



Mr. Lee Diaz
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Planning Department
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June 18, 2014

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT FOR PACIFICA GENERAL
PLAN UPDATE PROJECT

Dear Mr. Diaz:

Grassetti Environmental Consulting (GECO) is submitting this comment letter on behalf of the Pedro Point Community Association (PPCA). As Principal of GECO, I have prepared these comments based on my 30+ years of experience preparing and reviewing California Environmental Quality Act (CEQA) documents. A copy of my CV is attached.

The PPCA requested a thorough evaluation of the potential effects of the General Plan Update ("GPU" or "the Project") on the Pedro Point Field site ("the site"). This letter identifies deficiencies in the General Plan Update Draft EIR ("DEIR") with respect to that site. It is based on my reading of the proposed GPU and DEIR, as well as a review of sensitive resources and hazards from available sources. General deficiencies are described first, followed by some specific comments on the adequacy of technical analyses.

Introduction

Under CEQA, the GPU DEIR must focus on the secondary effects that will follow from adoption of the General Plan update (CEQA Guideline 15146). The City is not relieved from considering known impacts of the project on specific sites.

In this case, the City has been provided with evidence (attached hereto and submitted by PPCA under separate cover) that the site has been frequently flooded by San Pedro Creek, is subject to flooding under projected sea level rise, and is subject to tsunami hazards. (See also DEIR Figure 3.5-1 Tsunami Evacuation Area). Further, as noted in a letter submitted separately by Dr. Peter Baye, the site is valuable habitat for special status species.

This EIR does not accurately disclose these conditions as part of the environmental setting, disclose Project impacts, nor discuss the effectiveness of plan policies as mitigation. These omissions subvert the basic purpose of planning, which is to plan so that appropriate land uses can be located so as to avoid or minimize environmental impacts.

Rather than plan for sensitive sites such as Pedro Point Field, as detailed below, the City is proposing to adopt non-protective land uses and then use general policies (full compliance with which is not mandatory) relying mostly on deferred studies to reduce impacts. The general plan land use designations are the heart of the plan; once a site is designated, applicants have certain development rights. Therefore it is essential that the City fully consider site values and constraints prior to re-designating sites, not after the site is re-designated. This GPU fails to do that, and the EIR fails to adequately or accurately assess impacts of the proposed re-designation of the Pedro Point Field site.

Inadequacy of Project Description

The EIR must present a clear and stable project description. The EIR's project description is inadequate because it fails anywhere to identify which areas/parcels would be re-designated. (Instead, it focuses on general buildout numbers, as if site conditions were uniform throughout the City.) This failure makes it very difficult for the reader to understand how various areas of the City would be affected by implementation of the Project.

EIR Land Use Chapter 3.1 does include a very small- scale map of existing land use designations (Figure 3.1-2), which, critically shows the Pedro Point Field's land use designation as "Commercial" but omits consideration that the site is zoned "Commercial Recreation" (City Zoning Maps, p. 31 attached hereto). The General Plan (at pdf p. 98) states, "The land directly west of the Pedro Point Shopping Center was identified as a commercial recreation site in the previous General Plan, and has been zoned for general commercial uses." By failing to include this information, the DEIR does not serve its information disclosure requirement. The public should not be forced to ferret out information and connect the dots to understand the project and its impacts. This combination of incomplete and incorrect information renders the Project Description useless as the basis for determining impacts of the proposed GPU.

Given the limited number of sites proposed for designation changes in the GPU, the EIR should clearly identify them and include discussion of impacts and mitigations to those sites. Further, the project description compares the project to the existing plan, but does not provide the necessary information on existing buildout from which to conduct the impact assessment; CEQA does not permit plan-to-plan analyses (Guidelines Section 15126.2).

Inadequate Project Objectives

The EIR's stated Project Objectives (pp. 2-7 and 2-8) are so general and vague that they cannot be effectively used to fulfill their primary purpose, namely to guide development and assessment of an adequate range of alternatives. This deficiency is reflected in the Alternatives chapter (p. 4-2), which substitutes three different "criteria" for use in developing and selecting project alternatives (although those criteria are similarly vague and generic).

Inadequacy of Impact and Mitigation Discussion

The DEIR fails to disclose that the Pedro Point Field site is currently zoned commercial recreation, with a floor area ratio (FAR) of 0.2, which means that total development footage cannot exceed 20% of the site area. This designation promotes non-intensive recreational use of the site, retaining most of the site in open space. If, for example, a 2-story recreational facility were constructed, only 10% of the field's area would be disturbed, and sensitive resources and environmental hazards on the remainder of the site could be avoided.

The GPU would re-designate the site as Coastal Residential Mixed Use, which would allow housing or commercial uses at an FAR of 0.5 (DEIR Figures 2.2-1 and page 2-13). That FAR does not include roads or parking, which could result in further environmental impacts. The DEIR fails entirely to address potential Projects impacts at this site, and never even mentions the site in the impact analyses.

For most topics, the DEIR only provides over-generalized statements of impacts, lists plan policies, and then assumes that policies would effectively reduce all impacts to less-than-significant levels, without any analysis of the pre-policy impact or the actual applicability and effectiveness of the policies to the impact. In contrast, for traffic, the DEIR does conduct an intersection-specific assessment. This shows that it is possible for the DEIR to conduct a site-level analysis for the areas where changes in land use are proposed. The EIR should be revised to conduct those analyses for all of the resource categories.

In short, the EIR fails to go through CEQA's required steps of first disclosing impacts and whether those impacts are potentially significant, and only then discussing mitigation measures including their feasibility. As the court stated in *Trisha Lee Lotus v. Department of Transportation*:

"The purposes of Section 21801 are that there be some evidence that the alternatives or mitigation measures in the EIR were considered by the decision making agency and, as the Supreme Court stated in a similar situation, that there be a disclosure of the analytic route the....agency traveled from evidence to action." And, "The EIR does not, however, include any information that enables the reader to evaluate the significance of these impacts." (p.13) "Caltrans compounds this omission by incorporating the proposed mitigation measures into its description of the project and then

concluding that any potential impacts from the project will be less than significant. As the trial court held, the “avoidance, minimization, and/or mitigation measures”, as they are characterized in the EIR, are not “part of the project”. By compressing the analysis of impacts and mitigation measures into a single issue, the EIR disregards the requirements of CEQA.” (p. 15).

Here, the proposed changes in land use designations would cause the loss of biological resources, recreational resources, and flood storage from the site. The EIR must first disclose and analyze those impacts, determine the significance of the impact, and then discuss whether mitigation would reduce the impact. The applicability of policies must be identified, as well as their effectiveness. If policies are assumed to be mitigation, then they must be presented in a manner that assures their implementation on any particular site.

California courts have made it clear that cities are not obligated to implement all of the General Plan’s policies applicable to a site, therefore the GPU’s proposed policies cannot be assumed to mitigate for development of a site under the GP. Further, applicable measures must be included in a Mitigation Monitoring and Reporting Program.

At a planning level, a more effective, enforceable, monitorable, mitigation would be to change the Pedro Point Field’s land use designation to Open Space or retain the 0.2 FAR Commercial-Recreation designation, rather than the proposed intense 0.5 FAR designation. However, given CEQA’s requirement to compare impacts of a project (or plan) to existing on-the-ground conditions, impacts of development even at an FAR of .2 must be assessed and mitigated to the extent feasible. This is particularly important given CEQA’s infill exemptions. It is likely that, for some of the sites, no additional CEQA review will occur, and the impacts will not be addressed at all. This EIR’s lack of detailed analysis would allow the City to play a shell game in deferring analysis that may never occur, and thereby fails to meet CEQA’s purpose of full disclosure.

In summary, the EIR fails to address the impacts of land use changes proposed under the GPU because it concludes that GPU policies would mitigate any undisclosed impacts. In essence, the DEIR claims that the Project would mitigate itself – an untenable proposition. In addition, the GPU policies don’t assure mitigation because: 1) they’re generally written, and 2) cities have substantial discretion whether or not to implement their General Plan policies. Please revise all EIR chapters to 1) identify Project impacts, 2) disclose whether those impacts will be potentially significant, 3) identify which policies will be applied to which site as mitigations, and via what verifiable means (as formal CEQA mitigation measures to be covered by an MMRP), 4) identify any other feasible mitigation measures that could reduce Project impacts; 5) disclose post-mitigation residual impacts and whether the impact is still significant. Finally, as required in CEQA, the impacts of any mitigation measures must also be identified and mitigated, as feasible.

Criteria of Significance/Topics Addressed

As detailed in specific comments below, the EIR fails to focus its impact analysis to anticipated types of impacts. Instead, the impacts are just the same questions in the standard Initial Study checklist. This is not an initial study. This EIR is required to identify and focus on impacts of importance.

Specific Comments

We have reviewed the Land Use, Hydrology, Geology, Recreation, and Alternatives sections of the DEIR with respect to CEQA adequacy. Our comments on those sections are summarized below. We understand that biological resources issues are addressed under separate cover in an expert letter from Dr. Peter Baye, coastal ecologist. The general issues of lack of adequate impact/mitigation analyses, as detailed above, apply to all sections; some representative specific examples of these deficiencies that appear in the sections that we reviewed in detail are presented below.

Land Use Environmental Setting

Figure 3.1-2 (p. 3.1-3): This figure identifies existing General Plan designations, but not existing land uses. CEQA requires that a plan's impacts be considered against existing land uses, and does not permit plan-to-plan analyses. The Pedro Point Field site is currently vacant, not commercial. Further, this map is misleading in that it does not reflect underlying zoning that is more restrictive and environmentally protective than the general "Commercial" Plan designation, and which would be required to be changed to a higher density zoning to comply with the proposed new General Plan designations. Specifically, Pedro Point Field site's existing commercial recreation zoning designation permits a far lower development density than most other commercial designations. The map and any associated analyses should be revised to clearly distinguish between low-density commercial recreation uses and high density commercial and office uses. The map distinguishes among residential density designations, but fails to do the same for the commercial designations. Based on Table 3.1-3 (p. 3.1-13), the Pedro Point Field site's existing zoning designation is the equivalent of the proposed new Low-Intensity Visitor-Serving Commercial designation; however, Figure 3.1-2 conceals this.

Chapter 3.1, overall: The list of General Plan Policies that purportedly reduce impacts fails to describe how or to what degree impacts are reduced. Please add this analysis for Impacts 3.1-1, 3.1-2, and 3.1-3, considering that not all General Plan policies are required to be implemented by the City. With respect to the Pedro Point Field site, please address the clear non-compliance of the GPU's high intensity land use designation with the policies promoting wetlands preservation (CO-I-6), minimizing impacts of coastal development on vegetation (CD-I-14), Open Space Conservation and Habitat Protection (LU-I-13), Open Space Preservation (OC-G-5),

and protection of environmentally sensitive areas and biological diversity (CO-G-11, 12). Please revise the land use designation for consistency with the policies.

Chapter 3.1 also needs to be revised to address potential land use incompatibilities. As written there is no assessment of any potential incompatibilities of proposed new land uses with existing nearby uses. For example, will intense commercial/residential development of the Pedro Point Field site have noise or traffic incompatibilities with surrounding residential land uses? Will it displace flood storage, important habitat, or recreational uses of the site?

