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

ADDENDUM

Th10b

August 3, 2012

TO: Coastal Commissioners and Interested Parties

Click here to go to the original staff report.

FROM: South Coast District Staff

SUBJECT: ADDENDUM TO **ITEM Th10b**, COASTAL COMMISSION PERMIT APPLICATION **#5-12-065** FOR THE COMMISSION MEETING OF **August 2012**.

Correspondence

Attached is a letter in opposition to Items Th10b and Th10c from Greg J. Buchanan at 16822 Baruna Lane and a letter from Ms. Joyce Ritchie at 16631 Bolero Lane who also wrote in opposition to Item Th10b and is requesting to be removed as an applicant from Item Th10b, Coastal Development Permit Application 5-12-066. Staff has deleted the Ritchie property from the list of applicants in this addendum to the staff report. Both Mr. Buchanan and Ms. Ritchie expressed concerns regarding the use of rock to protect the bulkhead foundation from erosion. Attached is Tetra Tech's response to the opponents' comments.

The Commission imposes a special condition requiring revised plans and final as-built plans requiring further minimization of the footprint of the proposed replacement of rock at the toe of the bulkhead to protect from future erosion. As stated in the staff report, a layer of geotextile fabric will be placed beneath the proposed toe stone to prevent it from sinking/settling into the bay mud and reduce the likelihood of significant turbidity during construction. The proposed new toe protection material is intended to replace original toe stone settled material and will be placed on filter fabric to reduce any potential settlement. The applicants' coastal engineer has stated that the proposed toe stone (8-inch diameter or less quarry waste) is necessary to protect the integrity of the existing bulkhead and will not migrate or accrete to other areas under the observed hydrodynamic conditions within the Harbor. Therefore, with the use of the proposed fabric material, the problems associated with the original pre-Coastal Act protective toe stone are not anticipated to repeat. Since the project will replace previous toe stone, it is not considered "new" fill of coastal waters.

Recommended Revisions to Staff Report

Commission staff recommends the deletion of William and Joyce Ritchie at 16631 Bolero Lane from the list of project applicants; additional information updating the status of State Lands Commission leases at a couple of the subject sites, a correction to information regarding the orientation of existing docks in front of the subject bulkheads

and a change to Special Condition #4. Deleted language is in ~~strike through~~ and new language is in ***bold, underlined italic***, as shown below:

On page 1 of the staff report for Item Th10b (CDP 5-12-065), revise as follows:

Project Location: See Table Below, Huntington Beach, Orange County

Don Goodwin	16492 Somerset Lane
Richard Mulvania	16612 Nalu Circle
Oren & Carol Langston	16611 Nalu Circle
~~William & Joyce Ritchie~~	~~16631 Bolero Lane~~
Gilbert & Rory Unatin	16661 Bolero Lane
Samuel Glesy	17011 Bolero Lane
Ing Wong	16891 Bolero Lane
Michael Younessi	4022 Morning Star Drive
Tobin Campbell	4012 Morning Star Drive
Tobin Campbell	4001 Morning Star Drive
Leigh Ross	4021 Morning Star Drive
Theresa Fae Wood	4031 Morning Star Drive
Lois Lacy	4041 Morning Star Drive
Ralph Thorne	4141 Morning Star Drive
Ken & Karen Kawaguchi	4151 Morning Star Drive
Carrie Preston	16572 Ensign Circle
Thomas & Sandra Gallaugher	3781 Ragtime Circle
Elmer & Lincolna Malchow	3741 Nimble Circle
Vera J. Butler	3481 Sagamore Drive

On page 6 of the staff report modify Special Condition 4, Bulkhead Monitoring Plan as follows:

4. **Submittal of a Bulkhead Monitoring Plan.** The permittees shall maintain the bulkhead reinforcement in good condition throughout the life of the development. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit a Bulkhead Monitoring Plan to the Executive Director for review and approval. The permittees, and their successors in interest shall be responsible for carrying out all provisions of the approved Monitoring Plan for as long as the bulkhead reinforcement remains in place. The monitoring plan, at a minimum, shall provide for: (a) regular inspections by a ~~licensed engineer~~ ***qualified person familiar with bulkhead structures who is able to document via photos and provide written descriptions based on personal observation of the toe stone***. These inspections shall be performed at least every 2 years; (b) inspections shall examine and measure the location of the toe stone to ensure the rock has not migrated or settled; (c) proposed rock toe protection shall extend no more than 1 foot above the bottom of the foot and shall be limited to 3’- 4’ from the seaward from the seaward edge of the bulkhead footing at a 2(h) to 1(v) slope.

