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September 21, 2007

Ms. Meg Vaughn
California Coastal Commission
South Coast District Office
200 Oceangate, 10th Floor
Long Beach CA 90802-4416

RE: Huntington Beach/Parkside Estates Local Coastal Plan Amendment 1-06
Comments on June 29, 2007 Staff Report and Addenda

Dear Meg:

As you requested, we are submitting these comments to the Coastal Commission staff report and associated appendices and addenda prepared for the scheduled July Coastal Commission hearing on LCPA 1-06, Huntington Beach/Parkside Estates. These comments are supplemented by a letter from Mr. Rick Fitch dated September 12, 2007 requesting that various materials missing from your June staff report and associated appendices be included in the next published staff report/appendices on this matter.

COMMENTS ON STAFF REPORT

1. *Page 2, 4th paragraph, 4th line: "Commission has granted one coastal development permit for development on the property (5-82-278 Smokey's Stables) for equestrian related facilities.... some of the changes to the property cannot be correlated with any specific authorization by the Commission."*

   Your staff has been fully aware of multiple stable expansion requests processed by the City, and was similarly aware of considerable other activity that occurred during the stable's operations duration of over more than 20 years (approximately 1976 to 2000), and yet that has not been accurately represented in the staff report. All of these expansions were either permitted, cited or knowingly allowed. Your staff visited the site on numerous occasions to monitor the site, meetings on-site with other agencies including the City and Fish and Game, and issued various letters, reports and determinations in addition to the one CDP referenced above, yet none of this is cited in your staff report. It is inconceivable that staff is not aware of its long, close association with this site, from the time of Smoky's Stables operation onward. The record should be corrected to carefully and fully

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reflect this history.

2. *Page 3, 1st paragraph, 3rd line: "Commission staff has concluded that, without these [Smoky's Stables] alterations, wetland resources on the site would be more extensive than the previously identified AP, CP and WP wetland areas...."*

   Staff is aware that fills or disturbances associated with Smoky's Stables only impacted wetland resources in the CP area, and that it addressed those impacts in CDP 5-82-278. With the exception of the EPA delineation, which we argue is unsupported and discredited, none of the third-party biological assessments or delineations of the Parkside site (Dillingham, Shapiro, etc.) found wetland resources north of Slater Avenue, so any impacts to the AP or WP areas were merely fill or disturbance, not fill or disturbance of wetland resources. The staff report is misleading and should be corrected.

3. *Page 3, 1st paragraph, 12th line: "These intermingled areas were known to be wetlands in the 19th and early half of the 20th century and there remains some unresolved question as to whether some of that area would have been delineated as wetland more recently if more data were available and/or past alteration hadn't occurred."*

   There are no unresolved questions remaining, given the extensive on-site analysis by third-party and credible biologists (Dillingham, Shapiro, etc.), which noted no wetland conditions anywhere on the site other than in the CP. The statement above also completely ignores documented changes in the site's hydrology following construction of tide gates (1899), the flood control channel (1960) and adjoining neighborhoods and storm drains (1960s through 1980s) are well documented. This staff comment is nothing more than unsupported speculation refuted by evidence in the record. The issue is not the state of the property in the 19th or first half of the 20th Century, but current conditions or conditions at the time the Coastal Act was enacted, so the entire concept of "intermingled areas" is a false and irrelevant issue. This entirely new, never-before-heard-of concept of "intermingled areas" based on historic conditions long pre-dating the Coastal Act is contrary to Coastal Commission practice of "taking the land as we find it," that has been the accepted practice over the past 30 years. If staff continues to support the concept of "intermingled areas," the staff report should address how this new policy would be applied and its impact throughout the Coastal Zone.

4. *Page 16, 2nd paragraph, 2nd line: "The Eucalyptus grove in the northwest corner of the site, although separated from the rest of the trees by a gap of about 650 feet, provides the same types of ecological services as do the rest of the trees bordering the mesa."*

   The northerly eucalyptus grove emphatically does not provide the same ecological

services or values as the southerly eucalyptus grove, as detailed in our analysis of raptor use of the respective trees. The staff recommendation is completely at odds with the Commission's decision on the Goodell property, where the trees were not designated as ESHA, and therefore must not provide the "same types of ecological services," and more significantly, on the Brightwater property, where the Commission granted a flexible buffer that staff does not feel is appropriate for the Parkside site.

5. *Page 20, 2nd paragraph below tables, 1st line: "Of the approximately 5 acre former County area, 1.6 acres are proposed to become low-density residential and 3.3 ..."*

   As staff is well aware, the entire former County area is now proposed as open space/conservation and the above statement is misleading and inaccurate. The sentence should be struck and replaced with "The entire 5-acre former County area is proposed as open space/conservation."

6. *Page 29, bottom paragraph, 2nd line: "Exhibit 26 of the Bolsa Chica Land Use Plan, dated January 1982, created before the unpermitted fill was placed ..."*

   The statement does not reference the apparent placement of 6,000 cu. yds. of fill on the site, as referenced in the September 15, 1981 Los Angeles Times article, and further ignores the subsequent Coastal staff investigation of the action and its issuance of a CDP in 1982.

7. *Page 30, 2nd paragraph:*

   The staff report is inadequate and simplistic. It ignores the fact that current topographic maps continue to show a depression in the EPA area, that the land has been designated Prior Converted Cropland (meaning that it does not exhibit sufficient hydrology to support hydrophytes or hydric soils) and therefore not a wetland. Staff's assertion that topographic changes alone are the reason the EPA area "no longer functions as a wetland today" is wrong and contradicts staff's own conclusion in its May staff report. The EPA area was studied extensively by previous third party consultants and by the Department of Fish and Game and was not found to be a wetland, and all activities in that area have been related to long on-going and permitted normal farming practices.

8. *Page 31, 3rd paragraph:*

   Staff appears to be referencing two separate incidents; "bulldozer" is an apparent reference to the April 1998 weed-abatement activity, and "box plow" is an apparent reference to the December 2005 field preparation incident. In neither action were wetlands filled. To make the staff report accurate, it should be made

clear that both Coastal staff and City staff visited the site following the "bulldozer" incident and issued no citation. Both Coastal staff and City determined the activity to be cultivation, consistent with legal and on-going farming practices, and not grading.

As for the "box plow" event, the use of a box plow is considered part of normal farming practices, as is the use of even more intensive mechanized equipment, including bulldozers. This is an issue of importance along the California coast, as the California Farm Bureau and various coastal county Farm Bureaus have acknowledged in the record. These concerns should be addressed and the staff position regarding conventional farming practices in the Coastal Zone should be qualified.

Further, the staff report is incorrect in stating the area in question is "an area of known wetlands presence," as the incident occurred in December 2005 and Dr. Dixon's draft memorandum, which first stated his finding that the WP, in his opinion, could meet wetland criteria, was not provided to the City or Shea until January 2006. Further, the studies cited by Staff addressed the area in question, as follows: The 1989 EPA delineation did not find wetland resources in the area in question, and the Coastal Staff subsequently recognized our right to farm the entire field area, including the EPA area. The Commission's 1982 and 1984 actions deferring certification of the site were very general and did not reference wetlands in the specific area. The DFG study of wetlands in Bolsa Chica specifically concluded that the only area on the site that met wetland characteristics was located within the CP area. Thus, the staff assertions in this regard are misleading and should be corrected.

9. *Page 32, 4th full paragraph:*

Commission staff made a site inspection and reviewed the file before determining in its exclusion letter no new CDP was needed for Hole in the Wall Stable. It strains credibility that staff did not know what was occurring on the site or did not do its job at the time. The comment in the staff report revises history without support.

10. *Page 33, 1st paragraph, lines 3 to 6:*

This mischaracterizes the Staff's action. Staff fails to mention their requirement that Shea cease farming and prove its right to farm the land. Also, staff required that Shea file for a CDP, but later retracted its citation and determined a CDP was not needed. The staff report should be corrected accordingly.

11. *Page 33, 1st paragraph, line 10:*

The statement is incorrect as CDFG did in fact visit the site and subsequently concurred with Kegarice. Commission staff was directly involved in several meetings with CDFG and the City on this matter, and was well aware of CDFG's concurrence with Kegarice findings. Following all these meetings and letters, Commission staff specifically determined that continued farming of the entire site was permissible and, moreover, retracted the earlier citation, actions that could only have been taken if Staff concurred with CDFG and Kegarice. Again, the staff report revises history without support, so the staff report should be corrected.

12. *Page 33, 3rd paragraph:*

This discussion is flawed first because it does not reflect the full record, including the information the applicant has provided relative to the EPA delineation. The report should discuss such matters as the existing hydrology before the Harbor Bluffs improvements and the temporary redirection and increase of storm flow from Harbor Bluffs and Cabo del Mar onto the subject site until the 60" storm drain was installed. Please see Figures 1, 2 and 3 (attached). Figure 1 shows the predevelopment condition, with 4.8 acres of offsite drainage flow from areas to the northwest area onto the Parkside property. Figure 2 shows the interim drainage pattern increase to 21.8 acres of offsite drainage flow during the temporary construction period of Harbor Bluffs and Cabo Del Mar. Figure 3 depicts the conclusion of the Harbor Bluffs and Cabo Del Mar improvements and offsite drainage flow from the northwest area being contained in the 60" storm drain that completed the City's Master Plan of Drainage for this area of the City. Clearly, existing offsite drainage flow from the northwest area before the Harbor Bluffs and Cabo Del Mar developments was very minimal. However, the temporary and significant increase of offsite flow during the construction of Harbor Bluffs and Cabo Del Mar increased the flows 4.5 times and concentrated that flow directly to the EPA area. Unfortunately, this temporary increased drainage flow from offsite construction was not taken into consideration by Bilhorn or Sanders during their wetland delineation.

Further, it is presumptuous for staff to assume what actions the Commission would have taken on a CDP application made in the mid-1980s, and is especially presumptuous to assume that it would have denied the CDP given DFG's determination that the area was not a wetland, and given staff's subsequent approach to other issues on the subject property (i.e., its long-term agreement with the conclusion that the EPA area is not a wetland). Further, even if the Commission had denied the application, it is presumptuous to assume that water would have continued to flow onto the site illegally from the adjacent property. It is much more probable that the City would have achieved the goals of its drainage master plan by re-routing the flow in some manner not requiring a CDP, as other

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options were available.

Statistical testing of Dr. Dixon's Table 1 and Table 2 in Staff Report Exhibit LLL makes the argument of drainage change impacts moot. Dr. Dixon's four categories of ponding (< 7 days, 7-14 days, 15-30 days or >30 days) were subjected to the Wilcoxon test on the ordinal categories and the chi-square test on the percentages, for the periods 1959-1985 and 1986-2005. There were no significant differences in the two periods. The test results imply that roughly the same percentage of years ponded would be observed whether or not the drainage diversion existed. Further, the test results argue that there would be no significant benefit in reestablishing the drainage diversion.

13. *Page 34, 2nd paragraph, 5th line: "At a minimum, that would include the AP, WP and expanded CP areas, and the area delineated by the EPA and published in 1989, and very likely the area between the former equestrian facility and the WP."*

The addendum to the staff report for the May, 2007 hearing clearly states that the staff has found no evidence to support the opponents' allegations of unpermitted fill in areas other than the WP and extended CP areas. The analysis goes on to state, "In order for unpermitted fill to affect the recommended land use designations and zoning of the proposed LCP amendment, it would have to be demonstrated that the fill was placed in wetland and/or ESHA. No conclusive evidence has been presented demonstrating that the areas of alleged additional unpermitted fill supported wetland or ESHA area."

The current allegation by staff is in direct conflict with these previous statements. The staff ecologist, in his memorandum of July 2, 2007, confirms that no evidence of inundation has been introduced that he had not previously considered, yet the staff report for the July hearing states that there were very likely wetlands between the former equestrian facility and the WP. Further the staff report notes that "intermingled areas" were known to be wetlands in the 19th and early half of the 20th century and there remains some unresolved question as to whether some of that area would have been delineated as wetland more recently if more data were available..." As stated previously, the condition of the site prior to the Coastal Act is irrelevant to the Commission's considerations. Further, the staff report goes on to state (p. 38) that the applicant would have to present conclusive evidence that any Open Space Conservation area *did not support wetlands* for development to be considered. This is false; staff must present conclusive evidence that any Open Space Conservation area *does support* wetlands for development to be denied.

Finally, the use of a phrase like "very likely" is curious given the amount of

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studies that have been conducted over the past many decades that plainly demonstrate otherwise. The phrase is unsupported and should be corrected.

14. *Page 34, 3rd paragraph 5th line: "These intermingled areas were known to be wetlands in the 19th and early half of the 20th century and there remains some unresolved question as to whether some of that area would have been delineated as wetland more recently if more data were available and/or past land alteration hadn't occurred."*

    See comment #3 above.

15. *Page 34, 4th paragraph:*

    Is staff implying that it can impose mitigation at a 3:1 replacement of area lost ratio when staff's actions (and inactions) were largely responsible for the loss and the applicant was blameless, as is the case for all fill allegations regarding Smoky's Stables? Staff allowed the stable expansion, sanctioning development on the site, and issued a citation for 6,000 cu. yds. of fill – yet did nothing to monitor restoration of the cited area.

    As for staff's interpretation that routine farming practices are "grading" and "filling of wetlands," the area has been farmed for more than 50 years, and staff has previously determined and communicated to all involved that Shea Homes was justified in continuing to farm the 45-acre City Parcel. Staff cannot conveniently disregard any history, study, or portions of a study, and should present a complete and accurate record of events in the staff report. Also, if staff continues to contend that it can ignore a Prior Converted Cropland designation, then staff report should include a detailed justification, not just a cavalier dismissal, and also include a thorough discussion of the implications throughout the Coastal Zone of this recommended policy change.

16. *Page 35, bottom paragraph, through page 36 first full paragraph*:

    We do not concur with the staff position that the subject property was white-holed "due to the historic presence of wetlands on the site." In fact, the cited CDFG report (a degraded wetland report prepared specifically for the Commission pursuant to Section 30412 of the Coastal Act) expressly determined the subject property to be "not presently functioning as wetland." It is likely that other factors, including pending development plans and the potential for restoration, were more significant to the determination to white-hole the property,. The staff report should be corrected.

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17. *Page 36, 5th paragraph, 6th line: "And perhaps also from re-establishing the site as the location to accept runoff from the Cabo del Mar condominiums." [sic]*

    Any water previously reaching the subject site from Cabo del Mar was from an altered watershed which resulted in concentrated flows onto the Parkside site. Clearly water from Cabo Del Mar and Harbor Bluffs should not be considered as a hydrology source for the EPA designated wetland area.

    See Figures #1, #2 and #3 and comment #12 above. The statistical test results imply that roughly the same percentage of years ponded would be observed whether or not the drainage diversion existed. Further, the test results argue that there would be no significant benefit in re-establishing the drainage diversion.

18. *Page 37, 2nd paragraph:*

    See response #13 above.

19. *Page 41, 2nd paragraph, 6th line: "CDFG provided statements to this effect in a letter to the City dated June 15, 1998...agricultural areas, grasslands and wetlands are of seasonal importance to several species of raptors...."*

    The cited letter from CDFG was a response to the Parkside Estates Draft Environmental Impact Report (DEIR). In it (p. 3), the Department recommended that the proposed Parkside Estates project only be approved if all significant impacts to wildlife resources "are disclosed and mitigated to less than significant levels." The DEIR was approved by the City, was not legally challenged by CDFG, the Coastal Commission, or any other party, and development plans were approved showing trees being preserved and buffers considered.

20. *Page 41, 4th paragraph:*

    In the May staff report, Commission staff's position was that an NTS is an acceptable use within a buffer, per our proposal. Our desire to place the NTS within a buffer, per the May staff report, has not changed, and the staff report contains no stated, reasonable rationale for the altered staff position to the contrary. The staff report should be changed to reflect the May staff report position that the NTS is acceptable in the buffer, or be rewritten to fully document valid ecological reasons for the change, and present a discussion of impacts of this change of direction throughout the Coastal Zone.

21. *Page 43, 1st and 2nd paragraphs:*

    Staff's assertion that a 17-acre project with residential densities of up to 15 dwelling units per acre could be financially viable is based on false assumptions

and appears to be nothing more than a clumsy attempt to avoid a takings claim. First, the "relatively large lots" mentioned in the last paragraph on page 42 is incorrect. The proposed lots are a minimum of 5,000 and 6,000 square feet so that they will mimic the lot sizes of the surrounding single family neighborhoods, and the lots conform with the City's current zoning. Second, a zone change to RM is not feasible according to City Planning, due to inconsistent densities surrounding the area. Third, the same opponents who are speaking out against the applicant's proposed plan would also protest this approach as incompatible with the neighborhood, incompatible with adjacent open space and other complaints.

COMMENTS ON EXHIBIT NN AND NN (REVISED)

We wish to state for the record that there are no new materials in the record to justify the changes made between NN and NN (Revised) – no new soils, hydrology, vegetation or raptor studies are cited as the cause for the change. The BCLT presentation on alleged fill was previously rebutted by staff in May 2007, and no new BCLT information has been presented that would justify reversing this rebuttal. This is discussed further below in our comments on Exhibit MMM.

COMMENTS ON EXHIBIT LLL

22. *Page 4, bottom paragraph, 5th line: ...and nearly monthly oblique aerial photographs that documented surface saturation....*

    The cited photos do not appear in the record. They should be made available to the applicant and the public so they can be evaluated.

23. *Page 5, 1st paragraph, 9th line: Bilhorn based his wetland identification on: (1) a field examination (including test pits and borings) on April 15, 1987... After Dr. Sanders concluded that a portion of the site met federal wetland criteria ...*

    The staff report includes no specific information or data about this one, single site examination, or how it supports Bilhorn's supposed wetland identification. We note that the last rain in 1987 was in February, so it is highly unlikely Bilhorn viewed any wetland hydrological conditions on the site. We question why staff is putting credence on a determination based on a single site visit with absolutely no supporting data when Shea has provided extensive data is based on multiple visits over multiple years, with multiple detailed reports. Dr. Dixon's analysis also evaluated multiple years and relied on testable hypotheses. To ignore this extensive analysis and to rely on a single map without data is shocking, so the staff report needs to justify the action.

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Dr. Sanders did not conclude that the area met federal wetland criteria; rather, he stated that if farming were to cease, "it is likely that the [EPA area] would eventually" support wetlands. Bilhorn concluded that the EPA area was a "candidate" for Section 404 jurisdiction in the absence of farming. The staff report is misleading, and should be changed to accurately reflect Sanders' and Bilhorn's determinations.

24. *Page 6, 2nd paragraph, 6th line: The four early studies (Dillingham 1971, Mulroy 1973), Boule, et. al. 1981, and CDFG 1981) were not technical wetland delineations. .... In 1981, the CDFG designated the whole Parkside property as severely degraded wetlands – restorable – below +5 MSL.*

    The Boule (Shapiro) study included a wetland study in addition to the vegetation study referenced by staff. In this wetland study, Coastal staff ignored an area identified in the County parcel as pickleweed and mapped the farm field as agriculture.

    The staff report fails to mention that the CDFG study expressly designated the site as "... not currently functioning as a wetland." The designation of "below +5 MSL" is critical to understanding the site's relative restorability. It refers to the upper limit of tidal flow reach, meaning that CDFG was stating that the site was restorable if tidal influence returned to the site. However, the tide gates installed in 1899 stopped tidal flow from reaching the site, so the site would not meet CDFG's criteria as "restorable."

