

## **ATTACHMENT H**

**Additional Responses to Public Comments Raised in Appeals  
(including attached evaluation for Sudden Oak Death)**

## **Amendment to Oakland Zoo Master Plan**

### **Additional Responses to Public Comments Raised In Appeals**

#### **City Council Meeting, June 21, 2011**

This document contains staff's responses to comments contained in the comment letters cited in and attached to the Appellants' appeal that have not been previously responded to in writing. Specifically, the responses address comments from the following comment letters (as numbered in the appeal):

10. Comments submitted by Friends of Knowland Park, dated April 27, 2011
11. Letter from California Native Plant Society, dated April 26, 2011
12. Letter from California Wildlife Foundation & California Oaks, dated April 26, 2011
13. Letter from California Native Grasslands Association, dated April 27, 2011

All of the comment letters cited in the Appellants' appeal, including the above letters, were considered by staff and the Planning Commission when the Planning Commission adopted/approved the environmental document (Subsequent Mitigated Negative Declaration/Addendum [SMND/A]) and the development permits for the amendment to the Master Plan on April 27, 2011. Comments contained in the other comment letters cited in the Appellants' appeal, specifically letters no. 1 through no. 9, have already been responded to in writing in the staff report for the April 20 (adjourned to April 27), 2011, Planning Commission meeting (generally referred to as the staff report for April 27, 2011, Planning Commission meeting or the April 27, 2011, staff report) which is attached to the June 21, 2011, City Council Agenda Report as Attachment C.

The responses below are grouped by topic. As necessary and appropriate, staff responses were developed with the assistance of the technical consultants/experts who assisted in the preparation of the SMND/A.<sup>1</sup>

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<sup>1</sup> Technical experts that assisted in the preparation of these responses, the responses in the staff report for April 27, 2011, Planning Commission meeting, and/or the responses in the June 21, 2011, City Council Agenda Report, include:

Aecom – Transportation & Circulation

Arcadis – Noise

Environ – Air Quality; Global Climate Change

Environmental Collaborative – Biological Resources; Hydrology & Water Quality

Phytosphere Research – Biological Resources: Sudden Oak Death

Questa Engineering – Geology & Soils; Hydrology & Water Quality

Swaim Biological – Biological Resources: Alameda Whipsnake

WRA Environmental Consultants – Biological Resources: Habitat Enhancement Plan & Alameda Whipsnake Mitigation

## TYPE OF ENVIRONMENTAL DOCUMENT

1. Subsequent Mitigated Negative Declaration/Addendum: A Mitigated Negative Declaration (MND) was adopted by the City when the City approved the Master Plan in 1998. In adopting the 1998 MND the City found that the 1998 Master Plan would not result in a significant impact on the environment with the identified mitigation measures. The City has prepared a combined CEQA document (an Addendum together with a Subsequent Mitigated Negative Declaration, called an "SMND/A"), which independently and collectively satisfy the City's obligations under CEQA. The Planning Commission adopted/approved the SMND/A when it approved the proposed amendment to the Master Plan on April 27, 2011.

As stated in the June 21, 2011, City Council Agenda Report, the proposed amendment to the Master Plan (i) would not result in new significant environmental effects or a substantial increase in the severity of significant environmental effects already identified in the 1998 MND and (ii) there are no mitigation measures which were previously determined not to be feasible that would in fact now be feasible, or which are considerably different from those recommended in the 1998 MND, which would substantially reduce significant effects of the project but the project applicant declines to adopt them. All potentially significant impacts would be reduced to a less-than-significant level with the identified mitigation measures and the City's standard conditions of approval. Therefore, an EIR is not required and an addendum to the 1998 MND is the appropriate CEQA document.

Although an addendum is the appropriate CEQA document for the Master Plan amendment, in the interest of being conservative and providing additional opportunity for public review, the City also, as a separate and independent basis, followed the requirements under CEQA for a Subsequent MND. Under CEQA, an addendum does not require a public review period or responses to public comments. The City provided a 30-day public review period for the Draft SMND/A, reviewed and considered all public comments submitted through April 27, 2011, and responded to certain comments, as appropriate. Thus, no further environmental review is required.

2. Changes in Circumstances: The Appellants argue that there have been multiple changes in circumstances since the 1998 MND, including increased traffic, inconsistencies with the Open Space, Conservation and Recreation (OSCAR) Element of the City's General Plan (which the Appellants erroneously contend was adopted after 1998), the discovery and development of Sudden Oak Death in Knowland Park, and the loss of wildlife and native plant habitat. As stated above in Response 1, changes in circumstances alone do not necessitate the preparation of an EIR. In addition to changed circumstances, the project must meet one of the additional criteria listed above in Response 1, which the project does not for the reasons stated above, in order for an EIR to be required. Regarding the specific changes identified by the Appellants—traffic, OSCAR, Sudden Oak Death, and wildlife and habitat—the CEQA analysis, as detailed in the Draft SMND/A, the staff report for the April 27, 2011, Planning Commission meeting, and these additional

responses, thoroughly analyzes these issues and concludes that the project would result in a less-than-significant environmental impact relative to these issues with the incorporation of the identified mitigation measures and the City's standard conditions of approval. Regarding the OSCAR Element, contrary to the Appellants' claim, as stated on page 3.8-4 of the Draft SMND/A the OSCAR Element was adopted in June 1996, prior to the adoption of the 1998 MND, and acknowledges the Master Plan proposed for the California exhibit (pages 3.8-7 – 3-8.8).

3. New Information: The Appellants argue that new information has become available since the 1998 MND, including the documented presence of Alameda whipsnake on the site. As stated above in Response 1, new information alone does not necessitate the preparation of an EIR. In addition to new information, the project must meet one of the additional criteria listed above in Response 1, which the project does not for the reasons stated above, in order for an EIR to be required. Regarding the presence of Alameda whipsnake on the site, the presence of Alameda whipsnake habitat was documented in the 1998 MND and the 1998 MND analysis assumed Alameda whipsnake was present on the site. Therefore, the recent trappings of Alameda whipsnake on the site are not considered new information of substantial importance given that Alameda whipsnake was assumed present on the site in the 1998 MND. Furthermore, the CEQA analysis, as detailed in the Draft SMND/A, the staff report for the April 27, 2011, Planning Commission meeting, and these additional responses, thoroughly analyzes potential impacts to Alameda whipsnake and concludes that the project would result in a less-than-significant impact with the incorporation of the identified mitigation measures and the City's standard conditions of approval. Indeed, the impacts to Alameda whipsnake from the proposed amendment to the Master Plan are less than that of the approved 1998 Master Plan. The amended Master Plan would impact approximately 16 fewer acres of Alameda whipsnake habitat compared to the 1998 Master Plan (see Draft SMND/A, page 3.3-35).
4. New Mitigation Measures: The Appellants argue that numerous new mitigation measures are proposed which are different from the 1998 mitigation measures. The CEQA analysis identifies the 1998 mitigation measures and, where appropriate, maintains, revises, refines, updates, clarifies and/or deletes 1998 mitigation measures given the changes to the project, changes in circumstances, and/or new information. Of the 46 mitigation measures identified in 1998, six are revised, clarified, and/or refined (related to biological resources, geology and soils, and hydrology and water quality). Only one new mitigation measure is introduced (Mitigation Measure BIO-1 regarding a potential seasonal wetland), and that mitigation measure is not required under CEQA because the potential impact is already considered less than significant due to the City's standard conditions of approval; the mitigation measure merely assists implementation of the standard condition of approval by specifying implementation requirements for the standard condition of approval. Therefore, the CEQA analysis for the proposed Master Plan amendment does not identify numerous new mitigation measures; even if the SMND/A had identified numerous new mitigation measures, that, by itself, would not require an EIR.

5. Project Changes: The Appellants argue that certain changes to the project can not be considered “minor technical changes,” including the increased size and relocation of the California Interpretive Center, the new aerial gondola system, the new overnight camping area, and the new Veterinary Medical Hospital. Contrary to the Appellants’ claim, the CEQA analysis did not conclude that these changes are considered “minor technical changes.” The CEQA analysis finds that, pursuant to CEQA section 15164, an addendum to the 1998 MND is the appropriate CEQA document because only minor technical changes or additions are necessary to the outcome of the CEQA analysis. As explained above in Response 4, of the 46 original 1998 mitigation measures, only six mitigation measures are revised, clarified, and/or refined and one new mitigation measure is identified which is not necessary under CEQA but is nevertheless included to further reduce an already less-than-significant impact. The vast majority of the 1998 mitigation measures remain unchanged. Furthermore, pursuant to CEQA Guidelines section 15164, the project also does not meet the requirements of CEQA Guidelines section 15162 listed above in Response 1 requiring a Subsequent EIR or a Subsequent Negative Declaration. Moreover, the amendments to the Master Plan are not substantial, are consistent with the City’s general plan and the previously approved Master Plan, and do not result in new significant impacts or substantial increases in the severity of previously identified significant impacts. Indeed, many impacts would be reduced with the amended Master Plan as compared to the 1998 Master Plan, including potential visual impacts concerning the eliminated shuttle bus system (see Draft SMND/A; Section 3.1, Aesthetics), impacts to Alameda whipsnake habitat (see Draft SMND/A; Section 3.3, Biological Resources), impacts to protected trees (see Draft SMND/A; Section 3.3, Biological Resources), and land use impacts concerning the reduction of the perimeter fence (see Draft SMND/A; Section 3.8, Land Use, Recreation and Planning).

## ENVIRONMENTAL BASELINE

6. Existing Conditions: The Appellants argue that the CEQA analysis inadequately considers the potential impact of the project on existing environmental conditions, including the impact on wildlife habitat, local wildlife populations, and changes in wildlife habitat since 1998. As stated in the staff report for the April 27, 2011, Planning Commission meeting, the CEQA analysis updates the description of the existing site conditions as required under CEQA, assesses the potential impact of the full buildout of the amended Master Plan on the existing environmental conditions, and then compares the updated analysis to the analysis in the 1998 MND to determine whether there is a new significant impact and/or a substantial increase in the severity of significant impacts previously identified in the 1998 MND. The CEQA analysis, including the Draft SMND/A, the staff report for the April 27, 2011, Planning Commission meeting, and these additional responses, thoroughly analyzes the project’s potential impact on existing wildlife habitat and populations as required under CEQA, and finds that the project would not result in new significant impacts or substantial increases in the severity of previously identified significant impacts.

## PROJECT DESCRIPTION

7. Attendance Projections: The Appellants state that at several public meetings Zoo staff claimed that the Zoo expansion would attract more than a million visitors a year to the Zoo, and, the Appellants argue, that the CEQA analysis provides no evidence to refute the public's concern that the projected attendance figures were "cherry-picked" to suggest a lower attendance figure for environmental purposes. As stated in the staff report for the April 27, 2011, Planning Commission meeting, Appendix D of the Draft SMND/A provides a detailed analysis of projected Zoo attendance prepared by an independent, expert economic consultant. The analysis considers attendance trends at the Zoo, the effect of new exhibits on Zoo attendance, experiences of other zoos and visitor attractions, and demographic trends and forecasts to project future Zoo attendance with and without the proposed California exhibit. The analysis shows that attendance at zoos goes up when new exhibits open, then declines and stabilizes over time at a level lower than the peak. Without the California exhibit, the analysis projects that Zoo attendance will decline from the peak of 670,700 visitors in 2009 and stabilize at 600,000 annual visitors through 2035 due to the inability to add major new exhibits (but stabilizing and not further declining due to ongoing minor improvements and programming to maintain public interest), economic conditions, and demographic changes. With the California exhibit, the analysis projects that Zoo attendance would peak at 750,000 visitors in 2016 following the completion of the California exhibit and then decline and stabilize at 700,000 annual visitors through 2035 for the same reasons as stated above. Thus, there is substantial evidence that the attendance projections are reasonable and that the analysis did not "cherry-pick" a lower historic attendance figure and use that to predict/extrapolate future attendance figures. The unsupported claims by the Appellants do not state who made the attendance statements, when such statements were made, or whether the project at that time included the now abandoned panda exhibit proposal. Regardless, even assuming such statements were made, the information provided in the SMND/A is the most current and accurate.
  
