CITY OF HUNTINGTON BEACH

2000 Main Street P.O.Box 190 California 92648

Robert F. Beardsley, P.E.
Director

Department of Public Works
(714) 536-5431

June 26, 2007

Ms. Sherilyn Sarb, Deputy Director
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802-4416

Subject: LCP Amendment No. HNB-MAJ-1-6/Parkside Estates/Shea Homes May 10, 2007 Meeting, Agenda Item 14.a

Dear Ms. Sarb:

On May 10, 2007, the above noted LCP Amendment was presented to the Commission by the Coastal Commission staff. The City of Huntington Beach (City) would like to respond to the representations of several key elements made by commission staff and members of the public who spoke in opposition to the project. References to their statements from the Certified Transcript are noted with the page number in brackets (_) to direct you to where the citation can be found. The key elements or issues that the City is concerned with include the suitability of the site for residential development, required flood protection improvements, flood water displacement, and alleged acts of previous illegal grading.

Suitability of the Site

During Dr. Mark Johnsson's presentation, he stated (Pages 13, 18 and 20) that this project site was not suitable for residential development based upon seismic, flooding, stormwater displacement and grading issues without mitigation. The mitigation measures that the City required for the Parkside Estates project are typical requirements for any development in the State of California, especially along the coastal and basin areas. All developments have to be built to the seismic standards of the California Building Code (CBC), and nearly all building pads have to be elevated a minimum of 1-foot above the highest storm water flow in the street in order to meet Federal Emergency Management Agency (FEMA) and CBC requirements.

Flood Protection Improvements

The City, Orange County Flood Control District, The United States Army Corps of Engineers and FEMA have reviewed, confirmed and adopted the storm water modeling and flooding studies, technical computer models and reports that were developed to serve as backup for a major FEMA Conditional Letter of Map Revision (CLOMR) that was issued for this project site, which incorporated all of the mitigation requirements as "conditions" for the map revision and were imposed upon this development as conditions of approval to develop the property. Commission staff stated that these mitigation requirements were "exaggerated" (page 164).

The completion of the mitigation requirements for the Parkside project would allow FEMA to revise its current flood insurance maps, and thereby remove approximately 7,000 homes and businesses from the flood zone. Also, the homes lying in approximately 2,000 acres of the City of

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Huntington Beach would become potentially eligible for lower flood insurance rates due to the reduction in flood risk and the more detailed remapping of the watershed. These are not "exaggerations" as commission staff suggested. In fact, this is the kind of positive development improvements that the community expects the staff of the Public Works Department to pursue and achieve.

In a letter dated October 24, 2006 and addressed to the City of Huntington Beach, the County of Orange and Mr. Peter Douglas of the California Coastal Commission, Bolsa Chica Project Manager Jack Fancher acknowledges on page 2, paragraph 2, that "The restoration project did no modeling of storm water flow or levee failure on the Pocket side of the flood channel." He then remarks that the Lowlands Project intended to rely upon the Parkside development plans, which "calls for raising the grade of the proposed housing development out of the flood plain and, it's been said, to place a berm across the gap between the mesa and the flood channel. Presumably, this proposed berm would prevent storm water flooding into Shea's property from a flood channel levee failure next to the Pocket." Commission staff also recognized this flooding in their presentation (pages 18 through 20).

Recognizing the existing conditions and the added concerns of the restoration project the Huntington Beach Public Works Department has specifically recommended mitigation requirements to be constructed with this development by tying the re-built levee to high ground at the Bolsa Chica mesa via the "Vegetated Flood Protection Feature" (VFPF).

Flood Water Displacement

Dr. Johnsson's written report accurately states that the project more than mitigates any potential water storage displacement it might cause and notes that flood control improvements are needed in any case. However, staff's verbal presentation in the Commission hearing did not present this point very clearly (pages 18 through 20).

Dr. Johnsson made a claim that "the volume of fill added to the project site represents the volume of flood water that will be displaced into neighboring areas." He also claimed that the site "does serve as a storage area for some flood waters in a 100-year storm event, thus if no mitigation were undertaken, flooding of these neighborhoods would be exacerbated by the addition of fill at the Parkside Estates site." (pages 18 and 20).

These statements conflict with two reports that were prepared at the request of Coastal Commission staff to analyze the topographic impacts and displacement affects of the project fill against the hydrologic model that was prepared for FEMA review which underlies the CLOMR finding for this project. The extensive analysis completed in two reports, dated May 18, 2005 and March 24, 2006 concluded "Parkside Estates in the proposed developed condition would not displace floodwater." The analysis also demonstrated that, because the adjacent areas to the north are lower than the Parkside property, they would be flooded for at least 8 hours before any water begins to move into the Parkside property. Additionally, with the proposed improvements that must be built if the Parkside property develops, the actual maximum flooding elevation for the areas to the north would be nearly a foot lower than without the project.

The City was unaware of any comments that the Commission staff may have regarding the two reports that were prepared for staff until the hearing on May 10, 2007.

Illegal Grading

Significant time was spent by various public speakers attempting to demonstrate that an excessive amount of un-permitted grading occurred on the project site over a number of years. The Commission has already received a memorandum dated May 2, 2007 from Duane Wentworth, City Grading Inspector, regarding the red tag(s) issued on this site in 1989.

After reviewing all of the slides presented by the public speakers, the City has concluded that the claims regarding excessive illegal grading are speculative, cannot be supported by viewing aerial photographs that cannot be reasonably matched in time or accuracy, and that possess major margins of error due to the limitations of the surveys that produced them. Additionally, the slide claiming to show the area of the 1989 red tag issued by the City is erroneous in size. See the attached exhibit that shows the actual area of the red tag in comparison with the claims made during the presentation.

Due to the limitations and problems with aerial photographs that may occur from differences in elevation, atmospheric conditions, the angle of the shot, shadows from cloud cover, etc., no definitive conclusions can be made about the actual conditions seen on the ground. And for certain, no amount of guessing can accurately describe the amount of grading that has occurred without a physical topographic survey performed with each aerial photo. Quite possibly, what appears to be grading may actually be surface disturbance from farming activities, horses or vehicles. Or the image may be dust control activities as was required by the CDP.

The USGS topographic maps used for overlays with the aerial photos also have accuracy limitations. At the bottom of each USGS map is a statement that says "This map complies with national map accuracy standards." In the publication U.S. National Map Accuracy Standards, Appendix B, page 193, it states "Vertical accuracy, as applied to contour maps on all publication scales, shall be such that not more than 10 percent of all the elevations tested shall be in error more than one-half the contour interval." Therefore, maps with 5-foot contour intervals, such as the one used for the slides may have a maximum error that can be as much as plus or minus 2.5-feet of the contour shown. This is a major problem for the claims made in the project opponents' presentation, since the farm field is quite flat and contour lines are spread out by distance, thus totally inconclusive for grading changes.

Additionally, in the project Environmental Report, one section was devoted to explaining the differences in the survey datums used in the preparation of topographic surveys. Depending on whether the datum is NGVD 29 or NAVD 88, a difference in elevation of 2.3 feet may occur. USGS maps use NGVD 29 datum. For current projects the County of Orange, City of Huntington Beach and Caltrans all use NAVD 88 datum. FEMA may use either NGVD 29 or NAVD88 datums depending upon the circumstances influencing their coordination with other adjacent topographies. No distinction was made between the source topographies used in any of the presentations as to survey base datums.

Additionally, the magnitude of the alleged fill suggested by the slide presentations would require well over 1,200 truck loads of material. No one has ever reported activity of this magnitude and this amount of truck activity would not have gone unnoticed.

From the field inspections performed by City personnel over the past 25 years, no major or significant earthwork activity has ever been reported other than normal farming, and City records do not support the claims made in the slide presentation.

Summary

In all, the City of Huntington Beach Public Works Department would like to request that the information that was provided to the Commission be re-evaluated and that the facts are available to them in both our Environmental Impact Report and in subsequent reports and letters which have been made available to them on the key issues discussed above.

The Public Works Department requests that if errors are to be made in recommending modifications to the conditions and requirements of this project, they be made in favor of public health and safety along with the preservation of the valuable natural assets resources that make up our coastal area.

Should the Commission desire any further information or wish to have other questions answered in relation to these or other issues concerning the Public Works Department of the City of Huntington Beach, our staff representatives will be available at the next public hearing to address your concerns.

It is my hope that through additional dialogue, some level of agreement may be reached on those issues that remain.

Respectfully,

Travis K. Hopkins, PE
City Engineer
City of Huntington Beach

TH:cs

Cc: Members, California Coastal Commission
Alternates, California Coastal Commission
Peter Douglas, Executive Director, California Coastal Commission Staff
John Dixon, Ph.D., California Coastal Commission Staff
Mark Johnsson, Ph.D., California Coastal Commission Staff
Karl Schwing, California Coastal Commission Staff
Meg Vaughn, California Coastal Commission Staff
Ron Metzler, Shea Homes
Mary Beth Broeren, Principal Planner

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SheaHomes

Caring since 1881

Dear Neighbor,

We are writing to keep you informed about Parkside Estates, our proposed community near the corner of Warner and Graham that will provide much-needed flood protection for local neighborhoods. Unfortunately, it has come to our attention that misleading and inaccurate information about Parkside has caused confusion about our plan. **I invite you to read the enclosed "Myths & Facts" document, which clarifies the environmental and flood safety benefits of Parkside.**

With approval of Parkside and the completion of nearly $15 million in regional flood protection improvements Shea Homes will fund, nearly 7,000 Huntington Beach homes and businesses would be removed from the flood plain, and no longer have to pay mandatory flood insurance. Homes on another 2,000 acres would be at lower flood risk, and be potentially eligible for lower flood insurance premiums.

Our opponents minimize very real flood risks, and want to bring back wetlands that disappeared between 50 and 100 years ago. They say our plan destroys wetlands, but we are committed to protecting all the natural resources the California Coastal Commission directs us to protect.

We really need your support!

Parkside Estates' benefits will only become a reality if the Coastal Commission approves our plan at its hearing on Tuesday, July 10 in San Luis Obispo.

You can help by taking a few seconds to visit our Web site and **sending a letter to the Coastal Commission**. It just takes a few seconds – just visit **www.SheaParkside.com** and click on the "Support Us" button. If you would like to speak in favor of our plan in San Luis Obispo, **join us at the hearing.** Just call our outreach coordinator, Laer Pearce, for more information. He can be reached at (949) 599-1212 ext. 202.

Sincerely,

Ron Metzler
Shea Homes

PS: To view the photos in the "Myths & Facts" piece in a larger format, just visit our Web site, **www.SheaParkside.com.**

603 S. Valencia Avenue
Brea, California 92823

925.245.3600 T
925.245.3601 F

www.SheaHomes.com

Misleading and inaccurate information about Shea Homes' Parkside Estates plan may have you confused. Read the facts for yourself and learn why Parkside Estates is a community that Huntington Beach needs.

Opponents' Allegations: *Parkside Estates will destroy the site's wetlands.*

THE FACTS

Currently, everyone agrees there is a 0.98-acre degraded wetland on the Parkside Estates property (the "CP" wetland, left), which we will restore and protect. We also have agreed to protect and restore a second area, the "AP," making it a viable and productive wetland.

We have presented evidence that no other areas meeting the Coastal Commission wetland criteria are present on the site, and while the Commission has not reached a decision on this matter, we have agreed to preserve and buffer any area the Coastal Commission ultimately recognizes as a wetland.

Shea Homes will preserve and enhance this saltwater wetland.

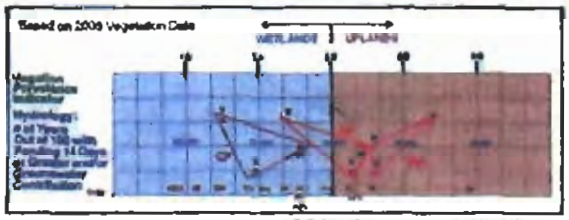
Opponents' Allegations: *The Parkside Estates plan isn't based on sound science, but rather on the few "experts" hired by Shea Homes.*

THE FACTS

Parkside Estates engaged three highly respected biological firms to provide their combined expertise in understanding highly technical wetland issues. These experts worked closely with Coastal Commission staff to develop proper protocols, then conducted studies over a three year period. These experts are bound by professional ethics and licenses to accurately report what they find – while our opponents are free to speculate.

All three firms have independently reached the same conclusions relative to wetlands and uplands on the site and their reports have been provided as part of the public record.

In addition to these findings, we also have relied on input, expertise and information from various federal, state and local sources (including our opponents) to be sure that our science is objective and complete.



Sophisticated analyses like this of soil, plants and hydrology are typical of the work done by Parkside biologists.

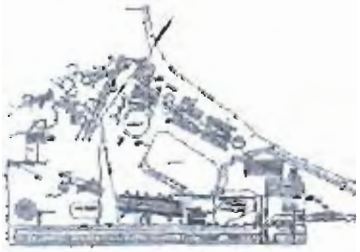
Opponents' Allegations: *Shea Homes is responsible for illegal filling to cover wetlands on the site.*

THE FACTS

Recent allegations that we have illegally filled in wetlands on the Parkside Estates site are untrue.

Most of the allegations involve events that occurred well before Shea Homes owned the property, and most were done with the proper environmental permits. Indeed, the portions of the site to be included in the Parkside development did not and do not have wetlands on them, according to wetland studies conducted by multiple agencies and individuals – so how could wetlands have been filled?

There is one small area of wetlands that may indeed have been illegally filled about 15 years before Shea purchased the land. We have acknowledged that, and have stated that we will alter the Parkside Estates plan so this area can be restored to wetland habitat.



One of several plans prepared by Smoky's Stables for review by the City, County or Coastal Commission.

Charges that we filled wetlands after purchasing the site are also false. The Coastal Commission granted Shea Homes permission to farm the site in 1998, based on a California Department of Fish & Game finding that the farm fields do not contain wetlands. With this permission, our farmer prepared fields, plowed, planted and harvested. Opponents say this is "filling a wetland" – but remember, the California Department of Fish & Game said there are no wetlands on the field!

Opponents' Allegations: ***Parkside Estates would become a wetland if farming stopped and homes are not built.***

THE FACTS

With or without homes, the farmed area does not regularly receive enough moisture to support wetlands. The historic wetlands were fed by tidal influence, which ended in 1899 with the construction of tide gates by the Bolsa Chica Gun Club. Upstream flow ended in the 1960s with construction of new neighborhoods.

Without its historic sources of water, the land simply does not receive enough water to be a wetland. If left unfarmed and undeveloped, the site would become a field of weeds, not a wetland – as it has in periods when it was temporarily not farmed.

Opponents' Allegations: ***If homes are built, the eucalyptus trees and the birds of prey that live there won't be protected.***

THE FACTS

The Parkside plan protects birds of prey and eucalyptus groves on the site. We will protect the southern eucalyptus trees with a 100-meter buffer, even though the Hearthside Brightwater project next door has a variable buffer that is narrower in some areas and wider in others.

We are not contesting the designation of the northern eucalyptus trees (pictured) as an Environmentally Sensitive Habitat Area (ESHA); we only want the Commission to consider allowing a variable buffer like Hearthside's - one that recognizes the existing conditions that surround this area.

Cooper's Hawks, the only raptors that nest in the northern eucalyptus trees, are highly acclimated to the urban environment.

Opponents' Allegations: ***Parkside Estates will increase the urban runoff that pollutes Huntington Harbour.***

THE FACTS

To the contrary, our plan will improve area water quality. Upon approval, Shea proposes to build a freshwater wetland – a Natural Treatment System (NTS) – that will clean all of Parkside Estates' urban runoff, in addition to all the runoff from 22 acres around the Cabo del Mar condominiums, which currently flows untreated to Outer Bolsa Bay, Huntington Harbour and the ocean.

The NTS will also clean up to 30 percent of the dry-weather runoff from the 3,000-acre Slater watershed, providing a significant improvement of water quality in the area and helping to protect Huntington Harbour. It also will attract and nourish birds and other wildlife.

The NTS will be a beautiful freshwater wetland like the Ballona NTS wetland, shown on the left, or the San Diego Creek NTS created by the Irvine Ranch Water District, shown on the right. Both of these NTS projects have been praised by many of the Parkside opponents.

Opponents' Allegations: ***The flood insurance and flood protection promised by Shea Homes will not happen, or are over-stated.***

THE FACTS

This is not true! The Coastal Commission's staff geologist said in his staff report that flood protection from Parkside Estates is real and needed. **In fact, by issuing a Conditional Letter of Map Revision (CLOMR), FEMA is obligated to issue a new flood map once the improvements are certified.**

The Wintersburg-East Garden Grove flood channel levee along Parkside.

The fact of the matter is that the repair of Huntington Beach's dangerously deteriorated levees (pictured on the left and right) cannot begin until Parkside Estates is approved by the Coastal Commission, and our $15 million in developer-funded flood control improvements are completed.

Of course, the County could repair the levees, but questions regarding the County's funding sources and timing have yet to be answered – and Parkside is ready to start the improvements as soon as the Coastal Commission approves the plan.

The area needs flood protection because water in the flood control channel often gets this high!

Opponents' Allegations: ***Shea Homes is just scaring people with talk about imminent tidal flooding.***

THE FACTS

The new 40-acre body of salt water (right red circle) is up to seven feet higher in elevation than homes near Parkside (left red outline).

Both the City of Huntington Beach and the County of Orange have written letters to state and federal officials raising concerns about **the imminent risk of tidal flooding** resulting from the Bolsa Chica restoration project. **A 10-year storm combined with a high tide is sufficient to cause the tidal flooding of 800 homes in the Warner-Graham area.**

Both the U.S. Fish & Wildlife Service and the National Marine Fisheries Service (managers of the Bolsa Chica restoration) have admitted that the restoration project did not turn out as they planned. As a result, there is now a massive, 40-acre salt water body in the Pocket – at a higher elevation than homes in the area.

The Coastal Commission staff has agreed that a tidal flood protection feature is necessary. Upon approval by the Coastal Commission, Parkside will build a certified tidal flood barrier that will protect homes now at risk of tidal flooding.

An old oil field road is all that's protecting neighborhoods in the Graham-Warner area.

Opponents' Allegations: ***Localized channel repairs will NOT guarantee removal from mandated flood insurance zones and will increase the potential for levee failure downstream on the south channel berm.***

THE FACTS

By issuing a Conditional Letter of Map Revision, FEMA is obligated to issue a new flood map once the Parkside improvements are installed. The charge that Parkside Estate's levee work could jeopardize the south levee is ludicrous. The new levee will increase water-holding capacity in that portion of the flood control channel. The two new pumps in the Slater pump station will improve flood protection on both sides of the flood control channel.

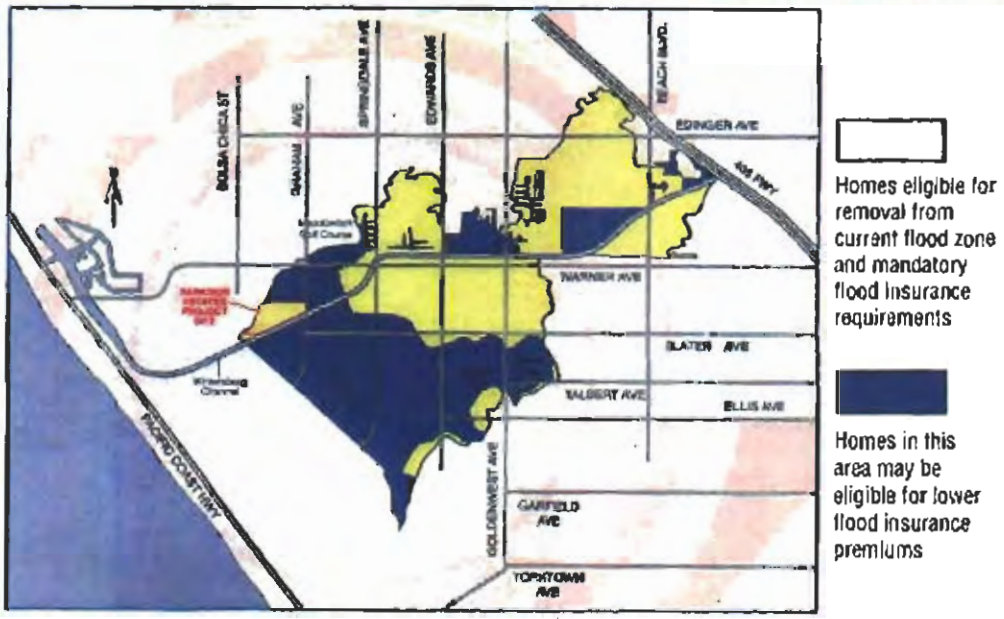
When FEMA issues its letter of map revision, homes in the yellow area of the map below will be removed from the flood plain and will become eligible for the elimination of mandatory flood insurance premiums. Homes in the blue area will be at lower flood risk and will be eligible for potentially lower flood insurance premiums.

Huntington Beach flooding in 1998. Shea Homes will pay for new pumps that will help drain neighborhoods like this much more quickly.

Opponents' Allegations: ***Proposed flood control improvements will only protect people on the north side of the Wintersburg Channel.***

THE FACTS

Homes and businesses both north and south of the Wintersburg Channel will benefit from Parkside Estates' $15 million in flood protection infrastructure improvements. Roughly half of the 7,000 homes and businesses that will be removed from the flood zone and mandatory insurance requirements are on the south side of the channel, as are most of the homes that will be eligible for lower flood insurance premiums.



Opponents' Allegations: *Flooding in the area will become worse because the fill placed on the Parkside Estates site will cause floodwater to flow into surrounding neighborhoods.*

THE FACTS

Not true at all. The Parkside Estates site and surrounding neighborhoods in the historic floodplain are functionally isolated from the Wintersburg flood control channel. In the event of failure of the existing levees, flooding of the surrounding neighborhoods would occur even without development of Parkside Estates, and the Coastal Commission's geologist said as much.

Because the surrounding neighborhoods near the Graham Street/Kenilworth Avenue intersections are actually at lower elevations than the Parkside site, water from a failed upstream levee would flood neighboring homes hours before it would rise enough to flood the Parkside site. That's why we are proposing to rebuild the levees, install larger storm drains and increase the efficiency of the Slater pump station – giving our neighbors greater flood protection, lower depth of flooding and faster drainage of their neighborhoods.

Opponents' Allegations: *The opponents' plan to create wetlands on the entire site would improve flood safety in Huntington Beach.*

THE FACTS

False! The opponents' plan (pictured) would breach the County flood control levee and make no provision for a certified tidal flood protection levee. They have no plans to build a large set-back levee next to the homes along Kenilworth and Graham. (This levee would cost millions of dollars and be nearly as high as the adjacent homes' second story windows.) They also have no plans to add pumping capacity to the Slater pump station or build a barrier against tidal flooding, as Shea Homes will do.

And perhaps most important, without the $15 million in storm drain, pump and levee improvements we will install, FEMA will not re-draw the Huntington Beach flood maps.

Opponents' Allegations: *Shea Homes should just sell the land so it can be open space.*

THE FACTS

No conservation group or agency has ever presented an offer to purchase the property despite the fact that Shea Homes has provided conservation groups with financial information. Frankly, it is unlikely that public funds would be allocated for such a purchase because the area has already received millions of dollars for the Bolsa Chica land acquisition and wetlands restoration. State officials are obligated to ensure that public land acquisition funds are distributed fairly throughout the state.

Further, preservation of the site as open space will indefinitely delay the repair of levees, the installation of new storm drains and pumps, and the construction of tidal flooding protection. FEMA will not redraw the flood maps until this work is completed.

It is unlikely the state would spend more on open space conservation in the area, since the restoration of Bolsa Chica has already received state funding.

PARKSIDE ESTATES

For more information, or to view larger pictures, please visit:

www.SheaParkside.com

Plan descriptions and depictions in this brochure are subject to change with approvals received from the California Coastal Commission and the City of Huntington Beach.

GLENN LUKOS ASSOCIATES

LSA

LSA ASSOCIATES, INC.

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ENVIRONMENTAL CONSULTANTS

MEMORANDUM

To: Sherilyn Sarb, Meg Vaughn
From: Art Homrighausen, Tony Bomkamp, Dr. Mike Josselyn
RE: Off-site drainage into Parkside Estates "EPA area"
Huntington Beach LCPA 1-06
Date: June 22, 2007

A member of our team received an email request from Meg Vaughn on June 18, as follows:

> I received the "Memorandum-Historic "EPA area" on Parkside Estates, Huntington Beach" dated June 3, 2007, prepared by LSA. That memorandum refers to hydrological changes at the Parkside site that occurred as a result of construction of the Cabo del Mar condos (adjacent to, but outside the coastal zone). Please provide information/ documentation regarding those hydrological changes. For example, do City approvals include an approved drainage plan? I'm looking for information that would clarify and document where the drainage from the Cabo del Mar site that used to drain onto the Parkside property is now directed. Approved graphics/plans and written descriptions will be useful.

To respond to this request, we have reviewed the historical record on Cabo del Mar and other nearby developments and provide this memo to document hydrological changes caused by the construction of the Cabo del Mar condominiums in the early 1980s and Harbor Bluffs about a decade earlier.

Prior to 1986, an area of approximately 22 acres where the Cabo del Mar and Harbor Bluffs developments now stand drained into the northwest portion of the Parkside Estates farm field area. This long-term drainage pattern probably contributed to soil in that area becoming relatively richer in organics, and relatively darker than other soil on the site. The City's Master Plan of Drainage planned to redirect this drainage via a storm drain, and this was accomplished in 1986.

The plans for the storm drain are attached, including both the April 30, 1982 plans and the March 20, 1986 "As Built" plans.

From this, we have assembled the following timeline, which incorporates both dates of plans and construction, and the dates of various studies made in this portion of the Parkside Estates site:

- In 1971, before there was development in the 22-acre area in and around Cabo del Mar, Dillingham found no wetland in the northwest portion of the 44-acre field (the area that subsequently has become referred to as the "EPA area").
- A temporary bubbler was installed no later than December 1978 immediately outside the Coastal Zone, draining Harbor Bluffs. The bubbler was apparently designed as a temporary measure, to be replaced by the long-planned 60-inch City storm drain in the City's Master Plan of Drainage. Concentrated runoff from the bubbler flowed onto the Parkside property.
- On or about May 28, 1981,[1] runoff from the Cabo del Mar area was directed to the bubbler. From this point until it was disconnected in 1986, the bubbler was draining its maximum area (22 acres, approximately 77 cfs at Q_{100}).
- In its December 1981 *Determination of the Status of the Bolsa Chica Wetlands* (revised June 8, 1982), the California Department of Fish & Game determined that there were no functioning wetlands present anywhere on the Parkside farm field, even though the bubbler had been in place for a number of years.
- Bilhorn made his June 1987 wetland determination based on two aerial photos taken in March 1982, in which he wrongly determined that dark soils were wet soils (see our memo of June 12, 2007, *Historic "EPA area" on Parkside Estates, Huntington Beach, Huntington Beach LCPA 1-06*). At this time, the bubbler had been in place for approximately six years. As pointed out in our EPA area memo, Dr. Dixon determined there were no prolonged ponding periods during March 1982.
- No later than March 20, 1986, the date of the "As Built" plans, the bubbler was disconnected and the flow was directed to the City's new storm drain.

If you have any further questions, any of us are available to respond.

cc: Ms. Teresa Henry
Mr. Karl Schwing
John Dixon, Ph.D.
Mark Johnsson, Ph.D.
Mr. Ron Metzler

[1] In our earlier memo on the "EPA area" we stated this occurred in 1982 or 1983. Further research revealed the earlier 1981 date.

SheaHomes
Caring since 1881
Our Vision ... to be the most respected builder in the country

June 20, 2007

Mr. Patrick Kruer, Chairman
Mr. Peter Douglas, Executive Director
California Coastal Commission
45 Fremont St., Suite 2000
San Francisco, CA 94105

Dear Chairman Kruer and Mr. Douglas:

As you recall, at the May 10 hearing on the Huntington Beach LCPA (1-06), the primary opponent presentation focused on alleged unpermitted fill in various areas of the project site, using a series of aerial photographs and photographs of activities on the site to present a case that wetlands had been filled and their locations moved. Further, they said Shea Homes had used farming as a cover to deliberately fill wetlands.

These allegations had been made prior to the hearing and had been addressed in the staff report addendum of May 8, 2007 (pages 1-11), but Executive Director Peter Douglas stated at the conclusion of public comment:

> "It really demonstrates the importance of public participation and public testimony and the public hearing process, because we saw evidence today, information today, that make me concerned about the nature of our recommendation.
>
> "This Commission has historically not allowed illegal fill of wetlands to then benefit subsequent developers by saying it is not a wetland, when there is evidence that it may have been previously illegally filled. We certainly saw that here today, and I think that is a change, in terms of our understanding, and our perception of this project." (Hearing transcript, p. 165)

The purpose of this letter is to show that Mr. Douglas' perception, which apparently was shared by many Commissioners, is not correct. The opponents' presentation was rife with errors, misinterpretations and concealed information. This letter will show you that:

- Most of the activities our opponents described as illegal were, in fact, permitted. This includes both development related to Smoky's Stables prior to Shea's ownership of the subject site, and farming subsequently conducted by Shea Homes.
- A 13,600-square-foot area of pickleweed in the CP was covered by fill in the early 1980s, some 14 years before Shea Homes purchased the site. We had informed the

Commission before the May 10 hearing that we would amend our plan to restore and preserve this area. (There is some photographic evidence showing disturbance in this area of the CP prior to the Coastal Act. Nevertheless, it appears that some of the pickleweed had re-established before the subsequent fills.)

- Six studies of the site conducted contemporaneously to Smoky's Stables' development on the site show there was no wetland in the area north of Slater Ave., so the opponents' charge that an earlier "WP" wetland had been covered and moved to a new location is false.
- Shea Homes' farming operations in the 1990s were a continuation of the legal and ongoing use predating the Coastal Act, and had been reviewed by Commission staff and allowed to continue.
- The chronology of the 2006 Notice of Violation was misrepresented by our opponents. Also, Coastal staff agreed that no action can be taken regarding that violation until the Commission determines whether the WP is a wetland, as reflected in the staff report.

To rebut the opponents' claims, we will refer to areas that are denoted below.

Biological Assessments of the Site Prior to Smoky's Stables

Six separate biological studies that were contemporaneous with Smoky's Stables development and operations on the site include discussions of vegetation or wetland delineations. Each of these studies showed that the wetland indicator plant, pickleweed, was found only south of Slater Avenue, and that no wetlands existed in the area where most of the Smoky's Stables construction occurred. The studies are:

- Dillingham (1971) mapped vegetation and delineated wetlands. The map shows wetland vegetation in the CP area (south of Slater), but no wetland vegetation or wetlands north of Slater Avenue.
- A diagram in the Environmental Impact Report for a prior proposed development on the Parkside property (1973) shows "marsh" only in the former County parcel.
- Vegetation maps prepared by Shapiro (1981) showed two polygons of wetland vegetation in the CP area, but no wetland vegetation elsewhere on the site.
- The draft agreement between the Department of Fish & Game and Smoky's Stables (February 1, 1982) included a map of the proposed Smoky's Stables development that shows marsh only south of Slater Ave. and indicates agriculture in all other areas proposed for Smoky's Stables.
- A wetland determination of the site by the California Department of Fish & Game (June, 1982) states "Extensive ground truthing by Department personnel has resulted in no substantive disagreement with the Shapiro and Associates map of wetland resources" – in other words, the only area on the site with wetland indicators was the CP, south of Slater.
- The Bolsa Chica Local Coastal Program vegetation map prepared by the Local Coastal Program of the County of Orange (1982) showed pickleweed in the CP, confirming Shapiro.

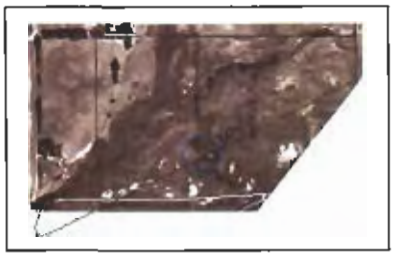
In summary, all of these studies confirmed pickleweed or wetland in the CP area south of Slater Ave., and none of them show any wetland or wetland vegetation in any part of the parcel north of Slater Ave., where our opponents focused their presentation on allegedly unpermitted fill. The alleged fill north of Slater Ave. was *not* over wetlands.

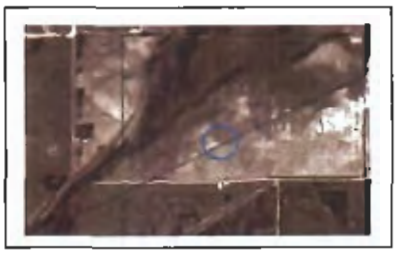
BCLT Misrepresentation of Historic Condition of Site (Prior to Coastal Act)

In its presentation to the Coastal Commission, BCLT represented the site as largely unaffected by development prior to enactment of the Coastal Act. This is not the case, as the following chronology shows:

1899 Bolsa Chica Duck Club builds tide gate at Bolsa Chica, ending all tidal influence on the Parkside site.

1938 Santa Ana River flood washes over site, covering the former tidal slough on the site (the top photograph is from 1932, before the flood; the second photo was taken the day after the flood). The slough (blue circles) disappears at this point and is not visible in any subsequent photographs of the site.[1]





1949 U.S. Geological Survey map shows "marsh" ending at the south side of Slater Ave. (arrow). In all subsequent mapping, pickleweed does not extend north of Slater Ave.