Inspection reports shall be prepared and conveyed to the Executive Director within 30 days of the inspection work. These reports shall provide information on and photographs from the date of the inspection, the name and qualifications of the person performing the inspection, and an overall assessment of the continued integrity of the bulkhead reinforcement. If the inspection identifies any areas where the bulkhead reinforcement has been damaged, the report shall identify alternatives to remedy the damage.

In the event that any sections of the rock have migrated, the permittees shall notify the Commission within 10 days; and in such event, within 30 days of such notification, submit to the Commission a complete application for any coastal development permit amendment, or new permit if legally required, necessary for the repair or replacement of the bulkhead reinforcement.

On page 10 of the staff report for Item Th10b (CDP 5-12-065) modify as follows:

Other Agency Review

- The City of Huntington Beach issued an Approval-in-Concept (AIC) for each site and issued Mitigated Negative Declaration No. 08-010(Huntington Harbour Bulkhead Repair Project) on September 3, 2008.

- The ~~applicant~~ ***agent, Tetra Tech,*** has submitted proof that the appropriate California State Lands Commission leases were obtained for work proposed within the harbor on property owned by the State of California. ***Tetra Tech is continuing to work with the property owners at 16871 Bolero Lane to finalize their approved State Lands lease for the existing bulkhead, boat dock and cantilevered deck and with the property owners at 3952 Venture Drive to amend their State Lands lease which currently only includes the existing boat dock and cantilevered deck to also include the bulkhead in their lease.***

- California Department of Fish & Game (CDFG) and National Marine Fisheries Service (NMFS) consultation is not required as the project does not anticipate impacts to eelgrass habitat.

- The U.S. Army Corps of Engineers (USACOE) has set up a Regional General Permit (RGP 84) for bulkhead repairs in Huntington Harbor using the methods proposed under this CDP application. The final RGP for the project will be issued once the CDP is approved. A copy of the RGP Public Notice has been provided by the applicant.

- Regional Water Quality Control Board (RWQCB) ~~has~~ issued a Section 401 Permit for the proposed project ***on August 3, 2012***.

Second paragraph on page 12 of the staff report, make the following correction:

The sediments at the toe of the bulkhead are primarily unconsolidated fine silty sands which are easily erodible. Some portion of the drop in sediments adjacent to the bulkhead may be attributed to settlement of the sediments beneath the fill that created the man-made islands in the 1960's. The ~~perpendicular configuration of~~ private boat docks at each of the sites may

exacerbate erosion caused by propeller wash from boats which occupy the slips. ***The extent of erosion caused by boat thrust and propeller wash highly depends on the boat operator and his berthing practices.*** Another potential cause of erosion may be routine maintenance dredging in the main channel and the dock slips. Tidal currents in Huntington Harbor are not typically high during normal, non-storm conditions. In addition burrowing fish (plainfin midshipman) were observed in the voids that have formed underneath the bulkhead further contributing to the problem of erosion beneath the bulkhead and its footing.

Joyce Ritchie
16631 Bolero Lane
Huntington Beach CA 92649

25 July 2012

Ms. Liliana Roman
California Coastal Commission
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-5071

Joyce Ritchie
Opposed

Ref: Permit No 5-12-065. 16631 Bolero Lane Huntington Beach CA

Agenda No. Thursday 9 August 2012 Item 10 b **TH10b**

Dear Ms. Roman;

I am an applicant on the referenced coastal permit and have been since August 2003. Within the last few years I was approached by another contractor working on the sea wall repairs within the harbor and allowed access for their review and assessment of my wall's condition. They in turn brought in their Coastal Engineer who's determination was that though I did have some loss of sea floor it was primarily due to long term consolidation and, at this point in time I do not have an issue which requires corrective measures. At that time I notified Tetra Tech that I was cancelling my contract with them and expected a refund on services either not performed or not provided including a refund on the soft bottom credits I had to purchase. Attached is a copy of this letter which, as of today, has gone unanswered.