8. Lighting: The Appellants state that the aerial gondola will have interior lighting and will bring visitors to night events at the California Interpretive Center. The Draft SMND/A and the staff report for the April 27, 2011, Planning Commission meeting acknowledge that the California Interpretive Center may occasionally be used in the evenings for events that currently occur at the Zoo, such as Zoo-related business meetings, fundraisers, lectures, the ZooLights holiday program, and the annual members' night. Lighting at the California Interpretive Center, as well as at the other proposed buildings and exhibits, would be required to comply with the City's standard conditions of approval which would require that lighting fixtures be adequately shielded so that the light is downward-oriented to prevent lighting from unnecessarily "spilling out" onto adjacent areas. The aerial gondola may be used in the evenings to transport visitors to evening events at the California Interpretive Center and to the overnight camping area. The gondola towers and gondola car exteriors would not be, and are not required to be, illuminated at night. For safety reasons, the interior floor of the gondola cars would be illuminated with downward-

oriented under-the-seat lighting for visitors using the gondola in the evening. This interior lighting would not “spill out” of the gondola car. The Appellants do not claim, nor provide any evidence to support a claim, that interior gondola night lighting and/or evening events at the California Interpretive Center would result in any significant environmental impacts.

9. Reconfiguration of Animal Exhibits: The Appellants argue that the CEQA analysis ignores the environmental impacts of the relocation of the animal exhibits, buildings, walkways, etc. of the California exhibit over the ridgeline to the eastern portion of Knowland Park. The Appellants do not submit any evidence to support this claim. As stated in the Draft SMND/A and the staff report for the April 27, 2011, Planning Commission meeting, the proposed Master Plan amendment would reconfigure the animal exhibits within the California exhibit. Under the 1998 Master Plan, both the Canyon exhibit and the River exhibit would be discontinuous from the Grizzly Bear exhibit and Woodland exhibit. The total area to be occupied by the animal exhibits (including the off-site breeding area but not including the California Interpretive Center) would be approximately 16.77 acres under the 1998 Master Plan. Under the proposed Master Plan amendment, the animal exhibits would be consolidated into a contiguous area of approximately 18.07 acres (not including the California Interpretive Center). The reconfiguration of the animal exhibits would locate additional animal exhibit area further to the east in the location of the relatively level area of Knowland Park above and east of the steep slopes located directly east of the existing Zoo. The additional animal exhibit area of about 1.30 acres (18.07 acres minus 16.77 acres), representing less than an eight percent increase, would be located in this eastern area compared to the 1998 Master Plan. The Draft SMND/A analyzes the impact of the proposed animal exhibits in the Master Plan amendment under each environmental topic and associated significance criteria and finds the potential impact to be less than significant with the identified mitigation measures and standard conditions of approval.

## AESTHETICS

10. Visual Simulations: The Appellants argue that the visual simulations in the Draft SMND/A are misleading and inadequate, claiming that the proposed buildings and fences are rendered implausibly pale and transparent and the grassland is portrayed as remaining green. The visual simulations were created by a professional visual analysis firm using standard methodologies and reasonably simulate the proposed project. As stated in the staff report for the April 27, 2011, Planning Commission meeting, the Draft SMND/A contains visual simulations of the proposed project from multiple viewpoints in Knowland Park and the surrounding area, and also provides information on a number of other viewpoints that were considered and rejected from further study. The analysis cannot and need not show a visual simulation from every possible viewpoint in the Park and surrounding area. Rather, the viewpoints selected in the analysis represent a reasonable range of the potential worst-case view impacts. The presented visual simulations show that the project would not obstruct panoramic views of San Francisco Bay, the Marin Headlands, and the Oakland and San

Francisco skylines from within Knowiand Park. From outside of Knowiand Park, the project would not obstruct scenic views of the ridgeline. The visual simulations show that both the aerial gondola and California Interpretative Center would be small elements on an expansive ridgeline.

11. OSCAR – View Protection: The Appellants argue that the staff responses in the staff report for the April 27, 2011, Planning Commission meeting assert that only “vistas” (i.e., distant views) are to be considered, yet, the Appellants argue, the OSCAR Element explicitly refers to “views.” Contrary to the Appellants argument, the CEQA analysis considers the project’s affect on both vistas and views. As explained on page 5 of the April 27 staff responses, the City’s thresholds of significance pertain to scenic vistas which, by definition, are distant views. The Draft SMND/A provides substantial evidence that the project would not have a significant impact on a scenic vista. Regarding the OSCAR Element’s policy concerning views (Policy OS-10.1), the Draft SMND/A and the April 27 staff responses address the project’s impact on views (pages 3.8-18 and 3.8-19 of the Draft SMND/A; pages 19 and 20 of the April 27 staff responses) and provide substantial evidence that the project is consistent with OSCAR Element view policies.
12. “Manipulated” Visual Simulation: The Appellants argue that the staff response in the staff report for the April 27, 2011, Planning Commission meeting regarding an image presented by the Friends of Knowiand Park at a Planning Commission meeting is misleading because the staff response stated that the Friends of Knowiand Park “manipulated” a visual simulation from the Draft SMND/A by “expanding and cropping the image.” Staff discussed this image in the staff report to clarify for the Planning Commission and the public that the image presented by the Friends of Knowiand Park was not the same as the image in the Draft SMND/A. In using the term “manipulated” staff did not intend to suggest that the Friends of Knowiand Park were trying to deceive the Planning Commission or the public, only that the Friends of Knowiand Park had altered the image so that it was clear that the image presented at the meeting was different than the image in the Draft SMND/A. The Appellants state that the image from the Draft SMND/A was cropped in order to show that the proposed California Interpretive Center breaks the continuity of the ridgeline, and is, therefore, a violation of OSCAR Element policies which call for protection of ridgelines from development. The view protection policies of the OSCAR Element are described above in Response 11, in the Draft SMND/A, and in the April 27 staff report. OSCAR Policy OS-10.1 (View Protection) does not prohibit development on ridgelines. The policy calls for the protection of existing scenic views, including views of the Oakland Hills from the flatlands. The proposed California Interpretive Center would not obstruct scenic views of the ridgeline. The visual simulation demonstrates that the Center would appear as a small element on an expansive ridgeline such that the visual impact on the ridgeline would be less than significant.
13. Character of Knowiand Park: The Appellants argue that project would substantially degrade the character of Knowiand Park. The Appellants state the following:



If this project is approved, *it will be impossible to walk around western Knowiand Park without seeing and hearing the Zoo*. This is a fundamental change in the character of the park and will permanently alter the peaceful enjoyment of it. (Friends of Knowiand Park, April 27, 2011)

Staff and the CEQA analysis agree that the project would alter the character of Knowiand Park, as would the approved 1998 Master Plan. The effects of the project on the character of the Park are thoroughly described in the Draft SMND/A and the staff report for the April 27, 2011, Planning Commission meeting. The effect of the project on the character of the Park will vary based on location, with impacts closer to the project being greater (but still less than significant) and impacts further from the project being less. The project will be highly visible to Park users near the project boundary. Due to the size, topography, and vegetation of the Park, there are also areas of the Park where the project will not be visible or heard. Many of the trails that traverse the 490-acre Park are located at a substantial distance from the project. From a CEQA perspective, the question is whether the project would substantially degrade the existing visual character or quality of the site and its surroundings. While staff acknowledges that the project would occupy an area that is important to some park users and that the presence of the project would negatively affect the experience of some park users, there is substantial evidence in the CEQA analysis, including the size and location of the project within the expansive Knowiand Park, to support a finding that the project would not substantially degrade the existing visual character or quality of the site and its surroundings. The SMND/A finds that the project would not result in new significant impacts or substantial increases in the severity of previously identified significant impacts. Furthermore, the overall footprint of the project has decreased by about six acres with the relocation of the perimeter fence.

14. Improvements to Emergency Access Road: The Appellants argue that the visual simulations in the Draft SMND/A are misleading and inadequate because there are no simulations of the proposed improvements to the existing emergency access road off Snowdown Avenue and that the improvements are falsely characterized as having no significant aesthetic impact. The Appellants characterize the improvements as creating a “virtual freeway” down the middle of the park and having a “devastating” aesthetic impact on Knowiand Park. The CEQA analysis provides a thorough evaluation of the potential effects of the proposed roadway improvements. The dirt road currently exists, is approximately 1,450 feet long, and ranges in width from ten to 15 feet with an average width of 12.5 feet. The roadway would be widened to 20 feet with turnouts every 300 feet and surfaced with gravel. The resulting roadway width would be less than a standard residential street and considerably less than a freeway. Knowiand Park has a number of existing unpaved fire roads traversing the park. Paved emergency access roads are a common feature in parks and compatible with the natural character of park settings. Because the aesthetic change to the roadway—widening and paving—would be limited and the roadway’s limited presence in one portion of Knowiand Park, the CEQA impact of the improvements would be less than significant. However, a non-CEQA project-specific condition was placed on the project requiring the new gravel surfacing to be dirt-like in color to

further minimize the already less-than-significant visual effect of the roadway improvements on the character of the Park. The current roadway is dirt so dirt-color gravel would represent a minimal visual change to the roadway. Moreover, the approved 1998 Master Plan also contained roadway improvements. The previously approved tram loop road would have been created by improving an existing service road and connecting it with a new road such that the road would encircle the California exhibit. The tram road would have been 15 feet wide and approximately 6,000 feet long. The tram road is no longer proposed in the Master Plan amendment.

The Appellants also argue that the new uses of the emergency access road off Snowdown Avenue would cause environmental impacts and alter the recreational opportunities in the Park. No new uses are proposed for the roadway; it currently functions as an emergency access road and would continue to function as an emergency access road.

## **BIOLOGICAL RESOURCES**

15. Alameda Whipsnake: The Appellants argue that because the final location of the California Interpretive Center would depend upon the permitting processes of the U.S. Fish and Wildlife Service and California Department of Fish and Game, the public is being denied the right to make comments on its final location. The Appellants argue that permit approvals for these agencies should be obtained prior to project approval. In response, staff notes that sufficient information is provided in the CEQA analysis concerning the location of the Center for the public to adequately comment on the Center. Mitigation Measure 14c states that the Center would be moved 10 feet to the east. Regarding fire fuel management activities near the Center, Mitigation Measure 14c has been further refined since the Planning Commission decision to provide more detailed guidance on Alameda whipsnake habitat protection during fire fuel management activities (see Attachment J to the June 21, 2011, City Council Agenda Report). A Draft Mitigation and Monitoring Plan (MMP) for the Alameda whipsnake has been prepared (see Attachment I to the June 21, 2011, City Council Agenda Report). According to the Draft MMP, the thinning of shrubs for fire fuel management purposes is beneficial to the Alameda whipsnake in many situations, such as those present in Knowland Park, where lack of natural disturbance (i.e., lack of fire) results in dense closed canopy communities. With the clarifications to Mitigation Measure 14c, there is substantial evidence that fire fuel management activities would not adversely impact Alameda whipsnake habitat and the California Interpretive Center would not need to be relocated beyond the 10-foot adjustment already described. Regarding the Appellants' argument that the State and federal permits should be obtained prior to project approval, staff notes that, as a State agency, the Department of Fish and Game would not be able to issue a permit until a CEQA determination has been made by the Lead Agency, which is the City in this instance. For the federal permitting process with the U.S. Fish and Wildlife Service, it is not a requirement that the federal permit be obtained prior to the City approving the project. Furthermore, since the City owns the Zoo and Knowland Park, the City has an interest in the outcome of the permitting process and would participate in that

permitting process as explained in the June 21, 2011, City Council Agenda Report and revised SCA BIO-10 (see Attachment J to the June 21, 2011, City Council Agenda Report). Therefore, the City needs to make its decision on the project before the federal permit is issued so that the City can participate in the permitting process with the full understanding of the project approval. Finally, the 1998 Master Plan contained the same requirement for State and federal permits and was approved prior to these permits being issued.

16. Bristly Leptosiphon: The Appellants argue that the mitigation measures proposed for protecting the bristly leptosiphon are inadequate. An updated biological assessment of the project site was conducted for the SMND/A, including an assessment of plant species listed in Attachments A and B contained in the March 14, 2011, letter by the California Native Plant Society (attached to the Appellants' appeal). As discussed in the Draft SMND/A (Section 3.3, Biological Resources) and the staff report for the April 27, 2011, Planning Commission meeting, bristly leptosiphon does not qualify as a special-status species under CEQA, therefore, any potential impacts to the plant species would not be considered significant under CEQA. Nevertheless, the Habitat Enhancement Plan (Appendix G-2 of the Draft SMND/A) includes avoidance and protection measures to be implemented as part of the project which would adequately protect the plant occurrence. There is substantial evidence in the analysis that the proposed non-CEQA required protection measures are adequate. The Appellants argue that the animal enclosures at the existing Zoo suggest that the plant occurrence would not survive in the wolf enclosure. In response, staff notes that the type of monitoring and protection measures proposed for the bristly leptosiphon are currently not in place in the existing Zoo, therefore, experiences at the existing Zoo are not indicative of future conditions concerning the bristly leptosiphon with the proposed monitoring and protection measures in place.
17. Grasslands Impact: The grasslands analysis in the Draft SMND/A and in the attachment to the staff report for the April 27, 2011, Planning Commission meeting categorizes the impact to grasslands as "low," "limited," "high," or "maximum" depending upon location and project characteristics. The Appellants argue, in a letter dated April 27, 2011, from the California Native Grasslands Association, that these categories lack any evidence or basis to assess their reliability, and observation of intense, year-round use by medium- to large-sized animals in limited spaces shows that native vegetation is often denuded or replaced by weeds. In response, staff notes that the potential impact to native grasslands would vary depending upon on the location of project elements, ranging from low disturbance in the larger animal enclosures to maximum disturbance where buildings and roads are proposed, and that these impact categorizations provide information on the potential project impact to public. Staff also notes that, in the interest of being conservative, the native grasslands analysis assumes that native grasslands in all impact categories would be lost and would need to be mitigated, although the total amount lost and mitigated could be reduced through refinements to the detailed plans for the California exhibit during the construction permitting phase.