1959 The East Garden Grove-Wintersburg flood control channel is built, effectively removing the Parkside site from the Santa Ana River floodplain. Fill was placed on the site by levee construction, and by the construction of a bridge and bridge approach fills for the Slater Ave. overpass of the channel.

1960s Construction of surrounding neighborhoods and related storm drains cuts off most upstream hydrology that historically reached the site.

1976 The photograph on the right was taken on December 28, 1976, three days before the Coastal Act became effective. (Mr. Stirdivant mistakenly said this image was taken after the Coastal Act's effective date.) He described the area indicated by the green arrow as fill. If it is indeed fill, it was present **before** the Coastal Act. The photo also shows what may be pre-Coastal Act fill in the CP area south of Slater Ave., adjacent to the Wintersburg flood control channel, as indicated with a blue circle.

[1] NOTE: All thumbnail images incorporated into this letter are included as full-sized images at the end of this letter.

In contrast to the opponents' presentation of the site's condition before the Coastal Act, by January 1, 1977, the effective date of the Coastal Act, the site had been removed from tidal influence, removed from the floodplain, cut off from most upstream water sources, had been farmed for decades, and was subjected to levee construction, road construction and related fill.

BCLT Misrepresentation of Smoky's Stables Permitting

In addressing the allegations of Jan Vandersloot, M.D. of illegal fill during the period of Shea Homes' ownership, it is important to consider authorized changes to the site by Smoky's Stables prior to Shea's ownership. As already demonstrated, no wetlands were ever delineated in the areas of the Smoky's Stables' operations above Slater Ave. – not in the WP, WP+ (as identified by Mr. Bixby on slide #65 of his May 10 hearing presentation), EPA or AP areas prior to Shea's ownership.

In their presentation, opponents made little mention of the fact that Smoky's Stables submitted plans for its operations, and these plans were reviewed and approved by both the Coastal Commission and the City of Huntington Beach.

This permitting began in 1981, about the time of this photo. The stable area prior to the initiation of expansion is circled in blue. Even at this stage, riders were using parts of the current Parkside site (red oval). The permit requests that followed can be documented as:

- On February 26, 1981, the County of Orange approved plans for Smoky's Stables, conditional on City approval. These plans covered the expansion of the stable facilities from the adjoining Goodell property, where it had been in operation since the 1960s, onto the Parkside site (then in MWD ownership, and in the City). This allowed 50 horses, a stable, corrals, holding pens and a tack shed.
- On June 2, 1981, Smoky's Stables received a five-year Conditional Use Permit from the City, also allowing a 50-horse facility.
- On October 28, 1982, Coastal Commission approval 5-82-278 approved the installation of a mobile home, expansion of the stables and fill and grading of a parking facility. It also required removal of gravel from the CP area.
- On October 20, 1986, the County of Orange and on December 16, 1986 the City of Huntington Beach both extended their earlier CUPs. No expansion was proposed for the portion in the County (Goodell property) and a minor expansion was proposed for the portion within City jurisdiction.

- On August 15, 1989, the City of Huntington Beach approved a CUP for Smoky's Stables to include two 18-stall barns, a riding arena, tack room and watchman's trailer.
- In 1994, the stable's CDP application 5-93-376 was reviewed and on June 15 the Commission staff issued an exemption letter. The CDP and Exemption Letter only covered the 13,000 square foot portion of the stable site on the Goodell property.

We have found no record of any Coastal Commission Notice of Violation to Smoky's Stables' for the duration of its presence and operations on the site. During multiple site visits in which Coastal staff was accompanied by Shea Homes representatives, staff never identified any preceding problems from Smoky's Stables' operations that required the attention of the property owner.

The plans authorized for Smoky's Stables in 1981 and 1982 included a horse arena at an elevation of approximately 0.0 feet with a drainage channel that drained from the horse arena to the "WP+" area. Plans showed a sump adjacent to the flood control channel with a pump. Presumably, the sump would have received nuisance and rain water from the stable and corral areas and the pump would pump it into the flood control channel. Also approved were holding pens, parking areas, a tack shed and a mobile home. The operator was also conditioned to remove gravel fill from the CP area.

Subsequent Conditional Use Permits allowed expansion of the facility so it ultimately grew to a 125-horse facility. The full extent of this permitted development is shown in the diagram on page 2 of this memo.

BCLT Misrepresents the 1987 "Red-Tagged" Fill

BCLT also overstated the size of the area that was "red-tagged" for illegal fill in 1987. In Mr. Stirdivant's presentation, this image was included, showing in red a very large area that he stated was the area that was red-tagged.

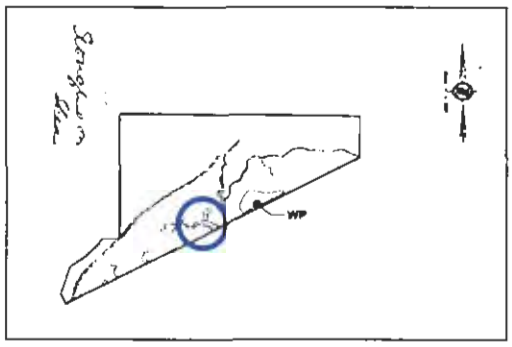
However, Mr. Dwayne Wentworth, the City of Huntington Beach inspector who red-tagged the fill violation, has stated that the area he red-tagged was much smaller (Staff report Addendum AAA, page 147). The approximate location of the 20' X 50' area Mr. Wentworth red-tagged is indicated by the green spot on the image. Mr. Wentworth stated that the fill was approximately two feet in depth, not the eight feet claimed by Mr. Stirdivant. (The area is quite small, and is visible along the flood control channel just below and to the left of Mr. Stirdivant's large red polygon.)

BCLT Misrepresentation of Smoky's Stables Photographic Evidence

Our opponents used aerial photographs purporting to show where fill occurred; however it is not possible to discern elevation from a two dimensional photograph, except, to some extent, by the presence of shadows.

In this photograph, note the distinctive shadow at the Slater Ave. overpass (green arrow), where the elevation is approximately 11 feet (NGVD 29). The permitted drainage ditch (blue arrow), which opponents said was an elevated area defining the edge of fill, is actually a ditch that is below 00 feet. They look the same, but there is at least an 11-foot elevation difference between the top of the road at the levee and the drainage ditch, showing that it is not possible to accurately discern elevations from two-dimensional aerial photographs. (Note also the sump and pump [red arrow], which removed water that flowed from the arena area via the drainage ditch to the sump. Were this area a wetland as our opponents allege, Commission staff would not have allowed a pump there.)

Alleged Fills 1998 – 2005 - Background



Vandersloot presented an argument to the Commission on May 10 that a historical wetland existed in the WP area and was subsequently impacted by fill placed on the site by Smoky's Stables. He did this by connecting the genesis of the WP to the old tidal slough on the site.

However, Vandersloot misidentified the location of the WP area when presenting this 1873 survey map to the Commission. He stated that the WP is located where the former tidal slough met the Wintersburg flood control channel (blue circle). The WP is actually located farther east, as indicated. (His assertion that the tidal slough is somehow relevant to the WP is erroneous because, of course, the slough had been obliterated by the Santa Ana flood in 1938.)

Because he misidentified the location of the tidal slough relative to the WP, his supposition is false and discredits the foundation of his primary argument that earlier illegal wetland fills (by Smoky's Stables) were wrongly bringing benefit to a subsequent developer (Shea Homes).

BCLT Misrepresented Shea Homes' 1998 Farming Operations

Shea Homes purchased the property in September 1996, and continued the historic farming operations on the site. In early 1997, we received a notice of violation and cease and desist order from Commission staff ordering us to stop farming, which we did. We then initiated a process to prove our right to farm the site. As a part of this process and the EIR process for Parkside Estates, a jurisdictional delineation of the entire farm field was conducted by Tom Dodson Associates (Lisa Kegarice). The delineation found no wetlands outside the CP area, and on February 25, 1998, the Commission rescinded the violation previously issued for farming on the 44-acre portion of the parcel, stating:

> Coastal Commission staff has reviewed your coastal development permit application 5-97-224 for disking the subject property ... for the purposes of agriculture, weed abatement and fire hazard removal. ...
>
> Coastal Commission staff has determined that a coastal development permit is not required for the disking operation based on the property's prior usage for agricultural purposes.

Commission staff withheld determining whether there were wetlands on that parcel pending a CDFG review of the Dodson delineation. CDFG provided that review on March 16, 1998, stating:

> Based upon the information outlined within the above-referenced letter by TDA [Tom Dodson Associates], the Department concurs that the subject property located within the City of Huntington Beach does not meet wetland criteria nor would there appear to be any likelihood that this portion of the site could be restored to a functional wetland without substantial manipulation of the hydrological conditions of the site.

Please note that CDFG and the Commission use the same standard for the determination of wetlands.

Concurrently, the City of Huntington Beach issued notices to abate weeds on various sites around the city, including the Parkside site. Following a public hearing at which Vandersloot and others testified in opposition to the proposed weed abatement on the Parkside parcel because of their belief that a wetland existed there. After consideration, the City issued a weed abatement order for Parkside. It was only after receiving the Commission letter, the CDFG letter

and the City order that Shea Homes undertook the weed abatement operation so prominently mentioned in the opponents' presentation, as pictured in this April 22, 1998 photograph.

Our opposition did not point out to the Commission that the 1998 rainfall year was one of the wettest on record (it is still referred to as "the 1998 El Niño"), resulting in flooding throughout Huntington Beach, as shown in the photo from the City's Web site, on the right. This rainfall, coupled with the cease and desist order which stopped farming for over a year, resulted in the growth of dense mustard across the site to a height of up to eight feet, as pictured in the opponents' photographs. By April, our farmer was already several weeks behind schedule and we were under orders from the City to remove the mustard. In order to remove the mustard in these unusually wet conditions that precluded the use of rubber-tired tractors, tracked equipment had to be used. All of the operations pictured by the opponents were authorized and there was no fill of wetlands, as none were documented on the site. The operation simply fulfilled the weed abatement order and restored the site to a condition that is conducive to farming.

BCLT Misrepresented Alleged CP Fills of 1998

Vandersloot also showed the Commission photos taken on December 5, 1998 of stockpiles of soil in the CP area which he said "have never been removed" and were spread out to fill portions of the CP. Both assertions are incorrect.

These piles were dumped on the site surreptitiously without Shea Homes' knowledge. Upon becoming aware of this "moonlight dumping," Shea Homes immediately notified Reed Thomas Company, Inc., a grading contractor, and as documented by the receipt included as attachment 8, all of the soil was removed from the site on December 22, 1998.

BCLT Charges of "EPA Wetland" Fill Unfounded

As documented in our memorandum dated June 12, 2007, neither Dillingham, Shapiro nor CDFG ever determined there to be a wetland in the "EPA area." As demonstrated in our memo, it was inappropriately delineated by Bilhorn in 1987 based on soil color in photos from 1982, an error perpetuated by EPA in 1989. As such, we believe the

evidence is clear that there is no "EPA wetland," as the area does not exhibit wetland conditions in most years (see memo for detailed analysis).

Nevertheless, we feel it is important to address Vandersloot's allegations of fill in March 2001.

First, as is typical of the opponents of Parkside, their photographs reflect extreme conditions and not "normal" or typical conditions. For example, nearly seven inches of rain fell in the 30 days preceding this March 12th photograph he showed, and 10 inches fell in the 60 days preceding the photo. This exceptionally unusual rainfall level explains why Vandersloot was able to show you a photo of a tractor surrounded by water on the site.

Second, it is critical to note that the Commission authorized the resumption of farming three years earlier for the entire farm field, including all of the areas Vandersloot described as "cut" and "fill" on May 10.

Finally, no discussion of the farming operations in the "EPA area" or any other portion of the 44-acre field is complete without addressing what legally constitutes farming. The practice of farming is regulated, and as such, agencies have written legal descriptions of various farming practices, including plowing. These definitions are in the record, as they were described on pages 3-145 and 3-146 of the response to comments of the Parkside Estates EIR. Of note:

- "The Clean Water Act defines normal farming activities as including "plowing, seeding, cultivating, minor drainage, harvesting ...."
- "The Corps has defined 'plowing' to mean 'all forms of primary tillage, including moldboard, chisel, or wide-blade plowing, discing, harrowing and similar physical means utilized on farm, forest or ranch land for the breaking up, cutting, turning over, or stirring of soil to prepare it for the planting of crops."
- "The Corps and EPA have jointly stated that 'plowing' includes 'land leveling, to prepare it for planting crops.'"

These definitions accurately describe the sort of farming activities that have been conducted on the site for decades, including a specific reference to a "wide-blade" plow, i.e., a box plow, the use of which was criticized by our opponents. Also, the specific reference to "land leveling" describes the farmer's efforts to remove low and high spots from the field, which is necessary for optimal production.

BCLT Misrepresented Facts Relative to the 2006 Notice of Violation

In his April 30, 2007 letter to the Commission, Mark Bixby stated:

> The attached photo from December 27, 2005, ***less than one week after Dr. John Dixon published his draft memo declaring the WP to be a wetland***, shows a tractor filling the WP with 4 inches of soil scraped from the adjacent high area. (Emphasis in original)

This is incorrect and so easy to verify as incorrect one wonders why Bixby made this sensationalistic error. The farming did occur on December 27, 2005, as he stated. However, the date of Dr. Dixon's draft report is January 12, 2006, three weeks after the farming – not one week earlier.

Therefore, the WP had not been declared by any agency or anyone with official status to be a wetland on December 27, 2005. Neither was the operation illegal fill. As explained above, the operation was a completely legal field leveling, as defined and allowed by the Corps of Engineers and EPA, and as had been done as an acceptable practice for over 50 years.

We are very concerned about the allegations of deliberate and illegal activity by Shea Homes, which are unfounded and completely untrue. We are confident that you will find that the actual, documented events are quite different from the false and irresponsible picture painted by the Bolsa Chica Land Trust.

The material presented by BCLT on May 10 was already in the record, and we were surprised that Commission staff did not support its own position regarding the allegations, as stated in its May 8, 2007 Addendum to the staff report. As you can see by the detail in this letter, it would have been impossible for us to provide a comprehensive rebuttal of their allegations in our allocated few minutes at the May 10 hearing. Therefore, we relied on staff to address these issues at the conclusion of the public hearing, and were confident that they had the necessary understanding of events, given the countless meetings and communications staff had conducted with the City, the Parkside team, and members of the BCLT.

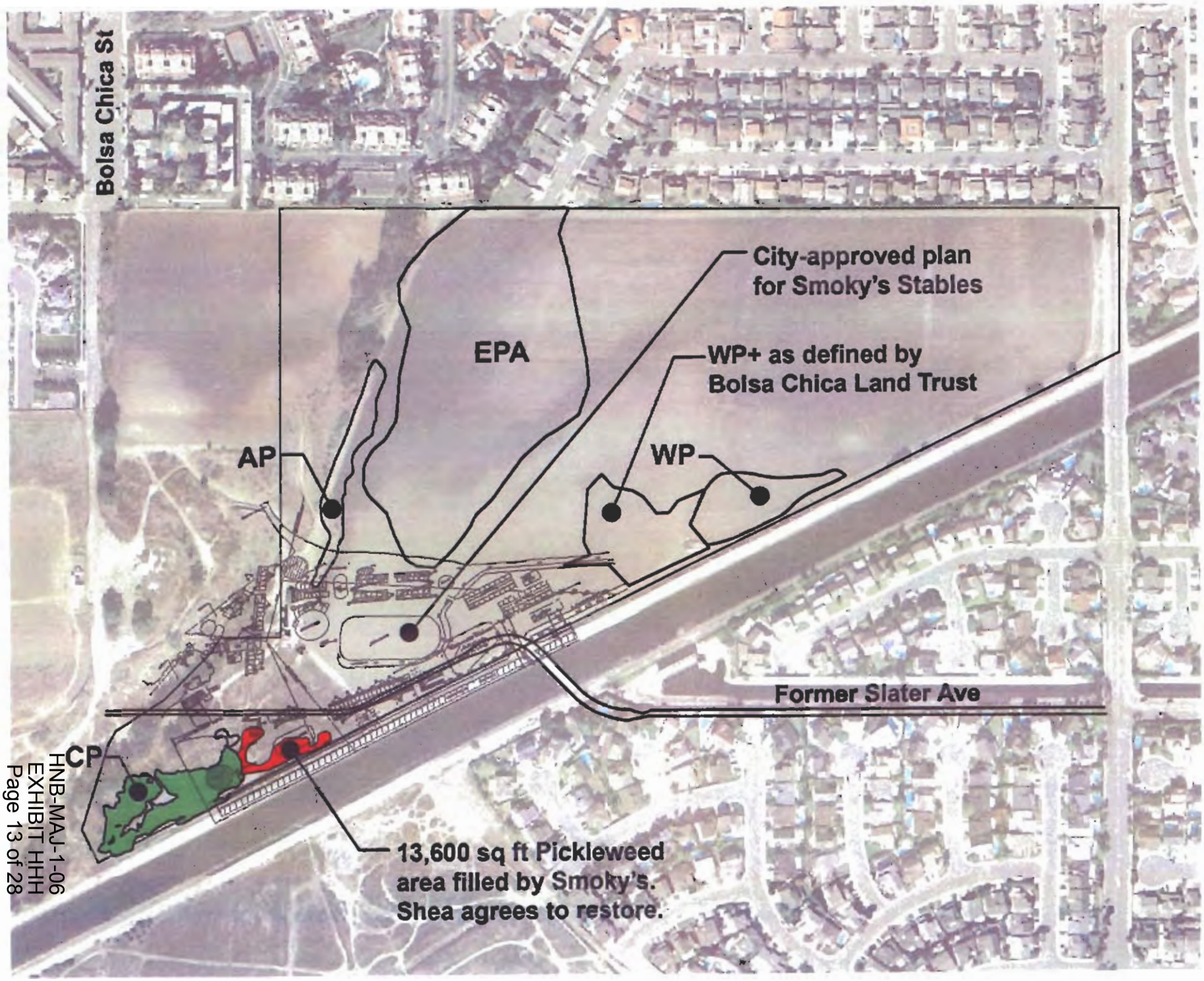
We are confident that this letter, and our subsequent meeting with Director Douglas on June 27, will sufficiently address the BCLT's misleading representations, so these matters will not consume valuable time at our hearing this July.

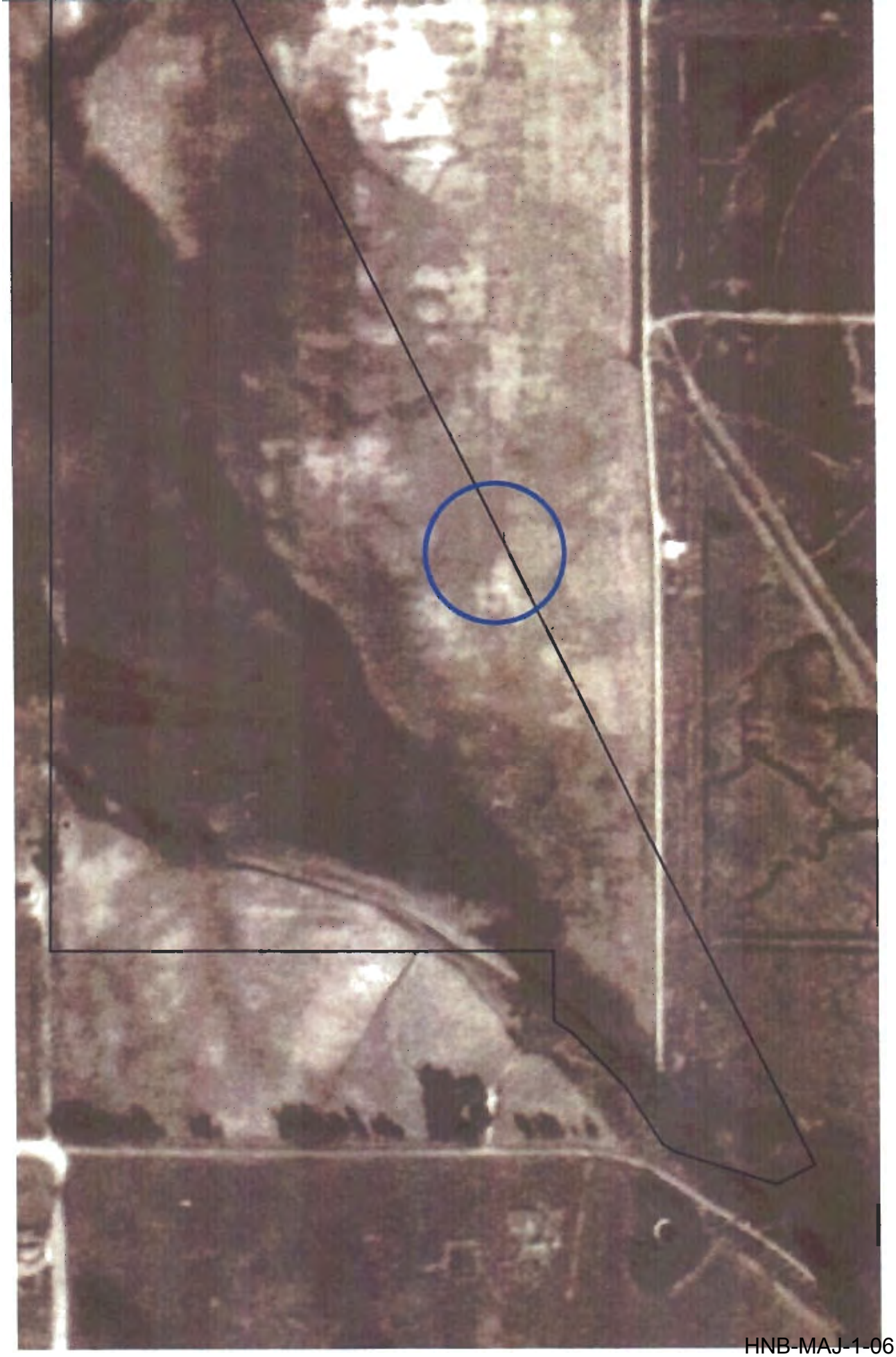
If you have any questions, please contact me or any of my team members.

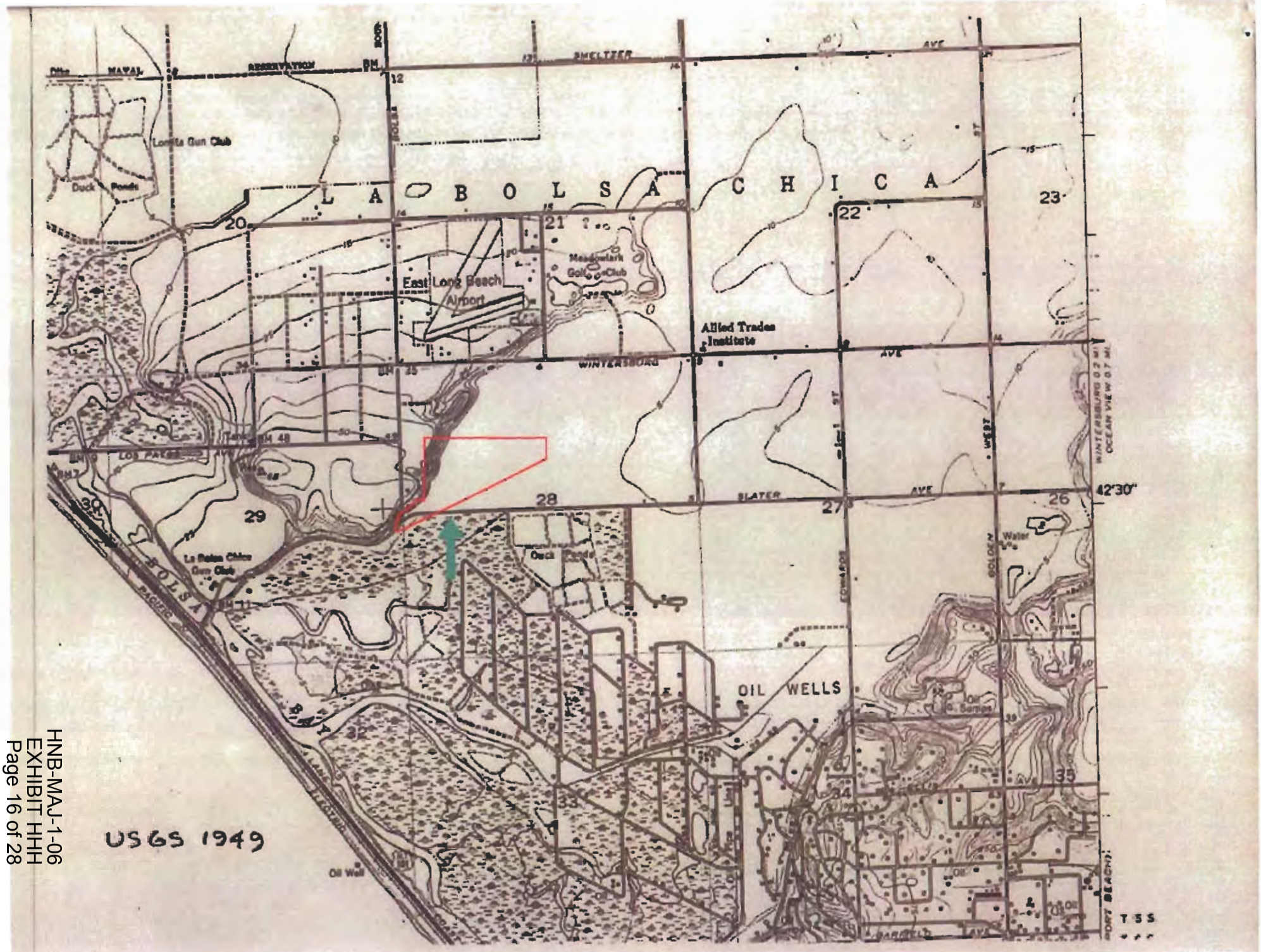
Sincerely,
Shea Homes, LLC

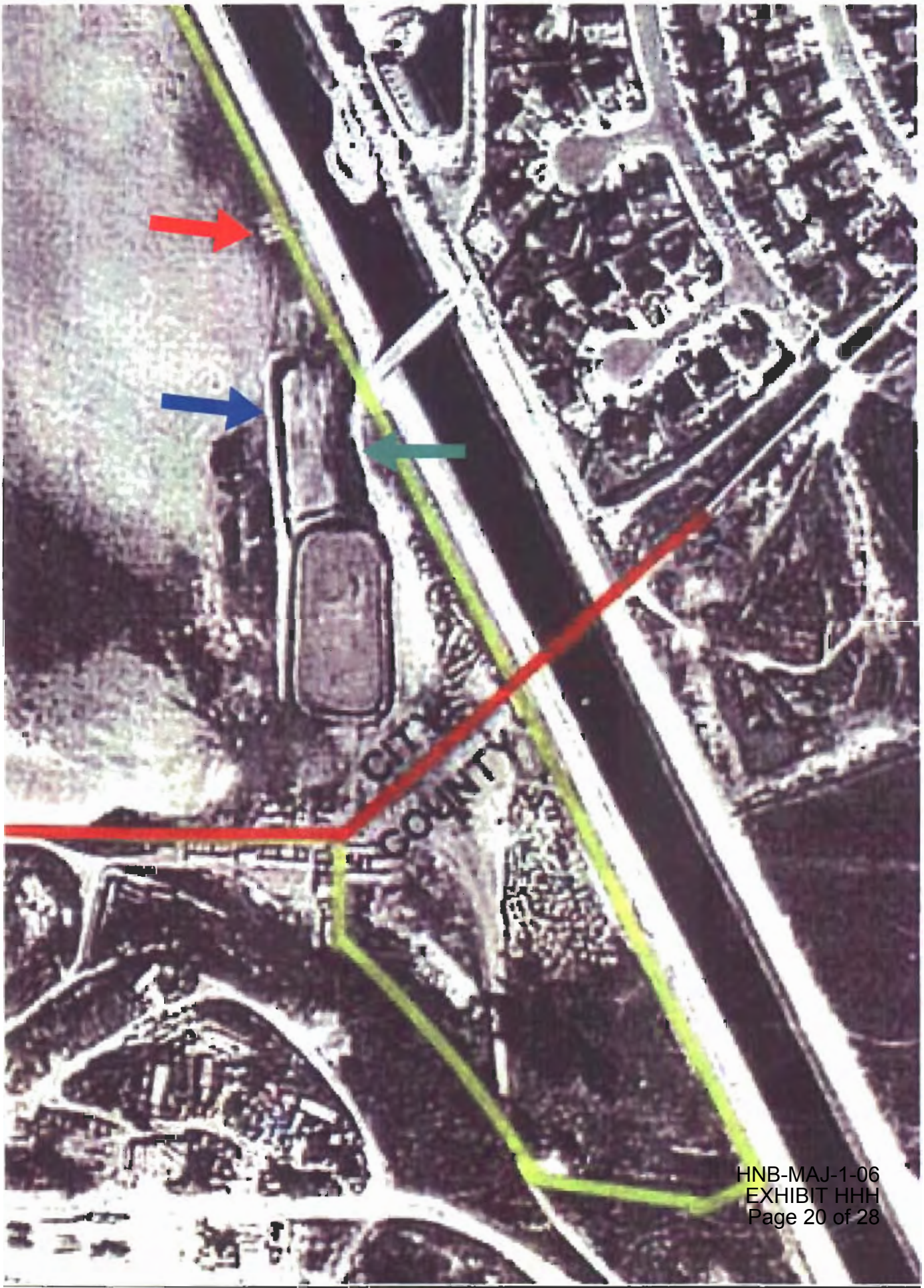
Ron Metzler
Vice President, Planning and Entitlement

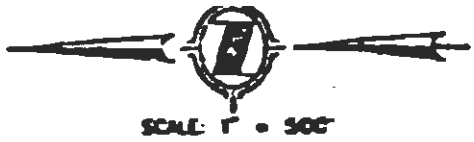
Cc: Members, California Coastal Commission
Alternates, California Coastal Commission
John Dixon, Ph.D.
Mark Johnsson, Ph.D.
Ms. Sherilyn Sarb
Mr. Karl Schwing
Ms. Meg Vaughn
Mr. Andrew Willis

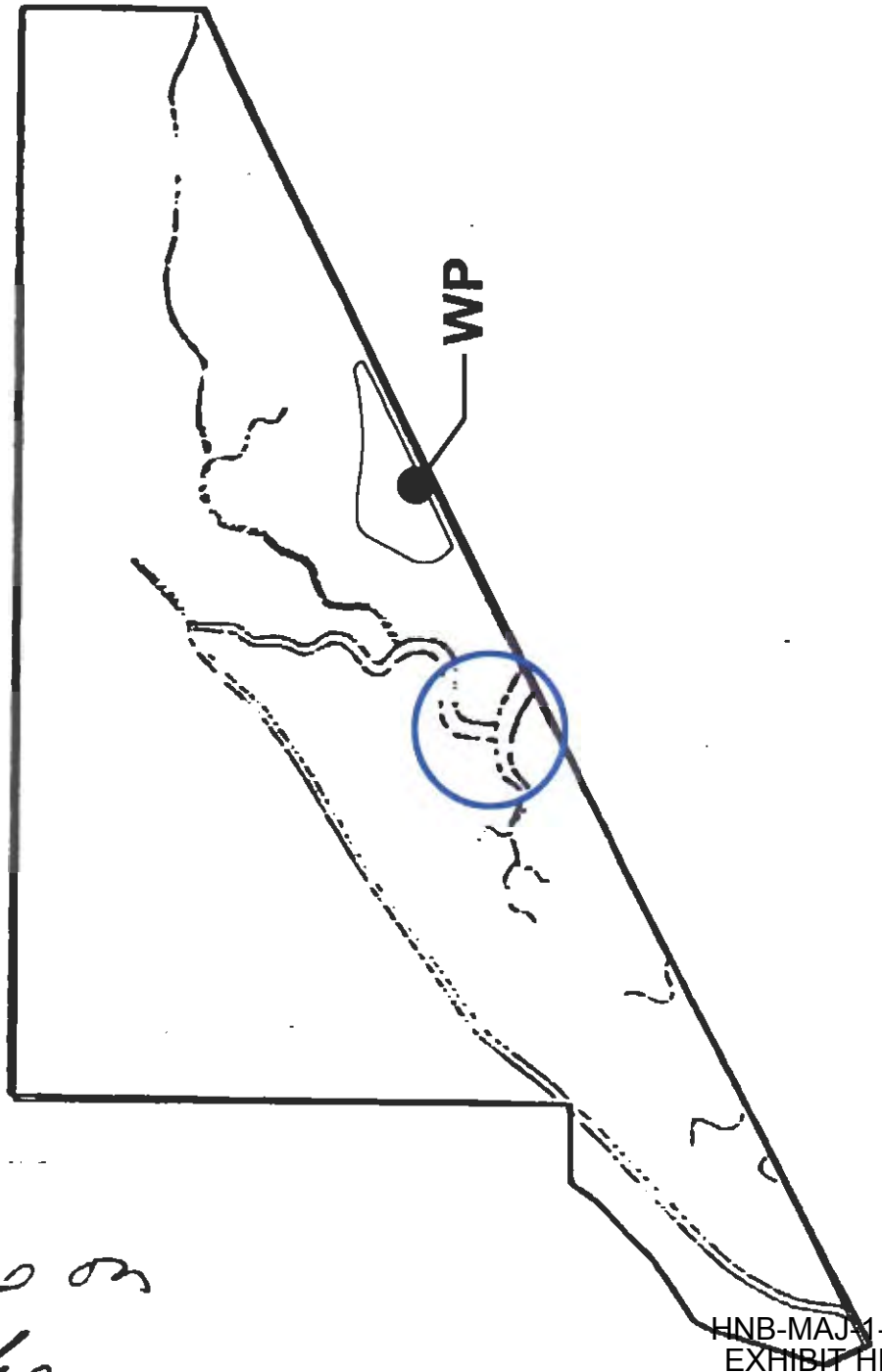

Bolsa Chica St
City-approved plan
for Smoky's Stables
EPA
WP+ as defined by
Bolsa Chica Land Trust
AP
WP
Former Slater Ave
CP
13,600 sq ft Pickleweed
area filled by Smoky's.
Shea agrees to restore.