Geology, Soils, and Seismic Risk

CEQA Guideline 15126.2(a) states, "The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.....Similarly, the EIR should evaluate any potential significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments, or in land use plans addressing such hazard areas." As described below for both geology and hydrology, this DEIR fails to conduct these assessments.

Figure 3.6-1: The Pedro Point Field site appear to include areas of Very High and Medium liquefaction potential. It also may be subject to impacts from coastal erosion, as described on p. 3.6-15. Yet the GPU's land use designation seems oblivious to these threats, and the DEIR fails to analyze these reasonably foreseeable potential Project impacts.

Impacts 3.6-1 and 3.6-3 (pp. 3.6-20 through 29): The EIR provides no analysis of the potential impacts of changes in land use shown in the GPU land use map. It also fails entirely to address whether and how the listed policies will reduce impacts such as those identified above for the Pedro Point Field site to less-than-significant levels and then inexplicably finds the impacts to be minimal. The EIR must be revised to analyze the impacts of the proposed changes in land use compared to existing conditions.

Further, please provide monitorable, enforceable mitigation for these potentially severe impacts on the Pedro Point Field site. The proposed policies mostly involve future studies, which do not suffice as mitigation, particularly in the absence of express performance standards. Please note that Geologic Hazard Abatement Districts do not ensure mitigation, but rather just shift funding responsibilities for mitigation from the City to buyers of subject properties.

Hydrology and Water Quality

Flooding of the Pedro Point Field Site: The Hydrology and Flooding section introduction states that the section analyzes water resources "in relation to the location of projects comprising the buildout of the proposed General Plan." (p. 3.5-

1), however no such analysis is included relative to those projects. The EIR states, "San Pedro Creek has a history of flooding in the Linda Mar area," but provides no information on flooding at the sites where land use is proposed to intensify substantially as a result of the GPU. The PPCA has provided the City with photos of the site entirely flooded to a depth of several feet, indicating that substantial flooding has occurred on the site. In addition, the EIR (Figure 3.5-1) shows the site is subject to flooding from tsunami runup. Further, although not identified in the EIR, BCDC maps of projected sea-level rise (Pacific Institute, 2009, Montara Mountain OE West Quadrangle, attached hereto) show the site as entirely flooded in the 55-inch sea-level rise projection. Yet the EIR fails to identify any of these constraints as occurring on the site, nor the impacts of dense development on the currently open site. Further, the EIR downplays sea level rise flooding, stating erroneously, "A 2009 report for the California Climate Change Centerindicate[s] potential increases in the 1 percent annual chance of coastal inundation, assuming a 55.1 inch rise in sea level." The section goes on to state that that report "should not be used for...land use planning." The EIR selectively omitted the fact that both BCDC and the California Coastal Commission (CCC) (who is charged with approval of the City's land use plan for this area) rely on this report for land use planning. This misleading reference should be deleted from the EIR and the actual impacts of this flooding, which are not related to any one-percent event but rather would be permanent on the site in the event of a 55-inch sea level rise, must be corrected so that the public and decision-makers are adequately informed about the long-term impacts of the project.

Because the Pedro Point Field is located in the Coastal Zone, designation of the site must be assessed for compliance with Coastal Commission policies with respect to flooding and sea level rise. The Commission's draft policies state that LCP's must integrate sea level rise into planning, using a maximum rise of 65.76 inches, which is based on the best available science as identified in the State of California's Sea Level Rise Guidance Document (March 2013). The CCC's Guidance is that coastal hazard risks should be avoidable, wherever feasible. Increasing development density on an open site subject to sea level rise and other coastal hazards is the opposite of this policy. Neither the Plan nor the DEIR even mention this impact.

Instead, the DEIR Hydrology section, Impact 3.5-6 (pp 3.5-30-31), inexplicably (because there's no analysis, just a list of policies) concludes:

Modeling suggests that future increases in sea level due to climate change may occur over the coming century. As a result, frequency of flooding events may increase, and there may be an increase in the area that is considered prone to a 100-year flood event. However the rate of sea level rise is not precisely known; estimates are even less reliable into the future.

There is zero analysis of the 55- or 65-inch sea level projections in the EIR. Instead the EIR seems to suggest that the entire issue is speculative. Yet, State and regional agencies such as BCDC have adopted both guidance and policy studies that are not

speculative. See State of California Sea-Level Rise Guidance Document, March 2013 update, Attachment 4 to this letter. This evasion of analysis in the face of overwhelming science and policy guidance from one of the agencies charged with approving the GPU as it applies to the Pedro Point area (as well as other coastal areas of the City) is misleading and deceptive, and thus violates CEQA.

Please revise the EIR to include a complete analysis of the impacts of the plan in increasing development densities in areas subject to sea level rise and other coastal hazards.

As mitigation, please revise the land use element of the plan to eliminate the density increases in these areas and respond to the real hazards by reducing densities instead. Suggesting unenforceable policies that conflict with the underlying land use as mitigation does not comply with CEQA requirements for mitigation, which must be both enforceable and verifiable, and must actually mitigate the impact.

Public Services and Recreation

The draft policies state that access to coastal areas shall be maximized. Yet, this Project would eliminate an informal access trail to the beach, as documented in a set of photos and maps attached hereto (Attachment 5). The EIR entirely omits coastal access outside of designated parks from its analysis. The Project's impacts on access through the Pedro Point Field are not disclosed in this EIR.

Alternatives

As described previously, the EIR fails to provide clear objectives as required by CEQA. This makes it impossible to determine if the range of alternatives is appropriate. This deficiency is compounded because project alternatives must reduce impacts compared to the project and, as detailed above, the EIR fails to adequately address potential impacts of the project on nearly all topics. Therefore it appears that the alternatives addressed in Chapter 4 are merely planning options and not actual CEQA alternatives. In fact, the three criteria on p. 4-2 states that the alternatives were selected to, "bracket the range of choices that have the broadest support from the community", apparently without specific consideration of their potential environmental impacts. Further, because of the EIR's failure to consider the Pedro Point Field site's existing commercial recreation zoning, traffic impacts of the no project alternative appear to be incorrect in that they apparently assume higher than permitted development on the Pedro Point Field site. The proposed GPU's worsening of the jobs/housing imbalance should increase traffic, not decrease it.

There is no location-specific analysis of flooding in this chapter, which results in inaccurate statements that the no-project alternative would increase flood hazards compared to the project. Certainly this is false at the Pedro Point Field site.

Table 4.3-9, *Wastewater Treatment at Buildout* (p. 4-30) purports to show changes for each alternative compared with the existing demand, but then uses an incorrect baseline of full development under the existing General Plan for the comparison, resulting in the comical conclusion that that extensive new development in the City would not increase water or wastewater treatment demand (it is unclear whether the table refers to water or wastewater demand – the table says wastewater yet the text referring to the table is in reference to water demand). A recent California Supreme Court decision (*Neighbors for Smart Rail v. Exposition Metro Rail Construction Authority*, 2013) makes it clear that existing conditions are what's on the ground, not what's planned.

Planning Issues

As noted above, the proposed Coastal Residential Mixed Use land use designation of the Pedro Point Field site would subject increased densities of people to geologic and hydrologic hazards, in non-conformance with both City and LCP policies. Further, sensitive ecological resources would be adversely affected, which also undercuts and fails to comply with the policies regarding those resources. As noted in the EIR's Project Description, the site's current Commercial Recreation land use designation is most similar to the GPU's proposed Visitor Serving Commercial (VC) designation. The VC designation "allows uses that create public access to the coastal setting and are adaptable to changing environmental conditions: campgrounds, rustic lodging, concession stands, warming huts, outdoor event sites, and similar uses. Development may occur up to a 0.20 FAR, but must have an overall very low-intensity character on sites of more than one acre. Buildout is assumed at 0.05 FAR, recognizing the large land areas and minimal buildings expected to support recreational uses." (DEIR, p. 2-14) It is clear that, given the site location and constraints, the GPU's policies as applied at Pedro Point Field can only be met by applying the VC General Plan designation and associated zoning.

Conclusions

The DEIR fails entirely as a disclosure document. It is my professional opinion that, given the extent of the flaws detailed above, which reflect only a partial review of the document's technical sections, this document does not meet even the barest of CEQA requirements for full disclosure of potential impacts of the proposed project. It will require substantive revisions to the project description, environmental baseline, disclosure of potential adverse impacts; reassessment of biological resources, hydrologic, geologic, and recreational impacts, identification of mitigations, and a revised alternatives analysis.

Addressing the deficiencies cited above are especially critical because of the potential for "infill" residential projects to be permitted under CEQA exemptions for such projects as permitted under Guidelines Sections 15182, 15183, and 15183.3. While this DEIR promises further site-specific CEQA review, it is possible that for some developments, no such review could occur. In those cases, given the analytical

deficiencies in this DEIR, the impacts will not be assessed in any CEQA document. This sort of CEQA “shell game” would deprive the public and decision-makers of meaningful information and input in the environmental review process.

The DEIR anticipates Initial Studies and Negative Declarations for future compliance with CEQA, but contends that it is not required to currently assess project level impacts. (DEIR, p. 44.) Such an assertion violates one of CEQA’s prime policies; the prohibition against ignoring foreseeable impacts for later analysis is clearly proscribed by CEQA. *Laurel Heights*. Cases citing *Laurel Heights* continue to disapprove of program or plan-level EIRs that defer impact analysis: “tiering is not a device for deferring the identification of significant environmental impacts that the adoption of a specific plan can be expected to cause.” *California Native Plant Soc. v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603, 623-25.

Therefore, it is my professional opinion that the entire DEIR should be rewritten and recirculated for public review. The current approach of setting plus policies equals mitigation should be discarded and the impacts of the proposed land use changes should be carefully evaluated. Please feel free to contact me at 510 849-2354 if you have any questions regarding the comments herein.

Sincerely

A handwritten signature in cursive script, appearing to read "Richard Grassetti".

Richard Grassetti
Principal
Grassetti Environmental Consulting

Attachment A: Grassetti Qualifications

Richard Grassetti

PRINCIPAL

Expertise

- CEQA/NEPA Environmental Assessment
- Project Management
- Geologic and Hydrologic Analysis

Principal Professional Responsibilities

Mr. Grassetti is an environmental planner with over 32 years of experience in environmental impact analysis, project management, and regulatory compliance. He is a recognized expert on California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes. He also has served as an expert witness on CEQA and planning issues. Mr. Grassetti regularly conducts peer review and QC/QA for all types of environmental impact analyses, and works frequently with public agencies, citizens groups, and applicants. He has managed the preparation of over 80 Federal and state environmental impact assessment documents, as well as numerous local agency planning and permitting documents. Mr. Grassetti also has prepared over 300 technical analyses for these documents. He has analyzed the environmental impacts of a wide range of projects including infrastructure improvements, ecological restoration projects, waste management projects, mixed-use developments, energy development, military base reuse projects, and recreational facilities. In addition to his consulting practice, Mr. Grassetti regularly conducts professional training workshops on NEPA and CEQA compliance, and was a lecturer for over 15 years at California State University, East Bay, where he taught the University's class on environmental impact assessment.