18. Grasslands Mitigation – Technical Feasibility: As stated in the June 21, 2011, City Council Agenda Report, the Appellants question the feasibility of the required native grassland mitigation citing a letter from the California Native Plant Society (CNPS) dated April 26, 2011. In the letter CNPS states that little is known about the natural systems of native grasslands and that there are no technologies in place that guarantee effective restoration of native grasslands in an area that has been colonized by exotics. An environmental consulting firm with experience in habitat restoration projects visited the site and reviewed the project plans, Habitat Enhancement Plan, and CNPS letter and believes the Habitat Enhancement Plan, including the required native grassland enhancement, is feasible from technical, geographic, and economic perspectives. The consulting firm's letter is attached (see Attachment K to the June 21, 2011, City Council Agenda Report). The scope of the grassland mitigation contained within the Habitat Enhancement Plan is grassland "enhancement," in contrast to grassland "restoration" which requires a much more significant effort than enhancement. Most of the grassland habitat in Knowland Park is relatively intact with scattered, isolated patches of non-native weeds. Grassland enhancement would involve weed removal and in some cases planting of native seed or container stock. The enhancement and ongoing management of native grassland would control the spread of non-natives in Knowland Park which would occur without the project.

The CNPS letter also cites a study by researchers at UC Davis and funded by Caitrans where, CNPS argues, \$450,000 was spent in an unsuccessful attempt to restore two acres (\$225,000 per acre) of invasive-dominated grassland into native grassland. As explained above, the scope of the native grassland mitigation contained within the Habitat Enhancement Plan for the Zoo project is native grassland "enhancement," in contrast to native grassland "restoration" which requires a much more significant effort than enhancement. The Caitrans study was conducted for a completely different purpose and in entirely different field conditions than those associated with the Habitat Enhancement Plan for the Zoo project. The Caitrans study evaluated several establishment sequences to determine effective ways to convert existing annual non-native vegetation to native perennial species in highly disturbed conditions with no native species component. Contrary to the assertion in the CNPS letter, the report acknowledges that vegetative type conversion can result in a stable plant community with the potential to reduce annual grass and broadleaf weeds and that once established, native perennial grass stands can persist for decades and remain relatively weed resistant. There is no information in the report related to a per acre restoration cost as suggested in the CNPS letter or an indication that the program was unsuccessful. There is no information whatsoever on estimated costs of the roadside native plant establishment component presented in the report, and the conclusion reached was that native perennial grasses could be successfully used as an alternative method for vegetation control and maintenance along roadsides. The purpose of the report was to evaluate alternative methods for vegetation control and maintenance, including establishment of perennial native grasses. Given the different purposes and conditions of the study from the Zoo project, the study can not be used as a basis for evaluating the potential feasibility of the Zoo grassland enhancement requirements.

Although the Zoo grassland mitigation focuses on grassland enhancement as opposed to grassland restoration, and enhancement requires significantly less effort than restoration, native grassland restoration as a practice is an accepted method for mitigating natural grassland habitat. According to *California Grasslands, Ecology and Management*, hundreds of grassland restoration projects have been initiated across California, with select native grass restoration and seeding sites in Butte, Colusa, San Luis Obispo, San Mateo, Santa Barbara, Solano, Shasta, Tehama, and Yolo counties ranging from 10 to 200 acres in size.<sup>2</sup> Invasive species control and management is a common tool in protecting native grasslands and other sensitive resources, and serves as the primary component of the compensatory mitigation requirements in the Habitat Enhancement Plan. Thus, as explained above and in the June 21, 2011, Agenda Report, there is substantial evidence that the required grassland enhancement in the Habitat Enhancement Plan is feasible from technical, geographic, and economic perspectives.

19. Grasslands Mitigation and Habitat Enhancement Plan – Funding: As discussed in the June 21, 2011, City Council Agenda Report, the Appellants argue that the required mitigation measures are meaningless without the requirement for an endowment to provide funding for the mitigation. Staff notes that an endowment was not required for the 1998 Master Plan.

An environmental consulting firm with experience in habitat restoration projects reviewed the Habitat Enhancement Plan and estimates that implementation of the Habitat Enhancement Plan, including native grassland enhancement activities, is expected to cost roughly (a) \$20,000 to \$25,000 for an initial assessment, (b) \$60,000 to \$85,000 annually, depending upon the activities required each year, for years one through five, and (c) \$40,000 to \$60,000 for years six through 10, and then (d) stabilize at \$15,000 to \$30,000 annually on an ongoing basis for monitoring and maintenance activities (see Attachment K to the June 21, 2011, City Council Agenda Report).

The applicant states that it has raised approximately \$1.4 million during the past four years, including approximately \$500,000 during the past year alone, for management and enhancement activities in Knowland Park and that it can and will be able to implement all required conditions of approval and mitigation measures, including the Habitat Enhancement Plan (see Attachment M to the June 21, 2011, City Council Agenda Report). Staff believes the applicant has demonstrated that it is financially capable of implementing the conditions of approval and mitigation measures. To further ensure that EBZS meets its habitat enhancement obligations, staff developed a project-specific condition of approval that requires EBZS to demonstrate it has the funding necessary to implement actions of the Habitat Enhancement Plan before the City issues construction-related permits for the California exhibit and other activities

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<sup>2</sup> *California Grasslands, Ecology and Management*, 2007, edited by Mark R. Stromberg, C.M. D'Antonio, T.P. Young, J. Wirka, and P.K. Kephart, reference in Chapter 21, California Grassland Restoration, page 255 and Table 21.1.

at the Zoo unrelated to California (see Attachment J to the June 21, 2011, City Council Agenda Report, condition of approval no. 31).

20. Habitat Boundaries: Citing the April 26, 2011, letter from CNPS, the Appellants argue that the ecotones created by habitat boundaries—where different habitat types meet—in Knowland Park are invaluable to many plant and animal species in the Park and that the “cut and paste” mitigation mentality of the Habitat Enhancement Plan would thoroughly disrupt these natural transition areas and be unable to restore them. In response, staff notes that the Biological Resources section of the Draft SMND/A provides a detailed discussion of the effects of the project on natural communities, and associated vegetation and wildlife. This includes the discussion under Criteria a, b, c, and d on pages 3.3-28 through 3.3-45 of the Draft SMND/A. The potential impacts on sensitive natural communities are evaluated under Criterion b and the potential impacts on wildlife habitat and movement opportunities are evaluated under Criterion d. Ecotones do not meet the standards for a “sensitive natural community” under the City’s significance criteria and, thus, do not require mitigation separate from the mitigation that may be required for resources that are considered “sensitive natural communities.” Nevertheless, Figure 3.3-1 on page 3.3-18 of the Draft SMND/A provides a visual representation of the extent of disturbance in relation to the existing vegetative cover types in the vicinity of the California exhibit and the Veterinary Medical Hospital, and shows that many of the habitat ecotones between grassland, scrub, chaparral, and woodland in the project area would remain undisturbed. A major focus of the Habitat Enhancement Plan would be controlling invasive species which are currently spreading throughout Knowland Park and compromising the value of these ecotones. Without an effective invasive species control program provided through implementation of the Habitat Enhancement Plan, these ecotones, the remaining grasslands, and even areas of chaparral, scrub, and understory of woodlands would be severely compromised. Thus, the Habitat Enhancement Plan would inherently protect and enhance ecotones.
21. 1998 Invasive Plant Removal Requirements: The 1998 MND contained mitigation measures concerning the removal of invasive non-native plant species, specifically Mitigation Measure 13a (Habitat Enhancement Plan) and 14b (French broom removal). The Appellants argue that there is no evidence that the City has taken monitoring or enforcement actions to ensure implementation of the 1998 mitigation measures concerning invasive plant removal. In response, staff notes that these mitigation measures were required to mitigate the impacts of the California exhibit. Since the California exhibit has not yet been implemented, the mitigation measures are not yet required. Nevertheless, as detailed in the applicant’s letter (Attachment M to the June 21, 2011, City Council Agenda Report) and in its presentation at the April 27, 2011, Planning Commission meeting, the applicant has voluntarily undertaken efforts to remove invasive plant species in Knowland Park, including a restoration project of Arroyo Viejo Creek in 2007 and ongoing French broom removal beginning in 2006.

22. Wetlands/Hydrology: The Draft SMND/A (in Section 3.3, Biological Resources and Section 3.7, Hydrology and Water Quality) and the staff report for the April 27, 2011, Planning Commission meeting thoroughly evaluate the project's potential impacts on wetlands and hydrology. Regarding the potential 950 square-foot seasonal wetland located on an existing fire road, the Appellants argue, contrary to staff's responses in the April 27 staff report, that the water feature was not the result of road grading. The Draft SMND/A and the April 27 staff report provide substantial evidence that this feature most likely formed as a result of grading associated with the creation and maintenance of the existing fire road, has limited habitat value, and is likely not a regulated wetland.

In its appeal, the Appellants cite a comment letter from the Friends of Knowland Park, dated April 27, 2011, that states that the Friends of Knowland Park discussed the 950 square-foot potential seasonal wetland and other water-related issues with Brian Wines of the Regional Water Quality Control Board (RWQCB).<sup>3</sup> The letter states that Board staff was concerned about the previous grading and thought that perhaps the grading constituted a violation of state and federal law. The letter also quotes Mr. Wines as stating that the Draft SMND/A's description of the areas of potential state water agency jurisdiction was "inadequate and slipshod."

On May 10, 2011, City Planning staff discussed the above issues with Mr. Wines and received written comments from Mr. Wines.<sup>4</sup> The Draft SMND/A was distributed to RWQCB when it was published for public review and comment on February 11, 2011. RWQCB did not submit comments during the 30-day comment period on the Draft SMND/A. Because the May 10, 2011, comments from Mr. Wines were received after the comment period, the City is not obligated to consider the comments. Staff, however, has reviewed and considered the comments. Below is a summary of Mr. Wines' comments and staff's responses:

- a) *Standard Condition of Approval SCA-BIO-10, Regulatory Permits and Authorization (Draft SMND/A page 3.3-10)*: Mr. Wines comments that the City's standard condition of approval SCA-BIO-10 does not adequately discuss RWQCB's independent authority to issue Water Discharge Requirements (WDRs) under the Porter-Cologne Act for impacts to waters of the State and does not describe the difference between waters of the U.S. and waters of the State. A thorough discussion of waters of the U.S., waters of the State, the Porter-Cologne Act, and RWQCB's jurisdiction, and how the regulated waters are considered in the evaluation of potential impacts of the project, is provided in the Draft SMND/A on pages 3.3-24 – 3.3-26 and pages 3.3-41 – 3.3-44. SCA-BIO-10 states the following:

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<sup>3</sup> In the April 27, 2011, letter, the Friends of Knowland Park state that they spoke to Brian Wines of the "state Water Resources Control Board." Mr. Wines is a staff member of the San Francisco Regional Water Quality Control Board which is a Regional Water Board of the State Water Resources Control Board.

<sup>4</sup> E-mail from Brian Wines, Water Resources Control Engineer, San Francisco Bay Regional Water Quality Control Board, May 10, 2011.

The project applicant shall obtain all necessary regulatory permits and authorizations from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game, and the City of Oakland, and shall comply with all conditions issued by applicable agencies. (Draft SMND/A, page 3.3-10)

SCA-BIO-10 then lists the required permit approvals that may be required but explicitly states that the potential permit approvals required is not limited to the permits and approvals listed. The Draft SMND/A acknowledges RWQCB's jurisdiction over elements of the project and that SCA-BIO-10 would require the applicant to obtain the necessary permits and approvals from RWQCB.