CITY
COUNTY





Stoughton Slea

12 5 '98

EPA 03-12-2001

reed thomas co., inc.
excavating - grading

1025 N. SANTIAGO STREET
SANTA ANA, CALIFORNIA 92701
(714) 558-7691 FAX (714) 558-7361
LIC. #A470946

INVOICE NO. 13873

PAGE 1

BILL TO
SHEA HOMES
603 SOUTH VALENCIA AVENUE
P.O. BOX 1509
BREA, CA 92822

JOB
SHH9604R
SHH9604R - PARKSIDE ESTATES
GRAHAM ST., BOLSA CHICA
HUNTINGTON BEACH

NOTE

INVOICE DATE	INVOICE NO.	CUSTOMER NO.	PAYMENT TERMS	CONTRACT NO.
12/29/98	13873	SHH100		

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	GRAHAM STREET, BOLSA CHICA HUNTINGTON BEACH, CA		
	DAILY WORK TICKET 12/22/98 NO 21691		535.00

Shea Homes So. California
Cost Center 32507050000
Cost Type- Cost Code 030603
Coding Approved
Payment Approved RM 1-4-99
Processed By Date
Posted By Date

GROSS	RETAINAGE	TAX	NET AMOUNT
535.00	.00	.00	535.00

reed thomas co., inc.
grading - paving

LIC. A470946 1025 NO. SANTIAGO STREET, SANTA ANA, CA 92701 (714) 558-7691

JOB NO.: SHH 9609R

Nº 21691

DAILY WORK TICKET

CONTRACTOR: Shea Homes

DESCRIPTION OF WORK Haul away dirt spoils Dumped by others on Shea property to Dump site (5 Loads)

DATE WORK PERFORMED 12-22-98

LOCATION Graham st, Bolsa Chica Huntington Beach

P.O. NO.

IF ADDITIONAL SPACE IS REQUIRED, PLEASE UTILIZE A SEPARATE SHEET

QTY	(A) LABOR & EQUIPMENT	STRAIGHT TIME HOURS EACH	STRAIGHT TIME RATE	PREMIUM TIME HOURS EACH	PREMIUM TIME RATE	TOTAL
1	Skip Dump Combo	5	86.00			430.00
				move in		105.00

SUBTOTAL A $535.00

QTY.	(B) MATERIALS (UNIT PRICE INCLUDES TAX & DELIVERY)	UNIT PRICE	TOTAL

SUBTOTAL B

QTY	(C) LABOR & EQUIPMENT FROM OUTSIDE SOURCES (LIST NAME OF OUTSIDE SOURCE)	STRAIGHT TIME HOURS EACH	STRAIGHT TIME RATE	PREMIUM TIME HOURS EACH	PREMIUM TIME RATE	TOTAL

SUBTOTAL C

OVERHEAD & PROFIT AT 15%

AUTHORIZED SIGNATURES.
REED THOMAS CO., INC. M. L. Baum DATE 12-23-98

CONTRACTOR N-A DATE

TOTAL $ $535.00

If any costs are involved in collecting said monies, Contractor agrees to pay reasonable attorney's fees and cost.

CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT
(Civil Code §3262 (d) (3))

Upon receipt by the undersigned of a check from Shea Homes in the sum of $ 535.00 payable to Reed Thomas Co., Inc. and when the check has been properly endorsed and has been paid by the bank upon which it is drawn, this document shall become effective to release any mechanic's lien, stop notice, or bond right the undersigned has on the job of Shea Homes (Owner) located at Graham Street, Bolsa Chica, Huntington Beach (Job Description)

This release covers the final payment to the undersigned for all labor, services, equipment or material furnished on the job, except for disputed claims for additional work in the amount of $ _____. Before any recipient of this document relies on it, the party should verify evidence of payment to the undersigned.

DATED: 12/29/98

Reed Thomas Co., Inc. (Company Name)

By Mary Lindborg V.P./R (Title)

NOTE: This form of release complies with the requirements of Civil Code Section 3262 (d) (3). It is not effective until the check that constitutes final payment has been properly endorsed and has cleared the bank.

SHEA BUSINESS PROPERTIES

885 Brea Canyon Road
Walnut • California
91789
(714) 598-9000
FAX (714) 598-9868

GLENN LUKOS ASSOCIATES

LSA

LSA ASSOCIATES, INC.

wra
ENVIRONMENTAL CONSULTANTS

MEMORANDUM

To: Sherilyn Sarb
From: Art Homrighausen, Tony Bomkamp, Dr. Mike Josselyn
RE: Historic "EPA area" on Parkside Estates, Huntington Beach
Huntington Beach LCPA 1-06
Date: June 12, 2007

This memo provides information relevant to the status of the area designated by Dana Sanders and Thomas Bilhorn to be a wetland ("the EPA Wetland"). Dr. John Dixon has summarized much of the material in his July 27, 2006 report; however, there is information relevant to the "EPA Wetland" area that was not included in Dr. Dixon's memorandum. In addition, we have conducted a more detailed analysis of some of the previous studies cited by Dr. Dixon.

The memo covers the following topics:

- Four mappings or wetland determinations made before the Bilhorn/EPA delineation and six made subsequent to it all found no wetland in the "EPA wetland" area.
- Bilhorn erred by concluding that dark soil equaled wet soil, and this error was picked up by EPA. We show through aerial photos taken during both unseasonably dry years, and years Dr. Dixon found no ponding on the site, that soil color is not a measure of soil wetness.
- We also cite Sanders' field observations from the period studied by Bilhorn, in which he states there was no evidence of past inundation or saturation.
- By reviewing the various studies, we show that the Bilhorn/EPA delineation with regard to the subject property was less detailed and comprehensive than many other studies conducted in the area. A major error in the Bilhorn study was the failure to note that the EPA area's watershed had been reduced by 22 acres by the construction of the Cabo del Mar condominiums.
- Relying on topographic studies, we show that opponent allegations of "cut and fill" in the EPA area are unfounded and are, in fact, indicative of routine farming and field preparation activities.
- Finally, relying on numerous sources including Dr. Dixon, we show that the EPA area does not have sufficient hydrology to support wetlands, even in the absence of farming, and that a 7-day standard is not appropriate for this site, based on site-specific data.

III 1

Ms. Sherilyn Sarb
California Coastal Commission
EPA Area

Summary of other Earlier Findings Regarding the "EPA Wetland"

Before the Sanders and Bilhorn studies, four studies evaluated the Parkside site; none identified a wetland in the area where Bilhorn identified "wet soils" – the area which subsequently became referred to as the "EPA Wetland." These studies are:

- Vegetation mapping and wetland delineation prepared by Dillingham (1971, Attachment 1). Note that the Dillingham study describes the state of the site prior to enactment of the Coastal Act.
- A tract map for a prior proposed development on the Parkside property that indicates site vegetation (1873, Attachment 2),
- Vegetation mappings prepared by Shapiro (1981, Attachment 3),
- A wetland determination of the site by the California Department of Fish & Game (1981, Attachment 4).

Subsequent to the Bilhorn review, the following studies of the site were made. As with the prior studies, none identified a wetland in the "EPA" area:

- The Sanders letter of 1991 finding that the site was "prior converted cropland" based on a lack of wetland hydrology. It is important to note that in this letter, Sanders observes that his initial determination was that no wetlands were associated with the EPA area; however, he modified his initial position of "no wetlands" to follow Bilhorn's analysis (addressed in more detail below). In short, Sanders' corrected position is consistent with our findings relative to Bilhorn's study.
- The Army Corps of Engineers letter of 1992 concurring with Sanders' finding of "prior converted cropland," which depends on a finding that the site does not pond for more than 15 days during most years.
- A biological resource assessment by Frank Hovore & Associates in 1997, in which Hovore noted that the 8.3-acre "EPA" area had been deprived of hydrology "sufficient to form [wetland] habitat"
- A wetland delineation by Kegarice in 1997
- A letter from the California Department of Fish & Game to the City of Huntington Beach in 1998
- A jurisdictional delineation by GLA in 2004, which focused on the 44-acre farm field area, including the "EPA" area.

As you can see, there has been an extremely extensive review of this site, and with the exception of Bilhorn and EPA, none of these studies has determined there to be a wetland at the "EPA" site.

III-2

We also would note that on Page 29 of his July 27, 2006 memorandum, Dr. Dixon makes the following assertion:

> "One could argue that the EPA delineation should stand because there has been no change in the overall hydrology of the site (i.e., total input and outflow of water) since 1989 and the recent photographic evidence is meager."

While we concur that the hydrology has not changed since 1989, Dr. Dixon apparently has failed to note that both Bilhorn and EPA did not account for the changed hydrological conditions that occurred about 1982 or 1983 during construction of the Cabo del Mar condominiums. Bilhorn's aerial photographs (addressed further below) were from March 1982, before the site hydrology was changed; whereas his report dates from after the hydrological diversion. Sanders points out this oversight in 1991. Also, as noted below, Dr. Dixon found ponding during this period was less than 7 days, even at the time before the site's hydrology changed.

Dark soils evident in photographs are <u>not</u> an indication of soil moisture

The so-called "EPA Wetland" was first defined by Sanders in 1987 based upon Bilhorn (1987), who based his analysis on the combination of a topographic depression and the appearance of dark soils in two aerial photographs. Bilhorn presumed that dark soils were equivalent to wet soils.[1] This presumption was flawed, as demonstrated by several lines of evidence:

- There are numerous photos that show distinct boundaries of dark soils approximating the "EPA wetland" boundary, even though the photos were taken at times when the soils could not possibly have been wet. For example, Attachment 5, a photo from January 31, 1970, clearly shows dark soils in the "EPA Wetland" area – but only two inches of rain had fallen in the entire month, so the soil was no more than slightly moist. On page 83 of his July 27, 2006 memo *"Wetlands at Shea Homes Parkside Estates,"* Dr. Dixon states:

  > "Based on rainfall pattern and amount, it is unlikely that topographic depressions were continuously inundated for long duration [7 days] this season."

- A review of all the aerials of the site show the EPA area (and the now dry relictual riparian area) consistently have darker soil values than adjacent soil.

[1] Bilhorn wrote on page 3 and 4 of his study "Agricultural Area Delineation, Bolsa Chica, Orange County California (June 1987), "Using March 18 and 31 1982, photographs, which are representative of normal year seasonal and transient ponding, a portion of the area ... shows wet soil conditions. **Darkest in value (wettest)** is the section running north-south at the western edge of the parcel, from the riding stable to the dead-end street. The soils lying within the "arm" of the - 0.5-foot contour ... are **much lighter in value and therefore much drier**." (**Emphasis** added)

III 3

We have inserted three representative examples (Attachments 6, 7 and 8), from 1984, 2000 and 2002 respectively.

- The May 28, 1984 photo was taken in a period that had only 1.1 inch of rain over the preceding four months, and a seasonal total of 7.9 inches, well below average.
- The February 2, 2000 photo was taken in a period that had only 0.87 inches of rain in the preceding five months, and a seasonal total of 6.5 inches, nearly all of which came after this photo was taken.
- The May 23, 2002 photo was taken in a period that had only 0.99 inches of rain in the preceding five months, and seasonal total of 2.87 inches, the second-driest year locally recorded.

- Bilhorn's interpretation of wet soils used in the "EPA wetland" determination is based on March 1982 photographs. Dr. John Dixon's rainfall and ponding analysis states that ponding occurred for less than seven days during March 1982. On page 95 of *"Wetlands at Shea Homes Parkside Estates,"* Dr. Dixon states:

  > "Based on rainfall pattern and amount, it is unlikely that topographic depressions were continuously inundated for long duration [7 days] this season."

- Bilhorn's delineation of wetlands does not correspond with the mapped topographic depression, even though he stated that the topographic map he used (Attachment 9) generally corresponded with the observable conditions in the field. Some of the dark soil areas mapped by Bilhorn as "EPA wetland" are higher in elevation by one foot or more than adjacent light soil areas that were not mapped as wetland, including an area approximately equal in size to the EPA area, as shown in Attachment 10.

On-site observations used in "EPA Wetland" determination reveal no ponding

- Sanders stated in his 1991 letter:

  > "I observed site conditions of the area in question on several occasions during 1987-1988. During that period, I saw no evidence of either current or past inundation or soil saturation in the [EPA] area."

In fact, Sanders originally concluded that none of the area in the agricultural field was wetland. Nevertheless, in 1987 Sanders deferred to Bilhorn's hydrology analysis, even though, in retrospect, it appears flawed. Even though Dr. Dixon has discounted the Sanders 1991 letter because of an apparent error in how he addressed Bilhorn's observations on the site's hydrology, that error has no impact on the factuality of Sanders' on-site observations of the physical conditions of the site.

III4

- In the same 1991 letter, Sanders noted that ponding after two storms did not last for more than seven days.
- No direct evidence of surface hydrology was ever reported by EPA, Sanders or Bilhorn; rather, as noted, Bilhorn made a flawed determination of "wetted soils," for a period that Dr. Dixon notes exhibited ponding for a period of less than 7 days. This error was then propagated by the EPA, which relied on Bilhorn.

- Dr. Dixon even notes that the results of the Bilhorn study were ambiguous.[2]

The EPA delineation was based on much less data than other studies

- The delineation of wetlands in the agricultural area was based on less information than was available for the rest of the Bolsa Chica area.
- The three studies which identified a wetland in that area [Bilhorn (1987), Sanders (1987) and EPA (1989)] are in reality one study – Bilhorn. Sanders makes it clear in his 1991 letter that Bilhorn is flawed, noting the altered hydrology. None of these three studies recognize the changes in hydrology caused by the construction of the Cabo del Mar condominiums, which occurred in 1982 and 1983, during the time the reports were being prepared. Cabo del Mar first temporarily increased the hydrology of the EPA area, then eliminated 22 acres of the EPA area's watershed when the site was tied to a storm drain.[3]
- No researcher ever identified the "EPA wetland" area as a currently functioning wetland. Instead, based on presumed hydrology in 1982, EPA, Bilhorn and Sanders all said that hydrophytic vegetation would likely develop in the absence of farming. Subsequent observations and analysis by Sanders (1991) determined that the low area was dominated by upland grasses and weeds, and that ponding occurred for less than seven days in most years; this is consistent with the earlier studies by Dillingham and Shapiro.
- The EPA area has been determined to <u>not</u> be a wetland by the U.S. Army Corps of Engineers, the Natural Resource Conservation Service and the California Department of Fish and Game. Note that the federal determinations were based on a lack of sufficient inundation to cause the formation of wetland, and that CDFG uses the same criteria as the Coastal Commission. There is absolutely no actual evidence that the "EPA wetland" area met the Coastal Commission wetland criteria at the time Shea took ownership and continued farming operations.

---

[2] Page 9 of Dr. Dixon's January 2006 report on Parkside wetlands

[3] Dr. Dixon says on page 97 of his January 2006 report on Parkside wetlands that less than half an inch of rain had fallen up to that date in December 1983 – another clear indication that dark soil does not represent wet soil.

IIIs

"Cut and Fill" Allegations Ignore Farming Practices and Commission Actions

- In 1998 the Commission wrote Shea Homes stating that farming is an allowed use on the entire 44-acre farm field site, including the "EPA wetland" area.
- Federal definitions of farming (EPA, Corps of Engineers) define plowing as "All forms of primary tillage, including wide blade plowing ... and similar means for ... cutting soil," and state that "plowing includes land leveling to prepare for the planting of crops."[4]
- Earth movement in this area is the result of farming – the necessity to have a flat field without areas that hold water or shed water. Changes in topography have been minimal – a matter of inches, less than the depth of a furrow. The EPA area and other areas being both raised and lowered over the years. Nothing in the topographic evidence supports the contention that there was "deliberate" fill in this area.

The "EPA wetland" area will not support wetland conditions

- It is important to note that even the AP area is on the extreme margins of, if not outside the margins of, the Coastal Commission's wetland criteria (i.e., no hydric soils, ponding for less than 14 days in most years, and development of hydrophytic vegetation presumed by Dr. Dixon). The AP area concentrates much of the agricultural field runoff and runoff from 2.5 acres of adjacent hillside into a smaller and deeper depression than the former EPA Wetland. If the 0.63-acre AP area at best barely meets the Coastal Commission wetland criteria, it stands to reason that an area covering about 8 acres that receives less water and has fewer periods of inundation will not meet the criteria.

- Dr. Dixon's own analysis refutes 7 day test for the AP (and potential EPA area by extension). On page 16, Dr. Dixon states that the 7 day standard is based on the minimum time required for soils to become anaerobic. In the same paragraph he references a report from EPA that states that inundation or saturation must meet or exceed a duration of 7 continuous days during the growing season in order to support hydrophytic vegetation and to exclude upland plant species, working (presumably) on the assumption that the presence of anaerobic conditions precludes establishment of upland plants.

- In a fairly lengthy section that addresses hydric soils, Dr. Dixon notes on page 22 that the AP requires between 14 and 28 days to exhibit iron reduction. In his conclusions on page 23, he states "...it is more likely than not that during most years areas WP and AP are not ponded for the duration needed to promote the formation of hydric soils at those locations, given the nature of the soils present.

[4] Parkside Estates EIR response to comments, pp. 3-145, 3-146

III6

- Given that it is the development of anaerobic conditions that limits or excludes upland plant species while providing suitable conditions for a hydrophytic community, it also follows that in the absence of such limiting conditions, the conclusion that 7 days is sufficient to promote the growth of hydrophytes is not warranted for the AP or the EPA area, and is in fact an unsupportable conclusion.

- As such, Dr. Dixon's use of a seven day standard for hydrology is not supportable for this site based on the site-specific data with which he is in agreement.

cc: John Dixon, Ph.D.
Mr. Karl Schwing
Ms. Meg Vaughn

Attachments:

1. Dillingham map, 1971
2. Tract map, 1973
3. Shapiro map, 1981
4. California Department of Fish & Game, 1981
5. 1970 aerial photo
6. 1984 aerial photo
7. 2000 aerial photo
8. 2002 aerial photo
9. Bilhorn topographic map
10. Bilhorn topographic map, detail

EXHIBIT 7

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Saturday, May 26, 2007 6:31 PM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Bolsa Chica Land Trust; Dena Hawes; Flossie Horgan; Jan Vandersloot; Julie Bixby; Karen Merickel; karen merickel; Linda Moon; Lyndon Lee; Peggy Fiedler; Marc Stirdivant; Marcia Hanscom; Marinka Horack; Paul Arms; Paul Horgan; Robert van de Hoek; Rudy Vietmeier; Sandy Genis; Shirley Dettloff
Subject: Shea Parkside AP vegetation update

Hi CCC staff, Bolsa Chica Land Trust people, and other friends of Bolsa Chica,

WP and the former stables area got most of the mindshare at the May 10th hearing, but amazing things are happening at AP that should not be overlooked.

A large quantity of the obligate hydrophytic species seaside heliotrope is growing within the AP buffer zone, which suggests that the current AP boundaries are currently undersized.

Please download my AP vegetation update letter from:

http://www.bixby.org/parkside/documents/CCC/nwwr-ccc-070526-AP.pdf

Note that I have intentionally omitted the applicant and consultants from this e-mail. While I had been going above and beyond the call of duty in sending this stuff to the applicant over the years, this courtesy was very seldom reciprocated by the other side, which forces us opponents to periodically poll CCC staff to learn of new applicant-submitted material.

If the applicant will agree to extend me the courtesy of sending me copies (electronic is OK and in fact preferable) of all future submittals they send to CCC staff, then I will be happy to include the applicant on future e-mails of mine.

--
mark@bixby.org
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JJJ1

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Wednesday, May 30, 2007 6:51 AM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Jan Vandersloot; Sandy Genis; Julie Bixby; Marc Stirdivant; Flossie Horgan; Jerry Chapman; Flossie Horgan; Paul Horgan; Paul Arms; Rudy Vietmeier; Marinka Horack; Karen Merickel; karen merickel
Subject: more disappearing Smoky's pickleweed?


0705010_0010f.JP
G (505 KB)


0705010_0010c.JP
G (51 KB)


0705010_0011f.JP
G (318 KB)


0705010_0011c.JP
G (42 KB)

Hi CCC staff and Parkside BCLT people,

I have attached images from two maps that I photographed on 05/02/07 when the BCLT Parkside team met with CCC staff in Long Beach.

The first map (the first two attachments) is the original Smoky's expansion plan from February 1982, back when the stables operator didn't consider pickleweed to be anything special and was planning to build a parking lot on top of the 1981 Shapiro pickleweed (Shapiro pickleweed not depicted on this map).

But take a look in the northeastern corner crop in the second attachment. We see a labelled area of pickleweed between the two major arenas. There is also a similarly drawn vegetated area between the easternmost arena, the road, and the levee, but it is unlabelled.

Now look at the second pair of attachments dating from a September 1982 map. The CCC has already rejected the initial plan, and ordered the restoration of the Shapiro pickleweed zone. But we see that the northeastern pickleweed patch and the unlabelled vegetation area have disappeared.

Hmmm...

One explanation of this is that once the stables operator realized that pickleweed was going to be problematic, he chose to omit the eastern pickleweed from the revised map in order to gain quick approval for the revised project.

Unfortunately the various CCC staff reports from that period do not mention the eastern pickleweed. I don't know if the "now you see it, now you don't" difference between the two maps escaped staff's attention, or if this difference was noted in some document not currently possessed by BCLT but deemed unimportant.

So I just wanted to make sure you all were aware that the stables operator had admitted to an area of obligate hydrophytic vegetation which disappeared on subsequent maps and certainly no longer exists today due to the unpermitted filling that followed issuance of CDP 5-82-278.

--
mark@bixby.org
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JJJz

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Monday, June 04, 2007 9:10 PM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel
Cc: Julie Bixby; Jan Vandersloot; Sandy Genis; Marc Stirdivant; Flossie Horgan; Jerry Chapman; Flossie Horgan; Paul Horgan; Paul Arms; Rudy Vietmeier; Marinka Horack; Karen Merickel; karen merickel; Dean Albright
Subject: Re: DFG, wetlands, and the bulldozing of April 1998 at Parkside

Hi CCC staff, Parkside BCLT people, and Dean Albright,

Dean Albright has provided me with video he shot on April 24, 1998, two days after the date of the bulldozer pics we showed at the May 10th hearing in San Pedro. Dean's video shows evidence of earth movement that would seem to exceed standard "weed abatement" practice. The under 10 minutes worth of video can be downloaded from:

http://www.bixby.org/mark/albright-980424/

Of the three video clips, clip #2 has some narration recorded on the day it was shot. I'm told the video was so shaky because it was very windy on the day it was shot, and it was hard to hold the camera still.

The above URL is a temporary download location. Interested parties wishing to save these video clips should download them to their own PCs.

Dean -- please do a "reply all" to this message and thoroughly describe your recollections from that day.

Thanks...

- Mark B.

Julie Bixby wrote:
> Hello, CCC staff and Parkside BCLT people,
>
> A follow-up to the 1998 photos of Shea's bulldozing activity.
> Attached
> are the minutes from the April 20, 1998 HB City Council meeting. The
> section on Shea begins on page 9. On page 10, Scott Harris, a biologist
> with DFG, speaks to the issue of potential wetlands on the property, and
> if Shea would only leave the land fallow for a while in order to make a
> proper determination. Just TWO DAYS later the bulldozers made their
> move (see Jan Vandersloot's public comments power point from May 10,
> video time stamp approx. 4:30).
>
> We are attempting to get an audio or visual record of the meeting to
> know exactly what Mr. Harris said, but again, it is very telling that as
> soon as anyone hints that there might be official wetlands on site,
> Shea's bulldozers spring into action to erase that notion.
>

--
mark@bixby.org
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JJJ

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Thursday, June 21, 2007 9:18 AM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Bolsa Chica Land Trust; Dena Hawes; Flossie Horgan; Jan Vandersloot; Julie Bixby; Karen Merickel; karen merickel; Linda Moon; Lyndon Lee; Peggy Fiedler; Marc Stirdivant; Marcia Hanscom; Marinka Horack; Paul Arms; Paul Horgan; Robert van de Hoek; Rudy Vietmeier; Sandy Genis
Subject: LA Times article on 1981 Smoky's fill incident

LAT sept 1981.pdf
(70 KB)

Hi CCC staff and friends of Bolsa Chica,

Please see attached for a 1981 LA Times article on the Smoky's Stables fill incident.

Of particular interest is where Fred Burkett said he imported the fill "to elevate the area around his stable and corral to prevent flooding during the rainy season". Hmmm.

This stated motive for the filling seems to be pretty clear proof to me that wetland hydrology was present on the site prior to the fills. I.e. if ponding was only occasional and short in duration (less than 7 days), why go to the trouble of importing so much fill? That Burkett had contracted to import 1,500 truckloads of fill strongly implies that ponding was chronic, pervasive, and long-lived (greater than 7 days).

Although Burkett was caught red-handed in 1981, we know from the extensive aerial photography record that Burkett soon resumed his unpermitted filling activities and by 1989 he had succeeded in filling his entire stables footprint by as much as 8ft of fill.

The commission cannot allow such a bold filling of wetlands to go unenforced. The commission needs to uphold the Coastal Act and direct that all of the unpermitted fills from the stables era (and the Shea era) be removed.

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mark@bixby.org
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JJJ4

JJJ5

Dumping of Fill Dirt in Bolsa Chica Wetlands Halted

By LESLIE BERKMAN, *Times Staff Writer*

Mounds of dirt from a City of Huntington Beach road project have been dumped on a portion of the environmentally prized Bolsa Chica lowlands in violation of the Coastal Act, state Coastal Commission officials said Monday.

The road contracting firm, All American Asphalt, based in Orange, said it halted the dumping immediately after an order to do so was issued Monday by the commission. The firm estimated that over the last two weeks it has deposited 6,000 cubic yards of dirt and gravel on parts of 11 acres.

State Coastal Commission laywer Steve Brown said All American was told to stop the dumping or face possible legal action. He said the commission will also demand removal of the deposited dirt.

A Coastal Act violation, he said, derives from the fact that the 11-acre dumping ground is part of the 1,200-acre Bolsa Chica lowlands that the Coastal Commission has preliminarily designated as wetlands worthy of special protection.

To place dirt on such an area, he said, would require a special permit and none was granted by the Coastal Commission in this case.

Hugh Lee, the contractor's representative on the road project, said the firm was unaware it was doing anything wrong.

Lee explained that Fred Wayne Burkett, who operates a commercial horse stable and animal farm on the 11 Bolsa Chica acres just north of the Wintersburg flood control channel, had wanted the dirt.

All American Asphalt had been hired by the City of Huntington Beach to reconstruct about three miles of worn out roadways on Edinger Avenue and Spring Street.

Lee said All American therefore took Burkett up on his offer to accept an estimated 40,000 tons — 1,500 truckloads — of dirt that the road excavation was expected to generate. Lee said he was amazed that Burkett had a use for so much dirt.

'Ignorance of the law is no defense,' says a Coastal Commission lawyer.

Burkett said Monday that he intended to use the dirt to build a 50-space parking lot, to elevate the area around his stable and corral to prevent flooding during the rainy season, and to construct a series of small canals and ponds that he planned to stock with fish.

Burkett said his plans were endorsed by the Metropolitan Water District of Southern California, from whom he leases the 11 acres for $900 a year, and by a local official of the state Department of Fish and Game.

The Metropolitan Water District, in a statement released late Monday, acknowledged that Burkett had asked permission to allow the dumping on its property and was told there appeared to be no reason why it couldn't be done.

However, the water district added that it did not know about the wetland restrictions and it disclaimed responsibility for any violation of the law.

"It is the responsibility of the lessee to conduct his activities on the land in compliance with the law and if something was done that was not in compliance, it is up to the lessee to remedy the situation," the district said.

The 11-acre parcel was acquired by the water district about 10 years ago, a district spokesman said, to house support facilities for a nuclear power plant that was planned to be built offshore. Those plans fell through, he said.

Kit Novak, Fish and Game's local representative, said that although he supported Burkett's idea of creating ponds on his leasehold, he could see no justification for the illegal use of fill, which he contended would be used mostly for other purposes.

"Ignorance of the law is no defense," said Coastal Commission lawyer Brown. He contended that under the law, Burkett, the contractor and the water district could be held liable.

However, he said that apparently the City of Huntington Beach is not responsible for the actions of the contractor since it never gave "actual or expressed consent" to the dumping.

Brown said he first learned that truckloads of fill were being taken to Bolsa Chica last Thursday. He said he was so informed by an official of the federal Environmental Protection Agency, who in turn had been advised by a biologist working in the area.

The incident fortunately was checked early, Brown said, but he added that it seems to be indicative of a disturbing trend. "A lot of people have been filling wetlands and it has been going on statewide recently," he said.

He noted that as recently as June, the state attorney general's office, at the Coastal Commission's behest, filed a lawsuit accusing Signal Landmark Inc. and other parties of illegally plowing and grading another part of Bolsa Chica. That suit is still pending trial.

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Tuesday, June 26, 2007 11:22 AM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Bolsa Chica Land Trust; Dena Hawes; Flossie Horgan; Jan Vandersloot; Julie Bixby; Karen Merickel; karen merickel; Linda Moon; Lyndon Lee; Peggy Fiedler; Marc Stirdivant; Marcia Hanscom; Marinka Horack; Paul Arms; Paul Horgan; Robert van de Hoek; Rudy Vietmeier; Sandy Genis
Subject: 1975 pre-fill stables aerial showing wetness

GoogleEarth_Image .jpg (326 KB)...

Hi CCC staff and friends of Bolsa Chica,

I spent much of last weekend updating my Google Earth Parkside model. See attached for a newly acquired aerial image from 02/17/75 showing wetness in the stables area before any major stables filling had started. The blue polygon denotes the area listed as below sea level on the 1965 USGS topo map.

The full-res aerial (without the polygon) can be obtained directly from:

http://www.bixby.org/parkside/kml/750217c.JPG

But you are encouraged to use my Google Earth model which likely has the most complete collection of aerial images in existence for the Parkside property. I added a couple dozen new images on Sunday.

If you want to see what I am talking about, download, install, and launch Google Earth from http://earth.google.com. Then in the Places section of the left nav window, right-click on the My Places icon, then click Add, Network Link. Enter http://www.bixby.org/parkside/kml/showme.kml into the Link field.

Then double-click the newly added entry that appears under My Places.

If the above instructions don't work for you, please PHONE ME at 714-625-0876 and I will be happy to talk you through the process.

--
mark@bixby.org
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JJJ6

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Tuesday, June 26, 2007 1:55 PM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Bolsa Chica Land Trust; Dena Hawes; Flossie Horgan; Jan Vandersloot; Julie Bixby; Karen Merickel; karen merickel; Linda Moon; Lyndon Lee; Peggy Fiedler; Marc Stirdivant; Marcia Hanscom; Marinka Horack; Paul Arms; Paul Horgan; Robert van de Hoek; Rudy Vietmeier; Sandy Genis
Subject: recent Shea Parkside flood control assertions

mythsAndFactsSingle.pdf (701 K...

Hi CCC staff and friends of Bolsa Chica,

Shea makes a number of flood control claims in the attached direct mailing piece (downloaded from http://www.sheaparkside.com/mythsAndFactsSingle.pdf) that bear further investigation. Among them:

1) "By issuing a Conditional Letter of Map Revision, FEMA is obligated to issue a new flood map once the Parkside improvements are installed." But wait just a minute -- the CLOMR that was issued assumes that Shea is going to improve the northern EGGW levee along the *entire* border of the Shea property. But I recall reading in some memos from late last year or early this year that the new plan is to only improve the levee down to the location of the VFPF, leaving the original (decaying) levee intact where it borders the CP wetland area. Wouldn't this reduction in levee improvement invalidate the CLOMR?

2) Shea says that water in the restored Bolsa Pocket "...is up to seven feet higher in elevation than homes near Parkside". Huh? The Pocket was restored to muted tidal conditions, thus water level in the Pocket should not be exceeding MSL. Furthermore, a large-format Shea map entitled "Site Topography Comparison: 1996 to 2003" dated 06/23/04 shows elevations along the northern portion of the Shea property ranging between 1 and 2 feet in elevation. The math simply does not compute here. If water level in the Pocket is no more than zero feet in elevation (i.e. MSL), then the homes adjacent to Parkside would need to be seven feet BELOW sea level for Shea's assertion to be true. That is simply not the case, not even according to Shea's own topo map.

