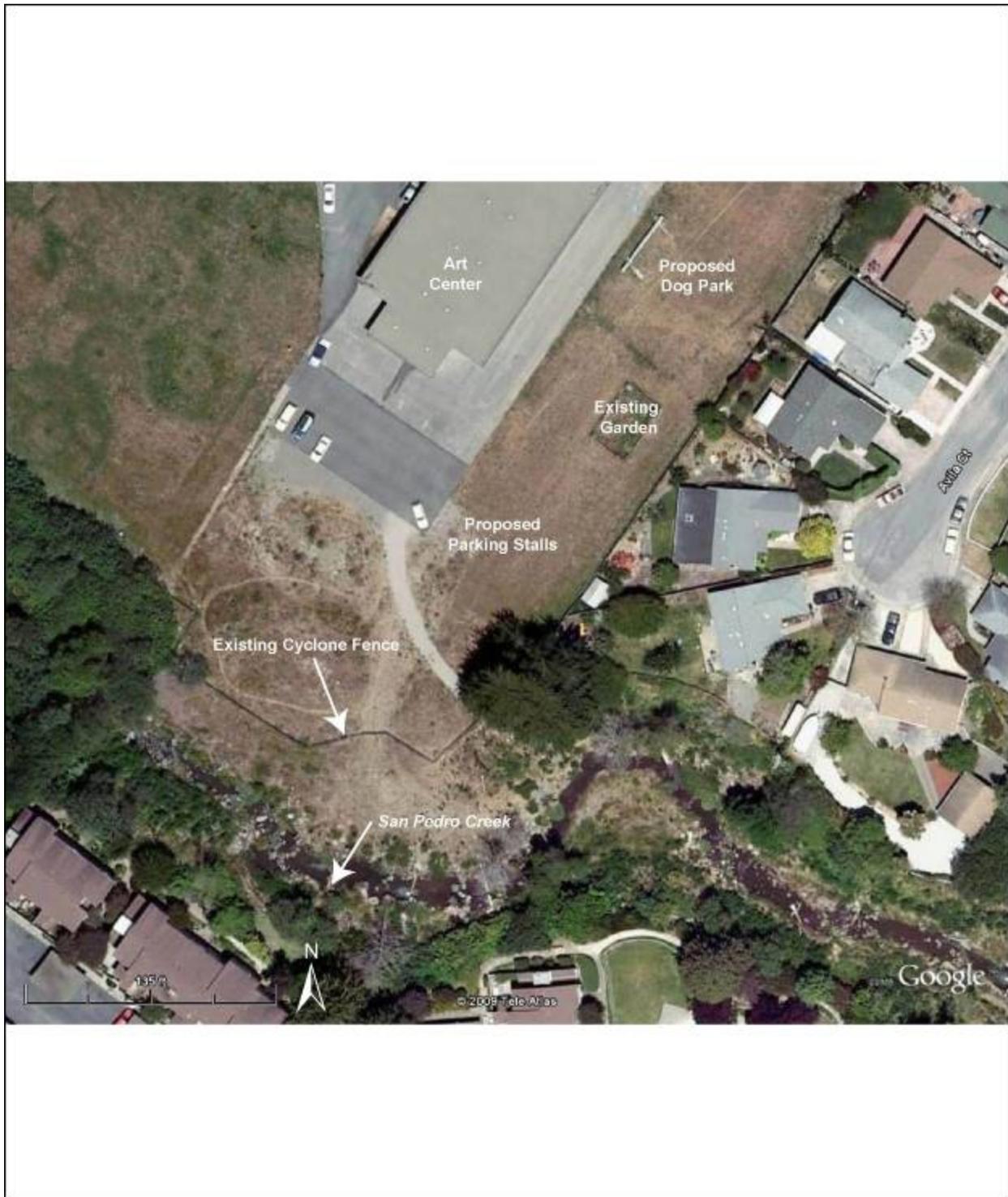
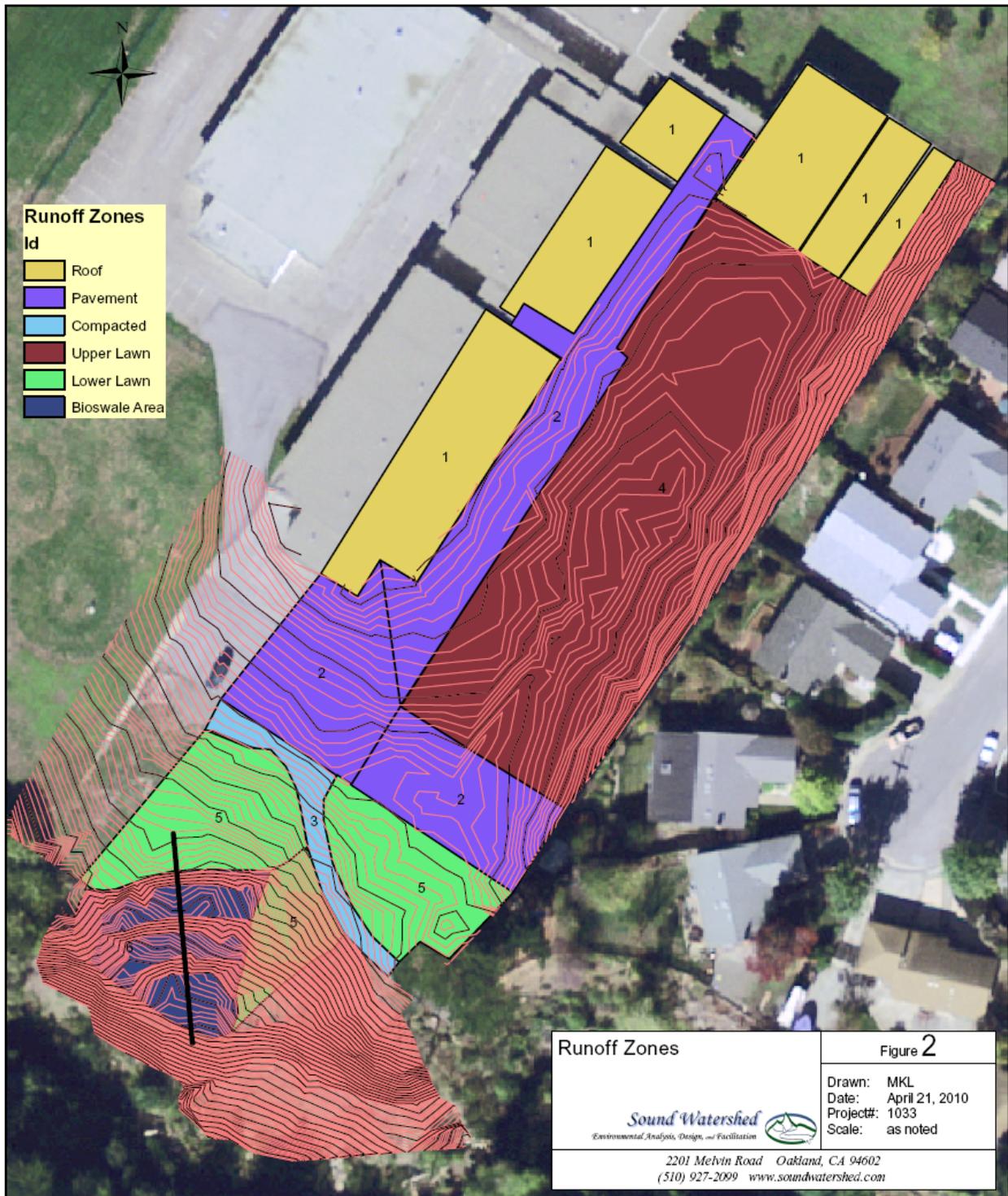


Figure 5. Site Topography and Runoff Zones



3.0 *Environmental Checklist Form*

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1. **Project title:** Pacifica Dog Park at Pacifica Center for the Arts
2. **Lead agency name and address:**  
City of Pacifica  
170 Santa Maria Avenue  
Pacifica, CA 94044
3. **Contact person and phone number:**  
  
Michael Crabtree, Planning Director  
City of Pacifica  
170 Santa Maria Avenue  
Pacifica, CA 94044  
(650) 738-7341
4. **Project location:**  
  
Sanchez Center for the Arts  
1220 Linda Mar Boulevard  
Pacifica, CA 94044
5. **Project sponsors name and address:**  
  
City of Pacifica  
170 Santa Maria Avenue  
Pacifica, CA 94044
6. **General Plan designation:** Agriculture
7. **Zoning:** A/B-5
8. **Description of project:** 0.5-acre dog park and 9-car parking lot
9. **Project Objectives:** Create a fenced in area for dog play and additional spaces in existing parking lot to be used by dog park users.
10. **Surrounding Land Uses and Setting:** Residential
11. **Other Public Agencies Whose Approval is Required:** None

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a Potentially Significant Impact as indicated by the checklist on the following pages.

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

**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

4/28/10

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**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.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.1 AESTHETICS -- Would the project:</b>				
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 and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental Setting

The proposed dog park site is approximately 0.5-acres in size, and is bordered by the Arts Center to the west, a single-family housing development to the east, Linda Mar Boulevard to the north and San Pedro Creek to the south. The proposed project will convert an open, grassy lot to an area enclosed by a fence with decomposed granite base.

*Would the project:*

**a. Have a substantial adverse effect on a scenic vista?**

**No Impact.** The location of the proposed dog park between the Art Center building and the existing housing development does not provide much room for an expansive vista. The mountains and trees that are visible from the site will continue to be visible after the fence and parking lot are in place.

**b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** The proposed dog park will not result in the damage or removal of any trees, rock outcroppings, or historic buildings within a state scenic highway. The location of the dog park is not near or adjacent to a scenic highway.

**c. Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less Than Significant Impact.** The proposed dog park location is currently a mowed lawn area. Adding decomposed granite and a chain link fence that is four feet high and covered with green vinyl coating to the 0.5-acre lot may slightly degrade the visual character of the site.

However, given the developed, residential nature of the surrounding neighborhood, the impact is not considered significant.

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

**No Impact.** Infrastructure associated with the proposed dog park includes a fence, a 9-space parking lot, and a dog waste bag dispenser. None of these are expected to create glare. No new light source will-be added as part of the proposed dog park.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**3.2 AGRICULTURE AND FOREST RESOURCES** -- 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. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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 California 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 12220(g)), timberland (as defined by Public Resources Code section 4536), or timberland zoned Timberland production (as defined by Government Code section 51104(g))? | <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"/> |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

### Environmental Setting

The Linda Mar residential development, of which the proposed dog park site is a part, is characterized as "Urban and Built-up Land" by the Farmland Mapping and Monitoring Program (California Department of Conservation 2006). There are no lands within or adjacent to the proposed dog park site under a Williamson Act contract (California Department of Conservation 2006). There are also no lands within or adjacent to the site which are used as timberlands (City of Pacifica 2001).

The Arts Center, and all of the associated grounds, is zoned “A/B-5” by the City of Pacifica (2001). The “A” stands for “agriculture” and the “B” stands for “Lot Size Overlay” (City of Pacifica 2001). The lot size overlay is used to define development regulations on designated sites (see regulatory setting below). All surrounding lands, excepting the area between top-of-bank in San Pedro Creek, are zoned “R-1”, “single family residential” (City of Pacifica 2001).

### Regulatory Setting

The following City of Pacifica Municipal Codes apply to the regulation of land uses within the Agricultural District areas of the City:

*City of Pacifica Municipal Code Title 9, Chapter 4, Article 1901(d)(3) (Effective July 8, 1993)*

Subject to all other regulations set forth in this chapter, the following uses shall be permitted, and the following regulations shall apply in the Agricultural District (A):

Conditional uses allowed in the Agricultural District, subject to obtaining a use permit and site development plan pursuant to this title, shall be as follows:

Public parks shall be a permitted use in the Agricultural District.

*City of Pacifica Municipal Code Title 9, Chapter 4, Article 2002 (a)(b)(c)(d)(Effective August 24, 1988)*

Development regulations in the B-District shall be as follows:

(d) Minimum setbacks.

- (1) Front: Twenty-five (25') feet for all B- Districts;
- (2) Rear: Twenty-five (25') feet for all B- Districts; and
- (3) Side: Twenty (20') feet for B-5 Districts.

*Would the project:*

**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 California Resources Agency, to non-agricultural use?**

**No Impact.** There is no prime, unique, or farmland of statewide importance within or adjacent to the proposed dog park site.

**b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** The proposed dog park is in compliance with all relevant City of Pacifica Municipal Codes (see the regulatory setting above for the relevant code) associated with the “A/B-5” zoning code designation. Title 9, Chapter 4, Article 1901 (d)(3) stipulates that public parks are a permitted use in an Agricultural District.

Title 9, Chapter 4, Article 2002 (a)(b) and (c) do not apply to the proposed dog park site as: 1) No dwellings will be constructed as part of the project; 2) It is part of a property that is approximately 6.8 acres in size, well above the minimum one-acre and 150-foot wide minimum requirement; and 3) The proposed project does not include the creation of any new impervious surface or structures. In compliance with Title 9 Chapter 4 Article 2002 (d), the proposed dog park eastern fence line will be 20 feet from the property line, meeting the minimum distance requirement for “side setback” in an A/B-5 zoned area.

**c. Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4536), or timberland zoned Timberland production (as defined by Government Code section 51104(g))?**

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

**No impact (c & d).** As stated above, the proposed dog park is in compliance with all relevant City of Pacifica Municipal Codes (see the regulatory setting above for the relevant code) associated with the "A/B-5" zoning code designation. The site is not zoned as forest land, timberland, or timberland production.

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

**No impact.** The site is not currently in production as Farmland, nor does the site contain forest land. Therefore, the project would not affect farmland or forest land.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.3 AIR QUALITY --</b> Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The proposed dog park site is a 0.5-acre mowed, grassy lot. The conversion of this lot into a dog park with a 9-car parking lot will require the use of some heavy machinery. Large dump trucks, typically with a 12-yard capacity, will be used to deliver the material that will be used as ground cover for the dog park. Ongoing maintenance of the dog park will require regular visits to the site by a small maintenance vehicle. Upkeep of the ground cover materials will also require up to one visit every 3 months by a truck delivering material.

Regulatory Setting

California Air Resources Board (CARB) is responsible for air pollution control and setting State ambient air quality standards and allowable emission levels for motor vehicles. The State is divided into air basins governed by districts. The project site is located in the Bay Area Air Quality Management District (BAAQMD). BAAQMD monitors and enforces District, State of California, and Federal air quality standards. Monitored pollutants include Ozone (O3), Nitrogen Oxides (NO and NO2, collectively "NOx") Carbon Monoxide (CO), Sulfur Dioxide (SO2), Hydrogen sulfide (H2S), particulate matter (PM10 and PM2.5), hydrocarbons, elemental and organic carbon, and various hazardous air pollutant compounds.

The project is located in the San Francisco Bay Air Basin. This Air Basin is an attainment area for all national pollutant standards set forth in the Federal Clean Air Act with the exception of

ozone. In June 2004, the Bay Area was designated a marginal non-attainment area for the national 8-hour ozone standard. The region also exceeds State ambient air quality standards for ozone and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). The state standards for these pollutants are more stringent than the national standards. All other pollutants are designated as “attainment” or “unclassified” for federal and state standards.

Construction-related activities associated with the creation of the dog park and parking lot, primarily the use of heavy equipment, will result in the short-term creation of nuisance dust and diesel emissions. Nuisance dust can contribute to increased ambient concentrations of PM<sub>10</sub> (not all dust is PM<sub>10</sub> as it depends on the size of the dust particle), particularly when dust settles on roadways where it can be pulverized and resuspended by traffic. Dust emissions also contribute to reduced visibility and the covering of exposed surfaces.

CARB has identified diesel engine particulate matter as a toxic air contaminant. Diesel engine exhaust is comprised of hundreds of different gaseous and particulate components, many of which are toxic. Many of the toxic compounds generated within diesel engines adhere to particulates, also generated during the diesel combustion process. These particulates are very small and penetrate deeply into human lungs. Diesel engine particulate matter has been identified as a human carcinogen. Mobile sources, including trucks, buses, automobiles, trains, ships and farm equipment, are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections.

#### BAAQMD CEQA Guidelines

The BAAQMD has published a document titled *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans* (1996). This document serves as a guide to evaluating potential air quality impacts of projects and focuses primarily on the criteria pollutants for which the region still periodically exceeds State and national standards (ozone, PM<sub>10</sub>). The document presents Significance Thresholds to assist in determining whether a project may have a significant air quality impact. If any of the thresholds are exceeded, then an EIR should be prepared.

The BAAQMD's Thresholds of Significance are based on the State Office of Planning and Research definitions of significant environmental effect. Section 15382 of the State CEQA Guidelines defines “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including ....air.” Appendix G of the CEQA Guidelines, the Environmental Checklist Form (the questions presented in this Initial Study), contains a list of effects that will normally be considered significant. If any of these thresholds are exceeded (if the answer to the Initial study Checklist Question is “Potentially Significant Impact”), then an EIR should be prepared. Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality impact (BAAQMD CEQA Guidelines, page 13).

BAAQMD CEQA Guidelines contain Best Management Practices (BMPs) that can be applied to projects to reduce the ambient dust and air pollution. These BMPs are listed in Section 2.6 of the Project Description.

#### Existing Ambient Air Quality

The BAAQMD operates a network of monitoring sites in the area and maintains a database of air quality data collected from these monitoring locations. The closest monitoring sites are in Redwood City, about 13 miles away, and in San Francisco on Arkansas Street, about 19 miles

away. Ambient air quality tends to be better along the coast as prevailing winds carry pollutants inland. In 2007, the most recent annual data available, the San Francisco monitoring station was in compliance with all state and national air quality standards except for PM<sub>10</sub> and PM<sub>2.5</sub>. It exceeded the California PM<sub>10</sub> standard two days out of the year and national PM<sub>2.5</sub> standard five days out of the year. 2007 monitoring data from the Redwood City station indicates that air quality in that area exceeded the California PM<sub>10</sub> standard one day and the national PM<sub>2.5</sub> standard one day (CARB 2007).

### Sensitive Receptors

Sensitive receptors are facilities that house or attract children, the elderly, and people with illnesses, or others who are especially sensitive to the effects of air pollution. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. The closest sensitive receptors in the project vicinity are the residents in the housing development to the east of the project site.

### Global Climate Change

The California Global Warming Solutions Act of 2006 (AB 32) requires the California Air Resources Board (CARB) to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020. CARB identified 427 million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>e) as the total statewide GHG 1990 emissions level and adopted this level as the 2020 GHG emissions limit (CARB 2007). CARB estimates 2020 GHG emission levels will reach 600 MMTCO<sub>2</sub>e if no actions are taken under a “business-as-usual” scenario.

The 1990 GHG inventory includes the following gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). Each GHG has a different capacity to trap heat in the atmosphere by absorbing infrared radiation. Almost 90% of the total GHG identified in the inventory is CO<sub>2</sub>. The majority of 1990 emissions are tied to fuel use activities such as electrical generation, transportation, and industrial operations (CARB 2007).

The CARB approved the AB 32 Climate Change Scoping Plan on December 11, 2008. As stated in CARB’s notice of the public meeting on December 11, 2008, key elements of the plan include:

- Expanding and strengthening existing energy efficiency programs and building and appliance standards;
- Obtaining 33 percent of California’s electricity from renewables;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long term commitment to AB 32 implementation” (CARB 2008).

Pursuant to Senate Bill 97 (Chapter 185, 2007) the Governor’s Office of Planning and Research (OPR) is in the process of developing CEQA guidelines “for the mitigation of greenhouse gas

emissions or the effects of greenhouse gas emissions.” OPR is required to “prepare, develop, and transmit” the guidelines to the Resources Agency on or before July 1, 2009. The Resources Agency must certify and adopt the guidelines on or before January 1, 2010. Until guidelines are adopted by the Resources Agency, there are no standards in effect to measure the significance of a project’s contribution of greenhouse gas emissions to global climate change.

On October 24, 2008, the CARB released a preliminary draft staff proposal for recommended approaches for setting interim significance thresholds for GHG. For residential and commercial projects, the proposal recommends a threshold that “the project, with performance standards or equivalent mitigation, will emit no more than X MMTCO<sub>2</sub>e per year (criteria to be developed)” or, that the project is consistent with “a previously approved plan that addresses GHG emissions...” including “a community level greenhouse gas target consistent with the statewide emissions limit in AB 32.” Again, these are from a preliminary draft staff proposal whose implementation relies on further approval and additional policy making, therefore this project cannot be evaluated against these draft thresholds.

*Would the project:*

**a. Conflict with or obstruct implementation of the applicable air quality plan?**

**Less Than Significant Impact.** The BAAQMD has implemented the Bay Area 2005 Ozone strategy to achieve compliance with the State’s one-hour air quality standard for ozone emissions and reduce ozone and ozone precursor emissions. The project will not conflict with or obstruct the implementation of this plan as it will not contribute to urban growth or introduce new sources of air pollutants into the basin.