- b) *Standard Condition of Approval SCA-BIO-13, Creek Dewatering and Aquatic Life (Draft SMND/A pages 3.3-11 – 3.3-12)*: Mr. Wines comments that the City's standard condition of approval SCA-BIO-13 does not mention that creek dewatering requires a permit from RWQCB. SCA-BIO-13 establishes requirements for protection of aquatic life, which is outside of RWQCB's jurisdiction. However, SCA-BIO-13 states that the project applicant shall obtain all necessary State and federal permits for dewatering, which would include the necessary permits and approvals from RWQCB. RWQCB permits and approvals for creek dewatering would also be required under SCA-BIO-10 (discussed above).
- c) *Arroyo Viejo Creek – RWQCB Jurisdiction (Draft SMND/A page 3.3-26)*: Mr. Wines comments that the analysis concerning Arroyo Viejo Creek does not acknowledge that RWQCB's jurisdiction extends beyond the Ordinary High Water Mark (OHWM) pursuant to the Porter-Cologne Act. In response, staff notes that the text does state that Arroyo Viejo Creek is a regulated water under the jurisdiction of RWQCB. At the location where the outfall modifications are proposed, the creek bank is highly eroded and nearly vertical, with no rooted riparian vegetation extending up the slope or at the top of the bank. Figure 2-19 on page 2-40 of the Draft SMND/A shows the existing bank configuration in relation to the proposed bank restoration, which would be regarded as a 2:1 slope with enhancement plantings of native willow cuttings and common rush, plug plantings of creeping wild rye, and seeding with a mixture of native grasses and forbs.
- d) *Veterinary Medical Hospital – RWQCB Jurisdiction (Draft SMND/A page 3.3-26)*: Mr. Wines comments that the analysis concerning the ephemeral drainage located upslope from the site of the proposed Veterinary Medical Hospital does not adequately describe RWQCB's jurisdiction and that the ephemeral drainage should be treated as subject to State jurisdiction. No activities are proposed in this ephemeral drainage as part of the project; the Hospital would be located outside of the upslope drainage channel and, therefore, outside of RWQCB's jurisdiction.



- e) *Drainage Outfall Replacement in Arroyo Viejo Creek (Draft SMND/A page 3.3-42)*: Mr. Wines states that the analysis concerning the proposed replacement of the drainage outfall in Arroyo Viejo Creek does not adequately describe RWQCB's jurisdiction which extends beyond the OHWM from top of bank to top of bank pursuant to the Porter-Cologne Act. In response, staff notes that the text does state that Arroyo Viejo Creek is a regulated waters under the jurisdiction of RWQCB and that authorization from RWQCB would be required. Mr. Wines also comments that willows installed as part of the 2007 creek restoration project may have been required as compensatory mitigation by RWQCB and, therefore, should not be disturbed unless additional mitigation is identified. The Draft SMND/A states that the project will retain the willows to the maximum extent possible. There are two willows that may be affected by the project. However, these willows were not required as mitigation for the 2007 restoration project and the project involves planting 13 new willows. Therefore, no additional mitigation is required. Mr. Wines also comments that there is nothing in the Draft SMND/A to support the document's statement that the proposed native enhancement plantings would fully mitigate any impacts associated with the outfall replacement. Native enhancement plantings are a standard mitigation requirement for mitigating impacts of projects of limited potential impact, such as the proposed outfall replacement. Pages 2-37 through 2-39 and Figure 2-19 of the Draft SMND/A describe and show how the existing eroded creek bank would be enhanced through the relocation of the outfall and installation of willows and native plantings which would curtail future erosion and enhance habitat values. Therefore, there is substantial evidence that the proposed enhancement plantings would fully mitigate any potential impacts.
- f) *Arroyo Viejo Creek – 2007 Restoration Project Annual Monitoring Reports*: Mr. Wines comments that the RWQCB permit for the 2007 Arroyo Viejo Creek restoration project required annual monitoring reports to RWQCB which have not been submitted to RWQCB. Staff is investigating this issue. However, the 2007 restoration project is a separate project from the current proposal; failure to provide permit-required monitoring reports does not affect the CEQA analysis for the current proposal. An adequate assessment of the current condition of Arroyo Viejo Creek was made as part of the CEQA analysis for the current proposal.
- g) *Mitigation for Potential Seasonal Wetland (Draft SMND/A pages 3.3-42 – 3.3-44)*: The CEQA analysis includes a mitigation measure (BIO-1) requiring mitigation for the potential impact to the 950 square-foot potential seasonal wetland located on an existing tire road in the event that the water feature is determined to be a regulated waters of the State by RWQCB. The City's standard condition of approval (SCA-BIO-10 discussed above) would ensure that the potential impact is mitigated by requiring the applicant to obtain all necessary State and federal permits and approvals. Mitigation Measure BIO-1 is identified in order to provide guidance for implementing SCA-BIO-10 in regards to the potential seasonal wetland. The Draft SMND/A states that compensatory

mitigation would be required in the “remote” instance that the feature is considered a waters of State and RWQCB requires compensatory mitigation. Mr. Wines comments that the use of the term “remote” is inappropriately leading and does not provide an accurate assessment of the jurisdictional status of the wetland. In response, staff notes that the purpose of the CEQA analysis is to conduct an accurate evaluation and reach substantiated conclusions. The Draft SMND/A and the April 27, 2011, staff report for the Planning Commission meeting provide substantial evidence that the wetland is most likely not a jurisdictional waters of the State. However, the Draft SMND/A acknowledges that RWQCB will make the determination as to the jurisdictional status of the wetland and conservatively provides for mitigation in the event that RWQCB determines that the potential seasonal wetland is jurisdictional and compensatory mitigation is required. Mr. Wines does not comment as to why the jurisdictional assessment is inaccurate. Mr. Wines also states that the Draft SMND/A does not provide sufficient detail to demonstrate that Mitigation Measure BIO-1 is physically feasible because the mitigation does not identify specific mitigation locations if compensatory mitigation is required for the loss of the 950 square-foot potential seasonal wetland. Under CEQA, it is not required that the potential mitigation locations be identified, only that enough information be provided to determine that the mitigation is considered feasible. Field assessments by the consulting biologist confirm that there are numerous potential locations on-site with the appropriate wetland hydrology to serve as mitigation, if required, including areas adjacent to the potential seasonal wetland and along the outer edge of the Arroyo Viejo Creek corridor.<sup>5</sup> Finally, Mr. Wines comments that the minimum maintenance period for wetland mitigation projects subject to RWQCB mitigation is five years, not three years as identified in Mitigation Measure BIO-1. Mitigation Measure BIO-1 merely establishes a minimum of three years. Final monitoring and maintenance requirements would be determined by RWQCB if the Board has jurisdiction.

In the April 27 letter, the Friends of Knowland Park state that RWQCB should approve all proposed mitigation measures before final project approval is granted. However, RWQCB, as a state agency, would not be able to approve any mitigation measures until the CEQA analysis is completed. Once the CEQA analysis is completed, the applicant would comply with SCA-BIO-10 and Mitigation Measure BIO-1 and seek RWQCB approval if required.

Staff believes the CEQA analysis concerning the above issues is adequate, no revisions to the SMND/A are required, and no additional mitigation is required.

23. Invasive Species Removal Techniques: The Appellants argue that the applicant’s past efforts to remove invasive French broom disturb the soil and distribute seeds. As explained in the applicant’s presentation at the April 27, 2011, Planning Commission meeting, the applicant contracts with experts in French broom removal. The removal is performed during the flowering season prior to the plant generating seed so that

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<sup>5</sup> Personal communication with Jim Martin, Environmental Collaborative, May 19, 2011.

there is no resulting seed dispersal. Also, the French broom is mowed, not extracted by the roots, thereby reducing potential soil erosion.

24. Trees – Overnight Camping Area: As stated in Section 3.3, Biological Resources, of the Draft SMND/A, impacts to trees would be reduced to less-than-significant levels through implementation of the Tree Protection and Revegetation Plan required in Mitigation Measure 13b and compliance with the City's Tree Protection Ordinance and standard conditions of approval (SCA-BIO-1 through SCA-BIO-4). The City's Tree Protection Ordinance requires that adequate protection be provided during the construction period for any trees that are to remain in the vicinity of proposed development, and SCA-BIO-4 expands upon the avoidance measures to be implemented to prevent damage during construction. Regarding the overnight camping area, the Appellants argue that the activity of the campground visitors and the tent cabin platforms would have significant impacts on trees in the campground area. In response, staff notes that oaks are regularly located in parks, campgrounds, and other areas with substantial pedestrian traffic without significant impact to the health of the trees. For example, there are existing oaks located in the existing Zoo and in the plaza in front of Oakland City Hall (Frank H. Ogawa Plaza) where roots are covered with paved surfaces and hundreds of people walk near the trees and over the roots on a daily basis with no significant impact to the health of the trees. The tent platforms proposed at the overnight camping area would be raised; the soil under the platforms would remain permeable. Because the tents would be located under the canopy of the trees where existing soil is shaded, no significant change in soil temperature or health is expected.

25. Trees – Sudden Oak Death Assessment: As stated in the staff report for the April 27, 2011, Planning Commission meeting, Sudden Oak Death (SOD) is a tree disease which infects and kills primarily oak trees but also other trees, including California bay laurel, Douglas-fir, and coast redwood. Section 3.3, Biological Resources, of the Draft SMND/A contains a detailed analysis of potential project impacts on trees and finds that potential impacts could be reduced to a less-than-significant level with implementation of the Tree Protection and Revegetation Plan required in Mitigation Measure 13b, compliance with the City's Tree Protection Ordinance and standard conditions of approval (SCA-BIO-1 through SCA-BIO-4), and implementation of the Habitat Enhancement Plan. The Appellants argue that a comprehensive assessment of the presence of SOD in Knowland Park should be done before project approval.

A comprehensive assessment of SOD in Knowland Park is not required prior to project approval. The purpose of documenting the existing physical environmental conditions in a CEQA analysis is to allow the comparison between the existing conditions and the incremental changes to the existing conditions caused by the project in order to determine the significance of the project's effects on the environment. Under CEQA, the description of the existing conditions need not be longer than necessary to make a determination as to the significance of the effect of the project. SOD is known to be present in Knowland Park. The extent and nature of SOD in Knowland Park will vary over time. As stated in the April 27 staff report, the

Tree Protection and Revegetation Plan required by Mitigation Measure 13b would involve ongoing tree surveys to document the condition of trees, including the status of SOD in the Park, and recommendations to extend the life and health of the trees. The monitoring and mitigation of SOD would be accomplished through the Tree Protection and Revegetation Plan and the Habitat Enhancement Plan. The Habitat Enhancement Plan was revised in April 2011 to clarify specific SOD-related actions. Therefore, no significant impacts related to SOD are anticipated. A determination has been made concerning the impact of the project relative to SOD so additional assessments are not required at this time. Additional assessments at this time would not result in a determination that the potential impact would be significant or more severe from the current determination.

Although additional assessments of SOD are not required for the reasons stated above, to respond to public concerns about SOD at the project site, a reconnaissance-level survey was conducted by an independent, expert consultant with extensive experience and expertise in SOD to assess the prevalence and potential impacts of SOD on oak stands in the California exhibit area and Arroyo Viejo Creek area. The results of that survey are attached to this response document as Exhibit A. The survey report indicates that SOD infections have been previously confirmed throughout the Oakland Hills with the nearest infections located to the south at the Dunsmuir Hellman Historic Estate, to west near the intersection of Golf Links Road and Scotia Avenue, and to the north between Golf Links Drive and Gateview Drive. These detections range from approximately 1,400 to 2,900 feet from the project site. The survey notes that nine leaf samples previously collected within the project area in May 2010 were negative for SOD.

In the California exhibit area the visual observations from the current survey found only one oak with symptoms closely matching SOD. 15 leaf samples were collected from bay trees; none of the bays had symptoms typical of SOD. Laboratory culture results for these samples were negative for SOD as of May 30, 2011. The survey notes that due to the predominantly open, relatively dry, savannah-like conditions in the California exhibit area, oaks in that location have a low risk of developing SOD. The area near the overnight campground has characteristics more favorable to SOD, however, no symptoms of SOD in this area were observed. In the Arroyo Viejo Creek area, several dead oaks were observed with symptoms consistent with SOD. Five leaf samples were collected from the Arroyo Viejo Creek area. Laboratory culture results found two of the samples positive for the SOD-causing pathogen. Given the short distance between the area of observed SOD symptoms in Arroyo Viejo Creek and the project site, it is likely that SOD will eventually spread into the project site through natural means, such as windblown rain and bay leaves transported by wind, with or without implementation of the project.