25. *Page 6, 3rd paragraph referencing footnote 5: "This was a good time to analyze patterns of wetness and inundation."*

    The rainfall data cited is correct, however it rained 3.25 inches in the two months preceding the photograph with 1.81 inches on March 17 and March 18, 1982, the day of the oblique aerial photograph. To base the extent of ponding on an aerial photograph taken on the second day of a nearly two-inch storm, particularly in a low-rainfall year, would result in a substantial overestimate of the extent of ponding at seven or 14 days later – so this was not a good time to analyze patterns of wetness or inundation. Dr. Dixon's July 27, 2006 Memorandum states as much on page 51, in a discussion of how, when not preceded by sufficient rainfall that "charges" the soil, ponds tend to dissipate rather quickly.

26. *Page 7, 1st paragraph, line 7th line referencing footnote 7: Mr. Bilhorn ... addresses the dark soils vs. wet soils issue and stands by his 1987 delineation.*

    See our comments #12, #23, #24 and #25 above.

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27. *Page 7, 1st paragraph, 8th line: "A March 19, 1982 oblique aerial photograph shows the EPA wetland completely covered by standing water from the horse arena in the south to the northern property line (Figure 1)."*

    Note that Fig. 1 was taken while Cabo del Mar was being graded, causing the temporary, concentrated flow of additional runoff onto the site. The staff report should be revised to consider this. Also note our comment regarding rainfall during this period in comment #25, above, and our comment regarding a temporary substantial increase in offsite tributary flow in comment #12, above.

28. *Page 7, 2nd paragraph, 2nd line: "EPA took into account data that had been collected by Signal Bolsa Corporation's consultants, but also conducted an independent analysis."*

    Staff is using an unsupported generalization from the EPA's Tom Yocum, but has attached no substantiating data. The reference should either be sufficiently documented or eliminated from the staff report.

29. Page 7, 3rd paragraph, 3rd line: "*... has never been a topographic analysis to determine where the runoff was directed or how much drained onto Parkside...."*

    This statement is incorrect. The analysis has long been done, and would have been provided upon your request. Attached are three figures responsive to this statement. Figure 1 shows the topographic drainage patterns prior to grading for Harbor Bluff and Cabo del Mar (pre-1978), which show offsite "non-concentrated" flow from 4.8 acres; Figure 2 shows temporary increased drainage patterns from Harbor Bluffs and Cabo del Mar during the period of their construction (approximately 1978 – 1985), which show offsite "concentrated" flow from 21.8 acres; Figure 3 shows the conclusion of the Harbor Bluffs and Cabo Del Mar improvements, reflecting the storm drain required by the City's master plan of drainage. See also above comments #23, #24, #25 and #27 above.

    Also see comment #12 above. The objective of a topographic analysis is to estimate the amount of runoff that might have reached the property, but the final result must meet the test of whether the change can be observed in the majority of years. The statistical test results imply that roughly the same percentage of years ponded would be observed whether or not the drainage diversion existed. Further, the test results argue that there would be no significant benefit in re-establishing the drainage diversion.

30. *Page 7, 3rd paragraph, 14th line: "Both Bilhorn (1987) and EPA (1989) are silent regarding the Cabo del Mar development. ... Bilhorn ... stated that he considered "various records and reports providing dates of construction and land alteration which affect the ... hydrology of the area of study." Although Mr. Bilhorn does*

not recall the detail ... he stated that he would routinely have taken into account obvious changes that affected hydrology ...."

If Mr. Bilhorn did, in fact, routinely consider such obvious alterations to hydrology as a major adjacent grading operation, then why are there no references to these alterations in his 1987 report? This speculative paragraph should be deleted from the staff report. See also comments #12 and #29 above.

31. *Page 8, 2nd paragraph: "Homrighausen ... asserted that '... no direct evidence of surface hydrology was ever reported....'"*

Our consultants' statement about direct evidence was in response to Bilhorn's notation "darkest in value (wettest)," or more simply, dark soils equal wet soils. In the absence of actual photos, we do not consider Bilhorn's interpretation to be direct evidence, since we have established that the dark soils on the site are not always wet, and, in fact, are dry for most of the year in most, if not all, years. Therefore, they are not evidence that any sort of hydrology criteria are met. The staff report should be rewritten to reflect this.

32. *Page 9, 2nd paragraph, 6th line, 8th line: "The bottom of the depression was one to one and [a] half feet lower than the surrounding ground and probably corresponded to a low feature in the historical salt marsh. Essentially, all the runoff from rainfall that fell onto the agricultural field and the adjacent hillside would have been directed to that depression."*

The statement regarding "a low feature in the historical salt marsh" is purely speculative and should be deleted because active tidal influence ended in 1899 with the installation of tide gates, and the Santa Ana River flood of 1938 obliterated all relictual salt marsh features on the site.

This statement regarding rainfall and runoff reaching the EPA area is inaccurate. The topographic map of 1980 shows that of the 45 acre field, only 19 acres drained to the EPA area.

33. *Page 9, 2nd paragraph, line 15th line: "This area [the WP] was effectively leveled by moving dirt from the hill to the west to the depression with a box plow in December 2005."*

The statement is false and should be deleted. There is no "hill" to the west of the WP; staff must be referring to the area around the Slater Avenue overcrossing, which was filled first by the County as part of the construction of the flood control channel prior to the Coastal Act, and subsequently by the stable operator in building out his CDP and subsequent City CUPs. The fill in this area was never declared a violation of the Coastal Act by Commission staff, despite

numerous visits to the area.

Further, and more importantly, per the topographic mapping, the area in question [the WP] was not leveled and remains a depression of approximately the same area in size. The staff report should be corrected.

34. *Page 9, 3rd paragraph, 7th line: "This unpermitted ditch periodically held water...."*

The statement that the drainage ditch was unpermitted is incorrect and should be deleted. The ditch was permitted via CDP 5-82-278.

35. *Page 10, "1998 Farming Operations" section.*

The staff report's characterization of this event is duplicitous and grossly unfair. While it is true that the City's weed abatement order covered the 100 feet adjacent to the northerly homes adjacent to the site, it is equally true that the Commission specifically authorized farming on the entire property in its letter of February 25, 1998. Obviously, farming would require removal of the weeds that were caused by the Commission's previous order that Shea stop farming on the site (a prohibition that lasted for nearly one year). This order was cancelled by the Coastal Commission's February 25, 1998 letter.

The "significant landform alteration" referenced was a small dirt barricade placed along a short area adjacent to Graham Street to keep off-road vehicles from entering the property and damaging the field and adjacent Coastal resources in the CP. It consisted of no more than approximately 10 cubic yards of soil.

36. *Pages 10 and 15, "Raptor Habitat and its Protection" section*

This discussion cites numerous studies of birds in wild places. The subject site does not have wildland characteristics; rather, it has been surrounded on three sides by development for approximately 40 years. Any species that would use this site, therefore, are species that are acclimated to urban development, and only foraging studies in urban environments are applicable. This should be noted in the staff report.

While we have argued for a buffer at the northern group of eucalyptus trees narrower than 100 meters, the buffer proposal that was articulated in the Homrighausen letter of July 7, 2007 should be evaluated in the new staff report. This proposal was for a variable width buffer that has an average buffer distance greater than 100 meters and would provide open space foraging area that exceeds the one-half-to-one ratio that staff is recommending.

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37. *Page 16, Figure 1, photo dated March 19, 1982*:

See our comments above at #12, #23, #25, #27 and #29 regarding drainage patterns and rainfall in this period. Also, consideration should be taken regarding the temporary, concentrated runoff from the Cabo del Mar condominium construction site. The evidence of this runoff is clear from the alluvial fan evident extending from the southeastern (upper left) corner of the construction site. The staff report should be amended to reflect this.

38. *Page 17, Figure 2, photo taken April 1998:*

The piles of earth are not from grading activities. There were farming cultivation activities occurring April 1998. The dirt berm contains no more than 10 cubic yards of soil and was placed in a small area along Graham to prevent trespassing vehicles from entering onto our property – which was becoming problematic and destructive, both to the field and the CP. Also see comment #35 above.

COMMENTS ON EXHIBIT MMM

39. *Weight of Evidence*:

The memorandum is a report from the Coastal Commission staff Mapping/GIS Program Manager to Dr. Dixon and Dr. Johnsson. In the absence of signatures from Dr. Johnsson, Exhibit MMM is the opinion of the sender of the memorandum (the "reviewer") rather than the professional opinion of a Certified Engineering Geologist, Registered Land Surveyor, or Licensed Civil Engineer.

40. *Photo Interpretation Results*:

Eleven vertical aerial images (1934 to 2006) were used to formulate the opinion. Of these, only three (1970, 1986, and 2001) were stereo pairs suitable for viewing "three-dimensionally." In the absence of contemporaneous, corroborating topographic information, elevations or changes of elevations implied by the reviewer from the other nine images cannot be verified and must be discounted.

41. *Map Interpretations:*

MMM's interpretations of contours ignore the limitations of map accuracy. The accuracy standard of maps is one half of a contour interval; in other words a USGS contour map has a contour interval of five feet, so its accuracy standard is plus-or-minus two-and-a-half feet. The reviewer has claimed changes in elevation of one foot or less. All statements about elevation changes in the staff report should clearly state the source material and the accuracy standard.

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42. *1934 photo, Exhibit 1:*

The 1938 Santa Ana River flood obliterated the sinuous drainage features shown in this image and other images. The darkened arc feature remained as a visible feature (still visible on contemporaneous images) but the feature is not topographically distinct from the adjacent land. For this reason, images predating 1938 have no bearing on the present matter. The reviewer's statement that the larger historical tidal channels and lower lying areas show clearly as darker tones, and that riparian vegetation lines part of the channel towards the eastern margins of the property, cannot be determined from such a poor quality photo – especially a photocopy of a photo, as Mr. Van Coops used.

43. *1952 Image Exhibit 2:*

In the absence of topographic information, the reviewer cannot state "...clear evidence of fill...." The implication is that road construction is somehow unpermitted, even though the photo predates the Coastal Act by decades.

44. *1970 Stereo Image Exhibit 2:*

The stereo pair was not provided to the public, and we ask that it be provided to us. Tidal channels ceased to exist in 1899 with the construction of tide gates by the Bolsa Chica Duck Club. Through-property flows ceased to exist with construction of the flood control channel and adjoining developments beginning in 1959. The darkened arc feature is a historic artifact of historic Santa Ana River outflow which ceased with the 1938 Santa Ana River flood and is not a drainage feature. There are no "channels" in the farmed area. No topographic features were identified in 1949 and later USGS topographic mapping. Coloration provides absolutely no indication about elevation, cut, fill or wetness. The reviewer's statement that coloration implies a drainage channel, given stereoscopic topographic information, casts doubt on all of his interpretations about elevation, cut or fill. The photo date was May 21, 1970, placing it in the 1969-1970 water-year; per the July 27, 2007 Dixon report, none of the areas were interpreted to be ponded at that time.

45. *1977 Image Exhibit 3:*

In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill.

46. *1981 Image Exhibit 4:*

In the absence of topographic information, the reviewer cannot make statements

about elevation, cut or fill. The zero (0 ft) MSL NGVD 29 contour referred to on the 1965 USGS quad sheet is inconsistent with the NAVD 88 datum convention developed for later images. The equivalent elevation is about 2-1/2 ft higher. Further, the 0 ft contour is inconsistent with the 1949 USGS quad sheet, which the reviewer has omitted from consideration. The 1949 USGS quad sheet with detail is provided as Figures 4 and 5, compared with the 1965 USGS quad sheet detail in Figure 6. There are no former tidal channels and no topographic evidence of their existence because tidal influence was eliminated in 1899 and surface manifestations were obliterated in the 1938 Santa Ana River flood.

47. *Page 4, 2nd paragraph, RE: February 19, 1983 photo, Exhibit 4:*

In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill. "Tidal channel" is inappropriate due to the prior existence of tide gates. See the comment on 1934 Exhibit 1 and elsewhere. The text states there was development within Shea property, citing well over 100 individual mounds of stockpiled fill south and southwest of arena area. This matter was covered by Smoky's Stables' CDP and no subsequent action was taken by the Coastal Commission.

48. *Page 4, 3rd paragraph, RE: May 13, 1986 Stereo Image, Exhibit 5:*

The stereo pair was not provided to the public, and we ask that it be provided to us. The one-acre additional fill is explained later as being authorized permitted fill in the stable area. There is no former tidal channel, and no topographic evidence of its existence because tidal influence was eliminated in 1899 and surface manifestation was obliterated in the 1938 Santa Ana River flood. The text states additional development and over an acre of additional fill is visible by the enclosed corrals or riding areas. The corrals and riding areas were covered by the CDP, and no citation was ever issued by Coastal Staff, so the assumption must be that no illegal fill occurred and no resources were harmed.

49. *Page 4, 5th paragraph, RE: January 28, 1995 photo, Exhibit 6:*

In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill.

50. *Page 5, 1st paragraph, RE: February 24, 1999, Exhibit 7:*

In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill. The quality of this photo is too poor to make the stated assertions, particularly with respect to elevation changes. Most of the disturbed area referenced by the reviewer is in the vicinity of the approved stable

development. Separate topographic evidence and permit documents provide a clearer understanding of the activities shown in this photo.

51. *Page 5, 2nd paragraph, RE: June 29, 2001 "Stereo Image", Exhibit 8*:

The stereo pair was not provided to the public, and we ask that it be provided to us. The tidal channels ceased to exist in 1899 with the construction of tide gates. The tonal difference is associated with a remnant of the 1938 Santa Ana River flood and is not a channel. Although it is true that the CP area was revegetating with upland and wetland species, it is incorrect for the reviewer to state that he can discern as much by viewing a photograph of this scale and quality. The identified channel was a ditch dug by the farmer and resolved by the Coastal Staff following a site visit without the issuance of a violation or citation. The reviewer's lengthy discussion of "some sort of construction activity" evidenced by a vehicle, vehicle tracks, etc., is false. No construction was occurring on the site at this time, and he has thoroughly misinterpreted standard farming practices, such as dust control, as a construction activity.

52. *Page 5, 3rd paragraph, line 2, RE: January 2006 photo, Exhibit 9:*

The "structures" referenced by Mr. Van Coops along the flood control channel are the concrete block emergency repairs constructed by Orange County Flood Control District at about the time of the photograph, in response to the imminent threat of levee failure. "Expansion of an access road" and "additional fill" are both related to the County's construction an access road for the emergency repairs and reinforcement of the levee.

Tidal channels ceased to exist in 1899. The tonal difference is associated with a remnant of the 1938 Santa Ana River flood.

The reviewer states that "...overlapping images were not available which precluded stereoscopic analysis...", yet in the sixth line, the reviewer states that "...changes include ... additional fill extending to the north of this expanded access road." Without stereo pairs, the reviewer cannot state that he is able to determine fill, or to distinguish fill from disturbance.

The reviewer errs in stating that there are signs of "relatively extensive grading" in the image. Without a stereographic pair, it is impossible for the reviewer to determine topographic changes. Further, no grading has occurred on the site at any time since Shea's ownership, and even the Commission staff's attempts to tie farming operations to grading have never focused on this time period.

53. *Page 6, 4th paragraph, line 7:*

The reviewer states that "...datums varies [sic] from location to location, but is approximately 2.3 feet in Orange County." It is unfortunate that the concept of datum (MSL NAVD 88) – bringing disparate data together with a common elevation – has heretofore been conspicuously ignored by both the citizen activists and Coastal staff, which accepted the opponents' questionable analyses at face value. As noted in comments to Exhibit 4, elevations on the 1965 USGS Quad Sheet are still referred to as MSL NGVD 29. Statements of datum (vertical in this case) must be made by a licensed surveyor or engineer, or be traceable to work by licensed individuals. The false statement about datums varying from location to location point to the reviewer's lack of understanding about this important concept, and his failure to consult with a licensed surveyor or engineer. The *conversion value* from one datum to the other, not the datums themselves, vary from location to location. For this part of Orange County, the conversion from NGVD 29 to NAVD 88 is about +2.4 ft.

54. *Page 7, paragraph 5), topographic map in 1978, Exhibit 14:*

The reviewer's entire discussion is flawed due to errors he committed in adjusting datums. He subtracted instead of adding.

55. *Page 9, 4th paragraph, 2nd line:*

The reviewer errs by saying, "The lowest lying area is in the northwest quadrant of the property." In fact, the lowest area is in the southwest quadrant of the property.

56. *Page 18, 2nd paragraph, Exhibit 26:*

The reviewer's conclusion regarding the amount of fill and height of fill are incorrect due to errors in converting datums. The errors should be corrected in the staff report.

This concludes our current comments to the July staff report and associated appendices. We respectfully request that the changes be made as described herein.

Sincerely,
Shea Homes, LP

Ron Metzler
Vice President, Planning and Entitlement

000 18

cc: Ms. Teresa Henry
Ms. Sherilyn Sarb
Mr. Karl Schwing
Dr. John Dixon
Dr. Mark Johnsson

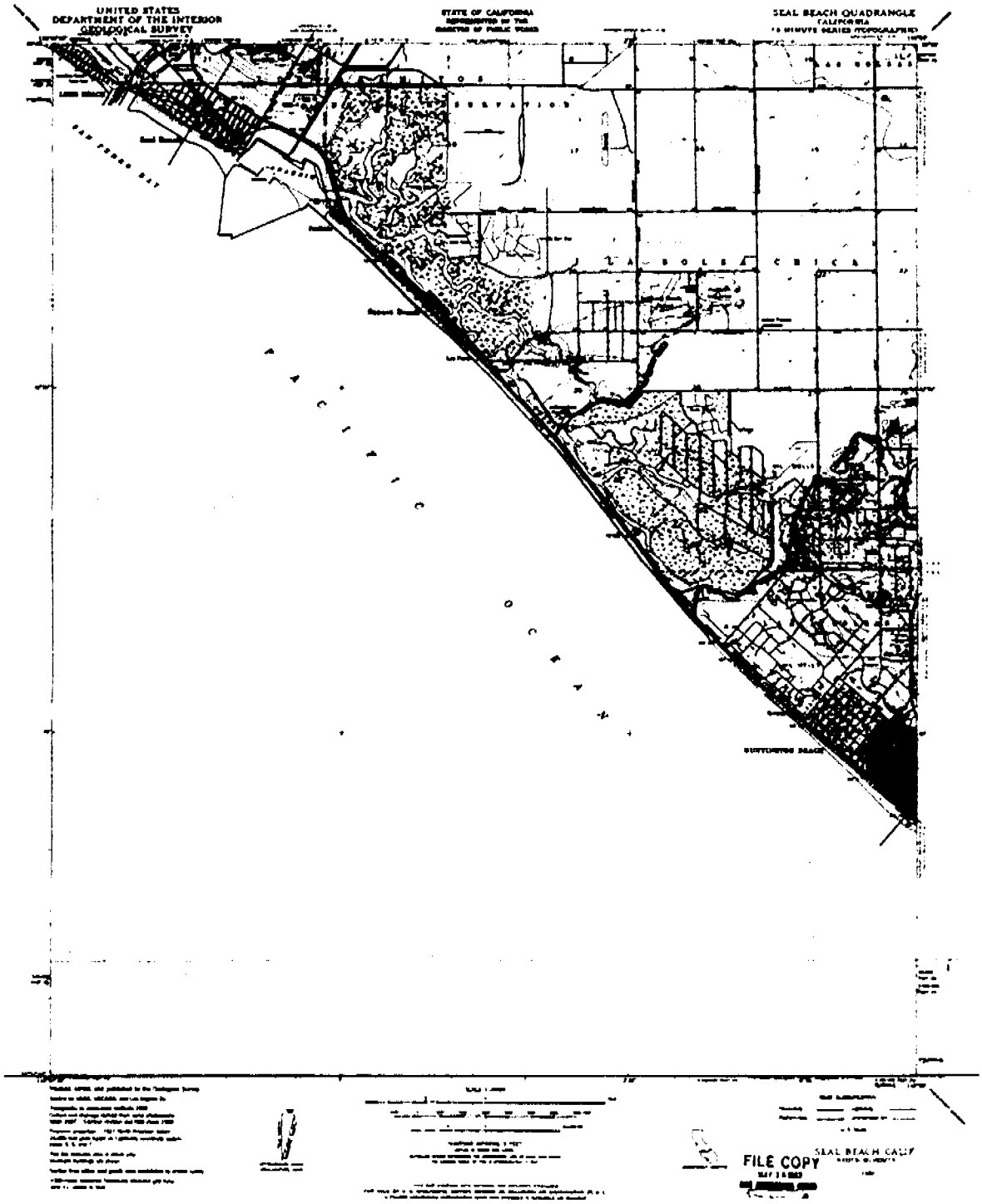


Figure 4. USGS Quad Sheet, 1949. NGVD 29 Datum.