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mark@bixby.org
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JJJ 1

Meg Vaughn

From: Mark Bixby [mark@bixby.org]
Sent: Tuesday, June 26, 2007 8:41 PM
To: Meg Vaughn; Karl Schwing; John Dixon; Jonna Engel; Bolsa Chica Land Trust; Dena Hawes; Flossie Horgan; Jan Vandersloot; Julie Bixby; Karen Merickel; karen merickel; Linda Moon; Lyndon Lee; Peggy Fiedler; Marc Stirdivant; Marcia Hanscom; Marinka Horack; Paul Arms; Paul Horgan; Robert van de Hoek; Rudy Vietmeier; Sandy Genis; Andrew Willis
Subject: Parkside county parcel EPA pocket wetlands?

1989-EPA-mapc.jpg
(853 KB)

Hi CCC staff and friends of Bolsa Chica,

I apologize for lobbing so many last minute items your way today. This is the last one, I promise. ;-)

There has been so much focus on the large 8.1 acre EPA wetland on the Shea city parcel that I fear two smaller EPA pocket wetlands have been overlooked on the Shea county parcel. The light only dawned for me today when a tattered, yellowing, large-size copy of the EPA wetland map was delivered to me.

The attached 1989 EPA wetland map shows two skinny wetlands in the county parcel. An analysis of my Google Earth historic aerial imagery at http://www.bixby.org/parkside/kml/showme.kml shows that the locations of these two skinny wetlands were relatively undisturbed from when the Coastal Act was passed until 02/19/83 when some disturbance of the northern pocket wetland becomes evident. The northern pocket wetland appears to have been completely filled by the time of the 05/28/84 photo.

These pocket wetlands are depicted on LSA 2002 county parcel wetland delineation maps, without any explanatory legend or associated text.

The Sanders 1991 report that fed into the prior converted cropland designation was solely focused on the 8.1 acres without any mention of the county pocket wetlands.

These pocket wetlands have not been cropped since passage of the Coastal Act. You have to go back in the aerial record to at least 1959 to find clear evidence of cropping.

If they were not cropped since the EPA delineated them in 1989, and they are not mentioned in the Sanders 1991 report, were they included in the prior converted cropland decision? It seems unlikely.

If they were federal wetlands, then they were also CCC wetlands. They appear to be intact in my 03/15/81 photo. The parking lot fill explicitly granted by CDP 5-82-278 did not include these pocket wetlands. It seems likely that the "existing condition" recognized by the CDP included these unfilled wetlands.

Yet these two wetlands are not recognized today by CCC staff Exhibit L. Why not? It looks to me like the northern pocket wetland was another victim of unpermitted stables fill.

I realize that these two wetlands are outside of the proposed development footprint and are protected within the southern euc grove ESHA buffer. But if there was unpermitted fill in violation of 30233, then the filled northern pocket wetland must be restored in order to enhance the habitat value of the ESHA.

--
mark@bixby.org
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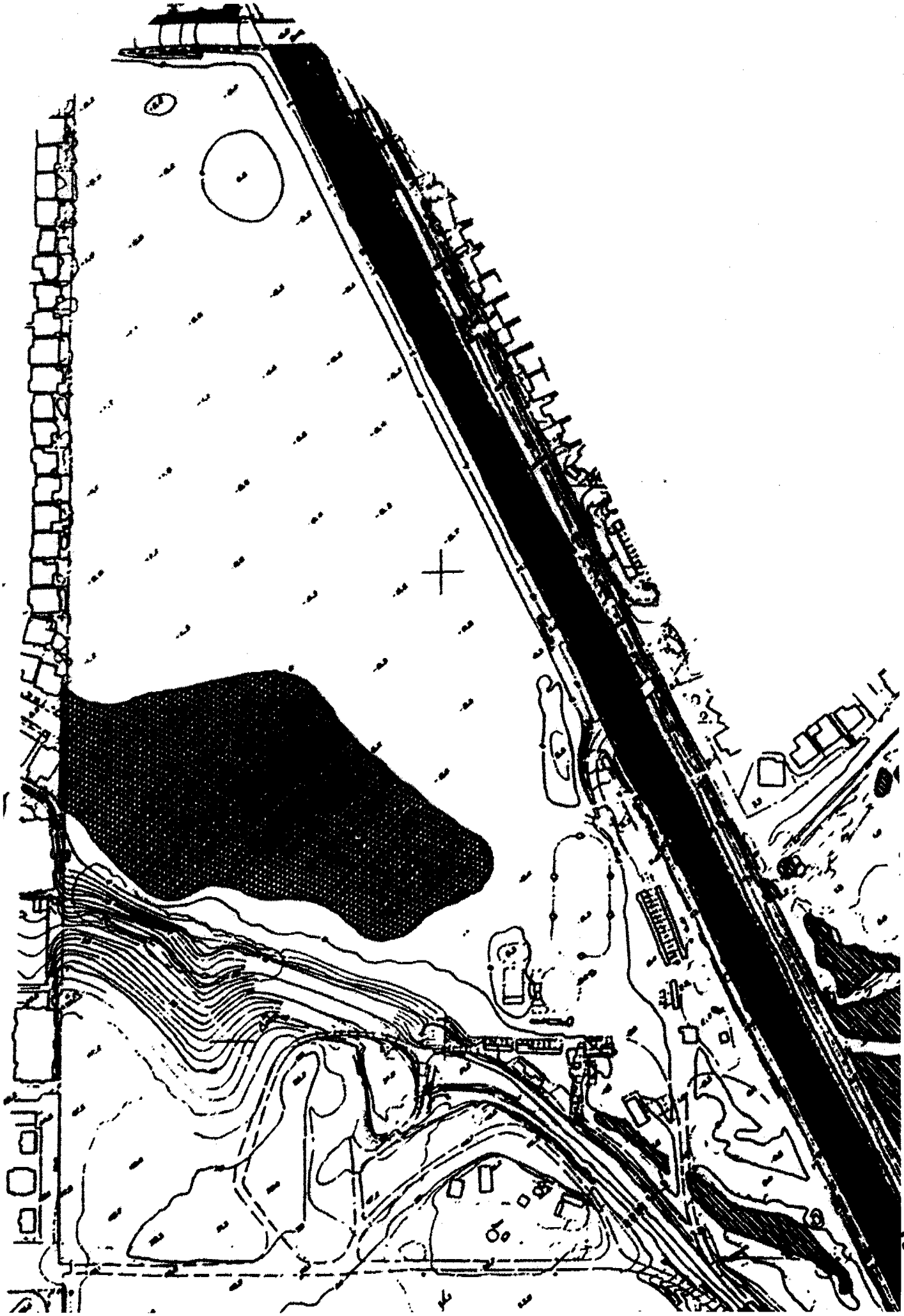
JJJ8



Neighbors for Wintersburg Wetlands Restoration
17451 Hillgate, Huntington Beach, CA 92649-4707 - 714-625-0876 - www.bixby.org/parkside

June 27, 2007

We8.5a

California Coastal Commission
South Coast Area Office
ATTN: Meg Vaughn
200 Oceangate, Suite 1000
Long Beach, CA 90802-4416

RE: Bixby raptor maps and Huntington Beach LCPA HNB-MAJ-1-06 and Shea Homes Parkside Estates

Dear Ms. Vaughn and Coastal Commissioners,

It has recently come to my attention that there may be a possible misunderstanding regarding the raptor sighting maps that I presented at the San Pedro hearing on May 10, 2007, as well as the maps I have previously submitted in letter form onto the written administrative record.

My letter form maps denote sightings at a particular perch location by a string of letters with the first letter being underlined, i.e. "WWWWWW". The underlined letter denotes the location of the first sighting, and the subsequent adjacent letters serve as a count of additional sightings at the location indicated by the first letter. Thus the preceding example indicates a total of 6 sightings at one specific location under the first underlined "W". The maps I showed in my San Pedro PowerPoint presentation used a similar representation but utilized a red dot instead of an underlined letter to denote the perch location with better visibility for the hearing room.

I tried to explain this mapping methodology as clearly as I knew how in my letters and in my speech, but apparently I was not clear enough, and some confusion resulted over whether or not my strings of letters indicated raptor foraging usage over the adjacent agricultural field.

My current maps tend to undercount raptor usage of the agricultural field. The relative lack of landmarks in the vastness of the field makes it difficult to accurately map perch locations, and my maps do not attempt to record the flyover activity which is a major component of foraging. So most of the agricultural field raptor foraging activity that I have witnessed has gone unmapped.

The raptor species that I semi-regularly observe foraging in the agricultural field (mostly when fallow) are American Kestrel, Cooper's Hawk, Northern Harrier, Turkey Vulture, and White-tailed Kite. Other agricultural foragers include Great Blue Heron and Great Egret. Most agricultural foraging activity occurs in the western half, i.e. from WP to the mesa.

Hopefully this letter has cleared up any lingering confusion. I have worked out a new & improved map design that will prevent this type of misunderstanding in the future. I look forward to implementing this design later this year once the LCPA process quiets down.

RKK

Sincerely,

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M E M O R A N D U M

FROM: John Dixon, Ph.D.
Ecologist

TO: Meg Vaughn

SUBJECT: Natural Resources at the Parkside Property

DATE: July 2, 2007

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At the May 10, 2007 Coastal Commission Hearing concerning a project-specific (Shea Homes) LCP Amendment by the City of Huntington Beach, several issues were raised by Commissioners or members of the public that staff had either not addressed or had dealt with in insufficient detail. Although many photographs of standing water were presented at the hearing, there was no new evidence of inundation that I had not previously considered (Dixon 2006). The principal unresolved issue concerns the possible loss of wetlands as a result of significant landform alterations including direct fill of wetlands. The Commission's mapping supervisor, Jon Van Coops (2007), has documented in a separate memorandum the actual landform changes that have taken place since the implementation of the Coastal Act using aerial imagery and topographic surveys. I will relate those changes to the existence and distribution of wetlands on the property. I will also address the recent assertions by wetland consultants for Shea Homes that the area delineated as a wetland by consultants for the Signal Bolsa Corporation and by the U.S. Environmental Protection Agency was not actually a wetland when delineated, but rather was an artifact of technical errors. In addition, I will address two issues relating to raptors: 1. The value of the agricultural field as foraging habitat, and 2. The basis for recommending a particular width for a protective buffer around perching, roosting, and nesting habitat.

Wetlands, Landform Alterations, and 1998 Farming Operations

EPA Wetland

During the 1980s, the Signal Bolsa Corporation commissioned a great deal of field work to delineate wetlands within the undeveloped portions of the Bolsa Chica lowlands that historically had been tidal marsh. Much of that effort was devoted to hydrological studies, which included the analysis of aerial imagery, both vertical aerial photographs and nearly monthly oblique aerial photographs that documented surface saturation or

surface ponding of water. The study area included the property that was owned by the Metropolitan Water District of Southern California (now Shea Homes Parkside), although the MWD property received less intense scientific scrutiny than the Signal properties. Then, as now, most of the Parkside property was under agriculture, precluding the presence of wetland vegetation. Dr. Dana Sanders was the wetland scientist responsible for the wetland delineation. However, for the Parkside property, his recommendations followed closely the recommendations of Thomas Bilhorn, a hydrologist and earth scientist, who conducted the actual field work and analysis. Bilhorn based his wetland identification on: (1) a field examination (including test pits and borings) on April 15, 1987, (2) nearby rainfall records, (3) a 1980 topographic map, (4) approximately monthly low altitude, oblique aerial photographs covering the period 1981 - 1987, (5) historical aerial photos dating to 1927, and (6) the documented history of land alterations affecting the area. After Dr. Sanders concluded that a portion of the site met federal wetland criteria[1], Mr. Bilhorn estimated the location, size and shape of the wetland based on the presence of a topographic depression and on the location of a wetted area on vertical aerial photographs from 1982.

In 1980, the U. S. Environmental Protection Agency designated the Bolsa Chica area as a "Special Case," which under a Memorandum of Understanding with the U. S. Army Corps of Engineers, transferred the responsibility for wetlands identification and delineation from the Corps to EPA. Although considerable field work had been done by Signal, the EPA independently identified and delineated the wetlands in the agricultural area based on their own analysis of aerial photographs and topography (T. Yocom[2] in personal telephone and electronic mail communications to J. Dixon on June 19, 2007). Mr. Yocom pointed out that, "In addition, under 40 CFR 230.3(s)(1), farmed areas which were historically subject to the ebb and flow of the tide and which remain below the plane of MHW are 'waters of the United States.' (see EPA JD[3], page 6). The Metropolitan property, according to EPA's JD, is underlain with Bolsa Silty Clay Loam, and is described as a soil on alluvial fans that are somewhat poorly drained and with mottles (redox concentrations.) They are listed as having good potential for supporting wetland vegetation (1978 Soil Survey for Orange County)."

In a recent submission (Homrighausen, Bomkamp and Josselyn 2007), Shea Homes' wetland consultants refer to the wetland area mapped in the late 1980s by Signal Bolsa Corporation and by the EPA as the "so-called 'EPA Wetland'" and put forth various arguments that purport to show that a wetland did not exist at that location at that time. They make the following claims: 1. Field studies conducted both before and after the EPA wetland delineation found that no wetlands were present. 2. The Signal Bolsa consultant, Thomas Bilhorn, based his 1987 wetland determination only on 1980 topography and 1982 vertical aerial photographs and that dark soils in such a photograph are not evidence of wetness. 3. EPA "picked up" Bilhorn's errors and, by implication, did not do independent research. 4. Bilhorn and EPA did not account for losses of hydrology that resulted from the construction of the Cabo del Mar

[1] Sanders made all the final delineation decisions following the standards developed by the Army Corps of Engineers (Bilhorn, personal communication to J. Dixon on June 29, 2007).
[2] Tom Yocom was a "National Wetlands Expert" for the USEPA at the time of his retirement in 2005. In the late 1980s, Mr. Yocom was responsible for the EPA wetland delineation of the Bolsa Chica lowlands.
[3] Jurisdictional Determination

condominium complex around 1983-1984, several years before their delineations. 5. No direct evidence of surface hydrology was ever reported, and 6. Signal Bolsa Corporation's primary wetland consultant, Dana Sanders, determined in 1991 that "Bilhorn is flawed." I will address these claims in order.

1. Homrighausen et al. (2007) assert that, "Four mappings or wetland determinations made before the Bilhorn/EPA delineation and six made subsequent to it all found no wetland in the 'EPA wetland' area." This might be taken to mean that each of these reports determined that there were no wetlands in the area mapped by EPA. That is not the case. The four early studies (Dillingham 1971, Mulroy 1973, Boule, et al. 1981, and CDFG 1981) were not technical wetland delineations. Dillingham (1971) and Boule, et al. (1981) were vegetation studies that described the Parkside property as "plowed field" and "U/A" (Urban/Agricultural), respectively. Mulroy characterized the area as a "ploughed field" or "wheat field" containing trees and weeds. In 1981, the California Department of Fish and Game designated the whole Parkside property as "severely degraded wetlands (restorable – below +5' MSL)." These reports simply acknowledge the fact that this historical salt marsh was an agricultural field at the time of observations. Of the six "studies" that took place after the EPA determination, three (Sanders 1991, Gill 1992, and Rempel 1992) were not, in fact, studies at all. Sanders (1991) was a determination based on inaccurate reporting of the record (see Dixon 2006) that the EPA wetland was "prior converted cropland"[4] and Gill (1992) was a concurrence letter from the Army Corps of Engineers. Apparently, no field work was conducted for this concurrence and had the record been accurately reported, the area might not have met the definition of "prior converted cropland" (Dixon 2006). Rempel (1992) was a concurrence by CDFG with the report by Kegarice (1997). The flawed nature of that study and my technical assessment of the other two studies (Frank Havore and Associates 1997, Young and Bomkamp 2004) are detailed in my earlier memo (Dixon 2006). In addition, it should be noted that these wetland studies did not attempt to assess conditions as they existed in 1987, but rather dealt with current conditions, which included markedly changed topography.

2. Homrighausen et al. (2007) confound issues associated with wetland identification with separate issues regarding wetland boundary determination. Bilhorn relied on a variety of evidence for his wetland determination (see above). His boundary determination, on the other hand, was based on the wetted area shown on two 1982 aerial photographs[5] and on the location of a topographical depression documented by 1980 elevations. Although the data were not shown,[6] Bilhorn (1987) stated that "seasonal patterns of damp and flooded soils" were determined from the monthly 1981 -

[4] In the 1988 National Food Security Act Manual, the Soil Conservation Service defined "prior converted croplands" as wetlands that, prior to December 23, 1985, were both cropped and manipulated to the extent that they no longer exhibit important wetland values. Specifically, such areas are inundated for less than 15 consecutive days during the growing season during most years. The Corp and EPA do not exert jurisdiction over prior converted cropland.

[5] This was actually a good time to analyze patterns of wetness and inundation. In the week prior to the March 18, 1982 photograph there were about 2.2 inches of rain with 1.8 inches falling on March 17-18. In the intervening days before the March 31, 1982 photograph, an additional .8 inches of rain fell.

[6] In his report on the Bolsa Chica lowland owned by Signal Bolsa Corporation, Bilhorn (1986) mapped the ponded areas shown in the low level, oblique aerial photographs. Unfortunately, the study area for the 1986 report did not include the agricultural field, so no data were shown for the latter. Although the photographs included the agricultural field and Bilhorn (1987) used them for his wetland identification, he did not present the data.

1987 low altitude photographs, as opposed to the two 1982 vertical aerial photographs that he used to estimate the wetland boundary. Homrighausen et al. (2007) also assert that "Bilhorn made a flawed determination of 'wetted soils'" and "presumed that dark soils were equivalent to wet soils." In a recent memorandum (Bilhorn 2007), Mr. Bilhorn states his educational credentials and extensive experience in the interpretation of aerial photographs, emphasizes that in all his work (including that at Bolsa Chica) he combines photo-interpretation with ground-truthing, addresses the "dark soils vs wet soils" issue[7] and stands by his 1987 delineation. 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). This confirms the accuracy of Mr. Bilhorn's determination of wetted soils from his analysis of the March 18, 1982 vertical aerial photograph. Finally, Homrihausen et al. (2007) claim that I found that ponding occurred for less than 7 days during March 1982, implying that this in some way relates to the EPA wetland. In my report (Dixon 2006), I used rainfall to estimate the likelihood of areas AP and WP ponding for at least 7 days given current topography and soil conditions. This obviously says nothing about the actual conditions in 1982 when the topography was very different. At that time, neither AP nor WP was present, whereas the EPA wetland included the lowest point in the agricultural field.

3. Homrighausen et al. (2007) assert that the EPA study was really just a restatement of the Bilhorn study.[8] According to Mr. Yocom, this is not true. EPA took into account data that had been collected by Signal Bolsa Corporation's consultants, but also conducted an independent analysis based on their own interpretation of aerial photographs and site topography.

4. Prior to the 1980s, some portion of the runoff from the mesa and mesa slope where the Cabo del Mar condominiums are now located drained onto the Parkside property. To my knowledge, there has never been a topographic analysis to determine where the runoff was directed or how much drained onto Parkside as opposed to other parts of the mesa or to the residential areas north of Parkside that are at a lower elevation. However, this land historically contributed some amount of water to the agricultural area of Parkside. At least by 1986[9], all the runoff from the Cabo del Mar Condominium complex and some adjacent neighborhoods was directed to a 5-foot storm drain that was constructed on the Parkside property along its northern boundary. Also, for an interim period of unknown duration between about 1978 and the completion of the condominium complex, runoff from an undetermined area was directed to drain pipes that terminated in an open "bubble up structure"[10] just north of the Parkside property line at the base of the slope near the northern Eucalyptus grove. Homrighausen et al. (2007) claim that the delineation of the "EPA wetland" was flawed because neither Bilhorn nor the EPA took into account these changes in hydrology and seem to suggest

[7] Mr. Bilhorn commented that, "… I have a great deal of experience in using aerial photos, and at Bolsa visited and mapped that site almost monthly over something like eight years. I am comfortable in standing by my description of saturated ground as distinguished from dark-mineral colored soil as that was a necessary distinction I had to make each month throughout the Bolsa area."

[8] Similarly, Metzler (2007) states that EPA "perpetuated" an error by Bilhorn.

[9] The construction drawings submitted to the City were signed off "as built" in 1986, but the date of sign-off does not necessary correspond to the date of completion.

[10] Essentially a short length of vertical culvert that terminated above the ground surface and had a protective grated cover.

that if there was a wetland, it was critically dependent on whatever water was diverted by the new storm drain. The latter is an *ad hoc* hypothesis for which there is little evidence one way or the other. One can only say that some amount of water was added or perhaps only directed to a point location (the bubble up structure) for a few years around the early 1980s and that sometime between about 1984 and 1986 water from north of the site was diverted to a storm drain. Both Bilhorn (1987) and EPA (1989) are silent regarding the Cabo del Mar development. However, the grading and construction of the condominiums and the excavation and installation of the storm drain across the agricultural field were not subtle or hidden activities and Bilhorn (1987) stated that he considered "[v]arious 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 of the construction activities that were taking place when he did his assessment, he stated that he would routinely have taken into account obvious changes that affected hydrology and that took place prior to his 1987 report (personal communication to J. Dixon, June 28, 2007).

5. Homrighausen et al. (2007) assert that "…no direct evidence of surface hydrology was ever reported…." Bilhorn (1987) stated that the delineated area was "…indicated by aerial photographs to receive surface water repeatedly from adjacent areas during the winter rainy season." That is direct evidence (also see Figure 1, below). Unfortunately, the photographs are not readily available for verification because Mr. Bilhorn turned over all the photographs to the State Lands Commission when they took possession of the Bolsa Chica lowlands (Bilhorn 2007 and personal communication to J. Dixon on June 28, 2007).

6. Homrighausen et al. (2007) assert that: "…Sanders originally concluded that none of the area in the agricultural field was wetland. Nevertheless, in 1987 Sanders deferred to Bilhorn's hydrology analysis, even though, in retrospect, it appears flawed." In 1987 Sanders concluded that: "Based on the application of the multiparameter approach, the entire subunit (43.8 acres) is presently uplands. This is due to the absence of wetlands hydrology in most of the subunit and hydrophytic vegetation throughout. However, it was determined that a portion of the subunit would probably be sufficiently wet to support hydrophytic vegetation if the farming activities ceased." In his 1991 letter, Sanders backpedaled and claimed that he "preliminarily concluded that none of the area qualified as wetlands" but changed his mind because Bilhorn (1987) showed that during periods of normal rainfall the shallow soil was saturated by a high water table. This characterization of Bilhorn's results is demonstrably false (Dixon 2006). The salient result of Bilhorn's studies was that the water table in the agricultural field was too deep to contribute to wetland hydrology and that the wetland was dependent on rainfall and localized runoff (Bilhorn 1987 and personal communication to J. Dixon on June 28, 2007).

Homrighausen et al. continue: "Sanders makes it clear in his 1991 letter that Bilhorn is flawed, noting the altered hydrology." After rereading Sanders (1991) several times, I remain baffled by this statement. No where does Sanders question Bilhorn's results, he merely misrepresents them. I have previously (Dixon 2006) discussed the grossly

inaccurate representations made by Sanders (1991)[11]. I am attaching copies of Sanders (1987 and 1991) and Bilhorn (1987) so those who are interested can make their own assessment of the reliability and verisimilitude of Sanders (1991).

Landform Alterations

In his memorandum, Jon Van Coops (2007) carefully documents both the fill that has been added to the southwestern portion of the Parkside site (probably originating offsite) and the leveling of the agricultural field by removing soil from some areas and adding it to others. In 1980, the area where a wetland was later mapped by EPA was a depression that included the lowest point in the agricultural field. In general, the ground sloped from the south and east to the north and west. The bottom of the depression was one to one and 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. Today there is no indication of a depression in that area.[12] It has been completely filled. On the other hand, the base of the hillside to the west has been cut and that is now the lowest place in the agricultural field and the location of the AP wetland. Until 2005, there was a second, shallower depression next to the flood control channel that was designated WP. The delineated boundary was at an elevation of about 1.2 feet and the lowest point was about 0.7 feet. This area was effectively leveled by moving dirt from the hill to the west into the depression with a box plow[13] in December 2005. Therefore, regardless of means or intent, the EPA wetland was filled and the AP and WP wetlands were created between 1977 and 2005. In December 2005, WP was also filled.

In addition to the land leveling that has taken place, fill has been imported and placed in the southwestern portion of the site. The fill upon which the extension of Slater Avenue was constructed was in place prior to the local implementation of the Coastal Act. The fill upon which a stable and associated infrastructure was built was added after 1977. In addition, a ditch was dug around the northern and eastern edges of this raised area, apparently to convey runoff to a pond from which it was pumped, probably into the flood control channel. This unpermitted ditch periodically held water and may have developed wetland characteristics. Using a bulldozer, Shea Homes filled the ditch in 1998 "in preparation for farming." The earlier fill south of Slater Avenue associated with the stable development covered an area that supported pickleweed, a wetland indicator

[11] Sanders (1991) manages to make the following contradictory statements on the same page: "…the water table does not rise to the soil surface during years of normal rainfall…." and "…the area would not have been considered as wetlands except for the high water table expected during years of normal rainfall…."

[12] Homrighausen et al. (2007), however, assert that "Changes in topography have been minimal – a matter of inches, less than the depth of a furrow."

[13] Shea Homes (Metzler 2007) equates a "box plow" with a "wide-blade plow." The use of the latter is considered "plowing" and a normal farming activity by the Corps of Engineers. However, a "wide-blade plow" is a different implement. According to "free.tractor.manuals.com," a wide-blade plow is synonymous with "sweep plow," "Noble blade plow," "blade plow," and "V-blade plow" and refers to a "wide flat blade tractor implement that kills weeds without disturbing surface residue." A similar definition is provided by the Savannah Company, which manufactures blade plows (www.savannahglobal.com). In any event, "redistribution of surface materials by blading, rading, or other means to fill in wetland areas is not plowing" by federal standards (33CFR320-331).

plant, in 1971. The area no doubt was still a wetland when it was filled. The fill north and west of the horse arena occurred in areas that were periodically inundated, judging from aerial photographs. However, there are insufficient data upon which to determine whether most of those areas would have met the definition of wetlands under the Coastal Act and the Commission's Regulations at the time they were filled. A small portion of that fill appears to have been placed on the EPA wetland (Van Coops 2007, Exhibit 26).

1998 Farming Operations

Metzler (2007) characterizes an April 22, 1998 photograph of a bulldozer grading and moving earth within the agricultural field as being a "weed abatement operation," and implies that it was a necessary response to a weed abatement order from the City of Huntington Beach. On April 20, 1998, apparently in response to concerns from citizens and the Department of Fish and Game,[14] the City of Huntington Beach acted as follows:

> The motion made by Green, second Sullivan to authorize the Street Superintendent to proceed with abatement of said nuisance, except Shea Company property located at southerly terminus of Graham Street, north of Orange County Flood Control channel (except for 100 foot buffer zone by residences for fire protection purposes) and report this matter at the Council meeting of May 4, 1998. The motion carried by unanimous vote with Councilmember Julien recorded absent.

Apparently, weed abatement was only required in a 100-foot strip long the northern boundary of the property that is adjacent to existing residences.[15] Generally, weed abatement is accomplished by mowing to a height of no more that 6 inches or by disking and does not require the movement of earth from one place to another. The bulldozer operation that took place in April 1998 did accomplish the abatement of weeds, but it also resulted in significant landform alteration as is suggested by the piles of earth that were documented in a video taken by a local resident (Figure 2).

Raptor Habitat and Its Protection

Foraging Habitat

At the May 10, 2007 Hearing, members of the public pointed out that the agricultural fields on the Shea Homes Parkside property offer foraging opportunities to raptors that would be lost as a result of the planned development. In a comment letter on the draft Environmental Impact Report for Parkside Estates, the California Department of Fish

[14] "Scott Harris, biologist, California Department of Fish and Game, stated that new information has been given to the state Department of Fish and Game. He presented reasons why he would urge that weed abatement be postponed for at least one growing season to give any wetlands vegetation a chance to come back so that a more complete wetland evaluation can be on that property. Mr. Harris responded to Mayor Pro Tem Green regarding the possibility of reversing the letter of the California Department of Fish and Game." From the Minutes, City Council/Redevelopment Agency, City of Huntington Beach, April 20, 1998.

[15] However, it was also made clear at the meeting that there was no reason not to disk the field for farming.

and Game (Rempel 1998b) found that, "Agricultural areas, grasslands and wetlands are of seasonal importance to several species of raptors in Orange County by providing important, if not vital, staging and wintering habitat. These habitats also provide forging areas for resident breeding raptors." Although the potential impact to raptor foraging habitat was noted, Rempel (1998b) did not recommend any specific mitigation.

In recent years, the California Department of Fish and Game has recommended that losses of documented raptor foraging habitat would be adequately offset by the dedication of 0.5 acres of foraging habitat for every 1.0 acre that is lost (e.g., Tippets 2000 and W. Tippets (CDFG), personal communication to T. Henry (CCC) in 2004). In past actions,[16] the Commission has followed this recommendation.

Since raptor foraging habitat is typically comprised of annual grassland and ruderal areas, I queried a number of raptor experts regarding the significance of agricultural areas that are frequently planted in row crops. Although plowed fields tend to have lower foraging value than undisturbed areas, they are still important. If the agricultural land is allowed to go fallow for part of the year and if it is periodically flooded it will also bring in more raptor prey species (Scott Harris, CDFG, email to J. Dixon on May 25, 2007). At an agricultural site in the Halfmoon Bay area there is significant raptor foraging in disked areas (G. Deghi, email communication to J. Dixon on June 8, 2007). Peter Bloom observed that gophers are often abundant in agricultural fields and that even repeated plowing does not exclude all rodent species (email communication to J. Dixon on June 4, 2007). Gary George, the Executive Director of the Los Angeles Audubon Society noted that agricultural fields are used for foraging by white-tailed kites, northern harriers, ferruginous hawks, and Swainson's hawks (email communication to J. Dixon on May 27, 2007). Although, there has been no attempt to quantify the raptor use of the agricultural field at the Shea Homes Parkside property, Mark Bixby (2007), a local resident who regularly visits the site, "semi-regularly" observes foraging by white-tailed kites, northern harriers, kestrels, and Cooper's hawks, especially in the western portion of the agricultural field nearest the Bolsa Chica Mesa and the stands of Eucalyptus trees.

Therefore, it appears that the agricultural field at the Shea Homes Parkside property is a significant foraging resource for several raptor species, including the white-tailed kite, which is a California "fully protected species." Bloom (2000) estimated the average distance from their hunting perch that raptors take prey: red-tailed hawk (100-300 yd / 91-274m); red-shouldered hawk (100ft / 30m); merlin (75-400yd / 69-366m); peregrine falcon (150yd / 137m); Cooper's hawk (50-250yd / 46-229m); sharp-shinned hawk (50-150yd / 46-137m); great horned owl (100-300yd / 91-274m); barn owls (25-100yd / 23-91m). This also suggests that the portion of the field that is closest to the western hillside and the Eucalyptus groves is of greatest significance to raptors.

[16] For example, Revised Findings for 5-97-367-A1 (Hellman Properties LLC) adopted June 14, 2000 and Revised Findings for 5-05-020 (Hearthside Homes/Signal Landmark) adopted October 13, 2005 (original CCC action was on April 14, 2005).

Eucalyptus Tree ESHA and Protective Buffers

Most of the area supporting the trees that line the edge of the Bolsa Chica Mesa has been recognized as an Environmentally Sensitive Habitat Area (ESHA) by the Coastal Commission in past actions because of the important ecosystem function of providing nesting, perching, and roosting habitat for many species of birds of prey. I have recommended that the northern grove of trees on the Parkside property also be designated as an ESHA because it has been documented to provide the same ecosystem functions as the rest of the trees and recommended a 100-meter protective buffer (Dixon 2006b). The following discussion presents the rationale for recommending a 100-meter development setback.

The protective function of development setbacks or buffers increases in some non-linear fashion with an increase in the width of the buffer. The amount of protection provided by the buffer can probably be described by an S-shaped curve, increasing slowly for ten or twenty meters, then rapidly for some unknown distance that varies by species (but probably from several tens of meters to a few hundred meters) and finally slowing and approaching an asymptote at greater distances. Therefore, within that middle range of distances whether or not a buffer is protective is not a “yes” or “no” question, but is instead a matter of degree. The shape of the curve and the feasible level of protection also varies with the landscape setting.

In an urban setting, feasible development setbacks are probably always too small to prevent impacts to all wildlife species. For example, Findlay and Houlahan (1997) found a negative correlation between species richness in wetlands and the density of roads on land up to 2000 meters from the wetland and concluded that narrow buffer zones were unlikely to protect biodiversity. It is very unlikely that such relationships would be evident in urban areas because the potential buffer zone is already developed and the most sensitive species are already lost. The scale of disturbance and its ecological effects is irreversibly altered by urbanization. Whereas in a natural setting a 2-kilometer buffer might be measurably more protective than a buffer of a few hundred meters, in an urban setting the maximum possible buffer is generally no more than one to several hundred meters and often less.

Another complication in an urban setting is that many birds that are present are either genetically predisposed to tolerate disturbance or have become habituated to human activities. These are the birds that will be most apparent to human observers. In the context of the nearby Hearthside Homes Brightwater development, LSA (2000) conducted a flushing study. They found that, when their perches were approached by a pedestrian, raptors flushed at distances that varied among species, individuals, and height of the perch. The lower the perch the sooner the birds flushed. Kestrels were most tolerant of human presence, often not flushing at all (flushing range 0 – 13 m). At the other extreme the single turkey vulture approached flushed at a distance of 70 m. White-tailed kites, which are sensitive to human intrusion in natural settings, generally flushed when approached to 30 m. Given the relatively high level of disturbance within the habitat where the study was done, it is reasonable to assume that most of the birds

that persisted there were relatively tolerant of human presence and these flushing distances should be considered minimums.

