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October 8, 2009

Dale Morris, Regional Director
Pacific Region
Bureau of Indian Affairs
2800 Cottage Way, Room W-2820
Sacramento, CA95825

Subject: EA Comments
Proposed Lytton Rancheria Fee-to-Trust / Residential Development Project

Dear Mr. Morris:

I am writing to transmit the comments of the County of Sonoma and Sonoma County Water Agency on the Environmental Assessment (EA) for the proposed Lytton Rancheria Residential Development and Fee-to-Trust Project (project). The Board of Supervisors authorized the enclosed comments at its meeting of October 6, 2009.

The enclosed comments explain that the County's fundamental interest is full and fair disclosure of all adverse environmental impacts of projects proposed in the County—before final action is taken. Meeting that interest here, and complying with the National Environmental Policy Act (NEPA), requires preparation of an environmental impact statement (EIS) rather than an EA.

As you know, the project is substantial in size, scope, and affected resources. It proposes 147 residential units, a community center, retreat, roundhouse, on-site wastewater treatment plant, roads, and other infrastructure on a largely pristine set of parcels that are home to an intact, self-sustaining oak woodland. The project is inconsistent with the general plans and land use regulations of both the County and the Town of Windsor, and may have additional significant effects on that oak woodland and other biological resources, groundwater supplies, regional water quality, global air quality and climate, noise, traffic, and aesthetics. The project would also impose substantial additional demands on police, fire, schools, parks, and other public service providers, while simultaneously removing land from local jurisdiction and reducing the tax revenues necessary to provide those services.

An EIS is necessary to disclose all project components, squarely analyze all the project's potentially significant direct and cumulative impacts, and require substantial measures to mitigate or avoid them. An EIS is also necessary to evaluate a full range of off-site alternatives to the project, and correct the EA's misstatements about the "no project" alternative and inclusion of Alternative A, which the document admits is infeasible in fact. Without an EIS that provides correct information, neither the BIA nor the public can make a proper, informed evaluation of the proposed project.

The County appreciates the work conducted to date by the BIA and its various environmental consultants, and looks forward to working with all parties to identify and analyze all the project's potentially significant impacts, and develop measures to fully mitigate or eliminate them.

Thank you in advance for your consideration of the County's comments. If you have questions or require additional information, please contact Jeffrey Brax, Deputy County Counsel, at (707) 565-2421.

Sincerely,

Paul L. Kelley

PAUL L. KELLEY, Chair
Sonoma County Board of Supervisors
Sonoma County Water Agency

Enclosure

c: Patrick O'Mallan by fax (916-978-6055) and e-mail (Patrick.O'Mallan@bia.gov)
Town of Windsor

Comments of the County of Sonoma and Sonoma County Water Agency

Lytton Rancheria Residential Development and Fee-to-Trust Project Environmental Assessment (EA)

The following comprises the comments of the County of Sonoma and Sonoma County Water Agency (SCWA) (collectively "County") on the EA for the Lytton Rancheria Residential Development and Fee-to-Trust Project (project). We acknowledge and appreciate the Bureau of Indian Affairs (BIA)'s willingness to extend the comment deadline to October 9, 2009 in response to the requests of Representative Mike Thompson and others.

For this and all other projects proposed in the County, our primary interest is full and fair review of all adverse environmental impacts. As detailed below, meeting that interest here and complying with the National Environmental Policy Act (NEPA) requires preparation of an environmental impact statement (EIS) rather than an EA. Under NEPA, an EIS

> must be prepared if 'substantial questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor.' Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1149 (9th Cir. 1998) (quoting Greenpeace Action v. Franklin, 14 F.3d 1324, 1332 (9th Cir.1992)). To trigger this requirement a 'plaintiff need not show that significant effects will in fact occur,' [but] raising 'substantial questions whether a project may have a significant effect' is sufficient. Id. at 1150 (quoting Greenpeace, 14 F.3d at 1332).

Ocean Advocates v. U.S. Army Corps of Engineers, 402 F.3d 846, 864-65 (9th Cir. 2005) (emphasis in original).

This standard offers little deference to agencies, and requires preparation of an EIS whenever substantial questions are raised suggesting a project may have a significant environmental effect. Impacts must be judged against their local and regional context (40 C.F.R. § 1508.27(a)), and an EIS prepared if either the impacts or the project itself is likely to be highly controversial. Id. at § 1508.27(b)(4); see Public Citizen v. Dept. of Transportation, 316 F.3d 1002 (9th Cir. 2003); California v. U.S. Dept. of Transportation, 260 F. Supp. 2d 969, 973 (N.D. Cal. 2003). An EIS is similarly required where the extent of impacts is "highly uncertain or involve[s] unique or unknown risks." 40 C.F.R. § 1508.27(b)(5).

The project meets all of the triggers for preparation of an EIS. The record shows that the proposed removal of more than 2,000 oak trees and construction and use of 147 residential units, a community center, retreat, roundhouse, on-site wastewater treatment plant, roads, and other infrastructure would have more than a "negligible" effect on the physical environment. Ocean Advocates, 402 F.3d at 865 (EIS required where EA failed to show that proposed dock extension "would have only a negligible impact on the environment"). Substantial questions are raised below, and have been raised by numerous others, that the project may result in significant adverse effects on oak woodlands and other biological resources; groundwater supplies; regional water quality; global air quality and climate; noise; traffic; aesthetics; police, fire, and other public services; and other environmental resources.

The BIA has already received substantial comments from state agencies, local governments, concerned citizens, nonprofit groups, and others identifying significant impacts and requesting an EIS. National Audubon Society v. Butler, 160 F. Supp. 2d 1180, 1190 (W.D. Wash. 2001) (an "outpouring of public protest . . . strongly counsels the agency to conduct an EIS"). In addition, the applicant has allowed some interested parties to access the site but apparently denied access to others, increasing the uncertainty of project impacts and again militating in favor of an EIS. See 40 C.F.R. § 1508.27(b)(5).

The County therefore joins with the Town of Windsor, California Regional Water Quality Control Board for the North Coast Region (Regional Board), Windsor West Residents, and Milo Baker Chapter of the California Native Plant Society in requesting preparation of an EIS before final action on the project. An EIS is necessary to disclose all project components, squarely analyze and mitigate all the project's potentially significant direct and cumulative impacts, and analyze a full range of off-site and other alternatives. This information is necessary to allow the BIA and public to make an informed evaluation of the proposed project, in keeping with the language and intent of NEPA. Specific comments are set forth below.

I. The EIS Should Disclose and Analyze the Reasonably Foreseeable Uses of the Proposed Community Center.

The BIA's NEPA Handbook states at page 16, section 4.4(D), that "[t]he discussion of the proposed action should clearly answer the questions: Who? What? Where? and When?"

The EA does not answer these questions for the proposed community center and its 4,250 square-foot banquet hall, its multi-purpose rooms, and other areas. Section 2.0 of the EA does not identify who will use the center, or whether it will be open to non-Tribal members. It does not disclose what the center will be used for, when, and how

often. It does not state whether the facility may be used for class I, II, or III gaming; rented for outside weddings or other special events; or rented for outside conferences and business meetings. Any of these uses would result in new, significant adverse impacts to traffic, noise, police and other public services, and other resources.

Appendix G of the EA, the Traffic Impact Study prepared by Abrams Associates, states at pp. 15-16 that the community center, roundhouse, and retreat are not "expected" to be open to the public on a "regular basis," and that Abrams understood that these facilities are "primarily" intended to serve project residents. This language should be elevated and substantially clarified in the main text of the final NEPA document. The project description chapter should define the phrases "regular basis" and "primarily," and disclose when, how often, and for what events the project site would be open to the general public or used by outside parties. It should further disclose whether and how often Tribal members living off-site would travel to the site for events and functions.

The BIA may not rely on the representations of the applicant or the May 2009 understanding of Abrams Associates regarding the potential future uses of the project's community center and other components. If the BIA wishes to bar outside use of those components to new and undisclosed environmental impacts, it must include a "substantive, legal limitation" on future uses as part of any project approval. See Ocean Advocates, 402 F.3d at 873. Alternatively, if the community center, roundhouse, and retreat occasionally would be open to or available for outside use, an EIS must be prepared to disclose, analyze, and mitigate the new traffic, air quality, and other impacts that were not addressed in the EA.

II. The EIS Should Properly Describe the No-Action and Other Required Alternatives.

The evaluation of alternatives is the "heart" of a NEPA document. 40 C.F.R. § 1502.14. The BIA's NEPA Handbook explains at page 16, section 4.4(D) that "[c]onsideration of alternatives should not be a mere exercise, but a good faith effort to find an adequate range of ways to fully and realistically meet the identified need or purpose of the proposed action."

The EA improperly assumes that under the No-Action Alternative, "the property would remain as rural residences and oak woodland habitat and would not be further developed." Page 2-12. That assumption describes the baseline, not the No-Action Alternative. The No-Action Alternative is the development that is reasonably foreseeable on the site if the proposed project never happens. Here, the relevant parcels are designated and zoned either Resources and Rural Development (RRD) or Rural Residential (RR), both of which permit residential and other types of development as a matter of right. EA at 3-48 and 3-50. In addition, three of the parcels are within the

Town of Windsor Sphere of Influence and Urban Growth Boundary (UGB), and have been designated as Estate Residential/Low Density Residential (ER). That designation allows 0.2 to 3 dwelling units per acre or 0.6 to 8.6 persons per acre, and those parcels thus could be developed with up to 63 residences even without the project. EA at 3-50.

Thus, if the project is not approved, the parcels could be developed for a substantial number of residences and other uses as a matter of right. An EIS should be prepared to investigate and disclose the number of residences, and assess the extent to which the true No-Action Alternative would meet the project's stated purpose and need, either by itself or in conjunction with other, off-site residential development. The EIS should further disclose that this development would not only be more consistent with the adopted policies of the Town and County, but could reduce both the costs of utility extensions and site improvements and the environmental consequences of the proposed development.

The document should also stop pretending that Alternative A is a viable option. The EA openly and repeatedly acknowledges that Alternative A is not feasible as a matter of fact. See EA, Appendix B, at 2-2 ("[C]onnection to the Town of Windsor municipal water supply does not appear to be a viable option"); id. at 3-11 ("[C]onnection to the town of Windsor sewer system does not appear at this time to be a viable alternative"); id. at 4-1 (Option 1 "is not considered viable for this project"); id. at 4-2 (same). The EIS should not claim credit for an alternative that contravenes a voter initiative and the Town of Windsor General Plan, and is not viable or feasible as a matter of fact. See CEQA Forty Questions No. 2(a) (reasonable alternatives include only those that are practical or feasible in fact, "rather than simply desirable from the standpoint of the applicant").

As a result, the EA in fact analyzes only the proposed project (Alternative B) and one alternative—a reduced-housing project on the exact same site and with the exact same community center, roundhouse and retreat, "the same rural roadways," and almost identical water supply and wastewater systems. EA at 2-10. This does not constitute analysis of an actual range of alternatives, and does not satisfy the "heart" of NEPA.

An EIS is required to correct the errors of the EA and analyze off-site alternatives. The purpose and need for the proposed action suggest a desire for a Tribal land base and place to congregate, and housing for some—but not all—of the Tribe's members. This purpose and need could be met by far more limited development on the project site itself, in conjunction with nearby residential development consistent with local general plans and zoning. See 'Ilio'ulaokalani Coalition v. Rumsfeld, 464 F.3d 1083, 1098 (9th Cir. 2006) (NEPA document must examine off-site alternatives where the purpose "is not, by its own terms, tied to a specific parcel of land"). Such development could avoid land use conflicts, the removal of significant oak woodlands, the need for a site-specific wastewater treatment plant, and other significant adverse impacts. An EIS should be prepared to identify and analyze off-site locations that can accommodate housing development or other project components.

The BIA and its consultants should not artificially limit project alternatives to one set of project components on the exact same set of parcels. The BIA and its consultants should instead work with the diverse interest groups that represent the community affected by the proposed project, and identify, include, and select the alternative that represents the consensus of the community. See BIA NEPA Handbook at 9-10, section 2.7(B). That "community alternative" will likely include development of residential and other permitted uses on multiple properties, consistent with City and County general plans and land use policies.