000 20

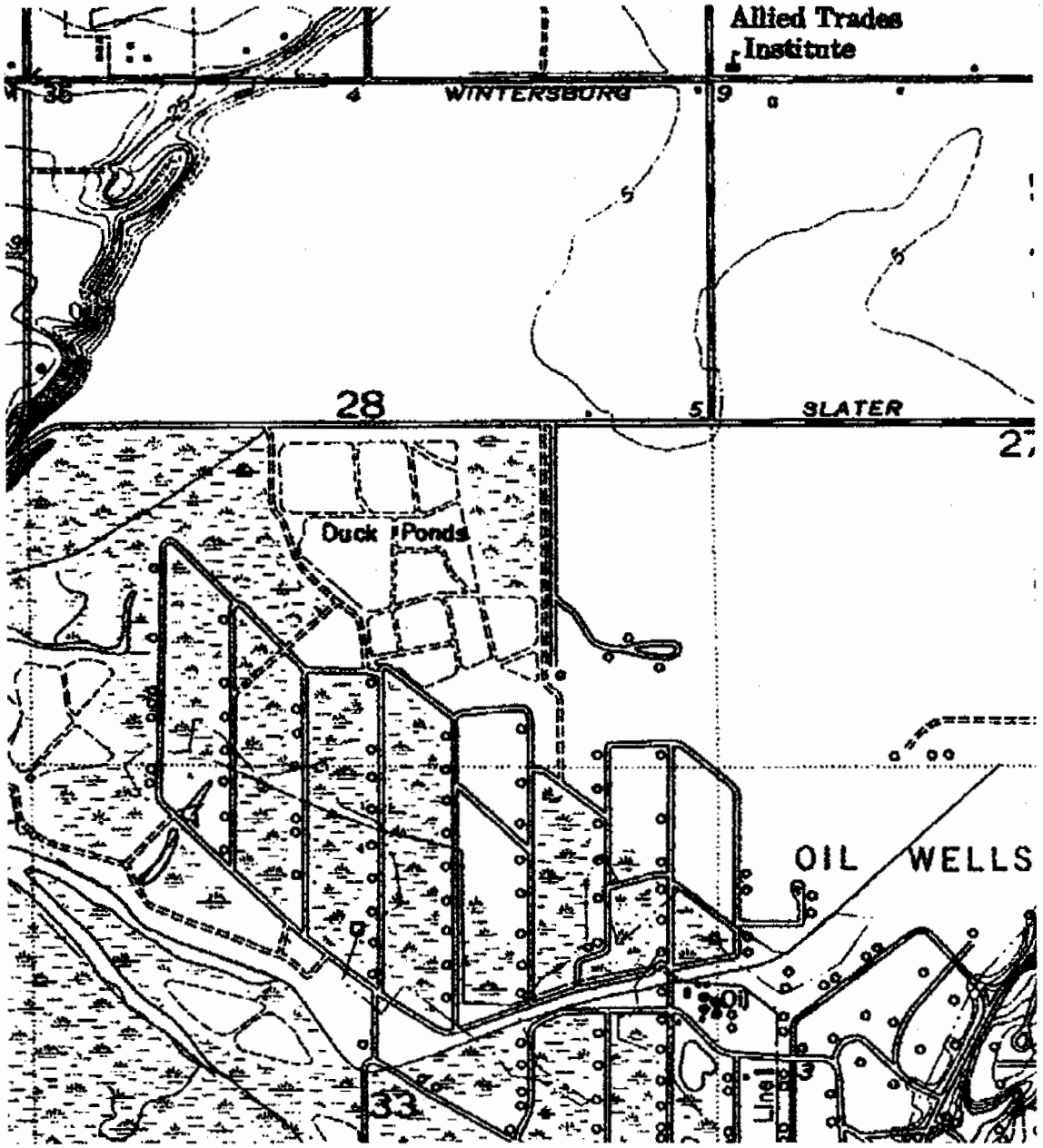


Figure 5. Detail, USGS Quad Sheet, 1949. NGVD 29 Datum.

000 21

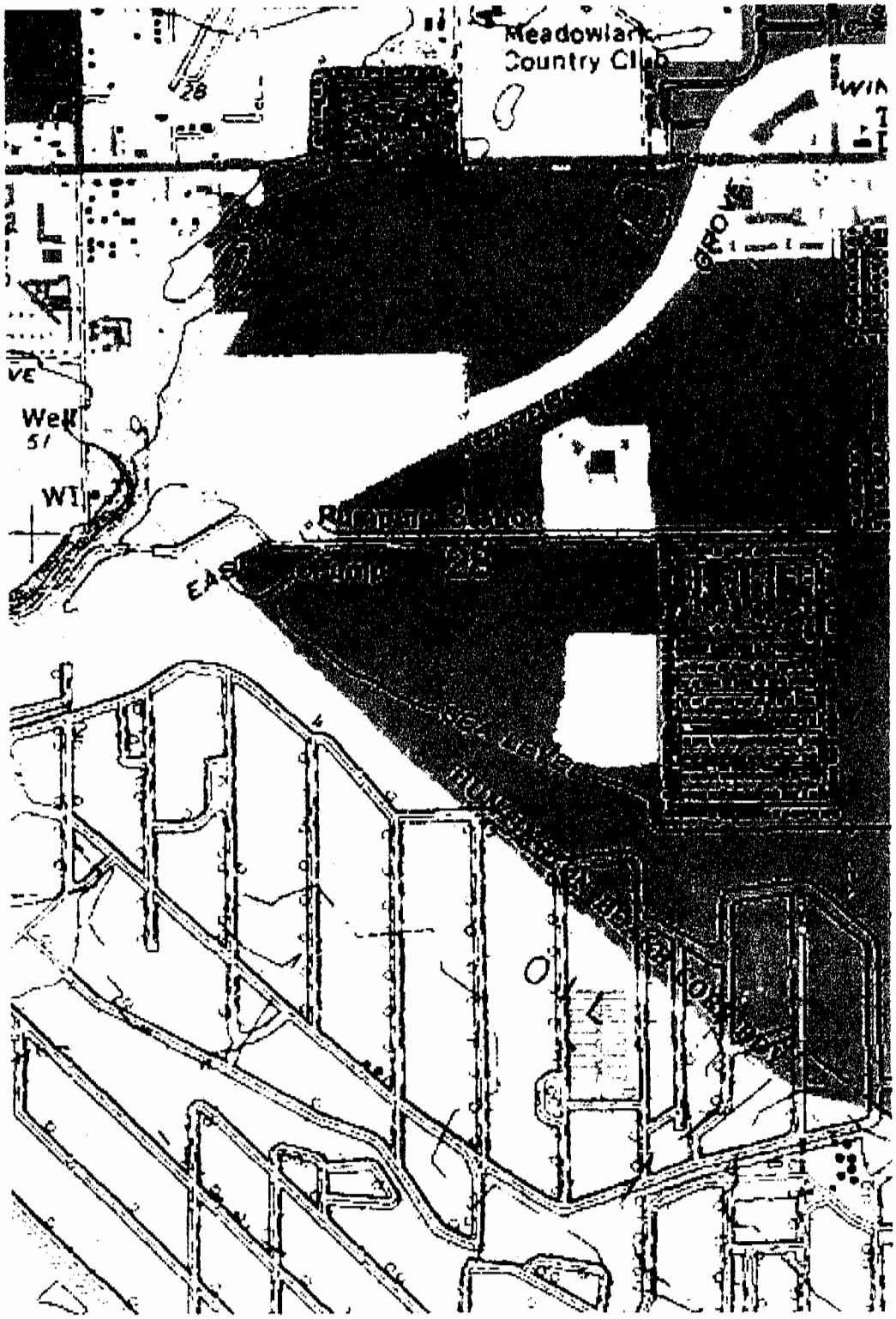


Figure 6. Detail, USGS Quad Sheet, 1965. NGVD 29 Datum. Compare to Figure 5.

000 22

Drainage Before Harbor Bluff and Cabo Del Mar
(Pre 1978)

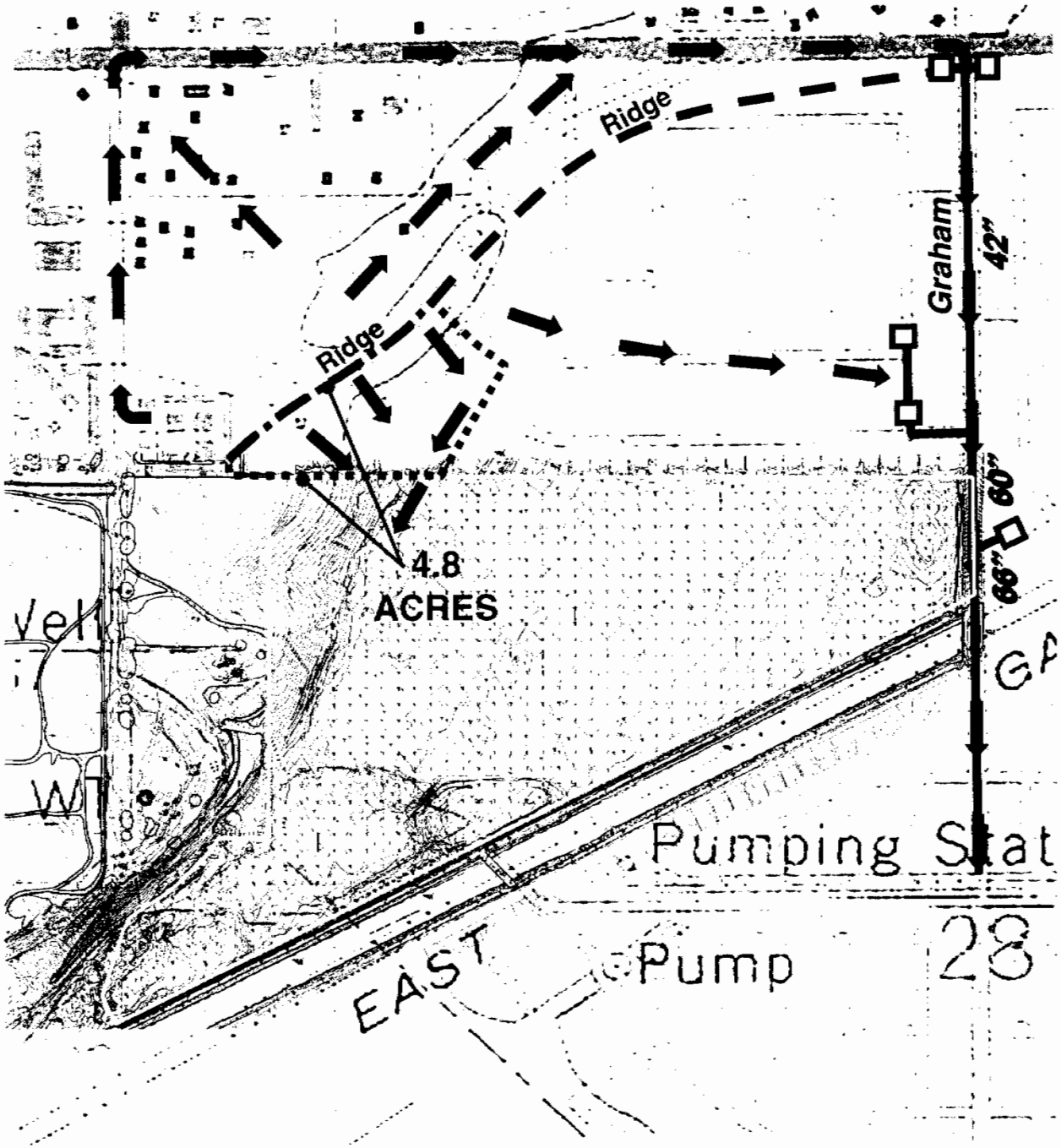


Figure 1

000 23

Interim Drainage Pattern From Harbor Bluff and Cabo Del Mar

(Before 60" Storm Drain)
(Approximately 1978-1985)

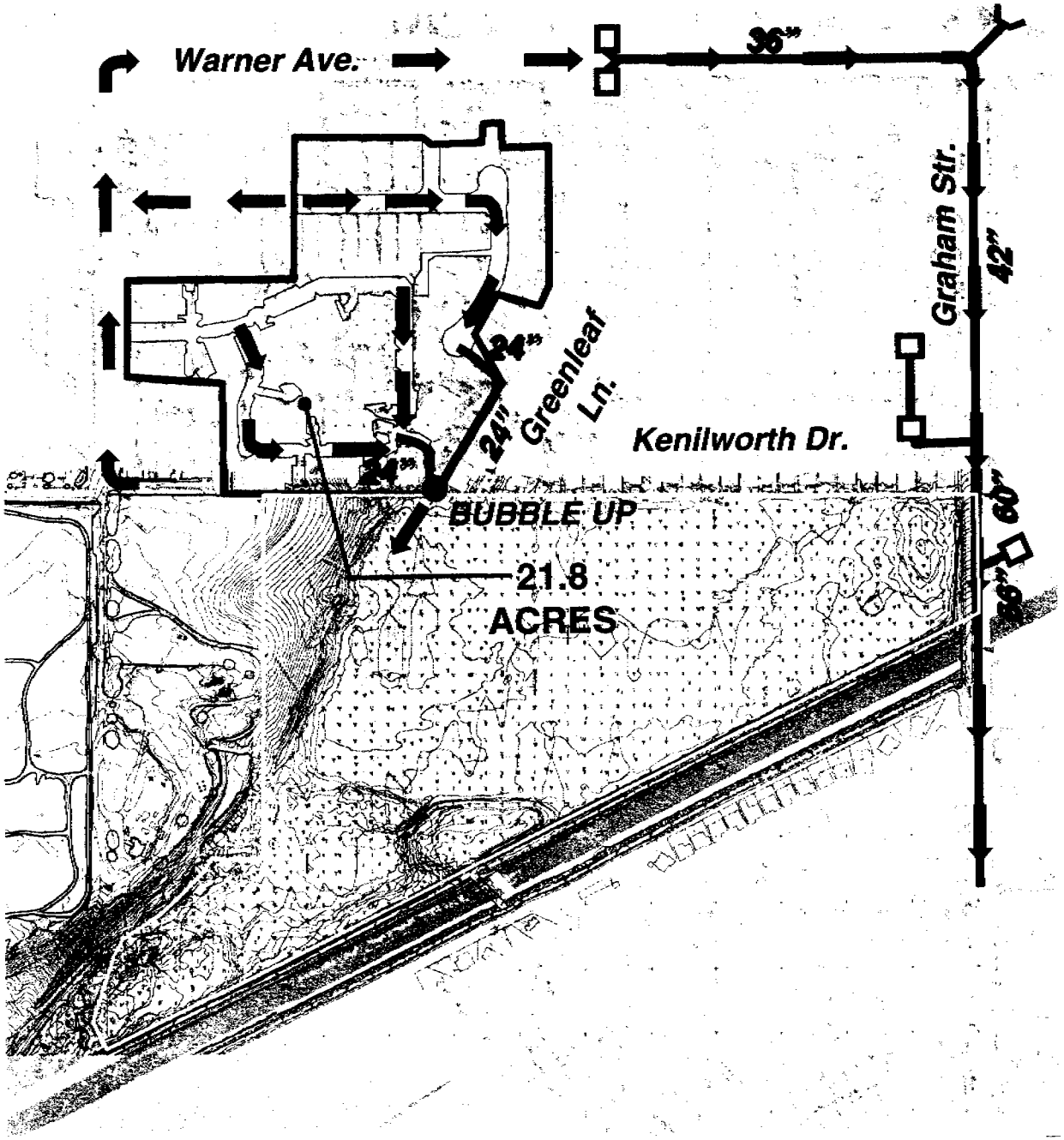


Figure 2

000
24

Drainage Today

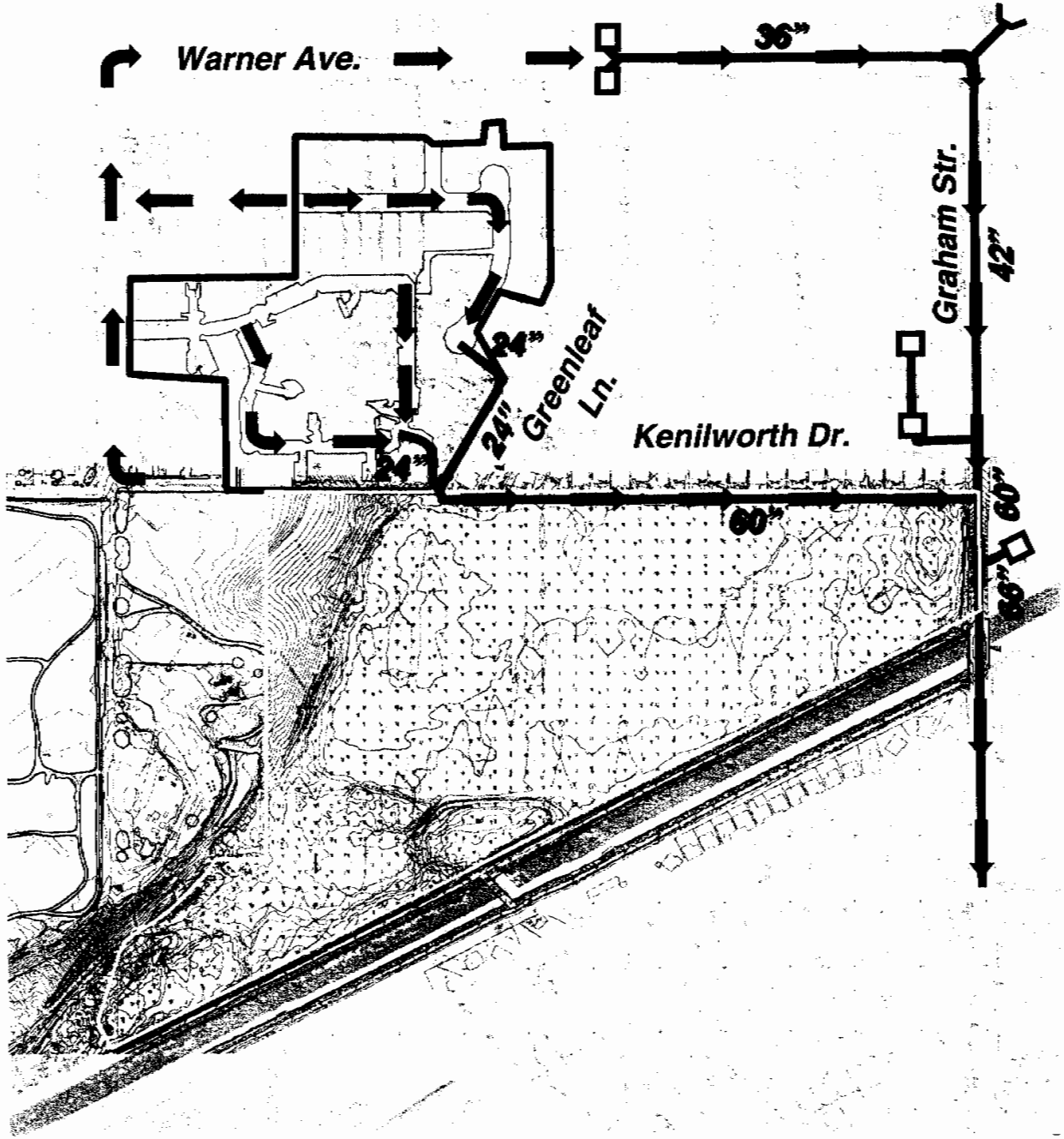


Figure 3

000 25

SheaHomes

Caring since 1881

Our Vision...to be the most respected builder in the country

September 24, 2007

Ms. Meg Vaughn
California Coastal Commission
South Coast District Office
200 Oceangate, 10th Floor
Long Beach CA 90802-4416

RE: Huntington Beach/Parkside Estates Local Coastal Plan Amendment 1-06
Comments on June 29, 2007 staff report

Dear Meg:

On Friday, September 21, 2007, we provided extensive comments on the above-referenced staff report. In this letter, we are providing a few brief but substantive additional comments that provide additional information on a few of the points we raised in our previous letter. If it is possible, we would like to have this supplemental information included in your next staff report. We understand, however, that this letter is being submitted one business day after you requested, so if it is not possible to review this material and stay on schedule for a November hearing, please ignore them for the purposes of your staff report.