Professional Services

- Management and preparation of all types of environmental impact assessment and documentation for public agencies, applicants, citizens groups, and attorneys
- Peer review of environmental documents for technical adequacy and regulatory compliance

- Expert witness services
- Assisting clients in Federal and state environmental impact assessment process compliance
- Preparation of technical analyses for impact assessments
- Preparation of project feasibility, opportunities, and constraints analyses, and mitigation monitoring and reporting plans

Education

University of Oregon, Eugene, Department of Geography, M.A., Geography (Emphasis on Fluvial Geomorphology and Water Resources Planning), 1981.

University of California, Berkeley, Department of Geography, B.A., Physical Geography, 1978.

Professional Experience

1992-Present	Principal, GECO Environmental Consulting, Berkeley, CA
1994-2012	Adjunct Professor, Department of Geography and Environmental Studies, California State University, East Bay, Hayward, CA
1988-1992	Environmental Group Co-Manager/ Senior Project Manager, LSA Associates, Inc. Richmond, CA
1987-1988	Independent Environmental Consultant, Berkeley, CA
1986-1987	Environmental/Urban Planner, City of Richmond, CA
1982-1986	Senior Technical Associate - Hydrology and Geology - Environmental Science Associates, Inc. San Francisco, CA
1979-1981	Graduate Teaching Fellow, Department of Geography, University of Oregon, Eugene, OR

Professional Affiliations and Certifications

Member and Past Chapter Director, Association of Environmental Professionals, San Francisco Bay Chapter
Member, International Association for Impact Assessment

***Publications
and Presentations***

Grassetti, R. *Understanding Environmental Impact Assessment – A Layperson's Guide to Environmental Impact Documents and Processes*. 2002 (Revised 2011)

Grassetti, R. *Round Up The Usual Suspects: Common Deficiencies in US and California Environmental Impact assessments*. Paper Presented at International Association for Impact Assessment Conference, Vancouver, Canada. May 2004.

Grassetti, R. *Developing a Citizens Handbook for Impact Assessment*. Paper Presented at International Association for Impact Assessment Conference, Marrakech, Morocco. June 2003

Grassetti, R. *CEQA and Sustainability*. Paper Presented at Association of Environmental Professionals Conference, Palm Springs, California. April 2002.

Grassetti, R. and M. Kent. *Certifying Green Development, an Incentive-Based Application of Environmental Impact Assessment*. Paper Presented at International Association for Impact Assessment Conference, Cartagena, Colombia. May 2001

Grassetti, Richard. *Report from the Headwaters: Promises and Failures of Strategic Environmental Assessment in Preserving California's Ancient Redwoods*. Paper Presented at International Association for Impact Assessment Conference, Glasgow, Scotland. June 1999.

Grassetti, R. A., N. Dennis, and R. Odland. *An Analytical Framework for Sustainable Development in EIA in the USA*. Paper Presented at International Association for Impact Assessment Conference, Christchurch, New Zealand. April 1998.

Grassetti, R. A. *Ethics, Public Policy, and the Environmental Professional*. Presentation at the Association of Environmental Professionals Annual Conference, San Diego. May 1992.

Grassetti, R. A. *Regulation and Development of Urban Area Wetlands in the United States: The San Francisco Bay Area Case Study*. Water Quality Bulletin, United Nations/World Health Organization Collaborating Centre on Surface and Ground Water Quality. April 1989.

Grassetti, R. A. *Cumulative Impacts Analysis, An Overview*.
Journal of Pesticide Reform. Fall 1986.

1986, 1987. Guest Lecturer, Environmental Studies
Program, University of California, Berkeley.

REPRESENTATIVE PROJECT EXPERIENCE

IMPACT ASSESSMENT REGULATORY COMPLIANCE SEMINARS

Mr. Grassetti has conducted numerous CEQA and NEPA compliance seminars for entities including:

- Alameda County Waste Management Authority
- San Francisco County Transportation Authority
- West Bay Sanitary District
- North Coast Resource Management, Inc.
- Element Power Company
- Tetra Tech Inc.
- Impact Sciences Inc.
- Northwest Environmental Training Center (over 10 workshops)
- California State University East Bay (14 years teaching Environmental Impact Assessment)

PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENT DOCUMENTS (partial list)

Salt River Ecosystem Restoration Project EIR. GECO managed preparation of an Environmental Impact Report for the restoration of a large area of former marsh and open channel near Ferndale in Humboldt County. The project includes creation of a new seven-mile-long river channel and a 400-acre wetland restoration. Major issues include biological resources, land use, hydrology/flooding, and construction impacts (noise, air quality, traffic.). Client: Humboldt County Resource Conservation District.

Aramburu Island Shoreline Protection and Ecological Enhancement Project Initial Study. Mr. Grassetti managed preparation of an Initial Study for a proposal by the Audubon Society to stabilize the shoreline and improve bird and seal habitat on the 34-acre Aramburu Island site in Marin County. Major issues include biological resources, hydrology/flooding, and construction impacts. Client: Wetlands and Water Resources.

Forward Landfill Expansion Project EIR. Mr. Grassetti managed preparation of an EIR for a 170-acre expansion of the Forward Landfill in San Joaquin County. This is the third EIR that Mr. Grassetti, has prepared for this landfill over a period of 15

years. Major issues include air quality, health and safety, biological resources, and traffic. Client: San Joaquin County Community Development Department.

San Francisco PUC WSIP Projects. Mr. Grassetti assisted in the preparation of the San Francisco Public Utility Commission's Water Supply Improvement Project Program EIR, as well as two other CEQA documents for smaller projects under that program. Major issues include hydrology, water supply, and fisheries. Client: Water Resources Engineering/Orion Associates.

Parsons Slough Project CEQA Review. Mr. Grassetti is managing preparation of an expanded Initial Study for a tidal sill (dam) project to reduce scour in Parsons Slough, an arm of the ecologically sensitive Elkhorn Slough. This IS may lead to either an EIR or Mitigated Negative Declaration. Major issues include fisheries, marine mammals, water quality, aesthetics, and construction issues (noise). Client: Vinnedge Consulting/ Elkhorn Slough National Estuary Reserve.

Hamilton Wetlands/Todds Road CEQA Review. Mr. Grassetti managed preparation of the CEQA Initial Study for an alternative access road for truck traffic to the Hamilton Wetlands Restoration Project to reduce the project's potential noise impacts. Major issues included noise, biological resources, and cultural resources. Client: California State Coastal Conservancy.

San Francisco Bay Water Trail Program EIR. Mr. Grassetti assisted in the preparation of the EIR for a "water trail" for small non-motorized boats throughout San Francisco Bay. The project involves designation of 115 access sites as well as policies for stewardship and education. Major issues include disturbance of birds, marine mammals, water quality, historic resources, and wetlands. Client: California State Coastal Conservancy.

Dutch Slough Restoration Project/Oakley Community Park EIR. Mr. Grassetti managed preparation of the EIR for a 1400-acre wetland restoration and 80-acre community park on former diked lands in Oakley. Major issues include fisheries, water quality, historic architectural resources, and wetlands. Client: California State Coastal Conservancy.

Vineyard RV Park Expansion Initial Study. Mr. Grassetti managed preparation of the Initial Study for an expansion of a mobile home park in Solano County near Vacaville. Major issues included flooding, biological resources, and traffic. Client: Vineyard RV Park.

Pinole Creek Restoration Project Initial Study. Mr. Grassetti prepared the CEQA Initial Study for a 2.5-mile long creek restoration project in the City of Pinole. Major issues included biological resources, flooding, and water quality. Client: City of Pinole.

Knobcone Subdivision Initial Study. Mr. Grassetti managed preparation of an Initial Study for a 5-unit subdivision in Richmond. Major issues include geologic hazards and biological resources. Client: City of Richmond.

Baxter Creek Restoration Project CEQA Consulting. Mr. Grassetti assisted City of El Cerrito staff in the preparation of an Initial Study for the proposed Baxter Creek Restoration Project. Client: City of El Cerrito.

West of Fairview Subdivision Supplemental EIR. Mr. Grassetti managed preparation of a Supplemental EIR for a 700-unit residential development in Hollister. Major issues include traffic, biology, and utility services. Client: City of Hollister.

American Canyon Initial Studies. Mr. Grassetti managed preparation of two initial studies for commercial and warehouse projects in the City of American Canyon. Major issues include traffic, biological resources, and geology. Client: City of American Canyon.

Pelandale-McHenry Specific Plan. Mr. Grassetti prepared the Specific Plan for an 80-acre residential/commercial development in Modesto. Major issues included land use, traffic, and provision of adequate infrastructure. Client: Meritage Homes

Monte Cresta Roadway Extension Initial Study. Mr. Grassetti prepared an Initial Study/Negative declaration for a roadway extension in San Juan Hills area of the City of Belmont. Major issues included slope stability and growth inducement. Client: City of Belmont

Bethel Island Water Supply Project. Mr. Grassetti prepared an Initial Study for a proposed new water supply system for the community of Bethel Island in Contra Costa County. Major issues included growth inducement, archaeological resources, and biological resources. Client: Bethel Island Municipal Improvement District.

San Francisco Bay Estuary Invasive Spartina Control Project EIR/EIS and Addendum. Mr. Grassetti managed preparation of the programmatic EIR/EIS on a plan to control invasive cordgrasses throughout the San Francisco Bay. Major issues included endangered species, visual resources, water quality, and human health and safety. Mr. Grassetti subsequently prepared an addendum for the addition of a new herbicide to the Spartina Control Program. Client: California State Coastal Conservancy.

Aptos Sanitary Sewer Replacement Project Initial Study. Mr. Grassetti prepared an Initial Study for the replacement of a storm-damaged sanitary sewer pipeline in Santa Cruz County. Major issues included cultural resources and biological resources. Client: Harris and Associates.

Eastern Dublin Specific Plan Supplemental EIR. Mr. Grasseti managed preparation of a Supplemental EIR for an 1100-acre mixed-use project in the City of Dublin. Major issues included traffic, biological resources, public services, noise, and air quality. Clients: Shea Homes and Braddock and Logan Services.

Consolidated Forward Landfill Project EIR Update. Mr. Grasseti managed preparation of an EIR for the expansion and consolidation of the Forward Landfill and the Austin Road Landfill near Stockton, CA. Major issues include toxics, water quality, traffic, biological resources, and air quality. Client: San Joaquin County Community Development Department.

Pleasanton IKEA Initial Study. Mr. Grasseti prepared a Draft Initial Study for a proposed new 300,000 sq. ft. IKEA store in Pleasanton. Major issues included biology, traffic, and visual resources. Client: IKEA Corporation.

Central Contra Costa Household Hazardous Waste Facility Studies: Mr. Grasseti assisted Central Contra Costa Sanitary District staff in the preparation of a Planning Study and subsequent CEQA Initial Study on feasibility, siting, and environmental issues associated with the development of a Household Hazardous Waste collection program and facility in Central Contra Costa County. Client: Central Contra Costa Sanitary District.

Southwest Richmond Flood Control Project IS. Mr. Grasseti prepared the Initial Study and Mitigated Negative Declaration for a proposed flood control project in the City of Richmond. Client: City of Richmond.

Wickland Oil Martinez Tank Farm Expansion Project EIR Management. Mr. Grasseti served as an extension of City of Martinez Planning Department staff to manage all aspects of the preparation of the CEQA review for a 2,000,000-barrel expansion at Wickland's Martinez oil storage terminal. We prepared the NOP, RFP, assisted in consultant selection, and managed the consultant preparing the EIR on this project. Client: City of Martinez.