III. An EIS Is Necessary to Disclose, Analyze, and Mitigate the Project's Significant Impacts on Oak Woodlands.

Attached hereto as **Exhibit A** is an independent evaluation of the impacts of the project's proposed conversion of oak woodlands, prepared by Adina Merelender, PhD, an expert and adjunct professor in the Environmental, Science, Policy, and Management Department at the University of California, Berkeley. The report confirms that all the alternatives identified in the EA would result in the significant loss of ecosystem function and services at the tree/grove, site, and landscape scales. Exh. A at 13. The report raises substantial questions as to whether the project may cause significant degradation of an environmental factor, and thus satisfies NEPA's requirement for preparation of an EIS. See Ocean Advocates, 402 F.3d at 864-65. The BIA should direct the preparation of an EIS that fully evaluates the project's significant adverse impacts on the site's oak woodland.

The report explains that the project site is comprised of intact, self-sustaining oak woodland, including an astonishing amount of blue oak regeneration, and is providing a full complement of ecosystem services. Exh. A at 2, 13. It explains the context of this potential impact, the importance of intact, functioning oak woodlands, and the state law requirement of project mitigation to insure protection of these important native plant communities. Exh. A at 3, 5; see Public Resources Code § 21083.4.

The report explains that Alternative B would nevertheless remove more than 2,000 oak trees, and affect more than 80% of the project site. Exh. A at 11. The report agrees with the August 27, 2009 letter from the California Department of Fish and Game that the removal of these oaks would result in significant adverse impacts to ecosystem function and services, species diversity and food sources, and habitat connectivity between the coast ranges and the Mayacamas mountains. Exh. A at 11-13.

An EIS is required to describe the habitat quality contained within the project site, and analyze impacts on a small-scale and regional basis. The EIS should describe the various age classes of the individual trees present, detail recruitment of seedlings, and describe if there are any wide-ranging pest or disease issues associated with the species

found. The EIS should also disclose that the project would lead to significant habitat fragmentation within the woodlands and probable strong edge effects, which in many cases can have dramatic negative consequences to local wildlife and avifauna populations. The EIS should also detail the potential for impacts to other native plant communities such as needlegrass grasslands that exist onsite.

The EIS should also correct the wholly inadequate mitigation proposed for the removal of more than 2,000 oak trees—the removal of more native trees as part of a "vigorous thinning regime." EA at 5-4. The EIS should address the real, substantial mitigation measures discussed at pages 14 to 17 of the attached report, including the dedication of conservation easements to protect native oak trees in the vicinity of the site.

IV. An EIS Is Necessary to Fully Assess Project Impacts on Other Biological Resources.

The BIA should direct the preparation of an EIS that fully analyzes and mitigates the project's potentially significant impacts on all biological resources, in accordance with all applicable requirements, including the Council on Environmental Quality's Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act (Jan. 1993).

The EA and Biological Assessment (BA) generally focus on rare plant species that can be either excluded due to lack of habitat (e.g., Pitkin Marsh lily) or greatly abbreviated by referencing the Santa Rosa Plain Programmatic Biological Opinion and mitigating all impacted wetlands not screened by Enclosure 5 "Suitable Habitat" at a rate of 1.5:1. Much of the information regarding impacts and mitigation in the Santa Rosa Plains appears to be based on information that has been superceded by the 2007 Programmatic Biological Opinion. The rare plant descriptions and analyses were not extended to sensitive fish and wildlife species and, as a consequence, the EA lacks important information. While the BA and EA section appear to focus on these individual rare plant species, they lack information regarding potential project impacts upon various regional wildlife species, sensitive plant communities (oak woodlands and needlegrass grasslands), as well as the potential to affect important local wildlife migratory corridors.

The BA incorrectly implies that Critical Habitat for salmonids does not exist in the unnamed perennial portion of the tributary to the Russian River (Section 5.0). NOAA Fisheries has designated all perennial tributaries of the Russian River, including this watercourse, as critical habitat for steelhead. An EIS is required to disclose that the unnamed tributary may provide primary constituent elements (i.e., critical habitat) including spawning, nursery, and rearing habitat for steelhead, and fully analyze and mitigate all potential impacts.

An EIS is also required to address impacts to the California red-legged frog (CRLF). All of Sonoma County is within the listed range, and the site may provide suitable habitat for this sensitive species. Neither species presence nor absence has been established in this region of the County, and neither the BA nor EA adequately assesses the potential for CRLF to occur. Essential habitat components for CRLF generally include breeding habitat, non-breeding habitat and migration corridors. Breeding habitat consists of ponds with adequate depth and hydrology as well as slow moving streams with pond-like vegetation. Non-breeding habitat typically includes riparian habitat that has adequate moisture for survival during the summer months, sufficient cover to moderate temperatures during extremes in the local climate, and features like deep pools, and/or dense vegetation to provide protection from predators. CRLF are know to use forested riparian communities, grasslands, open meadows, and agricultural fields as migration corridors. All of these habitat components are present on-site and within the project area. As a result, the BA should be revised and an EIS prepared to disclose, analyze, and mitigate the potential for CRLF and impacts to the same.

An EIS is also required to assess potential project impacts on state and federal species of special concern. Given the type of rocky perennial stream environment found in the unnamed perennial tributary to Windsor Creek, there is likelihood that the foothill yellow legged frog and western pond turtle could be present. Attachment A of the BA, the U.S. Fish and Wildlife Species List for the 7.5 minute quadrangle, identifies several listed species and species of special concern, including the foothill yellow legged frog, California red-legged frog, and western pond turtle. None of these species are adequately addressed in the BA or EA.

An EIS is also required to address the site's potential function as a migratory corridor for local wildlife species. The site is located near the Russian River, which is a well known dispersal and migratory corridor for salmonids as well as important aquatic and terrestrial wildlife species. Since the project site is currently undeveloped, connects to adjacent habitats, and includes wetlands, riparian forests, oak woodlands, and other important habitat features, the project area may function as an important migratory corridor. An EIS should be prepared to disclose, analyze and mitigate project impacts to migratory corridors.

Finally, the mitigation identified in Section 5.4.1 of the EA should be revised to require a minimum 50-foot setback from all waters of the United States, and not merely "where possible."

V. An EIS Is Necessary to Assess the Project's Wastewater Impacts.

The County agrees with the Regional Board's determination that the project "poses a significant threat to water quality" and requires preparation of an EIS. Regional Board at p. 11 (Sept. 8, 2009). The County agrees that the EIS must include detailed water balances to allow the public and decisionmakers to evaluate the project and the impacts of on-site wastewater disposal. See id. at p. 8. The water balances should include an irrigation balance based on the water demands of each plant species subject to irrigation, taking into account precipitation, ETo, irrigation efficiencies, and irrigation demand. The water balance data should be presented by month for the entire calendar year. The EIS should also include a second water balance for the proposed storage facility with inflow, outflow, precipitation, evaporation also presented by month for the whole calendar year.

The water balances should correct the EA's reliance on rainfall data and evapotranspiration rates from Healdsburg in Table 3-7. The project is located near Windsor rather than Healdsburg. Windsor has different evapotranspiration rates and possibly different rainfall amounts. The California Irrigation Management Irrigation System (CIMIS) has data for Station 103 in Windsor, which reveals a significant difference in evapotranspiration. CIMIS reports just 44 inches of evapotranspiration in Windsor, significantly less than the 51 inches claimed in Table 3-7. The BIA and its consultants should use data as close as possible to the project site.

The water balances should also present the total land area, as well as the irrigation area, to verify that enough land area is available, and to assess potential impacts due to over irrigation and/or pipeline breaks.

In addition, an EIS is necessary to correct the statement in Section 1.6.1 of the EA that project wastewater flows are estimated based on "Sonoma County design standards (Sonoma County, 2007)." The County is not aware of a document entitled "Sonoma County design standards" published or revised in 2007.

The document should also clarify the statement in Section 1.6.2 of the EA that conservative wastewater flow estimates were used. It is not clear whether the EA is referring to the 120 gallons per day per bedroom cited in the "Sonoma County design standards." The BIA should provide an estimate based on the number of plumbing fixtures, or at least the underlying data (number of fixtures, flow rate per fixture, etc.) so the public and decisionmakers can verify that the flow estimates are, in fact, conservative estimates.

An EIS should also be prepared to correct Table 3-2 in section 3.3.3, which relies on Tables 1-3 and 3-1 to present the lbs/day of BOD, TSS and TKN for the three alternatives. The number of people is needed to perform these calculations, but has not been provided for the majority of the development. See Table 1-3. The document should

include the information necessary to verify the presented loading rates.

The document should also provide a detailed design of the proposed treatment system. Section 3.8.3 of the EA discusses the treatment system in general, but does not provide a specific design or sizing of the treatment system.

If on-site treatment and discharge is needed as part of any approved project, the BIA should require, at a minimum, that:

(1) onsite storage and reuse be utilized to the greatest extent possible to minimize the need for discharge and offset use of groundwater;

(2) any future NPDES permit be developed in consultation with the North Coast Regional Water Quality Control Board; and

(3) terms of any NPDES permit accord with the North Coast Basin Plan.

These measures are the minimum necessary to begin to mitigate the significant adverse impacts of on-site treatment and discharge.

VI. An EIS Is Necessary to Fully Assess the Project's Water Supply Impacts.

The EA and Water and Wastewater Feasibility Study and Hydrogeologic Investigation Report do not assess the project's potentially significant impacts to nearby surface water features (e.g., unnamed tributary to Windsor Creek, Russian River, McLaughlin Pond). An EIS should be prepared to fully evaluate the connection between aquifer zones tapped by project water-supply wells and the Russian River alluvial aquifer.

The EA and Water and Wastewater Feasibility Study and Hydrogeologic Investigation Report also do not include a water balance for the project's groundwater demand. A water balance should be prepared that compares the net projected water demand with estimated amounts of groundwater recharge and storage associated with the local aquifer(s) tapped by the proposed water-supply wells for the project. The water balance should be used to evaluate cumulative and well as direct project impacts on the aquifer(s).

The water balance should also include the potable water necessary for common area irrigation. Section 2.2 of the EA states that this estimated demand has not been included or evaluated, which does not appear consistent with NEPA.

The BIA should also provide the underlying data supporting the water demand estimates summarized in Table 1-1. Section 1.5 states that the estimates are based on local and regional demand factors, available usage data, and other information. This data

should be provided so the public and decisionmakers can verify the water demand estimates.

The BIA should similarly provide the test data and pumping rates discussed in the EA. The EA states in Section 4.2.2 that the well maintained a continuous pumping rate of 75 gpm without "excessive drawdown." Additional information is necessary to evaluate use of that phrase, which is not defined in the EA.

The EA also states at 4-22 that potential drawdown to the neighboring well 700 feet to the east would be approximately 8.5 feet per year, assuming a hypothetical production well for one year at a continuous rate of 57 gpm. The BIA should clarify whether that continuous rate is really the 75 gpm identified elsewhere in the document, rather than 57 gpm.

Additional data is also needed to verify the statements at 4-23 of the EA that drawdown would be three feet at a distance of 2,000 feet, that the aquifer is 300 feet thick, and that area groundwater levels have been reported to be stable.

The BIA should also circulate the appendices to the Hydrogeologic Investigation Report (i.e., lithologic logs, geophysical logs, pump test data, etc.). This information would be extremely beneficial to the Santa Rosa Plain hydrogeologic investigation that is currently being conducted by the USGS and Water Agency.

An EIS should be prepared that requires implementation of a variety of Low Impact Development (LID) strategies and techniques to minimize the project's demand on limited water and energy resources and lessen its impact on the environment. LID is a sustainable practice that benefits natural resources and contributes to water conservation and water quality protection. The Water Agency is currently developing an LID guidance document that outlines planning and design considerations for implementing LID features, and may be a useful resource for the Tribe, BIA, and EA preparers. The document will address LID topics in the areas of water conservation, water re-use, stormwater management, and energy conservation as related to water use. A draft of the document is scheduled to be available by December, with a final document tentatively anticipated by spring of 2010. In addition, the project should be designed and constructed to achieve the highest certification through the U.S Green Building Council's LEED system.

Finally, given the lack of long-term groundwater-level data in the project area, the EIS should require that the nested monitoring well constructed for the hydrogeologic investigation be maintained and used for groundwater-level monitoring, and perhaps incorporated into the ongoing DWR monitoring program.

VII. An EIS Is Necessary to Fully Evaluate Greenhouse Gas (GHG) Emissions and the Project's Cumulative Impact on Global Climate Change.