On page 4, last paragraph, we are concerned that the photos cited by staff were not included in Bilhorn's 1987 report and do not appear anywhere in the public record for this matter. If these photos are to be relied upon for a definitive wetland determination, they should be made available to the applicant and the public so they can be evaluated.

On page 5, first paragraph, our initial letter should have made it more clear that Dr. Sanders (1987) did **not** definitively conclude that the area met federal wetland criteria. Rather, he only speculated that if farming were to cease, "it is likely that the [EPA area] would eventually" support wetlands. In fact, in 1987 Sanders concluded that there were no acres of wetlands on site (i.e., the 43.8 acre agricultural field) at that time.

On page 6, 2nd paragraph, while it is correct that Boule et al. of Shapiro and Associates did conduct a vegetation study, staff failed to identify the technical wetland delineation (*Bolsa Chica Wetland Boundary Study*) conducted by Shapiro and Associates in 1980. This wetland study identified two small areas in the County parcel as "mixed pickleweed salt marsh" and mapped the entire farm field as "urban/agriculture." Further, the staff incorrectly refers to the 1981 CDFG report as not being a wetland delineation when in fact the CDFG did make a definitive determination of wetlands regarding the site, finding no wetland resources in the farmed area.

HNB LCPA 1-06
Exhibit PPP

Shea Homes Limited Partnership, Southern California Division
An independent member of the Shea family of companies

603 S. Valencia Avenue, Brea, CA 92823 Phone 714·985·1300 Fax 714·792·2500 www.sheahomes.com/scal

Ms. Meg Vaughn
California Coastal Commission
September 24, 2007

On page 34, 4th paragraph, when discussing replacement ratios for mitigation, staff should recognize in its report that there is no evidence of any interim loss of habitat value in the agricultural field. This is because the area has been farmed since at least the 1950s, and farming continues to be an allowable use.

Also, we noted that the illustrations accompanying our letter of September 21 that figures 4, 5 and 6 were presented out of order. We apologize for this error.

Thank you.

Sincerely,
Shea Homes, LP

Ron Metzler
Vice President, Planning and Entitlement

cc: Ms. Teresa Henry
Ms. Sherilyn Sarb
Mr. Karl Schwing
Dr. John Dixon
Dr. Mark Johnsson

PPP 2

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400

MEMORANDUM

Exhibit QQQ

FROM: John Dixon, Ph.D.
Ecologist

TO: Meg Vaughn

SUBJECT: Wetland and Raptor Issues at Shea Parkside

DATE: October 25, 2007

Documents reviewed:

Bilhorn, T.W. 1987. Agricultural area delineation, Bolsa Chica, Orange County, California. A report to the Signal Bolsa Corporation dated June 1987.

Bomkamp, T. (Glenn Lukos Assoc.) 2006a. Letter report to J. Dixon and M. Vaughn (CCC) dated February 22, 2006 regarding: "Summary of Alpha, Alpha-Dipyridyl Testing for WP Area, AP Area, and County Parcel at Parkside Estates.

Bomkamp, T. (Glenn Lukos Assoc.) 2006b. Letter report to J. Dixon and M. Vaughn (CCC) dated March 30, 2006 regarding: "Summary of Alpha, Alpha-Dipyridyl Testing for AP Area and County Parcel between February 24 and March 28, 2006 at Parkside Estates.

Bomkamp, T. (Glenn Lukos Assoc.) 2006c. Letter report to J. Dixon (CCC) dated October 31, 2006 regarding: "Water balance/budget for WP and CP and evaluation of vegetation in WP and AP using Pevalence Index."

Bomkamp, T. (Glenn Lukos Assoc.) 2007. Letter report to J. Dixon (CCC) dated October 5, 2007 regarding: "Water balance/budget for EPA area."

Dixon, J. (CCC). 2006. Memorandum to M. Vaughn (CCC) dated July 27, 2006 regarding: "Wetlands at Shea Homes Parkside.

Dixon, J. (CCC). 2007. Memorandum to M. Vaughn (CCC) dated July 2, 2007 regarding: "Natural resources at the Parkside property."

Division of Water Resources, California Department of Public Works. 1942. Use of water by native vegetation. Bulletin 50.

EPA. Region IX. 1989. A determination of the geographical extent of waters of the United States at Bolsa Chica, Orange County, California. A report dated February 1989.

Exponent. 2006a. Water availability estimate for CP pre-2005 area. A technical memorandum dated October 31, 2006.

Exponent. 2006b. Water availability estimate for WP pre-2005 area. A technical memorandum dated October 31, 2006.

Exponent. 2006c. Water availability estimate for WP post-2005 area. A technical memorandum dated October 31, 2006.

Hamilton, D. (Exponent). 2007. Water availability estimates for the EPA area at the Shea Homes property. A technical memorandum dated October 5, 2007 prepared for R. Metzler (Shea Homes).

Homrighausen, A. (LSA), T. Bomkamp (GLA), and M. Josselyn (WRA). 2007. Memorandum to S. Sarb (CCC) dated June 12, 2007 regarding: "Historic 'EPA area' on Parkside Estates, Huntington Beach, Huntington Beach LCPA 1-06."

Homrighausen, A. (LSA). 2007. Letter to M. Vaughn (CCC) dated July 7, 2007 regarding: "Buffer distance for northern eucalyptus trees."

Van Coops, J. (CCC). 2007a. Memorandum to J. Dixon and M. Johnsson (CCC) dated July 2, 2007 regarding: "Aerial photo and map interpretation for Shea property (Orange Co. APNs 110-016-19 and 110-016-20, and 110-016-23)."

Van Coops, J. (CCC). 2007b. Memorandum to J. Dixon and M. Johnsson (CCC) dated October 25, 2007 regarding: "Response to the LCPA 1-06 Staff Report Comment Letter from Shea Homes."

Wetland Definition

Consultants for Shea Homes continue to reject the wetland definition (Title 14 California Code of Regulations Section 13577(b)) that has long been the basis for the Commission's wetland decisions. Bomkamp (2007) makes a de facto argument that the presence of hydric soils are a necessary condition for the presence of a wetland. This is apparent in the following assertions:

> "Ponded areas represent the absolute maximum extent of potential wetlands[1]. …[W]e know that the ponded areas in the agricultural field do not exhibit reduced iron[2] until after 27 to 35 days[3]. Therefore, in accordance with all accepted definitions, these areas would not be considered wetlands."

[1] This is not necessarily true. For example, a pond observed after a small rainstorm may be much smaller than the existing wetland.

[2] The observed presence of reduced iron is one field indicator of hydric soils.

> "The scientific literature supports a further conclusion that, because anaerobic soil conditions are required to support a predominance of plant species that are functioning as hydrophytes[4], none of these areas [AP/EPA and WP/WP+] should qualify as wetlands under the Coastal Act.[3]"

Mr. Bomkamp's conclusions are contained within his premise, which cannot be reconciled with the wetland definition in the Commission's Regulations.

All wetlands occur along a moisture gradient. Along this gradient, soils go from saturated to relatively dry; the physical indicators of hydric soils, which form under periodic anaerobic conditions, go from abundant to absent; and, wetland indicator species go from predominant to uncommon. Typically, the wetland indicator species will continue to be predominant beyond the point on the gradient at which the indicators of hydric soils drop out. Although there are objective places at which to draw a line distinguishing uplands from wetlands, there is no single correct location. The wetland definition in the 1987 Corps of Engineers Wetland Delineation Manual and the definition implicit in Mr. Bomkamp's remarks would place the line near the wet end of the gradient. The definition in the Commission's Regulations moves the line farther toward the dry end of the gradient. Other definitions are even more inclusive.

Potential Size of Wetlands

Consultants for Shea Homes have attempted to assess the potential for the formation of wetlands at the Parkside property by estimating water availability and by estimating the water requirements of some common wetland indicator plants (Bomkamp 2006, 2007; Exponent 2006a,b,c; Hamilton 2007). Given a fixed amount of water, the potential size of a wetland will be inversely proportional to the water demand of the vegetation.

Water availability was estimated by Exponent (2006a,b,c; Hamilton 2007) using rainfall records, soil characteristics, the estimated size of the watershed[5], and the size of the presumptive wetland[6] receiving the water. The available water was estimated as the amount of rain falling directly into the presumptive wetland plus runoff from the contributing area, which was calculated as the amount falling on the watershed minus the amount soaking into the ground (~87%). The contributing watershed was estimated based on local topography and on the presence of drainage infrastructure that directed water onto the Shea property during some years and into the municipal storm drain system more recently.

---

[3] Although there is some disagreement on the actual number of days of saturation required for iron reduction to occur at the Shea Homes property (Dixon 2006), the existing data suggest that the period is greater than a week at the AP. Strictly, this is only known for the AP area where the samples were taken. The factors affecting the rate at which anaerobic conditions develop (e.g., soil pH and soil organic content, and the factors affecting the validity of the test for ferrous iron, such as soil iron content, vary from place to place within the agricultural field.

[4] Hydrophytes are simply plants growing in water or on a substrate that is "at least periodically" deficient in oxygen as a result of excessive water content. This is a much broader definition than implied by Mr. Bomkamp.

[5] The size of the local watershed or "drainage area" was estimated by Hunsaker and Associates, but the methods used have not been described.

[6] If most of the available water is from runoff, then a smaller receiving area (presumptive wetland) will have more available water than a larger receiving area.

Using this model (Exponent 2006a,b), it was estimated that, prior to 2005, the median amount of water available within the CP wetland was 20.81 inches of water per year and the median within WP was 13.25 inches per year. Therefore, one would expect that there would be greater inundation at CP than at WP during most years. However, this expectation does not match the actual observations of ponding at the particular site in the CP wetland that I used for comparisons (Dixon 2006). In the available photographs taken of both areas at about the same time, WP generally has more standing water. This is probably because the overall receiving area of the CP wetland is large relative to that portion of the wetlands that I used as a comparison area, which is higher than much of the surrounding wetland terrain. Obviously, the assumption that all parts of a wetland have the same water availability is wrong. It is also clear that some areas of the CP wetland are able to support a preponderance of wetland vegetation with less water than the amount estimated for the total acreage. I include this example to demonstrate that although the simplifying assumptions of the water availability model are not unreasonable as a first cut, the devil is in the details.

Given estimates of water availability (Hamilton 2007), the potential size of the EPA wetland was calculated based on the assumption that the average annual water requirement for wetland vegetation is 24.6 inches (Bomkamp 2007). This water requirement was extrapolated from a report on the "consumptive use" of water or "evapo-transpiration" by a variety of California native plants (Division of Water Resources 1942). The purpose of the DWR study was to determine the potential availability of water for irrigation and other human uses[7]. For herbaceous species, plants were grown in large metal containers within which the water level could be kept constant throughout the year. Thus, the fraction of the roots that reached "ground water" or that were within the capillary fringe had a constant unlimited supply of water. Although the design may be appropriate for its intended purpose, which was to determine the maximum vegetative water demand under different conditions and to estimate the limiting depth of groundwater for vegetation, the results of the studies tell us nothing about the <u>minimum</u> water availability required to support a preponderance of wetland vegetation at the Shea Homes property or elsewhere. This is obvious in the reported relationships between water availability and the amount of water consumed (Department of Water Resources 1942). The more water that was made available to plants, the more they used. Also, where evaporation was higher, water use was higher. Under similar experimental conditions, plants in the Owens Valley used more water than plants near Santa Ana and the latter no doubt use more water than plants nearer the coast, although there were no coastal experimental stations.

Based on consumptive use results in the DWR study, Bomkamp extrapolates that salt grass (and probably pickleweed) requires around 40 inches of water per year. Although this may be roughly the amount that would be used were water continuously available in the majority of the root zone throughout the year, it is not the amount of water that is required by the species. In fact, the DWR report documented that when water availability was decreased by lowering the experimental depth to "ground water," salt grass continued to grow while consuming as little as 10 inches of water per year. The DWR data simply do not enable one to estimate the requirements for species such as

[7] For example, it was found that 24% of consumptive use in the Sacramento Delta "…goes to sustain plants serving little or no purpose." Interestingly, these kinds of studies showed that a large quantity of water could be recovered by extracting groundwater and thereby lowering it "…beyond the reach of the vegetation…[,which] was the basis for the construction of the … Los Angeles aqueduct."

salt grass living in a seasonally wet environment where nearly all the growth takes place opportunistically during a brief time in the winter when water from rainfall is available[8]. Since the estimates of vegetative water requirements are extrapolations based on inappropriate data (and are probably significantly inflated), the resulting estimates of the size of potential wetlands are not reliable or useful.

Temporal Changes in Water Availability

Hunsaker and Associates prepared maps showing estimated drainage areas (Hamilton 2007) based on topography for the years 1970, 1980, 1997, and 2005. Exponent (Hamilton 2007) used this information and estimates of the contributions of the Harbor Bluffs development and the Cabo del Mar condominiums (both north of the Shea Homes property) to estimate water availability during different time periods. Beginning some time during the period of about 1978 to 1980, water was diverted to a bubble-up structure that discharged onto the Shea Homes property. After about 1986, this water went into the storm drain system. Exponent used two estimates of infiltration for the period during which the Cabo del Mar condominiums were being built – 87% infiltration represents the estimated average for undisturbed soil in this area; 69% estimated infiltration represents the construction period when the ground was cleared of vegetation and compacted and runoff was probably higher. The results of this modeling exercise are shown for the periods of interest in Table 1.

Table 1. Estimated water availability for an 8-acre receiving area (EPA wetland area) during various time periods.

Time Period	Topography Used	Conditions	Estimated Water Availability for the 8-acre EPA area
Prior to c. 1978	1970	No water diversion structures; 87% infiltration assumed.	13.86 in
c. 1978 – c. 1986	1980	Water diverted to Shea Homes property from Harbor Bluffs & Cabo del Mar; 87% infiltration assumed.	14.23 in
c. 1978 – c. 1986	1980	Water diverted to Shea Homes property from Harbor Bluffs & Cabo del Mar; 69% infiltration assumed.	18.80 in
c.1986 - 1997	1997	Water diverted from Harbor Bluffs & Cabo del Mar to municipal storm drain; 87% infiltration assumed	11.60 in

Existence and Size of a Wetland in the Area Delineated by EPA

The consultants for Shea Homes contend that the EPA wetland never existed (Homrighausen et al. 2007) and question whether ponded areas that are apparent in aerial photographs represent wetlands (Bomkamp 2007). The latter skepticism is based

[8] The DWR report pointed out the limitations of their experimental protocols even for estimating consumptive water use: "It has been shown that the limitations of soil tanks make them inadequate for some types of consumptive use investigations. Tanks are suited to areas of high ground water … but studies in other areas where the water table is beyond reach of root systems may best be carried on through soil sampling." Shallow ground water is unusual at the Shea Homes property.

on the probable lack of hydric soil conditions and the theoretical calculations from inappropriate estimates of the water requirements of wetland vegetation discussed above. I have critiqued and rejected most of these arguments (see above and Dixon (2007)). The weight of the evidence indicates that a wetland meeting the definition in the Coastal Act and Commission's Regulations existed roughly within the area delineated by the EPA prior to about 1998. However, the consultants for Shea Homes have raised reasonable questions regarding the size of the area that frequently ponded and that was estimated at 7.6 acres by Bilhorn (1987), 8.3 acres by EPA (1989), and assumed to be 8 acres for purposes of calculation of water availability (Bomkamp 2007, Hamilton, 2007).

Since the wetland boundary delineation accepted by EPA appears to have been based largely on evidence of ponding during the construction period for the Cabo del Mar condominiums, the size of the wetland was likely an over estimate. Compared to the period prior to construction of the Cabo del Mar condominiums, the water availability during the construction period is estimated to have increased by between 3% and 36%, depending on runoff assumptions (Table 1). The water availability at the time that Shea Homes acquired the property is estimated to be about 2.25% less than before the condominium construction, but about 19% to 38% less than during the construction period. If size scales linearly with water availability, the actual size of the wetland after 1986 may have been in the range of 5 to 6.5 acres. Bomkamp (2007) presents delineations of ponded areas apparent in aerial photographs taken in 1962, 1967, 1980, 1981, 1983, and 1995. Considering only those delineations from photographs taken outside the Cabo del Mar construction period, the average ponded area was 4.0 acres[9].

The period of greatest interest is from 1986 (when water diversion changes were completed) to 1998 (when Shea Homes began significant land leveling). Unfortunately, there are few pertinent data available. However, photographs taken on February 10, 1993 (Figure 1), January 28, 1995 (Figure 2), and March 19, 1996 (Figures 3 & 4) show clear evidence of standing water in or adjacent to the boundaries of the EPA delineation and there probably was standing water obscured by crops on January 29, 1997 (Figure 5), since portions of the EPA area are generally inundated when there is this much standing water adjacent to the flood control channel and in the riding arena (cf. Figure 1). Based on recent observations of ponding after extreme rainfall, the EPA area was also almost certainly ponded for long duration after 8.6 inches of rain in February 1998, but no photographs are available. Although the photographic record is spotty, it appears that portions of the area delineated by EPA continued to be inundated following significant rainfall even after the runoff from neighborhoods to the north was diverted to the storm drain.