The problem with such studies is that they probably are examining only the tolerant subset of the raptor populations. Less tolerant birds would flush much sooner and may avoid many urban areas. Jurek (2000) pointed out that, "Individuals within a species may have differing levels of response to human activities, owing to variation in the population for tolerating unusual situations, or to differences in habituating to human activities out of past experience or upbringing. The same level of activity that would not adversely affect one of the habituated raptors might be perceived by a newly arrived individual of the same species in the ESHA to be threatening, causing the bird to not return there." Similarly, Walton (2000) wrote that developers "...often rely on buffers that I find largely ineffective for reducing raptor fright/flight response." and "They describe unusual tolerance, habituated individuals or exceptions to normal raptor behavior rather than the more common behavior of wild birds."

Studies conducted in natural settings find greater sensitivity to disturbance and result in recommendations for much larger buffers. Richardson and Miller (1997) cite several studies of flushing, the results of which vary among raptor species. Across species, the average minimum and average maximum flushing distances were, respectively, 35 m and 293 m for vehicle disturbance and 40 m and 466 m for pedestrian disturbance. The pedestrian figures suggest greater sensitivity to disturbance than was observed by LSA, but a different suite of species were observed in the two reports, which confounds direct comparison. However, two species were common to both reports. Merlin allowed approach all the way to the perch tree at Bolsa Chica but flushed at 17 m – 180 m elsewhere. Similarly, kestrels often never flushed at Bolsa Chica (range: 0 m –13 m), whereas they flushed at approach distances of 10m – 100 m elsewhere. These data suggest that raptors that currently use the highly disturbed portion of the ESHA at Bolsa Chica[17] are more tolerant of human presence than the average individual at less disturbed locations. The corollary is that many birds that could potentially use the ESHA may be excluded by human disturbance (cf. Jurek, 2000 and Walton 2000).

In their literature review, Richardson and Miller (1997) found that raptor biologists recommended buffers for various species of nesting raptors from 200 m to 1500 m in width, with the exception of 50-m buffers from visual disturbance for kestrels and prairie falcon. The following buffers were recommended for raptors that are known to have occurred at Bolsa Chica: Osprey (400–1500m), Cooper's Hawk (400–600m), sharp-shinned hawk (400-500m), red-tailed hawk (800m), peregrine falcon (800-1600m), American kestrel (50-400m). In order to prevent flushing by 90 percent of wintering individuals in rangeland and agricultural habitats, Holmes (1993) recommended buffers of 75 m for American kestrels and 125 m for merlin. Ferruginous hawks, which have the potential to occur at Bolsa Chica (Bloom, 1982), were subjected to experimental disturbance by White and Thurow (1985), which resulted in nest abandonment and lowered fledging success. Based on their experiment, they concluded that a buffer of 250 m would prevent nest desertion for 90% of the population. Bloom (2000) estimates flushing distances for raptors that occur at Bolsa Chica as follows: Osprey, red-tailed

[17] With the application of a Habitat Management Plan, the level of disturbance should decrease significantly.

hawk, rough-legged hawk, white-tailed kite, and peregrine falcon (100yd / 91m); Cooper's hawk (≥ 100yd / 91m); merlin (50 yd / 46m), great horned owl (75 yd / 69m); barn owl (day: 10 yd/ 9m).

White-tailed kites are a fully protected species in California, have frequently nested at Bolsa Chica, and are generally considered relatively sensitive to human disturbance. Therefore, I think that buffers that are adequate to protect nesting white-tailed kites should be adequate for most of the other species that are likely to nest in the Bolsa Chica ESHA. The following minimum spatial buffers have been recently recommended for nesting white-tailed kites: 100m (Bloom 2002); 100m (Holmgren 2002); 50m (J. Dunk (raptor researcher) in personal communication to M. Holmgren, 2002); 46-61m with "low-frequency and non-disruptive activities" (Froke 2002). These estimates suggest that a 100-m buffer in an urbanized setting is probably adequate, but not overly conservative.

The California Department of Fish and Game (1982) and the U.S. Fish and WIldlife Service (1979) also recommended a 100-m buffer for Eucalyptus ESHA at Bolsa Chica. The Service (1919) stated that, if planning adhered to USFWS guidelines, not only would 100-m buffers be established around the Eucalyptus groves but, "No development or access of any type would be allowed in the buffer area. Park corridors could border the zone but not intrude into it."

LSA, the consultant group for both Hearthside Homes and Shea Homes, has argued for very narrow buffers at Bolsa Chica. However, for the ESHA to the west of the Shea property, Homrighausen and Erickson (1999) concluded that a "100 foot buffer will provide adequate distance to permit nesting by the most common and least sensitive raptor species in all suitable portions of the ESHA" and that "The southern side of the ESHA will have a great deal of utility for virtually all the nesting birds, because it is bordered by hundreds of acres of open space, it will be screened from the development area by the northern edge of the ESHA, and a substantial portion of the grove is a least 100 meters from future development." I think taken together these statements indicate that development closer than 100 meters will reduce the utility for nesting raptors of those portions of the ESHA that are closest to the development footprint and therefore that a reduced buffer would violate Section 30240(b) of the Coastal Act because the portions of the ESHA nearest the development would be significantly degraded and no longer suitable for nesting by some of the raptor species at Bolsa Chica.

Finally, there seems to be a tendency to argue for narrower buffers where there are sources of disturbance already present. For example, the northern grove of Eucalyptus at the Shea Homes property is perpendicular to an adjacent condominium complex. If anything, this circumstance should be recognized as a reason to increase the amount of protection for the portions of the ESHA that are still adjacent to open space. If disturbance is allowed close to the trees on the remaining sides of the grove, the utility of the habitat to raptors would be severely compromised.

For all these reasons, I recommend that the Eucalyptus tree ESHA on and adjacent to the Shea Homes property be provided with 100-meter development setbacks. Such a

buffer will not only keep disturbance at a distance, but it will provide foraging opportunities close to perching and nesting areas.

Attachments:

Bilhorn (1987, 2007), Sanders (1987, pages 49-50), and Sanders (1991).

Figure 1. Oblique aerial photograph dated March 19, 1982 showing the EPA wetland and surrounding land under standing water. The photograph was originally obtained from Aerial Eye, Inc., 18103-F Sky Park Circle, Irvine, CA 92614 and a digital image was provided by M. Bixby. I cropped the photograph to emphasize the Shea Parkside property.

Figure 2. Piles of earth along Graham Street resulting from grading activities on the Shea Parkside property in April 1998. I extracted this image from a video clip taken by a local resident (identified as “Albright-980424.2”).

APPENDIX F

Agricultural Area Delineation
Bolsa Chica, Orange County California

Prepared by

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Prepared for

The Signal Bolsa Corporation
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June 1987

The Agricultural subunit Section 404 delineation has been made relying on less information than that available for the remainder of the project area. No water table piezometers were installed in this area; thus detailed hydrological information is lacking.

The location and type of lands believed to potentially qualify under Section 404 are shown on the attached map (Agricultural Area Delineation, Bolsa Chica Study, June 1987). The delineation is based upon the following examinations and records:

1. Field examination of current conditions (April 15, 1987) including two test pits and borings to total depths of approximately 60 inches.
2. Rainfall records of adjacent stations (Huntington Beach Fire Station and Orange County Westminster Station) for comparison of the current season with long-term record-derived norms.
3. Topographic map at the scale of 1 inch equals 200 feet with computed 0.5 foot contours, flown September, 1980.
4. Low altitude, oblique aerial photographs flown approximately monthly from 1981 to the present.
5. Historical aerial photographs dating back to 1927.

6. Various records and reports providing dates of construction and land alteration which affect the elevation, vegetative cover and hydrology of the area of study.

CONCLUSION

This area has been under agricultural cultivation since the mid-1930's. Some drainage works existed prior to that time, and major projects, principally the Wintersburg-East Garden Grove Flood Control Channel and the Slater Drain, were completed by 1961 and 1968, respectively. Land drainage and the current agricultural usage began long before enactment of Section 404.

At the time of field examination, the area had been plowed in preparation for planting. It was unvegetated except for an area of a few hundred square feet containing remnants of an agricultural crop. Current topographic relief appears generally consistent with the topographic map of 1980. A small depression near Graham Street has been filled as no water is seen to collect in this area. Otherwise, seasonal patterns of damp and flooded soils, as interpreted from the recent low altitude photography, are consistent with the 1980 topography.

Using March 18 and March 31, 1982, photographs, which are representative of normal year seasonal and transient ponding, a portion of the area lying within the -0.5-foot mean sea level

("MSL") contour shows wet soil conditions. Darkest in value (wettest) is the section running north-south at the western edge of the parcel, from the riding stable to the dead-end street. The soils lying within the "arm" of the -0.5-foot contour extending eastward to the Graham Street boundary are much lighter in value and therefore much drier.

Lithologic examinations show the surface to a 14- to 20-inch depth to be a silty clay. Beneath this layer the sediment changes to a fine-grained, well-sorted quartz sand with a 0.1- to 0.2-mm grain size. The free water surface was encountered at 51 inches below the ground surface. In a sand with the grain size and sorting described above, no capillary rise occurs. At the time of the field examination, the water table was 32 to 37 inches below the silty clay.

Based on comparison of water table elevation differences throughout the Bolsa Chica Lowland piezometer network between the current 1986-1987 season and the normal rainfall year of 1981-1982, the current elevation could be expected to rise about 2 feet to reach the normal year maximum. At this elevation the water table would lie 8 to 13 inches below the silty clay surface material and thus could not saturate this material by capillary processes.

Analysis of the monthly aerial photographs confirms that the surface layer remains dry from groundwater during the water table seasonal high. The appearance and disappearance of moist

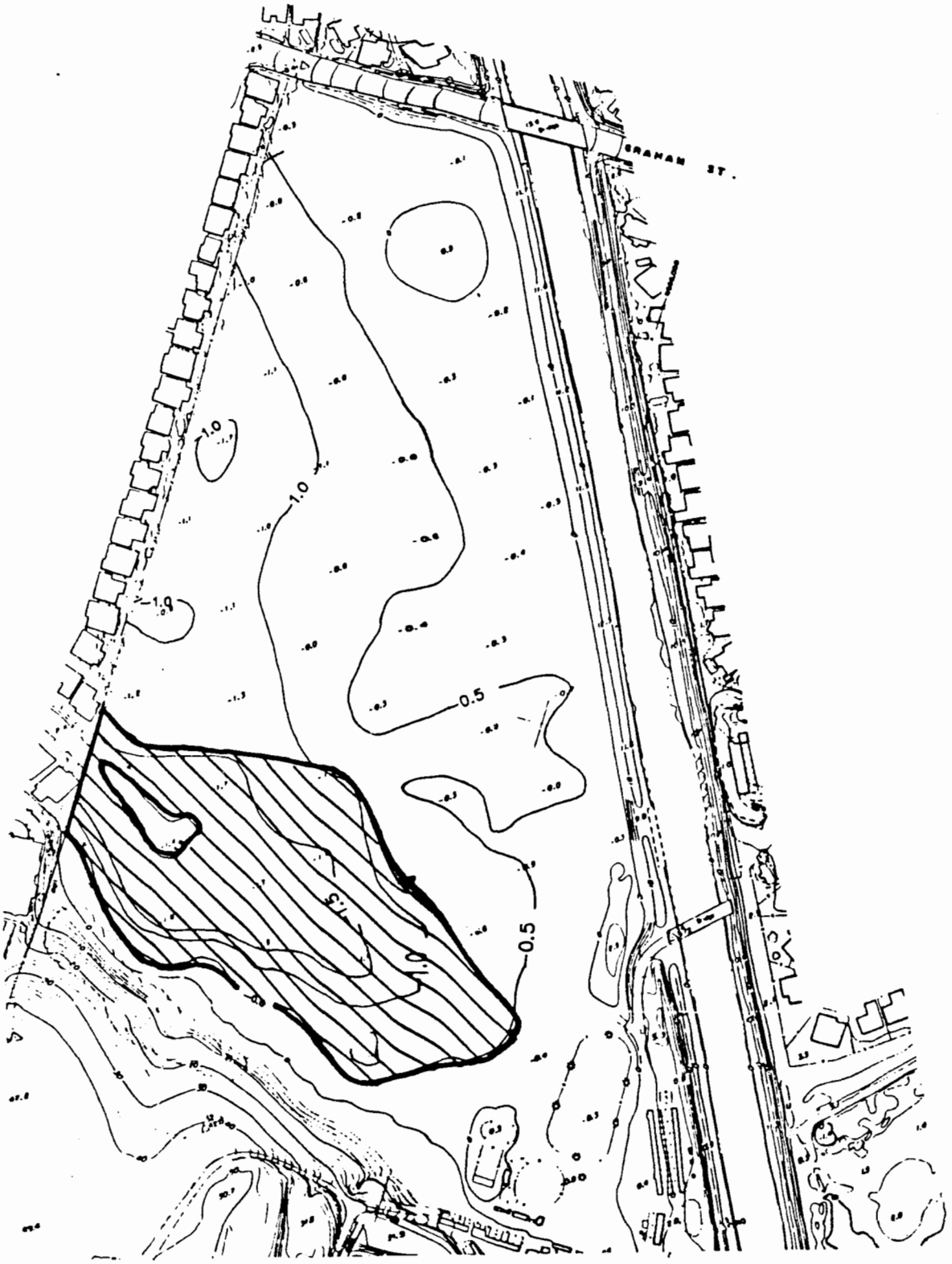
soils in this area are brief (days) and correlate to rainfall events and not water table fluctuations which are of shorter duration. Elevation of the water table by above-normal conditions of the 1-in-3 year return frequency is probably no more than a few inches and therefore would not affect the area expected to be saturated by groundwater.

The area delineation on the attached map is a depressional area within a portion of the -0.5 to -1.0-foot MSL contours indicated by aerial photographs to receive surface water repeatedly from adjacent areas during the winter rainy season. The area is considered to be a candidate for Section 404 jurisdiction if agricultural usage ceases and the land is allowed to lie fallow for an indefinite period.

The 1 inch equals 200 foot-scale map was used for acreage determination. Computer-electronic digitizer techniques were used for measurement. Resolution is 0.2 feet; acreage measurement is reproducible to 0.01 acre.

<u>The area so delineated totals 7.6 acres.</u>

0623A



AGRICULTURAL AREA DELINEATION
BOLSA CHICA STUDY

T.W. Bilhorn, Earth Sciences Consultant

THOMAS W. BILHORN

EARTH SCIENCES CONSULTANTS
NATURAL RESOURCE HYDROLOGY

MEMORANDUM

TO: John Dixon, California Coastal Commission

FROM: Tom Bilhorn

DATE: June 28, 2007

SUBJECT: Bolsa Chica "Agricultural" Area Jurisdictional Wetlands Delineation

Thee following comments are given based upon our two phone conversations today and your Email that included a copy of my 1987 report "Agricultural Area Delineation Bolsa Chica, Orange County California. As I told you, my reports, maps, photos were all given to the State Lands Commission in the late 1990's (as I recall) when they purchased the lowlands.

My delineation work at Bolsa was done with Dana Saunders (who, when with the COE wrote the 3 parameter approach delineation manual). I was responsible for the hydrology and mapping part of that effort and overseeing some peripheral soil oxygen studies. I was also responsible for arranging the flight patterns and interpreting the aerial photographs taken over the many years.

My scholastic background includes bachelors and masters degrees (Washington University and California Institute of Technology respectively) and included surveying and photogrammetry. My first work experience consisted of five years of aerial geologic mapping and for the past 15 years I have been retained by the State Attorneys General Office and the Department of Fish and Game on the surface and groundwater conditions of the Mojave River system – much of which has relied on photo interpretation. I co-authored a report with the USGS (report 96-4241) that mapped vegetation of the Mojave River. I also relied heavily on aerial photographs in preparing this report. In doing such work there is a basic rule that I follow, and preach: "see it on the ground first, see the photo, see it on the ground again".

In shorter words, I have a great deal of experience in using aerial photos, and at Bolsa visited and mapped that site almost monthly over something like eight years. I am comfortable in standing by my description of saturated ground as distinguished from dark-mineral colored soil as that was a necessary distinction I had to make each month throughout the Bolsa area. I wrote a number of reports over the 1980's including some on the unusual water table aquifer (which slopes downward away from the coast) and others on the photos and rainfall and other subjects. If those are available to you there could be a lengthy description of the photo and mapping steps I took.

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DETERMINATION OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS, AT BOLSA CHICA, CALIFORNIA

Prepared by

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Prepared for

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June 24, 1987

to allow development of characteristics of hydric soils. This subunit has 3.9 acres of wetlands, 0.0 acres of perennial water bodies, 1.6 acres of unvegetated seasonal ponds, and 36.0 acres of uplands (see Figure 3 and Table 1). The total area comprising all categories of "waters of the United States" was 5.5 acres.

43. Agricultural Area. This subunit (43.8 acres) (Table 1) is located north of the Wintersburg Flood Control Channel in the extreme northeastern portion of the project area (Figure 2). It consists of an area of stables and associated facilities and a larger agricultural field. Surface elevations of much of the subunit are below sea level. Based on application of the multiparameter approach, the entire subunit (43.8 acres) is presently uplands. This is due to the absence of wetlands hydrology in most of the subunit and hydrophytic vegetation throughout. However, it was determined that a portion of the subunit would probably be sufficiently wet to support hydrophytic vegetation if the farming activities were to cease. Soils in a major portion of the root zone during years of near-normal rainfall would not be saturated by rise of water from the water table due to capillary action. The only source of sufficient water to saturate the soils in a major portion of the root zone in this subunit is from surface water runoff following significant rainfall events. Only depressional areas would be saturated sufficiently to support the growth of hydrophytic vegetation. The stables area has

apparently received some fill material, and thus would not support the growth of hydrophytic vegetation due to the fact that soils would not be saturated in a major portion of the root zone. The subunit presently has 0.0 acres of wetlands, 0.0 acres of perennial water bodies, 0.0 acres of unvegetated seasonal ponds, and 43.8 acres of uplands (see Figure 3 and Table 1); if farming were to cease, it is likely that the subunit would eventually have 7.6 acres of wetlands and 36.2 acres of uplands (see Bilhorn, 1987a, Appendix F herein, "Agricultural Area Delineation, Bolsa Chica, Orange County, California," for a more complete discussion of the agricultural area delineation). The total area of "waters of the United States" is presently 0.0 acres; if farming were to cease, the total area of "waters of the United States" would be 7.6 acres.

44. State Lands. This area (Figure 2) consists of the area known as the Ecological Reserve. For discussion purposes, the area has been divided into two subunits: (a) Tidal, and (b) Non-tidal. These will be discussed separately.

a. Tidal. This subunit (234.3 acres) contains the portion of the Ecological Reserve that is subject to tidal action. It extends from the South Bolsa Dunes to Warner Avenue. Most of the subunit consists of perennial water bodies, with a fringe of wetlands occurring in some areas. Uplands occur as levees, an area of high ground on the west side near Warner Avenue, and small islands maintained as nesting areas for Least Terns. The tidal subunit includes 59.3

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10 October 1991

Ms. Rachel Sater
Beveridge and Diamond, P.C.
Suite 3900
1 Sansome Street
San Francisco, CA 94104

RE: INVESTIGATION OF MWD PORTION OF BOLSA CHICA WITH RESPECT TO PRIOR-CONVERTED CROPLAND VERSUS FARMED WETLAND STATUS

Dear Ms. Sater:

As you requested, I have conducted an investigation to determine whether the portion of the MWD property at Bolsa Chica technically qualifying as wetlands is subject to the prior-converted cropland provision in the 1990 Corps of Engineers Regulatory Guidance Letter (RGL-90-7 dated 26 September 1990). If so, the area would be considered as nonjurisdictional for purposes of Section 404 of the Clean Water Act of 1977 (as amended).

Background

I conducted a wetland delineation for Signal Landmark, Inc. in 1987 on a tract of approximately 1650 acres known as Bolsa Chica in Orange County, California (Sanders, 1987). An 8.1-acre* portion of a 45.6-acre agricultural field owned by the Metropolitan Water District (MWD) was among the portions of Bolsa Chica concluded to be wetlands. The area was concluded to have wetland hydrology on the basis of a groundwater hydrology study conducted by Mr. Thomas Bilhorn that indicated the water table

* The Koll Company had a consultant digitize the map provided in EPA's final wetland determination report, and found that the portion of the MWD farm field concluded to be wetlands by EPA is 8.1 acres. The same area was delineated as wetland in my report, and the area measured 7.6 acres according to Bilhorn (1987). Regardless of the differences in acreages, the area referred to in this letter is the entirety of wetlands that occur in the MWD farm field, whether 7.6 acres or 8.1 acres. The differences in acreage appear to be due to differences in mensuration methods.

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under normal rainfall conditions rises sufficiently near the soil surface to result in long duration of soil saturation within the upper one foot of the surface (Bilhorn, 1987). However, there was no evidence that the area is inundated periodically (except during the 1983 rainfall year, for which the return frequency exceeded 100 years). The 1983 rainfall year had the second greatest rainfall of the entire period of record. During the period in which the delineation was conducted, the above-referenced tract was being farmed to lima beans.

Standard For Prior-Converted Cropland

According to RGL-90-7 and subsequent guidance provided by the Corps of Engineers, the standard for determining whether an area that technically qualifies as wetlands qualifies as prior-converted cropland has two basic components:

(1) The area in question must have been farmed prior to 23 December 1985, and must continue to have been farmed (but not necessarily on an annual basis) since 23 December 1985.

(2) The area in question must not be inundated for 15 days or longer annually under conditions of normal rainfall.

The area in question will continue to be treated as farmed wetlands if either of the above provisions is not met, and the appropriate Section 404 permit would be required for the discharge of dredged or fill material into the area.

1987-1988 Observations

I observed site conditions of the area in question on several occasions during 1987-1988. During that period, I saw no evidence of either current or past inundation or soil saturation in the area. I preliminarily concluded that none of the area qualified as wetlands, but modified the original delineation on the basis of Mr. Bilhorn's hydrologic study indicating that 7.6 acres of the farm field would be expected to have saturated soil in the upper portion of the soil profile due to a water table rising to nearer than 18 inches of the soil surface under conditions of normal rainfall. This modification was considered appropriate on the basis that the delineation of the farm field was made using the Atypical Situation procedures described in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Under this procedure, it was appropriate to delineate areas where one or more of the

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parameters could not be characterized due to disturbance on the basis of the other two parameters. The field had been planted to lima beans, which was considered to be a disturbance that prevented characterization of the vegetation of the area. Based on the results of Bilhorn's (1987) groundwater hydrology study and the presence of indicators of hydric soils, I concluded that the 8.1-acre area (see page 1 footnote) would technically qualify as wetlands under conditions of normal rainfall and in the absence of farming activities.

1991 Observations

At the request of Beveridge and Diamond, P.C., I revisited the MWD property on 18 August, 1991. I made the following observations specifically in consideration of whether the 8.1-acre area would qualify as prior-converted cropland as defined by the MOA:

1. The entire field had supported a dense stand of barley during 1991. Although the stand apparently was volunteer, the high density of the barley indicates that the field probably had been planted to barley during 1990. The area recently had been disked and much of the barley was covered by soil. These observations provide onsite evidence that the field (including the portion qualifying as wetlands) has been subject to farming activities during the period following December 23, 1985.

2. Most of the area qualifying as wetlands in 1987 exhibited no evidence of gross wetland characteristics nor recent wetness. Barley had been growing throughout the depressional area. The only plant species observed in addition to barley were upland weeds [e. g., Salsola iberica (Russian thistle) and Brassica nigra (mustard)].

3. One small area (36 feet by 15 feet) of Typha latifolia (cattails) was observed on the south margin of the field. Water obviously had stood in the small depression earlier in the year. However, there were no obvious surficial features to account for the presence of cattails. I learned from officials of the Koll Company that a water pipe had burst in the area during the spring, which provided sufficient wetness to allow colonization by the cattails. Although the small depression might continue to support species having an indicator status of FACULTATIVE WETLAND and/or FACULTATIVE in the absence of farming activities, I would not expect the area to continue to exhibit sufficient wetness to support cattails.

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4. There are no significant upland drains entering the property. The Wintersburg Channel borders the field on the east and south sides. The area to the north has been developed as an apartment complex, from which surface runoff is directed into storm sewers. A steep hill bordering the property on the west is the only area available that could provide some surface runoff to the property. However, the absence of surface drains indicates that most water entering the property from the hill occurs as sheet flow. Therefore, the area does not receive significant surface runoff that could pond for long duration in the depressions.

Other Information

In his report of hydrologic conditions of Bolsa Chica, Bilhorn (1986) discussed factors influencing ponding of water on the general area. He concluded that transient ponds remain for less than one week under normal rainfall conditions due to the limited rainfall (approximately 10 inches per year) and the high evapotranspiration rate (approximately 60 inches per year). These transient ponds also were characterized as being very shallow (a maximum of only a few inches in depth). Transient ponds were observed to remain for less than seven days following rainfall events of 2 inches or less. A 2-inch rainfall event exceeds the normal two-year storm event for the area.

check EPA comment

Wetland Functions and Values

Although no formal analysis of wetland functions and values has been performed, it is obvious that the wetland portions of the MWD farm field are not providing functions and values normally attributed to wetlands (Adamus et.al, 1987), for the following reasons:

1. Continued farming of the area essentially precludes the presence of vegetation associated with wetlands. The absence of hydrophytic vegetation essentially eliminates the opportunity and effectiveness for the area to provide most of the functions attributed to wetlands, including all wildlife-related functions.

2. The area essentially lacks a watershed, which severely limits the opportunity for the area to provide the floodflow alteration, sediment stabilization, sediment/toxicant retention, and nutrient removal/transformation functions.

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3. The lack of permanent to periodically ponded water for long duration on the property drastically limits the ability of the area to provide most of the above-referenced functions, in addition to the aquatic diversity/abundance and recreation functions.

4. The area provides no fishery-related functions.

5. The absence of a hydrologic outlet precludes the possibility for the area to provide the detritus export function.

6. The fact that the water table does not rise to the soil surface during years of normal rainfall eliminates the possibility for the area to act as a ground water discharge area, while the small size of the area, limited volume of standing water for short duration, and relatively impermeable surface soil layers severely limits the possibility that the area provides significant ground water recharge.

Discussion

The area in question has had a long history of farming. Other evidence to be provided by the Koll Company will establish that the area was farmed regularly for many years prior to December 23, 1985. Examination of historical aerial photography also indicates a long farming history. My onsite observations during the period of 1987 through 1991 indicates that farming of the property has continued on a more or less regular basis since December 23, 1985. Therefore, based on information to be provided by the Koll Company and my personal observations, it is a fact that the area was farmed regularly prior to 1985 and has continued since 1985.

According to my 1987 wetland delineation of the MWD property, the source of wetlands hydrology for the 8.1 acres qualifying as wetlands is a water table that rises to nearer than 18 inches of the soil surface during years of normal rainfall (Sanders, 1987). The area was not delineated as wetlands on the basis of indicators that the area is periodically inundated. In fact, the area would not have been considered as wetlands except for the high water table expected during years of normal rainfall (Bilhorn, 1987). All available data indicate that the area is not inundated for long periods following rainfall events. The primary reasons for the lack of inundation for long duration include the low average annual precipitation rate, high evapotranspiration rate, very limited watershed, and

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absence of upland drains that convey water into the area. Therefore, the areas of MWD that technically qualify as wetlands are not inundated for 15 days or longer during years of normal rainfall.

Due to the extreme modification and use of the area and adjacent areas, wetlands occurring in the MWD farm field are not providing the functions normally attributed to wetlands. Factors affecting the ability of the wetlands to provide the functions normally attributed to wetlands include continued farming activities, a very limited watershed, low rainfall and high evapotranspiration rates, lack of permanently to periodically inundated areas, absence of a hydrologic outlet, a water table that does not rise to the soil surface, and relatively impermeable surface soil layers.

Conclusions

Conclusions of this study are:

1. The 8.1 acres of wetlands in the MWD farm field have been farmed for many years, and have been farmed regularly since December 23, 1985. Therefore, the area meets the first of two essential criteria for an area to qualify as prior-converted cropland.

2. Wetlands of the MWD farm field are not inundated for 15 days or longer during years of normal rainfall. The primary reasons for a failure to meet this criterion are a very limited watershed, low average annual rainfall (10 inches) and high evapotranspiration rates, and permanent alteration of upslope areas. Therefore, the area meets the second essential criterion of the prior-converted cropland provision of the MOA.

3. A general assessment of wetland functions and values indicates that, due to factors identified above, the area is not providing the functions normally attributed to wetlands. The fact that the area is not performing the functions and values normally attributed to wetlands provides evidence that it is prior-converted cropland.

4. Both essential criteria are met for a wetland area to qualify as prior-converted cropland. Moreover, the area does not provide the functions and values normally attributed to wetlands. Therefore, the 8.1-acre portion of the MWD farm field qualifies as prior-converted cropland, and the area should be considered as nonjurisdictional for purposes of Section 404 of the Clean Water Act or 1977 (as amended).

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If you have questions or comments regarding this letter report, please contact me at (601) 885-6135.

Sincerely,

Dana R. Sanders, Sr.

Dana R. Sanders, Sr., PhD.
D. R. SANDERS AND ASSOCIATES, INC.

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Exhibit
MMM

MEMORANDUM

DATE: July 2, 2007

TO: John Dixon
Mark Johnsson

FROM: Jonathan Van Coops, Mapping/GIS Program Manager

SUBJECT: **Aerial Photo and Map Interpretation for Shea Property (Orange Co. APNs 110-016-19, 110-016-20, and 110-016-23)**

The results of my review of available aerial photography, topographic maps and other materials provided for the Shea property are included below. The primary purpose of my review was to attempt to identify changes due to landform alteration resulting from grading, filling, and other activities including farming, and to attempt to delineate various disturbed areas using a baseline of 1970's-era aerial photography and topographic maps. This information is intended to be of assistance in characterizing land cover changes over time and the determination of how much permitted and unpermitted filling of land has taken place on the property.

I. Methodology

The review consisted of analyzing a series of maps and vertical aerial photographs, and also reviewing materials included in the power point presentations submitted by J. Vandersloot and M. Stirdivant. The vertical aerial photos were viewed under magnification and, where possible, with standard magnifying stereoscopes in order to establish dates where various types of landform alterations were evident. Images taken before and after January 1, 1977 were examined to determine whether any evidence of development was visible prior to the effective date of the Coastal Act. Various images available at the Commission's offices were scanned and examined using computer software that allows enlargement of small areas of an image, and adjustment of the image contrast and color balance. Digital aerial images and maps obtained or already available in the Commission's offices were also examined using the software mentioned above.

II. Photo Interpretation Results

Some of the earliest commercial aerial photography missions were flown in Southern California, and, as a result, I was able to examine vertical aerial images of this area taken during 1934, 1952,

1970, 1977, 1981, 1983, 1986, 1995, 1999, 2001, and 2006, with stereopairs (overlapping images) available only for 1970, 1986, and 2001. Stereopairs are used to view the content of overlapping aerial photographs "three-dimensionally."

The exhibit numbers given below for each image refer to the group of maps and photos that are attachments to this memorandum. This entire memorandum with attachments is labeled as Exhibit MMM to the staff recommendation for the July 2007 Commission meeting and can be viewed online on the Commission's website as a link from the July agenda.

1934 image (see Exhibit 1)

This black and white image, taken February 12, 1934, covers the entire property and was part of an early series covering the coastal lowlands in this region of Orange County. Our copy is a paper xerographic enlargement. Unfortunately, the image quality is not very high, but it is clear that the area retains some of the typical characteristics of coastal wetlands, with numerous meandering channels and bare flats. The larger historical tidal channels and lower lying areas show clearly as darker tones. Riparian vegetation lines part of the channel towards the eastern margins of the property. The image pre-dates the current alignment of the East Garden Grove-Wintersburg flood control channel, however, a drainage channel appears at the southeast margin of the image with its western terminus at one of the historical tidal channels. The roughly 1000 foot long east-west oriented segment of this channel is identified and labeled Slater channel on later US Geological Survey (USGS) topographic maps. The property in the eastern half of the image has been cleared along narrow straight lines that demark several 5 to 6 acre areas. No structures appear on the property, and the primary access to these areas appears to be from the west through what is now the Orange Co. APN 110-016-18 (the Goodell property), with a light duty or unimproved road running in a south-southwest direction from the northern property boundary along the base of the slope. The east-west trending road identified as Slater Ave. on the 1965 Seal Beach quadrangle appears at the southwestern limits of the property.

1952 image (see Exhibit 2)

This black and white image, taken December 26, 1952, covers only the westernmost 500 feet or so of the property in question. Unfortunately, the image quality is also affected by "banding" visible throughout the image, although it is clear that the area is being used for agricultural activities. As with the 1934 image, this image pre-dates the current alignment of the East Garden Grove-Wintersburg flood control channel. Again, no structures appear on the property, and the access to the agricultural field appears to be from the west through the Goodell property. Slater Ave. appears similar to its depiction on the 1965 USGS Seal Beach quadrangle. There is clear evidence of fill and road construction activities at the western margin of the agricultural field near the base of the slope.