I am opposed to the approval of this permit due to the following incorrect information and/or findings that are being used to justify the placement of rock which will result in unnecessary impacts to soft bottom habitat.

1. I have asked to have my property removed from the permit and my fees refunded but my property remains on the application.
2. My dock is oriented parallel to the seawall, not perpendicular as indicated in the application, and no propeller wash has been identified during dive inspections. See the attached dive inspection video.
3. It is my understanding that dredging of the harbor has only occurred in the entrance channel. I am not aware of any dredging activity in this area that would have affected my seawall.
4. Recent underwater testing has revealed that current related scour is not an issue in this area. See the attached report which includes some data that was collected a few hundred feet from my property.
5. No rock is currently present along my seawall or appears to have ever been present which is contrary to what is being stated in the application. See the video on the attached CD which reveals a thick blanket of silt along the entire footing which would not be present if scour were occurring. Placement of rock would not restore the original condition but rather result in new rock over the existing soft bottom.
6. The application indicates that the rock will not move. However, since the loss of material has been determined to be the result of long term consolidation of the soft materials along the footing, addition of the rock would seem to increase the weight on these materials which will likely result in continued and likely even increased consolidation which could cause the cut-off wall to be undermined and will also cause the rock to move.
7. The alternatives analysis did not consider all alternatives which should include the removal of concrete over pour and placement of a structural sheet pile along the

seaward face of the footing. The sheet pile can be extended well below the existing cut-off wall and prevent continued consolidation from undermining the seawall. This repair approach is self mitigating through the removal of the non-structural concrete over pour which often results in an increase in soft bottom rather than an impact by the placement of rock.

It is my understanding that some of the other properties included in this permit application have similar conditions as mine which are not consistent with the findings and recommendations justifying the placement of rock and resulting soft bottom impacts. At this time, I intend to continue to monitor the condition of my seawall and surrounding materials and proceed with corrective actions if conditions develop to justify corrective actions.

Sincerely,

Joyce J. Ritchie

Joyce Ritchie

Attachments: CD of Dive Inspection Video
Huntington Harbour Water Quality Measurements

Greg J. Buchanan
16822 Baruna Lane
Huntington Beach, CA 92649

27 July 2012

Ms. Liliana Roman
California Coastal Commission
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-5071

Greg Buchanan
Opposed

Ref: Permit No 5-12-065 and 5-12-066

Agenda Nos. **TH10b and TH10c**

Dear Ms. Roman;

In response to the Coastal Permit Application, Public Hearing Notice dated 20 July 2012, I would like to voice my opposition against both applications for the following reasons.

1. With exception to pile repair and void filling both designs require rip rap placement to prevent future erosion due to tidal currents, propeller wash from boats docked perpendicular to the sea wall, and routine maintenance dredging of the main channel and the dock slips. With respect to tidal currents, attached is a study, recently preformed, refuting the premise that tidal currents have anywhere close to the velocity to cause erosion.

2. The second argument for placement of rock suggests perpendicular docking and propeller wash causing erosion. Without debating the merits of this argument but only evaluating the Summaries of Status and Proposed Work for both Coastal Development Applications it is clear there is no justification at the subject properties that perpendicular docking causes or exasperates erosion. In fact, of the 27 properties under application, only 5 have slip configurations perpendicular to the sea wall and one is skewed. The remaining 21 properties have slips configured parallel to the seawall which would not direct propeller thrusts towards the seawall. In addition, five of these non-parallel slips exhibited the least scour when considering the proposed cubic yards of rock placed per linear foot of sea wall than all the other properties under application. This seems to imply that perpendicular docking does not result in an increase in the amount of material displaced from along the seawall.

3. The Applicant further states another potential cause of erosion may be due to routine maintenance dredging of the main channel and dock slips. Having lived in the harbor for over twenty years, I can safely say dredging is anything but routine. However, assuming it was, and the toe stone was placed alongside the sea wall footing as proposed then subsequently dredging activities commenced, obviously out board of the rock and at a depth below the rock fill, without the rock being keyed in at a depth below the dredge line, how is the rock prevented from ultimately migrating down slope?