The SOD survey concludes that given the City's standard conditions of approval, mitigation measures, and Habitat Enhancement Plan, with tree-health considerations and specific SOD-related actions, the potential impact of the project related to SOD would be less than significant. Furthermore, implementation of the project and the

Habitat Enhancement Plan would control the spread of SOD in Knowland Park such that the project and Plan would have a beneficial effect relative to SOD compared to the conditions at the Park without the project and Plan.

To further clarify certain provisions in the Habitat Enhancement Plan related to SOD, the following refinements would be made to the Plan as recommended by the survey (new language is underlined and deleted language is struck-out):

*Implementation Action 1-7: Develop and implement a comprehensive Sudden Oak Death Control Program addressing the possible spread and infection of SOD in Knowland Park associated with implementation of the Master Plan and vegetation management activities of the HEP. The SOD Control Program shall be prepared by a plant pathologist, certified arborist or registered professional forester trained in the treatment of SOD and submitted to the City for its review and approval. The SOD Control Program shall be prepared in consultation with the pest control staff of the Alameda County Agricultural Department, and shall be completed prior to initiation of any construction or additional vegetation management activities in Knowland Park associated with the California Exhibit and/or the HEP. Best Management Practices (BMPs) shall be developed as part of the program to address possible spread and infection both during construction of the California Exhibit and vegetation management activities associated with the HEP. Provisions in the SOD Control Program shall include the following major components with related BMPs, as modified to reflect the best available science in treating and avoiding spread of the pathogen.*

- ***Identify and Monitor Extent of SOD Infection:** Map the current extent of observed SOD infection in Knowland Park, designate zones for high and low risk areas, and monitor any spread of the pathogen as part of the annual monitoring program of the HEP. Risk zones and the applicable BMPs listed below shall be adjusted as necessary if the annual monitoring indicates the infection/infestation has spread.*
- ***Sanitation Measures:** Sanitize tools, equipment, vehicles, shoes and clothing upon exiting high risk zones or when used on known or suspected infested trees as a precaution against spreading the pathogen. Use all reasonable methods to sanitize personal gear and crew equipment before leaving a *P. ramorum*-infested location or high risk area. Contaminated soil, particularly mud, on vehicle tires, workers boots, shovels, stump grinders, trenchers, etc., may result in pathogen spread if moved to a new, uninfested location. Products used in sanitizing are corrosive to metal and fabric, and toxic to native plants and other vegetation. Measures taken to prevent possible spread of this pathogen shall be implemented in a coordinated fashion to avoid possible secondary effects of treatment, including establishing designated sanitation stations where materials are available for treatment and runoff is adequately contained. Complete cleaning of equipment, typically by using water to completely remove soil*

and plant debris, provides an adequate level of sanitation in most circumstances. The use of other cleaning and disinfecting agents (such as bleach or alcohol) is typically restricted to specialized uses (e.g., cleaning footwear).

- **Worker Training:** *Inform all construction and vegetation management crew members about the arboricultural implications of *P. ramorum* and required sanitation practices when working in high risk areas, and potential for spread to other locations. Where work will occur in infested areas, sanitation kits must be provided and their use monitored to ensure cleanup.*
- **Timing of Tree Removal and Construction:** *Restrict timing of tree removal, work on infected and susceptible vegetation species, and grading to the dry season (June - October), or during dry spells if adherence to this schedule is not feasible. When working in wet conditions, equipment shall be kept on paved or dry surfaces to the maximum extent feasible. Construction and vegetation maintenance activities shall generally occur in disease-free and low risk areas before proceeding to infested and high risk areas, and appropriate sanitation measures followed.*
- **Restrictions on Movement of Plant and Soil Material:** *Appropriate restrictions on grading, other soil disturbing activities, and collection or movement of plant material (wood, brush, leaves and litter) shall be developed and implemented where grading, vegetation removal, and heavy equipment operation is to occur in infected and high risk areas. Within the regulated area, potential host material (e.g. wood, bark, brush, chips, leaves, or firewood) from tree removals or pruning of symptomatic or non-symptomatic plants shall preferably remain within the infected area to minimize pathogen spread, or disposed of off-site according to the quarantine Compliance Agreement for green waste disposal in Alameda County.*
- **Nursery Stock:** *All nursery stock, soils, and soil amendments used at the site shall be free of *P. ramorum* and other plant pathogenic *Phytophthora* species. Appropriate certification and/or testing will be required to document that materials brought into the site are free of these exotic pathogens.*
- **Bay Removal:** *Reduce inoculum of *P. ramorum* in vicinity of oaks by selective removal of nearby bay foliage, especially understory bay seedlings and saplings.*

26. Trees – Sudden Oak Death-Related Actions: As stated in the staff report for the April 27, 2011, Planning Commission meeting, the revised and clarified Habitat Enhancement Plan contains specific actions to control the spread of SOD in Knowland Park. Included are specific SOD-related actions concerning the construction of the California exhibit and vegetation management activities of the Habitat Enhancement Plan. The Appellants argue that SOD-related actions should be

implemented prior to any construction, including construction of the Veterinary Medical Hospital. In response, staff notes that no oaks or other trees known to carry SOD are proposed for removal during, or would be affected by, construction of the Hospital. Therefore, construction activities associated with the Hospital would not contribute to the spread of SOD and SOD-related actions are not necessary. Regarding construction of the perimeter fence, no trees are proposed for removal. However, the perimeter fence is considered a component of the California exhibit so the SOD-related actions in the Habitat Enhancement Plan would be implemented during construction of the perimeter fence. The Appellants also argue that the SOD-related provisions are pointless because, they argue, a determination could be made that the provisions are infeasible due to the infeasibility provision of the Habitat Enhancement Plan (listed on page 8 of the staff responses in the April 27 staff report). In response, staff notes that the infeasibility provision only applies when determining the feasibility of further refinements of the plans for the California exhibit to avoid additional stands of native grasslands within the exhibit (thereby reducing the amount of grassland to be removed). The infeasibility provision would not apply to the SOD-related actions; the SOD-related actions would be required.

## GLOBAL CLIMATE CHANGE

27. Vegetation Change: The Draft SMND/A and the staff report for the April 27, 2011, Planning Commission meeting present a detailed analysis of the project's potential affect on global climate change including the potential increase in greenhouse gas emissions related to vegetation change at the site. The analysis states that the removal of existing vegetation at the site would result in an increase of approximately 390 metric tons of CO<sub>2</sub>e while new trees planted at the site would sequester approximately 274 metric tons of CO<sub>2</sub>e for a net increase of approximately 116 metric tons of CO<sub>2</sub>e. The Appellants argue that the analysis "double-counts" the CO<sub>2</sub>e sequestration of the new trees because, they argue, the sequestration is included in the calculation of the 390 metric tons increase due to the vegetation "change" and then included again in the calculation of the 274 metric tons decrease due to new trees. It appears the Appellant is misinterpreting the term vegetation "change" to mean the removal and then replanting of new trees. Table 2.16 of the Climate Change Technical Report (Appendix H of the Draft SMND/A) shows that the calculation of vegetation "change" only includes the removal of vegetation and not the replanting of trees. The replanting of trees is calculated separately, as shown on Table 2.18 of the Climate Change Technical Report, and then compared to vegetation removal in Table 2.19 of the Technical Report for the net difference which equals an increase of approximately 116 metric tons of CO<sub>2</sub>e. Thus, the analysis concerning vegetation change is adequate.

## LAND USE, RECREATION AND PLANNING

28. Perimeter Fence/Wildlife: The Appellants state that the proposed fence is described as having "animal-friendly undercrossings" to allow passage of wildlife, but the applicant has stated in meetings the necessity of fencing "protected open space" to

keep out feral dogs and cats. The Draft SMND/A and staff report for the April 27, 2011, Planning Commission meeting clearly indicate that the proposed perimeter fence would allow passage for wildlife. The Appellants argue that the perimeter fence will have “massive effects” on wildlife which are not adequately addressed. The Draft SMND/A and the April 27 staff report provide substantial evidence that the project will be consistent with OSCAR Element policies concerning wildlife migratory corridors. The project would not be located in wildlife migratory corridors mapped in OSCAR and would be designed with animal-friendly undercrossings to allow passage of all wildlife, with the exception of deer. Deer would continue to have movement opportunities in the remaining open areas of Knowland Park, including along the wildlife corridors shown in OSCAR. Moreover, the perimeter fence was approved in 1998 and the proposed modification of the fence location that would reduce the enclosed area from 62 acres to 56 acres would not result in any new significant impacts or substantially increase the severity of previously identified significant impacts. To the contrary, the modifications would reduce the potential impacts of the fence.

29. Recreational Buildings in City Parks: The Appellants argue that the project is not consistent with the policy in the OSCAR Element concerning non-recreational buildings in City parks (Policy REC-1.3). The staff report for the April 27, 2011, Planning Commission meeting contains a detailed analysis of why the project is consistent with this policy; no additional response is necessary.

## NOISE

30. Ambient Noise Increase: The Appellants argue that there has been no assessment of existing ambient noise levels in the “upper-mesa area facing the proposed expansion area.” Contrary to the Appellants argument, three additional measurements of existing ambient noise levels were taken in the upper-mesa area near the proposed California exhibit site. These locations and measurements are shown and listed in the staff report for the April 27, 2011, Planning Commission meeting (see Receptors 12, 13, and 14). These locations represent the “worst-case” scenarios for the potential increase in ambient noise levels because they are close to the proposed California exhibit (where project noise levels would be higher) and further away from Interstate 580 to the west and nearby residential areas to the south (thereby having lower existing baseline ambient noise levels). The project would not increase ambient noise levels by 5 dBA or more at these locations. Therefore, the increase in ambient noise levels would continue to be less than the City’s thresholds of significance and a less-than-significant impact. In addition, the Appellants did not raise the specific issue of the appropriateness of the noise measurement locations prior to the close of the public hearing and thus the City is not obligated to consider it. Rather, the Appellants raised the concerns that noise measurements were not taken for these locations.
31. Noise – California Visitor Center: The Appellants question if the impact of the noise from the deck on the California Visitor Center was considered in the noise analysis. In response, staff notes that noise from the outdoor deck at the Center was included in



the analysis. The analysis found that the expected noise levels would be less than significant. The estimated noise was based on the maximum occupancy of the deck which represents a worst-case scenario and, thus, is a conservative analysis.

32. Noise – Overnight Camping Area: Regarding the overnight camping area, the Appellants question if there will be quiet hours or outdoor fire pits, and question if noise from the overnight camping area was considered in the weekend noise analysis. In response, staff notes that there are no quiet hours or outdoor fire pits proposed for the overnight camping area. Noise from the overnight camping area was included in the analysis and compared to the City's CEQA thresholds of significance for daytime and nighttime noise. The analysis found that the expected noise levels would be less than significant. The noise thresholds are lower at night compared to during the day but are the same for weekdays and weekends. The estimated noise was based on the maximum occupancy of the camping area which represents a worst-case scenario and, thus, is a conservative analysis. Noise impacts from the camping area are expected to be minimal without the need for enforced quiet hours because of the tremendous distance between the camping area and public walking paths and trails in Knowland Park and between the camping area and adjacent residential areas. Furthermore, the Zoo implements a "Quiet Coyote" program designed to reduce visitor noise. The program will be incorporated into the California exhibit and the overnight camping area (see Attachment M to the June 21, 2011, City Council Agenda Report).

## TRANSPORTATION AND CIRCULATION

33. Cumulative Traffic Impacts from Other Large Projects: As explained in Section 3.11, Transportation and Circulation, of the Draft SMND/A and in the staff report for the April 27, 2011, Planning Commission meeting, the transportation analysis considers the project's contribution to the cumulative impacts of future growth, including large planned development projects such as the redevelopment of the Oak Knoll Naval Hospital site. The future baseline scenario is calculated using the Alameda County Transportation Commission (formerly the Alameda County Congestion Management Agency) Countywide Transportation Demand Model. The Model projects future land use and traffic growth for years 2015 and 2035 based on projections from the Association of Bay Area Governments (ABAG). Although not required because the Model already reasonably accounts for future traffic growth, in order to provide a more conservative analysis projected traffic from the redevelopment of the Oak Knoll site was obtained from traffic forecasts for the Oak Knoll project and added to the Model. The Appellants argue that the cumulative traffic analysis fails to consider the proposed redevelopment of the Foothill Square Shopping Center. Staff notes that the Appellants did not raise this issue prior to the close of the public hearing at the March 16, 2011, Planning Commission meeting, and, therefore, the City is not required to consider the issue. Nevertheless staff will respond to this issue. As stated above, because the City uses the forecast method for projecting future traffic growth, the City is not required to consider each and every pending development project because the Model reasonably accounts for future traffic growth. The traffic analysis for the Zoo project shows that the Zoo project would not result in significant transportation

impacts based upon the City's CEQA thresholds of significance. However, the CEQA analysis for the now approved and currently unbuilt Foothill Square project shows that the Foothill Square project would potentially cause a significant impact but the project mitigation requires installation of a traffic signal at the currently unsignalized intersection of 106<sup>th</sup> Avenue and Foothill Boulevard, which would reduce impacts to less-than-significant levels, and thus improve traffic conditions for the Zoo project at this location.