The size of the ponded areas during the post-construction period can only be accurately estimated from the two vertical aerial photographs taken in 1995 (Figure 2) and 1996 (Figures 3 & 4). The size of the ponded or saturated area[10] in 1995 is about 6.1

[9] This includes an El Niño year. The available photographs were taken for purposes other than wetland delineation and are a haphazard collection of dates. They should be treated as a random sample. Neither heavy nor light rainfall years should be discarded from this small sample.

[10] Bomkamp (2007) estimated the area of dark soils to be 6.63 acres, but argues that only about 2 acres was actually inundated. The Commission's mapping supervisor does not think there is sufficient basis in the aerial image to make such a distinction.

acres[11]. Van Coops estimates the size of the pond in the 1996 aerial to be about 2.9 acres. There is relatively little difference in the estimated pre- and post-construction water availability, so it is reasonable to use all the available ponding estimates to estimate the mean area. This results in an estimate of 3.6 acres.

Based on the Bilhorn (1987) and EPA (1989) estimates of the wetland area during the period of construction of the Cabo del Mar condominiums, estimates of water availability during the periods of interest, and the estimated size of ponded areas in available photographs, I think 4.0 acres is a reasonable estimate of the average area that ponded before about 1978 (prior to the construction of the Cabo del Mar condominiums) and between about 1986 (when water from the northern neighborhoods was diverted to the storm drain) and 1998 (when significant land leveling began). In order to estimate the shape and location of a 4-acre wetland within the footprint of the EPA delineation, the Commission's mapping unit overlaid the areas of inundation from 1995 (a very wet year) and 1996 (a below average rainfall year) over 1996 topography (Figure 6). A 4-acre wetland area was obtained by expanding the boundary of the 1996 inundation footprint until it intersected either the boundary of the 1995 inundation footprint or the edge of the topographic depression defined by the +0.5-ft contour, whichever was reached first. This process was continued until the estimated area of the resultant polygon was 4.0 acres (Figure 7). The boundary of this 4-acre historical wetland area relative to the area delineated by EPA in 1989 is shown in Figure 8. This 4-acre area is my best estimate of the portion of the wetland delineated by EPA that would have been frequently ponded or saturated near the surface after the water from the northern neighborhoods was diverted to the storm drain in about 1986 and before the significant land leveling that took place after about 1998 (see Van Coops 2007a, 2007b).

Buffer For Northern Eucalyptus Grove (Raptor Habitat)

Homrighausen (2007) presents Shea Homes's proposed footprint for residential development and a public park and asserts that the development plan "provides an effect variable width buffer." He estimates an average buffer width of 334 feet (102 m), with a minimum width of 173 feet (53 m). This result appears to have been obtained by averaging the development setback from both the southern grove of eucalyptus trees and the northern grove, and by including the active park area within the buffer. The proposed development plan is shown in Figure 9 with 50-m (164-ft) and 100-m (328-ft) buffers around the northern eucalyptus grove. It is obvious that the proposed development, which includes the park, is effectively less than 164 feet (50-m)[12] from the northern eucalyptus trees that provide raptor habitat, rather than 334 feet. This is not an adequate setback to protect raptors from disturbance. For the reasons I discussed in some depth previously (Dixon 2007), I recommend that a 100-m buffer be established around the northern grove of eucalyptus trees.

[11] Van Coops (2007a) originally estimated the area from a hard copy as roughly 5 acres. A more recent estimate using digital data and geographic information system (GIS) software is 6.1 acres.

[12] Homrighausen (2007) acknowledges that the park boundary was drawn 150 feet from the eucalyptus trees.

Figure 1. Oblique aerial photograph taken on February 10, 1993. There were about 5.7 inches of rain during the 30 days prior to the photograph and about 18.7 inches for the 1992-1993 rain year. Much of the ponding in the EPA area was probably obscured by vegetation.

Figure 2. Vertical aerial photograph taken on January 28, 1995. There were about 11.7 inches of rain during the 30 days prior to the photograph and about 18.3 inches for the 1994-1995 rain year. The area estimated to be ponded is contained within the green polygon and comprises about 6.1 acres.

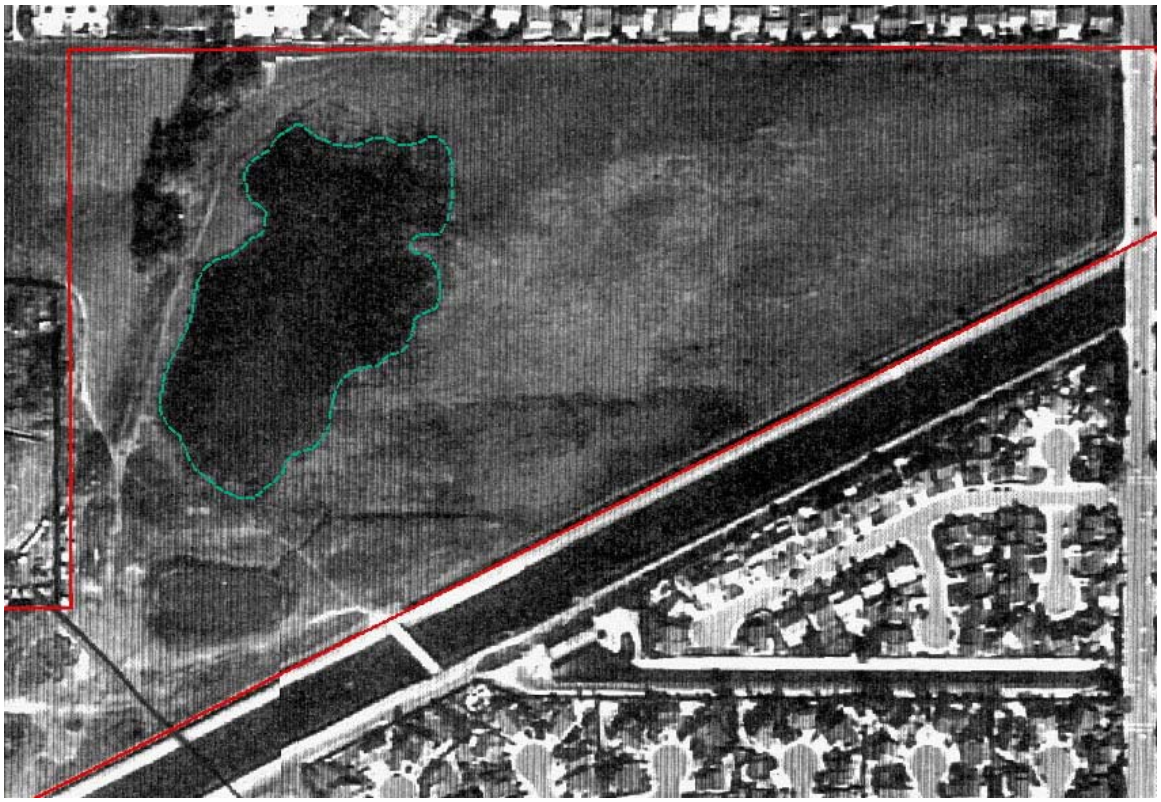


Figure 3. Vertical aerial photograph taken on March 19, 1996. There were about 3.7 inches of rain during the 30 days prior to the photograph and about 7.3 inches for the 1995-1996 rain year. The estimated area of inundation is shown separately in Figure 4 because the polygon obscures some of the surface features seen here.

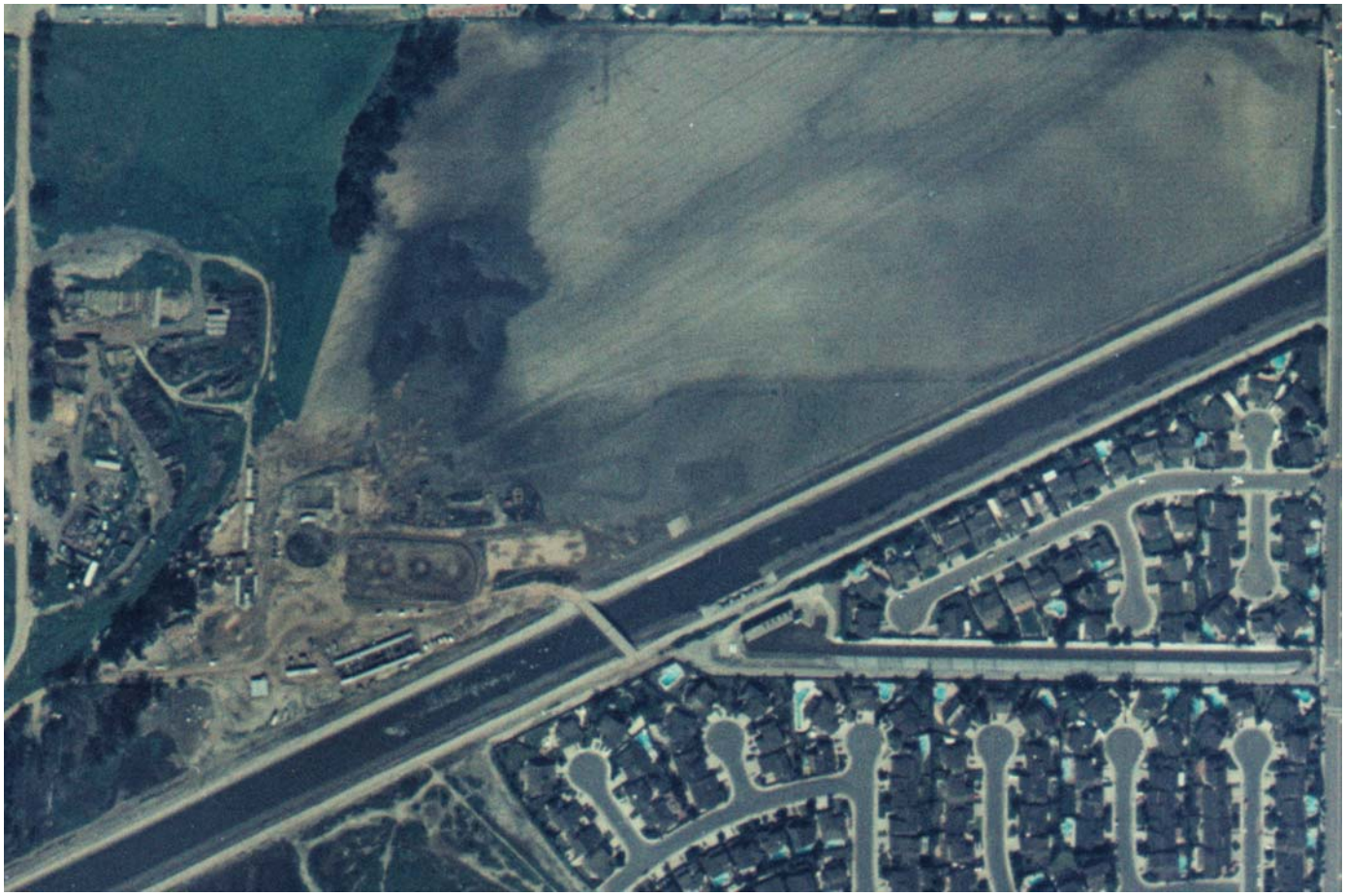


Figure 4. Vertical aerial photograph taken on March 19, 1996. The estimated area of inundation, which is enclosed by the orange polygon, comprises about 2.9 acres.

Figure 5. Oblique aerial photograph taken on January 29, 1997. There were about 4.8 inches of rain during the 30 days prior to the photograph and about 10.6 inches for the 1992-1993 rain year. The ground surface in the EPA area is obscured by vegetation. When the riding arena area and the area next to the flood control channel have this much water, it is highly likely that portions of the EPA area were also inundated (see Figure 1).

Figure 6. Estimated areas of inundation on January 28, 1995 and on March 19, 1996 overlaid on 1996 elevation contours.

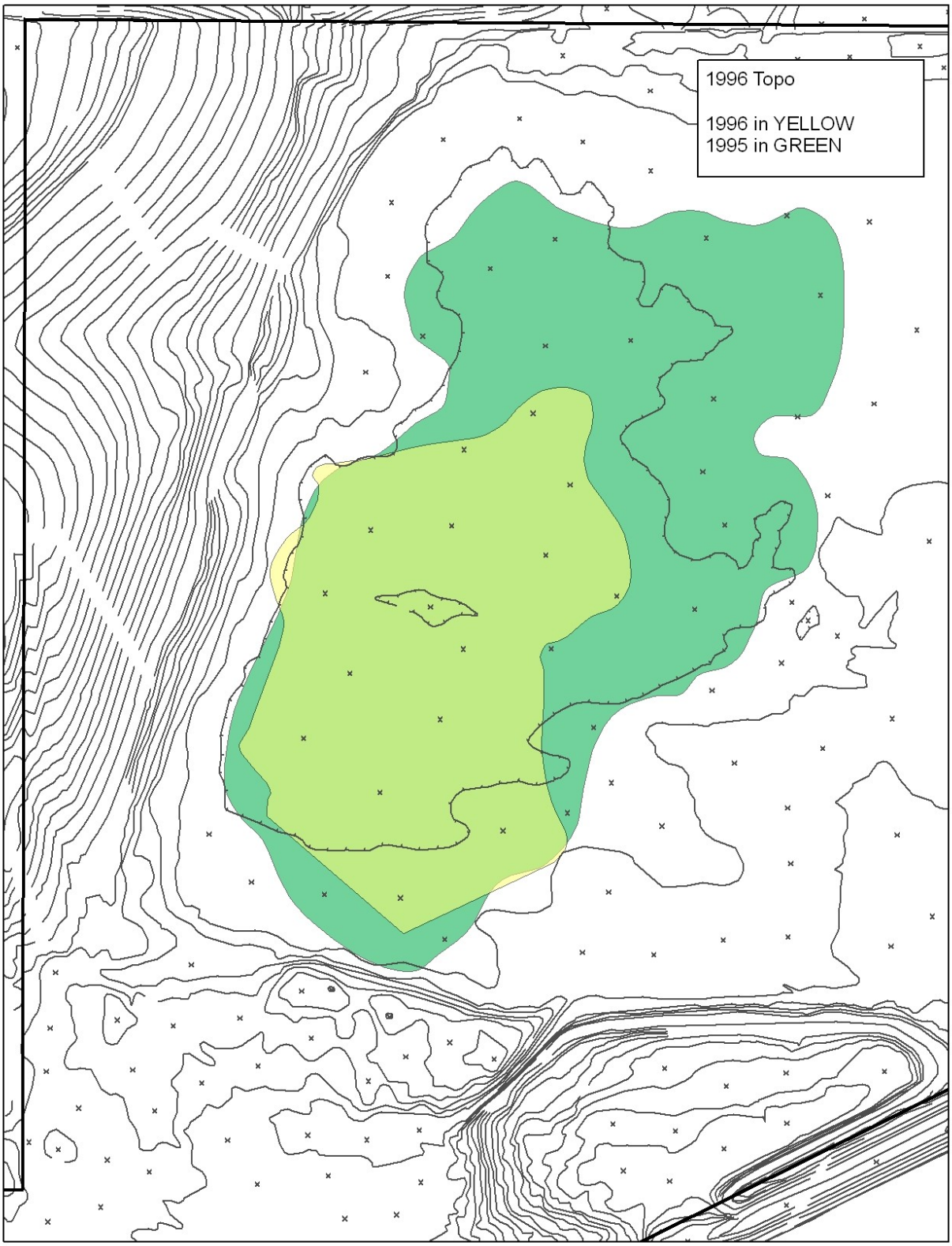


Figure 7. The blue polygon was obtained by expanding the boundary of the area inundated in 1996 (encompassed by the blue polygon) until it intersected the edge of the depression defined by the +0.5-foot contour or the edge of the area inundated in 1995, or until 4-acres was reached.