4. Summary of Staff Recommendations and Existing Conditions indicates the project will replace previously placed toe stone and therefore this "re-applying" does not constitute a " 'new' fill of open coastal waters". Perhaps in rare circumstances rock was placed during the construction of the harbor but my firm, Harbour Constructors, Co has been actively diving these Huntington Harbour sea walls along with installing carbon fiber sheet pile and pressure grouting existing voids. With exception to permitted rock previously placed, construction or illegally dumped materials, the only "original construction" rock we have encountered was three inch bedding rock at 3341 Bounty Circle CDP 5-12-173, Th6b, and its presence, well beneath the footing, is indicative of pre-Coastal Act placement.

5. The applicant's premise for all designs is erosion was and is the sole contributing factor in the degradation of the sea floor which ultimately causes the cut off wall to fail thus exposing the underside of the footing and timber pile to marine borers. Assuming the premise is correct, with the cut off wall intact, soils beneath the footing would not be exposed to the alleged tidal currents, propeller wash, and burrowing fish and therefore it would be logical to anticipate that soil remains behind the cut off wall and beneath the footing (i.e. no voids behind the cut off wall). Our findings are contrary and typically what has occurred to the sea floor out board of the footing is a good indication of what has occurred behind the cut off wall. For example, CDP 5-12-007 (Wirtz) had minimal separation between the cut off wall and the bottom of the footing and no voids observed beneath the cut off wall. However, drilling through the cut off wall, forty-five feet away from the separation, showed a sizable void beneath the entire footing. The same applies to CDP 5-12-019 (Nichols) except there were no separations between the cut off wall and bottom of footing. However the void was sizable enough to accommodate over two tons of grout placement. These findings support the determination that consolidation of the soft materials beneath and along the seawall footing is the primary cause of the voids and loss of material along the footing. In the case of CDP 5-12-065, TH10b, the applicant's plan is solely to dump rock fill without regard to what has occurred or is occurring beneath the footing and behind the cut off wall where the timber pile may already have been exposed. In short, this has the guise of selling soft bottom credits and rock while covering up a potentially serious problem under the auspices of stopping a non-existent erosion issue.

6. We will be seeking owner permission at 16417 Ladona to drill through the exposed cut off wall in the close proximity to 16411 Ladona, a property previously repaired under CDP 5-99-6 with course rock placement. In this case, there is no apparent cut off wall separation. Should we find a void at the repair to non-repaired interface it is highly likely the void extends well into the repaired area. If this is the case, ultimate repairs to 16411 Ladona will require removal of the rock to gain access for sheet pile installation and pressure grouting to protect the timber pile. This will cause significantly more disturbance to the marine environment by disturbing the soft bottom and releasing turbidity. In addition, it puts all prior "rock only" repairs in question and leaves the home owner with a potentially greater liability than had no work been performed.

7. The applicant implies that the design of the seawall relies on the rock to help shore the structure. However, our review of the available plans for the original seawall construction reveals that rock was not called for along the toe of the footing. Upon further consideration of the proposed rock providing shoring, through our construction experience and discussions with engineers experienced in seawall design, it is our understanding that the proposed rock will provide no shoring (support) to the structure since the rock is simply being placed on the existing unconsolidated materials along the top of a slope. In order for the rock to provide shoring to the seawall, the underlying, existing materials would need to be compacted and the rock would need to extend up and away from the footing in order to have a lateral load on the footing. This would result in a significant fill that would fill the harbor and would not be an

appropriate seawall design. Therefore the seawalls were designed to be supported by the timber piles which do not rely on rock for additional support.

8. Staff report is contradictory where the need for rock is predicated upon erosion, tidal currents etc. but later on within the report, as a rebuttal to the fifth alternative opposing cement slurry the applicant states ***"...over time it is anticipated by the applicant that sediment will settle upon the proposed stone"***. The argument for the need for rock to stop erosion, then suggest that though the rock is environmentally damaging it is an acceptable solution because silts will ultimately bury the rock through sedimentation is illogical.

Sincerely,

Greg J. Buchanan

July 19, 2012

Mr. Greg Reid
Exeltech Consulting, Inc.
921 SW Washington St., Suite 464
Portland, OR 97205

RE: Huntington Harbour Water Quality Measurements

Dear Greg:

Introduction

Nearshore and Wetland Surveys made a series of water quality measurements at four sites in Huntington Harbour between July 3 and July 9, 2012. The purpose of the measurement program was to assess the potential for current induced bottom scour along the toe of the existing seawalls and the need for scour protection. The primary parameters that were monitored were water current, turbidity, and depth. In addition temperature, pH, conductivity, and Oxidation Reduction Potential (ORP) data were recorded. Data were recorded at the Myers/Rieder (July 3 – 4), Zamboni (July 4 -5), Wood, (July 5 -6), and Pryor (July 6 – 9) properties. The monitoring period was selected to take advantage of extreme tides.