Construction-related emissions are expected to be minimal, as it will consist of the fence construction, 9-car parking space, and the installation of signs and a garbage bin. Although the project will not create any new sources of emissions, it may slightly increase emissions from existing sources. Because the dog park may slightly increase the number and/or intensity of use, it has the potential to increase the number of car trips to the site. Because garbage bins are already maintained by the City of Pacifica at the Arts Center, the proposed dog park is not expected to increase the number of maintenance truck trips. The slight, long-term increase in localized emissions that are anticipated by this project is not expected to contribute to non-attainment for Bay Area Air Quality Goals and is therefore considered less than significant.

The proposed project will not conflict with the intent of AB 32, the California Global Warming Solutions Act of 2006. Air emissions associated with the project will be temporary and consist of construction vehicle and equipment emissions, dust generated from construction, and a slight increase in vehicular traffic. The primary area of disturbance will be confined to the project site. The temporary, localized nature of the impact is considered less than significant.

**b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Less Than Significant Impact.** The project may generate some long-term (operational) emissions from increased usership of the park and therefore increased car trips. The project will also result in short-term, construction-related emission of particulate matter. Construction activities will implement Best Management Practices (BMPs) to reduce PM<sub>10</sub> emissions. These BMPs are described above in Section 2.6. The area of disturbance will be approximately 0.5 acres for the dog park and 3,200 square feet for the parking lot. The construction period is expected to last no more than one month. Thus, the long-term and short-term emissions

generated from this project will not lead to any existing or projected air quality violations and is therefore considered less than significant.

**c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less Than Significant Impact.** The BAAQMD was in non-attainment for PM10 and PM2.5 several days out of 2007 (CARB 2007). The main source of PM10 is road, construction, or agriculture dust. The main sources of PM2.5 are power plants, vehicles, wildland fires, and wood burning stoves. The very slight, potential increase in vehicular traffic associated with the proposed dog park is not expected to result in a considerable increase in PM2.5 therefore the potential impact is considered less than significant.

**d. Expose sensitive receptors to substantial pollutant concentrations?**

**Less Than Significant Impact.** The project will not result in the exposure of sensitive receptors to substantial pollutant concentrations. Project construction is expected to be complete within twenty business days, and will consist of fence and garbage bin installation, the construction of a retention basin, and a 9-car parking area. The slight increase anticipated in the form of vehicle trips is not expected to result in the exposure of sensitive receptors to substantial pollutant concentrations.

**e. Create objectionable odors affecting a substantial number of people?**

**Less Than Significant Impact.** The creation of a location where dogs congregate to play may result in localized odor associated with dog urine and feces. The proximity of the project site to local residences and users of the Pacifica Center for the Arts suggests, that under certain weather conditions (e.g. extreme heat and/or particular wind directions), odors may be detectable to humans. Odors will be partially minimized if park users pick up after their dogs. Feces pick up will be encouraged through interpretive signs and patrolling volunteers. Odor will also be minimized by frequent trash pick-ups. The City of Pacifica currently empties all trash bins at the Pacifica Center for the Art three times a week. Although unpleasant odors are expected to occasionally occur, a substantial number of people are not anticipated to be impacted and therefore the impact is considered less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.4 BIOLOGICAL RESOURCES -- Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Environmental Setting

### *Overview*

The information contained in this section is from the Biotic Assessment, Pacifica Dog Park at the Pacifica Center for the Arts, 1220 Linda Mar Boulevard, Pacifica (TRA Environmental Sciences, Inc. March 2009 (Appendix A)). The project site does not support any sensitive plants, wildlife or habitat. The project site is of low habitat value. It is regularly mowed and currently supports a ruderal vegetation community of non-native plants.

Although the project site does not include any sensitive habitat, it is adjacent to riparian and aquatic habitat associated with San Pedro Creek. The creek and its riparian canopy provide habitat for many species, including federally threatened steelhead trout (*Oncorhynchus mykiss*) and red-legged frog (*Rana aurora draytonii*). The discussion below is taken directly from the *Biotic Assessment*, as are the Checklist answers.

### *Vegetation Community*

The only vegetation community within the project site is non-native/ruderal vegetation. This vegetation community is commonly found in areas that have been routinely disturbed. The site was presumably graded when the neighborhood and Center were constructed. The site is flat and appears to be regularly mowed. The timing of the site visit in the winter found most plants species having just emerged and some were not yet identifiable. However, there is no potential for rare or special-status plant species due to the highly disturbed nature of the site. Species seen were all non-native and included wild radish (*Raphanus raphanistrum*), cutleaf geranium (*Geranium dissectum*), bristly ox-tongue (*Picris echioides*), common mallow (*Malva neglecta*), and unidentified clovers and grasses. Within the project area is a small (approximately 800 square foot) zone of vegetation that has been fenced off and supports a variety of cultivated and wild plants (Figure 4). It is assumed that this is or was a garden cared for by a tenant of the Center. The garden appeared not to have been maintained in some time.

No special features that could attract native wildlife species such as burrows, rock outcrops, wetted features, trees or shrubs were found within the project site.

The area proposed for the 9 parking stalls is adjacent and southwest of the proposed dog park, between the dog park and the creek (see Figures 3 and 4). The vegetation community within the parking area is the same as that within the dog park- non-native, ruderal vegetation. The new parking stalls will be a continuation of an asphalt area that is currently used for Center parking.

San Pedro Creek and associated riparian habitat are located approximately 175 feet southwest of the parking area proposed for the dog park. San Pedro Creek is a perennial creek that supports various wildlife species including the special-status steelhead (*Oncorhynchus mykiss*) and California red-legged frog (*Rana aurora draytonii*). San Pedro Creek at the location of the Center was included in a creek restoration project implemented by the City in 2005 (TRA 2008).

There is a cyclone fence between the Arts Center and San Pedro Creek (see Figure 4). A hole in the fence was observed during the site survey on May 21, 2009, and was also present when TRA surveyed the creek in the summer of 2008. The hole is large enough to allow people and dogs to pass through.

## Wildlife

One bird, a black phoebe (*Sayornis nigricans*), was seen in the immediate vicinity of the project area during the site survey of January 21, 2009. Other common bird species such as various sparrows, robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), and California towhee (*Pipilo crissalis*), among others, may occur in the vicinity of the site. The project site itself offers limited foraging habitat and no nesting habitat for birds. Reptiles such as western terrestrial garter snake (*Thamnophis elegans*) and fence lizard (*Sceloporus occidentalis*) may be found on or in the vicinity of the project area. Mammals that may occur on or in the vicinity of the site include common species such as California meadow vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*) and raccoon (*Procyon lotor*). No ground squirrel burrows were seen on site. Various insects including butterflies may utilize the site, however, no special-status butterflies could occur on site due to the absence of their larval food plants.

Bird species seen or heard in the riparian corridor of San Pedro Creek at the time of the site visit include pygmy nuthatch (*Sitta pygmaea*), Townsend's warbler (*Dendroica townsendi*), chestnut-backed chickadee (*Poecile rufescens*), ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), and Anna's hummingbird (*Calypte anna*). Numerous other bird species are common in coastal riparian systems and are expected to occur. In addition to steelhead and red-legged frog, other aquatic species present in San Pedro Creek include Pacific tree frog (*Pseudacris regilla*), prickly sculpin (*Cottus asper*), three-spined stickleback (*Gasterosteus aculeatus*), and Pacific lamprey (*Lampetra tridentate*). The project site is surrounded on three sides by urban development and does not serve as a movement corridor for wildlife.

### Special-status Species

The half-acre project site does not support habitat for special-status species (such as federal or state-listed species). San Pedro Creek is known to provide habitat for steelhead (Central California Coast Evolutionary Significant Unit (ESU) listed as Threatened with the National Marine Fisheries Service) and California red-legged frog (Federal Threatened and California Species of Special Concern). However, the site does not support suitable upland habitat for the frog as there are no wetted areas, burrows or other places for refuge.

*Would the project:*

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

**Less Than Significant with Mitigation Incorporated.** No special-status species have potential to occur within the Dog Park project area and no direct impacts to species are anticipated. Although there is a fence that separates the Pacifica Center for the Arts grounds from San Pedro Creek, vandalization of the fence has caused openings in it, and thus there is unrestricted access to the creek. Human and/or dog use of the creek and riparian area can cause trampling or death of the existing sparse streamside vegetation. Impacts to vegetation can increase erosion rates as the root structures from plants, once trampled, can no longer hold the soil in place. Sediment input into the creek by creekside use or by the direct entrance of humans and/or dogs into the creek can fill in deep pools that provide refuge habitat for red-legged frogs and juvenile steelhead, smother and/or trample steelhead redds (nests), and decrease invertebrate diversity and abundance, the primary food source for steelhead.

Dog waste can introduce bacteria, parasites, and nutrients into San Pedro Creek, affecting not only aquatic organisms but also potentially affecting human health. San Pedro Creek currently experiences high levels of *e. coli* pollution that has been directly attributed to canine feces. For an in-depth discussion on the existing condition of San Pedro Creek water quality and the proposed mitigation measure to avoid or reduce impacts to water quality from dog waste, see Section VIII, Hydrology and Water Quality.

**Impact:** Dogs and humans can now access San Pedro Creek from the proposed Dog Park site, thereby endangering special-status wildlife species (steelhead and red-legged frog) through sediment input into the creek or direct disturbance through entrance of humans or dogs into the creek.

**Mitigation Measure Bio-1:** The City of Pacifica will combat illegal use of San Pedro Creek by dogs and humans. The City shall:

1. Repair all existing holes in the fence that separate the creek from the Arts Center prior to opening of the dog park;
2. Weekly monitor the fence for future vandalism and making timely repairs of the fence when vandalism occurs (within 3 weeks of occurrence); and
3. Install interpretive signs that educate the public about the ecological importance of San Pedro Creek and how creekside and in-creek trampling by humans and dogs can impact ecological resources.

**Implementation Responsibility:** City of Pacifica

**Effectiveness:** Will reduce or avoid significant impacts

**Timing:** As listed above.

**b. 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 California Department of Fish and Game or US Fish and Wildlife Service?**

**Less Than Significant with Mitigation Incorporated.** Although the proposed dog park will not directly impact any sensitive natural communities, indirect impacts to San Pedro Creek associated with increased usership may occur. Increased dog and owner traffic to the park may lead to increased illegal use of the currently unfenced portion of San Pedro Creek and the adjacent riparian area. This small section of San Pedro Creek lacks the mature riparian canopy that normally minimizes human traffic. Low vegetation and low slopes of the creek banks makes the area very enticing, especially to offleash dogs. This potential impact will be reduced to less than significant levels with the implementation of Mitigation Measure Bio-1 outlined above.

**c. Have a substantial adverse effect on federally protected wetlands as defined by Section 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?**

**Less Than Significant with Mitigation Incorporated.** Although the proposed dog park site does not contain any wetland habitat, it is adjacent to San Pedro Creek. This water feature is considered a wetland under Section 404 of the Clean Water Act and has potential to be indirectly impacted by the proposed project (see answers a and b above). The potential impact will only be less than significant with the implementation of Mitigation Measure Bio-1 outlined above.

**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?**

**Less Than Significant with Mitigation Incorporated.** The project site is approximately 24,000 square feet and is surrounded on three sides by urban development. The site does not provide a movement corridor for wildlife or access to native wildlife nursery sites. However, adjacent to the proposed dog park site is San Pedro Creek, which serves as a wildlife corridor for many species, including steelhead trout and Pacific lamprey. Steelhead trout and lamprey use the creek for breeding, egg brooding, and rearing. Human or dog traffic has the potential to significantly disrupt the use of this habitat and even result in individual mortality. This indirect impact will be reduced to less than significant levels by the implementation of Mitigation Measure Bio-1 outline above.

**e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less than Significant with Mitigation Incorporated.** The City of Pacifica Local Coastal Land Use Plan (1980) stipulates that “riparian vegetation along all intermittent and year-round creeks shall be protected, enhanced, and restored where feasible” and that “buffer zones along creeks shall be required...” and “...adequate to protect identified habitat areas associated with the creek...” The potential increase in human and dog traffic into the riparian and creek area adjacent to the proposed dog park site will be reduced to less than significant levels with the implementation of Mitigation Measure Bio-1 outlined above.

**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?**

**No Impact.** There are no habitat conservation plans that pertain to the project site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.5 CULTURAL RESOURCES -- Would the project:</b>				
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 checked="" type="checkbox"/>	<input 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 geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Environmental Setting

The City of Pacifica General Plan Historic Preservation Element (1980) identifies a list of historic resources in the City of Pacifica. Two mapped resources occur near the project site. These include Sanchez Adobe and St. Peter's Church. No known historic resources occur within the project site.

Creekside areas are known to be areas of congregation for indigenous Californians. However, the developed, degraded nature of the site makes it unlikely for cultural artifacts or remains to be present.

*Would the project:*

**a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?**

**b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

**c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

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

**Less Than Significant Impact.** There are no known historical, archaeological, paleontological or unique geological features located on site. The site is currently used as a lawn and is frequently mowed. No digging or grading is associated with this project that may disturb any uncovered artifacts or remains. If cultural artifacts or remains are found on site the Best Management Practices (BMPs) outlined in the project description will be followed.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.6 GEOLOGY AND SOILS -- Would the project:</b>				
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 checked="" type="checkbox"/>	<input 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 (1994), 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 the use of septic tanks or alternative waste water 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"/>

### Environmental Setting

The proposed dog park is not located within the rupture zone of any known fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map (ABAG 2007). The proposed dog park site is approximately 3.5 miles to the east of the San Andreas Fault zone and 4.5 miles to the west of the Northern San Gregorio fault zone (ABAG 2007). The underlying bedrock is

classified as young alluvial fan deposits (Holocene) consisting of poorly sorted gravel, sand, and silt (USGS 2009). The proposed dog park location is characterized as “flatland” by the USGS (1997) and therefore is not susceptible to the effects of landslides. The proposed dog park location is in an area of “high susceptibility” to liquefaction (ABAG 2007).

The Modified Mercalli Intensity Shaking Severity Level system is used by the Association of Bay Area Governments (ABAG) to describe the intensity of shaking associated with various earthquake scenarios from “very violent” to “light”. Shaking at the proposed dog park site will be characterized as “very strong” if the following faults were to shake: the entire San Andreas Fault (as in the 1906 earthquake), the Peninsula section of the San Andreas Fault, or the Northern San Gregorio fault (ABAG 2007). Shaking would be characterized as “strong” if the Northern Golden Gate section of the San Andreas Fault were to shake (ABAG 2007).

The National Earthquake Hazards Reduction Program (NEHRP) has defined 5 soil types based on their shear-wave velocity (Vs). The proposed dog park site is classified as NEHRP “d” and includes some Quaternary muds, sands, gravels, silts and mud (USGS 2009). Significant amplification of shaking by these soils is generally expected. The Expansion Index pursuant to the Uniform Building Code for the proposed dog park soils was not calculated because the project is not proposing the creation of any new buildings and therefore does not trigger the oversight of Uniform Building Code.

*Would the project:*

**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?**

**ii) Strong seismic ground shaking?**

**Less Than Significant Impact (i and ii).** The proposed dog park site is not within the rupture zone of any known fault (ABAG 2007). The rupturing of the San Andreas or Northern San Gregorio Faults would result in “strong” to “very strong” shaking, as characterized by the Modified Mercalli Intensity Shaking Severity Level system, at the proposed dog park site. Because the proposed dog park does not create any overhead structures, the danger posed to people and property as a result of the project does not change. However, the creation of a dog park has the potential to attract more people to the site. This impact is considered less than significant because it is being built to provide local neighbors with dog park facilities. Those people expected to use the park are already living with the same earthquake threat and their exposure to this threat will not be any greater as a result of the dog park.

**iii) Seismic-related ground failure including liquefaction?**

**No Impact.** The proposed dog park location is in an area of “high susceptibility” to liquefaction (ABAG 2007); however, the project does not create any new infrastructure that will increase the susceptibility of people or property to injury from liquefaction.

**iv) Landslides?**

**No Impact.** The proposed dog park location is characterized as “flatland” by the USGS (1997) and therefore is not susceptible to the effects of landslides.

**b. Result in substantial soil erosion or the loss of topsoil?**

**Less Than Significant Impact.** The proposed dog park will convert a mowed, grassy lawn area to one covered with decomposed granite. Although the loss of a rooted biomass will likely result in some loss of top soil, particularly during rain events, decomposed granite will mitigate this impact by reducing the erosive power of rain as it falls onto the ground. In addition, this area has only a slight elevation change, which minimizes the erosive power of water.

**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?**

**d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

**No Impact (c and d).** The proposed dog park site is categorized as “flatland” by the USGS (1997) and therefore has no potential for landslides. The Expansion Index pursuant to the Uniform Building Code for the proposed dog park soils was not calculated because the project is not proposing the creation of any new buildings and therefore does not trigger the oversight of Uniform Building Code.

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

**No Impact.** The proposed dog park does will not require the installation of septic tanks or any type of wastewater disposal system.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.7 GREENHOUSE GAS EMISSIONS -- Would the project:</b>				
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 checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental and Regulatory Setting

This section contains excerpts from the California Environmental Quality Act (CEQA) Air Quality Guidelines (Guidelines) (2009) prepared by the Bay Area Air Quality Management District (BAAQMD) to address greenhouse gases (GHGs). The purpose of the Guidelines is to assist lead agencies in evaluating air quality and GHG impacts of projects and plans proposed in the San Francisco Bay Area Air Basin (SFBAAB). These Guidelines provide recommended procedures for evaluating potential impacts during the environmental review process consistent with CEQA requirements.

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of (GHGs) that contribute to global warming or global climate change have a broader, global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global climate change are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. Among the potential implications of global warming are rising sea levels, and adverse impacts to water supply, water quality, agriculture, forestry, and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production comes from motor vehicles. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county, and subregional level, and other measures to reduce automobile use. Energy conservation measures also can contribute to reductions in GHG emissions.

### California Greenhouse Gas Emissions Inventory

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Emissions of CO<sub>2</sub> are byproducts of fossil fuel combustion. CH<sub>4</sub> results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N<sub>2</sub>O is also largely attributable to agricultural practices and soil management. CO<sub>2</sub> sinks, or reservoirs, include vegetation and the ocean, which absorb CO<sub>2</sub>

through sequestration and dissolution, respectively, two of the most common processes of CO<sub>2</sub> sequestration.

California produced 474 million gross metric tons (MMT) of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) averaged over the period from 2002-2004. CO<sub>2</sub>e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH<sub>4</sub> has the same contribution to the greenhouse effect as approximately 23 tons of CO<sub>2</sub>. Therefore, CH<sub>4</sub> is a much more potent GHG than CO<sub>2</sub>. Expressing emissions in CO<sub>2</sub>e takes the contributions of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO<sub>2</sub> were being emitted. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2002-2004, accounting for 38 percent of total GHG emissions in the state. This sector was followed by the electric power sector (including both in-state and out-of-state sources) (18 percent) and the industrial sector (21 percent).

### California Greenhouse Gas Emissions Projections

The 1990 GHG emissions limit is approximately 430 MMT CO<sub>2</sub>e, which must be met in California by 2020 per the requirements of AB 32. The California Air Resources Board's (CARB) GHG inventory for all emissions sectors would require an approximate 28 percent reduction in GHG emissions from projected 2020 forecasts to meet the target emissions limit (equivalent to levels in 1990) established in AB 32.

#### *Thresholds of Significance*

The Thresholds of Significance for operational-related GHG emissions are:

- For land use development projects, the threshold is compliance with a qualified climate action plan or qualified general plan; or annual emissions less than 1,100 metric tons per year (MT/yr) of CO<sub>2</sub>e; or 4.6 MT CO<sub>2</sub>e/SP/yr (residents + employees). Land use development projects include residential, commercial, industrial, and public land uses and facilities.
- For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO<sub>2</sub>e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate.

When calculating project GHG emissions to compare to the thresholds listed above, the lead agency should ensure that project design features, attributes, or local development requirements are taken into consideration as part of the project as proposed and not viewed as mitigation measures. For example, projects that are mixed-use, infill, and/or proximate to transit service and local services, would have substantially lower vehicle trip rates and associated GHG emissions than what would be reflected in standard, basin-wide average default trip rates and emission estimates.

If annual emissions of operational-related GHGs exceed these levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change.

*Would the project:*

**a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Less Than Significant Impact.** As stated above, the criteria for land use development projects is 1,100 MT of CO<sub>2</sub>e/year. This threshold has been translated into stationary sources by BAAQMD as shown in Table 3-1 of the BAAQMD Air Quality Guidelines 2009). The dog park project is not considered a “land use development” and it is expected to generate well below the stated threshold of people to the site. Therefore, the project would not exceed the threshold for significant cumulative GHG emissions and not result in a significant impact.