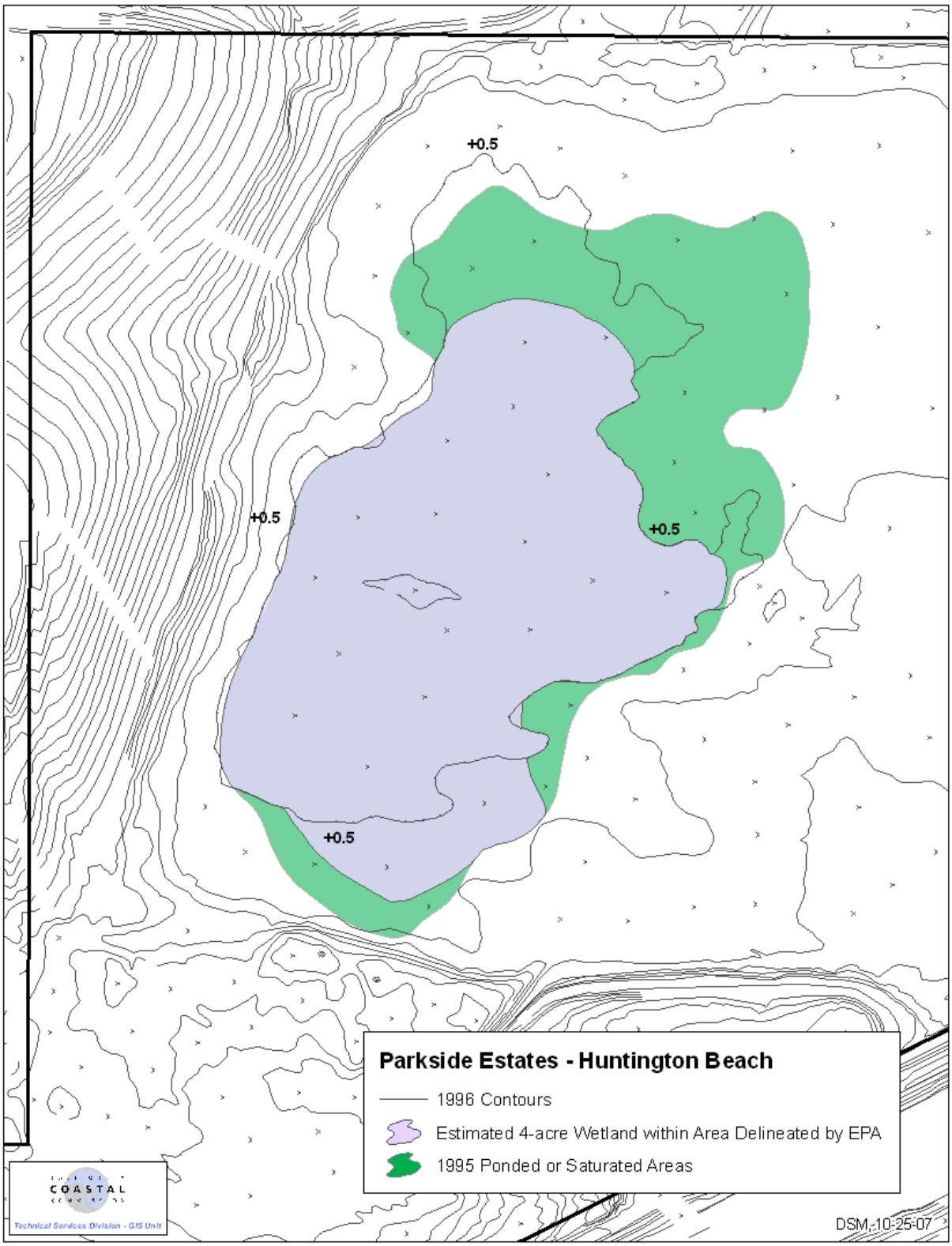
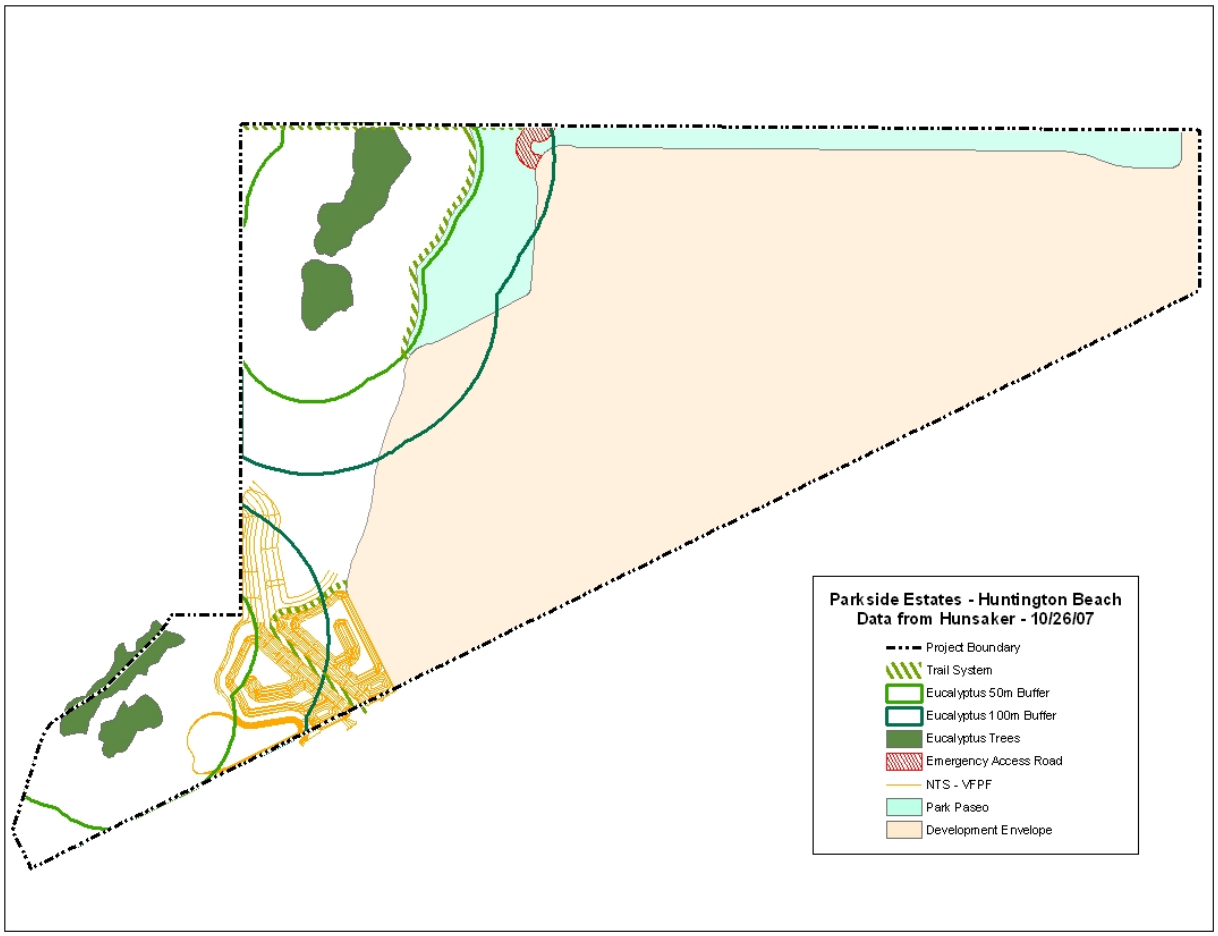


Figure 8. The area delineated by EPA during the construction period for the Cabo del Mar condominiums is shown in tan. Shown in lavender is the 4-acre portion of the EPA wetland that is estimated to have been present before and after the hydrological modifications associated with the construction of Cabo del Mar and before the significant land leveling that took place beginning in 1998.

Figure 9. Proposed development plan presented in Homrighausen (2007) with 50-m and 100-m buffers around the northern eucalyptus trees that provide important raptor habitat. In the key, "NTS" is a natural treatment system for urban runoff and "VFPF" is a vegetated flood protection feature or levee.



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MEMORANDUM

EXHIBIT RRR

Date: October 25, 2007

To: John Dixon
Mark Johnsson

From: Jonathan Van Coops, Mapping/GIS Program Manager

Subject: Response to the LCPA 1-06 Staff Report Comment Letter from Shea Homes

This memorandum is intended to provide you with a response to Shea Homes' (Shea) September 21, 2007 letter to Meg Vaughn providing comments on the July 2, 2007 staff report, including Exhibit MMM, regarding the Huntington Beach LCP amendment LCPA 1-06. The numbered responses below refer and correspond to the numbered comments contained in the Shea letter received on September 24, 2007. I have included the comments from the Shea letter in italics below, followed directly by my responses.

The purpose of Exhibit MMM was to provide an objective analysis of the landform alterations on the Shea property and to identify various areas that had been disturbed between 1970 and the present. Exhibit MMM does not attempt to identify or address the extent of permitted versus unpermitted fill on the property; it simply locates, to the extent possible, where and when fill or other landform alterations took place on the property. Shea's response letter appears to misconstrue the purpose of Exhibit MMM, and it consists in large part of personal attacks on the author and includes misleading, erroneous and/or incorrect statements. This memorandum addresses each of Shea's comments in turn.

Shea Comment 39
Weight of Evidence: The memorandum is a report from the Coastal Commission staff Mapping/GIS Program Manager to Dr. Dixon and Dr. Johnsson. In the absence of signatures from Dr. Johnsson, Exhibit MMM is the opinion of the sender of the memorandum (the "reviewer") rather than the professional opinion of a Certified Engineering Geologist, Registered Land Surveyor, or Licensed Civil Engineer.

Response to Comment 39
There is no requirement that topographic map and aerial photo interpretation be done only by Certified Engineering Geologists, Registered Land Surveyors, or Licensed Civil Engineers. As a professional geographer I have routinely utilized topographic maps and aerial photography for the last 30 years in my work for the Coastal Commission. Furthermore, in the current era of rapidly expanding use of geographic information systems (GIS) technology, map and photo interpretation are as likely to be done by geographers, other earth scientists, and GIS professionals as by engineers and surveyors.

Shea Comment 40

Photo Interpretation Results: Eleven vertical aerial images (1934 to 2006) were used to formulate the opinion. Of these, only three (1970, 1986, and 2001) were stereo pairs suitable for viewing "three-dimensionally." In the absence of contemporaneous, corroborating topographic information, elevations or changes of elevations implied by the reviewer from the other nine images cannot be verified and must be discounted.

Response to Comment 40

This comment confuses photogrammetry with photo *interpretation*. My analysis of the aerial photos was not intended to establish the magnitude of the change—*only that a change occurred*. If a photo interpreter examining a series of images detects a feature having relief in an image, such as a mound of fill or a seawall, where there was none previously, there is no requirement for "contemporaneous, corroborating topographic information" before concluding that the feature provides evidence of possible elevation change. For example, pre- and post-eruption (1980) aerial photos of Mt. St. Helens in southern Washington, where a substantial portion of the mountain disintegrated, clearly show major elevation changes at the mountain. There is no need to analyze stereopairs of the mountain pre- and post-eruption to see these elevation changes.

Figure 1, included below, includes portions of the 1981 and 1983 images reviewed in Exhibit MMM clearly showing evidence of elevation change in the form of mounds of fill visible south of the arena and in the central area of this portion of the 1983 image (see arrows). While these photos are not stereopairs, they clearly show that there are mounds of material on the property in 1983 that did not exist in 1981.

1981

1983

Figure 1 – Portions of 1981 and 1983 images

Figure 2, below, is an enlargement of the portion of the 1983 image reviewed in Exhibit MMM clearly showing evidence of mounds of fill visible south of the arena and in the central area of the image (see arrows).

Figure 2 – Enlargement of portion of 1983 image

To illustrate this further using a less dramatic coastal example, imagine examining two individual vertical aerial photos from different years that depict an area having an eroding coastal bluff. Figure 3, included on the following page, depicts portions of 1993 and 2006 Coastal Commission vertical aerial photography covering a part of San Mateo County's coastline showing evidence of coastal bluff retreat at the left center of the image (see arrow). The change in topography is clearly discernable, despite the fact that these are not stereopairs. The retreating cliff face (indicating changing elevations) is visible without stereoscopic analysis. Comment 40 is incorrect.

1993

2006

Figure 3 – Portions of 1993 and 2006 images showing coastal bluff erosion in San Mateo County

It is important to note that nowhere in the section of Exhibit MMM entitled *Photo Interpretation Results* did I attempt to *quantify* the magnitude of elevation change detected in the images that I examined.

It is also important to note that there are professional geographers and other experienced photo interpreters who can reliably detect features in aerial photos having relief *without the use of stereoscopes and stereopairs*. In other words, while someone with normal vision will certainly find it easier to see relief in vertical aerial photographs using stereopairs, it is not essential. I have examined hundreds of individual aerial photos during the last 30 years where, for example, it was entirely possible to determine that a feature was a coastal bluff face and not a beach *without* stereoscopic analysis.

An experienced photo interpreter examining an image can also use shadows and the angular geometry of a feature to identify relief. The notion that "changes of elevations implied by the reviewer from the other nine images cannot be verified and must be discounted" is erroneous. The topographic maps we had available that corresponded in date to the images we examined further corroborate the information interpreted from the images.

Shea Comment 41
Map Interpretations: MMM's interpretations of contours ignore the limitations of map accuracy. The accuracy standard of maps is one half of a contour interval; in other words a USGS contour map has a contour interval of five feet, so its accuracy standard is plus-or-minus two and a half feet. The reviewer has claimed changes in elevation of one foot or less. All statements about elevation changes in the staff report should clearly state the source material and the accuracy standard.

Response to Comment 41
The statement that the accuracy standard of maps is one half of a contour interval, is erroneous and misleading when applied to digital topographic maps. Comment 41 refers to the National Map Accuracy Standard (NMAS) of 1947 which has been superceded by the National Standard for Spatial Data Accuracy (NSSDA), for digital products (including digital elevation models (DEMS) and digital contours). The NSSDA was published in 1998 by the Federal Geographic Data Committee (FGDC). While, of course, the earlier topographic maps we examined were originally hand drawn or scribed and had 5 to 10 foot contour intervals, the digital topographic maps provided by Shea for this analysis typically included spot elevations given to the tenth of a foot. Shea's selection of one and two foot contour intervals for depiction of topography in the ".pdf" images we received could have also have been another user-defined contour interval. Computer software is commonly used to process digital elevations in order to generate contour lines with user-defined intervals, based on the spot elevations taken at a site.

Shea Comment 42
1934 photo, Exhibit 1: The 1938 Santa Ana River flood obliterated the sinuous drainage features shown in this image and other images. The darkened arc feature remained as a visible feature (still visible on contemporaneous images) but the feature is not topographically distinct from the adjacent land. For this reason, images predating 1938 have no bearing on the present matter. The reviewer's statement that the larger historical tidal channels and lower lying areas show clearly as darker tones, and that riparian vegetation lines the part of the channel towards the eastern margins of the property, cannot be determined from such a poor quality photo – especially a photocopy of a photo, as Mr. Van Coops used.

Response to Comment 42
The 1934 image, like the early maps of the area, provides a view of the property with typical characteristics of coastal wetlands, with numerous meandering channels and bare flats. The

comment that images earlier than 1938 have no bearing on the present matter is misleading. At a minimum the early photos, including the 1934 image, inform the current process with important historical context. The comment also is self-contradictory in that it asserts that the historical tidal channels were obliterated while also acknowledging these features remain visible in this and other contemporaneous images.

The comment that historical tidal channels, low-lying areas, and riparian vegetation cannot be determined from this image is erroneous. The fact is that with a high-resolution scan of the original large format photocopy, we were able to use image viewing computer software to examine enlarged views of the image showing significant detail. These features are visible even to the untrained eye.

Shea Comment 43

1952 Image Exhibit 2: In the absence of topographic information, the reviewer cannot state" [sic]*…clear evidence of fill…" The implication is that road construction is somehow unpermitted, even though the photo predates the Coastal Act by decades.*

Response to Comment 43

As with comment 40, comment 43 confuses photogrammetry with photo *interpretation*. There is no requirement for "contemporaneous, corroborating topographic information" before concluding that certain features provide evidence of possible elevation change. In addition, my discussion of the 1952 image made no mention of Coastal Development Permits or the Coastal Act. I simply explained that this image shows that there was fill on the property prior to 1952 – there is no "implication" that this was unpermitted fill.

Shea Comment 44

1970 Stereo Image Exhibit 2: The stereo pair was not provided to the public, and we ask that it be provided to us. Tidal channels ceased to exist in 1899 with the construction of tide gates by the Bolsa Chica Duck Club. Through-property flows ceased to exist with the construction of the flood control channel and adjoining developments beginning in 1959. The darkened arc feature is a historic artifact of historic Santa Ana River outflow which ceased with the 1938 Santa Ana River Flood and is not a drainage feature. There are no "channels" in the farmed area. No topographic features were identified in 1949 and later USGS topographic mapping. Coloration provides absolutely no indication about elevation, cut, fill or wetness. The reviewer's statement that coloration implies a drainage channel, given stereoscopic topographic information, casts doubt on all of his interpretations about elevation, cut or fill. The photo date was May 21, 1970, placing it in the 1969-1970 water-year; per the July 27, 2007 Dixon report, none of the areas were interpreted to be ponded at that time.

Response to Comment 44

The 1970 stereopair was provided to Shea on September 27, 2007 by placing digital files of the images on the Commission's file transfer protocol (ftp) site. The fact that historical channels in the farmed area have been altered does not negate the fact that their historical alignment still appears in this and other images. The implied assertion that color in an aerial photo image cannot indicate historical channels on the property is erroneous. Shea's comment ignores the fact that Exhibit MMM refers to *historical channels*, thereby giving the false impression that we implied the historical channel in the farmed area was a drainage channel in 1970. We made no such claim.

Nowhere in the Exhibit MMM section describing this image did I imply that the clearly visible historical channel retained the elevation characteristics in 1970 necessary to consider it a drainage channel at that time. The author of comment 44 mischaracterizes my statement about the historical channel and attempts to use it out of context as a basis for contesting the interpretations.

Shea Comment 45
1977 Image Exhibit 3: In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill.

Response to Comment 45
The comment regarding the 1977 image confuses photogrammetry with photo *interpretation*. There is no requirement for "contemporaneous, corroborating topographic information" before concluding that visible features provide evidence of possible elevation change.

Shea Comment 46
1981 Image Exhibit 4: In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill. The zero (0 ft) MSL NGVD29 contour referred to on the 1965 USGS quad sheet is inconsistent with the NAVD 88 datum convention developed for later images. The equivalent elevation is about 2-1/2 ft higher. Further, the 0 ft contour is inconsistent with the 1949 quad sheet, which the reviewer has omitted from consideration. The 1949 quad sheet with detail is provided as Figures 4 and 5, compared with the 1965 USGS quad sheet detail in Figure 6. There are no former tidal channels and no topographic evidence of their existence because tidal influence was eliminated in 1899 and surface manifestations were obliterated in the 1938 Santa Ana River flood.

Response to Comment 46
The comment purports to be about the 1981 image, however, there are no references to the 1981 image other than in the heading. This section of Exhibit MMM describes the structures, vehicles and disturbed areas on the property, as well as the filled areas that can be discerned from this 1981 image. Shea's comment does not address or refute these observations, instead it provides incorrect information regarding the height difference between MSL NGVD 29 and NAVD 88 in Orange County, and random details of the 1949 and 1965 USGS quad sheets. The comment also repeats previous incorrect and self-contradictory assertions regarding evidence of the former tidal channels.

Shea Comment 47
Page 4, 2nd paragraph, RE: February 19, 1983 photo, Exhibit 4: In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill. "Tidal channel" is inappropriate due to the prior existence of tide gates. See the comment on 1934 Exhibit 1 and elsewhere. The text states that there was development within the Shea property, citing well over 100 individual mounds of stockpiled fill south and southwest of arena area. This matter was covered by Smokey's stables' CDP and no subsequent action was taken by the Coastal Commission.

Response to Comment 47
Similar to comments 40, 43, and 45, comment 47 confuses photogrammetry with photo *interpretation*. There is no requirement for "contemporaneous, corroborating topographic

information" before concluding that visible features provide evidence of possible elevation change.

Comment 47 asserts it is inappropriate to use the term "tidal channel" but omits the word "former" from the reference. Our analysis does not state that tidal channels existed in 1983, instead we observe that the outline of the areas where these channels once flowed can be discerned in this photograph. Regarding the mounds of fill, the photo interpretation simply documented the presence of the fill. Whether the fill was permitted is a separate issue that is beyond the scope of Exhibit MMM.

Shea Comment 48

Page 4, 3rd paragraph, RE: May 13, 1986 Stereo Image, Exhibit 5: The stereo pair was not provided to the public, and we ask that it be provided to us. The one-acre additional fill is explained later as being authorized permitted fill in the stable area. There is no former tidal channel, and no topographic evidence of its existence because tidal influence was eliminated in 1899 and surface manifestation was obliterated in the 1938 Santa Ana River flood. The text states additional development and over an acre of additional fill is visible by the enclosed corrals or riding areas. The corrals and riding areas were covered by the CDP, and no citation was ever issued by Coastal staff, so the assumption must be that no illegal fill occurred and no resources were harmed.

Response to Comment 48

The 1986 stereopair was provided to Shea on September 27, 2007 by placing digital files of the images on the Commission's file transfer protocol (ftp) site. The comment asserting that there is no former tidal channel is erroneous and misleading, as explained in prior responses to Shea's comments. The comment regarding the corrals and riding stables being "covered by the CDP" has nothing to do with the photo interpretation.

Shea Comment 49

Page 4, 5th paragraph, RE: January 28, 1995 photo, Exhibit 6: In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill.

Response to comment 49

As with comments 40, 43, 45, and 47, comment 49 confuses photogrammetry with photo *interpretation*. There is no requirement for "contemporaneous, corroborating topographic information" before concluding that visible features provide evidence of possible elevation change.

Shea Comment 50

Page 5, 1st paragraph, RE: February 24, 1999 photo, Exhibit 7: In the absence of topographic information, the reviewer cannot make statements about elevation, cut or fill. The quality of this photo is too poor to make the stated assertions, particularly with respect to elevation changes. Most of the disturbed area referenced by the reviewer is in the vicinity of the approved stable development. Separate topographic evidence and permit documents provide a clearer understanding of the activities shown in this photo.

Response to Comment 50

The comment that the 1999 image is of too poor quality to interpret is erroneous and contradicted by the statement that separate materials explain "the activities shown in this photo." The fact is that with a high-resolution scanned image of this photograph, we were able to use image viewing

computer software to examine enlarged views of the image showing significant detail. These features are visible to the untrained eye and were accurately described in Exhibit MMM.