Instrumentation

An In Situ TROLL 9500 water quality probe was used to record turbidity, water depth, temperature, pH, conductivity, and ORP. Note that the depth is the height of the water surface above the instrument and is not tied to a specific tidal datum. The TROLL 9500 probe was programmed to record a single set of data every minute during the monitoring period. The manufacture's calibration procedure was conducted prior to the initial deployment. An InterOcean Systems S-4 current meter was used to measure water current, depth, and temperature. The S-4 current meter was programmed to average one minute of data, which was recorded every two minutes during the monitoring period.

Installation

The instruments typically were connected to a mount that held them as a constant elevation above the bottom for the duration of the recording period. At each site, a reinforcing steel rod was driven into the bottom and the mount with the instruments was lowed over the rod and attached with a set screw. In each case, the x-axis of the current meter was aligned perpendicular to the seawall. At the Woods' property, the TROLL 9500 probe was secured to a floating dock near the water surface to provide a comparison between surface and bottom turbidity.

3248 Park Vista Drive
La Crescenta, CA 91214
Phone: (818) 269-1421 Fax: (818) 957-0607
www.nearshoresurveys.com

Myers/Rieder Property

Location:	4002 Morning Star Drive
Deployment Date:	July 4 - 5, 2012
TROLL 9500:	6 in off bottom; 3 ft from seawall
S-4	12 in off bottom; 2 ft from seawall

Zamboni Property

Location:	16591 Nalu Circle
Deployment Date:	July 5 - 6, 2012
TROLL 9500:	6 in off bottom; 3 ft from seawall
S-4	12 in off bottom; 2 ft from seawall

Wood Property

Location:	4031 Morning Star Drive
Deployment Date:	July 5 - 7, 2012
TROLL 9500:	surface; 10 ft from seawall
S-4	12 in off bottom; 6 ft from seawall

Pryor Property

Location:	3341 Bounty Circle
Deployment Date:	July 6 - 9, 2012
TROLL 9500:	6 in off bottom; 7 ft from seawall
S-4	12 in off bottom; 6 ft from seawall

See the attached Site Plan showing the property locations.

Data Processing and Plots

Following each deployment, the raw data from the TROLL 9500 and S-4 were downloaded from the instruments and processed using the manufacture's software. The data were tabulated and spurious values were excised from the data set. Spurious data were those that fell greater than 3 times the standard deviation (95% confidence interval) from the parameter average.

The component of the current perpendicular to the seawalls (x-axis), as expected, was near zero. Therefore, only the y-axis, parallel to the seawalls, are discussed and presented in the plots that accompany this report. In all cases, the average y-axis current was near zero over the recording period. The current data shows evidence of an approximate 70-minute period seiche within the Harbour that masks any correlation between the tide level and current. A 72-minute average of the current data was calculated and is plotted along with the one-minute average data.

Plots presenting the turbidity, current, and depth are attached to this report.

Summary of Results

Myers/Rieder Property	Average	Maximum	Minimum
Current (cm/sec)	~0	5.9	-5.3
Turbidity (FNU)	6.6	10.3	3.4

Zamboni Property	Average	Maximum	Minimum
Current (cm/sec)	~0	10.5	-18.5
Turbidity (FNU)	7.8	14.1	4.3

Wood Property	Average	Maximum	Minimum
Current (cm/sec)	~0	3.6	-3.6
Turbidity (FNU)	3.1	5.1	2.0

Pryor Property	Average	Maximum	Minimum
Current (cm/sec)	~0	5.7	-14.2
Turbidity (FNU)	5.7	12.0	3.0

The current data show varying degrees of correlation with tide phase depending on location within the Harbour. Data from the Pryor property shows the highest correlation while data from the Wood property exhibits the lowest correlation. The magnitude of the seiche component of the data appears to be greater than the tidal component.