34. Golf Links Road/I-580 Intersections: The Appellants argue that Caltrans should approve the mitigation measures for the project prior to project approval. Staff notes that no new transportation-related mitigation is proposed because no new significant transportation-related impacts have been identified. Therefore, Caltrans approval is not required or necessary. Even if Caltrans approval was required, which it's not, Caltrans would not be able to approve the mitigation until after the CEQA analysis is complete and the project is approved by the City.

### **OTHER ISSUES**

35. Perimeter Fence Timing: The preliminary phasing schedule for the project indicates that the proposed perimeter fence would be installed as part of phase one of the project, prior to construction of the California exhibit. The Appellants argue that installing the fence years before construction of the California exhibit is unacceptable and that the fence should not be installed until the applicant demonstrates that it is prepared to complete the entire project and required mitigation measures, or, at the very least, the fence installation should be phased to coincide with specific phasing of project elements. In response, staff notes that the 1998 Master Plan did not contain a requirement regarding timing of the fence installation and that the perimeter fence has been reduced in size as discussed above. The Appellants have not demonstrated why the timing of the fence installation should be regulated differently than the 1998 Master Plan.
36. Alternative Concept: The Appellants state that the applicant's architect stated in a meeting that he had not been asked to consider Zoo expansion alternatives closer to the 1998 Master Plan and that the architect also stated that the elements and scope of the revised project could not be achieved within the constraints of the 1998 Master Plan. The Appellants argue that this is evidence of major changes to the project, not "minor technical" changes. Regardless of what the architect may or may not have stated, projects are typically refined and do change as they move from a conceptual site plan to more defined development plans. The discontinuous animal exhibits of the 1998 Master Plan were consolidated in the current proposal in order to improve animal and visitor experiences. This does not mean the project changes are substantial, or have significant environmental impacts. See Response 5 above for a discussion of "minor technical changes."
37. Dumping in Knowland Park: The Appellants argue that Zoo-related construction debris and animal waste has been dumped in Knowland Park. In its letter, the

applicant responds that there has been no Zoo-related dumping in Knowland Park since it assumed management responsibilities for the Zoo and Knowland Park (see Attachment M to the June 21, 2011, City Council Agenda Report). The Friends of Knowland Park have identified what it believes are Zoo-related dump sites in Knowland Park, including a site near the existing upper parking lot (at the location of the proposed Veterinary Medical Hospital), a site in Knowland Park where an old elephant sign from the Zoo is located, and a site near the proposed California Interpretive Center. The site near the existing upper parking lot is not a dump site; it is one of the locations of the Zoo's existing composting program that diverts solid waste from landfills. The site of the elephant sign is believed to be a decades-old dump site that predates the applicant's management of Knowland Park. The applicant has verified the existence of this dump site and states that the debris will be removed within 60 days. The third dumping site, located near the proposed California Interpretive Center, is the location of existing construction debris of unknown origin documented in the Draft SMND/A (Subsection 3.4.4.3) as existing fill soils that will be removed during the construction of the Center.

38. Service Road: The Appellants state that the service road to the California exhibit was to be relocated under the 1998 approval but is now proposed for use both during construction and after buildout under the amended Master Plan and without the mitigating landscaping and other measures agreed to when the road was previously relocated. As explained in the applicant's presentation at the April 27, 2011, Planning Commission meeting, under the 1998 approval the tram road was to be relocated, while the service road remained in its current location. Under the amended Master Plan the tram road has been eliminated and the service road remains in the same location as approved in 1998. Although the landscaping measures of the 1998 approval applied to the tram road, and not the service road, the Planning Commission adopted a condition (Condition 27) that applies the landscaping measures from the 1998 approval to the service road in the amended Master Plan.
39. Need for California Interpretive Center: The Appellants argue that the need for such a "large interpretive center" has not been adequately explained. In response, staff notes that under CEQA, it is not required to demonstrate a "need" for the proposed California Interpretive Center, only that the potential environmental impacts of the Center are adequately analyzed which they have been. However, the incorporation of office space, a gift shop, and a restaurant into an interpretive center at a zoo exhibit is reasonable and typical. The California Interpretive Center will provide space for visitor amenities and administrative functions that will enhance the successful operation of the Zoo, and provide additional revenue. Moreover, although the floor area of the Center would be approximately 34,000 square feet under the amended Master Plan compared to 7,500 square feet under the 1998 Master Plan, the actual footprint of the building under the amended Master Plan would only be approximately 13,000 square feet and the building would appear as a one-story building on the exhibit side (southeast side) because the building would be located on a hillside with space below the main floor where the gondola enters the building.

40. Air Quality – 1,000-Foot Radius: The Draft SMND/A contains a detailed analysis of potential air quality impacts in Section 3.2, Air Quality. The Appellants argue that evaluating only sources of air pollution within 1,000 feet of the project site is misleading because, they argue, virtually every visitor to the Zoo will arrive via Interstate 580 which is located right next to the Zoo. In response, staff notes that the air quality analysis was conducted in accordance with the guidelines of the Bay Area Air Quality Management District (BAAQMD). The analysis evaluates the project's potential impact as a generator of Toxic Air Contaminants (TACs) on nearby sensitive receptors, including nearby residential uses and schools, and concludes that the potential health risk would be under BAAQMD's CEQA threshold and, therefore, less than significant. The analysis also evaluates the project's contribution to potential cumulative impacts as a generator of TACs by assessing whether there are any other sources of TACs within 1,000 feet of the project site. The 1,000-foot screening distance is recommended by BAAQMD because multiple sources of TACs separated by more than 1,000 feet are unlikely to combine to create a significant cumulative impact. There are no other significant sources of TACs located within 1,000 feet of the project site, including Interstate 580, therefore the project would not combine with other TAC sources to contribute to a significant cumulative TAC impact. Also, because there are no other significant TAC sources within 1,000 feet of the project site, the project would not be exposed to significant levels of TACs from other sources. Finally, the analysis in the Draft SMND/A evaluates the potential air quality impact of the vehicle emissions associated with the increase in Zoo visitors attributed to the project and concludes that the impact would be below the thresholds recommended by BAAQMD, and, therefore, less than significant.
41. Inventory of Trees: The Appellants argue that an accurate inventory of trees to be affected by the project has not been prepared and that the City arborist has found the prepared inventory, labeling, and mapping of trees for removal to be inaccurate and inadequate. In response, staff notes that the applicant originally applied for a tree permit for the removal of trees associated with all phases of the project. At that time the Public Works Agency determined that the information submitted was insufficient for the tree permit covering all phases of the project, not for the CEQA analysis. It is not uncommon for the applications for specific development-related permits to require a higher-level of detail than the information provided in the CEQA analysis. The CEQA analysis need only provide sufficient detail to determine potential environmental impacts. The Public Works Agency determined that more detailed information would be required for processing the tree permit for all phases of the project given the size of the project and the number of trees involved. Therefore, the applicant revised the application for the tree permit so that it only covered the trees associated with phase one of the project, namely the Veterinary Medical Hospital, paving of the service road to the California exhibit, and installation of the perimeter fence. The Public Works Agency found that the information submitted for the revised tree permit application was sufficient and approved a tree permit for phase one of the project on April 28, 2011. At that time the Public Works Agency also found the CEQA analysis adequate and adopted the Planning Commission's CEQA-

related findings. The CEQA tree-related analysis is, therefore, adequate and an additional inventory is not required at this time.

42. Parking on the Front Lawn: The Appellants argue that issues related to parking on the front lawn—the grassy area near the Zoo entrance—have not been addressed, specifically that if the current use of the front lawn for overflow parking is no longer allowed then additional parking could be needed. In response, staff notes that the Draft SMND/A (Section 3.11, Transportation and Circulation) finds that the 872 identified striped parking spaces at the Zoo (at the main lot, upper lots, lower lot, loop road and Snow Building) would be sufficient to accommodate anticipated parking demand of the project such that the 200 spaces at the front lawn would not be needed for parking. Therefore, if the front lawn is no longer used for parking, additional parking would not be required and the existing parking at the Zoo would be sufficient. Moreover, as stated in the Draft SMND/A, parking is not a CEQA issue.
43. Water in Visual Simulation: The Appellants state that one of the visual simulations contained in the Draft SMND/A, Figure 3.1-3b, shows, the Appellants argue, what appears to be an area of water outside the project boundaries which suggests that the water feature is proposed for construction. In response, staff clarifies that the water feature is not proposed as part of the project, or any other project, and that the feature is not intended to represent an area of water. The object is an unintentional graphical remnant from when the photograph was modified to simulate the project. Refer to Response 10 above for an additional response concerning the visual simulations.
44. Conflict Between Land Uses: The Appellants state that the CEQA analysis does not seriously address the conflict between land uses. In response, staff notes that in the context of land use conflicts under the CEQA, the question being considered is whether there would be a fundamental conflict between two or more land uses due to the inherent nature of the land uses. The Draft SMND/A (pages 3.8-12 – 3.8-13) and the staff report for the April 27, 2011, Planning Commission meeting provide substantial evidence that the project would not result in a fundamental conflict between land uses, evaluating the potential for conflict between the project and Knowland Park and between the project and adjacent residential uses. Specifically, zoo activities and passive recreational uses (such as hiking and dog-walking) have co-existed in Knowland Park for many years, the City's general plan and zoning designations and policies acknowledge the location of the proposed Zoo expansion adjacent to areas of passive recreation in Knowland Park, and the undeveloped areas of Knowland Park would separate the proposed Zoo expansion areas from residential areas to the north and south of Knowland Park. Moreover, the decision to allow the expansion was made in the 1998 Master Plan approval and is further reflected in the City's zoning of the expansion area as Open Space – Special Use (OS-SU) which permits a wide range of recreational uses including uses consistent with a master plan (Draft SMND/A, page 3.8-8). Thus, there is no new significant impact or a substantial increase in severity of a previously identified significant impact.

45. Utilities and Conservation: The Appellants argue that there is no attempt to decrease the project's dependence on utilities and no attempts to incorporate any alternative or sustainable means to address water needs, wastewater, storm drainage, or electricity. The Appellants do not provide any evidence that this would result in a new significant impact or a substantial increase in severity of a previously identified significant impact. In contrast, the Draft SMND/A (Section 3.10, Public Services and Utilities) provides substantial evidence that the project would not result in a significant impact related to public services or utilities. Staff notes that the project does incorporate a number of sustainable building practices which would reduce the project's dependence on conventional utility service. The Veterinary Medical Hospital would be constructed according to Leadership in Energy and Environmental Design (LEED) green building standards. The overnight camping area would include composting toilets. The Hospital and California exhibit would include stormwater detention features such as green roofs, permeable paving, a vegetated swale, a detention facility, and rain gardens so that the volume and duration of post-project runoff matches the pre-project volume and duration. The Arroyo Viejo Creek outfall replacement element of the project would enhance the creek using bioremediation techniques. Regarding the practice of capturing and reusing stormwater to meet project water demand, staff notes that stormwater capture and reuse in California tends to be less effective in reducing water demand for climatic reasons because rainfall is seasonal and water demand is year-round. Stormwater capture and reuse in areas with California's Mediterranean climate tends to be more effective in controlling stormwater runoff. However, as stated above, the project incorporates a number of features to control stormwater runoff.
46. Perimeter Fence: The Appellants argue that the information presented concerning how the proposed perimeter fence would connect with the Zoo's existing fence is misleading and confusing. In response, staff notes that all the figures in the Draft SMND/A are generally consistent with regards to the connection between the proposed perimeter fence and the existing fence. In addition, in its presentation to the Planning Commission on April 27, 2011, the applicant further clarified in detail the relationship between the 1998 approved perimeter fence, the proposed perimeter fence, and the existing perimeter fence. The 1998 approved perimeter fence crossed Arroyo Viejo Creek connecting to Gold Links Road. This segment is no longer proposed. The current proposed perimeter fence would not cross Arroyo Viejo Creek to the north but would rather connect to an existing Zoo fence located near the existing bison and elk exhibit and the northern terminus of the existing aerial chairlift attraction at the Zoo. Regarding the figures in the Draft SMND/A cited by the Appellants, staff provides the following response: Regarding Figure 2-20, the 1998 approved perimeter fence is shown in blue crossing Arroyo Viejo Creek and connecting with Gold Links Road to the north. In Figure 2-21, the blue line represents the 1998 approved fence and the current proposed fence, except where the current proposed fence has been adjusted which is shown in purple as noted in the legend. The section of the fence crossing Arroyo Viejo Creek and connecting to Gold Links Road to the north is shown in gray, and not blue, because it is no longer proposed. Regarding Figures 2-3, 2-4, 3.11-1 through 3.11-12, and 3.9-3, the

proposed perimeter fence is generally shown in the same location as shown in Figures 2-20 and 2-21.