1970 images (see Exhibit 2)

These 1:12,000 scale black and white images were taken May 21, 1970, and present a good indication of pre-Prop 20 and Coastal Act conditions on the property. The extreme easternmost

portion (a triangular area approx. 2.5 acres in size) of the Shea property is just beyond the limits of the image. These photos were examined stereoscopically and show the area mostly in agricultural use. The cropland appears to be lying fallow although evidence of disking is apparent. The current alignment of the East Garden Grove-Wintersburg flood control channel bisects the image and the western extension of Slater Ave. is clearly visible just north of the channel embankment, along the southwestern margin of the property.

In their fallow state the slightly lower lying areas and historic tidal channels within the fields are quite easily distinguished from the rest of the cultivated area by their darker tones. The central portion of the area mapped and now identified as the EPA wetland appears to have been undergoing recent disking or plowing operations at the time the image was captured. The disturbance to the lower lying areas by disking enhances the soil contrast of wetter areas by darkening the "signature" of this feature in the image.

There do not appear to be any structures on the property in this image, and no improved roads other than the western extent of Slater Ave., which has been altered to allow for crossing the East Garden Grove – Wintersburg flood control channel. The main access to the agricultural fields appears to be from the Goodell property located immediately to the west, and via the light duty or unimproved road running in a southwest direction from the northern property boundary along the base of the slope. There is clear evidence of disturbance including clearing and road construction activities at the southeastern margin of the rectangular six-acre Goodell property. The 1970 images establish a pre-Prop 20, pre-Coastal Act baseline for gauging the extent of land alterations and other changes on the Shea property that came later.

1977 image (see Exhibit 3)

These 1:32,500 scale (1 inch equals approx. 2700 feet) color image was taken January 13, 1977, and present the closest indication of conditions on the site at the time the Coastal Act became effective, which was January 1, 1977. They are smaller scale (less detailed) than most of the other images, however they show the cropland appearing fallow and the historical channels and lower lying areas with characteristic darker tones. The filled area at the southeast corner of the Goodell property shows at least four structures and other vehicles or equipment in this part of the image. A single similar feature, probably a structure or vehicle, also appears to be situated on the adjacent property now owned by Shea (Orange Co. APN 110-016-20).

1981 black and white image (see Exhibit 4)

This image is from a vertical aerial photo taken January 31, 1981. The nominal scale of the original was probably 1:12,000 or 1 inch equals 1000 feet, although this has not been verified. The image covers only the westernmost 500 feet or so of the Shea property but clearly shows structures, vehicles, and an enclosed arena located on a disturbed area approximately six acres in size. All of this area is situated east of the Goodell property on what is now Orange Co. APN 110-016-20, and includes filled areas located both north and south of the segment of Slater Ave. that crosses the southwest portion of the property. This development also covers the majority of the property shown as lying below Mean Sea Level (MSL) on the 1965 USGS Seal Beach 7.5

minute quad for this area. Although truncated by the edge of the image, the darker grey tones of the lower lying area and former tidal channel are apparent in the cultivated area to the north of the disturbed area which was being developed as an equestrian facility.

1983 black and white image (see Exhibit 4)

This image is from a vertical aerial photo taken February 19, 1983. The nominal scale of the original was probably 1:12,000 or 1 inch equals 1000 feet, although this has not been verified. The image quality is low due to poor contrast and banding that is present in the digital file. The image covers only the westernmost portion of the property but, as with the 1981 image, shows the disturbed areas clearly, including additional fill north, south, and southwest of the riding arena. Well over 100 individual mounds of stockpiled fill material are evident in the area to the south and southwest of the arena. Similar to the 1981 image, the edge of this image truncates the cultivated part of the Shea property, but the darker grey tones of the former tidal channel are apparent in the area to the north of the arena and disturbed area being used as an equestrian facility.

1986 Department of Boating and Waterways (CCC) color image (see Exhibit 5)

These images are original prints of vertical aerial photos taken May 13, 1986. The nominal scale of the original images is 1:12,000 or 1 inch equals 1000 feet. Adjacent overlapping images were examined stereoscopically for the subject area and scanned versions of the same images were analyzed under magnification. Beyond the development present in the 1981 and 1983 images, additional filling is evident in the area to the south and west of the arena, as well as to its north, where over an acre of additional fill is visible with several enclosed corrals or riding areas constructed within the extended fill area.

The agricultural field occupying the balance of the property lies fallow in this image and, as in the earlier images, the darker signature of the former tidal channel and lower lying area shows clearly.

1995 black and white image (see Exhibit 6)

This image is a copy of a vertical aerial photo taken January 28, 1995. The nominal scale of the original is probably 1:12,000 or 1 inch equals 1000 feet, although this has not been verified. Adjacent overlapping images were not available which precluded stereoscopic analysis of the subject area for this year. A scanned version of the image was analyzed under magnification. The image shows the stable operations and further expansion in the stable area having ceased, and the area in the process of re-vegetating. Structure and vehicles in the stables area have been removed. Ponding in the lower lying parts of the agricultural fields is apparent in several areas, the largest being approximately 5 acres in size and located to the north of the former stables in the same general area as the EPA wetland mapped in the late 1980's.

1999 black and white image (see Exhibit 7)

This image is a digital version of a vertical aerial photo taken February 24, 1999. The nominal scale of the original is probably 1:24,000 or 1 inch equals 2000 feet, although this has not been verified. Adjacent overlapping images were not available which precluded stereoscopic analysis of the subject area for this year. A scanned version of the image was analyzed under magnification. The image covers only the westernmost portion of the property and is of relatively low contrast but, as with the 1981 and 1983 images, shows the filled, former stable area clearly, including additional fill extending to the north, and extensive disturbance throughout the entire filled area, and extending further to include the Shea property to southwest of the former riding arena. This image shows the dramatic, nearly complete alteration of the remnant coastal salt marsh area adjacent to Slater Ave. mapped as "pickleweed marsh" in the 1971 Dillingham report.

2001 color image (see Exhibit 8)

This image is a digital version of a vertical aerial photo taken June 29, 2001. The nominal scale of the original is 1:12,000 or 1 inch equals 1000 feet. Adjacent overlapping images were examined stereoscopically for the subject area and scanned versions of the same images were analyzed under magnification. The image covers the entire property and shows the agricultural fields under cultivation with the cropped portion divided into four quadrilateral shaped areas by three dirt roads and bounded by a perimeter road that follows the property lines. The southwest limit of the cultivated area is along the boundary between the City of Huntington Beach and unincorporated Orange County. The low lying non-agricultural Shea property to the southwest of the City/County boundary appears fragmented by trails but re-vegetating with both wetland and upland species. A channel has been constructed along the western margin of the cultivated area just east of the access road. This channel continues southwest through the County portion of the property. The dirt road following the western margin of the agricultural field northeast to the property boundary appears to have been undergoing some sort of construction activity at the time the image was taken. A vehicle is visible on the dirt road ahead of a line of specular reflection that usually indicates standing water. The pattern of vehicle tracks is consistent with a vehicle reversing direction at the end of the road and returning to the opposite end of the road via the same segment, as would occur if grading or watering were being done. This color image also shows the persistent tonal difference of the historical tidal channels and lower lying areas within the cultivated area.

2006 color image (see Exhibit 9)

This image is a digital version of a vertical aerial photo taken in January 2006. The nominal scale of the original imagery is 1:12,000 or 1 inch equals 1000 feet. Adjacent overlapping images were not available which precluded stereoscopic analysis of the subject area for this year. The digital image was analyzed under magnification. The image covers the entire Shea property and shows the activity in the agricultural field, as well as in the County area southwest of the former stables operation, where changes include the placement of structures along the flood control channel, the expansion of an access road into this area, and additional fill extending to

the north of this expanded access road. Signs of relatively extensive grading and standing water in the area along the northwestern margin of the agricultural field and access road are clearly evident. As in most of the aerials, this color image also shows the persistent tonal difference of the historical tidal channels and lower lying areas within the cultivated area.

III. Analysis of maps and other materials

In addition to the aerial photographs described above, we reviewed maps and other materials that were either in our map archive or were provided for our review. The scale of the originals is variable and most were developed for a specific purpose (e.g., topographic mapping, vegetation overlay, wetland boundaries, etc.). Some have no scale or source information.

Vertical Datums

For topographic mapping efforts the survey elevation traditionally used for zero was Mean Sea Level (MSL). All other elevations were referenced to this elevation. In addition, because the MSL itself must be referenced to network of survey control, the idea of identifying a particular MSL became the basis for what is referred to as a "vertical datum." Many topographic surveys performed in the mid-twentieth century used what is known as the National Geodetic Vertical Datum of 1929 (NGVD29), which was originally called the Sea Level Datum of 1929. It was created by the US Coast Survey after thousands of miles of transcontinental surveys had been completed using geodetic leveling to observe and establish a network of precise elevations from Chesapeake Bay to San Francisco. The Sea Level Datum of 1929 used the assumption that MSL at 26 control tide stations was equal, which we now know is not the case.

Due to advancements in the science of geodesy during the latter half of the twentieth century, our understanding of the shape of the earth and its implications for accurate surveying has changed dramatically. Consequently, periodic refinements to high-accuracy survey networks and datum changes must be made to reflect this new knowledge. As a result NGVD29 has been replaced by the North American Vertical Datum of 1988 (NAVD88) which references a single control elevation at a station in Canada as the zero elevation. The difference between the two vertical datums varies from location to location, but is approximately 2.3 feet in Orange County. Each of the digital topographic maps used in this review either used or was converted to NAVD88.

To further complicate the datum issue even reference datums are refined periodically. For example the 1980 map is NGVD29, 1976 OCS adjustment. Newer Orange County topographic maps are NAVD88, 1995 OCS adjustment. The result is that it can become quite complicated to compare topographic maps from different years, however, because all of these maps depict six inch to one foot contour intervals and spot elevations to the tenth, or at least half foot, it is possible to analyze the terrain and examine small relative differences that represent topographic depressions. The relative differences in elevation for these feature remains the same in different maps, but overlaying the information for visual presentation becomes difficult.

The primary maps reviewed are listed with comments below:

1) Large-scale topographic map prepared by the US Coast Survey in 1873 (T-1345). (see Exhibit 10)

   This 1:10,000 scale (1 inch equals 833.33 feet) map shows tidal channels, ponds, salt marsh, flats and riparian woodland depicted on the property, which is situated entirely below the 5-foot contour. Nearby survey control point is named "Grass Edge" and is located at the mean high tide line (MHTL).

2) Regional-scale topographic map prepared by the US Geological Survey (USGS) in 1901 (So. California Sheet No. 1). (see Exhibit 11)

   This 1:250,000 scale (1 inch equals 4 miles) map also shows tidal channels, salt marsh, and open water in the area. Vertical datum is mean sea level.

3) Large scale topographic map prepared by USGS in 1935 (Seal Beach 15 minute Quad). (see Exhibit 12)

   This 1:31,680 scale (1 inch equals 0.5 mile) map also shows tidal channels, salt marsh, open water and manmade drainage channels in the area. This map was based on survey work done in 1932. Vertical datum is mean sea level.

4) Large scale topographic map prepared by the USGS in 1965 (Seal Beach 7.5 minute Quad). (see Exhibit 13)

   This 1:24,000 scale (1 inch equals 2000 feet) map shows the current alignment of the East Garden Grove-Wintersburg channel, with the majority of the property lying below 5-foot elevation. The southwestern portion of the property is below Mean Sea Level (MSL), or zero elevation. This map was based on aerial photography taken in 1963, and the topography was done by planetable survey in 1965. The vertical datum for this map is NGVD29.

5) Large scale topographic map prepared by Orange County in 1978. (see Exhibit 14)

   This 1:2,400 scale (1 inch equals 200 feet) map has a 5-foot contour interval and spot elevations to 0.5 foot. The topography is based on aerial photography taken in March 1978. The vertical datum is NGVD29, indicating elevations shown on this map will be approximately 2.3 feet higher than their respective NAVD88 elevations. This map

shows the current alignment of the East Garden Grove-Wintersburg channel, with the majority of the Shea property lying below the 5-foot elevation (2.7 ft. NAVD88). Spot elevations in the southwestern portion of the property range from .5 foot to 2.5 feet (-1.8 feet to 0.2 feet NAVD88), with the roadbed of the Slater Ave. connector at 5.0 feet (2.7 feet NAVD88). Spot elevations shown along the tops of the flood control channel levees range from 11.5 feet to 12.5 feet (9.2 feet to 10.2 feet NAVD88). This photogrammetric base map depicts the levees about 10 feet to 12 feet higher than the adjacent area to the north, and 6.5 feet to 7.5 feet higher than Slater Ave. In turn, the roadbed of Slater Ave. is 2.5 feet to 4.5 feet higher than the surrounding area.

Northeast of the City/County boundary the Shea property (APN 110-016-20) is again shown mostly below 5 feet elevation with spots ranging from 1.0 foot to 3.5 feet. The eastern part of the property is truncated by the map limits. As in the southwestern part of the Shea property, the adjacent levees in this area range from 9 feet to 11.5 feet higher than the agricultural lands to their north. A fence line map symbol is delineated between the northern approach to the Slater Ave. bridge crossing and approximately the southeast corner of the Goodell property.

6) Large scale topographic map prepared by Orange County in 1980. (see Exhibit 15)

This 1:3,600 scale (1 inch equals 300 feet) has a 2-foot contour interval below 10 feet elevation, and a 10-foot interval above 10 feet elevation, with spot elevations to 0.1 foot. The vertical datum for this map is Mean Sea Level (NGVD29, 1976 OCS adjustment). The effect of this datum is to lower elevations approximately 2.5 ft. The date of photogrammetry given for this map is September 17, 1980. The elevation information on the paper copy of the map in our archive covers only the southwestern part of the property (Orange Co. APN 110-016-19 and APN 110-016-23). None of the spot elevation information is shown for the larger portion of the Shea property (APN 110-016-20).

A version of this map that included topography for the larger Shea agricultural parcel was also produced by the County and was used as the base map for the 1987 Bilhorn delineation. This same 1980 map was provided to us in digital form and is discussed in Section 7 below.

The map depicts the current alignment of the East Garden Grove-Wintersburg channel, with the majority of the Shea property to its north lying below the 0.0-foot contour or zero elevation. Spot elevations in the southwestern portion of the property range from -1.9 feet to 1.6 feet, with only the roadbed of the approach to the Slater Ave. overpass at elevations ranging from 1.5 feet up to 2.8 feet. Spot elevations shown along the tops of the flood control channel levees range from 10.9 feet to 11.3 feet. This photogrammetric base map depicts the levees ranging from about 9 feet to 13 feet higher than the adjacent area to the north, and about 8 to 10 feet higher than

Slater Ave. In turn, Slater Ave. is about 1.5 feet to 3.9 feet higher than the surrounding area. As with the 1978 map, this map shows the area as very low-lying with topographic depressions, and the only appreciable rise in elevation being due to the slightly elevated Slater Ave. roadbed.

7) Digital topographic data and maps prepared for 1970, 1980, and 1986 received from Hunsaker

In map form the digital topographic data for 1970, 1980, and 1986 show large scale (contour interval - 1 foot) coverage of the entire property. The elevation data have been converted to NAVD88. The 1980 map is developed from the same topographic map published by the County.

June 28, 1970 (see Exhibit 16)

In the 1970 depiction the elevations above 10 feet are not shown. The lowest lying area is in the northwest quadrant of the property where elevations drop to minus 1.0 foot and below. The area lying below zero elevation is a single polygon just over 4 acres in size, situated in the same general area as the EPA wetland mapped in the late 1980's. Because of the 1 foot contour interval used the extent of the topographic depression in this area is somewhat obscured. Had this map included supplemental 0.5 foot contour lines, this area would have been enclosed by a 0.5 foot supplemental contour line symbolized so as to indicate a topographic depression closer in size to the EPA wetland. All of the spot elevations inside that contour line would be less than 0.5 feet. The area now occupied by the AP wetland is shown at elevation zero and above.

Most of the area in the southwest portion of the property later developed as a stables operation is less than 2 feet elevation. The site later occupied by the arena is less than 1 foot elevation.

The highest elevation contour indicated anywhere on the lower portion of the property shown is 3 feet, and occurs in just two areas: (1) the approach to the Slater Ave. overpass of the East Garden Grove – Wintersburg channel; and (2) the perimeter of the property adjacent to and southwest of Graham Street.

September 17, 1980 (see Exhibit 17)

This digital map is developed from the same topographic map published by the County, and converted to NAVD88. As with the 1970 view, the 1980 depiction also omits elevations above 10 feet. It shows the area lying below the zero elevation located in the same general vicinity as in the 1970 depiction and the EPA wetland

delineated in 1987, however, the area is fragmented and its eastern extent has decreased. In this view the area is diminished in size to about one quarter of the area shown on the 1970 map, and consists of three separate smaller areas, not one. The three irregular-shaped areas combined total approximately 1 acre in size. Because of the 1 foot contour interval used the extent of the topographic depression in this area is somewhat obscured. If this map included supplemental 0.5 foot contour lines, this area would have been enclosed by a 0.5 foot supplemental contour line symbolized so as to indicate a topographic depression closer in size to the EPA wetland. All of the spot elevations inside that contour line would be less than 0.5 feet. Similar to the 1970 view, the area now occupied by the AP wetland is shown in 1980 at elevation zero and above.

In the area in the southwest portion of the property developed as a stables operation the elevations are generally higher, especially along the levee, where elevations have increased 1 to 2 feet compared to the 1970 depiction. With the exception of the rise in topography associated with the approach to the Slater Ave. overpass of the East Garden Gove – Wintersburg channel, this area is shown as less than 2 feet elevation in the earlier 1970 view, whereas in this 1980 depiction there is an increase in the area shown between 2 and 3 feet elevation and above. The site occupied by the arena is shown at less than 1 foot elevation.

The highest elevation contour indicated anywhere on the lower portion of the property shown is 5 feet, and occurs in just one area, the approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation has diminished in size relative to the 1970 map, and an oval shaped topographic depression at or below 1 foot elevation appears to the west of Graham Street.

Several irregular-shaped areas at or below 1 foot elevation are located to the north of the East Garden Grove – Wintersburg channel in the same general area as the WP wetland identified in 2006.

September 17, 1980 (see Exhibit 18)

The September 1980 map was used by T. Bilhorn as a base map for his June 1987 delineation. This is the same topographic map published by the County and described above. The portion of the map used for the 1987 delineation covers only Orange Co. APN 110-016-20. This 1:3,600 scale (1 inch equals 300 feet) has a 2-foot contour interval below 10 feet elevation, and a 10-foot interval above 10 feet elevation, with spot elevations to 0.1 foot. Supplemental six inch contour lines have been added. The vertical datum for this map is Mean Sea Level (NGVD29, 1976 OCS adjustment). The effect of this datum is to lower elevations approximately 2.5 ft. The map has not been converted to NAVD88. It shows the area lying below the –0.5 feet elevation in this part of the property, and incorporates part of the –0.5 foot

contour line as the wetland boundary. The delineated area consists of one polygon total approximately 8.1 acres in size. All of the spot elevations inside the wetland polygon are at or below –0.5 feet elevation.

In the area in the southwest portion of the property developed as a stables operation the elevations are generally higher, especially along the levee. The enclosed arena and other equestrian-related facilities are depicted, along with several elevated areas.

July 28, 1986 (see Exhibit 19)

As with the 1970 and 1980 topographic views, the 1986 depiction also omits elevations above 10 feet. This depiction also continues the trend with the lower lying area in the vicinity of the area mapped as the EPA wetland in the late 1980's, showing the eastern margin of the area below zero elevation further west, as two small adjoining irregular-shaped areas totaling about 0.1 acre, or about 2.5 % of the area shown for 1970. This map may be affected by the interpolation of the elevation data in the low-lying areas. Similar to the 1970 and 1980 views, the area now occupied by the AP wetland is shown at elevation zero and above.

In the area in the southwest portion of the property developed as a stables operation the elevations are generally higher, especially along the levee, where elevations have increased 2 to 3 feet compared to the 1970 depiction. With the exception of the rise in topography associated with the Slater Ave. overpass of the East Garden Grove – Wintersburg channel this area was shown as less than 2 feet elevation in the earlier view, whereas in the 1986 depiction there is an increase in the area shown as 2 to 4 feet elevation and above. Three distinct areas adjacent to the overpass approach and within the perimeter of the stables operation are depicted at elevations of 2 feet to 4 feet, whereas in the earlier 1970 view, the same areas ranged from 1 to 2 feet and below. The pattern of topography shown in this depiction in the area directly north of the overpass approach is consistent with the placement of fill on roughly 0.1 acre of land that was, in this case, 1 foot elevation and below, creating what appears as an "island" of higher lying ground rising to an elevation of 3 feet and above within it. The site occupied by the arena is shown at less than 2-foot elevation.

The highest elevation contour indicated anywhere on the lower portion of the property shown is 6 feet and occurs in just one area, the approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation in the 1970 depiction has disappeared entirely in the 1986 view, and the oval shaped topographic depression at or below 1 foot elevation just to the west of Graham Street has widened along the northern property boundary.

Similar to the 1980 view, several irregular-shaped areas, at or below 1 foot elevation, and located in the same general area as the WP wetland identified in 2006, are apparent to the north of the flood control channel.

8) Photogrammetry-based topographic maps prepared for 1997 to 2007 received from Hunsaker

These large-scale topographic maps cover the years of 1997, 2000, 2002, 2005, 2006, and 2007, and show detailed coverage (contour intervals are 0.5 - 1 foot) of the entire property. The vertical datum for this information is NAVD88.

May 29, 1997 (see Exhibit 20)

The 1997 depiction includes topography for the entire property. This depiction also continues the trend of the earlier maps, showing the lower-lying area below zero elevation in the vicinity of the area mapped as the EPA wetland in the late 1980's smaller, further to the west, and as a single irregular-shaped area totaling about 0.1 acre, or about 2.5 % of the area shown for 1970. The 0.5 feet elevation contour encloses an irregular-shaped area in the vicinity of the EPA wetland, and is shown with a map symbol indicating that this contour line denotes a topographic depression. All of the spot elevations inside this contour line are less than 0.5 feet. Similar to the 1970, 1980 and 1986 views, the area now occupied by the AP wetland is shown at elevation zero and above. The 1997 map actually shows six inch contours, and indicates the AP location is at 0.5 foot and above.

In the southwest area of the property developed as a stables operation the elevations are generally higher, especially along the levee, where elevations have increased 3 to 4 feet compared to the 1970 depiction. With the exception of the rise in topography associated with the Slater Ave. overpass of the East Garden Grove – Wintersburg channel this area was shown as less than 2 feet elevation in the earlier view, whereas in the 1997 depiction there is an increase in the area shown as 2 to 5 feet elevation and above. Two distinct areas adjacent to the levee and Slater Ave. overpass approach and within the perimeter of the stables operation are depicted at elevations of 2 feet to 5 feet and above, whereas in the earlier 1970 view, the same areas ranged from 1 to 2 feet and below. The area directly north of the Slater Ave. overpass approach is depicted with elevations ranging from 8.3 feet to 9.8 feet, whereas this same area was shown at or below 1 foot elevation in 1970, and at or below 2 feet elevation in both the 1980 and 1986 depictions. A fourth area directly to the north of the arena is shown at 4 feet and above, whereas in the earlier 1970 view, the same area is shown at elevations of 1 foot and below, and at or below 2 feet elevation in the 1980 and 1986 depictions. The pattern of topography shown in this depiction in the areas directly north of the overpass approach and arena is consistent with the

placement of fill on land that is depicted in the earlier views at an elevation of 1 foot and below, creating what appears as "islands" of higher lying ground rising to elevations of 4 feet and above to the north of the arena, and over 9 feet in the area to the north of the Slater Ave. overpass approach. Spot elevations in the area occupied by the arena are approximately 1.5 feet.

The highest spot elevation indicated anywhere on the lower portion of the property shown is 9.8 feet and occurs in just one area, the approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation in the 1970 depiction, which disappeared entirely in the 1986 view, is shown mostly at 2 feet elevation or below, and the oval shaped area at or below 1 foot elevation just to the west of Graham Street is shown with a map symbol indicating that inside this contour line is a topographic depression. All of the spot elevations inside this contour line are less than 1.0 feet.

In this 1997 view, the area occupied by separate irregular-shaped areas at or below 1 foot elevation in the 1980 and 1986 views located in the same general area as the WP wetland identified in 2006, is depicted as a single larger area at or below 1 foot elevation, just to the north of the flood control channel. Spot elevations within this area range from 0.7 foot to 1.0 foot.

September 25, 2000 (see Exhibit 21)

The 2000 depiction includes topography for the entire property, and also includes coverage of the subdivisions to the northeast of the Shea property. The elevation data has been converted from NGVD29 to NAVD88 resulting in elevations that are approximately 2.3 feet lower than the values for identical locations in the other years. The contour lines are shown at a 1 foot interval. As in the 1997 view, this depiction continues the trend of the lower lying area in the vicinity of the area mapped as the EPA wetland in the late 1980's, showing no contours lower than -1.0, but locating spot elevations down to -1.9 feet. Most of this area is shown below -1.5 feet elevation in a single irregular-shaped polygon. Had this map included supplemental 0.5 foot contour lines, this area would have been enclosed by a -1.5 foot supplemental contour line symbolized so as to indicate a topographic depression. All of the spot elevations inside that contour line are less than -1.5 feet. Similar to the 1970, 1980, 1986 and 1997 views, the area now occupied by the AP wetland is shown at higher elevations.

As in the other years subsequent to late 1970's, the elevations in the southwest portion of the property developed as a stables operation are generally higher, especially along the levee, where elevations in this 2000 view are relatively consistent with those shown in the 1997 depiction, where increases of 3 to 4 feet compared to 1970 were seen. With the exception of the rise in topography associated with the

Slater Ave. overpass of the East Garden Grove – Wintersburg channel this area was shown as less than 2 feet elevation in the earlier view, whereas in this 2000 depiction there is a general confirmation of the changes seen in the 1997 view, which showed increases in the area shown as 2 to 5 feet elevation and above. The pattern of topography shown in this depiction in the areas directly north of the overpass approach and arena is consistent of the placement of fill on land that is depicted in the earlier views at an elevation of 1 foot and below, creating what appears as areas of higher lying ground rising to elevations of 2 feet to 6 feet and above. Spot elevations in the area formerly occupied by the arena range from -0.5 feet to 0.3 feet.

Because of the datum conversion, the highest elevation contour indicated anywhere on the lower portion of the property shown is 6 feet and occurs in just one area, the approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation in the 1970 depiction, which disappeared entirely in the 1986 view, is shown mostly at -0.4 feet to -1.9 feet. No contour line for -0.5 feet is indicated, making it uncertain whether the area remains a topographic depression.

Because of the 1 foot contour interval used in the 2000 view, the area occupied by separate irregular-shaped areas at or below 1 foot elevation in the 1980 and 1986 views located in the same general area as the WP wetland identified in 2006, is depicted entirely below the -1.0 foot contour line. The spot elevations in this area just to the north of the flood control channel range from -1.6 feet to -1.7 feet, roughly 6 inches lower than the spot elevations found further north and east. This area is bounded on the southwest by the filled area directly north of the Slater Ave. overpass approach.

January 6, 2002 (see Exhibit 22)

The image we received for 2002 is identical to the 2006 image, with the exception of the two intersecting straight lines visible in the 2006 image. It appears that the 2002 map has been mislabeled 2006, however, due to this discrepancy the description of the topography for this year was deferred.

October 21, 2005 (see Exhibit 23)

Like 1997 and 2000, the 2005 depiction includes topography for the entire property. This depiction also continues the trend of the earlier maps, showing the nearly complete disappearance of the lower lying area in the vicinity of the EPA wetland. Whereas the earlier years showed a distinct depression here, in 2005 it is essentially gone. The eastern extent of the area below zero elevation is depicted as two irregular-shaped areas along the western margin of the agricultural field to the west of the EPA wetland. The 0.5 foot elevation contour also encloses an irregular-shaped area in the same general area, and is shown with a map symbol indicating that inside this contour

line is a topographic depression. The area below the 0.5 foot contour line in this part of the property is adjacent to the farm road along the western margin of the agricultural field, and covers an area approximately 100 feet wide by 750 feet long. All of the spot elevations inside this contour line are less than 0.5 feet, with the lowest elevation being -0.8 foot. The area now occupied by the AP wetland is shown at elevation zero and below and represents the area graded or excavated to that depth.

In the area in the southwest portion of the property used formerly as a stables operation the elevations remain generally higher, especially along the levee, where elevations have increased dramatically compared to the 1970 depiction. In this view the rise in topography all around the approach to the former Slater Ave. overpass of the East Garden Grove – Wintersburg channel has been evened out by disking or plowing operations that have also created map artifacts that show up as parallel "spikes" in the contour lines extending in the direction of the plowing or disking. All of this area except the overpass approach itself was shown as less than 2 feet elevation in the 1970 view, whereas in the 2005 elevations range from 2 to 8 feet and above. The pattern of topography shown in this depiction in the areas occupied by the former stable operation reflects the disking and grading activities that would level the area and produce the changes in contour lines that are apparent in this image. Spot elevations in the area formerly occupied by the arena are 2 to 3 feet, about 1 to 2 feet higher than the elevation shown in 1997.

The highest elevation contour indicated anywhere on the lower portion of the property shown is 11 feet and occurs in just one area, the approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation in the 1970 depiction, which disappeared entirely in the 1986 view, is shown mostly at 2 feet elevation or below, and an irregular-shaped area at or below 1.5 foot elevation is located to the west of Graham Street. This slight topographic depression is consistent with the location of the feature depicted and symbolized on earlier maps as a topographic depression. All of the spot elevations inside the 2005 depiction of the 1.5 foot contour line range from 1.2 feet to 1.4 feet.

In this 2005 view, the area occupied by separate irregular-shaped areas at or below 1 foot elevation in the 1980, 1986, and 1997 views located in the same general area as the WP wetland identified in 2006, is depicted as a single polygon at or below 1 foot elevation just to the north of the flood control channel. The areal extent has decreased on the western side compared to the 1997 depiction. Spot elevations within this enclosed polygon range from 0.7 foot to 0.9 foot.

January 1, 2006 (see Exhibit 24)

With the exception of the two intersecting straight lines visible in the image, this map is identical to the 2002 map. It appears that the 2002 map has been mislabeled 2006,

however, due to this discrepancy the description of the topography for this year was deferred.

January 16, 2007 (see Exhibit 25)

Like 1997 and 2000, and 2005, the 2007 depiction includes topography for the entire property. This depiction also continues the trend of the earlier maps, showing the nearly complete disappearance of the lower lying area in the vicinity of the EPA wetland. Whereas the earlier years showed a distinct depression here, in 2007, as in 2005, it is gone. The eastern extent of the area below zero elevation is depicted as an irregular-shaped polygon along the western margin of the agricultural field. The 0.5 foot elevation contour also encloses an irregular-shaped area in the same general area, and is shown with a map symbol indicating that inside this contour line is a topographic depression. As in the 2005 depiction, the area below the 0.5 foot contour line in this part of the property is adjacent to the farm road along the western margin of the agricultural field, and covers an area approximately the same as in 2005 (100 feet wide by 750 feet long). Its extent in the north is reduced compared to the 2005 view. All of the spot elevations inside this contour line are less than 0.5 foot, with the lowest elevation being -0.9 foot. A map symbol indicating a fence is depicted at the eastern side of this topographic depression, now identified as the AP wetland. The area now occupied by the AP wetland is shown at elevation zero and below and represents the area graded or excavated to that depth.

In the area in the southwest portion of the property used formerly as a stables operation the elevations remain generally higher, especially along the levee, where elevations have increased dramatically compared to the 1970 depiction. Similar to 2005, the 2007 view shows the rise in topography all around the approach to the former Slater Ave. overpass of the East Garden Grove – Wintersburg channel has continued to undergo disking or plowing operations that have created map artifacts that show up as parallel “spikes” in the contour lines extending in the direction of the plowing or disking. All of this area except the overpass approach itself was shown as less than 2 feet elevation in the 1970 view, whereas in the 2007 elevations range from 2 to 8 feet and above. The pattern of topography shown in this depiction in the areas occupied by the former stable operation reflects the disking and grading activities that would level the area and produce the changes in contour lines that are apparent in this image. Spot elevations in the area formerly occupied by the arena range from 2 to 3 feet, about 1 to 2 feet higher than the elevation shown in 1997.

The highest elevation contour indicated anywhere on the lower portion of the property shown is 11 feet and occurs in same area as in previous years, the former approach to the Slater Ave, overpass of the East Garden Grove – Wintersburg channel. The area at the eastern perimeter of the property shown at or above 3 feet elevation in the 1970 depiction, which disappeared entirely in the 1986 view, is shown mostly at 1.5 feet elevation or below, with an irregular-shaped area at or below

1.5 foot elevation located to the west of Graham Street. This slight topographic depression is consistent with the location of the feature depicted and symbolized on earlier maps as a topographic depression. All of the spot elevations inside the 2005 depiction of the 1.5 foot contour line range from 1.3 feet to 1.4 feet.

In this 2007 view, the area occupied by separate irregular-shaped areas at or below 1 foot elevation in the 1980, 1986, 1997, and 2005 views located in the same general area as the WP wetland identified in 2006, is depicted as a single polygon at or below 1 foot elevation to the north of the flood control channel. The areal extent of the polygon enclosed by the 1 foot contour line has decreased dramatically, covering less than 10% of the area shown in the 2005 depiction. The 2007 spot elevations within this area range from 1.1 feet to 1.4 feet.