The EA fails to comply with NEPA in its analysis and mitigation of GHG emissions and impacts related to global climate change. Section 3.0 contains just four sentences on global climate change, and the sentences merely reference 1997 documents from the Council on Environmental Quality. EA at 3-14 and -15. The EA does not discuss more recent federal and state efforts to address global climate change, including:

- Massachusetts v. EPA 549 U.S. 497 (2007) and the subsequent grant by the United States Environmental Protection Agency of a waiver allowing state regulation of motor vehicle standards;
- The proposed fuel economy rules issued in September 2009 by the US EPA and the Department of Transportation;
- The California Global Warming Solutions Act (AB 32);
- The California Air Resources Board's Climate Change Scoping Plan (adopted December 2008); and
- California Senate Bill 375 (signed September 30, 2008).
- The Bay Area Air Quality Management District's guidelines for analyzing and determining the significant of GHG emissions, which have been published and evaluated in draft are likely to be approved before final action on the project.

Though the Tribe and federal trust land may not be subject to each of these items, they are necessary to understand the context and severity of project impacts. See 40 C.F.R. § 1508.27(a). Four sentences and 1997 references are not sufficient to inform decisionmakers and the public about the nature and scope of this issue.

Section 4.1.3 is similarly inadequate. It endeavors to calculate the project's GHG emissions, but incorrectly states that total operational emissions after the first year would be 2,967 tons per year (tpy). In fact, adding the EA's own calculations of area source and mobile source CO2 equivalent emissions results in 3,035 tpy of total operational GHGs after the first year. Section 4.2.3 also incorrectly states that Alternative B would result in the same emissions as Alternative A. In fact, Alternative B includes operation of a wastewater treatment facility, which has the potential to result in increased emissions of methane and other GHGs.

In addition, the EA does not appear to account for the impact of cutting down 2,009 native trees and thinning of the remaining oak woodland as part of Alternative B. EA at 4-10, 5-4. An EIS is necessary to assess the impacts of the permanent loss of

mature trees and forest soils, both of which serve as carbon sinks. The EIS should circulate a substantially revised and comprehensive inventory of the GHG emissions of all project actions and components.

More importantly, the EA asserts that the project would result in a less-than-significant impact to climate change without ever identifying the relevant threshold of significance. That approach was considered and rejected in Center for Biological Diversity v. National Highway Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008), in which the Ninth Circuit held that mere calculation of potential increases in GHG emissions is insufficient to determine whether an action would have significant effects on the environmental related to climate change. The court held that while the relevant agency

> did the calculations necessary to determine how much extra carbon dioxide would be emitted, it failed completely to discuss in any detail the global warming phenomenon itself, or to explain the benchmark for its determination of insignificance in relation to that environmental danger. . . . Without some articulated criteria for significance in terms of contribution to global warming that is grounded in the record and available scientific evidence, [the agency's] bald conclusion that the mere magnitude of the percentage increase is enough to alleviate its burden of conducting a more thorough investigation cannot carry the day.

Id., 538 F.3d at 1224-25 (citing City of Los Angeles v. National Highway Traffic Safety Admin., 912 F.2d 478, 500 (D.C. Cir. 1990).

Here, too, the EA fails to discuss in any detail the global warming phenomenon itself, or to explain the benchmark for its determination of insignificance. Nor does it "evaluate the incremental impact . . . these emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions." Id. at 1216. An EIS is required. The EIS should include substantial additional information regarding the significance of the project's direct and cumulative impacts related to GHG emissions and global climate change.

The EIS should also correct the EA's treatment of mitigation of climate change impacts. Section 4.1.3 refers the reader to Section 5.0 for mitigation, but no measures related to GHG emissions appear there. The EA also refers the reader to Section 2.0, which lists four measures related to energy use, but makes no attempt to quantify the resulting reduction in the project's GHG emissions. The EIS should identify and require far more substantial measures that are sufficient to meet all federal and state emissions targets and mitigate the project's cumulative contribution to global climate change.

VIII. An EIS Is Necessary to Fully Evaluate Other Air Emissions.

The EA's analysis of other air emissions contains several errors that necessitate preparation of an EIS. As noted above, the document does not disclose the number of off-site Tribal members or non-Tribal members who would use the proposed community center and other non-residential project components. An EIS is necessary to calculate and evaluate the increased air emissions that would result from those vehicle trips.

The EA also fails to evaluate air emissions against both the California Clean Air Act in addition to the federal Clean Air Act. California has adopted air quality standards that in some cases are more stringent than the federal standards. These standards are important for evaulating the context and intensity of project impacts, and should be included in an EIS.

The EA also fails to address all emission-producing facilities and project components. Based on the information in Appendix D, the air quality analysis does not seem to account for operational emissions and energy needs associated with the community center (with swimming pool) or retreat. Those needs should be disclosed, and the resulting impacts assessed, in an EIS.

Like several past documents produced by Analytical Environmental Services, the EA at Section 3.3.1 incorrectly states that a portion of the project is located in the North Coast Unified Air Quality Management District. That district regulates air emissions only in Humboldt, Del Norte, and Trinity counties. According to County GIS data, the entire project site appears to be within the San Francisco Bay Area Air Basin (SFBAAB), which is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

An EIS is necessary to evaluate project and cumulative impacts against the actual context and air basin conditions. In particular, an EIS is necessary to analyze and mitigate impacts related to State PM10 and PM 2.5 standards, for which the SFBAAB is in non-attainment. An EIS is necessary to provide a detailed discussion of these emissions, which can lead to adverse health effects as well as localized nuisance concerns, and to analyze the project's potentially significant contribution to this cumulative impact, particularly during construction. The EIS should require subsantial measures to control fugitive dust beyond those stated in Section 5.3 of the EA. Standard measures include halting grading activities when winds exceed 25 mph, and limiting speed on unpaved roads to 15 mph.

An EIS is also necessary to analyze and mitigate project-level and cumulative impacts against the State one-hour and eight-hour ozone standards, for which the SFBAAB is a non-attainment area.

An EIS is also required to correct the description of sensitive receptors in Section 3.3.5 of the EA, which appears to miss some that are located as close or closer to the project than those that are listed. These include a residence on 066-300-017 located within 100 feet of proposed housing, and a residence on 066-191-016 located approximately 75 feet from a proposed driveway.

Section 4.1.3 of the EA should be revised to disclose that BAAQMD thresholds of significance for operational emissions of NOx, ROG, and PM10 are 15 tons per year.

Finally, the document should disclose and evaluate the PM and CO data from Appendix D in the subsections titled "Anticipated Air Quality Impacts."

IX. An EIS Is Necessary to Fully Evaluate Storm Water Impacts.

The EA correctly seeks to evaluate pre- and post-project runoff flows, and to use structure detention BMPs and other measures to address erosion, sediment control, and other impacts. The EA's pre-project hydrology evaluation only includes the land areas that drain to the northeast and south, however. The EA fails to analyze the significant portion of the project area that drains to the northwest, and is not included in the pre-project hydrology.

The pre-project analysis appears to follow the Flow-Based Hydraulic Sizing Requirements for water quality or treatment control contained in section 4.3.1 of the County SUSMP manual. This analysis is not intended to address the change in flows pre-project versus post-project conditions, however. This analysis only covers the treatment aspect and does not completely address the change in flows. Typically, the 2-yr 24 hour event is used to analyze and address the change in flow, whereas the 85th percentile mean annual 24 hour event is analyzed for treatment controls.

The above comments also apply to the post-project evaluation, which used the same method of analysis while correctly acknowledging all drainage areas. However, the submitted hydrology map should be enlarged and/or made legible in order to evaluate the post-project hydrology for the various alternatives.

The EA also fails to justify the runoff or C values used in the hydraulic calculations, especially since the pre-project C value appears too high. C values are predicated on land use (which currently resembles the "Parks – Vegetated Areas" curve) and terrain slope, which ranges from 9% to 16% in the areas denoted as A1, A2 and A3 of the Pre-Construction Hydrology Map of Appendix A. The maximum C value for the pre-project vegetated areas appears to assume a terrain slope greater than 20%, which does not appear to be the case for these areas.

These errors suggest that the EA has understated the erosion, water quality, and other potentially significant impacts of increased stormwater runoff across and off the project site. An EIS should be prepared to fully disclose, analyze, and mitigate those impacts.

X. An EIS Is Necessary to Fully Evaluate Traffic Impacts.

The EA incorrectly fails to analyze impacts at the following intersections, which will be impacted by traffic seeking to avoid driving through the downtown area to access Highway 101:

- Eastside Road at Old Redwood Hwy;
- Arata Interchange;
- Arata at Old Redwood Hwy; and
- Starr Road at Old Redwood Hwy.

Traffic may elect to use the Arata Interchange for NB off and SB on movements, which would impact all the intersections identified above.

The EA also lacks necessary information about the anticipated demographics of the development, and the resulting implications for potential traffic impacts and the need for a transit link. The EA also fails to recognize that an identical project proposed in the County would be assessed a standard mitigation fee for residential development, to address its long-term and cumulative contribution to local traffic.

Finally, with regard to alternative transportation, the document should disclose that the nearest Sonoma County Transit route to the proposed project is intercity route 60, which operates daily between Santa Rosa and Healdsburg/Cloverdale. The closest stops on route 60 for the project site are at Old Redwood Highway and Eastside Road and at Windsor River Road and Starr Road. Given its limited resources, Sonoma County Transit does not have the ability to offer additional services, and the Tribe should consider paying for extended service or offering a shuttle service for project residents. The ideal shuttle route should serve the Windsor Depot (Windsor River Road and Windsor Road), where transfers to route 60 and Windsor local route 66 can be made, and where Windsor's SMART (rail) station will be constructed.

XI. An EIS Is Necessary to Fully Evaluate Noise Impacts.

An EIS is necessary to correct the following errors in the EA's analysis of project noise impacts.

In Section 3.10.2 and elsewhere, the EA incorrectly references and relies upon the 1989 Sonoma County General Plan, instead of the current Sonoma County General Plan 2020.

As discussed above in our comments regarding air emissions, the EA at Section 3.10.3 and elsewhere appears to miss nearby receptors, including a residence on 066-300-017 located within 100 feet of proposed housing, and a residence on 066-191-016 located approximately 75 feet from a proposed driveway.

The EA incorrectly states that construction noise would be less than significant because the nearest receptors are more than 200 feet away from proposed construction activities. In fact, several sensitive receptors are closer than 200 feet, including those listed in Section 3.10.3 of the EA and in these comments. An EIS is necessary to correct the analysis, and determine whether receptors would be exposed to noise louder than 75 dBA during construction.

The EA's analysis of traffic noise is similarly inadequate. The EA fails to provide sufficient information on the existing and with-project noise levels to determine if the project would result in significant noise impacts. The EA preparers should measure existing noise levels along Windsor River Road, and not merely assert that an increase of 200 peak hour vehicle trips is necessary to cause a noticeable increase in ambient noise. That claim could not be verified and appears incorrect. When existing traffic volumes and noise levels are relatively low, even a fairly low number of new vehicle trips can cause a noticeable noise change for existing sensitive receptors. An EIS is necessary to take and disclose actual measurements and conduct the relevant modeling before determining whether traffic noise would noticeably increase.

The document should disclose that the General Plan standard (NE 1-b) for roadway traffic noise is 60 dBA Ldn, and only may be raised to 65 if it is not possible to meet 60 using a practical application of the best available noise reduction technology.

Finally, additional information regarding the noise generated by a potential water treatment facility should be disclosed and analyzed. Section 4.2.10 (and others) do not identify the distance of the facility to the closest receptor, the equipment at the facility that would generate noise, or the amount of noise that would result. An EIS is necessary to fully and fairly disclose, analyze, and mitigate the project's potentially significant noise impacts.

XII. An EIS Is Necessary to Fully Evaluate Impacts to Police, Fire, and Other Public Service Providers.

A. Police Services.

The Sonoma County Sheriff's Office has reviewed the EA, which accurately states that the Sonoma County Sheriff's Office has jurisdictional authority over the project site. Based on the data provided and the residential nature of the project, the Sheriff's Office would expect an increase in calls for service due to the increase in population and population density at the site. The EA's claim that the project would result in only a "negligible increase in demands" for law enforcement services appears unsupported. An EIS is necessary to disclose that the project would increase calls while decreasing the tax revenue necessary to pay for that service, a significant impact that requires real analysis and mitigation.

Additionally, the document should provide a more detailed description regarding the future use of the proposed community center, and the resulting demands for law enforcement services and associated mitigation. The Sheriff's Office would like to understand what types of events would be held at the center; whether participation would be fee-based; whether the events would draw from outside the property population; and what plans would be developed for security services at the center, particularly when it is at expected full capacity.

Finally, all references to the Sonoma County Sheriff's Department should be changed to the Sonoma County Sheriff's Office.