Austin Road Landfill Expansion Project EIR Update. Mr. Grasseti prepared an Initial Study and Supplemental EIR updating a 1994 EIR for the expansion of the Austin Road Landfill near Stockton, CA. Major issues include water quality, traffic, biological resources, and air quality. Client: San Joaquin County Community Development Department.

Wayside Road Sewer Expansion Initial Study. Mr. Grasseti prepared an Initial Study and Mitigated Negative Declaration for a proposed new sewer system in the Wayside Road area of Portola Valley. Client: West Bay Sanitary District

Los Trancos Woods Sewer Expansion Initial Study. Mr. Grasseti prepared an Initial Study and Mitigated Negative Declaration for a proposed new sewer system in the Los Trancos Woods area of Portola Valley. Client: West Bay Sanitary District

Arastradero Road Sewer Expansion Initial Study. Mr. Grasseti prepared an Initial Study and Mitigated Negative Declaration for a proposed new sewer system in the Arastradero Road area of Portola Valley. Client: West Bay Sanitary District

Lower Orinda Pumping Station Initial Study/Negative Declaration. Mr. Grasseti prepared an Initial Study/Negative Declaration for renovating or relocating a wastewater pumping plant in Orinda, CA. Client: Central Contra Costa Sanitary District.

Shell Martinez Breakout Tanks Project Initial Study. Mr. Grasseti prepared an Initial Study for two proposed new wastewater storage tanks at Shell's Martinez Manufacturing Complex. Major issues included air quality, odors, and visual impacts. Client: City of Martinez.

Shell Martinez Biotreater Facility Initial Study. Mr. Grasseti prepared the Initial Study/Negative Declaration for a proposed new biotreater facility for Shell's Martinez Manufacturing Complex wastewater treatment plant. Major issues included water quality, wetlands, growth-inducement, and cumulative impacts. Client: City of Martinez.

Vallejo Solar Power Plant Initial Study. Mr. Grasseti prepared a CEQA Initial Study/Negative Declaration for a proposed photovoltaic array intended to power a water pumping plant in the City of Vallejo. Major issues included land use compatibility and visual quality. Client: City of Vallejo.

Ranch on Silver Creek CEQA Consulting. Mr. Grasseti prepared the Mitigation Monitoring and Reporting Program and other CEQA compliance tasks for a large residential/golf course project in San Jose. Client: Sycamore Associates.

Morgan Hill Ranch Initial Study Analyses. Mr. Grasseti prepared the Hydrology, Geology, and Hazardous Materials analyses for the Morgan Hill Ranch Mixed Use Project Initial Study. Client: Wagstaff and Associates.

East Bay MUD Water Conservation Study. Mr. Grasseti conducted the field portion of a major water conservation survey for the East Bay MUD service area. Client: Water Resource Engineering.

East Bay MUD Pipeline CEQA Analyses. Mr. Grasseti prepared technical analyses for two EIRs regarding proposed new East Bay MUD pipeline in Sacramento, San Joaquin, and Calaveras Counties. Client: Uribe & Associates.

Sunnyvale Landfill Power Plant CEQA Initial Study. Mr. Grasseti prepared an Initial Study for a proposed landfill gas-fueled power plant at the Sunnyvale Landfill in Santa Clara County. Recommendations for mitigation and further environmental review were prepared. Client: 3E Engineering.

Fremont Redevelopment Project Hydrologic Analysis. Mr. Grassetti prepared the hydrology section for an environmental impact report for four redevelopment projects in Fremont. Client: Wagstaff and Associates.

Ostrom Road Landfill Hydrologic Analysis. Mr. Grassetti prepared the hydrology section for an environmental impact report on the proposed vertical expansion of an existing Class II landfill in Yuba County. Client: ESA Associates.

Pinole Portion of the Bay Trail Hydrologic, Geologic, and CEQA QA/QC Analyses. Mr. Grassetti prepared the hydrologic and geologic analyses for a CEQA Initial Study on a half-mile segment of the Bay Trail in the City of Pinole. Mr. Grassetti also provided CEQA process consulting services on this project. Client: Placemakers.

Kennedy Park Master Plan Hydrologic and CEQA QA/QC Analyses. Mr. Grassetti prepared the hydrologic analyses for an environmental impact report on a proposed park master plan in the City of Napa. Client: Placemakers.

U.S. Navy Bay Area Base Closure and Re-Use Environmental Studies. Mr. Grassetti assisted in the NEPA/CEQA review process for US Navy Base Closures and Re-Use for the San Francisco Bay Area. Work tasks include CEQA compliance overview, internal peer review, quality control reviews, and preparation of technical analyses. Specific projects are summarized below:

Mare Island Naval Shipyard EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of the EIR/EIS on the shipyard closure and reuse program, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Oak Knoll Naval Medical Center EIR/EIS Studies. Mr. Grassetti conducted a CEQA/NEPA quality control and peer review of the EIS/EIR prepared for disposal and reuse of the Oak Knoll Naval Medical Center EIS/EIR in the City of Oakland. Client: Tetra Tech, Inc.

NAS Alameda EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of EIR/EIS on reuse of the Naval Air Station, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Naval Station Treasure Island EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of the EIR/EIS on reuse of Naval Station Treasure Island, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Hunters Point Naval Shipyard EIR/EIS. Mr. Grassetti assisted in the responses to comments and peer review of the EIR/EIS for the Hunters Point Naval Shipyard in San Francisco. Client: Uribe and Associates.

Naval Fuel Depot Point Molate. Mr. Grassetti conducted overall internal peer reviews of several drafts of the EIR/EIS for reuse of the former Naval Fuel Depot Point Molate in Richmond, CA. In addition, he prepared the Noise, Socioeconomics, and Cultural Resources sections of the EIS/EIR. Client: Uribe and Associates.

CEQA/NEPA PEER REVIEW AND EXPERT WITNESS CONSULTING PROJECTS

Jackson State Forest CEQA Review. Mr. Grassetti prepared a detailed analysis of the CEQA adequacy of the California Department of Forestry's EIR on a new management plan for the 40,000 acre Jackson State Forest. Major issues included forestry practices, water quality, and biological resources. Client: Dharma Cloud Foundation

Los Angeles Airport Arrival Enhancement Project Environmental Assessment NEPA Peer Review. Mr. Grassetti prepared a peer review and expert declarations regarding the adequacy of the NEPA Environmental Assessment for rerouting of flight paths for aircraft arriving at Los Angeles International Airport. Major issues included adequacy of assessment of noise effects on traditional cultural practices of the Morongo Band of Mission Indians. Client: Law Offices of Alexander & Karshmer.

St Mary's College High School Master Plan Peer Reviews. Mr. Grassetti conducted peer reviews of two Initial Studies for proposed expansions of a high school. Major issues included noise and traffic. Client: Peralta Park Neighborhood Association.

Lawson's Landing EIR Peer Review. Mr. Grassetti conducted detailed peer reviews of numerous CEQA documents for the proposed master plan for the Lawson's Landing mobile home park and campground in Marin County. Client: Environmental Action Committee of West Marin.

Coaches Field Initial Study Peer Review. Mr. Grassetti conducted a peer review of a proposed lighted ballfield project in the City of Piedmont. Mr. Grassetti's review resulted in the Initial Study being withdrawn and an EIR being prepared. Client: Private Party.

Metropolitan Oakland International Airport Development Plan Environmental Impact Report CEQA Review. Mr. Grassetti performed a critical review and assisted in the preparation of comments and ultimately successful litigation regarding the proposed expansion of Metropolitan Oakland International Airport. Major issues included noise, cumulative impacts, and alternatives selection/analyses. Client: Law Office of John Shordike.

San Francisco International Airport Environmental Liaison Office Consulting. Mr. Grassetti conducted various internal peer review tasks associated with environmental studies being prepared for SFIA's proposed runway expansion. Client: LSA Associates, Inc.

El Cerrito Lumber Yard CEQA Peer Review. Mr. Grassetti conducted an internal peer review for an Initial Study on a controversial parcel in the City of El Cerrito. Client: City of El Cerrito.

Sausalito Marina CEQA Critique. Mr. Grassetti prepared a peer review and critique of an EIR for a proposed new marina in Sausalito. Client: Confidential

Sausalito Police and Fire Station CEQA Critique. Mr. Grassetti prepared a peer review and critique of an EIR for a proposed new public safety building in Sausalito. Client: Confidential

Napa Verison Tower CEQA Critique. Mr. Grassetti conducted a peer review and critique for a cellular telephone tower in the City of Napa. Client: Confidential.

Morongo Mining Projects Environmental Reviews. Mr. Grassetti provided CEQA, NEPA, and technical consulting to the Morongo Band of Mission Indians regarding two aggregate mines adjacent to their reservation in Riverside County, CA. Client: Law Office of Alexander & Karshmer.

Napa Skateboard Park Peer Review. Mr. Grassetti conducted a peer review and critique for a neighborhood association on a proposed skateboard park in the City of Napa. Client: Confidential.

Headwaters Forest Project EIR/EIS Review. Mr. Grassetti conducted an expert review of the CEQA and NEPA adequacy and technical validity of EIR/EIS on the Headwaters Forest Habitat Conservation Plan, Sustained Yield Plan, and land purchase. Clients: Environmental Law Foundation; Environmental Protection and Information Center, and Sierra Club.

Global Photon Fiber-Optic Cable EIR Peer Review. Mr. Grassetti assisted in a third-party peer review of an EIR on a proposed offshore fiber-optics cable. Client: Tetra Tech, Inc., and California State Lands Commission.

Coachella Valley Water Management Plan CEQA Peer Review. Mr. Grassetti assisted a consortium of Coachella Valley Indian Tribes in reviewing CEQA documents on the Coachella Valley Water Management Plan. Client: Consortium of Coachella Valley Tribes.

Salton Sea Enhanced Evaporation System Initial Study/Environmental Assessment Peer Review. Mr. Grassetti reviewed the draft IS/EA for a spray project to evaporate excess return flow water from the Salton Sea. Client: Morongo Band of Mission Indians.

Santa Rosa Home Depot CEQA Peer Review: Mr. Grassetti conducted a peer review and provided expert testimony regarding the adequacy of the Environmental Impact Report and associated technical studies for a proposed Home Depot shopping center in Santa Rosa. Client: Redwood Empire Merchants Association.

Mitsubishi Mine CEQA Litigation Review. Mr. Grassetti conducted a review of legal briefs regarding the adequacy of CEQA analyses for a proposed mine expansion in San Bernardino County. Client: Law Offices of Thomas Mauriello.

Alamo Gate Permitting Review. Mr. Grassetti performed a critical review and prepared expert testimony and correspondence regarding the adequacy of CEQA and land use permitting and studies for a proposed gate on Las Trampas Road, which would preclude vehicular access to a regional park staging area. Client: Las Trampas Trails Advocates.

Cambria Condominiums Environmental and Planning Review. Mr. Grassetti prepared expert reviews of the potential environmental effects and Local Coastal Plan compliance of a proposed condominium development in Cambria, San Luis Obispo County. Client: Law Office of Vern Kalshan.

Mariposa County Planning Policy Reviews. Mr. Grassetti conducted a review of proposed alterations to the Mariposa County General Plan for CEQA compliance. Client: Dr. Barton Brown.