Shea Comment 51

Page 5, 2nd paragraph, RE: June 29, 2001 "Stereo Image", Exhibit 8: The stereo pair was not provided to the public, and we ask that it be provided to us. The tidal channels ceased to exist in 1899 with the construction of the tide gates. The tonal difference is associated with a remnant of the 1938 Santa Ana River flood and is not a channel. Although it is true that the CP area was revegetating with upland and wetland species, and it is incorrect for the reviewer to state that he can discern as much by viewing a photograph of this scale and quality. The identified channel was a ditch dug by the farmer and resolved by the Coastal Staff following a site visit without the issuance of a violation or citation. The reviewer's lengthy discussion of "some sort of construction activity" evidenced by a vehicle, vehicle tracks, etc. is false. No construction was occurring on the site at this time, and he has thoroughly misinterpreted standard farming practices, such as dust-control, as a construction activity.

Response to Comment 51

The 2001 stereopair was provided to Shea on September 27, 2007 by placing digital files of the images on the Commission's file transfer protocol (ftp) site. Similar to what was said in several earlier sections, Exhibit MMM included no assertion that the former channel was a channel in 2001. The comment persistently omits the adjectives "former" and "historical" from any references to channels, and instead repeats the assertion that no channel exists.

The comment about the re-vegetation of the CP wetland is erroneous. On the contrary, stereoscopic photo analysis using standard 1:12,000 scale aerial photography is a highly useful tool that has been employed for years by public and private organizations for this type of interpretation. In addition to stereoscopic analysis we were able to use image viewing computer software to examine enlarged views of high-resolution scans of the June 29, 2001 image that show significant detail and contrast.

In the portion of the 2001 image included on the following page as Figure 4, which depicts the area of the CP wetland, it is plainly evident that the vegetation color, the color contrast between the vegetation features, and the geometric arrangement of the vegetation shapes in the area support the statement in Exhibit MMM that the area was re-vegetating with both wetland and upland species (see arrows a – wetland vegetation, and b – upland vegetation).

Figure 4 – Portions of June 29, 2001 image showing re-vegetation of CP wetland

It is unclear what is meant by the comment "resolved by staff" made in reference to the drainage channel at the western margin of the agricultural field. Once again, Shea misinterprets the purpose of Exhibit MMM, which is simply to describe the features shown in these images, not to make any judgments with respect to the legal status of the development on the property.

The assertion that the vehicle activity and road watering apparent in this image do not constitute construction activity is irrelevant. Whether this activity was farming or dust-control related does not negate the fact that both the road watering and vehicle movement are clearly visible in the images.

Shea Comment 52

<u>Page 5, 3rd paragraph, RE: January 2006 photo, Exhibit 9:</u> The "structures" referenced by Mr. Van Coops along the flood control channel are the concrete block emergency repairs constructed by Orange County Flood Control District at about the time of the photograph, in response to the imminent threat of levee failure. "Expansion of an access road" and "additional fill" are both related to the County's construction [of] *an access road for the emergency repairs and reinforcement of the levee.*

Tidal channels ceased to exist in 1899. The tonal difference is associated with a remnant of the 1938 Santa Ana River flood.

The reviewer states that "…overlapping images were not available which precluded stereoscopic analysis…", yet in the sixth line, the reviewer states that "…changes include…additional fill extending to the north of this expanded access road." Without stereo pairs, the reviewer cannot state that he is able to determine fill, or to distinguish fill from disturbance.

The reviewer errs in stating there are signs of "relatively extensive grading" in the image. Without a stereographic pair, it is impossible for the reviewer to determine topographic changes. Further, no grading has occurred on the site at any time since Shea's ownership, and even the Commission staff's attempts to tie farming operations to grading have never focused on this time period.

Response to Comment 52

In this section of my report I mention the changes I detected in the area southwest of the former stables area that included "the placement of structures along the flood control channel." During my July 21, 2007 visit to the site I was able to inspect these structures, which consist of a number of concrete blocks stacked together on the landward side of the northwestern levee to provide bank stabilization and reinforcement of the levee. The comment regarding the concrete blocks apparent in the 2006 image is consistent with what I observed during my July 21, 2007 site visit.

The assertion regarding stereopairs in comment 52 is incorrect. As explained in the response to Shea's comment 40, while someone with normal vision will certainly find it easier to see relief in vertical aerial photographs using stereopairs, it is not essential. Figures 1 through 3 illustrate clearly that changes in topography are discernable without stereopairs.

"Grading" refers to the movement of earth that results in a change in topography, regardless of purpose.

Shea Comment 53

Page 6, 4th paragraph, line 7: The reviewer states that "…datums varies [sic] from location to location, but is approximately 2.3 feet in Orange County." It is unfortunate that the concept of datum (MSL NAVD88) – bringing disparate data together with a common elevation – has heretofore been conspicuously ignored by both the citizens activists and Coastal staff, which accepted the opponents' questionable analyses at face value. As noted in comments to Exhibit 4, elevations on the 1965 USGS Quad Sheet are still referred to as MSL NGVD 29. Statements of datum (vertical in this case) must be made by a licensed surveyor or engineer, or be traceable to work by licensed individuals. The false statement about datums varying from location to location point to the reviewer's lack of understanding about this important concept, and his failure to consult with a licensed surveyor or engineer. The conversion value from one datum to the other, not the datums, themselves, vary from location to location. For this part of Orange County, the conversion from NGVD 29 to NAVD 88 is about +2.4 ft.

Response to Comment 53

The comments regarding Exhibit MMM, page 6, 4th paragraph, line 7 are at first random, and then become misleading and erroneous. They appear to be based partly on using a portion of the sentence I wrote regarding geographic variations of the difference between the NGVD29 and NAVD88 vertical datums out of context. The sentence comment 53 quotes out of context did not state that the vertical datums vary from location to location. Re-reading it one will plainly see that the full statement reads "The *difference* [emphasis added] between the two vertical datums varies from location to location…" which it does (See Figure 5, National Geodetic Survey (NGS) map of height differences between NAVD88 and NGVD29). Orange County's Geomatics/Land Information Systems Division actually provides the values of 2.3 feet, 2.34 feet and 2.35 feet for the NAVD88/NGVD29 height difference.

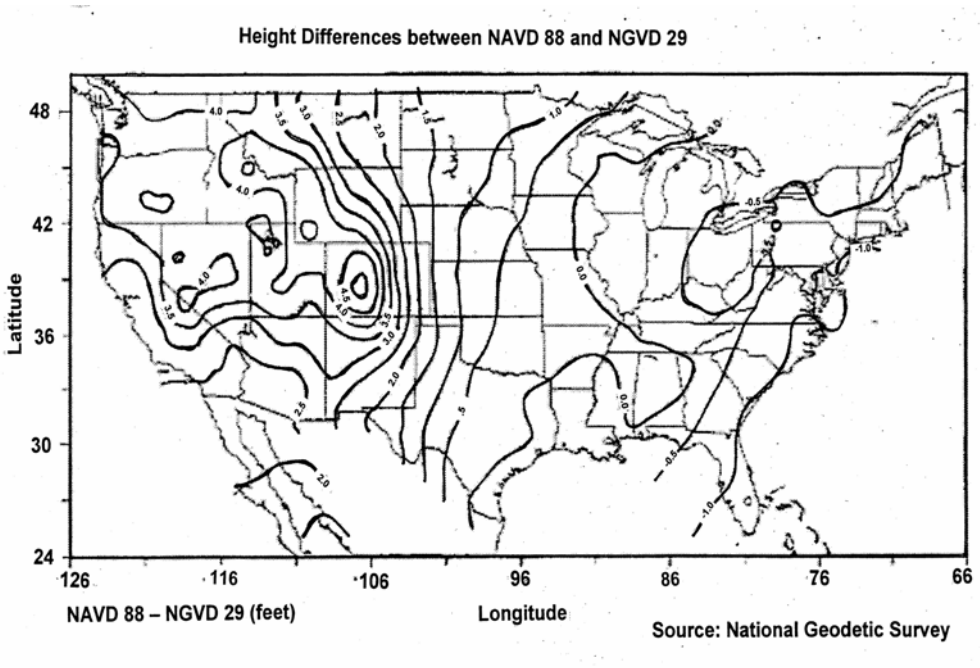

Figure 5 – NGS Map showing variations in height differences between NAVD88 and NGVD29

The implication that I did not consult with our staff engineer is incorrect. On the contrary, the entire document including the datum section of Exhibit MMM was reviewed by other GIS/Mapping staff as well as both the Coastal Commission staff engineer and staff geologist, who are registered professionals.

Shea Comment 54
Page 7, paragraph 5), topographic map in 1978, Exhibit 14: The reviewer's entire discussion is flawed due to errors he committed in adjusting datums. He subtracted instead of added.

Response to Comment 54
The comment regarding Exhibit MMM, page 7, paragraph 5, 1978 topographic map (Exhibit 14) is misleading and incorrect. We made no datum adjustments. In the text of Exhibit MMM I included elevation values parenthetically that are the corresponding NAVD 88 elevations expressed in terms of NGVD 29, the datum used by the 1978 map, which would be 2.35 feet lower than their values expressed in terms of NAVD 88. To adjust or convert any of the NGVD 29 elevation values to NAVD 88 would require adding 2.35 feet. As with all of the topographic maps, the 1978 map was analyzed and the topography described as depicted.

The following table illustrates the differences of elevation values expressed using NAVD 88 and NGVD 29.

Description	Elevation (feet)		
	MLLW	NAVD 88	NGVD 29
Mean High Water (MHW)	4.65	4.28	1.93
Mean Sea Level (MSL)	2.76	2.39	0.04
NGVD 29	2.72	2.35	0.00
NAVD 88	0.37	0.00	-2.35
Mean Lower Low Water (MLLW)	0.00	-0.37	-2.72

(Source: Orange County Geomatics/Land Information Systems Division)

Figure 6 – Vertical Datums in Orange County, California

Shea Comment 55
Page 9, 4th paragraph, 2nd line: The reviewer errs by saying, "The lowest lying area is in the northwest quadrant of the property." In fact the lowest area is in the southwest quadrant of the property.

Response to Comment 55
The comment regarding Exhibit MMM, page 9, paragraph 4, Line 2 is misleading and incorrect. When one enlarges or "zooms in" to this map far enough, it is clear that there is a negative sign adjacent to the "1" label on the concentric-shaped –1.0 foot contour line located in the vicinity of the EPA wetland. The author of Shea's comment 55 apparently failed to notice this while examining the 1970 map. The one foot contour indicated at the southwest quadrant is actually a +1.0 foot contour.

As stated in Exhibit MMM, the lowest lying area shown on the 1970 map is, in fact, located within the northwest quadrant of the property.

Shea Comment 56
Page 18 2nd paragraph, Exhibit 26: The reviewer's conclusion regarding the amount of fill and height of fill are incorrect due to errors in converting datums. The errors should be corrected in the staff report.

Response to Comment 56
The comment regarding Exhibit MMM, page 18, paragraph 2, Exhibit 26 is misleading and incorrect. *No* datum conversions were made by Coastal Commission staff. All of the topographic maps were analyzed and the topography described as depicted. If there were any errors in converting elevation data from NGVD29 to NAVD88 they were included in the submittal made by Hunsaker and Associates when they provided the information to us in June 2007.

A correction: On page 18, both the *Stables Area* sections should refer to Exhibit 26, not Exhibit 25.

Please contact me with any questions about this memorandum or Exhibit MMM.

cc: M. Vaughn, CCC - LB
S. Sarb, CCC - SD
K. Schwing, CCC - LB

SheaHomes

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Our Vision...to be the most respected builder in the country

COASTAL COMMISSION
HNB LCPA 1-06
EXHIBIT # SSS
PAGE 1 OF 3

July 6, 2007

W 8.5a

Ms. Meg Vaughn
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802

Subject: Response to Mark Bixby Correspondence in Coastal Staff Report Regarding Status of CLOMR, and Elevation of Flood Water in Bolsa Chica Pocket adjacent to the Parkside Estates Property

Dear Ms. Vaughn:

This letter responds to an e-mail (June 26, 2007 1:55 PM) reproduced on Page 53/60 of Attachment 7 to the Coastal Staff Report (W8.5a-2007-a7.pdf). In this email, Mr. Bixby makes two assertions that are patently false and misleading.

In Mr. Bixby's Paragraph 1), he questions whether terminating the certified flood control levee at the certified tidal flood protection levee (the VFPF) would somehow invalidate FEMA's June 2002 Conditional Letter of Map Revision (CLOMR). Termination of the certified flood control levee at the VFPF was specifically requested by Coastal Staff, a fact that Mr. Bixby ignores. Hydraulically, the change that Coastal Staff requested has no impact on flood protection for existing homes or Parkside Estates. Similarly, the existence of the downstream levee is of no consequence with respect to the hydraulic modeling. The CLOMR cannot be invalidated except if it is superseded by a scientifically and technically superior analysis, certified by a licensed civil engineer and approved by FEMA.

In Mr. Bixby's Paragraph 2), he states, *"Huh? The Pocket was restored to muted tidal conditions, thus water level in the Pocket should not be exceeding MSL."* Mr. Bixby's statement might be excused as the well-meaning effort of a citizen activist, if he had researched Moffatt & Nichol's hydraulic modeling that is part of the Bolsa Chica restoration engineering reviewed and approved by Coastal Staff, or if he had read Shea Homes' engineering consultants' many technical submittals[1]. But Mr. Bixby's statement conflicts with his own earlier statements[1], conflicts with Moffatt & Nichol's calculations approved by Coastal Staff, conflicts with statements and assurances from the U.S. Fish and Wildlife Service, and finally conflicts with water surface measurements made by a licensed land surveyor. All of these previous calculations and measurements were available through

[1] See in particular "Technical Memorandum – Review of U.S. Fish and Wildlife Service Letter of October 24, 2006 Re Bolsa Chica Restoration Pocket", N. Jordan, October 31, 2006.
[1] See in particular Mr. Bixby's assertions that Pocket flooding impacted groundwater near Shea property.

Coastal Staff to Mr. Bixby, yet he ignored all of them and stated that maximum muted high tide does not exceed MSL (Mean Sea Level, no datum specified by Mr. Bixby).

The result of Mr. Bixby's misstatement in 2) is the incorrect conclusion that Pocket flooding does not cause a flood threat to homes neighboring Shea property. Numerous agencies, including the City of Huntington Beach and Orange County Flood Control, have expressed that the threat of flooding from the Pocket is "imminent," and Bolsa Chica restoration officials have also acknowledged that a flooding risk exists. It is therefore necessary to correct the public record.

After thorough review, it is clear that Mr. Bixby's assertions have no relevance to Coastal Staff analysis of Coastal issues or the upcoming Commission actions. The attachment discusses each of Mr. Bixby's misstatements in detail.

Sincerely,

SHEA HOMES LP

Ron Metzler
Vice President, Planning and Entitlement

Attachment: Analysis of Bixby Assertions

cc: Members and Alternates, California Coastal Commission
John Dixon, Ph.D.
Mark Johnsson, Ph.D.
Karl Schwing
Sherilyn Sarb

SSS2

ATTACHMENT – ANALYSIS OF BIXBY ASSERTIONS

Reference. E-mail (June 26, 2007 1:55 PM) reproduced on Page 53/60 of Attachment 7 to the Coastal Staff Report (W8.5a-2007-a7.pdf).

Ambiguous Statement of Water Surface Elevation. Mr. Bixby states that the "...water level in the Pocket is no more than zero feet in elevation (i.e. MSL)..." A statement of water surface elevation, absent a statement of datum, creates a dangerous ambiguity. By ignoring datum, Mr. Bixby displays a fundamental lack of basic engineering and surveying principles.

Datum confusion is one of the factors that led to the failure of the New Orleans levees. Mr. Bixby has two common datums to choose from: NGVD 29 or NAVD 88. Which is it? Neither we, nor Coastal Staff, nor the impacted public have any way of knowing.

Implied Water Surface Elevation. Assuming that Mr. Bixby meant 0 ft, Mean Sea Level, NGVD 29, the equivalent elevation would be about 2.4 ft MSL NAVD 88. Assuming that Mr. Bixby meant 0 ft MSL NAVD 88, the equivalent elevation would be about –2.4 ft NGVD 29.

Pocket Water Surface Elevation – Moffatt & Nichol. Moffatt & Nichol's original engineering analysis[1] for the Bolsa Chica restoration computed the following water surface elevations:

- Outer Bolsa Bay and Pocket tide-only spring higher high water surface elevations were modeled to be about 4 ft MSL NGVD 29 (6.4 ft MSL NAVD 88).
- Outer Bolsa Bay and Pocket tide plus flood flow water surface elevations were modeled to be higher than 6 ft MSL NGVD 29 (8.4 ft MSL NAVD 88), or more than a 2 ft increase attributable to flood flow.

Pocket Water Surface Elevation – USFWS. USFWS anticipated a maximum pocket water surface elevation of about 3 ft (5.4 ft).

Oilfield Road "Levee" Elevation. The elevation of the oilfield road "levee" barrier when the levee abutment was breached was about 3.3 ft (5.7 ft), leaving less than a half a foot of freeboard. After notification of the freeboard concern, USFWS added a stated 3 ft of fill on the oilfield road. The fill was actually about 2 ft, as surveyed2.

Pocket Water Surface Elevation at First Flooding. At first flooding, a high water line just below the original top of the oilfield road was noted, with an estimated water surface elevation of about 3 ft (5.4 ft).

Pocket Water Ordinary High Water Level after Several Tidal Cycles. The surveyed ordinary high water level after Pocket flooding was about 2.7 ft (5.1 ft).

Piping Failure Elevation. The surveyed piping failure elevation is 1.7 ft (4.1 ft). Piping failure would be anticipated to begin some time before freeboard is compromised.

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[1] "Tidal Hydraulics, Flood Flow Hydraulics, and Water Quality Assessment for the Co-Equal Wetlands Restoration Alternative Plan at Bolsa Chica", Moffatt & Nichol, 1993/1994.

[2] If the M&N Report modeling is applicable to the present Pocket situation, a water surface increase of about 2 ft attributable to flood flow would be anticipated. This increase is about equal to the 2 ft of fill dirt, still resulting in a zero-freeboard situation.

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PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

July 7, 2007

W 8.5a

Ms. Meg Vaughn
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802

Subject: Buffer distance for Northern eucalyptus trees

Dear Ms. Vaughn:

With respect to buffer distance for the eucalyptus trees on the Parkside Estates site, there has been significant discussion in previous staff analyses, documentation submitted by the applicant, and testimony at the public hearing. However, this discussion has centered on single recommended distances that are inherently arbitrary, and there has been very little consideration of the actual context and conditions of the proposed development in this regard. Therefore, this memorandum focuses on the specific habitat conditions and actual distances between the proposed development and the eucalyptus trees. The first section below addresses the conditions between the eucalyptus trees and the residential development, based on a modified applicant's preferred proposed site plan. The second section discusses potential uses in the proposed park, which would be between the northern eucalyptus trees and the proposed residential area.