**b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**No Impact.** Applicable plans and programs to reduce emissions of greenhouse gases include the AB 32 Climate Change Scoping Plan and the BAAQMD’s Climate Protection Program. The AB 32 Climate Change Scoping Plan states the largest reduction in GHG emissions is through improved emission standards for cars, a low-carbon fuel standard, energy efficiency measures in buildings and appliances, and the use of renewable energy in our electricity production. The dog park project has no bearing on emission standards, fuel standards or the incorporation of renewable energy for electricity production. Therefore, the project does not conflict with the AB 32 Climate Change Scoping Plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.8 HAZARDS AND HAZARDOUS MATERIALS -- Would the project:</b>				
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 accident conditions involving the release of hazardous materials 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 materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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areas or where residences are intermixed with wildlands?

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### Environmental Setting

Hazardous substances have certain chemical and physical properties that may pose a substantial present or future hazard to human health of the environment when improperly handled, stored, disposed or otherwise managed. These substances are commonly used in commercial, agricultural, and industrial applications, and to a limited extent in residential areas. There are no known hazardous material sites identified in the City of Pacifica based on a review of the Cortese List (2009).

*Would the project:*

- a. **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**
- b. **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**
- c. **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or hazardous waste within one-quarter mile of an existing or proposed school?**

**No Impact (a, b, and c).** No hazardous materials will be transported, used, disposed of, handled, or emitted as part of this project.

- d. **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** As stated above, the proposed project site is not on a list of hazardous materials sites.

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

**No Impact (e and f).** The proposed dog park is not located within two miles of a public airport or public use airport nor is it within the vicinity of a private air strip. The closest airport to the site is the San Francisco International Airport, which is approximately 6 miles to the

northeast. The other airport in the vicinity is the Half Moon Bay Airport, which is 7 miles south of the site.

**g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less Than Significant Impact.** Much of the area directly adjacent to the Pacific Ocean in the City of Pacifica is within a tsunami inundation zone (City of Pacifica 2009). Tsunami evacuation routes direct people to travel upland. Linda Mar Boulevard is a conduit the City of Pacifica (2009) proposes people use to quickly flee low-lying areas. Although the proposed dog park may slightly increase vehicular traffic in the vicinity of the Arts Center, it is not expected to increase local traffic congestion such that traffic will back up or be stopped for longer than is currently experienced. This finding is based on the size of the road, the location of nearby traffic lights, and current traffic patterns in the area. The size of the road allows traffic behind a left-turning vehicle to safely navigate around that vehicle, alleviating severe back up. The lack of a nearby traffic light, and the impact it has on slowing or backing up traffic, reduces the chance that traffic turning into and out of the Pacifica Center for the Arts parking lot will severely impact the flow of traffic. In addition, the current traffic patterns and volume in the area do not suggest that the road is at or near capacity. Thus, any traffic impacts created by increased usership of the dog park are considered less than significant.

**h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**No Impact.** The proposed dog park will not create any new infrastructure that will expose persons to risk of loss if a wildland fire were to occur in or adjacent to the area. The Proposed Project will not create new risk or increase current risk of starting or attracting a wildland fire to the area. Therefore the project will have no impact on the risk of loss, injury or death as it pertains to wildland fires.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.9 HYDROLOGY AND WATER QUALITY -- Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 which 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 the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental Setting

The approximate 0.5-acre site is slightly sloped so that the runoff direction for water will be generally from the northeast to the southwest draining into to San Pedro Creek. The soils are classified as orthents and similar soils with 0 to 5% slope (USDA 2009). The term orthent is used to characterize a site where any former soil has been either completely removed or is so truncated that the identification of past soils is not possible. The soil classification reflects the site's past development, including the open space areas such as the area proposed for the dog park.

The soils are in hydrologic soil group D, as designated by the National Resource Conservation Service (USDA 2009). Soil group D is described as having high runoff potential and a very slow infiltration rate when thoroughly wetted, consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material.

### *Rainfall Amounts*

The estimated peak discharge (Q) in a 100-year flood event is 0.042 cfs. ( $Q=CiA$ , where C (runoff coefficient) is 0.40 for a 100-year re-occurrence interval,  $i$  (rainfall intensity) is 0.21 in/hr (Amato 2003), and A (area) is 0.5 acres).

As part of the due diligence for this project, Sound Watershed Consultants, LLC (SWC) developed a site-specific rainfall plot to estimate the rainfall intensity, duration and frequency based on estimated NOAA (National Oceanic and Atmospheric Administration) Atlas 2 v.11 values (See Appendix C). This plot was used in combination with Time of Concentration and Rational Equation estimates for peak runoff magnitude and total runoff volumes from the site (see Table 1 below).

**Table 1**  
**24-Hour Storm Precipitation Totals Based on NOAA Atlas 11 Map Values**

Storm Event	24-hour Amount (in inches)
2 year	2.7
5 year	4.0
10 year	4.5
25 year	6.0
50 year	6.8

### *Water quality*

Currently, dog owners use the grassy areas around Pacifica Center for the Arts for off-leash dog walking. A hole in the fence surrounding the Arts Center allows owners to take their dogs into the undeveloped portions of the riparian area adjacent to San Pedro Creek. The grassy areas adjacent to the Arts Center are most likely a source of canine fecal matter to San Pedro Creek.

The main stem of San Pedro Creek and its associated riparian corridor make up the southern border of the Arts Center. San Pedro Creek is a perennial stream that drains 8 square miles of predominately intact coastal scrub habitat in the upper stream reaches and a combination of residential and commercial development in the middle and lower stream reaches (Davis 1999). San Pedro Creek is composed of five main tributaries that comprise seven subwatersheds (Davis 1999). San Pedro Creek ultimately drains to the Pacific Ocean at Pacifica State Beach, a beach frequented by recreational users including waders, swimmers, surfers, and kayakers.

A two-year study (1996-1998) performed by the Environmental Protection Agency (EPA) and the City of San Francisco Waste Water Treatment Plant indicated that coliform, fecal coliform, *Enterococcus*, *Escherichia coli* (*E. coli*) and *Streptococcus* levels in the North Fork and main stem of San Pedro Creek far exceeded both State of California and EPA maximum levels for recreational waters for most of the sampling period (more than 1000 units of total coliform bacteria /100 ml, and 200 units of fecal coliform/100 ml) (San Pedro Creek Watershed Coalition 2009). It is important to note that San Pedro Creek, to date, is only designated for non-recreational use (see regulatory setting below for a complete explanation). A 2006 bacteriological study on San Pedro Creek found canine inputs of *e.coli* to be second only to avian sources in abundance in both wet and dry seasons (Davis and Chan 2006).

Although San Pedro Creek is designated for non-contact (non-recreational) use by the State Water Quality Control Board (see regulatory setting below), Pacifica State Beach, where San Pedro Creek discharges, is. San Mateo County Department of Health is responsible for weekly water quality sampling at two Pacifica State Beach locations and posting health-warning signs when the water quality objectives for recreational use and human contact are exceeded. The sampling location nearest the creek is often out of compliance, identifying San Pedro Creek as the likely source of bacterial contamination.

### Regulatory Setting

The California Regional Water Quality Control Board San Francisco Bay Region (2007) identified seven specific beneficial uses for San Pedro Creek: 1) Municipal and domestic supply, 2) non-contact water recreation, 3) cold freshwater habitat, 4) warm freshwater habitat, 5) fish migration, and 6) fish spawning. Each beneficial use has an associated water quality objective that is set by the San Francisco Bay Regional Water Control Board and outlined in the Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin (2007). Non-contact water recreation objectives are much less stringent than those for water contact recreation (see Table 2).

San Pedro Creek is listed by the United States Environmental Protection Agency's 2006 *Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads* (TMDLs) (USEPA 2007) for Coliform Bacteria. Currently, the San Francisco Bay Water Quality Control Board is reviewing data to determine a TMDL for coliform bacteria on San Pedro Creek. The proposed TMDL completion date is 2019 (USEPA 2007). As part of the TMDL determination process, the RWQCB is also reviewing a change in the beneficial use designation of San Pedro Creek, from non-contact to contact water recreation.

**Table 2**  
**Regional Water Quality Control Board Objectives**  
**for Fecal Coliform in San Pedro Creek**

<b>Water Quality Objectives for Coliform Bacteria<sup>a</sup></b>		
<b>Use</b>	<b>Fecal Coliform (MPN/100ml)</b>	<b>Total Coliform (MPD/100ml)</b>
Water contact recreation	Geometric mean <200, median <240	90 <sup>th</sup> percentile <400, no sample >10,000
Non-water contact recreation	Mean < 2,000	90 <sup>th</sup> percentile <400,

<sup>a</sup>. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

### Reports Prepared for This Project

TRA conducted a detailed internet search to find scientific, peer-reviewed journal articles and technical reports that address fecal coliform loading in small, urban areas such as that of the proposed project site. The results of these efforts is contained in a memo entitled *Preferred Alternative for Addressing Fecal Coliform Runoff at The Pacifica Center For The Arts Dog Park, TRA Environmental Sciences, Inc.* and is contained in this document as Appendix B. This memo states, "Two documents were found that were of most relevance to the Dog Park: Can Stormwater BMPs Remove Bacteria? New Findings from the International Stormwater BMP Database by Clary et al. (2008), and the Stormwater Treatment Options For Reducing Bacteria In Arroyo Burro And Mission Creek Watersheds by the City of Santa Barbara and URS Corporation (2002)".

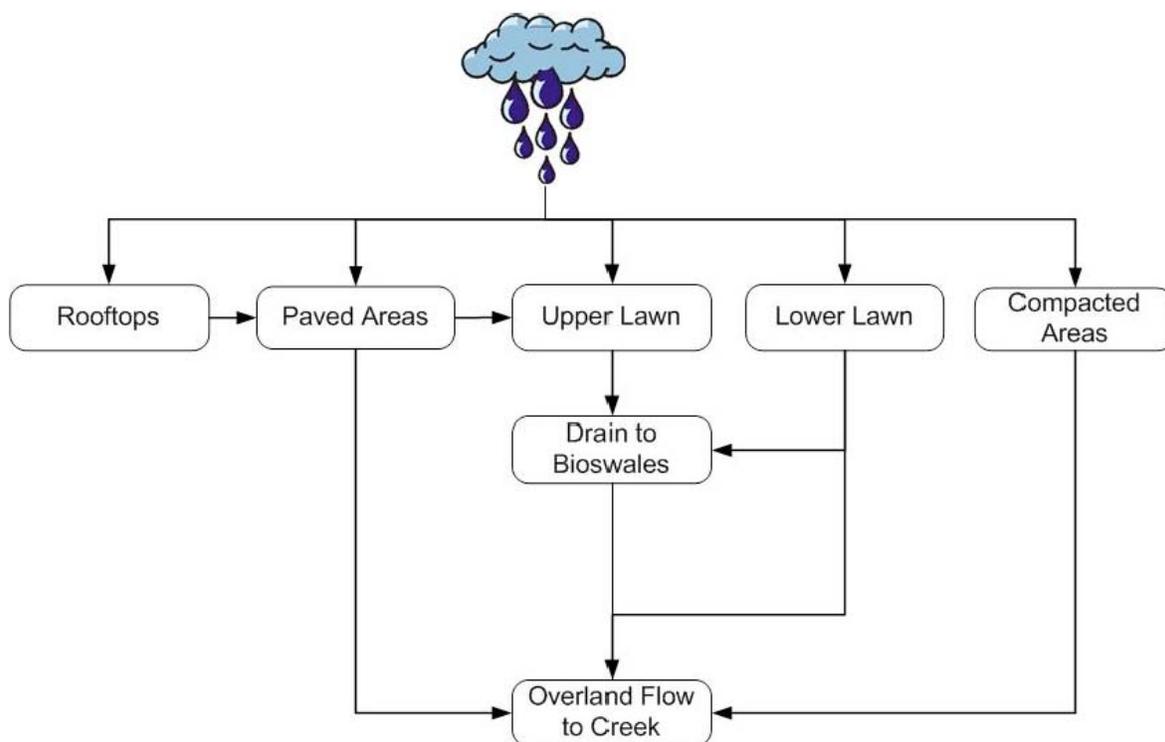
As part of this memo, a websearch was performed to see if there were products already on the market that could solve this issue. Based on these two types of searches, and after conferring with geomorphologist Mike Liquori of Sound Watershed Consulting, LLC, a solution was found that could typically remove 77% - 99% of fecal coliform from on-site runoff. This solution as stated above, is a passive-treatment filtration system manufactured by Filtterra (see <http://www.filtterra.com/index.php/product/bacterra>). This system consists of the following three components: 1) A passive-treatment filtration system; 2) A vegetated bioswale; and 3) A vegetated buffer strip.

This combination can meet the City's objectives in a cost-effective, low-maintenance and aesthetically pleasing manner. Filtering systems are generally made up of a multi-chamber vault system that passes water through a media substrate, such as sand or carbon, to filter out contaminants. Filter systems, if designed properly, work well in size-constrained sites in highly urbanized areas, and could work especially well in the area between the proposed dog park and San Pedro Creek. Filtering systems have known efficacy rates for all of the standard urban pollutants, including fecal coliform. Additionally, they are relatively inexpensive to install and maintain.

This filtration system is an underground filtering unit that comes pre-assembled to the site as a pre-cast concrete structure. It includes a filter chamber filled with a proprietary blend of filter media (mulch and engineered soil), piping, and top grates. A small tree will be planted in the middle of the top of the filtration system (at the rough grade of the soil surrounding the filtration system). The device works by routing runoff into the structure in a manner that removes and collects trash while filtering runoff through the media.

In April 2010, SWC surveyed the site to develop a quick base map. They then calculated existing water runoff amounts (see Table 1, above) and projected water runoff amounts for the 10, 25 and 100 year storm events which would be expected to a) infiltrate into the soil of the dog park (to be covered with either grass or decomposed granite, depending on location; b) runoff the site to accumulate in the proposed biofilter, and c) runoff into the riparian corridor of San Pedro Creek (see Figure 6). This was done by determining the height of the proposed drop inlet structure in the proposed biofilter, calculating the runoff coefficient for each area and ground covering to figure out the volume and proposed velocity of runoff water, determining the elevation at the proposed creek outfall, and determining vegetation width and depth of the new swales. The results of these efforts is contained in a memo entitled *Pacifica Dog Park Biofiltration Swale Technical Memo*, Sound Watershed Consulting, LLC. and is contained in this document as Appendix C.

**Figure 6. Estimated Water Runoff from Site (With Proposed Bioswales)**



Would the project:

**a. Violate any water quality standards or waste discharge requirements?**

**Less Than Significant with Mitigation Incorporated.** As stated above, the increased loading of fecal coliform to San Pedro Creek as a result of the increased use of dogs at the proposed Dog Park project could likely result in a potentially significant impact to the water quality of San Pedro Creek. As stated in Section IV, Biological Resources, of this Checklist, San Pedro Creek is known to provide habitat for steelhead (Central California Coast Evolutionary Significant Unit (ESU) listed as Threatened with the National Marine Fisheries Service) and California red-legged frog (Federal Threatened and California Species of Special Concern). Therefore, TRA has worked with the City and members of the Pacifica Organization of Canine Helpers (POOCH) to develop three methods to reduce this potentially significant impact to less than significant levels. The three methods are listed below in Mitigation Measure HYD-01. In

addition, regrading the site to ensure water runoff does not go into the creek is listed as HYD-02. Also contained in HYD-02 is a rough estimate of the size of any swale system, prepared by Sound Watershed Consulting, Inc. It is expected that the final design would include 2-3 terraces from the biofilter unit, with swales and probably a geotechnical element at each terrace and swale to ensure that erosion would not occur.

**Impact:** The increased loading of fecal coliform to San Pedro Creek as a result of the proposed Dog Park project could likely result in a potentially significant impact to the water quality of San Pedro Creek.

#### **Mitigation Hyd-01:**

1. The City of Pacifica will reduce the amount of fecal matter from the dog park by providing the following:
  - A dog-waste bag dispenser at the site; and
  - A trash can at the site that is emptied three times a week by Coastside Scavengers.
2. The City of Pacifica will contract with POOCH to:
  - Work with City staff to create an interpretive sign that educates the public about the impacts dogs can have to local aquatic and human health;
  - Create and distribute educational brochures that feature more in-depth information regarding the impacts of in-stream dog and person traffic; and
  - Implement an aggressive person-to-person education campaign during the first three months of dog park operation where visitors are given free dog-waste bags, a brochure, and a verbal explanation of the park rules.
3. The City will install a Bacteria Bioretention System (passive-treatment filtration system) manufactured by Filterra (or similar). For more details please see the *Preferred Alternative for Addressing Fecal Coliform Runoff at the Pacifica Center for the Arts Dog Park* (January 6, 2010) (see Appendix B). The system shall be installed and maintained by the City per the manufacturer's specifications.
4. The Bacteria Bioretention System will be checked biannually and will be maintained annually by City Public Works staff.
5. Water quality monitoring shall be part of this measure, including baseline monitoring before construction that evaluates turbidity and fecal coliform levels. Monitoring shall be done three times per year for the first three years after construction, in January, March and June, and a report analyzing the effects of this monitoring shall be prepared by the City (or its consultant) and shall be available to the public for review.
6. If the monitoring and associated analysis reveals higher levels of turbidity and fecal coliform than baseline that exceed stated standards, then the dog park shall be temporarily closed until either the filter system is working properly again or another, more effective system is installed.

**Implementation Responsibility:** City of Pacifica, POOCH

**Effectiveness:** Will reduce or avoid significant impacts

**Timing:** As listed above.

Implementing Mitigation Measure HYD-01 will require a more complete site design that includes considerations for site grading, more detailed site hydrology, the configuration of the filter system features (filter box, vegetated strip and bioswale), and associated specifications. Based on the information contained in the *Pacifica Dog Park Biofiltration Swale Technical Memo*, Sound Watershed Consulting, LLC. (Appendix C), it is estimated that a biofiltration swale system needs to be present at the site. The information provided in this Technical Memo can be

used to develop more detailed designs and specifications for both the drop inlet and the bioswale.

A biofiltration swale is a shallow vegetated channel or ditch designed to treat stormwater through phytoremediation and/or infiltration. Swales are typically constructed with a vegetative layer underlain by a filtering media such as gravel or sand. These layers work together to promote bioremediation and groundwater infiltration. Because biofiltration swales are not meant to hold water for any length of time, they are less likely to attract water fowl and/or dogs. Table 3, below, is from the Technical Memo and states the attenuation effect that bioswales can have on peak storm events:

**Table 3**  
**Net Attenuation Effect of Routing Runoff Through Bioswales**

2-yr	30.8%
5-yr	17.7%
10-yr	14.8%
25-yr	9.4%
50-yr	7.6%
100-yr	6.4%

This Technical Memo states that “based on a preliminary configuration the bioswale will have a capacity of about 2,025 cubic feet. Assuming this preliminary capacity, the bioswale should contain at least 34% of the 2-yr 24-hour storm event (assuming no infiltration). This capacity could be expanded by either lengthening the swale system, by increasing the depth of the swales, by increasing the infiltration capacity, or by increasing the berm height. Certain vegetative species may also be more effective at promoting infiltration”.

**Mitigation Hyd-02:** A series of three bioswales shall be constructed at the site, between the parking lot and San Pedro Creek. These bioswales shall have a minimum capacity of 2,025 cubic feet and shall be implemented by utilizing the three existing terraces in the southern corner of the property (see Appendix C for specific details, especially Figure 3 in this Appendix). These bioswales were designed to use the existing topography as much as possible to minimize earthwork. Assuming this preliminary capacity, the bioswale shall contain at least 34% of the 2-yr 24-hour storm event (assuming no infiltration).

The three swale segments shall be oriented along the existing terraces (running in an approximately east-west direction) and shall be in the dimensions and volumes as indicated in Table 4. Excavation of existing material to a depth of approximately 1 foot in some places and the construction of a 1- to 1.5-foot berm shall also be part of this effort.