The turbidity data vary over a small interval of 2.0 to 12.0 FNU with little correlation to tide level or current velocities. To provide a visual reference, photographs of water samples with various turbidity levels accompany this report. Review of the water samples reveal no observable difference between the turbidity levels recorded at the site. It appears that the recorded turbidity levels represent the natural background turbidity levels for the area and was not found to be the result of current induced scour. Review of published sediment transport data validated these findings since the current velocities observed at the sites do not exceed erosion velocities which were indicated to be initiated at 50 cm/s. The velocities were also found to not reach transitional velocities (20 cm/s) for very small (0.001 mm), unconsolidated sediments (Hjulström, 1935). See the attached diagram. According to these findings, current induced bottom scour was not observed at the subject sites.

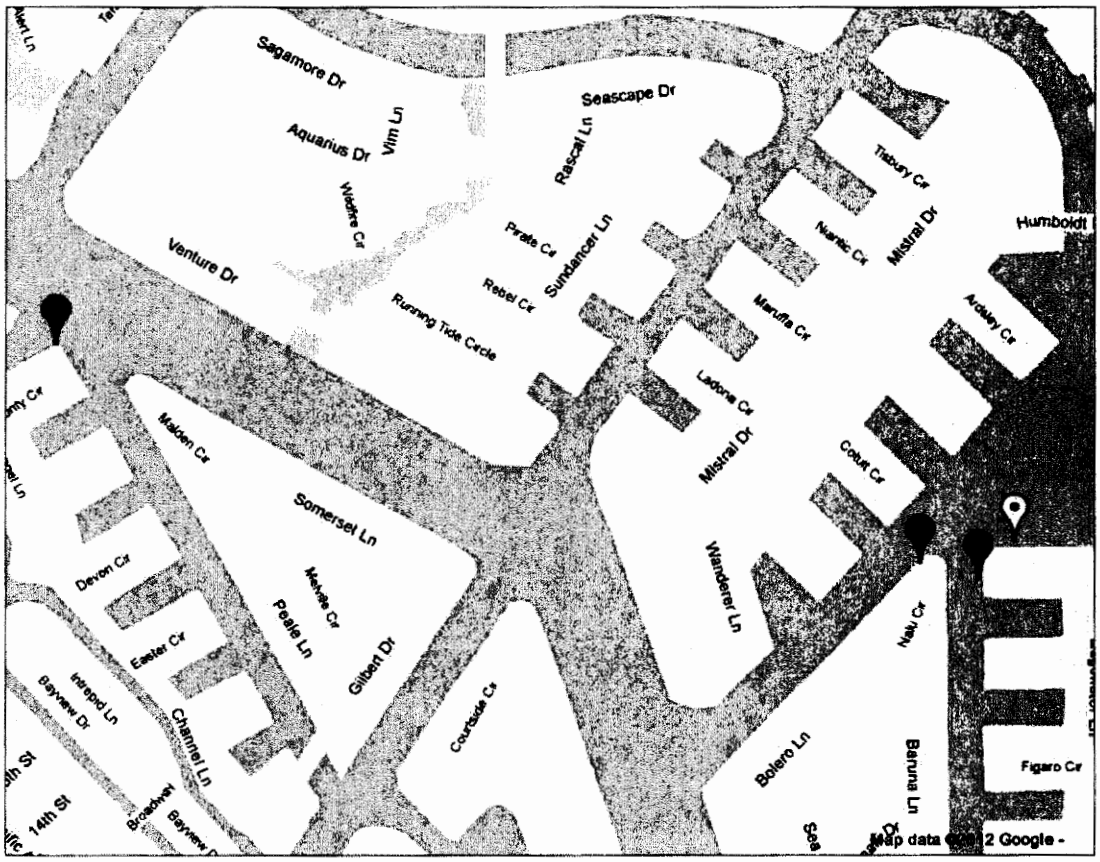
Thank you for allowing me to assist you in this endeavor. Should you have any questions or comments, please do not hesitate to contact me.

Sincerely,
Nearshore and Wetland Surveys,

Rick Hollar
Hydrographic Engineer

CC: Greg Buchanan, Harbour Constructors, Co.