Gregory Canyon Landfill Environmental Processing Review. Mr. Grassetti was retained to review the environmental permitting and CEQA analyses for the proposed Gregory Canyon Landfill in northern San Diego County. Procedural issues include landfill siting requirements and CEQA process compliance. Technical issues include cultural resources, hydrology, endangered species, traffic, and health and safety. Client: Law Offices of Alexander & Karshmer and Pala Band of Mission Indians.

Otay Ranch Development CEQA Review. Mr. Grassetti prepared an expert review of the Environmental Impact Report for the 23,000-acre Otay Ranch project in San Diego County in connection with ongoing litigation. Major issues were CEQA compliance, compliance with the California planning process, biological impacts, cumulative impacts, and alternatives. Client: Law Offices of Charles Stevens Crandall.

Punta Estrella Chip Mill Environmental Report Compliance Review. Mr. Grassetti prepared a review of a proponent's environmental report for a proposed wood chip mill in Costa Rica to determine compliance of documentation with U.S. environmental standards and policies. Major compliance issues included US Clean Air Act and Clean Water Act standards, NEPA standards, and adequacy of overall impacts analysis. Client: Scientific Certification Systems.

Carroll Canyon Burn Facility CEQA Compliance Review. Mr. Grassetti prepared a CEQA process review for a proposed Negative Declaration on a planned contaminated-earth burning facility in the City of San Diego. Client: Law Offices of William Mackerzie.

Monterey Bay Marine Lab CEQA Compliance Review: Mr. Grassetti assisted attorneys in review of a CEQA Negative Declaration, NEPA Environmental Assessment, and associated documents for the relocation of the Monterey Bay Marine Laboratory. Issues included the effectiveness of mitigation to cultural and biological resources, the

appropriateness of the Negative Declaration versus an EIR, and other CEQA issues. Client: Law Offices of Alexander & Karshmer.

Monterey Ground Water Ordinances CEQA Compliance Review. Mr. Grassetti provided expert CEQA consulting services to attorneys regarding the appropriateness of Monterey County's CEQA processing of proposed ground water ordinances. Client: Salinas Valley Water Coalition.

Jamestown Whistlestop CEQA Adequacy Review. Mr. Grassetti performed an expert review and assisted in successful litigation regarding an Initial Study for a proposed mini mall in Jamestown, Tuolumne County. Client: Law Offices of Thomas Mauriello.

Sunrise Hills Environmental Impact Report Peer Review. Mr. Grassetti performed a critical review of the applicability of the EIR for a proposed 200-unit residential development in Sonora, Tuolumne County. Major issues include grading, erosion, water quality, biological impacts, and visual quality. Client: Sylva Corporation.

Sonora Crossroads Shopping Center Environmental Impact Report Review. Mr. Grassetti performed a review of an EIR for a major new shopping center in Sonora, Tuolumne County. Major issues included geologic and hydrologic impacts. Findings were presented to the Sonora City Council, and pre-litigation assistance was provided. Client: Citizens for Well Planned Development.

Blue Oaks Residential Development CEQA Studies Review and Critique. Mr. Grassetti performed several tasks related to a proposed residential development in western Tuolumne County. Tasks included review of County CEQA procedure, review of Initial Study, review of Draft EIR, and coordination with attorneys. Client: Western Tuolumne County Citizens Action Group.

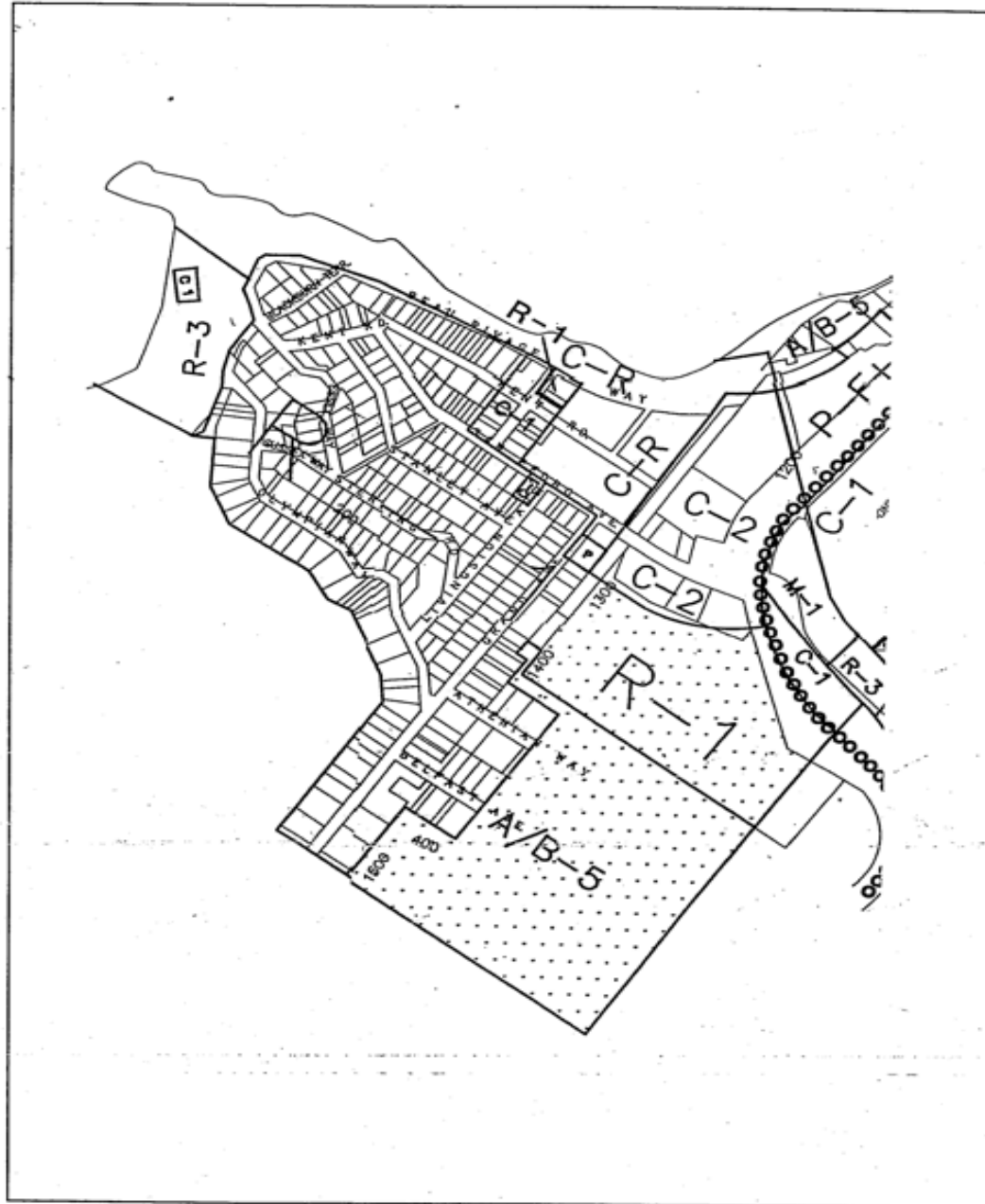
Yosemite Junction Project CEQA Review. Mr. Grassetti prepared a review and critique of a proposed Negative Declaration for a 40-unit outlet mall in Tuolumne County, California. The Negative Declaration was subsequently denied and the project application rescinded. Client: Sylva Corporation.

Sonora Mining Corporation CEQA Review/Expert Witness Services. Mr. Grassetti conducted a review and critique of CEQA compliance for the proposed expansion of Sonora Mining Corporation's Jamestown Gold Mine in Tuolumne County, California. Client: Law Office of Alexander Henson.

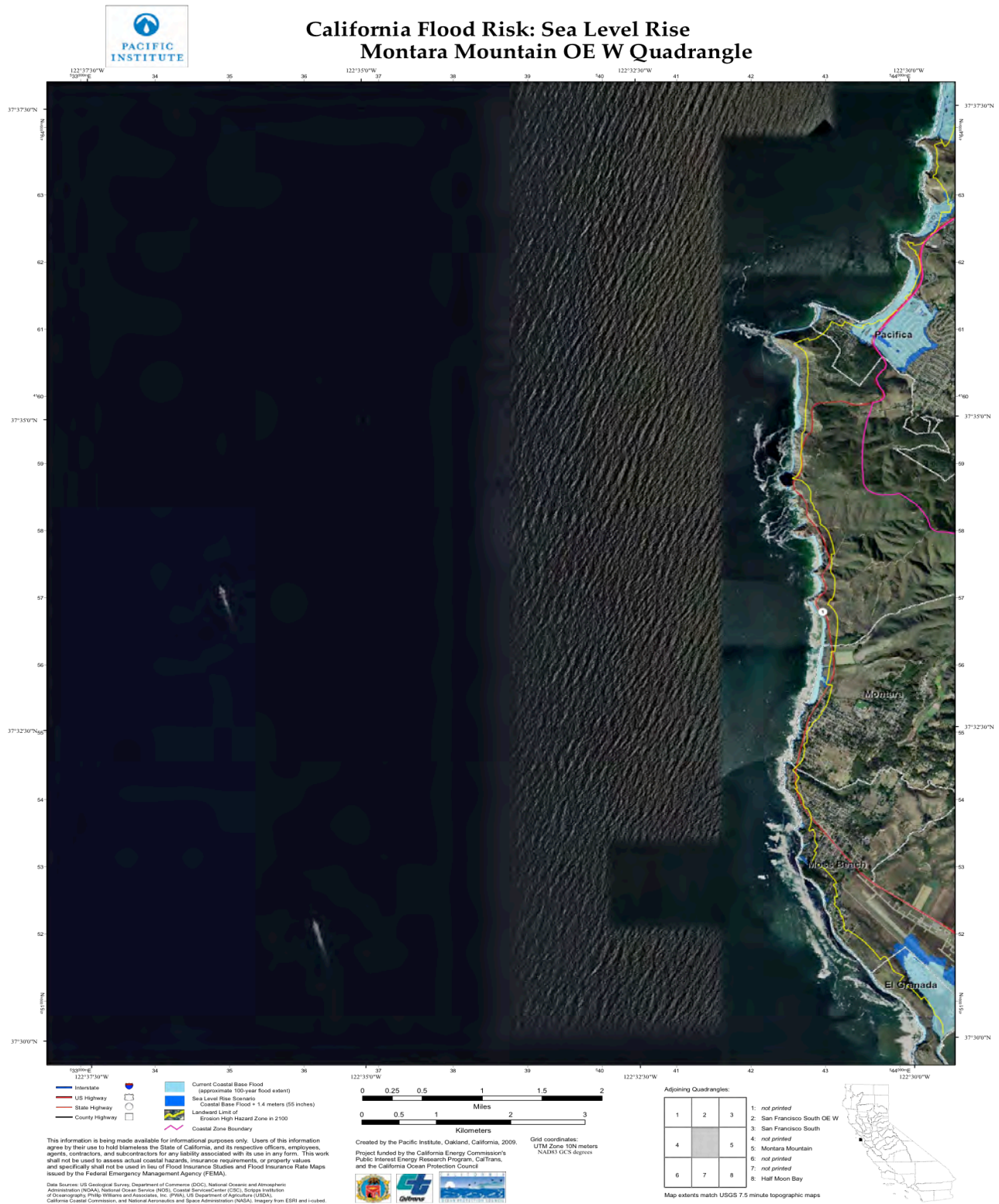
Save Our Forests and Rangelands Expert Review and Witness Services. Mr. Grassetti provided expert review, consulting services, and expert witness testimony on CEQA issues for a successful legal challenge to an EIR and Area Plan for 200,000 acres in the Central Mountain Sub-region of San Diego County. Client: Law Offices of Milberg, Weiss, Bershad, Specthrie, & Lerach.