B. Fire and Emergency Services.

The Sonoma County Department of Emergency Services has likewise reviewed the EA, and has identified the following issues for consideration.

Section 2.1.7 appears to address emergency access by stating that "rural roadways would be 24-feet wide two-lane asphalt travel ways, with gravel shoulders consistent with Sonoma County Subdivision and Fire Safe Standards." The EA preparers should also require the following:

1. Roadways should be named consistent with Sonoma County Fire Safe Standards Section 13-40, *Names of Roads*.

2. Road signs should be installed consistent with Sonoma County Fire Safe Standards Section 13-41 through Section 13-45.

3. Addressing of buildings should be installed consistent with Sonoma County Fire Safe Standards Section 13-46 through Section 13-48.

With regard to water supply, the EA states in Section 2.1.9 that "The Tribe would ensure that appropriate water supply and pressure is available for emergency fire flows" and in Section 4.2.2 that "This tank size would provide 300,000 gallons for fire flow storage and an additional 100,000 gallons for operational storage." The document should also require that:

1. The fire suppression water supply and delivery rate is based on the most demanding structure (the community center) and should be applied in any of the alternatives where this building is considered.

2. According to the California Fire Code, the required water supply for the most demanding structure (the 18,809 square foot community center) is 300,000 gallons if it is constructed as a Type V, A building.

3. According to the California Fire Code, the required deliver rate for fire suppression water for the most demanding structure is 2500 gallons per minute.

4. According to the California Fire Code fire hydrants for this project should be spaced approximately 500-feet apart. Note that this is based on a 1500 gallon-per-minute demand associated with the single-family residential units.

The EA also states at Section 2.1.9 that: "All structures would be constructed in accordance with all Uniform Building Codes, as adopted or supplemented by Sonoma County." In fact, Sonoma County has adopted and amended the California Building and Fire Codes. In addition, the Sonoma County Code requires the installation of fire sprinklers in single-family and two-family dwellings. Residential fire sprinklers should be installed in all single and two-family dwellings that are a part of this project.

The EA mentions fire alarm and suppression systems related to the community center in Section 2.1.9, stating that "The community center would be equipped with an early detection system that ensures an initial response to any fire alarm (automatic, local, or report). This would rely on automatic sprinklers in the occupied areas and smoke detection, along with automatic sprinkler systems in the areas of the facility that are normally unoccupied such as storerooms and mechanical areas." The BIA should require that fire alarm and suppression systems installed in the community center and other structures conform to the requirements of the California Building and Fire Codes as amended and adopted by the County of Sonoma.

Clarification is needed regarding the statement in Section 4.1.9 of the EA that the project would contract directly and use propane rather than natural gas. The document

should disclose how propane would be delivered to the buildings.

The EA also makes various references to native vegetation, but does not identify a specific fuel modification methodology. The BIA should require development of a vegetation management plan that describes how the existing native vegetation and developed landscaping will comply with Sonoma County Fire Safe Standards Sections 13-54 through Section 13-59.5.

The EA also mentions in Section 2.5 impacts related to hazardous materials would be greatest under Alternative B and C, due to the storage of hazardous materials (sodium hypochlorite and citric acid) for the onsite wastewater facilities. The BIA should require submission of a Hazardous Materials Management Plan to the Sonoma County Department of Emergency Services – Hazardous Materials Division whenever the use of hazardous materials is contemplated.

C. Other Public Services.

The County joins in the comments of the Town of Windsor and others regarding the project's potentially significant impacts to local schools, parks, solid waste capacity, and other public resources. The EA attempts to dodge the analysis and mitigation of these impacts by noting that although Tribal members are dispersed throughout the State, many of them currently live in Sonoma County. That claim is unavailing; the development of 147 residences and relocation of Tribal members will create a new, concentrated demand on local public services while simultaneously reducing the tax base necessary to provide those services. An EIS is necessary to analyze and mitigate the significant impacts on public resources and service providers that would result from

XIII. An EIS Is Necessary to Fully Address the Project's Land Use Conflicts and Impacts.

The description of existing development on the subject parcels at page 1-5 of the EA does not match the information in County records. Unless information is provided to the contrary, the fourth paragraph should be corrected to read:

> "Five single-family homes are located within the project site's boundaries. Two homes are located on APN 066-300-028. Each of the following three parcels contains one home: APNs 066-300- 033, 066-191-017, and 066-191-020. Surrounding land uses include private residential, agricultural, and undeveloped parcels."

Unless accurate information is provided to the contrary, the beginning of the second paragraph on page 3-48: should similarly be corrected to read: "Land uses on the 92-acre project site include five single-family residences and . . . ."

The information presented at pages 3-48 through 3-50 regarding the County General Plan and zoning is incomplete and confusing, because it mixes parts of General Plan and zoning requirements. The following provides the complete information.

Assessor's Parcel Number	**General Plan Land Use Designation**	**Parcel Size (Acres)**	**Allowed Lots & Dwellings**	**General Plan Open Space Designation**	**County Zoning**	**In Town USB, UGB & SOI?**	**Town G. P. Land Use Designation**
066-191-017	Rural Res. - 5 ac.	9.27	1		AR, B6 / 5-acre density	Yes	Estate & Low Density Res. 0.2-3 du / acre
066-191-018	Rural Res. - 5 ac.	.01	1		AR, B6/ 5-acre density	No	Estate & Low Density Res. 0.2-3 du / acre
066-191-020	Rural Res. - 5 ac.	2.45	1		AR, B6/ 5-acre density	No	
066-191-022	Rural Res. - 5 ac.	11.96	2		AR, B6/ 5-acre density	Yes	Estate & Low Density Res. 0.2-3 du / acre
066-300-028	Resources & Rural Dev.-20 ac.	5.00	1	Scenic Landscape Unit	RRD,B6/ 20-acre density, SR	No	
066-300-031	Rural Res. - 5 ac.	50.47	10		AR, B6/ 5-acre density	No	
066-300-033	Resources & Rural Dev.-20 ac.	12.51	1	Scenic Landscape Unit	RRD,B6/ 20-acre density, SR	No	

An EIS is necessary to evaluate project consistency with the following policies in the Land Use Element:

"**Objective LU-1.7:** Work collaboratively with Tribal Governments within Sonoma County regarding land uses on tribal trust land to ensure consistency with the General Plan and compatibility with surrounding areas."

"**Policy LU-1q:** Pursue legally enforceable government-to-government agreements with tribes and work collaboratively to ensure development on tribal trust land is compatible with the surrounding area, and that social, economic, and environmental impacts are mitigated."

"**Policy LU-1r:** Encourage tribes to develop land uses of tribal lands that are consistent with the County General Plan."

Section 3.8.2 should be revised to clearly identify the relevant Town of Windsor General Plan land use designations, which are included in the table above. The text should clarify that the County General Plan and regulations currently govern development of the entire site, and that the City's General Plan would only control the Town's approval of development of property inside City boundaries.

Section 3.8.3 should be revised to include a description of the soils on the site and their agricultural capabilities.

Most importantly, the EA contravenes NEPA by failing to recognize and address the project's inconsistency with local general plans. The legal applicability of local land use regulations after project approval is not relevant to the NEPA-required determination of whether the project, as proposed, is consistent with the same. The project proposes a residential complex that is much larger and more dense than would be allowed by either the County or Town General Plans. A total of 147 dwelling units are proposed, far more than the 17 units contemplated by the County General Plan or the 63 units allowed by the Town General Plan on the easterly portion of the site. The location and pattern of the proposed dwellings on the site also does not reflect the planned maximum densities of 3 dwellings per acre in the Town General Plan area, 5 acres per dwelling in the County RR designation, and 20 acres per dwelling in the County RRD designation.

Section 4.3.8 should be revised to include the land area proposed for the community center, play space and wastewater disposal in its density calculation. The gross density is closer to two acres per dwelling if all development is included, which is still substantially higher than allowed by the County General Plan.

An EIS is necessary to identify and require substantial mitigation for inconsistencies with local adopted land use plans. For projects that propose a higher density than allowed by local General Plans, the normal remedies are to modify the project's density or request a General Plan amendment to change the land use designation

as a part of project approval. The EIS should discuss the extent to which the project complies with the following criteria, which govern a change to the Urban Residential designation necessary to accommodate the proposed density:

"(1) Lands shall be within a designated Urban Service Area,

(2) Adequate water, sewer, public safety, park, school services and other necessary infrastructure shall be available or planned to be available,

(3) Lands shall have convenient access to designated arterial or collector roads,

(4) Lands shall not be subject to unacceptable risks such as flooding, geologic, noise, or other hazards,

(5) For high or medium density residential use, lands shall have convenient access to commercial uses and community services,

(6) Any applicable Land Use Policies of the Planning Area."

Only the easterly 21 acres of the site is within the USB, but a General Plan amendment could include expanding the USB to include the proposed development and thus meet criteria 1. Any uncertainties regarding how water supply, wastewater treatment and other services would be provided would have to be resolved in order to meet criteria 2. Since Windsor River Road is not a designated arterial or collector road, it is questionable if the site has "convenient access" to such a road per criteria 3. Meeting criteria 4 appears possible; criteria 5 is not applicable to this project, and there are no applicable planning area policies per criteria 6.

The proposed Alternative C gross density of one to two acres per dwelling unit is within the overall Rural Residential designation range established by the County General Plan of one to twenty acres per dwelling unit. The on-site water supply and wastewater treatment proposed under Alternative C also fit the general intent of this designation. It appears that the Alternative C project and site could meet the following criteria for the Rural Residential designation with the appropriate density:

(1) The area does not have soils suitable for agricultural production,

(2) The area does not include substantial agricultural uses,

(3) Lands have access to a County maintained road,

(4) Lands shall have enough groundwater for individual wells,

(5) Lands shall have sufficient permeability for individual septic systems,

(6) Any applicable Land Use Policies for the Planning Area.

XIV. An EIS Is Necessary to Fully Address Impacts to Visual Resources.

Page 3-64 of the EA should be revised to correct the reference to the General Plan to "the Open Space and Resource Conservation Element of the Sonoma County General Plan."

The following text should be added to the end of first paragraph: "These objectives are implemented by the following policy requirements for new development:

"Policy OSRC-2d: Unless there are existing design guidelines that have been adopted for the affected area, require that new structures within Scenic Landscape Units meet the following criteria:

(1) Site and design structures to take maximum advantage of existing topography and vegetation in order to substantially screen them from view from public roads.

(2) Minimize cuts and fills on hills and ridges.

(3) Minimize the removal of trees and other mature vegetation. Avoid removal of specimen trees, tree groupings, and windbreaks.

(4) Where existing topography and vegetation would not screen structures from view from public roads, install landscaping consisting of native vegetation in natural groupings that fits with the character of the area in order to substantially screen structures from view. Screening with native, fire retardant plants may be required.

(5) Design structures to use building materials and color schemes that blend with the natural landscape and vegetation.

(6) On hills and ridges, avoid structures that project above the silhouette of the hill or ridge against the sky as viewed from public roads and substantially screen driveways from view where practical.

(7) To the extent feasible, cluster structures on each parcel within existing built areas and near existing natural features such as tree groupings.

Exempt agricultural accessory structures proposed on parcels in the Diverse Agriculture, Land Extensive Agriculture, Land Intensive Agriculture, and Resources and Rural Development land use categories, and on parcels in the Rural Residential land use category with Agriculture and Residential (AR) Zoning, from this policy if their use does not require a use permit in the Development Code. If compliance with these standards would make a parcel unbuildable, site structures where minimum visual impacts would result. Exempt telecommunication facilities if they meet the siting and design criteria of the Scenic Resources (SR) Zoning District."

"Policy OSRC-6a: Develop design guidelines for discretionary projects in rural areas, but not including administrative design review for single family homes on existing lots, that protect and reflect the rural character of Sonoma County. Use the following general design principles until these Design Guidelines are adopted, while assuring that Design Guidelines for agricultural support uses on agricultural lands are consistent with Policy AR-9h of the Agricultural Resources Element.

(1) New structures blend into the surrounding landscape, rather than stand out.

(2) Landscaping is included and is designed to blend in with the character of the area.

(3) Paved areas are minimized and allow for informal parking areas.

(4) Adequate space is provided for natural site amenities.

(5) Exterior lighting and signage is minimized."

The assessment of visual impacts in Section 4.1.12 should be revised to include an analysis of the project's consistency with the design criteria in Policy OSRC-2d regarding new structures within Scenic Landscape Units. These criteria are aimed at minimizing the view of new man-made development from public roads. The information provided in Section 4.1.12 does not support the statements on page 4-21 that "the topography of the site would minimize the visual prominence of the proposed housing and other buildings" and that "limited development would not be visible to local residents and travelers on Eastside Road and Windsor River Road."