47. Process Issues: The Appellants state that there have been many procedural obstacles that have interfered with and made extremely challenging for the public to participate in the public review process for the project. In response, staff notes that the process was conducted in accordance with all legal requirements and did not prevent the Appellants from participating in the process (as evidenced by the Appellants' numerous comments on the project and SMND/A). The Appellants have raised issues and comments and those issues and comments have been considered during the review process. Thus, the Appellants were not deprived of a meaningful opportunity to comment on the SMND/A and the various staff reports, and were not prejudiced.

**EXHIBIT A**

**EVALUATION OF OAKLAND ZOO CALIFORNIA PROJECT SITE FOR  
SUDDEN OAK DEATH**





## **EVALUATION OF OAKLAND ZOO CALIFORNIA PROJECT SITE FOR SUDDEN OAK DEATH**

Phytosphere Project 2011-0501

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June 2, 2011

### **SCOPE**

Phytosphere Research was requested by Oakland Zoo staff to perform a reconnaissance-level survey to assess the prevalence and potential impacts of sudden oak death (SOD) on oak stands in the California exhibit area. We were also asked to review and comment on the measures proposed in the April 2011 revisions to the Habitat Enhancement Plan relating to SOD.

### **QUALIFICATIONS**

Founded in 1987, Phytosphere Research provides contract research and consulting services related to natural resource management, plant health, horticulture, and urban forestry. Our services are available to public agencies, businesses, and individuals. The two principals of the firm, plant pathologists Elizabeth A. Bernhardt, Ph. D. and Tedmund J. Swiecki, Ph. D., constitute the staff of Phytosphere Research.

We have been researching diseases and pests of California oaks since 1988. We began studying sudden oak death (SOD) in 2000. With contracts from the USDA Forest Service through State and Private Forestry and the Pacific Southwest Research Station, we have investigated epidemiological factors influencing the development of SOD. As part of this work, we have been monitoring a network of 150 plots located in Marin, Napa, and Sonoma counties on an annual basis since we established the plots in 2000. These plots have yielded valuable information on environmental factors influencing disease development, as well as information on disease progression in infected trees. We also have ongoing projects testing management and control methods for SOD funded by the Forest Service, the San Francisco Public Utility Commission, and the Midpeninsula Regional Open Space District.

We have presented our research findings at each of the four SOD Science Symposia that have been held during the eleven years since the cause of SOD was discovered. In addition, our

reports on SOD to the USDA Forest Service and other cooperators are available online at our website, [Phytosphere.com](http://Phytosphere.com). We have ongoing cooperative projects related to SOD with the laboratories of Dr. David Rizzo, UC Davis, and Dr. Matteo Garbelotto, UC Berkeley, as well as with several other agencies and individual landowners.

In addition to our work on SOD, we have completed a variety of research projects related to plant disease diagnosis, plant health management, environmental restoration, urban forestry, soil management, and the ecology and adaptive management of California plant communities, especially oak forests. More information about our firm is available at [Phytosphere.com](http://Phytosphere.com).

## **BACKGROUND**

SOD is caused by *Phytophthora ramorum*, an introduced fungus-like organism. In forests containing SOD-susceptible oaks (coast live oak, California black oak, Shreve oak, canyon live oak), the disease is primarily related to the abundance and distribution of California bay. *Phytophthora ramorum* causes small to medium sized lesions on California bay leaves. These lesions have no significant impact on the health of California bay trees.

Under wet conditions, especially under warmer spring temperatures, copious amounts of *P. ramorum* spores are produced on infected bay leaves. The spores are primarily dispersed by splashing water. The spores can initiate more bay leaf infections, leading to further spore production. Spores produced on bay leaves also can be splashed onto adjacent or nearby oaks. These spores can infect the living bark tissues of susceptible oaks. These infections give rise to bark cankers that can expand to girdle and kill the trees.

One to several years may elapse between the time that an oak tree is infected by *P. ramorum* and the development of visual symptoms. On coast live oak, the initial visible symptoms are trunk cankers that bleed a dark fluid. In later stages of disease, bleeding may no longer be evident and cankered areas are commonly invaded by secondary organisms. Infected oaks do not produce spores that are readily dispersed, so SOD is not transmitted from oak to oak.

In SOD-affected coast live oak stands, increases in the number of trees infected by SOD occurs in pulses that are strongly associated with successive years in which spring rainfall is plentiful. These conditions lead to abundant spore production on California bay. Weather conditions in spring 2010 and 2011 have generally been favorable for *P. ramorum* sporulation and infection. The last such period that was very favorable for new SOD infections occurred in 2005-2006. SOD incidence on coast live oak is typically highest in areas containing high amounts of California bay with relatively closed canopies. Large diameter coast live oaks have a greater risk of developing lethal SOD bark cankers than do smaller diameter trees.

## **METHODS**

### **Survey methods**

Within surveyed areas, we visually inspected oak trunks for the presence of symptoms that were consistent with those caused by *P. ramorum*. Various organisms can cause injury to oak trunks that result in bleeding. When we encountered areas of bleeding similar to those caused by SOD, we chipped the outer bark of the affected area with a clean hatchet, looking for typical canker symptoms in the exposed bark. Small pieces from suspect oak cankers were

placed into PARP agar growth medium contained in petri plates. This agar medium is selective for *Phytophthora*. Petri plates were incubated at room temperature in the laboratory. Plates were evaluated periodically to detect growth of *P. ramorum* from the tissue pieces. Any growth from tissue pieces was inspected under a microscope. Identification of the pathogen was made based on the characteristic growth form and structures produced on the agar medium.

In addition, we sampled bay leaves with symptoms that were consistent with those caused by *P. ramorum*. Leaf tissue from the edges of suspect bay leaf lesions were placed into PARP agar medium and evaluated as described above.

Because visible symptoms in SOD-infected oaks typically require at least 1-2 years to develop, it is unlikely that we would have been able to detect symptoms in trees that may have been infected in 2010 or 2011 in our May 2011 survey. Any existing SOD cankers detected in our survey would most likely date to 2005-2006. *P. ramorum* is typically difficult to recover from old cankers, so we expected that our detection efficiency from canker sampling would be relatively low. Symptomatic bay leaves typically have a higher detection efficiency using PARP medium. Nonetheless, false negatives (no pathogen recovery from leaves that have actual *P. ramorum* symptoms) are possible, especially for old leaf infections.

#### **Sampling in the California Exhibit Area**

We met with Nik Haas-Dehejia and Dr. Joel Parrott the morning of May 19 to discuss SOD, threats to California hardwood forests, and the expansion plans for the zoo. Nik Haas-Dehejia oriented us to the layout of the project area in the field and provided maps of the site. Prior to beginning our field work, we used an annotated aerial image of the project site to develop polygons that approximated the boundary of the planned California exhibit area. These polygons were uploaded into a handheld GPS unit, which was used for navigation in the field.

We inspected the trees in the area on May 19 and 20, 2011. We used the GPS polygons as well as the presence of tagged trees to determine which trees were in or adjacent to the project area. We worked systematically through the area and recorded our paths through the site using the track logging capability of the two GPS units we used. The GPS tracks are shown in Figure 1 below. For each coast live oak that we inspected, we recorded the tree tag number (if visible) and visually inspected the trunk of the tree using a flashlight to provide additional illumination. A GPS waypoint was recorded for every tree from which we collected a bark or bay leaf sample.

The trunks of only a few trees within the project area could not be observed due to impenetrable vegetation surrounding the trees. We also did a partial survey of the drainage behind the proposed veterinary hospital site. Much of this area is difficult to access due to extremely steep terrain and heavy vegetative cover along the base of the drainage.

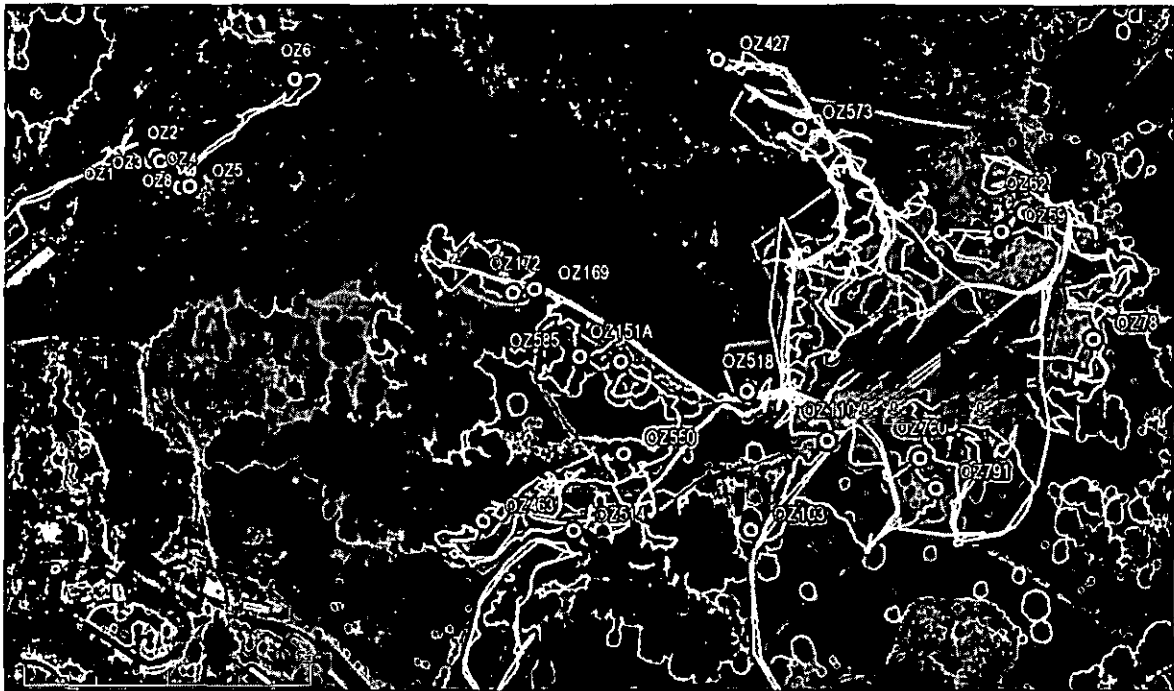


Figure 1. Map of area surveyed for sudden oak death. Purple line represents approximate edge of California exhibit area. Thin white lines represent GPS tracks showing the routes taken as we traversed the site. White circles represent sampled trees and are labeled with numbers beginning with "OZ". Samples are described in Tables 1 and 2 below.

#### Sampling in Arroyo Viejo Creek Area

Prior to visiting the site, we reviewed aerial imagery of the site to determine whether any visible oak mortality that might be attributable to SOD was present in or near the project area. Using current and historical Google Earth aerial images, we identified two small areas west of the project area within Knowland Park where several tree dead canopies were visible in imagery from October 2009. The first dead canopy in one of these patches was visible in imagery dated September 2008. All the canopies in these areas were green in 2007 imagery. The timing of the mortality was consistent with SOD infections that would have been initiated in 2005-2006, and the spatially clumped pattern was also typical of that seen in early SOD infestations.

We uploaded the coordinates of these dead tree canopies into a handheld GPS unit and travelled on foot to these areas with Nik Haas-Dehejia on May 20, 2011. We determined that the dead trees were coast live oaks. We collected bark samples from two coast live oaks (samples OZ2 and 4) with potential SOD cankers. We also examined nearby California bay trees for the presence of *P. ramorum* symptoms and collected a number of leaf samples that were placed into PARP media (Table 2). GPS coordinates were taken at all sample locations (Figure 1). Due to time limitations, our observations were largely limited to the immediate vicinity of the areas identified in the aerial imagery.

## RESULTS

### California Exhibit Area

We examined 435 coast live oak trees in and around the California Exhibit area, as well as California bay occurring adjacent to these oaks. This number does not include the additional trees we examined in the ravine behind the proposed veterinary hospital. We sampled bark tissue from four coast live oak trees with bleeding bark cankers that superficially resembled those caused by *P. ramorum* (Table 1, Figure 1). When these trees were chipped to expose the tissue associated with the bleeding, only one had canker symptoms that closely matched those caused by *P. ramorum*. As of June 2, 2011, results from these isolations were negative. However, positive culture results may develop up to three weeks after isolation, so final culture results from the tissue samples from these trees are still pending.