Residential Development Buffer

Figure 1 is a simple illustrative exhibit of the various open space uses adjacent to the eucalyptus trees. It shows the eucalyptus trees themselves, along with AP and CP areas, which would be either preserved or restored, including the portion of the CP wetlands that were filled by the stable operation. It also shows the water surface area of the NTS, which would have emergent wetland vegetation in the shallow areas. The June 29, 2007, staff report acknowledges that the NTS would provide habitat value, including raptor foraging habitat. The shallow water would increase the variety of habitats, potentially contributing to biodiversity of the site. All other land around the eucalyptus trees, with the possible exception of the park, would be revegetated with native vegetation, which would be specifically planned to provide foraging area for raptors and other species.

This plan provides an effective variable width buffer that will be dominated by native vegetation. There are several ways to measure the functional buffer distance(s); the most intuitive of these are illustrated in Figures 2 through 4. The most conservative of these three methods yields an average buffer distance of 334 feet, with a minimum of 173 feet. These buffer distances are compared with those approved for the nearby Brightwater project in the following table:

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EXHIBIT # III
PAGE 1 OF 7

Buffer Distances and Comparison with Brightwater

	Average Distance from Eucalyptus Trees to Nearest Edge of Residential Development	Minimum Distance	Maximum Distance
Parkside Estates	334 Feet	173 Feet	525 Feet
Approved Brightwater	276 Feet	150 Feet	375 Feet

As noted at the May hearing, raptors in the vicinity have demonstrated tolerance of nearby human activities, as evident by the Cooper's hawk nest near the Cabo del Mar condominium complex. As Commissioner Wan pointed out, one of the most important functions of the buffer is to provide foraging area. The buffer area proposed here provides that function, with a larger average distance than a simple, arbitrary distance of 100 meters (328 feet) in the absence of other project design considerations. Furthermore, there will be extensive wetland and native upland habitat preserved between the two major groupings of eucalyptus trees, which will provide additional foraging habitat. In fact, a simple, uniform buffer of 100 meters, considered by itself, would produce a total of 16.4 acres of open space foraging area within the Parkside property, but the open space proposed by the applicant amounts to 17.4 acres, or one acre more.

Park Uses

If the applicant's proposed buffer zone described above is accepted, the remaining question centers around the allowable uses in the park that would be situated between the residential development and the native habitat that will surround the northern eucalyptus trees, i.e., the area that has been proposed as park.

One choice would be to require native vegetation with a few allowable passive uses in the portion of the park nearest residential development, as proposed by staff in the April staff report.

Another choice would be to allow a dual use turf park in the outer portion of a large buffer, where informal public recreation could occur and raptors could forage during times of lower public usage. While this foraging area would not be of the same quality as native vegetation, it would still be useful, just as turf areas on golf courses and large parks such as Huntington Central Park are. And it should be noted that the minimum distance from the trees to the edge of the turf park as shown here is 150 feet, which is the same as the Brightwater minimum buffer distance, although in that case the minimum distance was to residential development, not an open park.

TTT 2

Summary

In summary, the proposed average buffer distance to residential development is more than sufficient and exceeds that in the approved Brightwater plan. A turf park could certainly provide a valuable component of this buffer, or a passive park with native vegetation could provide even more habitat function, but at the expense of community recreation opportunities.

Sincerely,

LSA ASSOCIATES, INC.

Art Homrighausen

Art Homrighausen
Principal

cc: Members and Alternates, California Coastal Commission
John Dixon, Ph.D.
Mark Johnsson, Ph.D.
Karl Schwing
Sherilyn Sarb

T T T 3

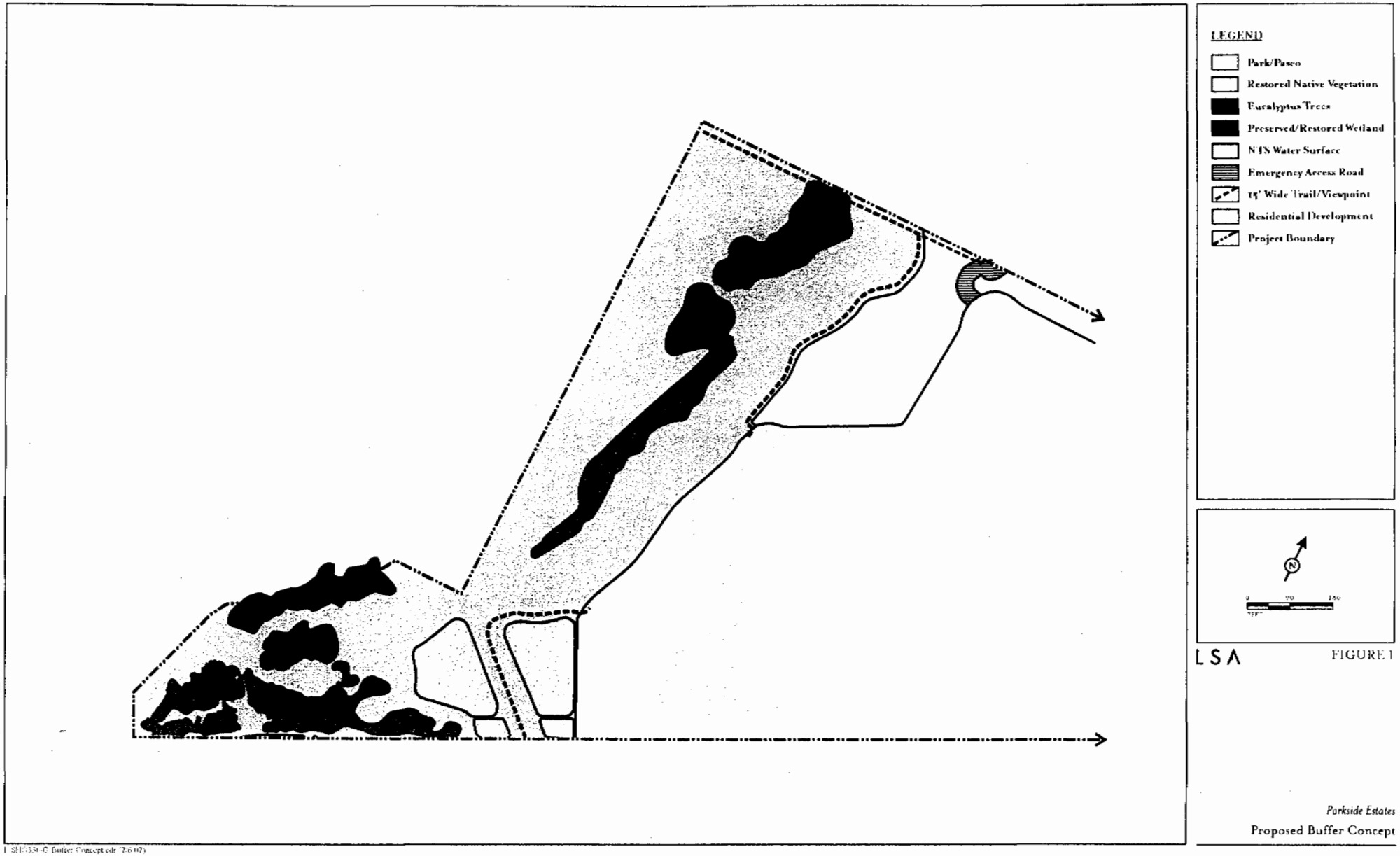
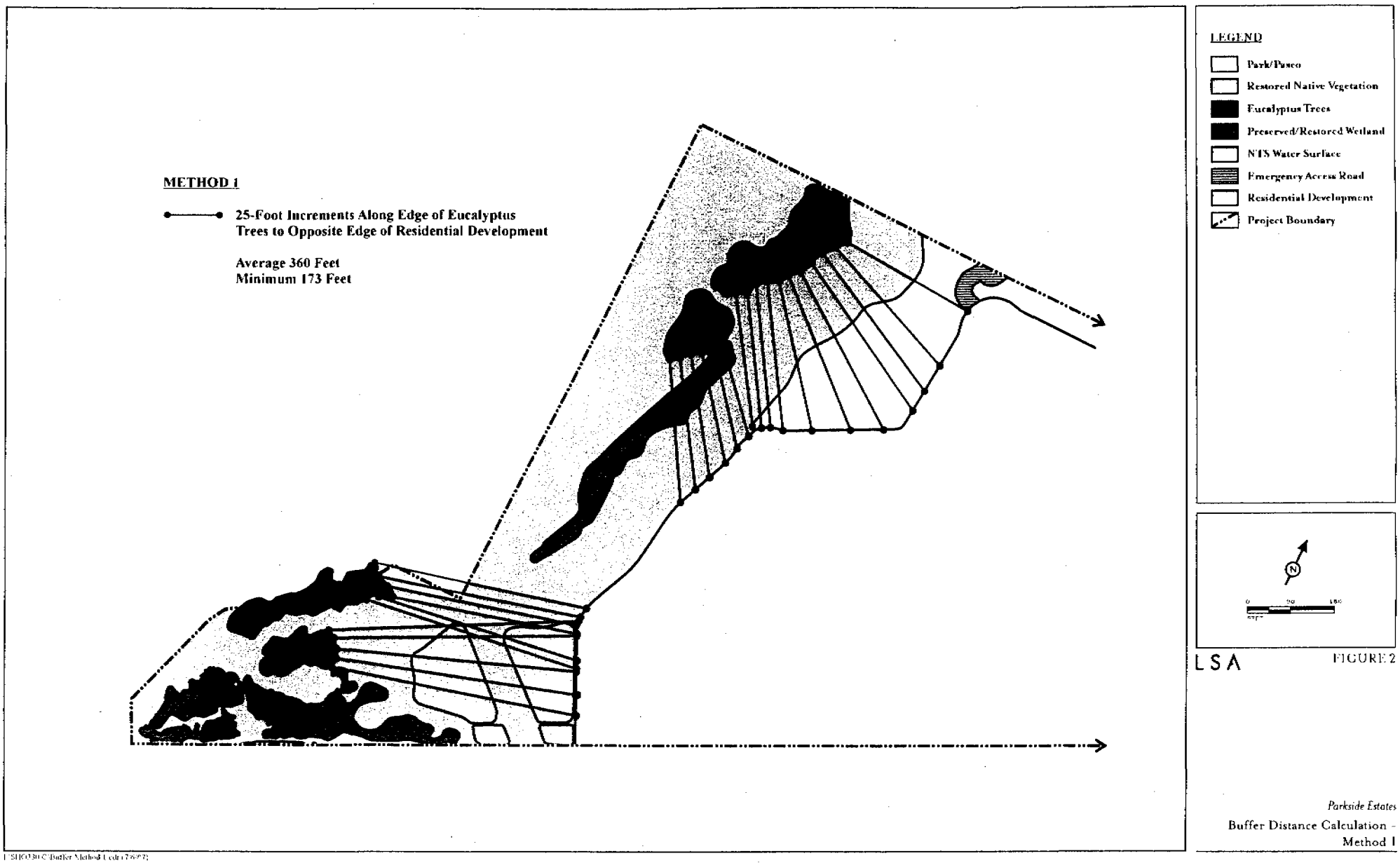


FIGURE 1

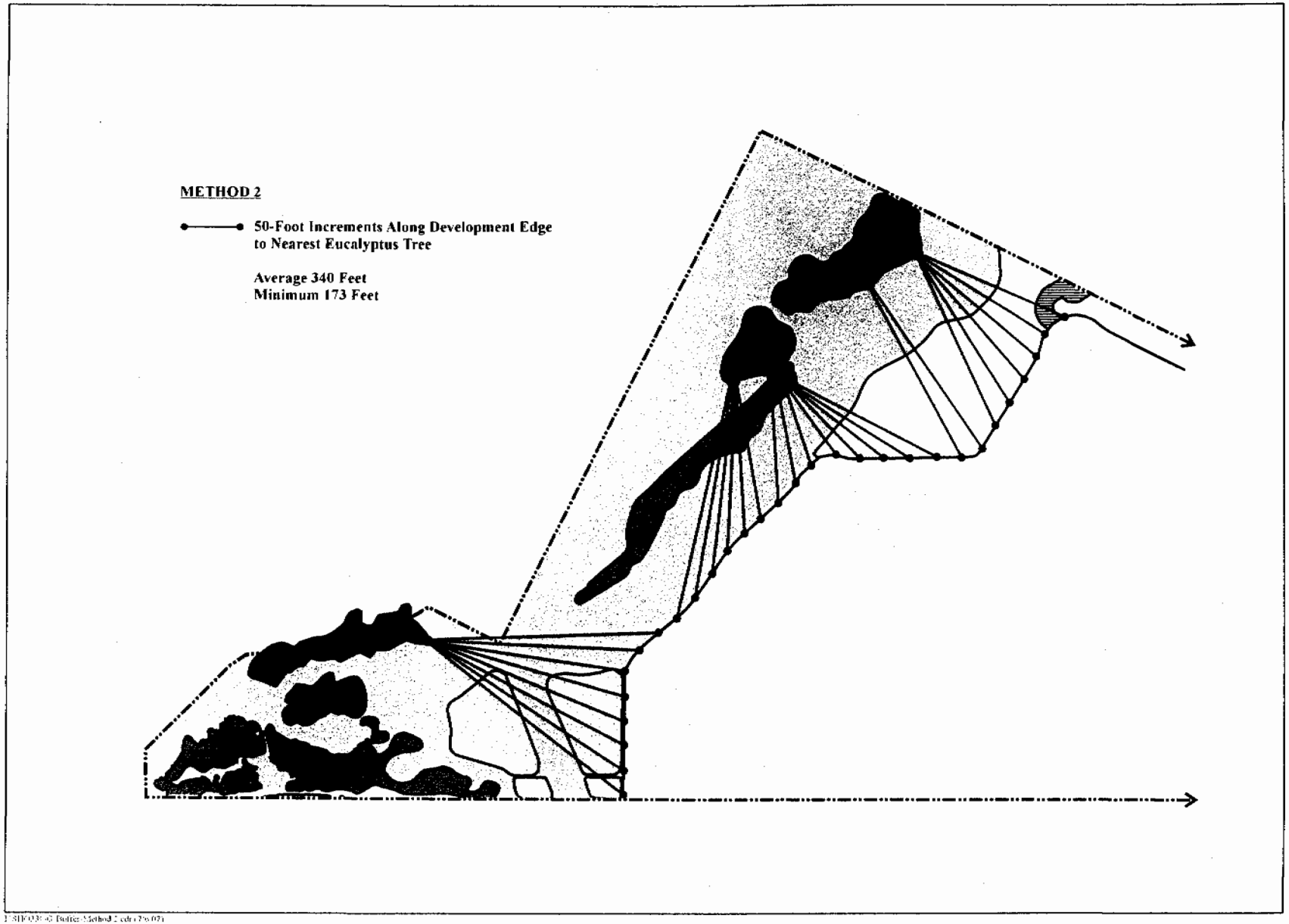
Parkside Estates

Proposed Buffer Concept

I:\SHC331-C Buffer Concept.cdr (7/6/07)


METHOD 1
25-Foot Increments Along Edge of Eucalyptus Trees to Opposite Edge of Residential Development
Average 360 Feet
Minimum 173 Feet
LEGEND
Park/Paseo
Restored Native Vegetation
Eucalyptus Trees
Preserved/Restored Wetland
NTS Water Surface
Emergency Access Road
Residential Development
Project Boundary
N
0
90
180
LSA
FIGURE 2
Parkside Estates
Buffer Distance Calculation - Method 1

TTT5



LEGEND

- Park/Pasco
- Restored Native Vegetation
- Eucalyptus Trees
- Preserved/Restored Wetland
- NTS Water Surface
- Emergency Access Road
- Residential Development
- Project Boundary

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FIGURE 3

Parkside Estates

Buffer Distance Calculation - Method 2

TTT 9

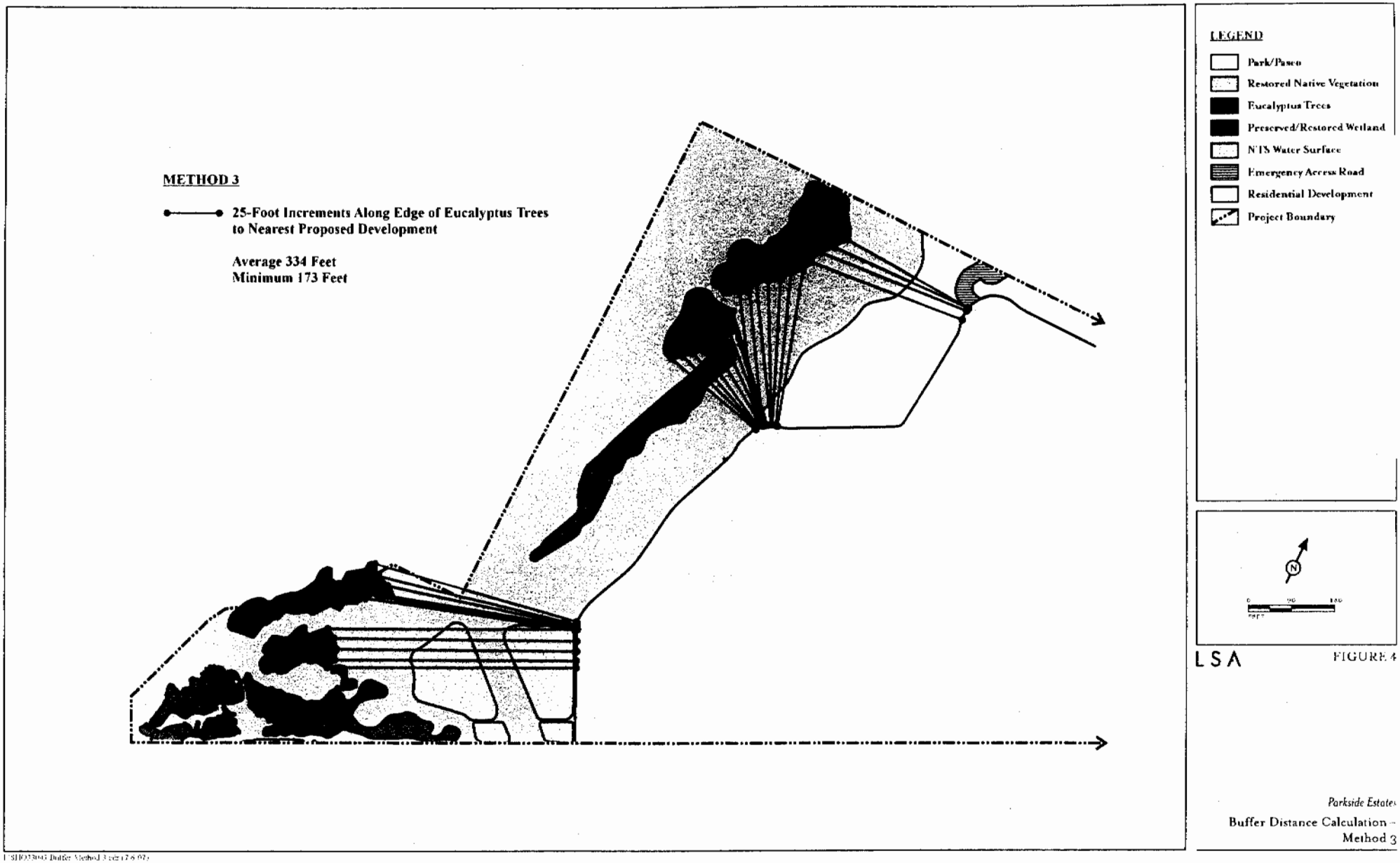

FIGURE 4

Parkside Estates

Buffer Distance Calculation – Method 3

T T T 7