To the contrary, the site plan for Alternatives A, B and C clearly shows that the proposed retreat facility, the "potential home or retreat," the roundhouse and the westerly housing cluster are all at the tops of hills that are labeled "HIGH POINTS – RIDGES." Consequently, the EIS should provide a complete analysis of the potential visibility of these new structures from public roads using photographic simulation and the actual effects of topography and the trees that will be retained on the site. Attached hereto as **Exhibit B** is a copy of the "Visual Assessment Guidelines" adopted by PRMD as an administrative procedure for analyzing visual impacts.

An EIS is necessary to analyze and mitigate the project's alteration or interruption of locally important scenic vistas. When a true visual assessment of the project has been completed, the EIS should consider modifying the height, width, location, colors, texture or other design aspects of the proposed buildings to reduce their visibility from public roads. The County further suggests that project plans and visual assessment be submitted to the County's Design Review Committee for review. The Committee and its staff are experienced in addressing the visual impacts of development in Scenic Landscape Units, and can help identify standard, reasonable methods to reduce impacts.

XV. An EIS Is Necessary to Fully Address Cumulative Impacts.

The EA's discussion of cumulative impacts considers just three future projects and provides just five pages of discussion regarding their potential, combined impacts. EA at 4-40 to 4-46. The EA does not identify any past activities in the project area that have resulted in environmental impacts, nor analyze their effects in conjunction with the impacts of the proposed project.

This approach is unavailing. NEPA requires "a catalog of past projects and . . . discussion of how those projects (and differences between them) have harmed the environment." Lands Council v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005). NEPA further requires that the BIA provide the "hard data" regarding past and potential future impacts, and not merely a summary of opinions of agency experts. Klamath-Siskiyou v. Bureau of Land Mgmt., 367 F.3d 989, 994 (9th Cir. 2004). The BIA should direct the preparation of an EIS that discloses all applicable past, present, and reasonable foreseeable projects, and fully analyzes and mitigates the resulting cumulative impacts.

XVI. Conclusion.

As noted above, the County is interested in full and fair disclosure of all the project's environmental impacts before final action is taken. That interest requires preparation of an EIS that discloses and limits all the future uses and users of project components, squarely evaulates and mitigates all the project's potentially significant direct and cumulative impacts, and analyzes a range of off-site and other alternatives, including the "community alternative" identified by the BIA NEPA Handbook. Without that information, neither BIA nor the public can make a proper, informed decision on the proposed project.

Exhibit A

An evaluation of the effect that conversion of oak woodlands will have on the environment as a result of the proposed

Lytton Residential Development

September 1, 2009

Prepared for:

County of Sonoma, County Counsel's Office

Prepared by:

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EXECUTIVE SUMMARY

The goals of this report are to investigate the following issues.

1) Address the environmental impacts and likely levels of significance associated with the proposed woodland conversion to residential development at the site and landscape scale.
2) Evaluate mitigation that would be required under state and local environmental protection laws.
3) Assess potential changes to downstream habitat due to the proposed increase in development in the watershed using existing published spatially explicit model results.

California's oak woodland landscapes support hundreds of vertebrate and thousands of invertebrate species. Over 30,000 acres of oak woodlands are converted each year for residential and commercial uses. This results in continued habitat loss and fragmentation which impacts natural communities, ecosystem function, and ultimately is responsible for many of the 309 threatened and endangered species in the State. In an effort to prevent continued net loss of the State's most biologically rich habitat type, the California Environmental Quality Act now requires that if a development project will result in a significant effect to oak woodlands, the county must require one or more oak woodland mitigation alternatives for the significant effect associated with the conversion of oak woodlands. Therefore, California oak woodlands warrant thorough environmental review prior to any habitat conversion.

The level of impact to California oak woodlands likely to result from a proposed development is assessed by comparing the initial site condition of the oak woodland at the tree and project site as well as landscape scales and the degree to which the initial site condition will be changed by the proposed project. Most of the entire project area proposed for conversion to the Lytton Residential Development is comprised of intact self-sustaining oak woodland, including substantial amounts of blue oak regeneration, and currently is providing a full complement of ecosystem services. Any proposed project that would substantially change the conditions of intact woodlands may be determined to have significant impacts. All proposed development options (A-C) will result in a permanent significant loss of ecosystem function and services and much of the existing habitat features currently associated with the native woodlands on the properties at all three scales (tree/grove, site, and landscape).

The California Global Warming Solutions Act (AB 32) defined thresholds to reduce carbon dioxide emissions. Mitigation for CO_2 emission impacts includes direct CO_2 emission impacts from tree disposal and the cumulative effects due to the loss of future increases in tree carbon sequestration.

Further assessment of the woodland resources that will be impacted by this proposed development and meaningful analysis of CO_2 emission impacts are needed. In addition, downstream habitat should be surveyed and cumulative impacts of additional development to any stream habitat supporting fresh water species should be assessed. In-kind compensatory mitigation should be provided to protect threatened high-priority woodlands and habitat connectivity already designated by the Sonoma County Agricultural and Preservation and Open Space District and to address the State's carbon reduction mandate.

California woodlands: oak species, wildlife values, and threats

California's oak woodlands support a majority of the region's biodiversity, provide ecosystem goods and services, and have aesthetic value. Hundreds of vertebrate and thousands of invertebrate species depend on the States oak woodland landscapes (Pavlik et al. 1991). Located at the eastern edge of the coastal fog belt, the climate and complex geology of the Coast Ranges in Sonoma County have produced a rich flora and a diverse mix of vegetation types and plant communities including mixed mixed conifer-hardwood forest, oak woodland, grasslands, chaparral, riparian and other wetland habitat, and a variety of serpentine influenced communities.

The interior portions of Sonoma County's Coast Ranges support some of the highest oak diversity in the state with up to 13 taxa and numerous undescribed hybrids. Large stands of Oregon Oak (*Quercus garryana var. garryana*) reach their southern-most limit in the Coast Ranges here, and commonly occur with Black Oak (*Q. kelloggii*), Coast Live Oak (*Q. agrifolia*), and Shreve Oak (*Q. parvula var. shrevei*) on northerly oriented slopes. Other tree oaks found throughout the County include Blue oak (*Q. douglasii*), Valley Oak (*Q. lobata*), Interior Live Oak (*Q. wislizeni*), and Canyon Live Oak (*Q. chrysolepis*). A variety of shrubby oaks occupy steeper, less hospitable ground such as the Leather Oak (*Q. durata*) found in serpentine habitat, Brewer's Oak (*Q. garryana var. breweri*) of higher elevation sites, and Interior Live Oak (*Q. wislizeni var. frutescens*), and Scrub Oak (*Q. berberidifolia*) on rocky terrain.

The early Mexican grazing era and later Euro-American settlement of the larger valleys and adjacent slopes of Sonoma County led to significant impacts to the pre-historic condition of oak woodlands and forests. Following this, intensive agricultural led to large habitat losses and fragmentation mostly confined to valley bottoms. Today, the most widespread threat to oak woodlands in California is residential development leading to habitat loss and fragmentation in the valleys and throughout the foothills. The associated loss of biodiversity can be observed in the high number of federally listed threatened and endangered species found in California to date which is 309, second only to Hawaii.

Gently sloped low elevation woodlands are most vulnerable to development. With more than 85% of the States woodlands in private ownership only remnant stands of valley bottom

woodlands remain, making stands of valley or riparian woodland adjacent to river flood plains relatively uncommon. In northern California, most new residential development is taking place in foothill oak woodlands because of the desirable mediterranean climate, holdings in predominately private ownership, and proximity to population centers (Standiford et al. 1987, Scott et al. 1995). Since 1950, over 1,000,000 acres of California's oak woodlands have been converted and an unknown percentage has been modified by human related activities. Standiford et al. (1987) noted that an increased demand for property in rural areas has raised property values and resulted in land fragmentation and conversion of oak woodlands to housing, roads, and recreational development. Over 30,000 acres of oak woodlands are converted each year for residential and commercial uses (Standiford & Scott 2001). As a result, California has the greatest recorded number of housing units in the wildland-urban interface (Radeloff et al 2005). In some areas core oak woodlands are being fragmented into isolated islands of habitat, but more commonly these core areas are becoming smaller as the surrounding landscape becomes increasing exurban.

The consequences of residential development to California's woodland fauna are best documented for bird communities. Various studies of California birds demonstrate that certain species tolerate houses and their associated disturbances ('urban adapters') while other more sensitive species are rare or not detected at all ('urban avoiders') (Blair 1999; Stralberg and Williams 2001). In Sonoma County, a study of birds in urban and exurban residential areas as compared with undeveloped woodlands revealed that urban adapted species such as the Oak Titmouse, Western Scrub-Jay, Northern Mockingbird, American Crow, and House Finch are at least 5 times more common in suburban areas while temperate migrants, ground nesters and species such as Northern Flickers, Orange-crowned Warblers, and Hutton's Vireos were all significantly impacted by residential development (Merenlender et al 2009).

Other factors impacting oak woodlands in California include the lack of oak regeneration. Blue oak (*Q. douglasii*), which is a drought-tolerant deciduous species endemic to California's Coast Ranges and Sierra Nevada foothills, in particular may decline due to limited levels of regeneration. It is believed that this lack of regeneration is associated with competition for soil moisture from exotic annual species but other factors such as change in natural fire frequencies, increased rodent and deer herbivory, and climate change have all been implicated. Saplings and

small trees are often difficult to find in blue oak stands and when detected are usually associated with existing mature blue oak canopy cover. In order for blue oak saplings to become trees they need to get past browse height (150-170 cm). In generally it takes 10 to 30 years for blue oaks to exceed browse height, but this timing can vary widely depending on soil moisture conditions and browsing rates. Blue oak regeneration remains a major concern for the sustainability of California's oak woodlands (Swiecki et al 1993).

Oak woodlands mitigation law

California Environmental Quality Act (CEQA) was amended in 2004 and now requires a county to determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment (PRC 21083.4). As the California Oak Foundation notes, this state public resource code specifically grants counties the right to vigorously protect their oaks. If a county determines that a project will result in a significant effect to oak woodlands, the county must require one or more oak woodland mitigation alternatives for the significant effect associated with the conversion of oak woodlands.

The approach used here to determine whether or not the proposed project is likely to result in a significant environmental impact is explored using the "Oak woodland Impact Decision Matrix: A guide for planners to determine significant impacts to oaks as required by SB 1334 (Public Resources Code 21083.4)" developed by the University of California's Integrated Hardwood Range Management Program (http://danr.ucop.edu/ihrmp). The level of impact to California oak woodlands likely to result from a proposed development is assessed by comparing the initial site condition of the oak woodland at the tree and project site as well as landscape scales and the degree to which the initial site condition will be changed by the proposed project. Both initial woodland condition and the level of degradation likely to result from the proposed development are described below prior to addressing the likelihood of significant impacts occurring.

Existing woodland condition: tree stand and site scale

The entire 92 acres where the proposed Lytton Residential Development is located falls into what is classified as oak woodland because the canopy closure is far greater than 10% across most of the site (~80%) and woodlands are expected to occur in the few areas where the canopy closure falls below this threshold. The site is comprised of open blue oak woodland (*Q.s douglasii)* occupying flatter topography in the eastern portion of the parcel while hillier terrain to the west supports a denser mixed oak woodland of Blue Oak, California black oak (*Q. kelloggii),* Oregon white oak (*Q. garryana), and Pacific Madrone (Arbutus menziesii). cover* Other oak species present include coast live oak (*Q. agrifolia*) andvalley oak (*Q. lobata*). Interestingly, the plant list in the Environmental Assessment did not include Oregon white oak which was likely misidentified as valley oak. This omission points to the need for additional and improved documentation of the flora onsite as local extirpation of some taxa is likely from the proposed development. The extent of blue oak regeneration on the site is truly notable and includes large numbers of seedlings and young trees. Because of the problems associated with blue oak regeneration statewide (referenced above) this fact alone makes the site unusually valuable to blue oak persistence in the area.