Due to the low number of SOD-type cankers on oaks in the project area, we emphasized sampling California bay leaves. We collected 15 leaf samples from California bay trees in this area (Figure 1, Table 1). None of the bay leaves had completely typical symptoms of SOD infection. Results from these isolations were negative as of June 2, 2011 but final culture results from these leaf samples are pending.

Table 1. Results from samples collected in California exhibit area May 19 and 20, 2011. Samples include the tree tag number of the sampled tree or the nearest tagged tree if the sampled tree was not tagged. Sample locations are shown in Figure 1.

| Sample number | Sample type         | Results <sup>1</sup> |
|---------------|---------------------|----------------------|
| OZ 59         | Bay leaves          | Negative             |
| OZ 62         | Coast live oak bark | Negative             |
| OZ 78         | Coast live oak bark | Negative             |
| OZ 103        | Bay leaves          | Negative             |
| OZ 110        | Bay leaves          | Negative             |
| OZ 151A       | Coast live oak bark | Negative             |
| OZ 169        | Bay leaves          | Negative             |
| OZ 172        | Bay leaves          | Negative             |
| OZ 172        | Coast live oak bark | Negative             |
| OZ 427        | Bay leaves          | Negative             |
| OZ 463        | Bay leaves          | Negative             |
| OZ 514        | Bay leaves          | Negative             |
| OZ 518        | Bay leaves          | Negative             |
| OZ 550        | Bay leaves          | Negative             |
| OZ 585        | Bay leaves          | Negative             |
| OZ 760        | Bay leaves          | Negative             |
| OZ 782        | Bay leaves          | Negative             |
| OZ 791        | Bay leaves          | Negative             |
| OZ 794        | Bay leaves          | Negative             |

<sup>1</sup> No growth of *Phytophthora* species observed as of 6/2/11. In some cases, positive results may develop up to three weeks after isolation. Given the rapid growth from confirmed positive isolations at this location (Table 2), late positive results are not likely, but plates will be kept and monitored until 6/10/11.

We observed several recent failures of large oak stems or branches in and near the project area. Several of these failures occurred in multisemmed trees with poor structure that were affected by wood decay. We also observed two failures on a slope above the veterinary site that appeared to be associated with soil failure. These failures were not of types that are typically seen in SOD-affected oaks, and none of the failed trees had SOD canker symptoms.

Many of the coast live oaks in the central portion of the California exhibit area occur in a predominantly open, relatively dry, savannah-like stand. These are mostly relatively young, small diameter trees that have shown a large increase in canopy spread over the past 20 years, based on our review of aerial imagery from 1993. Bay cover in this area is low and mostly consists of seedling and saplings, with only a few small trees. Because of current stand characteristics, oaks in this area currently have a low risk of developing SOD.

The western portion of the site around the overnight camping area has mostly larger oaks that form a more complete and dense canopy. Similar stands are present on several north-facing slopes adjacent to the west side of the project area. Bay generally appears to be more common in these stands, but we did not have time to quantify bay cover during our survey. In general, these stands have conditions that are more favorable for SOD development - greater canopy cover, larger oaks, more bay cover, and northerly aspects that may dry out slowly. Although the potential for SOD development is greater in these areas, no likely SOD-related oak mortality was seen in aerial imagery of the areas. We observed no clear SOD symptoms in the portions of these stands that we surveyed.

#### Arroyo Viejo Creek Area

We found two mortality clusters containing up to several dead coast live oaks in the area near Arroyo Viejo Creek which we had identified from aerial imagery. Symptoms on the dead trees were consistent with those seen in SOD-killed trees. Affected oaks were relatively large, dominant trees with extensive bay cover near the trunk. The trees appeared to have been killed by stem cankers and evidence of bleeding was present on some of the dead oaks. In addition, the oaks showed extensive beetle boring and sporulation of *Annulohyphoxylon thouarsianum*, which is typical of SOD killed trees. We sampled bark tissues from possible SOD cankers on two trees. The sampled cankers were relatively old, so the likelihood of a successful isolation from them was relatively low.

We collected five leaf samples from California bay trees in this area. Most of these sampled leaves had symptoms that were quite typical of those caused by *P. ramorum*. *P. ramorum* was positively identified based on colony morphology from two of these samples (Table 2). In addition, the related pathogens *P. pseudosyringae* and *P. nemorosa* were identified by colony morphology.

*P. pseudosyringae* and *P. nemorosa* cause symptoms on bay that are visually indistinguishable from those caused by *P. ramorum*. Like *P. ramorum*, *P. pseudosyringae* and *P. nemorosa* appear to be exotic pathogens that have been found in nursery stock. Although *P. pseudosyringae* and *P. nemorosa* can also cause trunk cankers, *P. ramorum* is the most aggressive and problematic of the three species.

The area is on a north facing slope that has relatively large coast live oaks. California bay is relatively common in the area, and many of the bays are also large trees. A few large California buckeyes are also present in the area. The canopy is nearly closed. Conditions in this area are generally favorable for SOD development and persistence of the SOD pathogen over the long term.

**Table 2.** Results from samples collected in Arroyo Viejo area May 20, 2011. Sample locations are shown in Figure 1.

| Sample number | Sample type           | Results  |
|---------------|-----------------------|--|
| OZ1           | California bay leaves | <i>P. ramorum</i> positive<br><i>P. pseudosyringae</i> positive  |
| OZ2           | Coast live oak bark   | Negative <sup>1</sup>  |
| OZ3           | California bay leaves | <i>P. pseudosyringae</i> positive<br><i>P. nemorosa</i> positive |
| OZ4           | Coast live oak bark   | Negative <sup>1</sup>  |
| OZ5           | California bay leaves | Negative <sup>1</sup>  |
| OZ6           | California bay leaves | <i>P. nemorosa</i> positive                                      |
| OZ8           | California bay leaves | <i>P. ramorum</i> positive                                       |

<sup>1</sup>No growth of *Phytophthora* species observed as of 6/2/11. In some cases, positive results may develop up to three weeks after isolation. Given the rapid growth from confirmed positive isolations at this location, late positive results are not likely, but plates will be kept and monitored until 6/10/11.

## CONCLUSIONS AND PROJECT IMPLICATIONS

Pending final results of our lab tests, we did not find any clear evidence of SOD or *P. ramorum* bay leaf infections among the trees we surveyed in and immediately adjacent to the California exhibit area. Stand conditions in the central portion of this area are not especially favorable for *P. ramorum*. However, conditions could become more favorable for SOD in the future. Bay cover is likely to increase over time because many of the bays in this area are understory seedlings and saplings. Removal of these understory bay seedlings and saplings would be an important component of a strategy to minimize both current and future SOD risk for retained oaks, whether the project proceeds or not. Removal of these small understory bays would not require a tree removal permit under the City's Tree Protection Ordinance because they are less than nine inches in diameter.

Conditions in the denser stands in and near the California exhibit area are more favorable for SOD development. We did not see evidence of SOD in the denser stands within our surveyed area. We noted that nine bay leaf samples collected within the project area as part of a Garbelotto lab SOD blitz in May 2010 were also negative for the presence of *P. ramorum* (<http://nature.berkeley.edu/garbelotto/english/sodblitzresults2010.php>). Although we cannot rule out the possibility that *P. ramorum* is present in this area, it is clear that it is at least very uncommon and has not yet caused coast live oak mortality.

The Oakmapper website ([oakmapper.org](http://oakmapper.org)) indicates that *P. ramorum* infections have been confirmed throughout the Oakland Hills. According to Oakmapper, the presence of SOD in

the area around Knowland Park was first confirmed in 2008. The nearest infections at the Oakmapper website are to the south on a coast live oak at the Dunsmuir Hellman Historic Estate, on bay to the west near the intersection of Golf Links Road and Scotia Avenue, and to the north between Golf Links road and Gateview Drive. These detections range from about 1400 ft to 2900 ft from the project site.

Our sampling near Arroyo Viejo Creek indicates that *P. ramorum* is present within the park. This infestation appears to be relatively recent in origin. The apparent SOD-related oak mortality we identified along Arroyo Viejo Creek is located within 800 feet of the planned California exhibit area. We have not mapped the complete extent of *P. ramorum* infections in this area, so it is possible that the pathogen is present in bay that is located closer to the project area. The bay distribution between these areas is unknown but likely bay canopies are visible throughout this zone in aerial images. Given the relatively short distance between the apparent SOD infestation and the project area, it is likely that SOD pathogen will eventually spread into the area through natural means of dispersal such as windblown rain and bay leaves transported by wind. This spread would occur with or without the project.

#### **HABITAT ENHANCEMENT PLAN COMMENTS**

The revised April 2011 HEP calls for the development and implementation of a SOD control program that would reflect the best available science in treating and avoiding spread of the pathogen. The HEP also calls for monitoring and allows for adjustment of the plan as needed to account for changes in disease distribution. These elements should allow for the development of an adaptive plan to manage SOD at the site, resulting in less-than-significant SOD-related impacts.

We suggest the following technical changes to the implementation actions.

- Implementation Action 1-7, first paragraph: addition

The SOD Control Program shall be prepared by a plant pathologist, a certified arborist or registered professional forester trained in the treatment of SOD.

Plant pathologists, particularly those who have been involved in SOD research, are generally the best qualified persons to develop a disease management program for SOD. Most plant pathologists are not certified arborists or RPFs.

- Implementation Action 1-7, bullet 1: clarification

The term "infection" refers to the disease status of an individual tree or plant part. When referring to an area where the pathogen may be infecting various plants, the term "infestation" should be used.

- Implementation Action 1-7, bullet 2: clarification

The statement "Products used in sanitizing are corrosive to metal and fabric, and toxic to native plants and other vegetation." appears to refer specifically to the use of bleach (sodium hypochlorite) solutions. A point that should be made is that complete cleaning of equipment,



typically by using water to completely remove soil and plant debris, provides an adequate level of sanitation in most circumstances. The use of other cleaning and disinfecting agents (such as bleach or, more commonly, denatured alcohol) is typically restricted to specialized uses (e.g., cleaning footwear). The current text could be clarified to note that large scale use of toxic and corrosive sanitizing products will not be necessary.

- Implementation Action 1-7: addition

Additional language should be added to clarify that plant and soil materials pose a potential threat of pathogen introduction. The following text is suggested for addition under this action: All nursery stock, soils, and soil amendments used at the site shall be free of *P. ramorum* and other plant pathogenic *Phytophthora* species. Appropriate certification and/or testing will be required to document that materials brought into the site are free of these exotic pathogens.

- Implementation Action 1-7: addition

Additional language should be added to clarify that removal of bays could be a component of a strategy to minimize SOD risk for retained oaks. The following text is suggested for addition under this action:

Reduce inoculum of *P. ramorum* in vicinity of oaks by selective removal of nearby bay foliage, especially understory bay seedlings and saplings.

## SUMMARY

Although there is no evidence indicating that the SOD pathogen is currently present within the California Exhibit area, it is found a relatively short distance away, near Arroyo Viejo Creek. In the absence of any development of the site, the pathogen is likely to move via natural means of spread from this source to the project area in as little as one to a few years. In addition, current users of the site can traverse throughout the site without following any procedures to minimize spread either within the site or from off-site areas. This increases the potential for *P. ramorum* introduction and spread throughout the site. Further growth of bay seedlings and saplings at the site will also occur in the absence of any project development, which will increase SOD risk potential to oaks at the site over time.

The project HEP calls for the development and implementation of a comprehensive SOD Control Program. At a minimum, appropriate management activities implemented under this science-based SOD Control Program have the potential to maintain the SOD disease risk in the project area at a level that is no greater than expected without the project. For example, the use of appropriate phytosanitary practices during both construction activities and subsequent maintenance and management of the site will minimize spread of the local *P. ramorum* population and help prevent the introduction of additional *P. ramorum* strains and other exotic pathogens to the site. Future impacts of SOD to coast live oaks in the project area could actually be reduced below levels that would be expected without the project by implementing the SOD Control Program. In particular, removal of understory bay seedlings and saplings and other management of bay canopy near oaks has the potential to greatly reduce future SOD-related oak mortality at the site. With the development, implementation, and monitoring of the SOD Control Program specified in the HEP, no significant impacts of the project with

respect to the effects of SOD in the project area are anticipated; thus the project will result in less-than-significant SOD-related impacts and, as stated above, future conditions would improve compared to future conditions without the project.



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