IV. Conclusions

Based on the analysis of the available aerial photography, topographic maps and other materials, it is apparent that many landform changes have resulted due to development activities on the subject property over a long period of years, ranging from the leveling of the fields by agricultural activities during the 1900's and at present, to the fill of low–lying areas and construction of equestrian facilities in the 1980's and 1990's. The most dramatic changes involving fill appear to have taken place in the southwest part of the property (on both sides of the City /County boundary, however grading and farming activities in the agricultural field have also significantly altered the topography throughout that area, including the areas identified as the EPA wetland, the WP wetland, and the AP wetland. The CP wetland has been altered less in recent years.

EPA Wetland and AP Wetland

Historically, this area was part of the larger Bolsa Chica coastal wetland. Although agriculture has gone on in this area since the 1930's, the elevations have consistently indicated a topographic depression here. Aerial photography shows repeated instances of ponding in the area.

The base map used for the 1987 EPA wetland map was the 1980 topographic map produced by the County. The original map was drawn with 1 foot contours, and six inch supplemental contours were added to this map. The -0.5 contour line actually forms nearly half of the delineated wetland boundary. Because this map uses the NGVD29, 1976 OCS adjustment as the datum, elevations shown are below zero for most of the property. Interestingly this map shows spot elevations indicating a lower area in the vicinity of the WP wetland.

In this decade the topography of the EPA wetland area has changed dramatically, with the obliteration of the depression in its original location and the creation of a smaller, narrower depression now identified as the AP wetland at the western margin of the agricultural field. The areas covered by the AP wetland and the EPA wetland are not contiguous. Whereas the EPA wetland was a relatively broad and shallow (approx. six inches to 1 foot) depression, covering over 8 acres, the AP wetland shows as a narrower depression, over a foot deep at its maximum,

covering about an acre. The AP wetland boundary is essential coincident with the zero contour line at the western margin of the agricultural field. The large-scale topographic maps produced in this decade show clear evidence of continued disturbance in this area.

Stables Area - Permitted Fill

Exhibit 26 shows the area where 1500 to 3000 cubic yards of fill for a parking area was authorized by CDP 5-82-278. This area is approximately 1 acre in size. Filling an area this size with enough material to raise the elevation 3 feet would take 2400 cubic yards. This entire area was mapped as below sea level in 1965, and at or below 1 foot elevation on the 1970 and 1980 maps. The elevation is at or below 2 feet on the 1986 map. The 1997 map shows elevations of 2.5 to 3.0 feet for this area. The map prepared for 2000 has elevations converted from NGVD29 to NAVD88 and depicts this entire area below 1 foot elevation. Other elevations on this map are about 2.5 feet below those shown on the other maps. The maps prepared for 2002, 2005, 2006, and 2007 all show this area ranging from 3.0 to 4.5 feet elevation (NAVD88). Exhibit 25 shows the area of permitted fill in the southwestern part of the property.

Stables Area – Unpermitted Fill and other Disturbance

Of course historically, this area was also part of the larger Bolsa Chica coastal wetland. Although agriculture has gone on here since the 1930's, the mapped elevations before 1980 have consistently indicated that the elevation in this location is at or below 2 feet. Nearly the entire area was mapped as below sea level in 1965 by the US Geological Survey. Aerial photography after 1977 shows repeated instances of filling and grading and construction in the area. In the 1980's the topography changed significantly, with the raising of elevations in the area north of the former Slater Ave. overpass to nearly 10 feet. The large-scale topographic maps produced in this decade show clear evidence of continued disturbance in this area, with the plowing and leveling of the area, and the construction of drainage ways. Exhibit 25 shows this approximately 10 acre disturbed area in the southwestern part of the property.

WP Wetland

As with the above areas, historically, this area was also part of the larger Bolsa Chica coastal wetland. Although agriculture has gone on in this area since the 1930's, the large-scale maps reviewed have consistently indicated the presence of small topographic depression in this general area. Recent aerial photography also shows instances of ponding in the area.

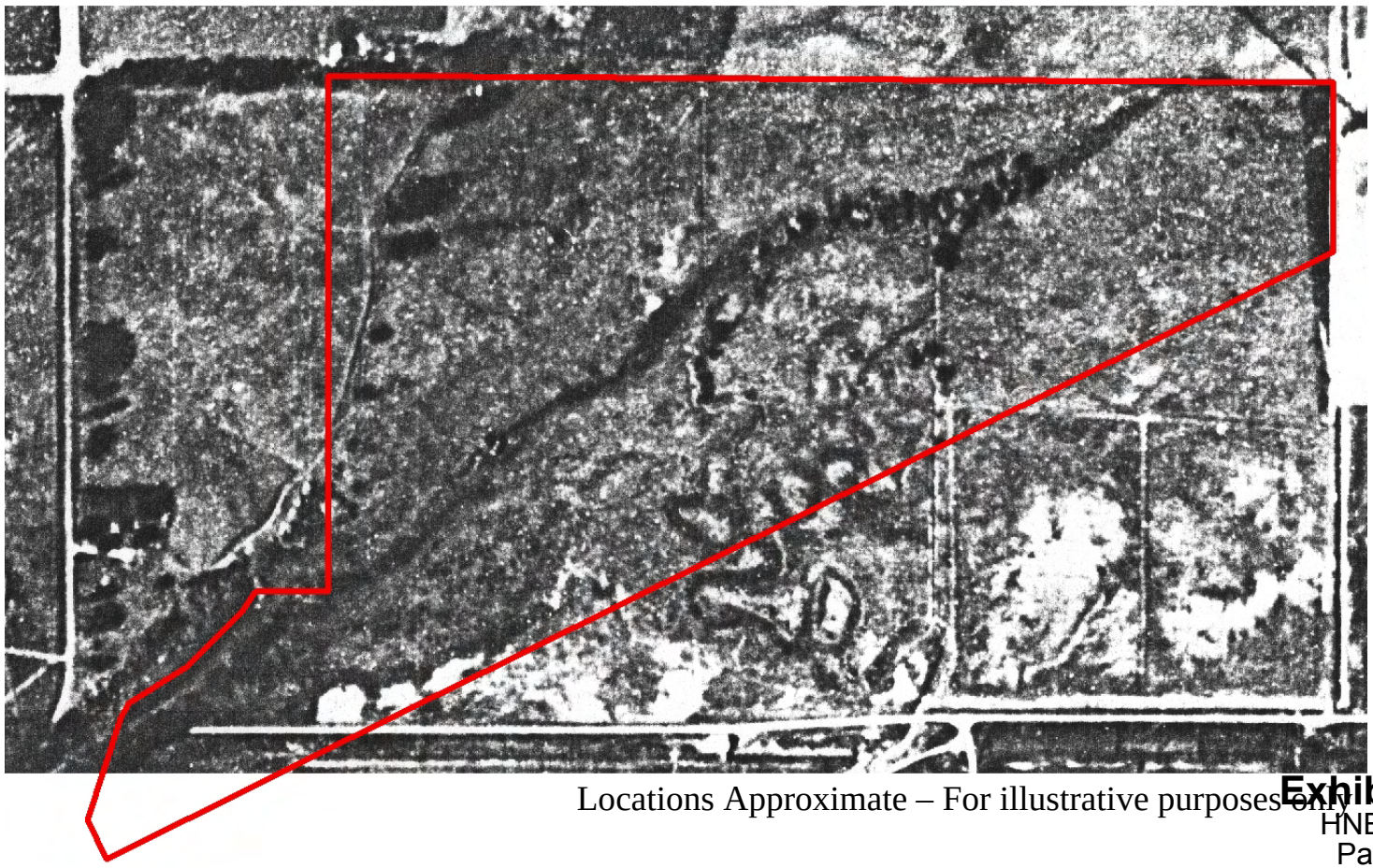
The topographic map used to delineate the area that has had standing water in recent years was the 2005 map described earlier. The boundary of the wetland roughly follows the 1.2 foot spot elevations and encompasses the 1.0 foot contour line. On the 2005 map spot elevations in the lowest part of the depression are 0.7 feet. The 2007 map shows a much-reduced depression varying from 0.8 feet to 1.0 foot elevation.

CP Wetland

Similar to the above areas, historically, this area was also part of the larger Bolsa Chica coastal wetland and maintained the characteristics of a coastal salt marsh longer that the other historical wetlands that were located on the property. Although agriculture has gone on in this area since the 1930's, it was north of Slater Ave. The large-scale maps have consistently indicated very low-lying elevations here. Aerial photography shows incursions of fill and evidence of clearing or grading in the 1980's and the more recent placements of structures along the levee. In this decade the topography has remained about the same as it was in 1986. The large-scale topographic maps produced in this decade may indicate some incursion of unpaved roads and trails in this area.

Exhibit 1
Early Aerial Photography

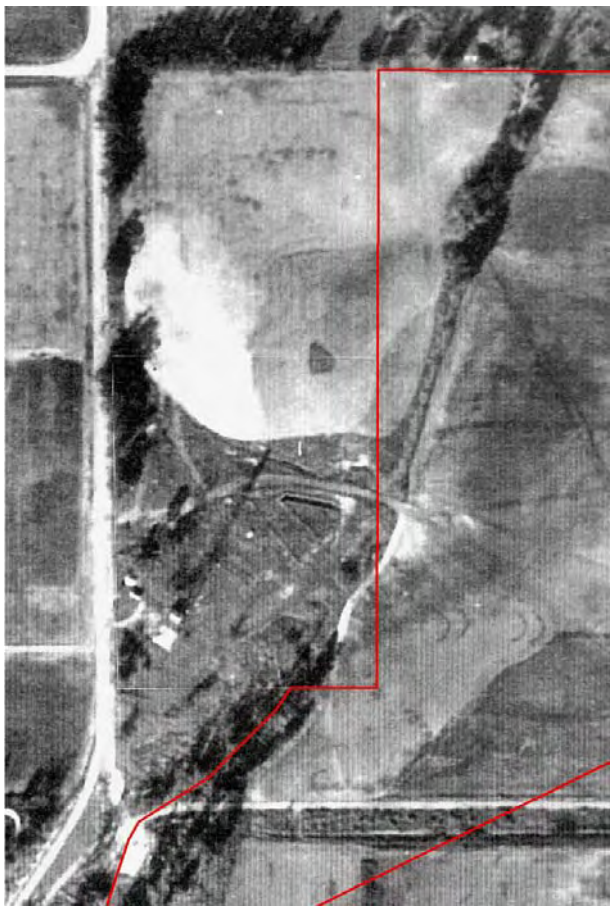
2/12/1934



Locations Approximate – For illustrative purposes only

Exhibit 2
Pre-Prop 20 and Coastal Act

12/26/1952



5/21/1970

Exhibit MMM
HNB-MAJ-1-06
Page 21 of 45

Locations Approximate – For illustrative purposes only

Exhibit 3
Pre-Coastal Act
High-Altitude Coverage

1/13/1977

Locations Approximate – For illustrative purposes only

Exhibit 4
Stables Fill and Development

1/31/1981

2/19/1983

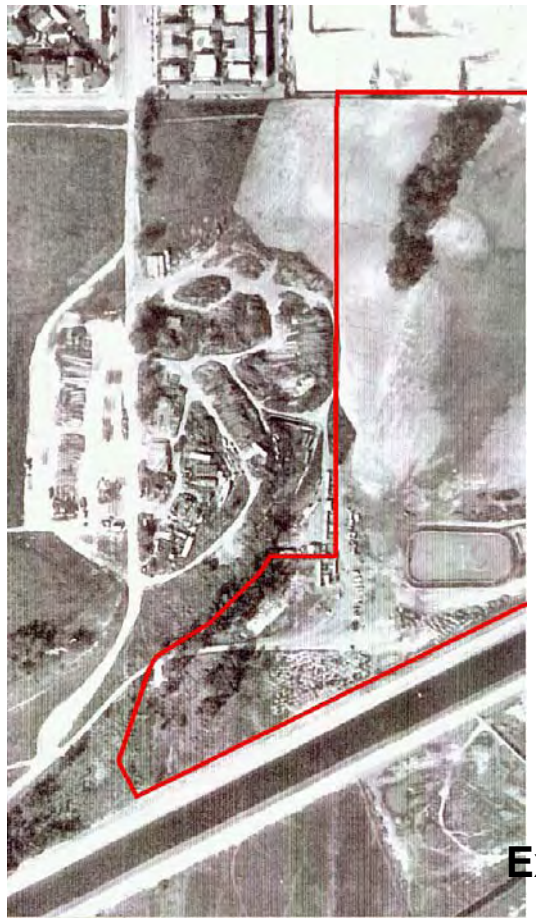


Exhibit MMM
HNB-MAJ-1-06

Locations Approximate – For illustrative purposes only

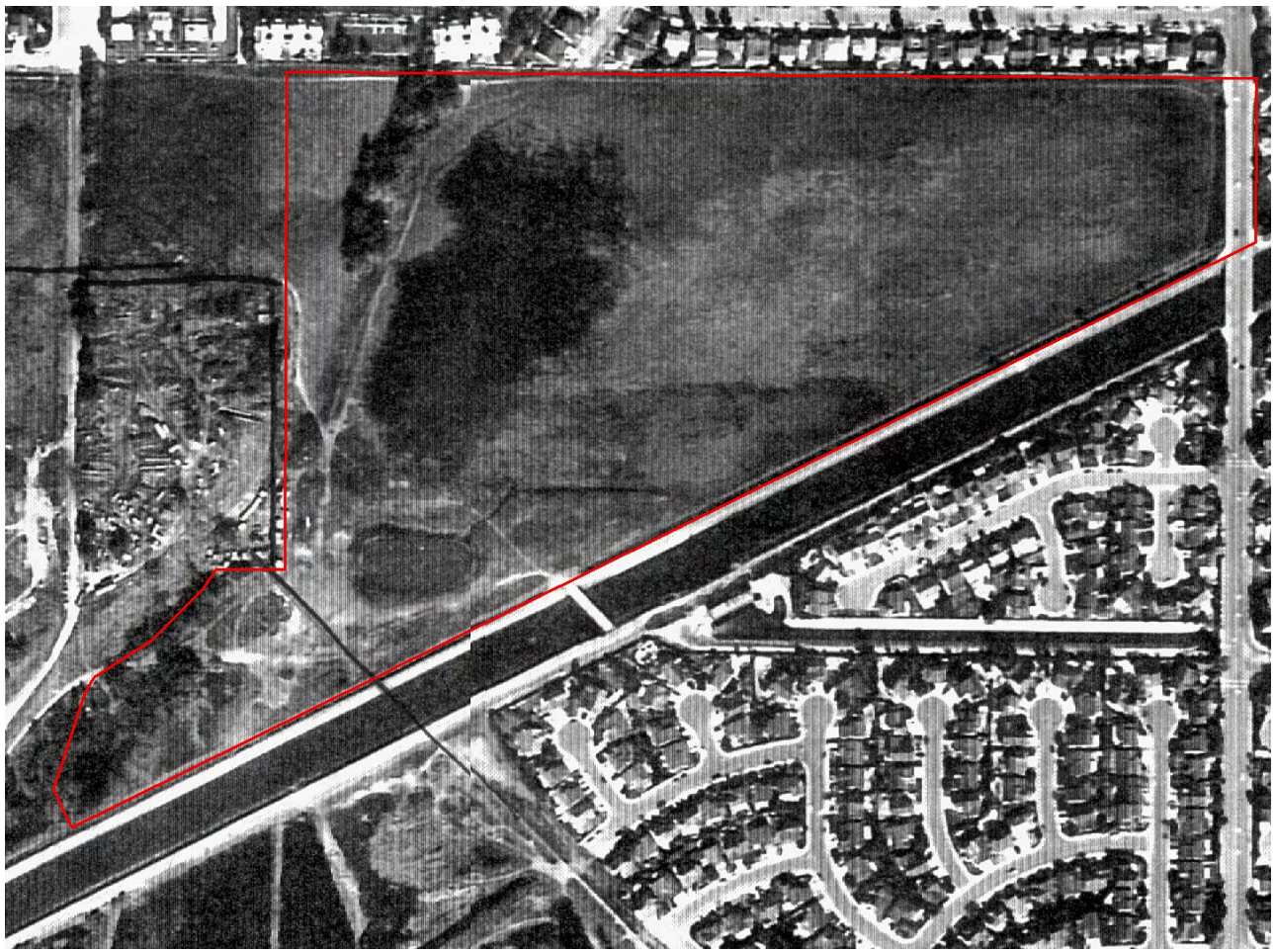
Exhibit 5
Continued Fill and Stables Development

5/13/1986

Locations Approximate – For illustrative purposes only

Exhibit 6
Wetlands, Continued Fill and Decline of Stables Development

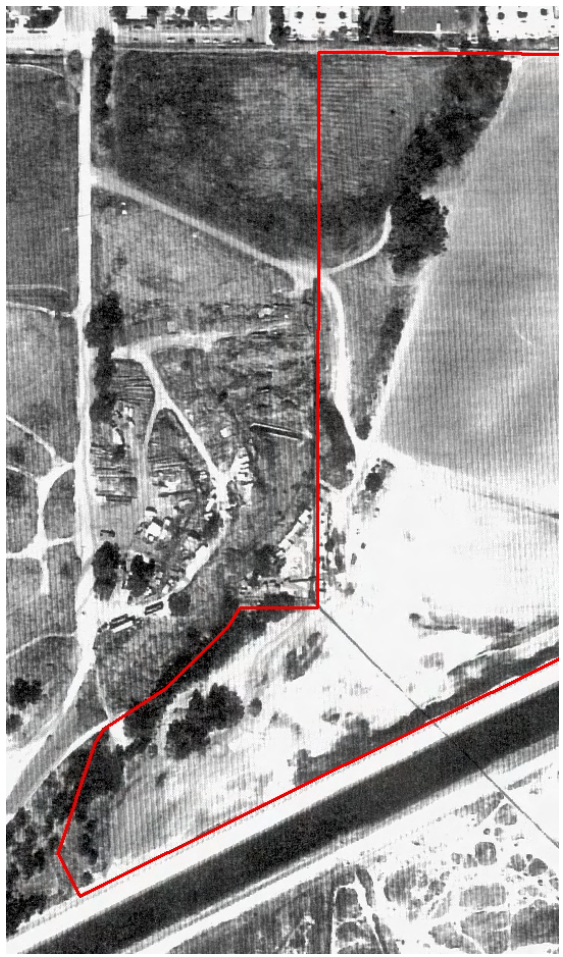
1/28/1995



Locations Approximate – For illustrative purposes only

Exhibit 7
Continued Fill, Grading, and Stables Decline

2/24/1999



Locations Approximate – For illustrative purposes only

Exhibit 8
Continued Grading and Agricultural Development

6/29/2001

Locations Approximate – For illustrative purposes only

Exhibit 9
Continued Grading and Agricultural Development

January 2006

Locations Approximate – For illustrative purposes only

Exhibit 10
Vicinity of Shea Property

Source: T-1345, Surveyed in February to April 1873

Exhibit 11
Detail of Bolsa Chica: USGS Topographic Map

Source: So. California Sheet No. 1, edition of 1901

Exhibit 12
1935 USGS Topographic Map

Source: Seal Beach Quad, edition of 1935

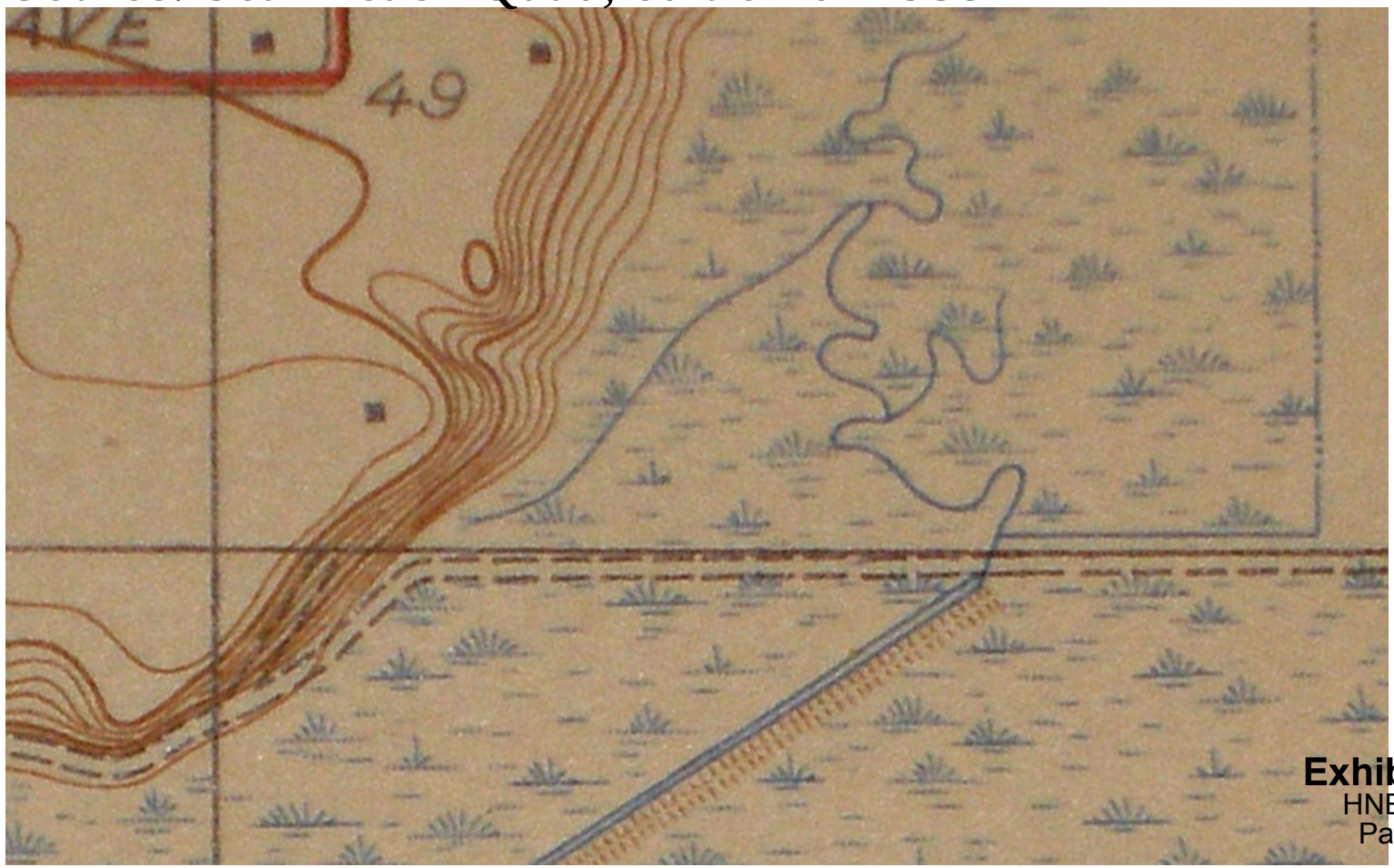
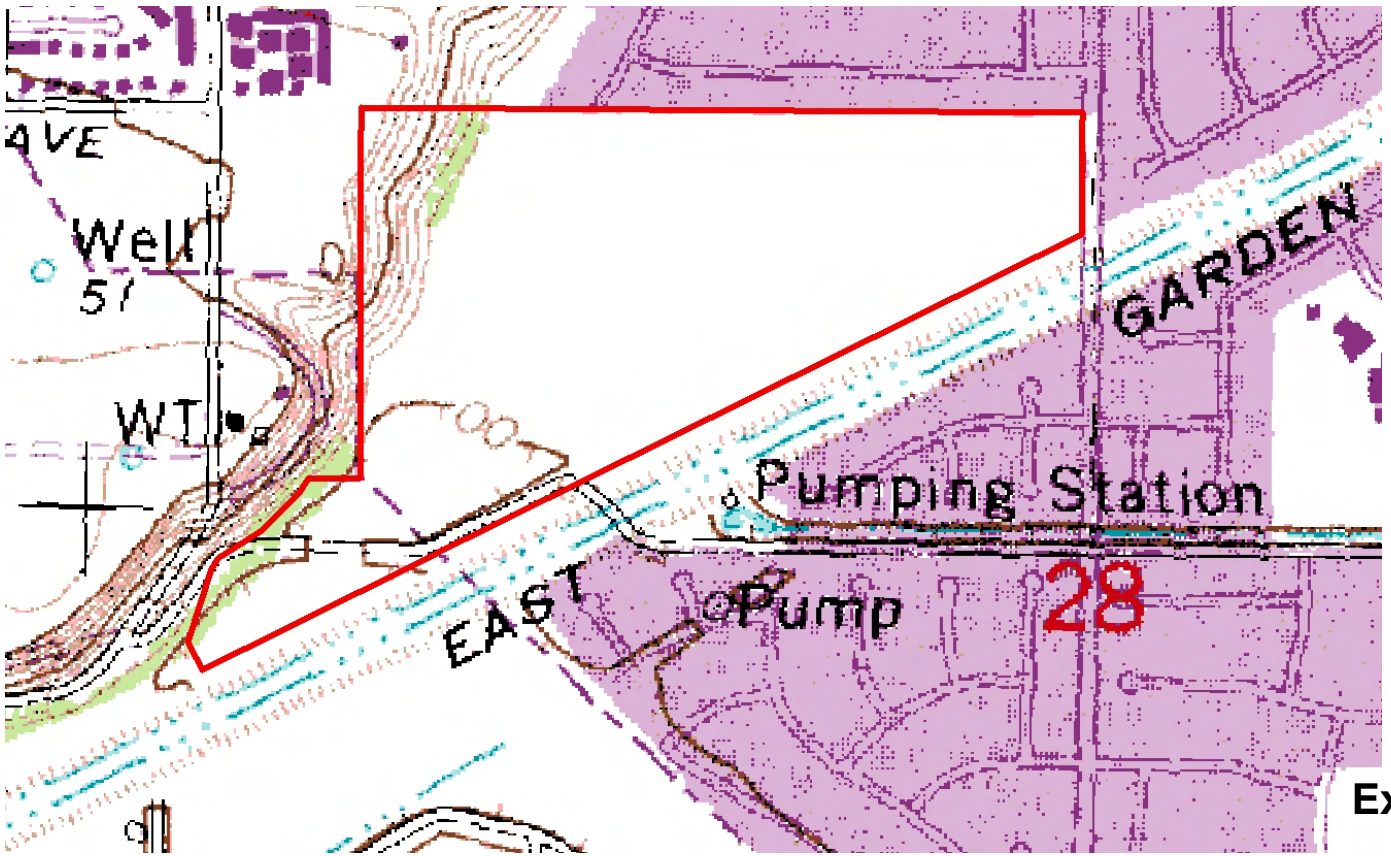


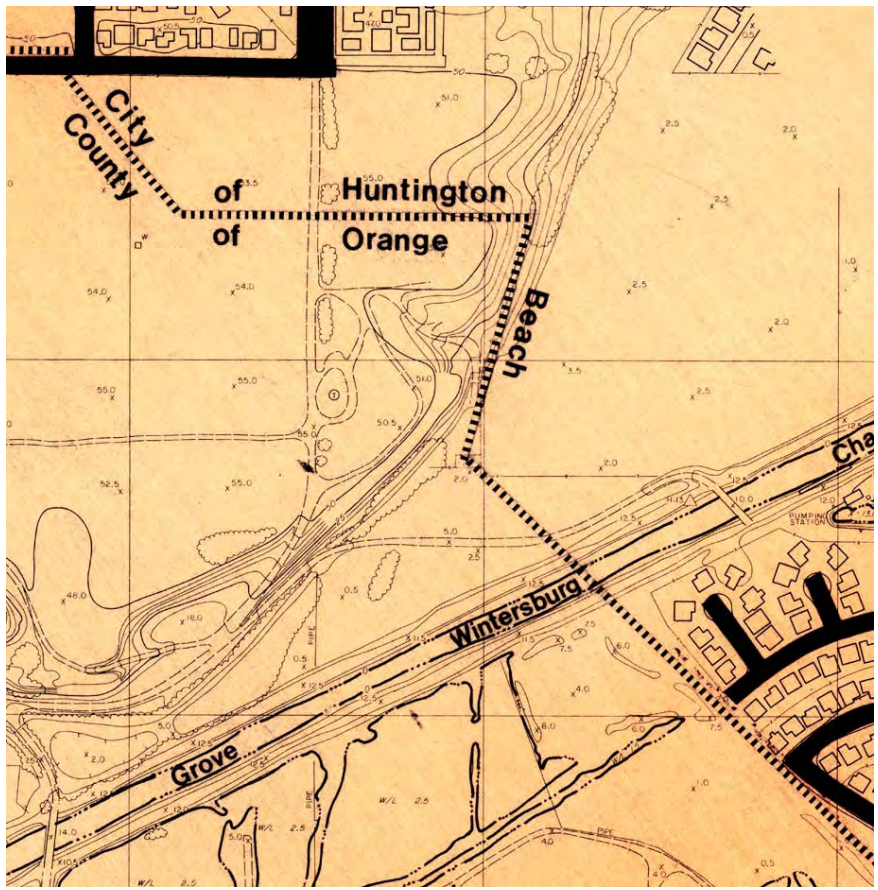
Exhibit 13
1965 USGS 7.5 Minute Quad

Source Dates: Aerials 1963, Topo by Planetable 1965, photorevisions (purple) from 1978 aerials



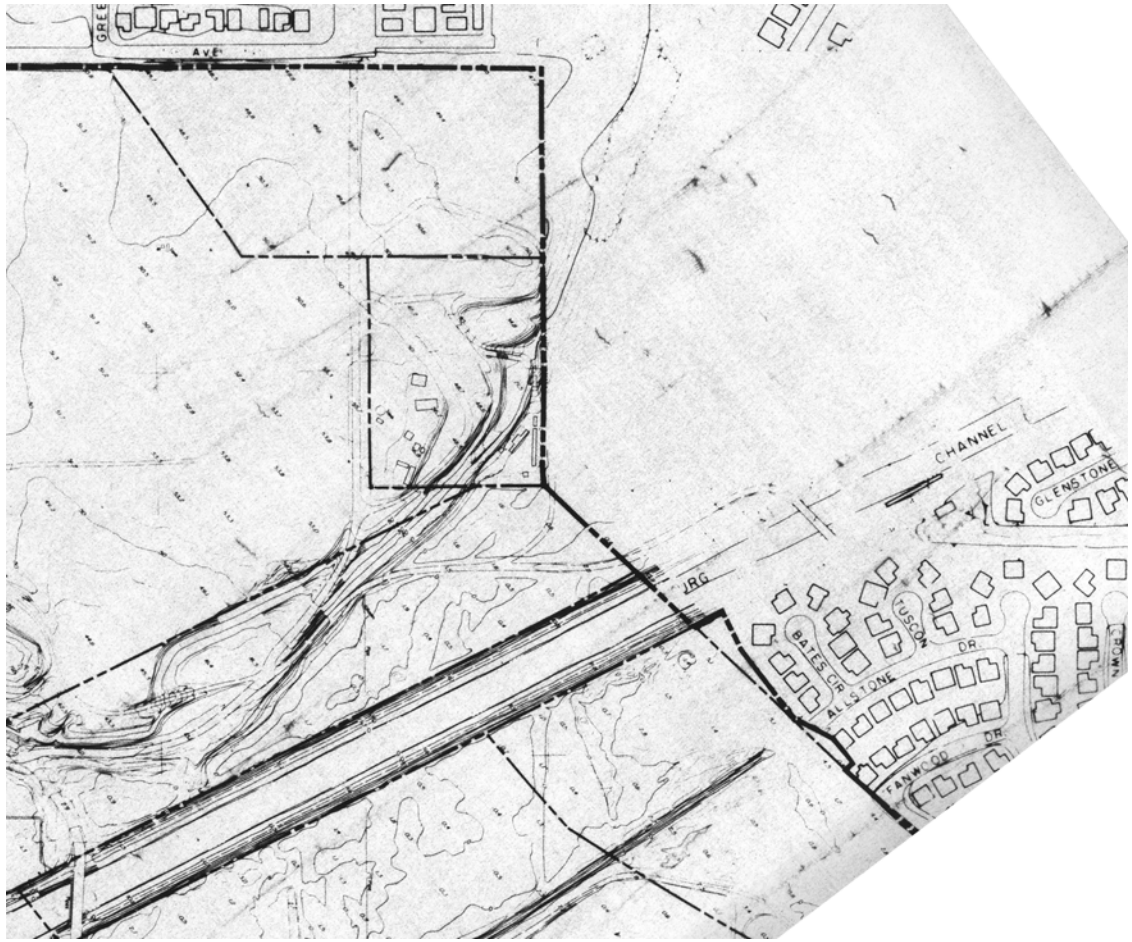
Locations Approximate – For illustrative purposes only