**Table 4**  
**Proposed Bioswale Dimensions**

Bioswale	Width (in feet)	Length (in feet)	Volume (cubic feet)
Upper	8	82	656
Middle	6	66	394
Lower	27	36	974
<b>Total volume, all bioswales</b>			<b>2,024</b>

In addition, the following recommendations from the Pacifica Dog Park Biofiltration Swale Technical Memo, Sound Watershed Consulting, LLC (Appendix C) shall be implemented as part of this project:

1. A more detailed design shall investigate the infiltration capacity of the onsite soils and subsurface conditions so that a more refined hydrologic estimate can be developed in support of the final design and construction specifications. With sufficient infiltration capacity, the bioswale could treat a larger proportion of the design (2 year) storm. The following design elements shall receive additional consideration by the City of Pacifica's Engineering Department (or qualified consultant) prior to construction of any element of the Dog Park, bioswale, or filter:
  - The configuration of the bioswale, drop inlet location, and drop inlet drain structures; Overflow structure design for the bioswale (to prevent erosion on steep slopes to San Pedro Creek);
  - Conveyance features (e.g. either channels, swales, culverts or dispersal structures) at the outlet of the bioswale and drop inlet drain;
  - Connecting features where concentrated peak flows occur at the confluence with San Pedro Creek (a small channel exists immediately below the line in the Bioswale area of Figure 5);
  - Refine estimates of existing infiltration to determine the need to design infiltration improvements into the swales; and
  - Selection of appropriate plant species for the swales that can provide both erosion control treatments, aesthetic values, and desired bioremediation effects.
2. A site survey shall be conducted to clarify how much regrading will need to occur. Regrading the site will ensure that the entire Dog Park footprint drains (sheetflows) directly into the filter system, then is discharged into a swale which flows into San Pedro Creek. The highest point should be at the northeast corner of the Dog Park site, at the residential property line. It is possible that this point needs to be as much as 6 inches higher than existing. This will avoid the puddling and pooling of contaminated water within the fenced-in area of the Dog Park.

**Implementation Responsibility:** City of Pacifica

**Effectiveness:** Will reduce or avoid significant impacts

**Timing:** As listed above.

**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 which would not support existing land uses or planned uses for which permits have been granted)?**

**No Impact.** No long-term use of water is planned for this project.

**c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

**d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Less Than Significant with Mitigation Incorporated (c and d).** As stated above, the site is relatively flat, and the construction and operation of the proposed dog park will not substantially alter the existing drainage pattern or increase flooding on or off site. Installation of the biofilter, as described above in Mitigation Measure HYD-1, will capture water runoff originating from the dog park area, allowing sediment to settle out and thus reducing the overall volume of water that runs off the site into San Pedro Creek.

**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?**

**Less Than Significant Impact.** The proposed dog park will not contribute runoff water that will exceed the capacity of existing or planned stormwater drainage systems. Although the proposed dog park has the potential to provide additional sources of coliform bacteria in the form of dog feces to San Pedro Creek, the creation of a vegetated swale, as detailed in Mitigation Measure HYD-2 above, will minimize these impacts to less than significant levels.

**f. Otherwise substantially degrade water quality?**

**Less Than Significant Impact.** The additional input of canine fecal matter into San Pedro Creek is not expected to be substantially greater than baseline levels. The creation of a detention pond to capture, hold and filter runoff will reduce bacterial loading to the creek. The implementation of an education program with specific, detailed information regarding bacterial contamination of San Pedro Creek and the provision of free dog-waste bags is also expected to minimize the coliform bacterial contamination associated with the dog park.

**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?**

**h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

**i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

**No Impact (g, h, and i).** The proposed dog park will not place housing or any other structures within the 100-year flood zone (FEMA 1981). The City of Pacifica has no land within a dam inundation area (ABAG 1995).

**j. Inundation by seiche, tsunami, or mudflow?**

**No Impact.** The proposed dog park site is not within a seiche (City of Pacifica), tsunami (County of San Mateo 2006), or mudflow (City of Pacifica) inundation area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.10 LAND USE AND PLANNING -- Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>

### Regulatory Setting

#### *Zoning*

All lands surrounding and adjacent to the Arts Center, excepting the area between top-of-bank in San Pedro Creek, are zoned "R-1", "single family residential" (City of Pacifica 2001). The Arts Center, and all of its associated grounds, are zoned "A/B-5" by the City of Pacifica (2001). The "A" stands for "agriculture" and "B-5" represents the "Lot Size Overlay" (City of Pacifica 2001). The lot size overlay is used to define development regulations on designated sites. Development regulations on B-5 designated property must adhere to the following, pursuant to the following section of the City of Pacifica Zoning Code:

*City of Pacifica Municipal Code Title 9, Chapter 4, Article 2002 (a)(b)(c)(d)(Effective August 24, 1988)*

Development regulations in the B-District shall be as follows:

- (d) Minimum setbacks.
- (1) Front: Twenty-five (25') feet for all B- Districts;
  - (2) Rear: Twenty-five (25') feet for all B- Districts; and
  - (3) Side: Twenty (20') feet for B-5 Districts.

#### *Off-leash law*

City of Pacifica Ordinance 698 (Title 6, Chapter 1, Section 6-1.206(a) of the City of Pacifica zoning code) prohibits dogs from being off leash within a public park. The ordinance reads:

"No owner or possessor of any animal shall cause or permit it to do any of the following: To be upon any public street, sidewalk, park, school ground, public property, or upon any unenclosed premises in the City unless the animal is properly licensed, if such licensing is necessary

pursuant to this article, and under the control of the owner by being saddled, harnessed, haltered, or leashed by a substantial chain, lead rope, or leash, which chain, lead rope, or leash shall be continuously held by some competent person capable of controlling such animal”.

*Would the project:*

**a. Physically divide an established community?**

**No Impact.** The proposed dog park will be built on the grounds of the Arts Center and will not divide any community.

**b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**Less Than Significant with Mitigation Incorporated.** The proposed dog park meets the requirements set forth in the general plan for its zoning designation of A/B-5. Public parks are a designated use within areas zoned for agriculture (City of Pacifica Ordinance 363, Section 4.17). The dog park design meets all of the minimum setback requirements for the lot size overlay B-5. However, off-leash dogs are prohibited in the City of Pacifica. To mitigate for this impact, Mitigation Measure LU-1 stipulates that the city will create an amendment to the ordinance to allow for off-leash dog use in designated areas.

**Impact:** Off-leash dogs are prohibited in the City of Pacifica. Therefore, any off-leash use at the site is illegal.

**Mitigation Measure LU-1:** The City of Pacifica will amend Zoning Ordinance 698 to allow for off-leash dog use within parks designated for that specific use. The ordinance will also include language that makes owners responsible for the control of their dog(s) within the park, as well as, for the removal of their dog’s feces.

**Implementation Responsibility:** City of Pacifica

**Effectiveness:** Will reduce or avoid significant impacts

**Timing:** As listed above.

**c. Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No Impact.** No habitat conservation plan or natural community conservation plan exists for the proposed dog park site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.11 MINERAL RESOURCES -- Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<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"/>

*Would the project:*

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

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

**No Impact (a and b).** There are no known mineral resources located at or near the proposed dog park site (USGS 2009).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.12 NOISE -- Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project 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) For a project within the vicinity of a private airstrip, 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"/>

### Environmental Setting

The Pacifica Center for the Arts is located in the Linda Mar residential neighborhood. The primary source of noise in this neighborhood, and in the City of Pacifica in general, is traffic. As the site is currently used for unauthorized dog walking, associated barking and human yelling and whistling (to call dogs) is a current condition of the site.

### Regulatory Setting

The following City of Pacifica Municipal Codes apply to the regulation of noise within the City:

*City of Pacifica Municipal Code Section 5-10.03.*

It shall be unlawful for any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary, or unusual noise or any noise which annoys, disturbs, injures, or endangers the comfort, health, repose, peace, or safety of other persons within the City. (§ 2, Ord. 211)

The following noises, among others, are hereby declared to be loud, disturbing, unnecessary, and unusual noises in violation of the provisions of this chapter; provided, however, such enumeration shall not be deemed or construed as in any degree exclusive, but merely illustrative, it being the intent and purpose of the provisions of this chapter to include and prohibit all noises of the kind and character described in Section 5-10.02 of this chapter:

(d) Yelling, shouting, and similar noises. Yelling, shouting, hooting, whistling, or singing on the public streets, particularly between the hours of 10:00 p.m. and 7:00 a.m., or at any time or place so as to annoy or disturb the quiet, comfort, or repose of persons in any office or in any dwelling, hotel, or other type of residence, or of any person in the vicinity;

(e) Animals and birds. The keeping of any animal or bird causing frequent or long-continued noise, disturbs the comfort or repose of any persons in the vicinity;

(m) Pile drivers, hammers, and similar equipment. The operation, between the hours of 8:00 p.m. and 7:00 a.m., of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, the use of *which is attended by loud or unusual noise*;

*Would the project result in:*

**a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Less Than Significant Impact.** There are two forms of noise that will be created by the proposed dog park: 1) short-term, construction-related noise; and 2) Long-term, dog-park associated noises such as barking and growling by dogs and yelling, whistling, and loud talking by dog owners. Construction will be limited to the weekdays (M-F) between the hours of 8:00 a.m. and 6:00 p.m., and all construction machinery will have standard, noise-muffling devices installed (see project description for a list of Best Management Practices (or BMPs) associated with construction-related noise reduction).

Dog park hours will be set between the hours of 7:00 a.m. and sunset. All short-term and long-term noise will occur during times allowable by the City of Pacifica Municipal Code (see Regulatory Setting above). The municipal code regarding noise will apply to the proposed dog park, and dog park users will be expected to adhere to this and other City of Pacifica laws and codes regarding conduct and noise disturbance. Because all anticipated use of the site must adhere to existing laws, the potential impact of the dog park on noise levels will be less than significant.

**b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less Than Significant Impact.** Residents living and working closest to the Pacifica Center for the Arts, particularly those in the housing development directly east of the project site and those working in the Pacifica Center for the Arts building, could be subject to some temporary ground-borne vibration from construction of the parking area and dog park. No long term vibration or ground-borne noise will be created by the dog park project. Construction will

occur during those hours designated by the City of Pacifica for construction, which are 8:00 a.m. and 6:00 p.m. during weekdays (M-F); no construction is permitted on weekends. Because current law protects the neighboring community from construction-related noise and vibration, the impact will be less than significant.

**c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** Although the proposed Dog Park will likely increase the use of the area by dogs and dog owners, this is not expected to substantially increase permanent ambient noise levels. (See Response 3.12a above).

**d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** Although the proposed Dog Park will likely increase the use of the area by dogs and dog owners, this is not expected to substantially increase temporary or periodic ambient noise levels. (See Response 3.12a above).

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

**No Impact.** The proposed dog park site is not within the area of any Airport Land Use Plan. The site is approximately 6 miles southwest of San Francisco International Airport and 7 miles north of the Half Moon Bay Airport. The use of the site for a dog park, either during the construction or operation phase, will not result in exposing people to significant or excessive noise levels.

**f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** The proposed dog park site is not located within the vicinity of a private airstrip.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.13 POPULATION AND HOUSING -- Would the project:</b>				
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 elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*Would the project:*

**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)?**

**b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact (a, b, & c).** The proposed dog park is for recreation only and does not include a housing component. The park site is located with an Arts Center within an urbanized area, and will not induce substantial population growth, displace housing, nor displace people.

<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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**3.14 PUBLIC SERVICES --**

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

i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*Would the project:*

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

- i) Fire protection?**
- ii) Police protection?**
- iii) Schools?**
- iv) Parks?**
- v) Other public facilities?**

**No Impact (a, i - v).** The proposed dog park is within an urbanized area and will not result in the need for the creation of any new government services or facilities. In addition, there are measures which POOCH will undertake to ensure that the dog park is properly maintained (see Mitigation Measure Hyd-01).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.15 RECREATION --</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental Setting

Local artists, sport recreationists, and dog walkers currently use the grounds surrounding the Pacifica Center for the Arts. Local artists use the individual rooms as studios. The grounds of the facility, including two baseball/softball diamonds, are used for sports recreation and on- and off-leash dog walking and play. The open, grassy fields on both the east and west side of the Arts Center offer wide, open spaces perfect for soccer, Frisbee, or dog walking. Dog walkers are also known to use areas outside, but adjacent to, the Arts Center, particularly those areas outside of the fence, between the center and San Pedro Creek (Jerry Davis personal communication).

*Would the project:*

**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?**

**Less Than Significant Impact.** Although the creation of a dog park is likely to slightly increase visitor traffic to the Arts Center, it is not expected to result in any substantial physical deterioration of the facility. However, the creation of the proposed dog park has the potential to reduce use of the grounds within, and adjacent to, the Arts Center for dog walking and play, thus minimizing current dog walking impacts in areas used for sports recreation.

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

**No Impact.** No additional recreational facilities will be constructed or expanded as a result of the proposed dog park.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.16 TRANSPORTATION/TRAFFIC -- Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards 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) 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"/>

### Environmental Setting

The Arts Center is located on the eastern edge of the Linda Mar Community. The nearest traffic light is located approximately 0.5 miles west of the site, at the intersection of Linda Mar Boulevard with Adobe and Seville Drives. The second closest traffic light is located approximately 1.75 miles west of the Arts Center at the intersection of Linda Mar Boulevard and Peralta Road.

For the purposes of estimating baseline traffic conditions on Linda Mar Boulevard and assessing potential impacts from the proposed dog park, the following assumptions were made:

- 1) Traffic generated on Linda Mar Boulevard east of the Adobe Drive/Seville Drive intersection is primarily from single-person occupied vehicles traveling between residential homes and Highway One (worst-case scenario).
- 2) There are approximately 1,000 homes that are serviced by Linda Mar Boulevard east of the Adobe Drive/Seville Drive intersection and 80% of each home generates two vehicle trips per day during each of the two peak commuting hours (4 trips total per day).
- 3) Peak traffic hours on Linda Mar Boulevard are between 7:30 a.m. and 9:30 a.m. and 4:30 p.m. and 6:30 p.m.
- 4) Residential traffic is split evenly over the commute hours, i.e. half of all morning vehicle trips occur between 7:30 a.m. and 8:30 a.m., the second half occurs between 8:30 a.m. and 9:30 a.m.
- 5) The greatest traffic generator in the vicinity of the Arts Center is the Alma Heights Christian Academy Junior and High School, approximately 0.5 miles west of the Arts Center.
- 6) Peak traffic hours at Alma Heights are between 7:45 a.m. and 8:30 a.m., and between 3:00 p.m. and 4:00 p.m.
- 7) Approximately 180 junior high and high school students attend Alma Heights, generating approximately 360 car trips a day, 180 in the morning and 180 in the afternoon (Alma Height's Staff personal communication).
- 8) 20% of the Linda Mar residential community generates one-vehicle trip per day during off-peak traffic hours (between 9:30 a.m. and 4:30 p.m.).
- 9) The Arts Center traffic peaks occur between 7:00 a.m. and 10:00 a.m. and between 4:30 p.m. and 6:30 p.m.
- 10) The Arts Center generates approximately 5 vehicle trips per hour during peak hours and 2 vehicle trips per hour during off-peak hours (between 10:00 a.m. and 4:00 p.m.).
- 11) The proposed dog park will increase the vehicle trips by 4 trips per hour during peak hours, for a total of 9 vehicle trips per hour, and 1 vehicle trip per hour during off-peak traffic hours, for a total of 3 vehicle trips per hour (TRA and Beverly Kingsbury, personal communication).

Using the above assumptions, it is estimated that 800 vehicle trips per hour are generated by residential traffic between 7:30 a.m. and 9:30 a.m., and again between 4:30 p.m. and 6:30 p.m., on the section of Linda Mar Boulevard east of the traffic light at Adobe /Seville Drives. Alma Heights Junior High and High School contribute approximately 180 additional vehicle trips between the hours of 7:45 a.m. and 8:30 a.m., and again between the hours of 3:00 p.m. and 4:00 p.m. Although the afternoon commute hours are relatively unaffected by Alma Heights traffic, the morning commute hours between 7:30 and 8:30 experience a total of approximately 980 vehicle trips in the vicinity of the Arts Center. This is by far the busiest time for the portion of Linda Mar Boulevard nearest the Arts Center, and may create moderate traffic congestion at the traffic light on the corner of Adobe /Seville Drives and Linda Mar Boulevard.

Baseline conditions at the Arts Center assume 5 vehicle trips per hour during peak commute times (between 7:30 a.m. and 9:30 a.m. and again between 4:30 p.m. and 6:30 p.m.). Off-peak use generates approximately 2 vehicle trips per hour. The creation of the dog park is estimated to increase vehicle trips during peak commute hours by four vehicles per hour and during off-peak commute hours by 1 vehicle per hour.

The Sanchez Art Center and Pacifica Performances, both housed at the Pacifica Center for the Arts, each hold regular events that have the potential to fill the parking lot and create localized traffic congestion. The Arts Center holds events approximately every six weeks on Friday nights between 7:00 p.m. and 9 p.m. (Arts Center Staff personal communication). Pacifica Performances holds almost weekly events on Saturday evenings between 7:30 p.m. and 9:30 p.m. (Pacifica Performances Staff personal communication).

Little League and the local children's soccer league also contribute to the existing parking and traffic use of the site. Little league parents and coaches need parking weekday afternoons for practice and weekend mornings for games between January and June. Soccer league participants create parking needs between August and November for weekday afternoon practice and Saturday morning games.

**a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?**

**Less Than Significant Impact.** The proposed dog park is estimated to contribute 4 additional vehicle trips per hour between 7:30 a.m. and 9:30 a.m. and 4:30 p.m. and 6:30 p.m. These four vehicle trips will be in addition to at least 800 vehicle trips per hour during the peak commute hours (between 7:30 a.m. and 9:30 a.m. and 4:30 p.m. and 6:30 p.m.). This small increase in traffic is not considered significant.

**b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**No Impact.** Linda Mar Boulevard is not designated by the San Mateo County Congestion Management Agency (San Mateo C/CAG 2007).

**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?**

**No Impact.** Implementation of the proposed dog park will not result in any changes to air traffic patterns.

**d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact.** The proposed dog park will not result changes to any existing road, intersection or other traffic design features. No roads will be constructed as a result of this project.

**e. Result in inadequate emergency access?**

**No Impact.** There will be no change in emergency vehicle access to the Arts Center as a result of this proposed dog park.

**f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

**No Impact.** The proposed dog park does not conflict with any plans or programs for alternative transportation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.17 UTILITIES AND SERVICE SYSTEMS -- Would the project:</b>				
a) Exceed wastewater treatment requirements 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"/>
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 which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<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 projects solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The City of Pacifica contracts with Allied Waste for garbage disposal services. Allied Waste delivers waste from the City of Pacifica to the Ox Mountain Landfill in Half Moon Bay, CA. Currently, there is one primary garbage bin used by dog walkers at the Arts Center. The bin is emptied three times a week by Coastside Scavengers.

## Regulatory Setting

The following City of Pacifica Municipal Codes apply to solid waste within the City:  
*Title 6, Chapter 1, Article 301 (effective April 13, 1994): Prohibited conduct.*

It is unlawful for any owner, keeper or other person in possession of any animal to permit his or her animal to discharge such animal's excreta upon any public or private property within the City, other than the property of the owner, keeper or other person in possession of such animal, unless the owner, keeper or other person in possession immediately removes such feces from the area in a safe and sanitary manner by depositing it in a closed or sealed container in a sanitary receptacle. Owner, keeper or other person in possession of the animal must carry, at all times, a suitable container or other suitable instrument for the removal and disposal of feces. Disabled persons who use animals for disability support purposes are exempt from the provisions of this section with respect to such animals.

*Would the project:*

**a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**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?**

**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?**

**No Impact (a, b, and c).** The proposed dog park will not result in the creation of any new source of storm water or wastewater.

**d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

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

**No Impact (d and e).** There will be no additional water entitlements required for this project.

**f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**Less Than Significant Impact.** Presently, the garbage bin at the site located nearest the grounds frequented by dog walkers is emptied three times a week by the City of Pacifica Public Works Department. This waste is then collectively deposited into large dumpsters serviced once a week by Coastside Scavengers. Coastside Scavengers then dumps their trucks at the Ox Mountain Landfill in Half Moon Bay or the Mussel Rock Dump in Daly City. The proposed dog park will add one more bin that will be emptied, along with the existing bin, three times a week. The Ox Mountain landfill and the Mussel Rock Dump are sufficiently permitted to handle the addition of three garbage bags per week.

**g. Comply with federal, state, and local statutes and regulations related to solid waste?**

**Less Than Significant Impact.** The City of Pacifica mandates that all pet waste be deposited “in a closed or sealed container in a sanitary receptacle,” and that the “owner, keeper or other person in possession of the animal must carry, at all times, a suitable container or other suitable instrument for the removal and disposal of feces” (see the regulatory section above). As stated in the Project Description, to encourage proper dog-waste disposal, the City of Pacifica, in conjunction with POOCH, will provide education materials, free dog-waste bags, and a garbage receptacle that will be emptied weekly. Upon park opening, POOCH stewards will implement a 3-month education campaign where they will hand out free bags and encourage users to keep the park clean. In addition, occasional, unofficial “pooper scooper” services may be performed by one or more POOCH stewards (Beverly Kinsbury, personal communication).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.18 MANDATORY FINDINGS OF SIGNIFICANCE --</b>				
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Mandatory Findings of Significance

**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?**

**Less Than Significant with Mitigation Incorporated.** No special-status species have potential to occur within the project area and no direct impacts to species are anticipated. Indirect impacts from increased usership of the park could include increased illegal use of the riparian and creek areas for recreation. Indirect impacts to special status species will be less than significant with the implementation of Mitigation Measures as listed in this document.