Attachment 2: City of Pacifica Zoning Map, p. 31

Zoning Map 31



Attachment 2: Pacific Institute Sea Level Rise Map



Mr. Lee Diaz
June 19, 2014

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Attachment 4: State of California Sea Level Rise Guidance Document

STATE OF CALIFORNIA SEA-LEVEL RISE GUIDANCE DOCUMENT

Developed by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT),
with science support provided by the Ocean Protection Council's Science Advisory Team and the
California Ocean Science Trust

March 2013 update

Background, Purpose, and Intended Use

This document provides guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California. This document was developed by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) in response to Governor Schwarzenegger's Executive Order S-13-08, issued on November 14, 2008, which directed state agencies to plan for sea-level rise and coastal impacts. That executive order also requested the National Research Council (NRC) to issue a report on sea-level rise (SLR) to advise California on planning efforts.

The final report from the NRC, *Sea-Level Rise for the Coasts of California, Oregon, and Washington*¹, was released in June 2012. The *Sea-Level Rise Guidance Document* has been updated with the scientific findings of the 2012 NRC report. The intent of this guidance document is to inform and assist state agencies as they develop approaches for incorporating SLR into planning decisions with the most recent and best available science, as published in the 2012 NRC report. Specifically, this document provides information and recommendations to enhance consistency across agencies in their development of approaches to SLR. Because of their differing mandates and decision-making processes, state agencies will interpret and use this document in a flexible manner, taking into consideration risk tolerances, timeframes, economic considerations, adaptive capacities, legal requirements and other relevant factors. (Refer to Recommendation #2 below for a discussion of risk tolerance and adaptive capacity). Although the estimates of future SLR provided in this document are intended to enhance consistency across California state agencies, the document is not intended to prescribe that all state agencies use specific or identical estimates of SLR as part of their assessments or decisions.

SLR potentially will cause many harmful economic, ecological, physical and social impacts and incorporating SLR into agency decisions can help mitigate some of these potential impacts. For example, SLR will threaten water supplies, coastal development, and infrastructure, but early integration of projected SLR into project designs will lessen these potential impacts.

Summary of Guidance Development and Planned Future Updates

Staff from the CO-CAT member agencies worked collaboratively to develop the first version of this document, the *Interim Sea-Level Rise Guidance Document*² (2010), prior to the release of the NRC

¹ Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012).
http://www.nap.edu/catalog.php?record_id=13389

² Sea-Level Rise Interim Guidance Document (2010).

http://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20110311/12.SLR_Resolution/SLR-Guidance-Document.pdf

report. The *Interim Sea-Level Rise Guidance Document* (2010) was developed based on the best available science at the time (the process for the development of the document is outlined in its Appendix). As the *Interim Sea-Level Rise Guidance Document* explicitly called for an update when the findings of the NRC report were available, the present document has been revised to include results from the NRC report (for more information on the development of this version, please see Appendix A). Because the science of SLR is continually advancing, this guidance document will be revised as necessary to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

Recommendations

CO-CAT reached agreement on the following policy recommendations based upon recent projections of future SLR from the National Research Council's 2012 report on Sea-Level Rise and input from the scientists as listed in Appendix A.

1. **Use the ranges of SLR presented in the June 2012 National Research Council report on *Sea-Level Rise for the Coasts of California, Oregon, and Washington* as a starting place and select SLR values based on agency and context-specific considerations of risk tolerance and adaptive capacity.** Table 1 (below) presents SLR projections based on the June 2012 NRC report on SLR. Refer to Recommendation # 2 for a discussion of time horizon, risk tolerance, and adaptive capacity, which should be considered when choosing values of SLR to use for specific assessments.

Table 1. Sea-Level Rise Projections using 2000 as the Baseline

Time Period	North of Cape Mendocino ³	South of Cape Mendocino
2000 - 2030	-4 to 23 cm (-0.13 to 0.75 ft)	4 to 30 cm (0.13 to 0.98 ft)
2000 – 2050	-3 to 48 cm (-0.1 to 1.57 ft)	12 to 61 cm (0.39 to 2.0 ft)
2000 – 2100	10 to 143 cm (0.3 to 4.69 ft)	42 to 167 cm (1.38 to 5.48 ft)

³ The differences in sea-level rise projections north and south of Cape Mendocino are due mainly to vertical land movement. North of Cape Mendocino, geologic forces are causing much of the land to uplift, resulting in a lower rise in sea level, relative to the land, than has been observed farther south.

Note: These projections incorporate a land ice component extrapolated from compilations of observed ice mass accumulation and loss. It is important to note that the NRC report is based on numerical climate models developed for the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report⁴ which do not account for rapid changes in the behavior of ice sheets and glaciers and thus likely underestimate sea-level rise (the new suite of climate models for the Fifth Assessment Report was not available when the NRC report was developed). The committee used the model results from the IPCC Fourth Assessment Report, together with a forward extrapolation of land ice that attempts to capture an ice dynamics component.⁵

- 2. Consider timeframes, adaptive capacity, and risk tolerance when selecting estimates of SLR.** The timeframe identified for a project is an important consideration for SLR projections and will affect the approach for assessing SLR impacts. Until 2050, there is strong agreement among the various climate models for the amount of SLR that is likely to occur. After mid-century, projections of SLR become more uncertain; SLR projections vary with future projections due in part to modeling uncertainties, but primarily due to uncertainties about future global greenhouse gas emissions, and uncertainties associated with the modeling of land ice melting rates. Therefore, for projects with timeframes beyond 2050, it is especially important to consider adaptive capacity, impacts, and risk tolerance to guide decisions of whether to use the low or high end of the ranges presented. Due to differing agencies mandates, stakeholder input and other considerations, agencies may assess the adaptive capacity of a project or action differently.

Consequences are a function of impacts and adaptive capacity

The consequences of failing to address SLR adequately for a particular project will depend on both adaptive capacity and the *potential* impacts of SLR to public health and safety, public investments, and the environment. Figure 1 in Appendix C illustrates how adaptive capacity and potential impacts combine to produce consequences.

Adaptive capacity is the ability of a system to respond to climate change, to moderate potential damages, to take advantage of opportunities, and to cope with the consequences.⁶ In most situations, adaptive capacity must be front-loaded, or built into the initial project; it cannot be assumed that adaptive capacity can be developed when needed unless it has been planned for in advance. A project that has high adaptive capacity and/or low potential impacts will experience fewer consequences. For example, an unpaved trail built within a

⁴ Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (2007).
http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1

⁵ Page 13, Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012).
http://www.nap.edu/catalog.php?record_id=13389

⁶ Definition of adaptive capacity used in the 2009 *California Climate Adaptation Strategy*, based upon definition provided in *Climate Adaptation: Risk, Uncertainty and Decision-making*, UK CIP (2003), UKCIP Technical Report, Oxford, Willows, R. I. and R. K. Cornell (eds.).

rolling easement with space to retreat has high adaptive capacity (because the trail and easement can be relocated as sea level rises) and therefore will experience fewer harmful consequences from SLR. In contrast, a new wastewater treatment facility located on a shoreline with no space to relocate inland has low adaptive capacity and high potential impacts from flooding (related to public health and safety, public investments, and the environment). The negative consequences for such a project of failing to consider a large amount of SLR would therefore be high.

Risk Tolerance

The amount of risk involved in a decision depends on both the consequences and the likelihood of *realized* impacts that may result from SLR. These realized impacts, in turn, depend on the extent to which the project design integrates an accurate projection of SLR. However, current SLR projections provide a range of potential SLR values and lack precision (see Table 1 above). Therefore, agencies must consider and balance the relative risks associated with under- and/or over-estimating SLR in making decisions.⁷

Figure 2 in Appendix C illustrates this relationship for a project in which underestimating SLR in the project design will result in harmful realized impacts such as flooding. In this case, harmful impacts are more likely to occur if the project design is based upon a low projection of SLR and less likely if higher estimates of SLR are used. In situations with high consequences (high impacts and/or low adaptive capacity), using a low SLR value therefore involves a higher degree of risk.

- 3. Consider storms and other extreme events.** Coastal ecosystems, development, and public access are most at risk from storm events, including the confluence of large waves, storm surges, and high astronomical tides during a strong El Niño.⁸ Water levels reached during these large, short-term events have caused significant damage along coast. For example, a strong El Niño combined with a series of storms during high-tide events caused more than \$200 million dollars in damage (in 2010 dollars) to the California coast during the winter of 1982-83. In the next few decades, most of the damage along the coast will likely result from extreme events. Historical records are one of the main sources for information on the extremes that are possible, and the damages that can result. Planning activities and project design would be improved by considering impacts from extreme events. Future sea level will be a starting point for project design considerations. Where feasible, consideration should

⁷ Examples of harmful impacts that might result from underestimating SLR include damage to infrastructure, and inundation of marsh restoration projects located too low relative to the tides. Examples of harmful impacts that might result from overestimating SLR include financial costs of over-engineering shoreline structures, locating in-water development in too shallow a depth to avoid navigational hazards, and marsh restoration projects located too high relative to the tides.

⁸ Page 7, Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012). http://www.nap.edu/catalog.php?record_id=13389

be given to scenarios that combine extreme oceanographic conditions on top of the highest water levels projected to result from SLR over the expected life of a project.

- 4. Coordinate with other state agencies when selecting values of SLR and, where appropriate and feasible, use the same projections of sea-level rise.** For projects developed by or under the regulatory authority of multiple agencies, using the same SLR values will increase efficiency of analyses and promote consistency. Agencies may select other values depending on their particular guiding policies and considerations related to risk, ability to incorporate phased adaptation into design, and other factors.
- 5. Future SLR projections should not be based on linear extrapolation of historic sea level observations.** For estimates beyond one or two decades, linear extrapolation of SLR based on historic observations is inadequate and would likely underestimate the actual SLR. According to the OPC Science Advisory Team, because of non-linear increases in global temperature and the unpredictability of complex natural systems, linear projections of historical SLR are likely to be inaccurate.
- 6. Consider changing shorelines.** California's very dynamic coast will evolve under rising sea level and assessments of impacts from SLR to shoreline projects must address local shoreline changes. For example, there could be less significant coastal change due to SLR in areas of high sediment supply (e.g., offshore of large northern CA rivers), whereas the coast may recede or change very dramatically in other areas (low sediment supply, presence of eroding bluffs or dunes, etc.). Existing resources for assessing future erosion/accretion rates include: U.S. Geological Survey report on shoreline changes for California's beach habitat,⁹ U.S. Geological Survey report on shoreline changes for California's bluff habitat.¹⁰
- 7. Consider predictions in tectonic activity.** The 2012 NRC report highlights the significant risk posed to the region north of Cape Mendocino from a large earthquake (magnitude greater than 8) along the Cascadia Subduction Zone, which could cause significant land subsidence resulting in instantaneous sea-level rise as well as a tsunami. In subduction zones, strain builds within the fault zone causing land to rise slowly before subsiding abruptly during an earthquake. The last great earthquake of the region occurred in 1700, causing an instantaneous rise in relative sea level of up to 2m due to land subsidence. Because this guidance document is targeted towards advising on climate induced changes in sea level, it will not provide guidance on changes in sea level from tectonic activity. However, this information is included because it was an important finding of the NRC 2012 report.