The land-use history of a woodland can result in sites whose qualities span from relatively undisturbed to thoroughly altered. Various criteria are used to determine the site quality along this continuum. *Intact* woodlands are characterized as being in a "wild state" with live and dead trees and maintain the capacity for regeneration of oaks and other plant species. They are defined in part by compatible land uses such as grazing, open space, recreation and other non-intensive. As a result, roads and buildings are rare across the site. The ecological functions provided by the existing woodland include shade, ground water filtration, wildlife/fish habitat, nutrient cycling, wind/noise/dust abatement, and carbon sequestration. Wildlife movement is relatively unimpaired across intact woodlands. Because almost all of California's woodland-grass communities are dominated by understory exotic grasses and forbs this criteria has no bearing on otherwise intact woodlands. The designation of *Intact* refers mainly to being free from destructive land use practices that inhibit or limit the oak woodland to naturally sustain itself and its associated flora and fauna.

The current state of woodland across the proposed Lytton project area represents a self-sustaining closed canopy woodland with previous compatible land use. Habitat structure and ecological function appear relatively unimpaired as compared with other woodland properties in the area and throughout the state. It is clear that most of the entire project area is made up of intact woodland with the exception of the open fields found along the eastern side of the project which were cleared of native vegetation in the past. This area is assumed to be the same areas referred to as pasture in the Biological Assessment report (15% of the project area). Any proposed project that would substantially change the conditions intact woodlands may be determined to have significant impacts (IHRMP guidelines for PRC 21083.4).

The biological assessment suggests that the stand condition on the site is poor due to the presence of dead limbs and the persistence of woody debris. When in fact, the presence of these habitat elements in California's oak woodlands is well-known to be of great benefit to wildlife and part of a healthy oak stand. The complexities of bark conformation, snags, loose bark, perching sites, fallen logs, cavities, and hard and soft mast are all parts of the forest structure that play a role in allowing so many species to co-exist. In particular the following habitat elements are integral to these ecosystems and critical to maintain. Therefore, no thinning, liming or trimming should occur unless needed for fire safe considerations. "Clean" oak woodlands are the least desirable from a wildlife perspective.

From *Conservation of Oak Woodlands – Recognizing the Values*
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> *Snags* are dead standing trees. Snags (and dead branches) decay over time from the actions of various wood fungi. Snags often provide sites for cavity-nesting birds (woodpeckers) to excavate nest sites. Snags may have loose bark suitable for insects, nesting by tree swallows, and winter roost sites for lizards. They may also have branches suitable for perching for hawks, mourning doves, and phoebes. Older snags that have lost

large branches may provide suitable nesting/roosting sites for many owls. Eventually snags fall over, providing another structural component to the habitat.

Fallen logs provide cover and nourishment for many arthropods, fungi and wildlife. In arid environments, logs can retain soil moisture and extend the activity periods for all of these organisms.

Existing woodland condition: landscape context and connectivity analysis

While the primary emphasis for determining significance under CEQA is a comparison of pre and post site condition and the assessed impacts associated with the proposed conversion to the environment, landscape context of any proposed woodland conversion should also be considered. The project site is situated on a river terrace or bench that extends along the side of a valley and represents a former level of the valley floor. This terrace likely resulted from a hydrological or climatic shift that caused renewed down cutting by the Russian River. It has a relatively flat top made up of sedimentary deposits and it may be the remains of an old floodplain, cut through by the river and left standing above the present floodplain level or the river could have cut into the bedrock leaving the sedimentary deposits and bedrock that make up the terrace. Large river valleys usually have more than one set of terraces forming a series of benches running parallel to the river. These benches are often highly desirable for agricultural production as can be seen by the vineyards immediately adjacent to the project site. Statewide, wine grape acreage has more than doubled since 1990 especially in areas such as Sonoma County where premium wine grapes are grown. In some places this new vineyard acreage is resulting in the conversion of native oak woodland habitat (Merenlender 2000).

The habitat loss and fragmentation associated with woodland conversion to agriculture and urban uses has resulted in concerns over the protection and restoration of woodland habitat connectivity at a landscape scale. Particularly affected by habitat fragmentation are those large ranging, low density species that require extensive amounts of area to survive. One of the tools being explored by scientists and adopted by land managers to address this problem is maintaining, enhancing, and/or recreating connectivity among remaining natural habitat fragments. In recent years, conservation science has focused on various issues of connectivity

ranging from the utility of corridors to examining the permeability and utility of differentially modified lands for wildlife. These efforts have addressed different aspects of connectivity such as distance between fragments and other properties of the landscape matrix surrounding continuous wildlands.

In spite of the lack of strong guidelines from the scientific community, conservationists and land managers have whole-heartedly adopted the need to maintain and enhance habitat connectivity for species conservation. Some conservation organizations have formed explicitly to address connectivity to conserve wildlife, and organizations purchasing land as well as easements often consider connectivity in prioritizing properties and dollars. Some efforts focus on single species while others address differences among species, or on maintaining community coherence. This is the case for the San Francisco Bay Area and Sonoma County in particular. The Sonoma County Agricultural Preservation and Open Space District and the Sonoma Community Foundation are two local institutions, the former public and the later private, that are dedicated to the protection of Sonoma County's open space values including wildlife conservation. To this end, they have sponsored research to identify critical habitat patches and linkages within and surrounding the Mayacmas Mountains. The proposed area for residential development falls within this area of analysis. This analysis and mapping effort provides a means to address how this particular woodland and the neighboring parcels contribute to the overall level of habitat connectivity.

To date, most landscape connectivity models have been constructed using focal wildlife species and are primarily based on species distribution models derived from expert opinion of wildlife habitat requirements and movement behavior (e.g., South Coast Missing Linkages, Corridor Designer). However, connectivity planning often needs to encompass many different habitat types and large geographic extents. At this scale, we have limited empirical data on wildlife distributions, particularly rare and endangered species, and we have even more limited knowledge of how species respond to the configuration and connectivity of habitat. Under these circumstances, a more measure of general habitat connectivity is highly desirable, rather than a compilation of habitat characteristics that are unique to particular species.

To meet this challenge, a team of scientists from the University of California, The Nature Conservancy, and the District developed an approach to modeling landscape connectivity that relies on landscape metrics, or indicators of landscape integrity, which can be derived from more consistent and detailed data on human disturbances and the built environment. This landscape connectivity model is currently being used to prioritize land conservation in the Mayacmas Mountains ecosystem and surrounds.

The first step in the analysis was to define habitat for the study area, which includes portions of Sonoma, Napa, Lake and Mendocino Counties in the North Coast region of California. Here habitat is defined as any area where natural vegetation was present and human disturbance (e.g., roads, high-density development, or intensive agriculture) was absent. Additionally, areas of contiguous habitat are delineated as 'patches' in a vector data format. In this area most of the natural habitat falls into mixed oak woodlands. The second step was to use landscape metrics to analyze the relative importance of habitat patches throughout the study area. The first metric that we developed – Local Cores – is an area-independent approach to identifying the locally-important habitat patches that form the foundation of our landscape network. For this analysis all patches of natural habitat land cover are mapped. Then a kernel or sliding window (in this case a circle with a diameter of 1,000m) is used to compare all the patches that fall within this fixed area for all points on the landscape. The number of times that a particular patch is found to be the largest patch in the neighborhood is recorded and those patches that are most frequently determined to be the largest patch in the area are identified as local cores. Then the relative permeability of the intervening landscape was estimated. This is done by quantifying the "cost" of species movement through the matrix of land cover types between these locally important patches map relative permeability and to identify least cost paths between core patches of habitat.

This analysis reveals that the parcels proposed for conversion are part of a local core of oak woodland because they make up part of the largest continuous patch of woodland in the local area. This larger patch of woodland is surrounded by a complex matrix of varied land-use land-cover types that span the eastern terrace above the Russian River flood plain. This remnant woodland is relatively isolated from the larger continuous woodlands found along the eastern and western flanks of the Mayacmas Mountains and the eastern ridge of the coast ranges (Figure

1). Due to historic land clearing in the Russian River valley few woodland remnants remain to anchor habitat connectivity across the valley.

Sites such as the proposed Lytton development are often referred to as "stepping stones" in the connectivity literature. Stepping stones are patches of habitat or protected areas that are not physically connected but which certain species use while dispersing or migrating (pg. 192 Hilty et al. 2006). The removal of such "stepping stones" can reduce landscape-scale habitat connectivity and therefore should be avoided.

Magnitude of the expected impact to woodlands (A-C)

Here impacts to individual trees, the stand, and the landscape scales that may occur as a result of the proposed project need to be considered. The oak woodland impacts have not been adequately quantified at any of these scales in the existing environmental assessment. However, it is clear by the extent of proposed roads and housing development that impacts to oak woodland resources at all three scales will result. The proportion of woodland removal from the site needs quantification but appears to be over 80% of the site. The final assessment should include impacted habitat acres which will result from removed trees and any trimmed trees as well as edge effects to remaining oak stands which can substantially reduce the ecosystem function and services provided. Changes in microhabitat associated with edge habitat can lead to changes in faunal composition and density. Species associated with humans can also reduce native biodiversity in retained fragments by invading the edges and smaller fragments (Stefan 1999). Domestic and feral animals, such as cats and dogs, damage native species populations in remaining habitat by chasing and preying upon them (Arango-Velez and Kattan 1997, Crooks and Soulé 1999). Similarly, invasive plant species often associated with development that did not previously occur cause problems for the original community of species. Fragments can also experience direct increased human impacts, especially when adjacent to high human density. Also, natural areas in close association with humans is generally used for recreation, which can lead to five fold reductions in wildlife densities in north coast California woodlands (Reed and Merenlender 2009); and therefore should be included as impacted areas.

The spatial extent of development and resulting habitat loss and associated impacts surrounding the building envelop needs to be quantified. This information is critical to determine the magnitude of the expected impact. In addition to changes in percent vegetation cover, tree density and habitat acreage , other metrics can inform the magnitude of the resulting impact such as changes to the road and structure density of the site that can reduce habitat suitability for most native species. At the landscape scale, changes in the amount of edge habitat, distance from urban development of any remaining oak woodlands, and changes to the general configuration of remaining stands; as well as modification or severing of wildlife corridors or habitat linkages directly impact animal and plant movement.

The temporal extent of the resulting changes is also important to determine. For example, will the impacts be long-term to the habitat structure and ecological functions associated with the site? If the impacts are irreversible, as is the case for dense residential development and permanent roads, then the impacts need to be mitigated in a fashion that protects woodland resources in perpetuity.

A net loss of oak woodland acreage can result from an increased habitat fragmentation, loss of vertical and horizontal stand structure and complexity (including thinning and any tree trimming), loss of understory species diversity, loss of food sources for wildlife such as acorns, loss of nesting, denning, burrowing, hibernating, and roosting structures. Also, the loss of habitats and refugia for sedentary species and those with special habitat requirements can be considered significant. Impacts can also result from activities associated with road construction such as grading, trenching, changes in grade, and culvert placement across stream crossings leading to soil erosion and sediment input into watersheds. A suggested checklist of impacts can be found in "Oak woodland Impact Decision Matrix: A guide for planners to determine significant impacts to oaks as required by SB 1334 (Public Resources Code 21083.4)" developed by the University of California's Integrated Hardwood Range Management Program (http://danr.ucop.edu/ihrmp).

Although mitigation measures may help to diminish some of the negative aspects of a

project, they cannot ensure that the cumulative effects would not result in long-term changes affecting the ecological processes associated with an *Intact* woodland. Therefore, cumulative impacts may have to be considered when predicting the affect of a project proposed for designated *Intact* woodland.

Determination of significance

The determination of existing conditions and the evaluation of potential impacts of a project are considered at the tree or grove scale, for the entire site, and the surrounding landscape to determine levels of significance. The astonishingly high rates of blue oak regeneration in combination with the diversity of hardwoods associated with the higher elevation of the proposed Lytton development suggests a high condition level at the scale of individual trees and groves. The high percent canopy cover, current compatible land use, and intact woodland structure and function that exists across almost the entire proposed project area supports a designation at the site level of intact native woodland. The landscape context reveals a remnant woodland surrounded by a complex matrix of more intensive land uses. However, the fact that the parcels being proposed for conversion form part of the largest remnant patch of woodland in the local area means that this site could represent an important "stepping stone" for maintaining woodland connectivity across the valley floor between the coast ranges and the Mayacmas mountains. Given the importance of maintaining habitat connectivity in foothill woodland communities of California, the loss to habitat connectivity should also be considered when avoiding or mitigating significant environmental impacts.

All proposed development options (A-C) will result in the significant loss of ecosystem function and services and much of the existing habitat features currently associated with this 92 acre native woodland at all three scales (tree/grove, site, and landscape). Most of the area proposed for development is comprised of intact dense woodland with evidence of low levels of degradation due to historic land use such as livestock grazing resulting in loss of diversity in the grassland understory. With impacts to all of the criteria listed in the check list recommended for assessment of significance to intact California oaks (PRC 21083.4) one can conclude that the development being proposed represents a significant impact to intact woodland under CEQA.