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

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

**No Impact.** Implementation of BMPs as listed in the Project Description of this document and implementation of Mitigation Measures as listed in this document will ensure that no cumulative impacts occur as a result of implementing this project.

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5.0 *Report Preparers*

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**TRA Environmental Sciences, Inc.**

Christine Schneider, Senior Project Manager  
Victoria Harris, Senior Analyst  
Rebecca Sloan, Analyst  
Sandy Ho, Graphics

**Sound Watershed Consulting, LLC**

Mike Liquori, Principal  
Jeff Prancevic, Associate

## 6.0 Mitigation, Monitoring and Reporting Plan

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This Mitigation, Monitoring and Reporting Plan (MMRP) has been prepared pursuant to CEQA Guidelines, which state the following:

“In order to ensure that the mitigation measures and project revisions identified in the Initial Study/Mitigated Negative Declaration are implemented, the Lead Agency [Granada Sanitary District (District)] shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects.” (§15097(a)) and;

“The Lead Agency may choose whether its program will monitor mitigation, report on mitigation, or both. “Reporting” generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. “Monitoring” is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both.” (§15097 (c))

Table 1, on the next page, lists the Impacts, Mitigation Measures, and Timing of the Mitigation Measure (when the measure will be implemented) related to the District’s Naples Beach Sewer Project. All of the mitigation measures listed here will be implemented by the District and/or City of Half Moon Bay or by their appointees.

According to CEQA Guidelines Section 15126.4 (a) (2), “Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.” Therefore, all mitigation measures as listed in this MMRP will be adopted by the City of Pacifica when the project is approved.

Impact	Mitigation Measure	Implementation & Timing	Monitoring Responsibility	Verified Implementation
<b>BIOLOGY</b>				
<p><b>Impact Bio-1:</b> Dogs and humans can now access San Pedro Creek from the proposed Dog Park site, thereby endangering special-status wildlife species (steelhead and red-legged frog) through sediment input into the creek or direct disturbance through entrance of humans or dogs into the creek.</p>	<p><b>Mitigation Measure BIO-1:</b> The City of Pacifica will combat illegal use of San Pedro Creek by dogs and humans. The City shall:</p> <ol style="list-style-type: none"> <li>1. Repair all existing holes in the fence that separate the creek from the Arts Center prior to opening of the dog park;</li> <li>2. Monitor the fence weekly for future vandalism and making timely repairs of the fence when vandalism occurs (within 3 weeks of occurrence); and</li> <li>3. Install interpretive signs that educate the public about the ecological importance of San Pedro Creek and how creekside and in-creek trampling by humans and dogs can impact ecological resources.</li> </ol>	<p><b>Implementation:</b> City of Pacifica</p> <p><b>Timing:</b> As needed and indicated in Mitigation Measure.</p>	<p><b>Monitoring:</b> City of Pacifica</p>	<p><b>Initials :</b> _____ <b>Date:</b> _____</p> <p><b>Initials :</b> _____ <b>Date:</b> _____</p> <p><b>Initials :</b> _____ <b>Date:</b> _____</p>
<b>HYDROLOGY AND WATER QUALITY</b>				
<p><b>Impact Hyd-01:</b> The increased loading of fecal coliform to San Pedro Creek as a result of the proposed Dog Park project could likely result in a potentially significant impact to the water quality of San Pedro Creek.</p>	<ol style="list-style-type: none"> <li>1. The City of Pacifica will reduce the amount of fecal matter from the dog park by providing the following: <ul style="list-style-type: none"> <li>• A dog-waste bag dispenser at the site; and</li> <li>• A trash can at the site that is emptied three times a week by Coastside Scavengers.</li> </ul> </li> <li>2. The City of Pacifica will contract with POOCH to: <ul style="list-style-type: none"> <li>• Work with City staff to create an interpretive sign that educates the public about the impacts dogs can have to local aquatic and human health;</li> <li>• Create and distribute educational brochures that feature more in-depth information regarding the impacts of in-stream dog and person traffic; and</li> <li>• Implement an aggressive person-to-person education campaign during the first three months of dog park operation where visitors are given free dog-waste bags, a brochure, and a verbal explanation of the park rules.</li> </ul> </li> <li>3. The City will install a Bacteria Bioretention System (passive-treatment filtration system) manufactured by</li> </ol>	<p><b>Implementation:</b> City of Pacifica, POOCH</p> <p><b>Timing:</b> As needed and indicated in Mitigation Measure.</p>	<p><b>Monitoring:</b> City of Pacifica</p>	<p><b>Initials:</b> _____ <b>Date:</b> _____</p> <p><b>Initials:</b> _____ <b>Date:</b> _____</p> <p><b>Initials:</b> _____ <b>Date:</b> _____</p>

Impact	Mitigation Measure	Implementation & Timing	Monitoring Responsibility	Verified Implementation
	<p>Filterra (or similar). For more details please see the <i>Preferred Alternative for Addressing Fecal Coliform Runoff at the Pacifica Center for the Arts Dog Park</i> (January 6, 2010) (see Appendix B). The system shall be installed and maintained by the City per the manufacturer's specifications.</p> <p>4. The Bacterra Bioretention System will be checked biannually and will be maintained annually by City Public Works staff.</p> <p>5. Water quality monitoring shall be part of this measure, including baseline monitoring before construction that evaluates turbidity and fecal coliform levels. Monitoring shall be done three times per year for the first three years after construction, in January, March and June, and a report analyzing the effects of this monitoring shall be prepared by the City (or its consultant) and shall be available to the public for review.</p> <p>If the monitoring and associated analysis reveals higher levels of turbidity and fecal coliform than baseline that exceed stated standards, then the dog park shall be temporarily closed until either the filter system is working properly again or another, more effective system is installed.</p> <p><b>Mitigation Hyd-02:</b> A series of three bioswales shall be constructed at the site, between the parking lot and San Pedro Creek. These bioswales shall have a minimum capacity of 2,025 cubic feet and shall be implemented by utilizing the three existing terraces in the southern corner of the property (see Appendix C for specific details, especially Figure 3 in this Appendix). These bioswales were designed to use the existing topography as much as possible to minimize earthwork. Assuming this preliminary capacity, the bioswale shall contain at least 34% of the 2-yr 24-hour storm event (assuming no infiltration).</p>			<p>Initials: _____</p> <p>Date: _____</p> <p>Initials: _____</p> <p>Date: _____</p>

Impact	Mitigation Measure	Implementation & Timing	Monitoring Responsibility	Verified Implementation
	<p>The three swale segments shall be oriented along the existing terraces (running in an approximately east-west direction) and shall be in the dimensions and volumes as indicated in Table 4 of the IS/MND. Excavation of existing material to a depth of approximately 1 foot in some places and the construction of a 1- to 1.5-foot berm shall also be part of this effort.</p> <p>In addition, the following recommendations from the Pacifica Dog Park Biofiltration Swale Technical Memo, Sound Watershed Consulting, LLC (Appendix C) shall be implemented as part of this project:</p> <p>1. A more detailed design shall investigate the infiltration capacity of the onsite soils and subsurface conditions so that a more refined hydrologic estimate can be developed in support of the final design and construction specifications. With sufficient infiltration capacity, the bioswale could treat a larger proportion of the design (2 year) storm. The following design elements shall receive additional consideration by the City of Pacifica’s Engineering Department (or qualified consultant) prior to construction of any element of the Dog Park, bioswale, or filter:</p> <ul style="list-style-type: none"> <li>• The configuration of the bioswale, drop inlet location, and drop inlet drain structures; Overflow structure design for the bioswale (to prevent erosion on steep slopes to San Pedro Creek);</li> <li>• Conveyance features (e.g. either channels, swales, culverts or dispersal structures) at the outlet of the bioswale and drop inlet drain;</li> <li>• Connecting features where concentrated peak flows occur at the confluence with San Pedro Creek (a small channel exists immediately below the line in the Bioswale area of Figure 5);</li> <li>• Refine estimates of existing infiltration to determine</li> </ul>			<p>Initials: _____</p> <p>Date: _____</p>

Impact	Mitigation Measure	Implementation & Timing	Monitoring Responsibility	Verified Implementation
	<p>the need to design infiltration improvements into the swales; and</p> <ul style="list-style-type: none"> <li>• Selection of appropriate plant species for the swales that can provide both erosion control treatments, aesthetic values, and desired bioremediation effects.</li> </ul> <p>2. A site survey shall be conducted to clarify how much regrading will need to occur. Regrading the site will ensure that the entire Dog Park footprint drains (sheetflows) directly into the filter system, then is discharged into a swale which flows into San Pedro Creek. The highest point should be at the northeast corner of the Dog Park site, at the residential property line. It is possible that this point needs to be as much as 6 inches higher than existing. This will avoid the puddling and pooling of contaminated water within the fenced-in area of the Dog Park.</p>			<p>Initials: _____</p> <p>Date: _____</p>
<b>LAND USE AND PLANNING</b>				
<p><b>Impact LU-1:</b> Off-leash dogs are prohibited in the City of Pacifica. Therefore, any off-leash use at the site is illegal.</p>	<p><b>Mitigation Measure LU-1:</b> The City of Pacifica will amend Zoning Ordinance 698 to allow for off-leash dog use within parks designated for that specific use. The ordinance will also include language that makes owners responsible for the control of their dog(s) within the park, as well as, for the removal of their dog's feces.</p>	<p><b>Implementation:</b> City of Pacifica</p> <p><b>Timing:</b> Before issuance of building permit</p>	<p><b>Monitoring:</b> No monitoring needed once the Zoning Code has been amended.</p>	<p>Initials: _____</p> <p>Date: _____</p>

**Pacifica Dog Park at the  
Pacifica Center for the Arts  
Initial Study/Mitigated Negative Declaration**

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**Appendix A**

**Biotic Assessment Pacifica Dog Park at the Pacifica Center for the  
Arts, TRA Environmental Sciences, March 2009**

**BIOTIC ASSESSMENT**

**Pacifica Dog Park**  
**at the**  
**Pacifica Center for the Arts**  
**1220 Linda Mar Boulevard, Pacifica**

Prepared for:  
Mr. Michael Crabtree  
City of Pacifica  
1800 Francisco Blvd.  
Pacifica, CA 94044

Prepared by:  
TRA Environmental Sciences, Inc.  
545 Middlefield Road, Suite 200  
Menlo Park, CA 94025  
(650) 327-0429

March 2009

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## **I. INTRODUCTION**

The City of Pacifica has proposed the development of a dog park adjacent to the Pacifica Center for the Arts on Linda Mar Boulevard. The dog park would provide a place where dog owners could allow their dogs to play off-leash in a fenced-in dog run. The City would provide users with a dispenser for dog waste bags, a waste receptacle(s), and parking.

The following Biotic Assessment describes existing environmental conditions at the proposed dog park site, including natural communities, wildlife and plant species observed on site, special-status species or habitats potentially occurring on site, and impacts to biological resources that could result from development of a dog park. The potential for contamination from dog waste and options for dog park surfacing are analyzed. Recommendations with respect to minimizing impacts to biological resources are provided. The California Environmental Quality Act (CEQA) checklist questions for biological resources are also addressed.

## **II. PROJECT LOCATION AND SITE DESCRIPTION**

The proposed dog park is located at the Pacifica Center for the Arts, at 1220 Linda Mar Boulevard in Pacifica, San Mateo County (Figure 1). The Pacifica Center for the Arts (hereon referred to as “the Center”) and proposed dog park are located within a residential neighborhood on the south side of Linda Mar Boulevard just before the intersection of Alicante Drive. Significant natural features in the vicinity of the proposed dog park site include San Pedro Creek, approximately 200 feet southwest of the dog park site, and San Pedro Mountain, the foothills of which are located approximately 0.1 mile to the south beyond Rosita Road (Figure 2). There is a very gradual slope to the project site, with the elevation at the northeast end (near Linda Mar Blvd.) at 89 feet and the elevation at the southwest end (toward San Pedro Creek) at 82 feet.

The Center includes several single story buildings that house artists’ studios. An asphalt parking lot borders the buildings to the north, east and south. The proposed dog park (hereon referred to as “the project site”) is proposed in the area to the west of the buildings. The project site is earthen, flat, and regularly mowed, limiting vegetation. The project site is void of any structures. A complete description of the environment at the project site follows in Section IV.

## **III. PROPOSED PROJECT**

The dog park would provide the public with an enclosed, recreational space where dogs could run and play off-leash. Use of the dog park would be free and open to the public. Currently, dog owners utilize the area behind and alongside the Center for off-leash dog play, although no designation as a dog park has yet been made.

The project would not require any grading or major ground disturbance. For the dog park, an area 23,415 square feet in size (roughly half an acre) and rectangular in shape would be enclosed with fencing (Figure 3). Options for surfacing of the dog park are addressed in this report. The City would provide a dispenser for storing plastic bags for dog waste pick-up, with the intent that plastic bags be stocked by users and volunteers. The City would also provide a trash receptacle at the dog park to encourage the pick-up of dog waste.

Figure 1: Regional Location Map

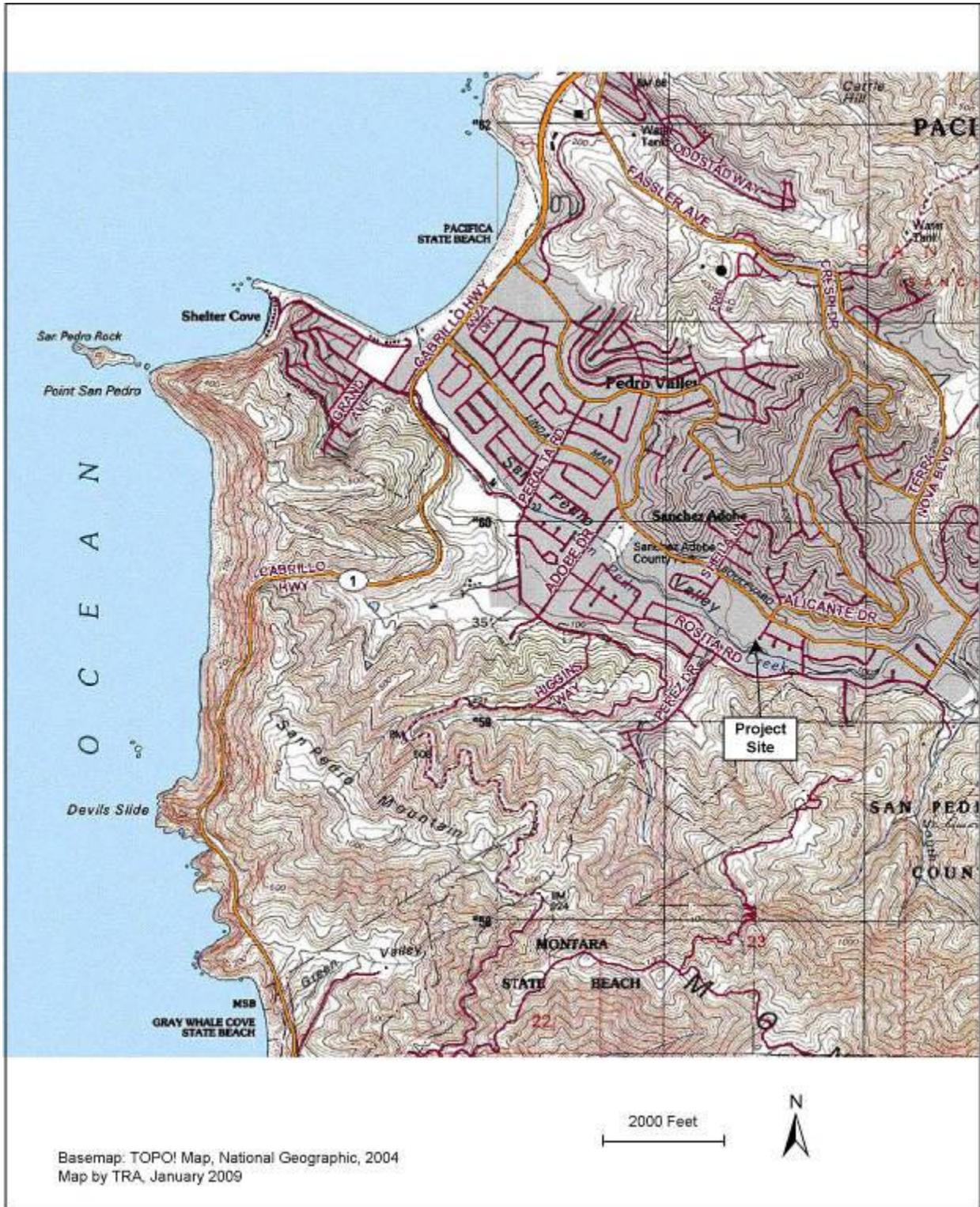




Figure 3: Preliminary Dog Park Plan

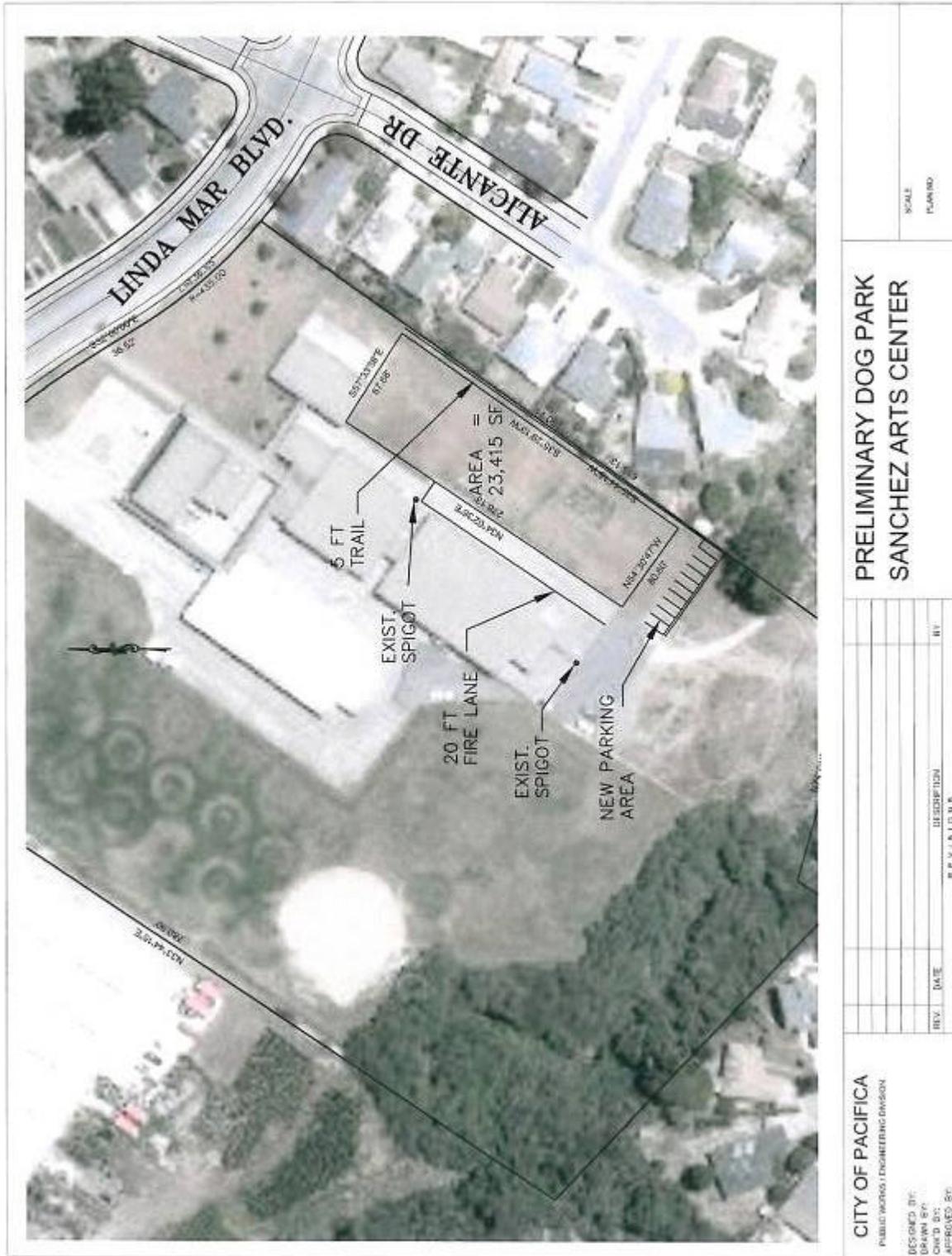
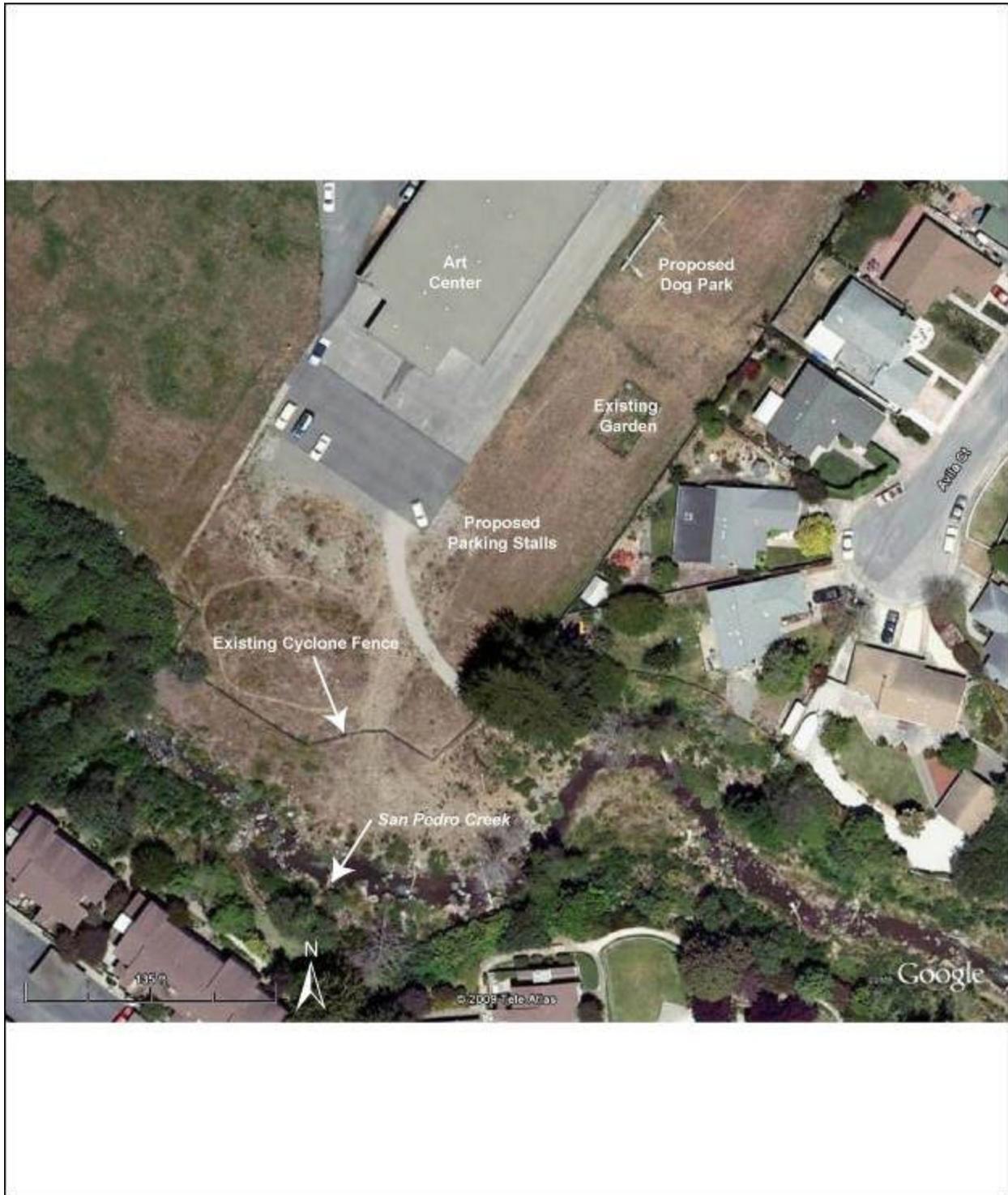