⁹ Cheryl Hapke et. al, *National Assessment of Shoreline Change Part 3: Historical Shoreline Change and Associated Coastal Land Loss along Sandy Shorelines of the California Coast* (U.S. Geological Survey Open File Report 2006-1219, 2006). <http://pubs.usgs.gov/of/2006/1219/>

¹⁰ Cheryl Hapke et. al, *National Assessment of Shoreline Change Part 4: Historical coastal cliff retreat along the California coast* (U.S Geological Survey Open File Report 2007-1133, 2007). <http://pubs.usgs.gov/of/2007/1133/>

- 8. Consider trends in relative local mean sea level.** Relative sea level is the sea level relative to the elevation of the land. In California, the land elevation along the coast is changing due to factors including tectonic activity and subsidence. The National Oceanic and Atmospheric Administration provides a summary of the trends in the measured relative sea level at tidal gauges (water level recorders) in California that have been operating for at least 30 years <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>. Predictions of future sea levels at specific locations will be improved if relative trends in sea level from changes in land elevation are factored into the analysis.

APPENDIX A

Development of this Document

The Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), led by the Ocean Protection Council (OPC), developed this document. CO-CAT includes staff from the following state entities:

- Business, Transportation and Housing Agency,
- Coastal Commission,
- Department of Fish and Game,
- Department of Parks and Recreation,
- Department of Public Health,
- Department of Toxic Substances Control,
- Department of Transportation,
- Department of Water Resources,
- Environmental Protection Agency,
- Governor's Office of Planning and Research,
- Natural Resources Agency,
- Ocean Protection Council,
- Ocean Science Trust,
- San Francisco Bay Conservation and Development Commission,
- State Coastal Conservancy,
- State Lands Commission, and
- State Water Resources Control Board.

Staff from these state entities worked collaboratively from July through October 2010 to develop the interim version of this document, the *Interim Guidance Document* (2010), and reached agreement on the document's recommendations. Upon the release of the NRC Report in June 2012, numerous meetings and workshops were held to familiarize agencies and the public with its findings. On November of 2012 CO-CAT members reconvened to discuss the update of this document. CO-CAT members came to consensus over retaining the policy recommendations stated in the *Interim Guidance Document* (2010), and updating the Guidance Document per the new set of ranges of SLR presented in the 2012 NRC report, and incorporating new scientific findings on the hazards associated with storms and tectonic activity as a potential source of change in relative sea level.

The 2012 NRC Report, unlike the Interim Guidance Document, divides the California coast into two separate regions – north of Cape Mendocino and south of Cape Mendocino. The projections for north of Cape Mendocino incorporate the uplift trends that are partially associated with the Cascadia Subduction Zone and result in very different projections for sea level rise than are anticipated for the rest of the coast. For the coast from Cape Mendocino to the Mexican Border, the 2012 NRC projections for the years 2030 and 2050 are similar to the projections presented in the *Interim Guidance Document* (2010), but have a wider range. For this same area, the NRC projections by 2100 are slightly lower than those in

Interim Guidance Document (2010), due to differences in modeling approaches and consideration of regional impacts.

OPC staff, directed by CO-CAT members, worked with the California Ocean Science Trust (whose Executive Director is the OPC's Science Advisor) to ensure that the update to this document best incorporated the scientific findings in the 2012 NRC report. A sub-committee of relevant subject matter experts from the OPC's Science Advisory Team responded to questions posed on how to adapt tables and figures from the NRC Study to better serve the Guidance Document's audience. The questions posed and responses can be found in Appendix B.

APPENDIX B

Responses to February 2013 Questions for the Ocean Protection Council's Science Advisory Team from the Sea Level Rise Task Force of the Ocean and Coastal Working Group of the California Climate Action Team (CO-CAT)

March 1, 2013

These responses were developed by a sub-committee of scientists from the OPC Science Advisory Team (OPC-SAT) who work directly on sea-level rise issues. Two of the scientists were also members of the NRC Committee that prepared the 2012 Report on West Coast Sea-Level Rise:

1. Dr. Dan Cayan, Research Meteorologist, UC San Diego Scripps Institution of Oceanography & United States Geological Survey
2. Dr. Gary Griggs, Director of Institute of Marine Sciences and Distinguished Professor of Earth and Planetary Sciences, UC Santa Cruz
3. Dr. Sam Johnson, Research Geologist, United States Geological Survey Pacific Science Center, Santa Cruz

Following the completion and release of the National Research Council's report: *Sea-Level Rise for the Coasts of California, Oregon and Washington: Past, Present, and Future* (2012), CO-CAT sought to update the Sea-Level Rise Guidance Document. The following questions were posed to the OPC-SAT sub-committee:

Questions

Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future

1. The report outlines ranges of sea-level rise rates for the time horizons 2030, 2050 and 2100 (Table 5.3, page 96):
 - a. We would like to be able to recommend ranges for the time horizons utilized (2030, 2050, and 2100) for zones north of Cape Mendocino and south of Cape Mendocino. However, we are not sure what range of numbers we could recommend to the area north of Cape Mendocino so that those communities can plan for sea-level rise given the tectonic risks specific to that region.
 - b. Given the *components* in Table 5.3 (page 96), the *sum of all contributions* does not add up. Can you please explain how the contributions add up?
2. There are sea-level rise ranges presented for major cities along the West Coast. Would utilizing the rates presented for these cities more accurately reflect the science over utilizing the regional (north or south of Cape Mendocino) ranges?

Responses

Prior to answering these specific questions, the sub-committee wants to reiterate some key points from our September 1, 2010 response.

1. Over the next few decades, episodes of heightened sea level associated with large winter storms and anomalous short period climate patterns will be of greater concern to infrastructure and development in coastal areas than the relatively slow increases that are projected in association with global sea-level rise alone. The coast of California has experienced two very large El Niño events over the past 20 years, in 1982-83 and 1997-98, when large storms resulted in hundreds of millions of dollars in storm damage to private property and public infrastructure. The damages occurred from a combination of elevated sea levels and large storm waves, especially when these factors coincided with high tides. During the 1983 ENSO event, sea levels were the highest ever recorded in San Diego, Los Angeles and San Francisco, 29.0 cm (11.4 in.), 32.3 cm (12.7 in), and 53.8 cm (21.2 in.), respectively, above predicted high tides.

This point was also made clear in the NRC Report (Executive Summary p. 6):

Most of the damage along the California, Oregon, and Washington coasts is caused by storms—particularly the confluence of large waves, storm surges, and high astronomical tides during a strong El Niño. The water levels reached during these large, short-term events have exceeded mean sea levels projected for 2030 and are equivalent to values projected for 2050, so understanding their additive effects is crucial for coastal planning.

2. Coastal hazards in California vary geographically and will evolve through this century based on a combination of sea-level rise, possible changes in storm climate, and tectonic uplift or subsidence. Different coastal environments will be exposed to different risks and these risks are expected to increase in the future. Each of these needs to be understood, their risks assessed and adaptation measures developed.

- a. Inundation of coastal flooding along the low lying portions of the open coast
- b. Inundation of low-lying areas around San Francisco Bay
- c. Coastal erosion of cliffs, bluffs and dunes
- d. Rapid land-level change (primarily subsidence) north of Cape Mendocino during a subduction zone earthquake that is likely to occur in the next several hundred years

We do not believe that there is enough certainty in the sea-level rise projections nor is there a strong scientific rationale for specifying specific sea-level rise values at individual locations along California's coastline. The uncertainties in future sea-level rise projections increase as the projected time horizon is extended forward through the 21st Century. These uncertainties arise from an incomplete understanding of the global climate system, the inherent unpredictability of natural climate variation, the inability of global climate models to accurately represent all important global and regional

components, and the need to make assumptions about important climate drivers over future decades (e.g., greenhouse gas emissions, aerosols, land use).

For the near future (out to 2030), confidence in the global and regional projections is relatively high, but uncertainty grows larger as the time horizon of the projection is extended forward. There are large uncertainties in projections for 2100 made using any existing methodology, including process-based numerical models, extrapolations, and semi-empirical methods. The actual sea-level rise value for 2100 is likely to fall within the wide uncertainty bounds provided in the NRC West Coast Sea Level Rise Report, but a precise value cannot be specified with any reasonable level of confidence.

The sections of coastline north and south of Cape Mendocino clearly are parts of different tectonic regimes and tide gages have recorded distinct regional values over their periods of record. The tide gage for the North Spit at Humboldt Bay extends back to 1977 and has recorded an average sea-level rise of +4.73 +/- 1.58 mm/yr., equivalent to 1.55 ft./100 years. This is considerably higher than the global average and indicates significant subsidence in this location. Sixty-five miles north at Crescent City, the tide gage record extends back to 1933 and shows, over the period of record, a local drop in sea level of -0.65 +/- 0.36 mm/yr., equivalent to -0.21 ft./100 years. The drop in sea level is explained by a rising coastline near Crescent City due to flexure of the North American tectonic plate above the subducting Juan de Fuca plate. We believe it is advisable to use the two different rates (augmented by any future acceleration in rates of sea level rise) for the areas closest to these two gages, with intermediate values for the areas between them. What is certain to happen when the next large subduction zone earthquake occurs, however, is that there will likely be essentially instantaneous coastal subsidence north of Cape Mendocino that could be as much as three feet or more.

From Cape Mendocino to San Diego, based on the NRC report findings and the general lack of large variation between the data from the open coast NOAA tide gage stations with the longest and most consistent records, we believe that using a single sea-level rise value is the presently the best and most tractable approach. Historic sea-level rise rates from tide gages range from about 0.8 to 2.1 mm/yr. Table 5.2 in the NRC report projects essentially identical values for both San Francisco and Los Angeles for 2030 (14.4-14.7 +/- 5 cm), 2050 (28.0-28.4 +/- 9.1 cm) and 2100 (91.0-93.1 +/- 25 cm).

These values can be refined in future decades as we continue to gather additional sea-level rise and vertical land-motion data from tide gages, satellite altimetry, and GPS surveys, and as long-term trends become clearer, but careful, sustained monitoring is essential to carry this out.

For the near future it will continue to be short-term extremes that flood low-lying areas and increase rates of cliff, bluff and dune erosion that will generate the highest risks. These extremes will likely arise when a combination of factors occur, including ENSO events, high tides, storm surges, wave set up and wave run up. Along the California coast, these extreme storm events almost always occur in the winter months, and expose coastal development, whether public or private, to the greatest hazard. As global climate warms and global sea level continues to rise, these storm events, even if they do not increase in intensity or duration, will likely have even greater impacts on the California coast.