The extent of the woodland conversion is far greater than any minimum size threshold used for exempting such conversions from being considered significant throughout California which ranges from 1/4 - 3 acres. Based on the condition criteria discussed above, the falls well into the top 1/3 of existing blue oak woodland sites typically found statewide. Since the development impacts fall into the highest degree of impact and the site condition ranges from intact to moderately degraded, options A-C are expected to significantly effect to intact oak woodlands. This level of impact would require one or more of specified alternatives to mitigate the significant effect of the conversion of oak woodlands in California under Public Resources Code 21083.4

Mitigation

The existing Environmental Assessment fails to assess impacts to California's oak woodlands associated with the proposed development and does not provide any mitigation for the significant loss of oak woodlands that will result from development options A-C. Rather, the stated thinning and trimming suggested as mitigation will in fact threaten the survivorship of any native trees remaining on site and greatly reduce their wildlife values.

Public Resources Code 21083.4 stipulates four mitigation alternatives available to proportionally mitigate significant impacts to oak woodland habitat. Counties shall require one or more of the options for a project and the planting of oaks shall not fulfill more than 50 percent of the required mitigation. Therefore, the planting of oaks must always be accompanied by another mitigation alternative. Because of the poor success of many oak tree planting projects, protection in perpetuity of in-kind woodland habitat should be provided. The Wildlife Conservation Board or Counties themselves are the only entities that can receive funds under option 3 of California Public Resources Code 21083.4[1].

> Mitigation option 3 reads "Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the

Wildlife Conservation Board. A project applicant that contributes funds under this paragraph shall not receive a grant from the Oak Woodlands Conservation Fund as part of the mitigation for the project."

The method that is recommended to determine acceptable level payment to meet the requirements of Public Resources Code 21083.4 is as follows. The first step is to consider where in the County oak woodlands should be conserved to protect the natural communities they harbor and associated natural resource values. Ultimately, these are areas where funds will be required to protect privately-owned oak woodlands in the county. Existing regional land conservation plans developed by the county, stakeholders, or conservation organizations can be used. In the case of Sonoma County, priority oak woodlands for conservation investment have been mapped by the Sonoma County Agriculture and Open Space District (SCAOSD). Additionally, since this project will impact woodland habitat connectivity, priority habitat linkages also identified by this same District should be included in the estimates for compensatory mitigation.

The next step is to determine the per acre value of acquiring permanent protection of these priority woodlands. To do this it is suggested to acquire all recent sales (1-3 years) data from woodland properties that are a priority for land conservation identified in step 2. Using this data, determine median value per acre for purchasing land in its entirety and the price range for acquiring a conservation easement from properties in these areas. If the project area falls within the area of interest for conservation then these values should also be determined based on the area impacted by the project. It is important to use a qualified property appraiser who has met the educational requirements for General Certification pursuant to the Appraisal Qualifications Board of the Appraisal Foundation and who holds a designation from a recognized professional appraisal organization. The appraiser should be familiar with conservation easement valuation and should follow best practice guidelines. For this project, SCAOSD has written guidelines for appraiser selection and process that should be followed.

The second step includes calculating the area impacted by the proposed project. This needs to encompass the building envelope, new roads, landscaping, all areas enclosed by a fence

that prohibits animal movement, and include a border or buffer surrounding the building envelope which will likely be impacted by activities associated with development such as pets and invasive weeds. Again, edge effects to woodland communities should be considered as part of the impacted area because residential development can result in increased edge habitat. There are various estimates of the extent to which edge effects can be detected. Physical and biological impacts have been detectable as far as 1,640 feet into forested systems (Laurance 1995); so the area impacted should include a buffer out from the development footprint envelop.

In addition to the above estimates of cost and area impact, it is necessary to agree on a mitigation ratio to determine the amount of in-kind area that should be protected to compensate for the likely impacts associated with the proposed project. It is widely appreciated that a minimum of 2:1 replacement will more fully compensate for the woodland impacted by the proposed development since a 1:1 will ultimately result in a net loss of 50% of the habitat. It is also important that off site in-kind compensatory mitigation be provided in the local area or County and represent a similar woodland habitat type. In this case a site with blue oak foothill woodland that has protections in place to ensure good natural regeneration and areas designated as critical for maintaining habitat connectivity in the area would be considered in-kind.

Ultimately, if a fee is considered the preferred method of mitigation then the fee can be based on the cost of purchasing protected land in its entirety or through a conservation easement in the area identified as a priority for woodland conservation and connectivity. Again, these priorities have already been assessed by the SCAOSD for the area in question. The amount of protected land to base the fee on can be negotiated with the County based on the number of acres impacted by the proposed project times the mitigation ratio. The fee should also include stewardship costs which range from 5-10% of the total but again can be determined more easily from the existing public and private lands trusts in Sonoma County since the County would then be responsible for compliance and resource monitoring of any resulting fee property or conservation easements. It is recommended that the funds collected as mitigation should not be transferred to a private company or non-profit without public oversight.

In addition to the mitigation requirements under CEQA for oak woodland resources, Sonoma County has a general plan resource conservation element to protect and enhance valley oaks and valley oak woodlands [Section 5.1 of the general plan resource conservation element. (Ord. No. 4991 § 1(h), 1996.)] The following text from this element specific to mitigation is below.

> Except as provided in subsection (b), when any person cuts down or removes any large valley oak, or any small valley oaks having a cumulative diameter at breast height greater than sixty inches (60"), on any property within the VOH district, such person shall mitigate the resulting valley oak loss by one of the following measures: (1) retaining other valley oaks on the subject property, (2) planting replacement valley oaks on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. Such person shall have the sole discretion to determine which mitigation measure to use to mitigate the valley oak loss. The requirements for each mitigation measure are specified in Table 26-67-030. The selected mitigation measure shall be undertaken and completed within one (1) year after the valley oak or valley oaks are cut down or removed in accordance with guidelines established by resolution or ordinance of the board of supervisors.

Climate Change mitigation

Senate Bill 97 directed in 2007 that the California Environmental Quality Act (CEQA) Guidelines be amended by January 1, 2010 to address climate change. On October 24, 2008 the California Air Resources Board (CARB) released for public review a preliminary draft of Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases CARB proposes a sector-specific approach with different types of thresholds (quantitative, qualitative or performance based) for each sector. The most recent proposed draft includes preliminary threshold concepts for industrial, residential and commercial projects. Therefore, this

residential development project should be assessed to determine if significant impacts to climate change will result.

Attorney General Brown has made it clear that CEQA discretionary approvals must provide: (1) an examination of a project's impact on climate change and the adoption of all feasible mitigation measures to reduce such impacts; (2) such analysis can and must be done today even absent established thresholds of significance or impending regulations under Assembly Bill 32.

Escalating deforestation of California oak woodlands will make it much more difficult and expensive to meet the AB 32 requirement to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. Therefore, under CEQA, CO_2 emission impacts associated with oak woodland conversion should be considered. This needs to include direct CO_2 emission impacts from tree disposal and the cumulative effects due to the loss of future increases in tree carbon sequestration. Preferably, the following issues should be addressed in a full environmental impact review: (1) how much potential CO_2 sequestration over the next 100 years will be lost due to impacts to live native trees 3 inches dbh or greater; (2) how much sequestered CO_2 will be released if the live trees, standing dead trees or woody debris are burned or otherwise disposed; (3) how will oak woodland CO_2 emission impacts be proportionally mitigated?

The proposed on-site tree trimming and thinning does not qualify as mitigation for CO_2 emission impacts. Planting oaks also will not be sufficient since oak tress do not register appreciable CO_2 storage for at least 20 years. In fact, the carbon sequestration capacity of existing oak woodlands exponentially exceeds the ability of planted mitigation oaks to make any CO_2 difference for AB 32 purposes. Therefore, only permanent protection of threatened undeveloped oak woodlands at a greater than 1:1 replacement should be considered as mitigation for CO_2 emission impacts.

Urban land use and impacts to fine sediment levels that can impact salmon reproduction

The conversion of rural areas to suburban and exurban housing development radically alters the stream drainage network causing hydrological impacts that can impair watershed function. In the United States (US) alone, 35,000 miles of river are impaired by urban runoff and sewers. Urban runoff in semi-arid systems, such as is found in California, also results in increased sediment exported to coastal or downstream ecosystems. In a recently published study, spatially explicit parcel-level data from Sonoma County was used to examine the influence of land use (including urban, rural-residential, and vineyard) on salmon spawning substrate quality in tributaries of the Russian River in California. A land use change model was used to forecast the probability of losses in high-quality spawning habitat and recommend priority areas for incentive-based land conservation efforts (Lohse et al 2008). Urban and vineyard land use were significant predictors of in-stream levels of fine sediment. Successful salmon incubation requires spawning gravels that have low concentrations of fine sediment. In fact, salmonid survival and emergence are reduced by 50% when fines exceed 30% (Kondolf 2000).

The results from the statistical analysis conducted by Lohse et al. (2008) indicate that all three land use types were negatively associated with spawning substrate quality, with urban development having the largest marginal impact. While urban development had the largest marginal effects (greatest response per unit of land use change), future rural residential development was shown to have a greater overall impact than urban development on spawning-substrate quality. This is because the land use change impacts from rural residential development are expected to impact 10 times as much land. In addition, rural-residential development is forecasted to occur in watersheds ranging from the least to the most developed, and therefore will likely impact stream reaches that currently support intact salmon habitat. So, clearly additional residential development such as is being proposed will result in increased downstream sediment levels and could impact instream habitat. However, watersheds such as the one surrounding the town of Windsor, where the percent cover of existing development is high (ie. upper quartile as compared with other adjacent watersheds) showed lower levels of expected habitat decline with additional residential build-out because the stream reaches are less likely to harbor high-quality spawning habitat.

It is recommended that stream habitat surveys following the California Department of Fish and Game habitat survey methods, paying particular attention to embeddedness levels in any spawning gravels that may be present, are conducted downstream from the proposed development to determine the existing condition for aquatic species. If intact habitat does exist then the scale of impacts associated with proposed projects A-C will certainly result in impacts to the downstream habitat from expected increases in levels of fine sediment.

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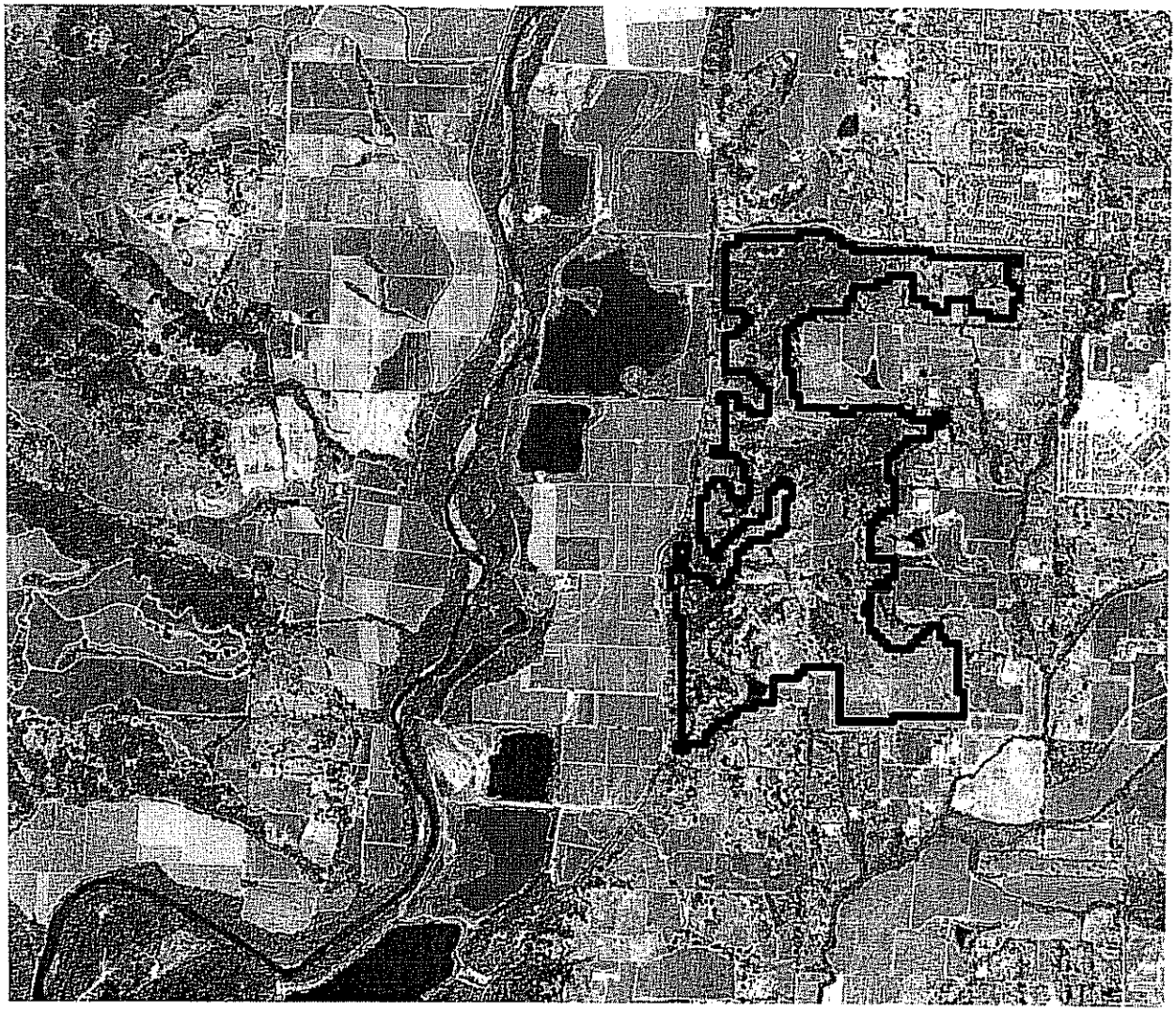
Figure 1. Blue outline designates continuous patch of natural habitat that was identified as a "local core" area for habitat connectivity analysis described. This patch of remnant habitat includes the project area and represents the largest patch in the local area and a potential "stepping stone" for habitat connectivity.