Figure 4. Zoomed view of Project Site features



In addition to the dog park, a 9-stall parking area, approximately 3,200 square feet in size, is proposed (Figure 3). The parking area would be mowed and flattened. The surfacing material for the parking stalls has yet to be determined. Asphalt and gravel will both likely be considered. No grading is required to create the parking lot.

#### IV. METHODS

A survey of the project site was conducted by biologist Autumn Meisel of TRA Environmental Sciences, Inc., on January 21, 2009. The property was surveyed for biological resources to document vegetation, habitat types, and wildlife found or suspected to occur on the project site. The site and the adjacent creek were visited by TRA in April, May, and July 2008 as part of the City of Pacifica's Capistrano Bridge Fish Passage Project monitoring program. As a result, TRA had already compiled information on the special-status species known to occur or which have the potential to occur in the vicinity of the project site (TRA 2008).

#### V. RESULTS

Results of findings on biological resources present or potentially present on site are detailed below. Representative photos of the project site are provided in Appendix A.

##### A. Vegetation Communities

The only vegetation community within the project site is non-native/ruderal vegetation. This vegetation community is commonly found in areas that have been routinely disturbed. The site was presumably graded when the neighborhood and Center were constructed. The site is flat and appears to be regularly mowed. The timing of the site visit in the winter found most plants species having just emerged and some were not yet identifiable. However, there is no potential for rare or special-status plant species due to the highly disturbed nature of the site. Species seen were all non-native and included wild radish (*Raphanus raphanistrum*), cutleaf geranium (*Geranium dissectum*), bristly ox-tongue (*Picris echioides*), common mallow (*Malva neglecta*), and unidentified clovers and grasses. Within the project area is a small (approximately 800 square foot) zone of vegetation that has been fenced off and supports a variety of cultivated and wild plants (Figure 4). It is assumed that this is or was a garden cared for by a tenant of the Center. The garden appeared not to have been maintained in some time.

No special features that could attract native wildlife species such as burrows, rock outcrops, wetted features, trees or shrubs were found within the project site.

The area proposed for the nine parking stalls is adjacent and southwest of the proposed dog park, between the dog park and the creek (Figures 3 and 4). The vegetation community within the parking area is the same as that within the dog park- non-native, ruderal vegetation. The new parking stalls would be a continuation of an asphalt area that is currently used for Center parking.

Located approximately 175 feet southwest of the parking area proposed for the dog park is San Pedro Creek and associated riparian habitat. San Pedro Creek is a perennial creek that supports various wildlife species including the special-status steelhead (*Oncorhynchus mykiss*) and

California red-legged frog (*Rana aurora draytonii*). San Pedro Creek at the location of the Center was included in a creek restoration project implemented by the City in 2005 (TRA 2008).

There is a cyclone fence between the Center and San Pedro Creek (Figure 4). A hole in the fence was observed during the site survey on January 21 and was also present when TRA surveyed the creek in the summer of 2008. The hole is large enough to allow people and dogs through.

## **B. Wildlife**

One bird, a black phoebe (*Sayornis nigricans*), was seen in the immediate vicinity of the project area during the site survey. Other common bird species such as various sparrows, robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), and California towhee (*Pipilo crissalis*), among others, may occur in the vicinity of the site. The project site itself offers limited foraging habitat and no nesting habitat for birds. Reptiles such as western terrestrial garter snake (*Thamnophis elegans*) and fence lizard (*Sceloporus occidentalis*) may be found on or in the vicinity of the project area. Mammals that may occur on or in the vicinity of the site include common species such as California meadow vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*) and raccoon (*Procyon lotor*). No ground squirrel burrows were seen on site. Various insects including butterflies may utilize the site, however, no special-status butterflies could occur on site due to the absence of their larval food plants.

Bird species seen or heard in the riparian corridor of San Pedro Creek at the time of the site visit include pygmy nuthatch (*Sitta pygmaea*), Townsend's warbler (*Dendroica townsendi*), chestnut-backed chickadee (*Poecile rufescens*), ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), and Anna's hummingbird (*Calypte anna*). Numerous other bird species are common in coastal riparian systems and are expected to occur. In addition to steelhead and red-legged frog, other aquatic species present in San Pedro Creek include Pacific tree frog (*Pseudacris regilla*), prickly sculpin (*Cottus asper*), three-spined stickleback (*Gasterosteus aculeatus*), and Pacific lamprey (*Lampetra tridentate*).

The project site is surrounded on three sides by urban development and does not serve as a movement corridor for wildlife.

## **C. Special-status Species**

The half acre project site does not support habitat for special-status species (such as federal or state-listed species). San Pedro Creek is known to provide habitat for steelhead (Central California Coast Evolutionary Significant Unit (ESU) listed as Threatened with the National Marine Fisheries Service) and California red-legged frog (Federal Threatened and California Species of Special Concern). However, the site does not support suitable upland habitat for the frog as there are no wetted areas, no burrows or other places for refuge, and no such habitat exists in the project vicinity that would lead a frog to travel through the site.

## **VI. ANALYSIS OF IMPACTS**

As development of the dog park would not require any grading, major ground disturbance, or use of heavy equipment, the analysis of impacts to biological resources are focused on the

operational effects of dog park use. Impacts are described below, followed by sections on surfacing alternatives and mitigation recommendations.

### **A. Watershed contamination**

Dog waste is considered a significant bacterial pollutant in urban watersheds, and could introduce giardia, E. coli, and salmonella as well as other bacteria to the San Pedro Creek watershed (LEES + Associates 2005). Humans are susceptible to these bacteria, as well as to parasites such as hookworms, tapeworms and roundworms that may be present in dog feces. Dog urine does not carry the risk of bacterial or parasitic contamination that dog feces does, but urine can burn vegetation due to chemicals such as nitrogen and acid present in the urine. Run off from the dog park during storm events can carry urine and feces with it which can pose the risk of contamination to nearby San Pedro Creek. Picking up dog waste significantly reduces the degree of contamination, although some waste and bacteria may still be left behind.

Dog waste is also a nutrient pollutant, and dog feces carry high levels of nutrients such as phosphorous, carbon, and nitrogen, which can degrade waters (LEES + Associates 2005). Increased nitrogen can also change soil composition such that non native weedy species are favored over native vegetation.

The project site is earthen and rainfall is absorbed by the ground (or may surface flow in large storm events) and contributes to the San Pedro Creek watershed. The accumulation of dog waste at the dog park could result in degradation of water quality at San Pedro Creek and increased levels of nitrogen in the soil if the project isn't designed or mitigated to prevent such impacts.

The area in and around the project site is currently used by members of the public for off-leash dog recreation and no dog waste bags or trash receptacles are provided. Therefore, it is likely that dog waste is currently being left on the ground by some of these users. Providing a formalized dog park is likely to increase the numbers of users to the area, but will likely encourage removal of dog waste as 1) there is an increased likelihood that dog owners will see when dogs defecate, 2) a dispenser for dog waste bags and waste receptacles will be provided, 3) there is well-respected etiquette within a dog park to pick up after one's dog, and 4) site stewards will often remove the leftover waste of other dogs at opening or closing time.

### **B. Wildlife and plants**

The project site does not support any sensitive plants, wildlife or habitat, and therefore no direct impact would occur to sensitive wildlife or plant species as a result of off-leash dog recreation in the designated dog park. The project site is of low habitat value. It is assumed to be regularly mowed and currently supports a ruderal vegetation community of non-native plants. The establishment of the dog park may further degrade the habitat value of this site. Depending on the surfacing material chosen, vegetative cover may decrease, the soil may be disturbed as dogs dig, and common wildlife such as the species described in section V.B may reduce their use of the site. However, as the site is already of low habitat value and only approximately one-half acre in size, such a change does not represent a significant impact to wildlife or plants. Off-leash dogs could potentially impact wildlife by chasing, biting, barking, digging, and/or otherwise harassing and injuring animals. However, as the dog park will be fenced, the occurrence of dogs

impacting wildlife is expected to be reduced from the existing condition (use of unfenced area by off-leash dogs).

Bacterial and nutrient pollution from dog waste may have a negative, indirect effect on species, including the protected species that inhabit San Pedro Creek. The lower watershed of San Pedro Creek is located in an urban environment with a variety of sources for bacterial pollution, and species within the creek are already residing in an environment with some level of contamination (water quality data managed by the City of Pacifica). With establishment of a dog park, it is desired to minimize additional pollution of the creek so that any increase is so small as to not significantly increase the bacterial load downstream from the dog park. Recommendations for minimization of dog waste contamination are provided later in this report.

### **C. Dog access to San Pedro Creek**

At the time of the site survey, a hole in the cyclone fence along the San Pedro Creek corridor was found down-slope from the Center (see photo 3 in Appendix A). Dog owners have been seen utilizing the area behind the Center for off-leash dog play. Dogs may access the creek and riparian area through the hole in the fence. Dogs could go in the stream, potentially affecting aquatic resources such as fish spawning gravels, micro-organisms, and/or disturbing sediment. Dogs may deposit waste within the creek corridor. Off-leash dogs could also potentially impact native habitat through digging up and/or trampling vegetation. Damaged vegetation from digging and trampling could result in bank erosion and an increase in sediment filled runoff entering the creek during the rainy season. As the number of dog owners is likely to increase with the development of a designated dog park, the potential for impact to the creek from off-leash dogs will also increase unless the hole in the fence is repaired and the fence is regularly monitored to ensure that no new holes are created.

## **VII. SURFACING ALTERNATIVES**

Various surface alternatives for the dog park are available, and all have benefits and costs. These surfaces are described below, and measures that can reduce dog waste contamination with respect to surfacing are described in Section VIII.

### **A. Turf**

Turf has been a common surfacing material in dog parks, although turf is often trampled and torn up by the dogs and burned from dog urine, presenting a maintenance problem for managers. As turf gets torn up, areas of bare dirt can result in dirty and muddy dogs, which users typically want to avoid. To maintain turf, park managers may invest in irrigation, fertilizing, seeding, etc., which in addition to increasing resources required for maintenance, may have a negative impact on the adjacent creek and riparian habitats through the run-off of irrigation water carrying fertilizer and dog waste if the project isn't designed or mitigated to prevent such impacts. Turf may also be managed by rotating use within a dog park, and closing off sections at certain times to allow the turf to recover.

## **B. Mulch/Wood Chips**

Mulch or wood chips such as redwood chips are easy to maintain, reduce weeds, and keep dogs clean. They do absorb odors from dog waste, and some municipalities that utilize mulch in their dog parks replace the mulch annually. Mulch has the advantage of providing a permeable surface that is easily maintained. The disadvantages are that it is harder to see dog feces and thus waste is more likely to be left on the ground, dogs tend to chew on and eat the chips, and chips or mulch from softer wood degrade quickly.

## **C. Earthen- no change to existing surface**

The dog park and parking area are currently earthen and support primarily non-native, herbaceous species that are regularly mowed. In establishing the dog park, the City may opt to make no change in surfacing, and rather continue mowing the site as needed. Utilizing the existing surface is low cost and would not require fertilizer or irrigation. Dogs may get dirty or muddy playing in the dog park depending on rainfall. Also, dog feces may be less likely to be seen than on another surface such as decomposed granite (described below).

## **D. Decomposed granite**

Decomposed granite is comprised of granite rock that has decomposed into a gravel-like material that can range in size from a sand particle to 3/8 inch. Decomposed granite is popular for use in dog parks as it does not absorb odor from dog waste, it keeps the dog park from getting muddy, it can be brushed off of dogs' fur, and is durable. Dog park managers often install irrigation over decomposed granite to keep it clean, and watering of decomposed granite as often as three times a week has been reported (Allen 2007). Watering the decomposed granite to clean off dirt and dust would increase the transport of dog waste into the watershed if the project isn't designed or mitigated to prevent such impacts. Therefore if decomposed granite is used as a surfacing material at the proposed dog park, very limited to no watering of the surface is optimal.

## **E. Pea gravel**

Pea gravel consists of very small (1/4 to 1/2 inch), smooth rocks used to create aggregate concrete surfaces or used as a walking or driving surface. The benefits of pea gravel are similar to decomposed granite, although due to the slightly larger size, pea gravel may be rougher on dog paws than decomposed granite. Pea gravel is inexpensive and easy to maintain.

## **VIII. RECOMMENDATIONS**

**A. Surfacing.** Of the surfacing materials discussed above, maintaining the existing, earthen/ruderal vegetation surface with regular mowing, decomposed granite or pea gravel, or a combination of these materials is recommended. These options are low cost, easily maintained, and suitable for dog play. A combination of surfacing that includes a boundary of existing, earthen surface with a strip of decomposed granite may be an option worth considering. It is recommended that decomposed granite be watered/irrigated seldom to never. Turf is not recommended as it is not durable and requires irrigation, which would result in increased transport of dog waste into the watershed if the project isn't designed or mitigated to prevent

such impacts. Mulch is typically not preferred by dog owners and would need to be replaced periodically.

**B. Double gate.** Installation of a double gate at the dog park would reduce the likelihood that unleashed dogs escape from the park when a user enters or exits. A double gate is typically preferred by dog owners as a safety measure for the dogs, and would also add a layer of protection in keeping off-leash dogs restricted to the designated dog park.

**C. User education.** It is recommended that the City post signs at the dog park informing users to limit off-leash dog play to within the dog park and to clean up dog waste. Educational signs could also be provided that explain to users the habitat value of San Pedro Creek and the threat of contamination to the creek posed by dog waste.

**D. Repair and maintain fence at San Pedro Creek.** The fence at San Pedro Creek should be repaired as soon as possible and regularly monitored for new holes to prohibit dog and human entrance into the creek and restoration area.

**E. Park maintenance.** The City should routinely service the dog park to ensure that the plastic bag dispenser is being stocked by users, the trash receptacle is adequate in size and being regularly emptied, and that any accumulated dog waste found within the dog park is removed. If it is found that users are not stocking the bag dispenser with plastic bags, the City may want to consider that they adopt this task to ensure that bags for dog waste are always available.

**F. Study site hydrology to determine need for installation of bioswale or French drain.** Due to the very gradual, downhill slope of the dog park, it is not expected that there would be significant surface flow off of the site. However, in the event of a heavy storm there may be surface flow that causes water from the dog park to run down slope towards San Pedro Creek. It is recommended that the potential for hydrological impacts be analyzed prior to dog park construction. Remedies for hydrological impacts may include construction of a bioswale or a French drain alongside the southwest (creek facing) border of the dog park to provide a natural way to help filter water moving off of the dog park surface.

## IX. CEQA BIOLOGICAL EFFECTS

### Will the proposed project:

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

**Less than significant with mitigation incorporated.** No special-status species have potential to occur within the project area and no direct impacts to species are anticipated. Dog waste may introduce bacteria, parasites and nutrients into the watershed if the project isn't designed or mitigated to prevent such impacts. Watershed contamination may have an indirect effect on special-status species that reside within San Pedro Creek. Impacts to special-status species will be less than significant with the following mitigation incorporated:

**The City of Pacifica will 1) provide a plastic bag dispenser for dog waste bags and a trash receptacle that is regularly emptied, 2) post signs notifying users to pick up dog waste, 3) avoid impermeable surfacing in the park, and 4) analyze the potential for hydrological impacts prior to dog park construction.**

b. 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 California Department of Fish and Game or US Fish and Wildlife Service?

**No impact.** The project area is limited to non-native grassland/ruderal habitat. There will be no tree or shrub removal. There are no sensitive natural communities within the project area.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 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?

**No impact.** The project site does not support any wetland habitat. There will be no construction of storm drains or other storm flow management features.

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?

**No impact.** The project site is approximately 24,000 square feet and is surrounded on three sides by urban development. The site does not provide a movement corridor for wildlife or access to native wildlife nursery sites.

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

**No impact.** The project site does not support any protected biological resources such as sensitive habitats or trees, and does not conflict with any City of Pacifica policies or ordinances protecting biological resources.

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?

**No impact.** The project site does not contain habitat for species protected under a Habitat Conservation Plan or a Natural Community Conservation Plan. There are no habitat plans that pertain to the project site.

## **X. REFERENCES**

- Allen, Laurel. 2007. Dog Parks: Benefits and Liabilities. Department of Earth and Environmental Studies Master of Environmental Studies Capstone Projects. University of Pennsylvania. This paper is posted at ScholarlyCommons@Penn.
- LEES + Associates Landscape Architects. 2005. Dealing with Dog Waste in Vancouver Parks at Everett Crowley Park. Available from LEES + Associates at <http://www.elac.bc.ca/>.
- TRA Environmental Sciences. 2008. Capistrano Bridge Fish Passage Project, 2008 Monitoring Report. Prepared for the City of Pacifica. July.

**Appendix A. Representative Photos taken January 21, 2009**



Photo 1. Area proposed for dog park. Photo was taken facing north toward Linda Mar Blvd.



Photo 2. Area proposed for parking stalls



Photo 3. San Pedro Creek and protective fence. A large hole in the fence is located to the right of the blue sign.