Additional factors for state agencies to consider in selecting a sea-level rise rate from the projected ranges that are included in the NRC report for any future coastal facility or infrastructure project include:

1. The projected lifespan of the project or facility
2. The cost or value of the project or a replacement facility
3. The impact or consequence of damage to or loss of a facility or project

APPENDIX C

FOR ILLUSTRATION PURPOSES ONLY – CONCEPTUAL MODELS

Figure 1. Consequence = Impacts x Adaptive Capacity

	Low Adaptive Capacity	Medium Adaptive Capacity	High Adaptive Capacity
High Impact	HIGH CONSEQUENCES	HIGH CONSEQUENCES	MEDIUM CONSEQUENCES
Medium Impact	HIGH CONSEQUENCES	MEDIUM CONSEQUENCES	LOW CONSEQUENCES
Low Impact	MEDIUM CONSEQUENCES	LOW CONSEQUENCES	LOW CONSEQUENCES

This figure demonstrates how the consequences of a decision are determined by the amount of impact and by the adaptive capacity. There are higher consequences when there are greater impacts and lower adaptive capacities.

Figure 2. Example of:

$$\text{Risk} = \text{Consequence} \times \text{Likelihood}$$

For projects where too much sea-level rise would cause project impacts such as flooding,



if use lower estimates of sea-level rise



if use medium estimates of sea-level rise



if use higher estimates of sea-level rise



	Higher Likelihood Impacts	Medium Likelihood Impacts	Lower Likelihood Impacts
High Consequence	HIGH RISK	HIGH RISK	MEDIUM RISK
Medium Consequence	HIGH RISK	MEDIUM RISK	LOW RISK
Low Consequence	MEDIUM RISK	LOW RISK	LOW RISK

This figure demonstrates how the amount of risk is determined by the consequences (impacts and adaptive capacity) and the likelihood of impacts occurring. In this example, using higher SLR estimates lower the project risks.”

Attachment 5: Site Access Photographs

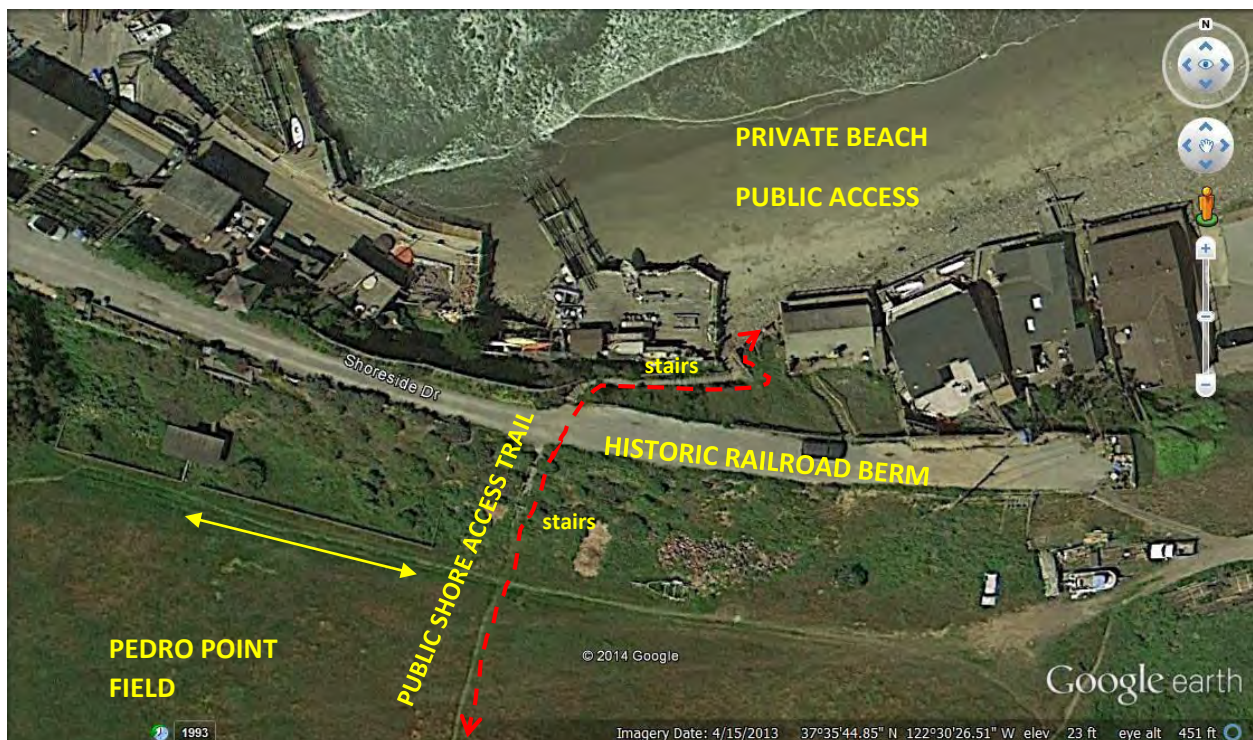
PEDRO POINT FIELD, Pacifica, CA
("Archdiocese Property"; "Calson Property")
Modern and historical coastal landscape features

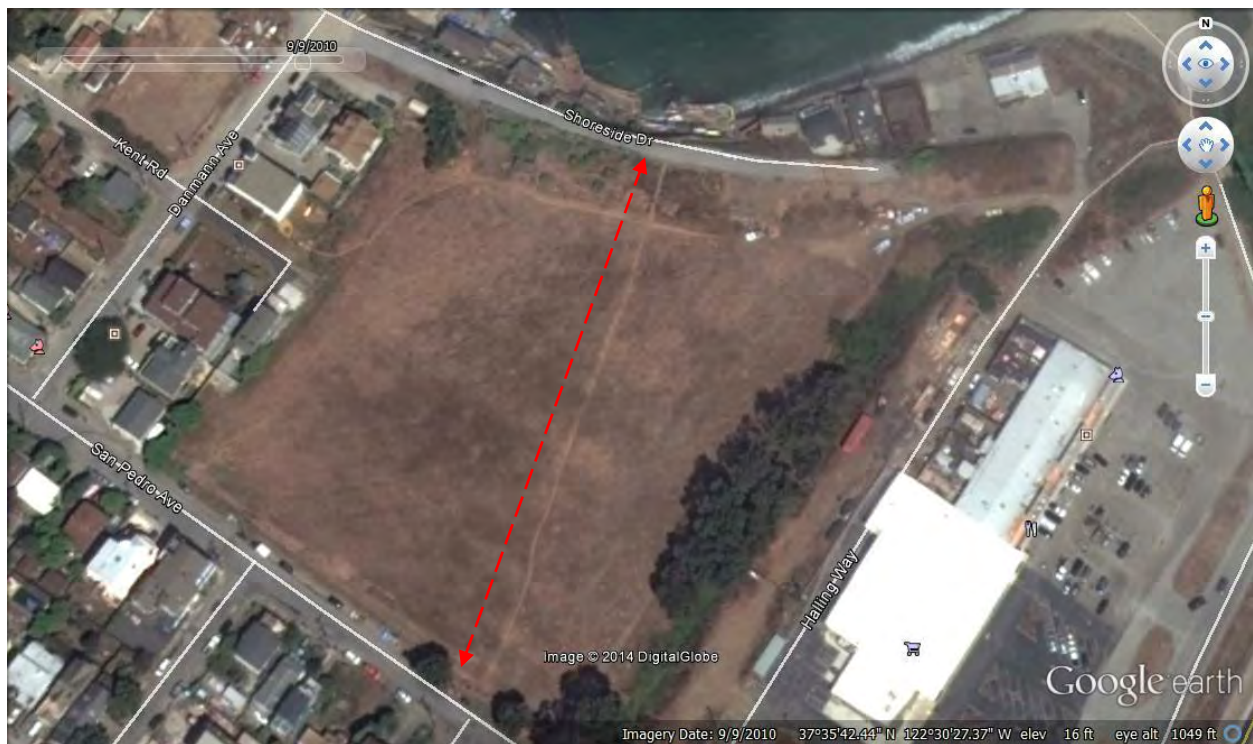
Modern setting – April 2013



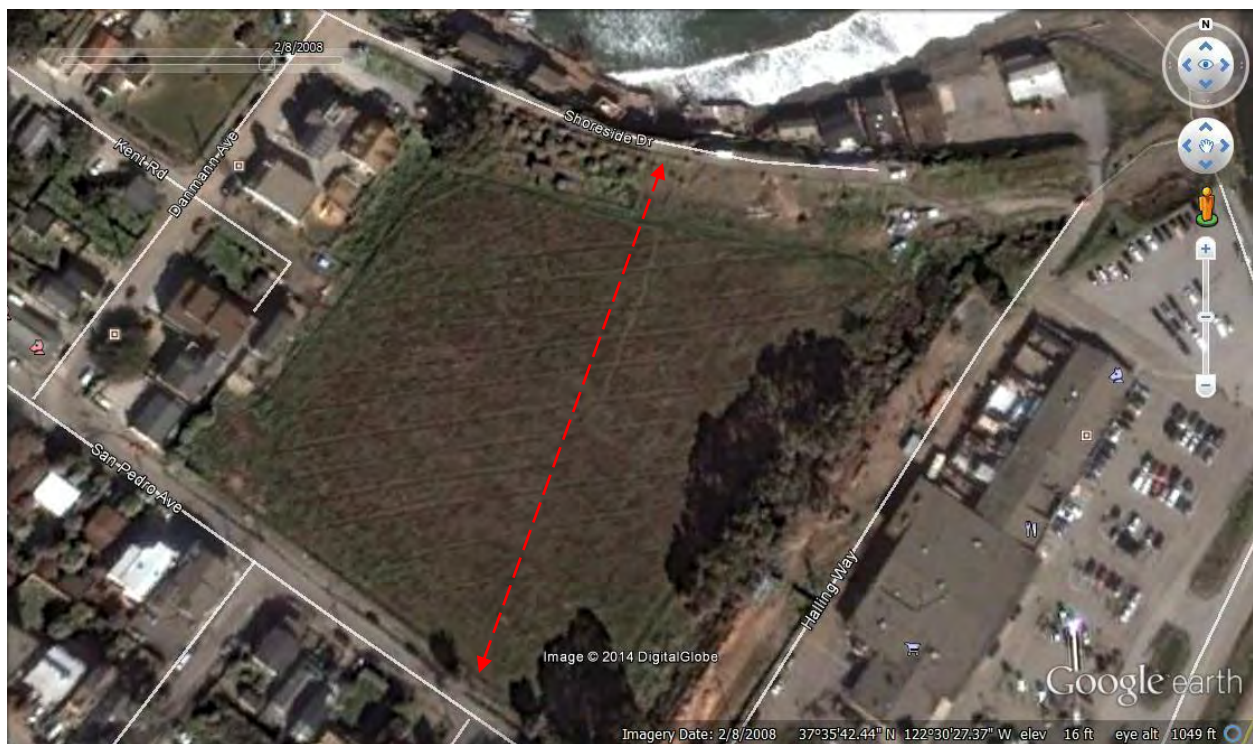


Informal (trampled) foot trail network connections between public road (San Pedro Avenue) and public access to shoreline, across Pedro Field.





2010 PEDRO PT FIELD SHORELINE TRAIL (9/9/2010)



2008 PEDRO PT FIELD SHORELINE TRAIL (2/08/2008)



2005 PEDRO PT FIELD SHORELINE TRAIL (10/10/2005)



2002 PEDRO PT FIELD SHORELINE TRAIL (9/30/2002)