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M.S. 1986 University of California, San Diego, Department of Ecology and Evol. Biology
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Recent Employment

Cooperative Extension Specialist and Adjunct Professor
Environmental Science, Policy, and Management Department
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Post-doctoral Fellow 1993-1995:
Center for Conservation Biology, Department of Biological Sciences, Stanford University

Grants and Contracts

National Geographic Grant, 1991
American Primatological Society, Student Prize, 1993
Integrated Hardwood Range Management Program, 1996-2005
Sustainable Agriculture Research & Education Prog., 1997-2000
Renewable Resources Education Act Funds, 1996, 1997, 1998, 2002, 2006
California Department of Fish and Game, 1999-2009
USDA Forest Service, 2000
National Science Foundation, 2001-2003
Environmental Protection Agency NCER STAR, 2002-2004
Environmental Protection Agency NCER STAR, 2005-2008
The Nature Conservancy 2006-2009
Sonoma County Water Agency 2007-2009
Sonoma County Agriculture and Open Space District 1998-2009
Sonoma Community Foundation 2009

Honors

North American Board, Society for Conservation Biology
Editorial Board, Journal for Conservation Biology
Assigning Editor, Society for Conservation Biology
Editorial Board PLos One

Scientific Publications

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Exhibit B

Permit and Resource Management Department
VISUAL ASSESSMENT GUIDELINES

PURPOSE
The purpose of this administrative procedure is to provide guidelines for the assessment of visual impacts in the preparation of Initial Studies and Environmental Impact Reports.

GENERAL
These guidelines provide procedures to guide staff and consultant's in preparing and analyzing visual impacts. While the analysis of visual impacts involves qualitative judgements, this procedure is intended to define a methodology that utilizes to the extent practicable, objective standards that can be described and utilized in a consistent manner.

PROCEDURE
To analyze the visual effects of a specific project the following procedures should be followed.

1. Determine Viewpoints and Characterize Environmental Setting

Project impacts will be analyzed by considering public viewing points. Public viewing points include public roads, public trails, and public parks. Other public gathering places may be considered on a case-by-case basis. Start with topographic maps and aerial photos. Follow up with a "windshield" survey of roads in the vicinity of the project to determine where the project would be most visible to the general public. Consider a variety of viewpoints, and not only the point at which the project is most visible. The "baseline" environmental setting of viewpoints should be discussed in terms of existing physical features, as well as applicable regulations pertaining to development and scenic resources.

2. Prepare Photos to Illustrate Visual Impacts

Photographic analysis is required to evaluate potential visual impacts. Architectural renderings can be used for design considerations, but are discouraged in visual impact analysis because they tend to soften the effects. The visual impact analysis focuses on the mass, scale and contrast of the structure in relation to its surrounding.

A. For smaller projects, staff shall coordinate with the applicant to construct story poles, or tethered balloon clusters that accurately represent the height and location of the project. The story poles or balloon tethers should be marked at 5-foot intervals to provide a reference scale on the photos. In some instances a notice to the area residents describing the purpose for the story poles should be provided and/or site visit should be arranged for the decision-making body.

Take photos of the site from the various viewpoints identified in Step 1, or require the applicant's representative or consultant to provide photos taken from the selected viewpoints along with a site plan illustrating the location and height of each story pole and the viewpoints for the photos. If telephoto photos are to be taken, be sure that a similar photo is taken that represents the view seen by the human eye. A 360 degree panoramic view, taken from where the project will be located, is helpful to convey the surrounding landscape.

The photos should be marked by outlining the proposed structure using the story

poles or balloons as a guide for the roof line and corners of the structure. In some instances, offsite views may be at such a distance, that the balloons or story poles are not readily apparent in the photos without the use of a telephoto lens – include both telephoto and normal eye view in these instances may be needed to illustrate the structure.

B. For more complex projects, a digitized photo simulation may be required. The following tasks are appropriate for visual assessments prepared by consultants:

1. Photograph site from viewpoints determined in Step 1 above. Verify site photography locations on field maps for use with computer model of the proposed project. Delineate additional field references to help verify the computer modeling and viewpoint locations.

2. Prepare baseline photographs from selected viewpoints for the simulations.

3. Develop plan and section figures describing the visual conditions within the project viewshed.

4. Produce a 3D realistic computer model of the proposed project using topographic, architectural and landscape drawings of project. Use AutoCAD or other appropriate software to develop the 3D terrain and architectural aspects of the model.

5 Additional simulations may be done to illustrate the effect of mitigation from landscape screening growth at 5- or 10-year intervals following construction.

6. Apply the proposed building materials and paint colors to the model and render, duplicating the view angle, distance, lighting conditions and time of year in the existing conditions photograph. Use existing elements in the baseline photograph as control points to register the model to the photograph. Repeat for each viewpoint.

7. Verify viewpoint accuracy using computer plot overlays on base photographs.

8. Digitize base photographs for each selected viewpoint.

9. Produce visual simulations that accurately show the proposed project ("before and after") for each selected viewpoint. The simulations should represent the mass, scale, density and proposed grading of the project. The computer simulation must include: all grading including roadways, driveways, landscape and parking areas and tree removal for required fire breaks; all structures and ancillary facilities; and landscaping at the time that construction is completed.

10. Analyze project impacts as described below.

3. Characterize the Site's Sensitivity

The visual sensitivity of the project site should be given a rating of low, moderate, high or maximum using the following criteria in Table 1.

Table 1
Site Sensitivity

Sensitivity	Characteristics
Low	The site is within an urban land use designation and has no land use or zoning designations protecting scenic resources. The project vicinity is characterized by urban development or the site is surrounded by urban zoning designations and has no historic character and is not a gateway to a community. The project site terrain has visible slopes less than 20 percent and is not on a prominent ridgeline and has no significant natural vegetation of aesthetic value to the surrounding community.
Moderate	The site or portion thereof is within a rural land use designation or an urban designation that does not meet the criteria above for low sensitivity, but the site has no land use or zoning designations protecting scenic resources. The project vicinity is characterized by rural or urban development but may include historic resources or be considered a gateway to a community. This category includes building or construction sites with visible slopes less than 30 percent or where there is significant natural features of aesthetic value that is visible from public roads or public use areas (i.e. parks, trails etc.).
High	The site or any portion thereof is within a land use or zoning designation protecting scenic or natural resources, such as General Plan designated scenic landscape units, coastal zone, community separators, or scenic corridors. The site vicinity is generally characterized by the natural setting and forms a scenic backdrop for the community or scenic corridor. This category includes building and construction areas within the SR designation located on prominent hilltops, visible slopes less than 40 percent or where there are significant natural features of aesthetic value that are visible from public roads or public use areas (i.e. parks, trails etc.). This category also includes building or construction sites on prominent ridgelines that may not be designated as scenic resources but are visible from a designated scenic corridor.
Maximum	The site or any portion thereof is within a land use or zoning designation protecting scenic resources, such as General Plan designated scenic landscape units, coastal zone, community separators, or scenic corridors. The site vicinity is generally characterized by the natural setting and forms a scenic backdrop for a designated scenic corridor. This category includes building or construction sites within the scenic resource designation on or near prominent ridgelines, visible slopes greater than 40 percent or where there are significant natural features of aesthetic value that are visible from a designated scenic corridor.

Note: A ridgeline is a landform which, when viewed from a public street, is silhouetted against

the sky and where no earth backdrop is provided by the subject or contiguous property for a proposed structure.

4. Determine Visual Dominance

The visual dominance of the project is determined comparing the contrast of the following elements or characteristics of the project with its surroundings and giving a rating of inevident, subordinate, co-dominant, or dominant:

- Form: shape, geometry, complexity
- Line: the edge of the shape, boldness, complexity of silhouette, orientation
- Color: reflectivity, hue (actual color), value (dark or light)
- Texture: surface characteristics, randomness, grain (fine or coarse)
- Night Lighting

Based on the criterion listed above, define the visual dominance of the project as described in Table 2.

Table 2
Visual Dominance

Dominance	Characteristics
Dominant	Project elements are strong – they stand out against the setting and attract attention away from the surrounding landscape. Form, line, color, texture, and night lighting contrast with existing elements in the surrounding landscape.
Co-Dominant	Project elements are moderate – they can be prominent within the setting, but attract attention equally with other landscape features. Form, line, color, texture, and night lighting are compatible with their surroundings.
Subordinate	Project is minimally visible from public view. Element contrasts are weak – they can be seen but do not attract attention. Project generally repeats the form, line, color, texture, and night lighting of its surroundings.
Inevident	Project is generally not visible from public view because of intervening natural land forms or vegetation.

5. Determine Significance of Visual Impacts

The determination of visual impact significance is made by:

a. Establishing the level of visual sensitivity of the site using the criteria discussed Table 1.

b. Characterizing the visual dominance of the project in terms of its form, line, color, texture, and lighting as described in Table 2.

c. Determining significance of the visual impact by comparing site sensitivity with visual dominance of the project in accordance in Table 3.

Table 3
Thresholds of Significance
for
Visual Impact Analysis

Sensitivity	Visual Dominance			
	Dominant	***Co-Dominant***	***Subordinate***	***Inevident***
Maximum	Significant	Significant	Significant	Less than significant
High	Significant	Significant	Less than significant	Less than significant
Moderate	Significant	Less than significant	Less than significant	Less than significant
Low	Less than significant	Less than significant	Less than significant	Less than significant

6. **Mitigation Measures.** Possible mitigation measures for visual impacts include the following:

- Limit the extent of grading, tree removal, amount of cuts and fills, length of roadways, height of retaining walls and areas for building envelopes. Conservation easements may be appropriate to protect viewsheds and sensitive visual resources.

- Building envelopes may need to be adjusted to avoid the most visible locations and/or reduced in size. Structures could be limited in their size or height to reduce bulk and contrast.

- Color and texture of building materials should be consistent with the surrounding environment. Non-reflective surfaces and darker colors should be utilized to avoid glare and contrast.

- Require screening vegetation and landscape plans subject to Design Review.

- Require exterior lighting plans subject to Design Review. Exterior lighting shall be low mounted, downward casting and fully shielded to prevent glare. Lighting shall not wash out structures or any portions of the site. Light fixtures shall not be located at the periphery of the property and shall not spill over onto adjacent properties or into the sky. Flood lights are not permitted. Parking lot fixtures should be limited in height (20-feet). All parking lot and/or street light fixtures shall use full cut-off fixtures. Lighting shall shut off automatically after closing and security lighting shall be motion-sensor activated.

- Lighting plans should be designed to meet the appropriate Lighting Zone standards from Title 24 effective October 2005 (LZ1 for dark areas, LZ2 for rural, LZ3 for urban).