**Pacifica Dog Park at the  
Pacifica Center for the Arts  
Initial Study/Mitigated Negative Declaration**

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**Appendix B**

**Preferred Alternative for Addressing Fecal Coliform Runoff at the  
Pacifica Center for The Arts Dog Park, TRA Environmental  
Sciences, January 2010**



545 Middlefield Road, Suite 200  
Menlo Park, CA 94025-3472  
Tel: (650) 327-0429  
Fax: (650) 327-4024  
www.TRAenviro.com

## Memo

**To:** Mr. Michael Crabtree, Planning Director  
City of Pacifica  
Planning and Building Department  
1800 Francisco Boulevard  
Pacifica, CA 94044

**From:** Rebecca Sloan, Associate Biologist/CEQA Analyst  
Mike Liquori, Principal, Sound Watershed Consulting, LLC

**Subject:** Preferred alternative for addressing fecal coliform runoff at the Pacifica Center for the Arts Dog Park

**Date:** January 6, 2010

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### Overview

The increased loading of fecal coliform to San Pedro Creek as a result of the proposed Pacifica Center for the Arts Dog Park (Dog Park) would likely result in a potentially significant impact pursuant to Appendix G (Initial Study Checklist) of the California Environmental Quality Act (CEQA) Guidelines. Therefore, TRA Environmental Sciences, Inc (TRA) conducted a detailed internet search to find scientific, peer-reviewed journal articles and technical reports that address fecal coliform loading in small, urban areas such as that of the proposed project site.

We found two documents that were of most relevance to the Dog Park: *Can Stormwater BMPs Remove Bacteria? New Findings from the International Stormwater BMP Database* by Clary et al. (2008), and the *Stormwater Treatment Options For Reducing Bacteria In Arroyo Burro And Mission Creek Watersheds* by the City of Santa Barbara and URS Corporation (2002).

We also did a websearch to see if there were products already on the market that could solve this issue. Based on these two types of searches, and after conferring with geomorphologist Mike Liquori of Sound Watershed Consulting, LLC, we can now recommend a solution with three components:

- 1) A passive-treatment filtration system,
- 2) A vegetated bioswale, and
- 3) A vegetated buffer strip.

We feel that this combination will meet the City's objectives in a cost-effective, low-maintenance and aesthetically pleasing manner. Filtering systems are generally made up of a multi-chamber vault system that passes water through a media substrate, such as sand or carbon, to filter out contaminants. Filter systems, if designed properly, work well in size-constrained sites in highly urbanized areas, and could work especially well in the area between the proposed dog park and San Pedro Creek. Filtering systems have known efficacy rates for all of the standard urban pollutants, including fecal coliform. Additionally, they are relatively inexpensive to install and maintain.

The website search revealed what we think is the best solution: the Bacterra Bioretention System for the passive-treatment filtration system (see <http://www.filterra.com/index.php/product/bacterra>). This underground filtering unit comes pre-assembled to the site as a pre-cast concrete structure and includes a filter chamber filled with a proprietary blend of filter media (mulch and engineered soil media), piping, top grates, and a tree. The device works by routing runoff into the structure in a manner that removes and collects trash while filtering runoff through the media. According to the manufacturer's website, Bacterra units typically remove 77% - 99% of fecal coliform from on-site runoff.

## **BACKGROUND INFORMATION/DUE DILIGENCE**

Clary et al. (2008) found that most traditional BMPs for minimizing fecal coliform levels in on-site runoff generally produce inconsistent, unpredictable results. While effective in treating other water quality constituents, detention ponds and swales were found to have low effectiveness in reducing fecal coliform levels and in some cases increased fecal coliform levels. This may be due to the attraction these aquatic features have for waterfowl, small mammals, and domestic pets, all of which contribute to fecal coliform loading.

The City of Santa Barbara and URS Corporation (2002) recommended active treatment systems as a highly effective method for treating fecal coliform. Such active treatment methods are typically applied at large-scale wastewater treatment facilities. The two most common active treatment systems use chlorine and ultraviolet irradiation to disinfect on-site stormwater and/or wastewater (EPA 2008). Although these treatment options are known to be highly effective in the treatment of fecal coliform, installation and maintenance costs are very large (City of Santa Barbara and URS Corporation 2002). Given the large scope and scale of such treatment alternatives, TRA did not consider an active treatment system as a viable alternative for the Dog Park facility.

The City of Santa Barbara and URS Corporation also recommended infiltration trenches as a highly effective method for removing fecal coliform in small, urbanized settings. Infiltration trenches are usually 3- to 12-foot deep trenches lined with a filtering fabric and backfilled with stone aggregate. Infiltration trenches function primarily by promoting saturation, and thus filtration, through surrounding soils (EPA 1999a). However, three characteristics of infiltration trenches make them impractical for the Dog Park site: (1) the potentially high level of maintenance required to remove sediment build up and replace trench filtering components (EPA 1999a), (2) the need for highly permeable soils (>0.5 in/hour) (Atlanta Regional Commission 2001), and (3) the proximity of the infiltration zone to the creek and associated riparian aquifer.

Our research found two BMPs in the Clary et. al. article that showed some promise in the treatment of fecal coliform: retention ponds and media filters or filter systems (including biofiltration cells). A retention pond would require substantial site grading and geotechnical design given the existing site topography and runoff characteristics. Therefore, TRA dismissed the concept of using a detention and/or retention pond as the primary treatment option at the Dog Park site.

## **MORE INFORMATION ON THE RECOMMENDED ALTERNATIVE**

The Bacteria Bioretention system is relatively inexpensive to install and maintain, requiring the excavation of a hole of sufficient size to house the unit, the annual replacement of a 3-inch layer of shredded hardwood mulch within the filter housing, and routine trash removal. Visible above ground is the concrete-framed, unfiltered opening, a tree, and the SDR-35 PVC outlet pipe. The tree comes with the unit and is planted within the filter media. The tree provides an aesthetic value but also improves water infiltration through the filter media because the roots keep the soil from compacting and solidifying, (see figure to the right). There are a number of tree species to choose from that are suitable for the climate in the City of Pacifica, including those native to the site (e.g., Pacific Coast Wax Myrtle (*Myrica californica*) and Toyon (*Heteromeles arbutifolia*)).



Cross-section of Bacteria filter unit. Stormwater enters through the throat-like opening, moves through the filter media, and exits via a pipe. The outlet pipe at the Dog Park site will be aboveground and will empty into a vegetated bioswale.

We recommend installing a vegetated buffer strip above the Bacteria filter inlet. The buffer strip should be a minimum of 3 feet wide. A more detailed site plan should be determined during the design phase. This vegetated buffer strip will attenuate sheet flows and reduce runoff volumes into the Bacteria filter. The buffer strip will also act as a pre-filter by reducing the concentration of some contaminants such as motor oil and total suspended solids (Barr Engineering 2001).

Below the filtration unit, we recommend installing a vegetated bioswale that will convey the water from the Bacteria filter away from the site and toward San Pedro Creek. This bioswale will help avoid erosion in the conveyance of treated water away from the site, reduce hydromodification impacts, and promote additional water quality treatment. The bioswale, like the vegetated buffer strip, will also provide some secondary treatment benefits for urban runoff constituents such as sediment, nutrients, total suspended solids, heavy metals and hydrocarbons typically associated with parking lot runoff.

## **DESIGN REQUIREMENTS FOR THE RECOMMENDED ALTERNATIVE**

As suggested above, implementing this recommended solution will require a more complete site design that includes considerations for site grading, more detailed site hydrology, the configuration of the BMP features (filter box, vegetated strip and bioswale), and associated

specifications. We also recommend a site survey be conducted to clarify how much regrading will need to occur. Regrading the site will ensure that the entire Dog Park footprint drains (sheetflows) directly into the BMP system. The highest point should be at the northeast corner of the Dog Park site, at the residential property line. It is possible that this point needs to be as much as 6 inches higher than existing. This will avoid the puddling and pooling of contaminated water within the fenced-in area of the Dog Park.

Filter systems can be placed either above-ground or below-ground and vary considerably by size and media, although sand and mulch are the most common media types. Underground filter systems work best in confined, urban settings with a high percentage of impervious surfaces, like those at the Dog Park site. Underground filters generally require some level of maintenance (EPA 1999b) and a sufficient elevation difference between the filter inlet and outlet (Barr Engineering 2001). Filter systems are also on the lower end of capital and maintenance costs (City of Santa Barbara and URS Corporation 2002).

## **COSTS FOR THE RECOMMENDED ALTERNATIVE**

Cost considerations for this recommended alternative are provided below for design, construction and maintenance. These cost estimates are preliminary and subject to revision as additional detail is developed. They also assume that the scope and scale of the design is somewhat thrifty. Additional site improvements (e.g. redundant drainage, sub-grades, additional aesthetic improvements, etc) would add to these costs, and can be more fully explored during the design phase.

### **Design**

Design costs typically include detailed site analysis, site design, and construction oversight. Pre-design analysis will include a more detailed assessment of the site hydrology, grading needs, vegetation requirements and site configuration alternatives. A full design will include drawings and specifications for key design elements, including a site plan, typical drawings, vegetation plan, etc. Typical costs for a full design for a project of this size and scope range from \$8,000 to \$20,000, depending on the level of detail and the amount of construction supervision required.

### **Construction**

Construction costs at this stage should be considered preliminary, and can be clarified following site design. The filter box is the most expensive element, and will cost about \$10,000. Costs for grading, drainage controls, planting, irrigation support, mulch, and misc. supplies for the buffer strip and bioswale will likely range from about \$8,000 to \$25,000, depending on the site details. Thus we estimate a total construction cost of approximately \$20-35,000 for these elements, noting that some cost savings may be achieved by incorporating these costs into other design elements (e.g. fencing, paving, etc).

## **Maintenance**

Maintenance for the site will include trash removal, replacement of mulch media in the filter box, and potential sediment accumulation removal after large storms, and occasional erosion remediation. With proper design and site construction, costs for these activities will usually be only a few hundred dollars per year.

## REFERENCES

Atlanta Regional Commission. 2001. Georgia Stormwater Management Manual, Volume 2: Technical Handbook. Accessed online at <http://www.georgiastormwater.com/vol2/title.pdf> (December 28, 2009).

Barr Engineering Company. 2001. Minnesota Urban Small Sites BMP Manual, Prepared for the Metropolitan Council. Accessed online at [http://www.metrocouncil.org/environment/water/BMP/Title\\_toc\\_intro.pdf](http://www.metrocouncil.org/environment/water/BMP/Title_toc_intro.pdf) (December 28, 2009).

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Clary, J., Jones, J., Urbonas, B., Quigley, M., Strecker, E., and Wagner, T. (2008) Can Stormwater BMPs Remove Bacteria? New Findings from the International Stormwater BMP Database. Stormwater Magazine May/June 2008.

Environmental Protection Agency (EPA). 1999a. Storm Water Technology Fact Sheet: Infiltration Trench. Office of Water, Washington D.C. EPA 832-F-99-019. Accessed online at <http://www.epa.gov/owm/mtb/infltrenc.pdf> (December 28, 2009).

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EPA. 2008. Onsite Wastewater Treatment Systems Technology Fact Sheet 4. EPA 625/R-00/008. Last updated April 14<sup>th</sup>, 2008. Accessed online at <http://www.epa.gov/nrmrl/pubs/625r00008/html/tfs4.htm> (December 28, 2009).

San Mateo Countywide Water Pollution Prevention Program. 2007. C.3 Stormwater Technical Guidance. Updated December 2007. Accessed November 16, 2009 at <http://www.flowstobay.org/documents/business/new-development/C.3%20Tech%20Guidance%20Complete%20December%20Update.pdf>.

**Pacifica Dog Park at the  
Pacifica Center for the Arts  
Initial Study/Mitigated Negative Declaration**

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Appendix C

Pacifica Dog Park Biofiltration Swale Technical Memo, Sound  
Watershed Consulting, April 2010



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## DRAFT MEMORANDUM

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**TO:** MR. MICHAEL CRABTREE, PLANNING DIRECTOR  
CITY OF PACIFICA  
PLANNING AND BUILDING DEPARTMENT  
1800 FRANCISCO BOULEVARD  
PACIFICA, CA 94044

**FROM:** MIKE LIQUORI, PRINCIPAL

**SUBJECT:** PACIFICA DOG PARK BIOFILTRATION SWALE

**DATE:** APRIL 21, 2010

**CC:** CHRISTINE SCHNEIDER, TRA ENVIRONMENTAL

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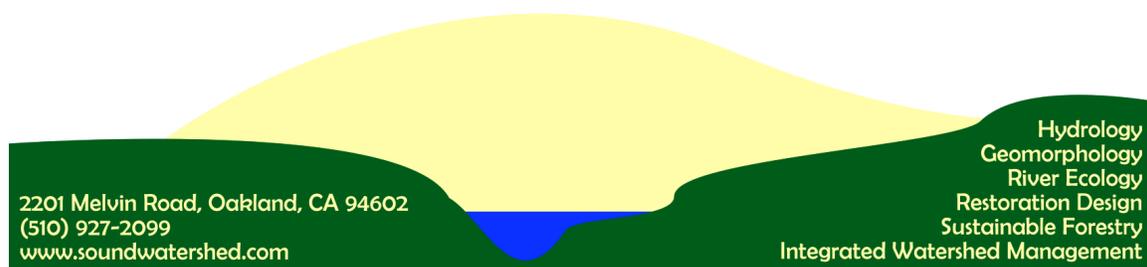
This memo provides the findings and recommendations of our hydrologic evaluation related to treating stormwater drainage at the proposed Pacifica Dog Park near Pacifica Center for the Arts in Pacifica, CA.

These findings and recommendations are based on a visual site assessment and topographic survey followed by geographic data interpretation and hydrologic analysis.

### ASSESSMENT METHODS

SWC conducted a visual assessment and site survey on April 16, 2010. The assessment included

- observations of general surface soil characteristics
- general vegetation patterns



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- existing site configuration, including fence lines, pavement, adjacent buildings, and rain gutter downspouts; and
- distinct topographic features, including swales and terraces.

### **Topographic Survey & Geographic Data Interpretation**

During the April 16, 2010 site visit SWC also conducted a topographic survey within the Site Boundary. Using a Leica Builder R100M total station, SWC surveyed approximately 500 elevation points (see Figure 1). The purpose of the survey was to verify drainage directions sufficient to determine runoff pathways, associated contributing areas, and to identify any significant areas of detention storage. Given the generally flat topography of the site, such factors were not obvious in the absence of the survey. The survey identified the location of distinct topographic features (breaks in slope, swales, and terraces), as well as existing infrastructure (rain gutter downspouts, edges of pavement, and adjacent buildings).

Using ArcGIS software, SWC constructed a Triangulated Irregular Network (TIN) from the elevation points. From this TIN we generated a Digital Elevation Model (DEM) and topographic contour map (Figure 1).

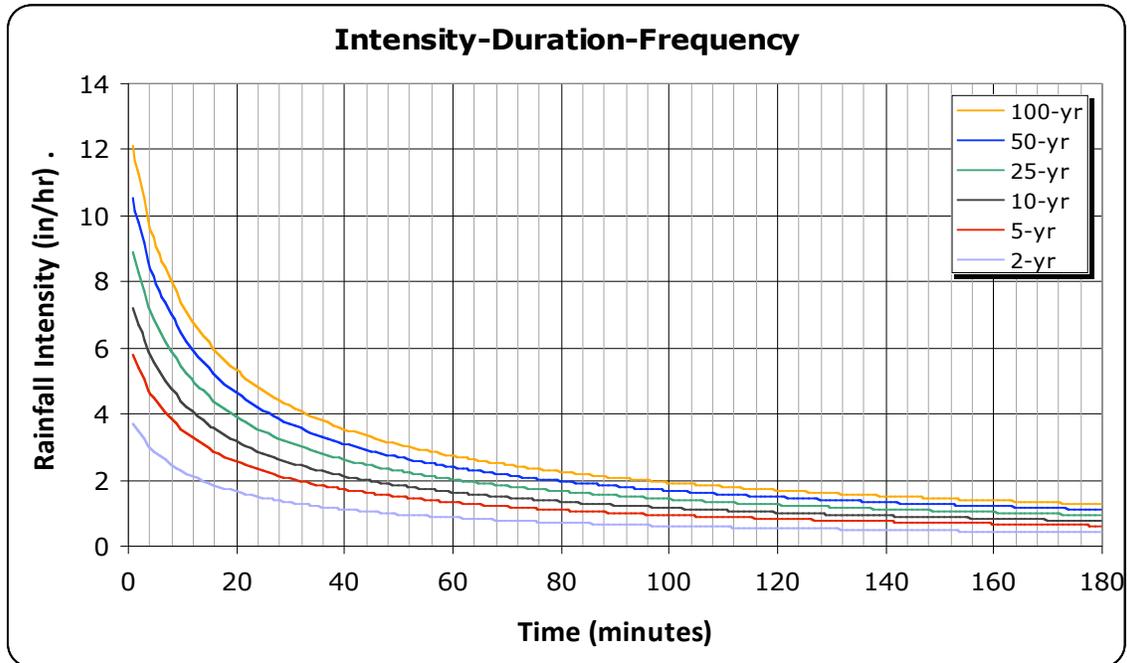
### **Hydrologic Analysis**

Sound Watershed developed a site-specific rainfall plot to estimate the rainfall intensity, duration and frequency based on estimated NOAA Atlas 2 v.11 values. This plot was used in combination with Time of Concentration and Rational Equation estimates for peak runoff magnitude and total runoff volumes from the site.

**Table 1) 24-Hour Storm Precipitation Totals Based on NOAA Atlas 11 map values.**

<b>24-hr Storm Totals (in)</b>	
2-yr	2.7
5-yr	4.0
10-yr	4.5
25-yr	6.0
50-yr	6.8
100-yr	7.5

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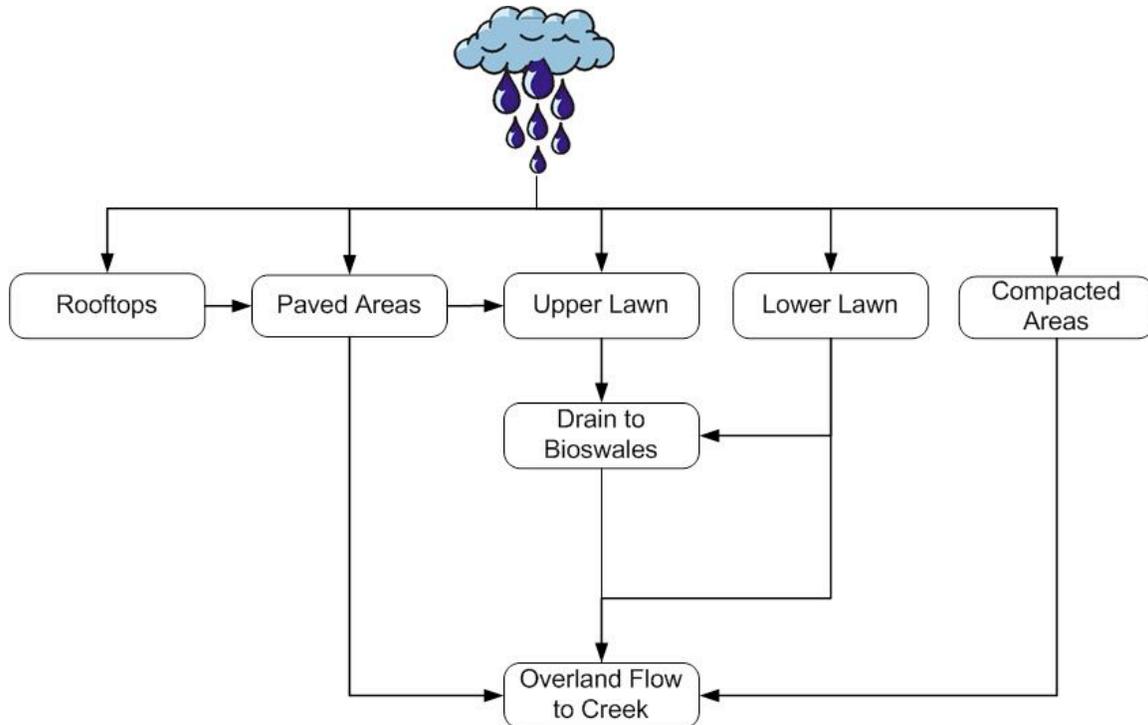
**24-hr Storm runoff Volumes**

24-hr storm runoff volumes for the 2-yr, 5-yr, 10-yr, 25-yr, 50-yr and 100-yr storm event were calculated using the following rainfall-runoff equation provided by the Soil Conservation Service (USDA, 1973):

$$Q_v = (P - 0.2*S)^2 / (P + 0.8*S)$$

Where  $Q_v$  is the total depth of accumulated runoff,  $P$  is the total depth of accumulated precipitation, and  $S$  is the potential maximum retention and varies with surface type (pavement, meadow, etc) and SCS Curve Number (CN) (USDA, 1986). Curve Numbers were obtained from Haan et al (1994). We calculated  $Q_v$  for each type of contributing surface and then multiplied that figure by the entire area covered by each particular surface type. The result is the total discharge volumes for each area.