Exhibit 14
Large Scale Topographic Map



Source: Orange Co. EMA, based on photography taken in 1978

Exhibit 15
Large Scale Topographic Map



Source: Orange Co. EMA, based on photography taken September 17, 1980

Exhibit 16
Large Scale Topographic Map
June 28, 1970 Source: Hunsaker, 2007

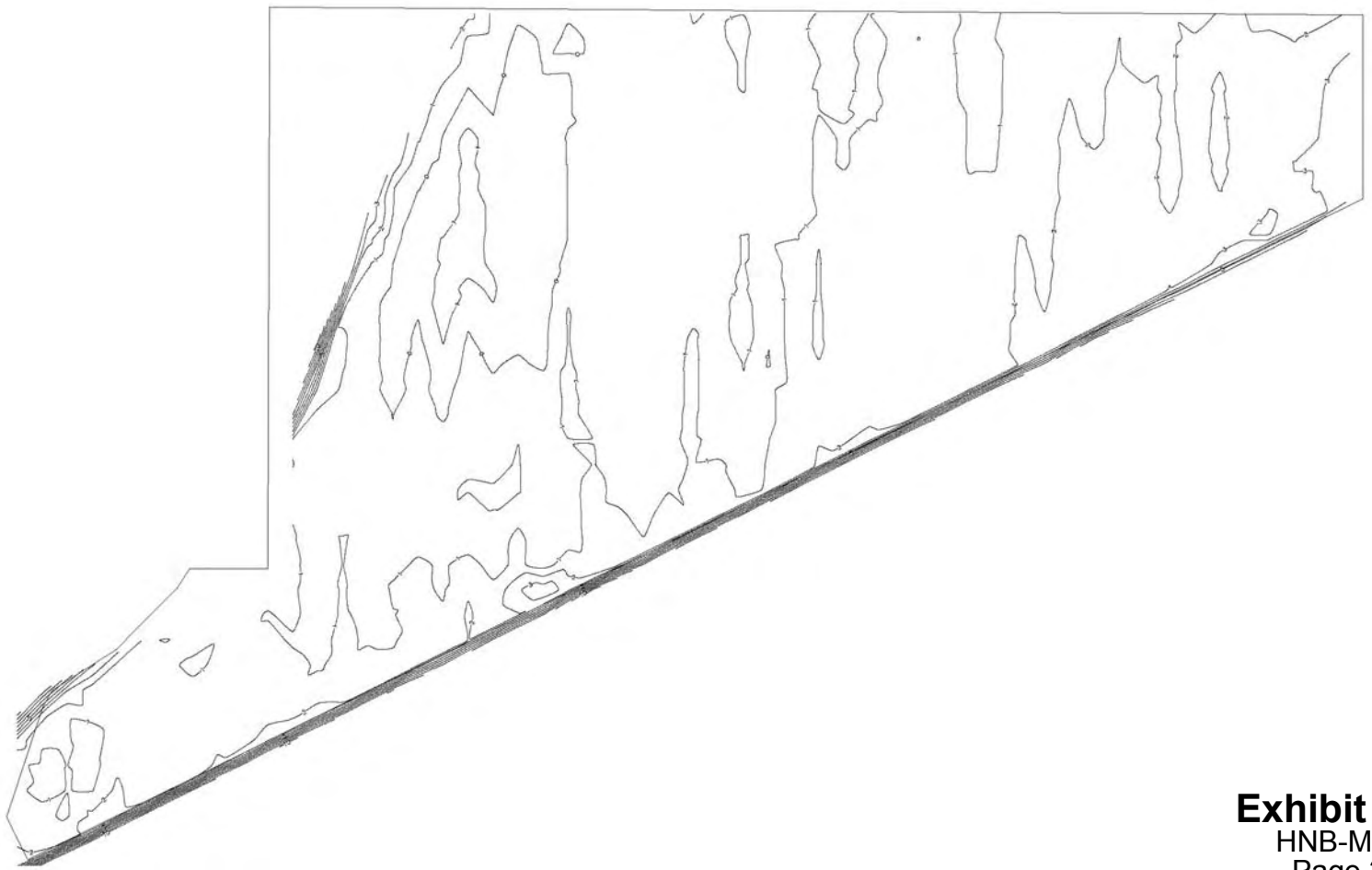


Exhibit 17
Large Scale Topographic Map
September 17, 1980 Source: Hunsaker, 2007

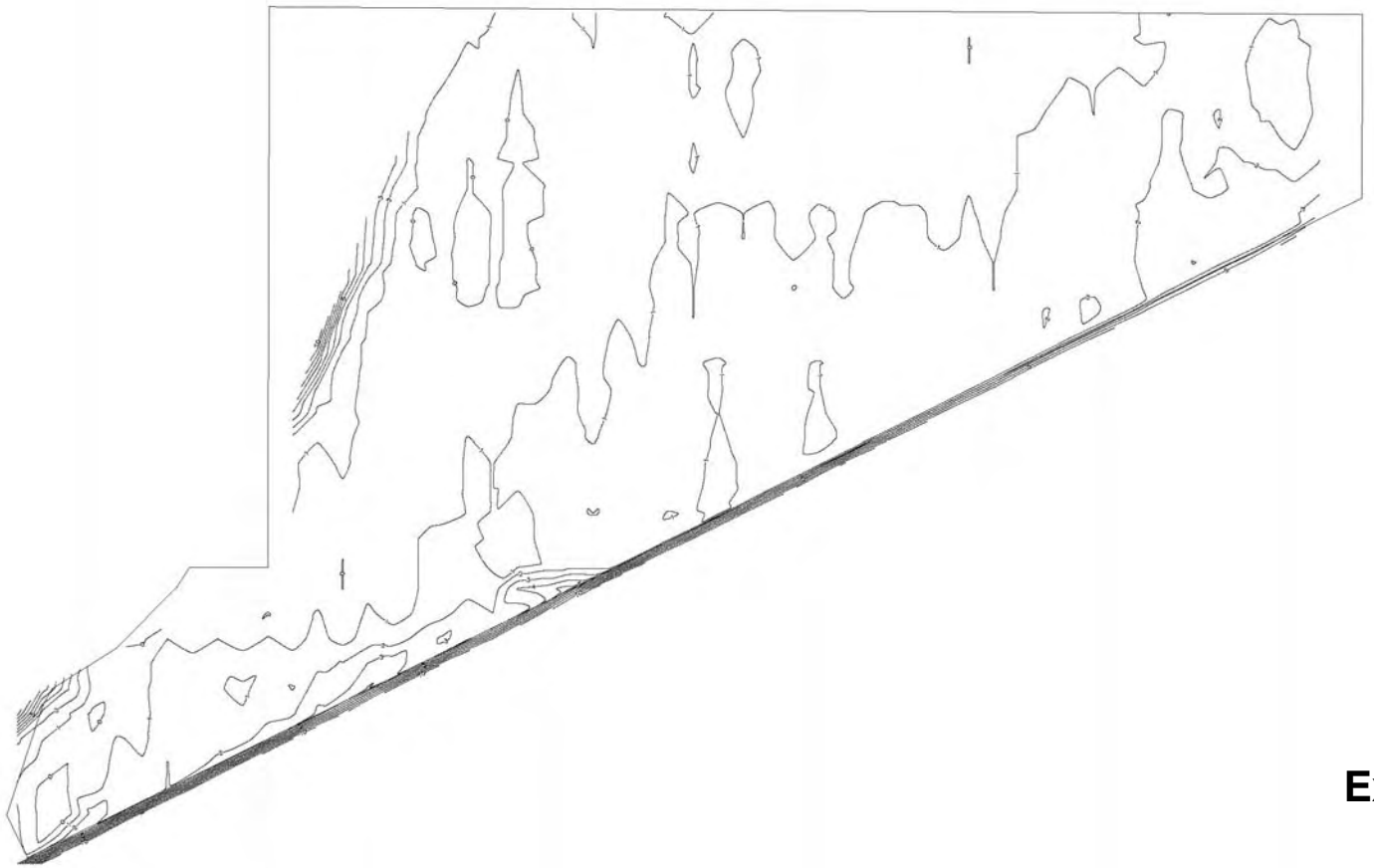


Exhibit 18
Agricultural Area Delineation

Source: Thomas W. Bilhorn, June 1987

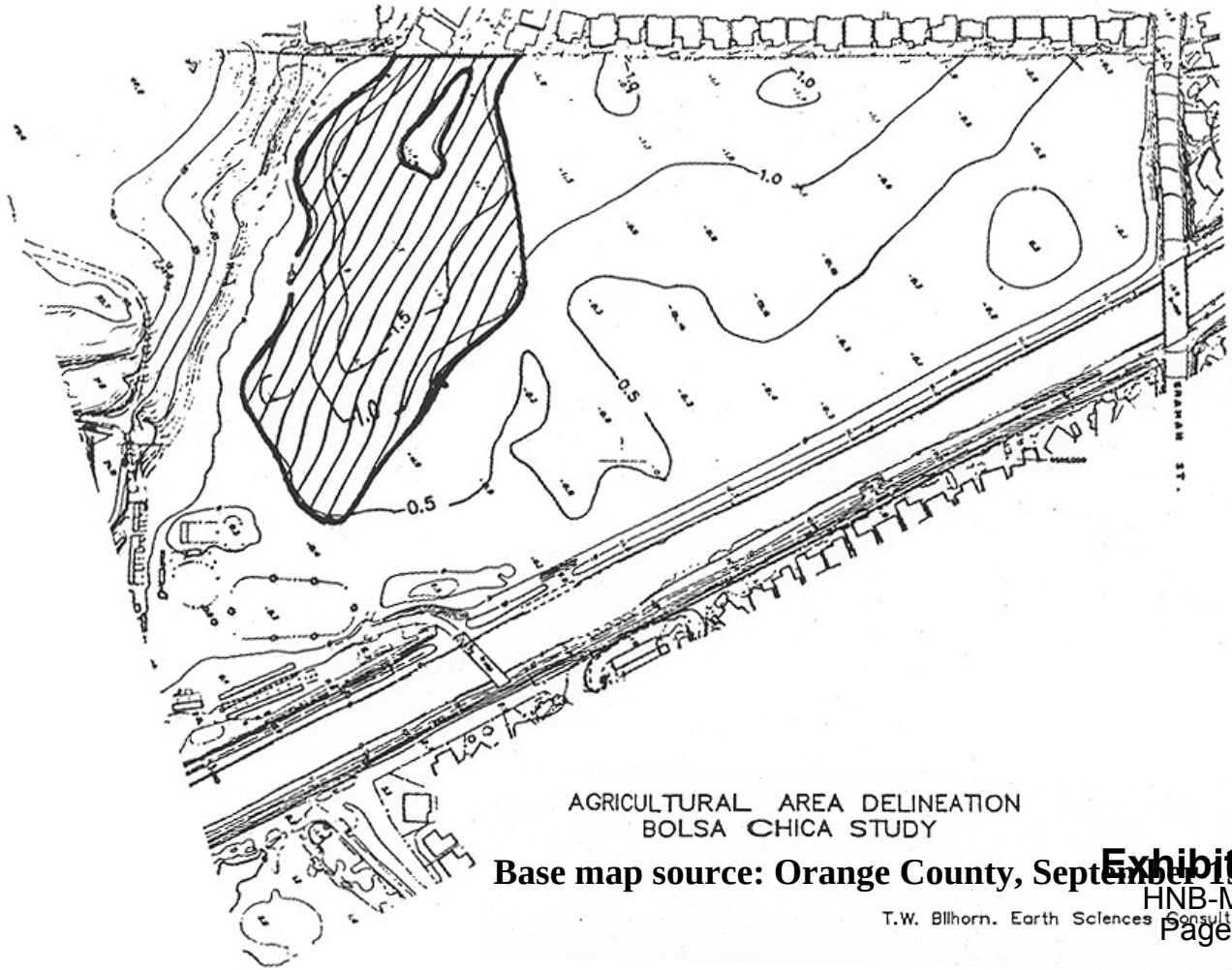


Exhibit 19
Large Scale Topographic Map
July 28, 1986 Source: Hunsaker, 2007

Exhibit 20
Large Scale Topographic Map
May 29, 1997 Source: Hunsaker, 2007

Exhibit 21
Large Scale Topographic Map
September 25, 2000 Source: Hunsaker, 2007

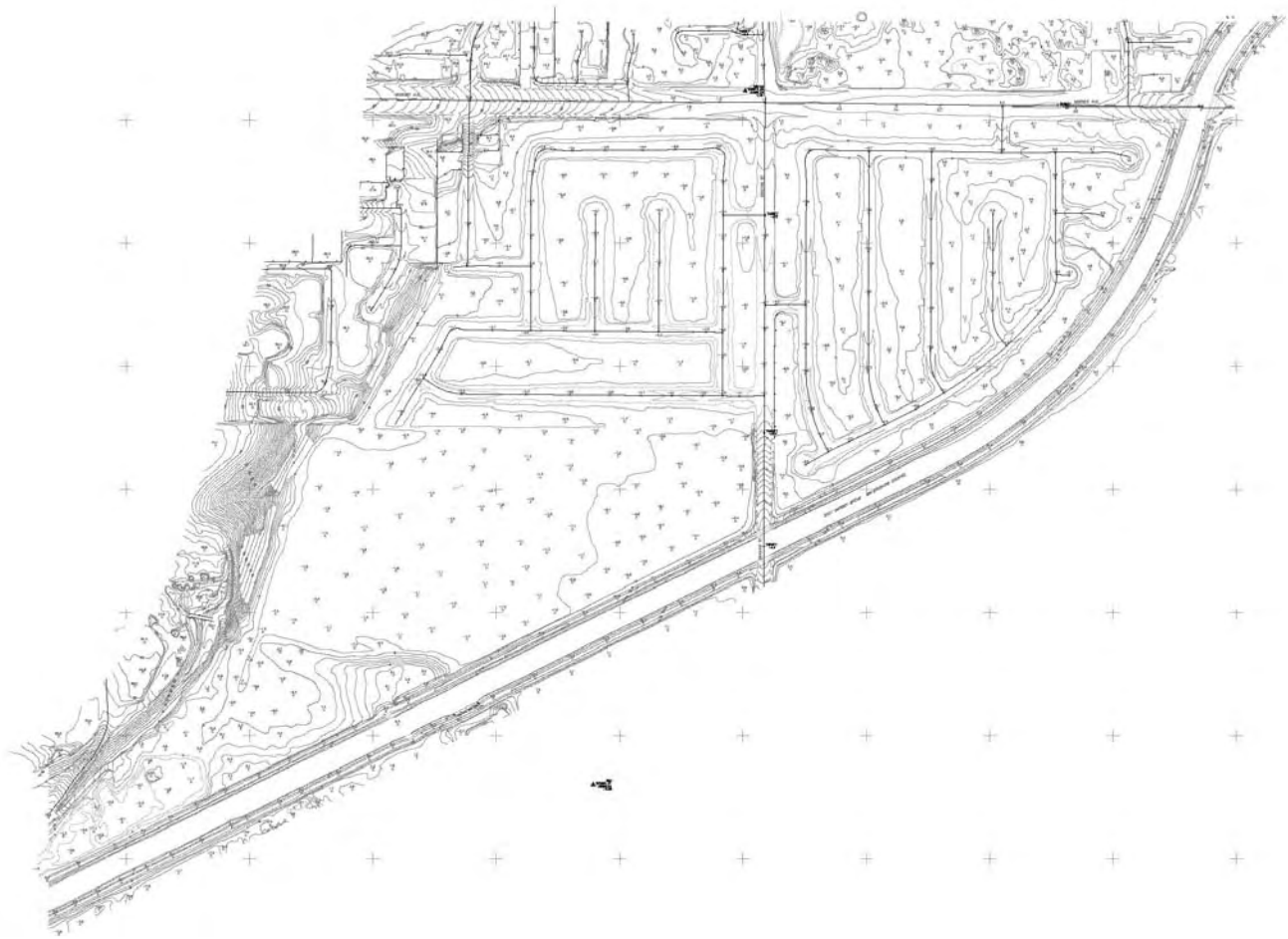


Exhibit 22
Large Scale Topographic Map
January 6, 2002 Source: Hunsaker, 2007

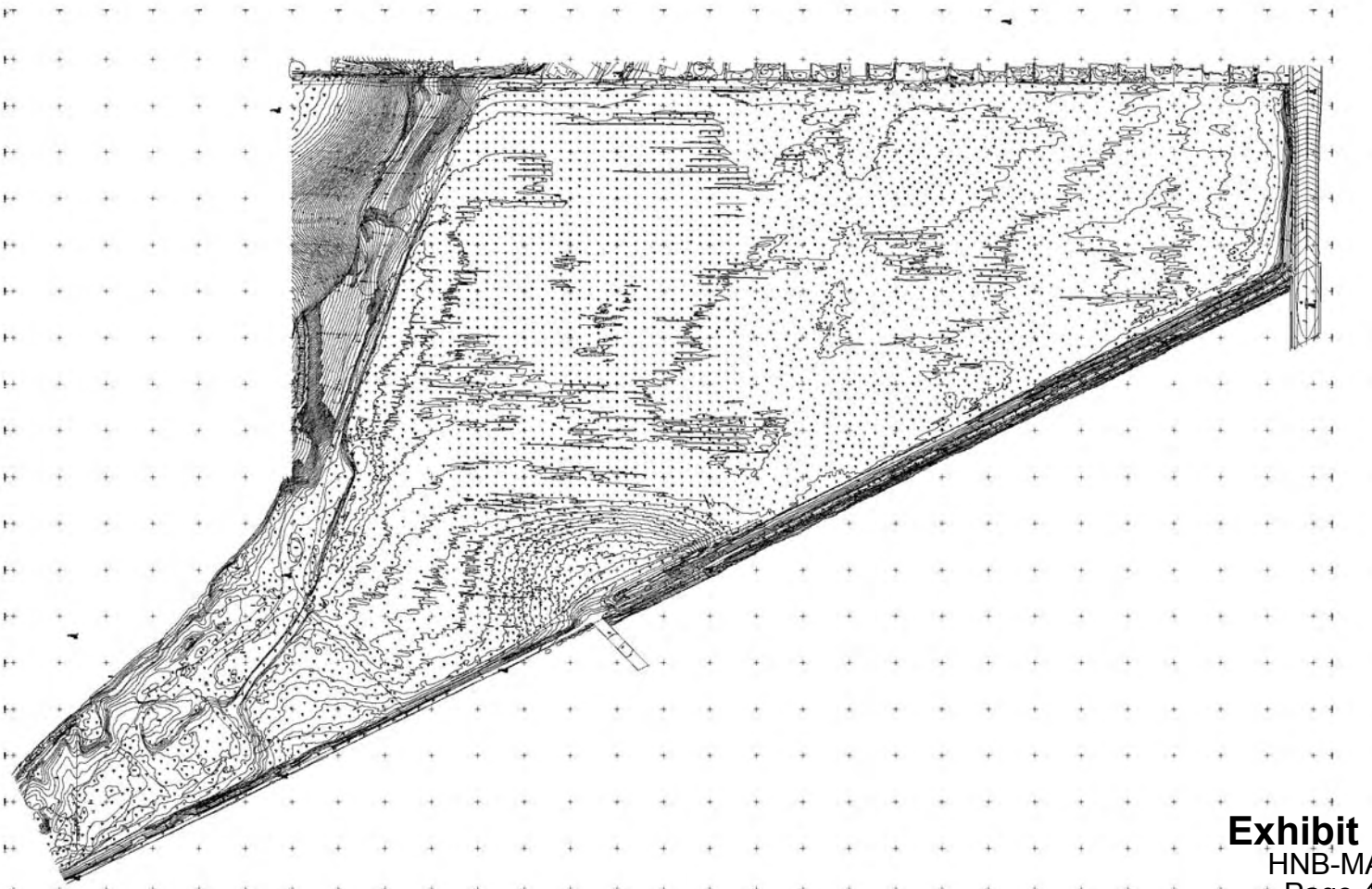
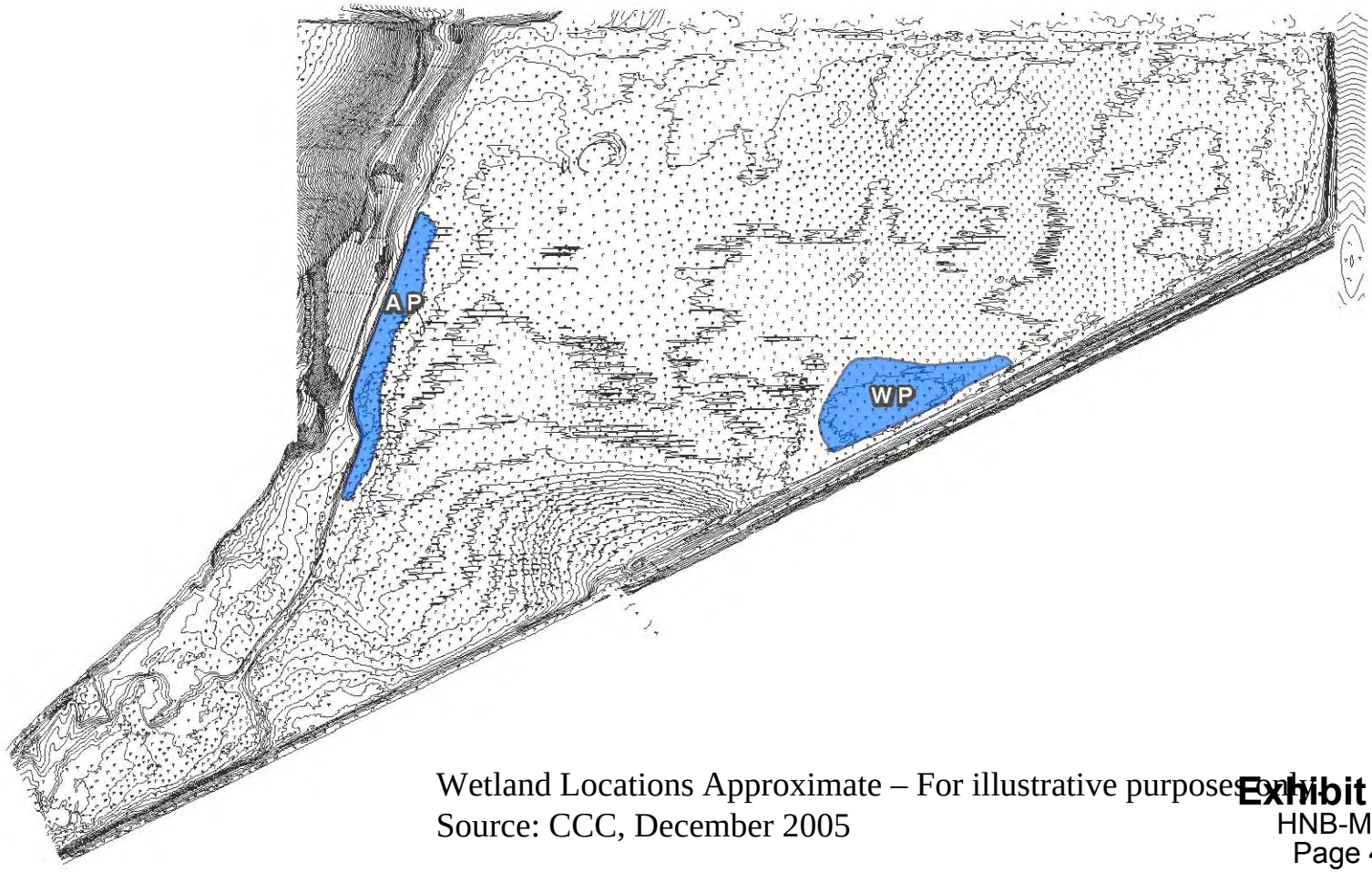


Exhibit 23
Large Scale Topographic Map
October 21, 2005 Source: Hunsaker, 2007



Wetland Locations Approximate – For illustrative purposes only.
Source: CCC, December 2005

Exhibit 24
Large Scale Topographic Map
January 1, 2006 Source: Hunsaker, 2007

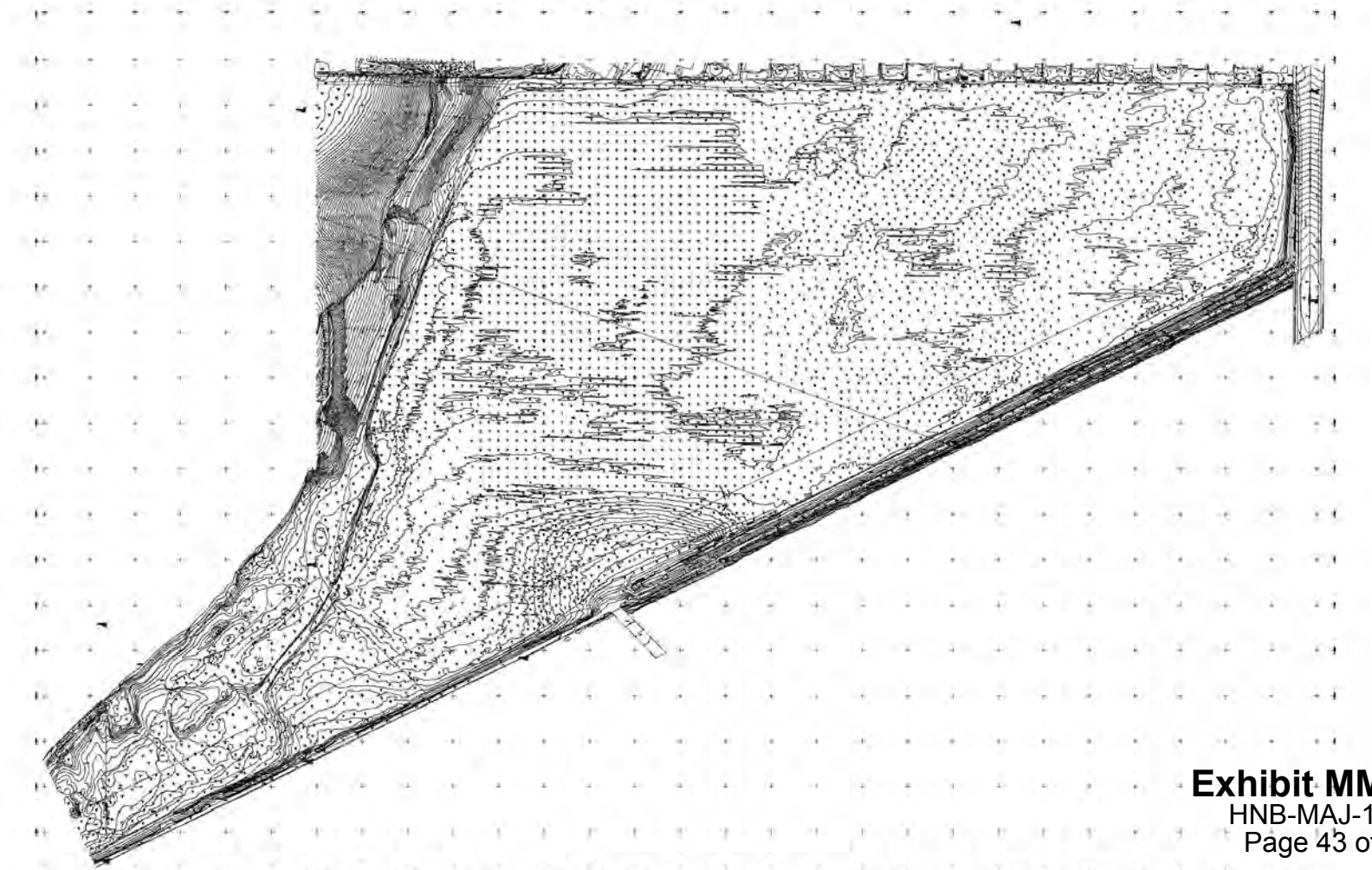


Exhibit 25
Large Scale Topographic Map
January 16, 2007 Source: Hunsaker, 2007

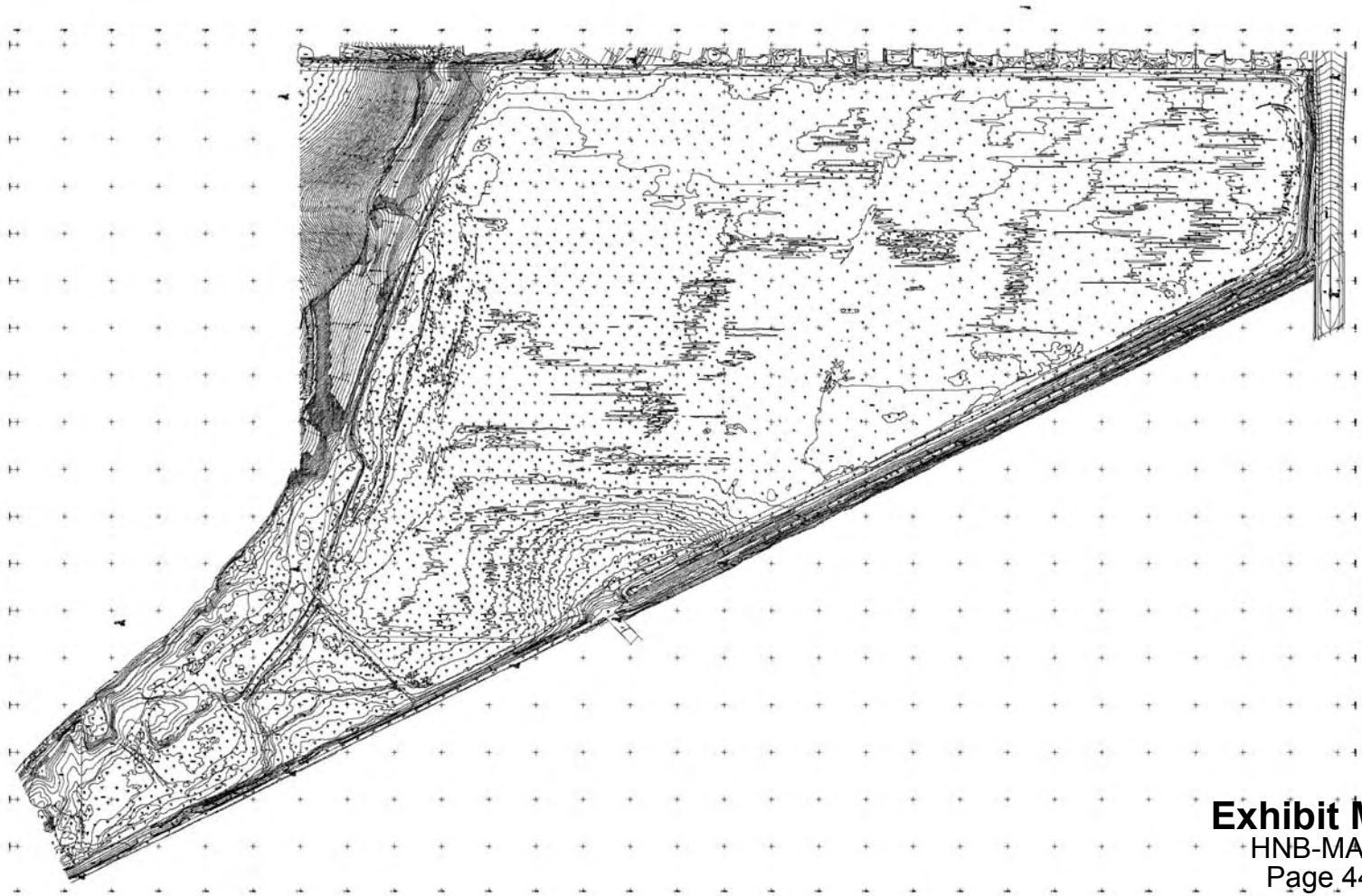


Exhibit 26
Areas of Disturbance and Fill

Air photo taken January 2004

Locations Approximate – For illustrative purposes only

Exhibit MMM
HNB-MAJ-1-06
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STATE OF CALIFORNIA - THE RESOURCES AGENCY PETE WILSON, *Governor*

CALIFORNIA COASTAL COMMISSION

South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

February 25, 1998

Ronald C. Metzler
Vice President Community Development
Shea Homes Southern California, Inc.
P.O. Box 487
655 Brea Canyon Road
Walnut, CA 91788-0487

Subject: CDP Application 5-97-224 and Violation V-5-97-002

Dear Mr. Metzler

Coastal Commission staff has reviewed your coastal development permit application 5-97-224 for disking the subject property located at the intersection of Graham Street and Kenilworth Drive for purposes of agriculture, weed abatement and fire hazard removal. Additionally the project description included the temporary excavation of three test pits for purpose of monitoring groundwater levels, the fencing of the pits, backfilling the pits, and removal of the fencing upon completion of the project.

Coastal Commission staff has determined that a coastal development permit is not required for the disking operation based on the property's prior usage for agricultural purposes. However, the proposed excavation of test pits, fencing, and backfilling requires a coastal development permit. Please submit a revised project description for CDP application 5-97-224 by March 20, 1998.

The effect of this letter on V-5-97-002 will be the removal of the disking operation as unpermitted development. The unpermitted development consisting of the test pits and the associated development will remain until the Commission acts on a permit application for the test pits.

Though the property has been used extensively for agricultural purposes on a historical basis, the site has also been identified as potentially containing wetlands. The modification to the project description of coastal development permit application 5-97-224 should not be taken as an indication that the property does not contain wetlands. Commission staff has received a copy of a letter dated December 17, 1997 describing a wetland evaluation of the property undertaken by Lisa Kegarice. At a meeting held on February 18, 1998 between

Ex NNN,

the Department of Fish and Game, Shea Homes, and the Coastal Commission the Department of Fish and Game agreed to review this wetland evaluation. The conclusion reached by the Department of Fish and Game concerning the existence of wetlands will be used by Commission staff in its evaluation. Should you have any questions please give me a call at the number shown on the letterhead.

Sincerely,

Stephen Rynas, AICP
Orange County Area Supervisor

cc: Pam Emerson, Coastal Commission
Jim Barnes, City of Huntington Beach
Terry Dickerson, California Department of Fish and Game