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We recognize that the runoff volumes from the rooftops and a portion of the pavement is partly attenuated by routing this runoff through the lawn area, where detention storage, evapotranspiration and infiltration can reduce the total runoff capacity from these impervious areas. We developed a simple routing model (see above) to help identify the sources-areas for this attenuation effect. To estimate the total attenuation, the volumetric runoff from impervious areas upslope of vegetated buffers were apportioned to based on the total volume delivered and the total area receiving the water (assuming that the water is distributed uniformly over the entire area). The result was an additional "effective rainfall factor" that was added to the receiving zone precipitation factor prior to calculating the  $Q_v$  calculation.

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**Table 2) Net attenuation effect of routing impervious runoff thru upper lawn** (see text for description of the method).

<b>Net Attenuation Effect from Routing Impervious Runoff thru Vegetated Buffers</b>	
2-yr	30.8%
5-yr	17.7%
10-yr	14.8%
25-yr	9.4%
50-yr	7.6%
100-yr	6.4%

must also pass over the lawn on the south-east side of the property. We accounted for any infiltration that would occur during such flow by adding the discharge volumes of the rooftop and a portion of the pavement to the precipitation input of the lawn. Discharge from the lawn thus includes and discharge from the rooftop or pavement that does not infiltrate.

### **Peak runoff discharges**

SWC also calculated expected peak discharge for the 2-yr, 10-yr, 25-yr, and 100-yr storm events using the Rational Method (Haan et al 1993):

$$Q_p = CiA$$

Where  $Q_p$  is peak discharge,  $A$  is contributing area,  $i$  is rainfall intensity, and  $C$  is a runoff coefficient that varies with surface type. Using precipitation data identified above, characteristic slopes and lengths of the flow path from the topographic survey, and estimated Manning's  $n$  values, we generated time of concentration values and rainfall intensity values (see above). We then used these rainfall intensity values in the Rational Method to estimate peak discharge. Our input parameters for each of the surface type are provided in the output tables.

The runoff time of concentrations are small enough for this site that we can simply assume that the duration of peak runoff is sufficiently long as to reach steady state (and thus it is not necessary to route the peaks from each area). This allows us to estimate the peak as a simple sum from each area.

## Rainfall-Runoff Estimates

Proposed Surface Type	Curve Number	S - Value	Total Area (acres)	24-hr Storm Volumes (cubic ft), $V = Q * A * 43560 / 12$					
				2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
<b>Drain Routing</b>									
Rooftop	98	0.20	0.348	3119	4754	5385	7276	8285	9168
Pavement Routed to Upper Lawn	98	0.20	0.159	4539	6925	7843	10600	12071	13359
Upper Lawn Routed to Drain	69	4.49	0.603	3928	7985	9675	14991	17929	20540
<b>Overland Routing</b>									
Pavement Routed Overland	98	0.20	0.105	941	1435	1625	2196	2500	2767
Proposed Parking Area (paved)	92	0.87	0.086	589	977	1129	1588	1835	2052
Lower Lawn Routed Overland	61	6.39	0.228	214	671	891	1656	2113	2534
Bioswale Area	65	5.38	0.102	139	382	494	872	1094	1296
Compacted	82	2.20	0.037	152	292	349	529	627	714
<b>Net Volume Routed to Inlet Drain</b>			<b>1.11</b>	<b>3,928</b>	<b>7,985</b>	<b>9,675</b>	<b>14,991</b>	<b>17,929</b>	<b>20,540</b>
<b>Net Volume Routed Overland</b>			<b>0.56</b>	<b>2,035</b>	<b>3,756</b>	<b>4,488</b>	<b>6,842</b>	<b>8,170</b>	<b>9,363</b>
<b>Total Delivered to Bioswale</b>			<b>1.67</b>	<b>5,963</b>	<b>11,742</b>	<b>14,163</b>	<b>21,832</b>	<b>26,099</b>	<b>29,904</b>
<b>Proposed Parking Area (paved)</b>	98	0.20	0.086	774	1180	1336	1805	2056	2275
<b>Proposed Parking Area (grassed)</b>	74	3.51	0.086	227	500	618	998	1212	1404
<b>Difference</b>				<b>547</b>	<b>680</b>	<b>718</b>	<b>807</b>	<b>844</b>	<b>871</b>



### Peak Discharge Estimates

Proposed Surface Type	Total Area (acres)	Runoff Coefficient C	Char Slope	Char Length (ft)	Manning's n	Discharge (cfs)					
						2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
<b>Drain Routing</b>											
<b>Rooftop</b>	0.348	0.97	0.0100	38	0.010	1.24	1.95	2.41	2.99	3.55	4.07
<b>Pavement Routed to Upper Lawn</b>	0.159	0.92	0.0225	42	0.013	0.54	0.84	1.05	1.30	1.54	1.76
<b>Upper Lawn Routed to Drain</b>	0.603	0.15	0.0176	359	0.030	0.21	0.35	0.45	0.59	0.70	0.84
<b>Overland Routing</b>											
<b>Pavement Routed Overland</b>	0.105	0.92	0.0225	42	0.013	0.36	0.56	0.69	0.86	1.02	1.16
<b>Proposed Parking Area (paved)</b>	0.086	0.92	0.0225	42	0.013	0.29	0.46	0.57	0.70	0.83	0.96
<b>Lower Lawn Routed Overland</b>	0.228	0.20	0.1230	113	0.036	0.15	0.24	0.30	0.37	0.44	0.51
<b>Bioswale Area</b>	0.102	0.15	0.1230	113	0.036	0.05	0.08	0.10	0.13	0.15	0.17
<b>Compacted</b>	0.037	0.65	0.0361	13	0.037	0.09	0.14	0.17	0.21	0.25	0.29
<b>Net Volume Routed to Inlet Drain</b>	<b>1.11</b>					<b>2.00</b>	<b>3.14</b>	<b>3.91</b>	<b>4.87</b>	<b>5.78</b>	<b>6.68</b>
<b>Net Volume Routed Overland</b>	<b>0.56</b>					<b>0.93</b>	<b>1.48</b>	<b>1.83</b>	<b>2.27</b>	<b>2.69</b>	<b>3.09</b>
<b>Total Delivered to Bioswale</b>	<b>1.67</b>					<b>2.93</b>	<b>4.62</b>	<b>5.75</b>	<b>7.14</b>	<b>8.48</b>	<b>9.77</b>

<b>Proposed Parking Area (paved)</b>	0.086	0.92	0.0225	42	0.013	0.29	0.46	0.57	0.70	0.83	0.96
<b>Proposed Parking Area (grassed)</b>	0.086	0.10	0.0225	42	0.036	0.02	0.03	0.04	0.06	0.07	0.08
<b>Difference</b>						<b>0.27</b>	<b>0.43</b>	<b>0.53</b>	<b>0.65</b>	<b>0.77</b>	<b>0.88</b>



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## HYDROLOGIC INFLUENCES ON THE CONCEPTUAL SITE DESIGN

We understand that the objective of the project is to provide runoff treatment to mitigate for fecal coliform and/or other bacterial pollutants that are likely to be delivered to San Pedro Creek. The information provided in this Technical Memo can be used to develop more detailed designs and specifications for both the drop inlet and the bioswale.

Generally, pollutant levels can be mitigated through filter media or phytoremediation associated with certain plant communities. The majority of phytoremediation occurs in the root zone of plants (rhizosphere). The root zone represents a microenvironment where bacteria and fungi form a unique community among the soils, roots and groundwater that can detoxify hazardous compounds. Plants provides mineral nutrients to the microbial community that stimulate activity among the micro-organisms. These plant communities typically increase the abundance of microorganisms in the root zone by 5-20 times (and can be greater than 100 times) compared to non-vegetated soils (Kruger, 1997).

The core components of the conceptual design include:

**Drop Inlet with Filter Media (optional)** – that will treat water from the upper lawn (and possibly the parking lot expansion) before routing the water to the biofiltration swale described below. Deciding the configuration of the drop inlet will be required before grading designs for the parking lot can be developed.

**Biofiltration Swale** – A biofiltration swale is a shallow vegetated channel or ditch designed to treat stormwater through phytoremediation and/or infiltration. Swales are typically constructed with a vegetative layer underlain by a filtering media such as gravel or sand. These layers work together to promote bioremediation and groundwater infiltration. Because biofiltration swales are not meant to hold water for any length of time, they are less likely to attract water fowl and/or dogs.

There are several possible configurations for the swale and drainage associated with the drop inlet.

Based on a preliminary configuration (see Figure 3), the bioswale will have a capacity of about 2,025 cubic feet by utilizing the three existing terraces in the southern corner of the property. Three swale segments oriented along the existing terraces (approximately east-west) may provide swale lengths as indicated in Table 3. Excavation of existing material to a depth of approximately 1 foot in some places and the construction of a 1- to 1.5-foot berm would yield the following cross-sectional areas and associated volumes (Table 3):

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**Table 3) Potential capacity of terraced biofiltration swale based on preliminary analysis**  
(see Figure 3).

<b>Terrace</b>	<b>XS Area (ft)</b>	<b>Length (ft)</b>	<b>Volume (cu ft)</b>
<b>Upper</b>	8	82	656
<b>Mid</b>	6	66	394
<b>Lower</b>	27	36	974
	<b>Totals</b>	<b>102</b>	<b>2024</b>

Assuming this preliminary capacity, the bioswale should contain at least 34% of the 2-yr 24-hour storm event (assuming no infiltration). This capacity could be expanded by either lengthening the swale system, by increasing the depth of the swales, by increasing the infiltration capacity, or by increasing the berm height. Certain vegetative species may also be more effective at promoting infiltration.

We note that we had limited information about the infiltration capacity of the onsite soils, and we had no information about subsurface conditions. A more detailed design should investigate these issues so that a more refined hydrologic estimate can be developed in support of the final design and construction specifications. With sufficient infiltration capacity, the bioswale could treat a larger proportion of the design (Q2) storm.

We recommend several design elements that should receive additional consideration prior to construction:

- The configuration of the bioswale, drop inlet location, and drop inlet drain structures
- Overflow structure design for the bioswale (to prevent erosion on steep slopes)
- Conveyance features (e.g. either channels, swales, culverts or dispersal structures) at the outlet of the bioswale and drop inlet drain
- Connecting features where concentrated peak flows occur at the confluence with San Pedro Creek (we note a small channel existing immediately below the XS line on Figure 1).
- Refine estimates of existing infiltration to determine the need to design infiltration improvements into the swales

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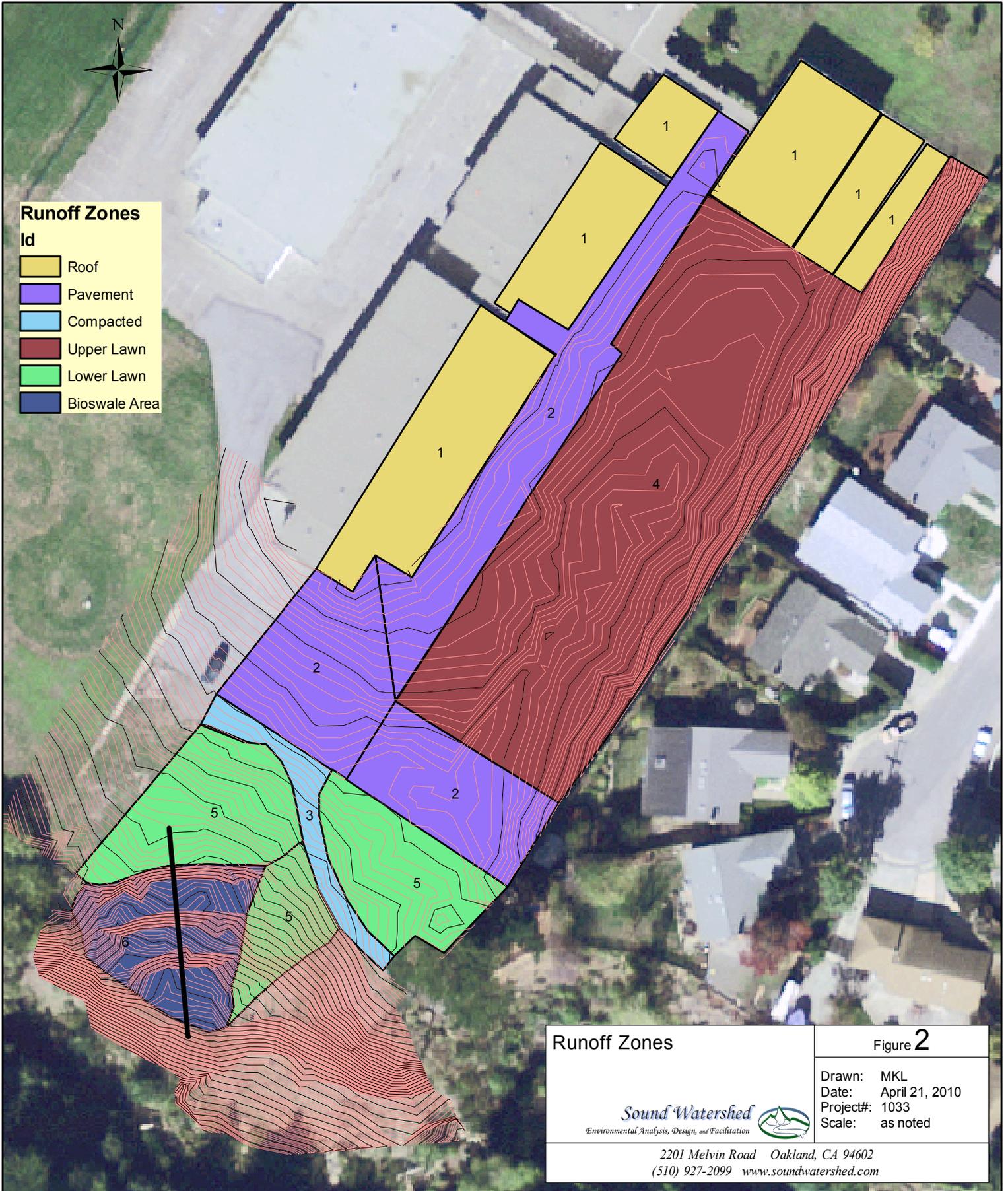
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- Selection of appropriate plant species for the swales that can provide both erosion control treatments, aesthetic values, and desired bioremediation effects.

**REFERENCES**

- Haan, Barfield & Hayes 1993. *Design Hydrology and Sedimentology for Small Catchments*. Academic Press 588p.
- Miller, J.F., Frederick, R.H., and Tracey, R.J. 1973. *NOAA ATLAS 2: Precipitation-Frequency Atlas of the Western United States, Volume XI-California*. National Oceanic and Atmospheric Administration.
- USDA – Soil Conservation Service. 1973. *Technical Paper 149: A Method for Estimating Volume and Rate of Runoff in Small Watersheds*. U.S. Department of Agriculture.
- USDA – Soil Conservation Service. 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*. U.S. Department of Agriculture.





**Runoff Zones**

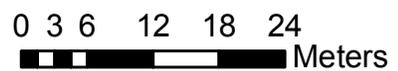
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Yellow	Roof
Purple	Pavement
Light Blue	Compacted
Red	Upper Lawn
Green	Lower Lawn
Dark Blue	Bioswale Area

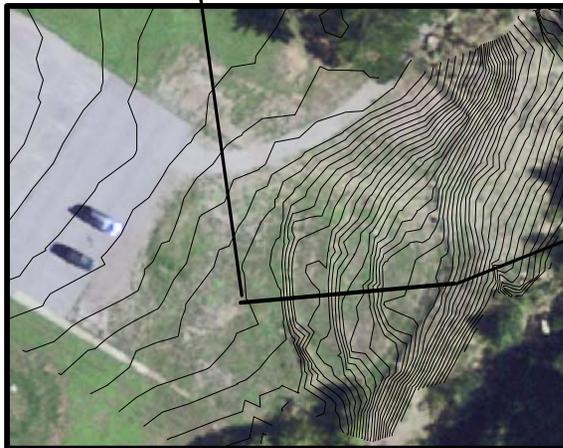
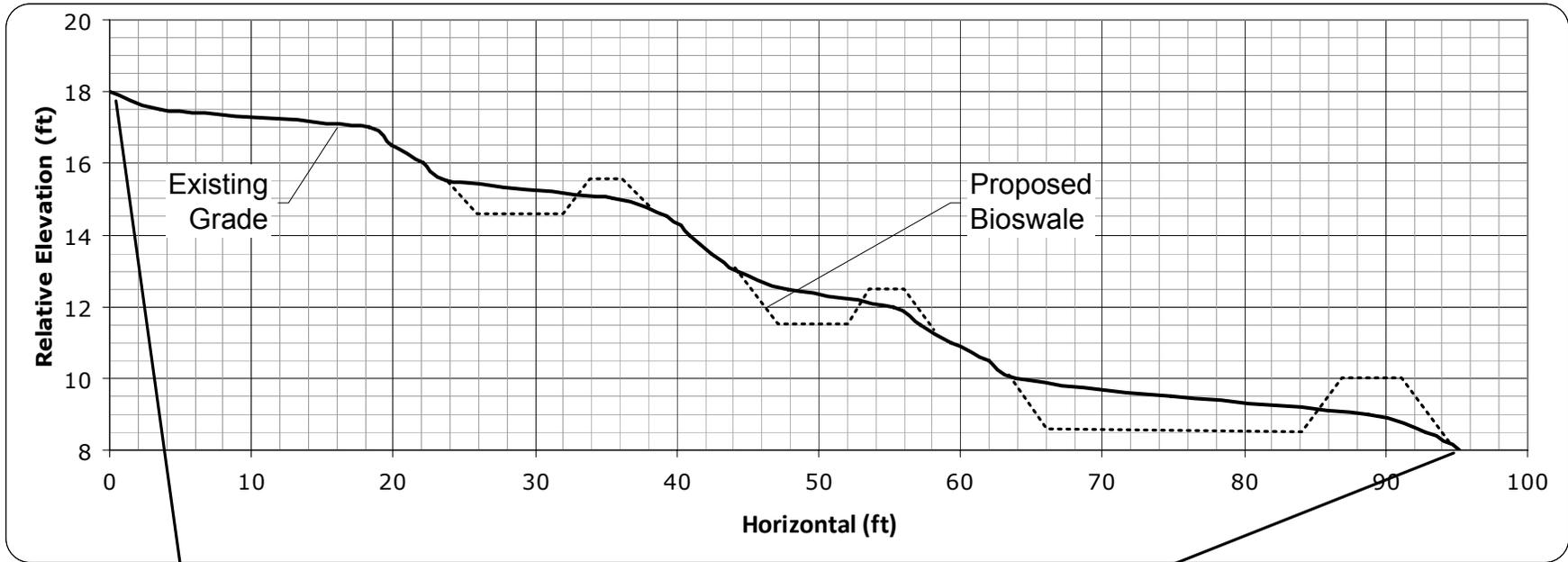
Runoff Zones	Figure 2
	Drawn: MKL Date: April 21, 2010 Project#: 1033 Scale: as noted



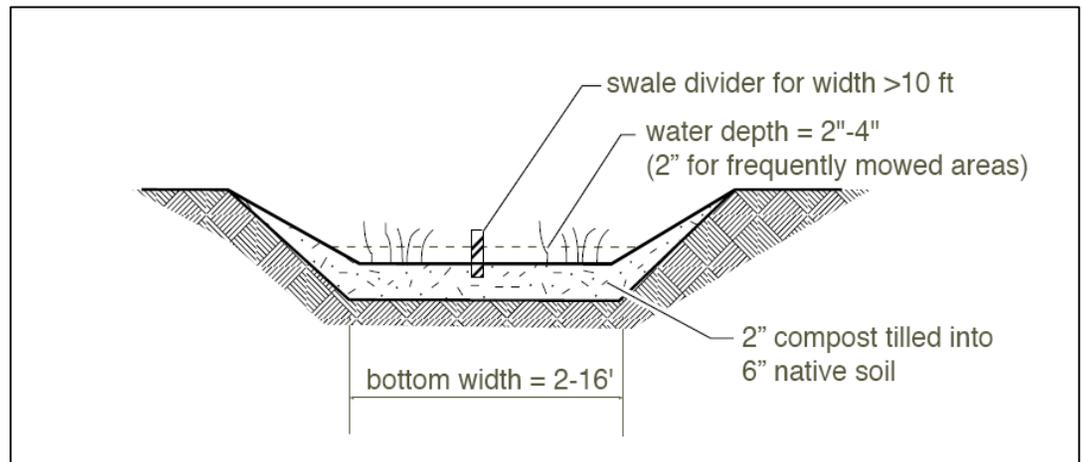
2201 Melvin Road Oakland, CA 94602  
 (510) 927-2099 www.soundwatershed.com



# Longitudinal Profile



## Typical Cross Section



Preliminary Typical Drawings  
for Pacifica Dog Park  
Bioswale

Figure **3**

Drawn: MKL  
Date: April 21, 2010  
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Scale: as noted



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