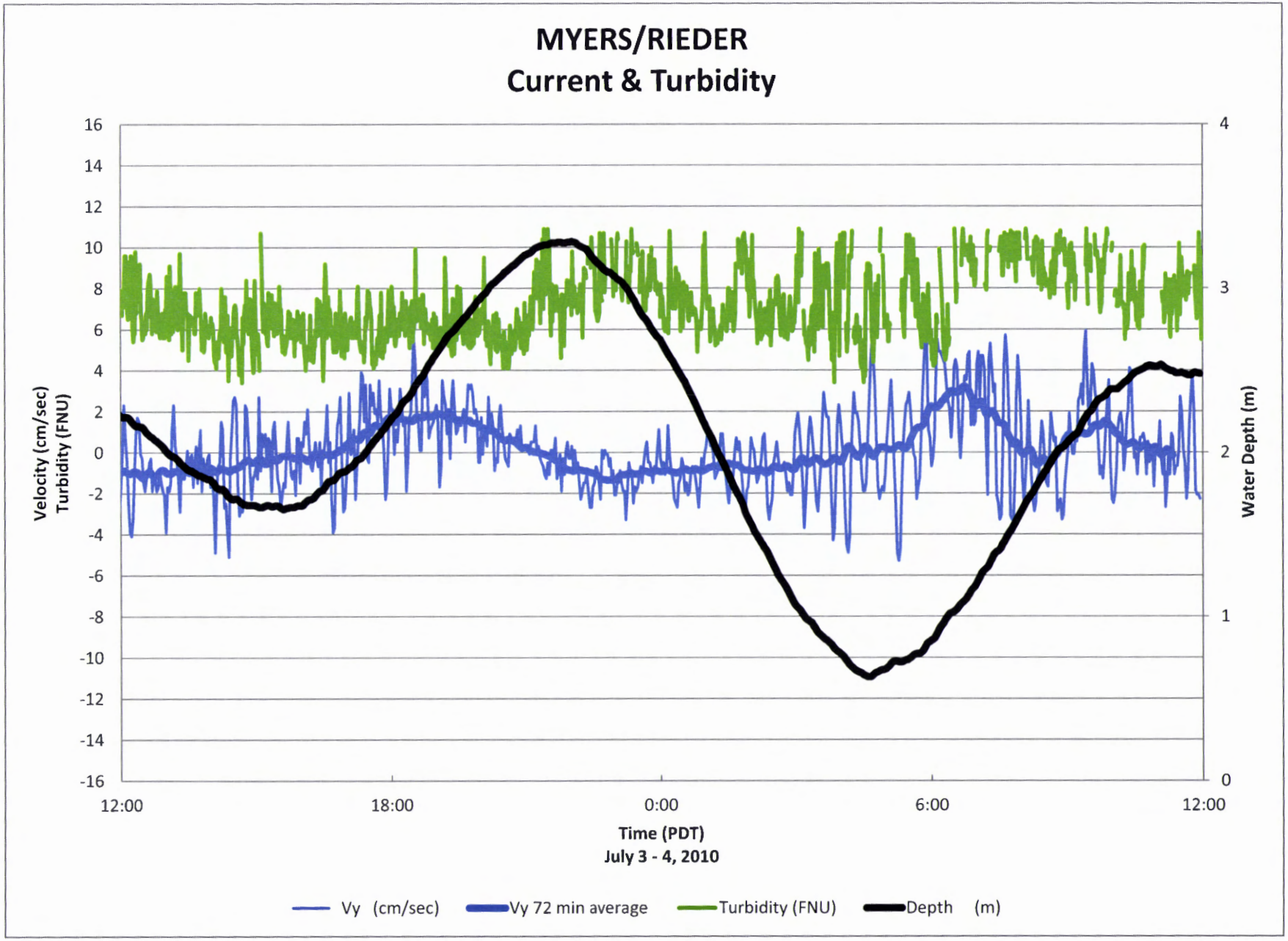
Attachment A – Site Plan



Huntington Harbour Current and Turbidity Locations

- Prior
  3341 Bounty Circle
- Zamboni
  16591 Nalu Circle
- Myers/Rieder
  4002 Morning Star Drive
- Wood
  4031 Morning Star Drive

Attachment B – Turbidity, Current and Depth Plots


MYERS/RIEDER
Current & Turbidity
Velocity (cm/sec)
Turbidity (FNU)
Water Depth (m)
16
14
12
10
8
6
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3
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12:00
18:00
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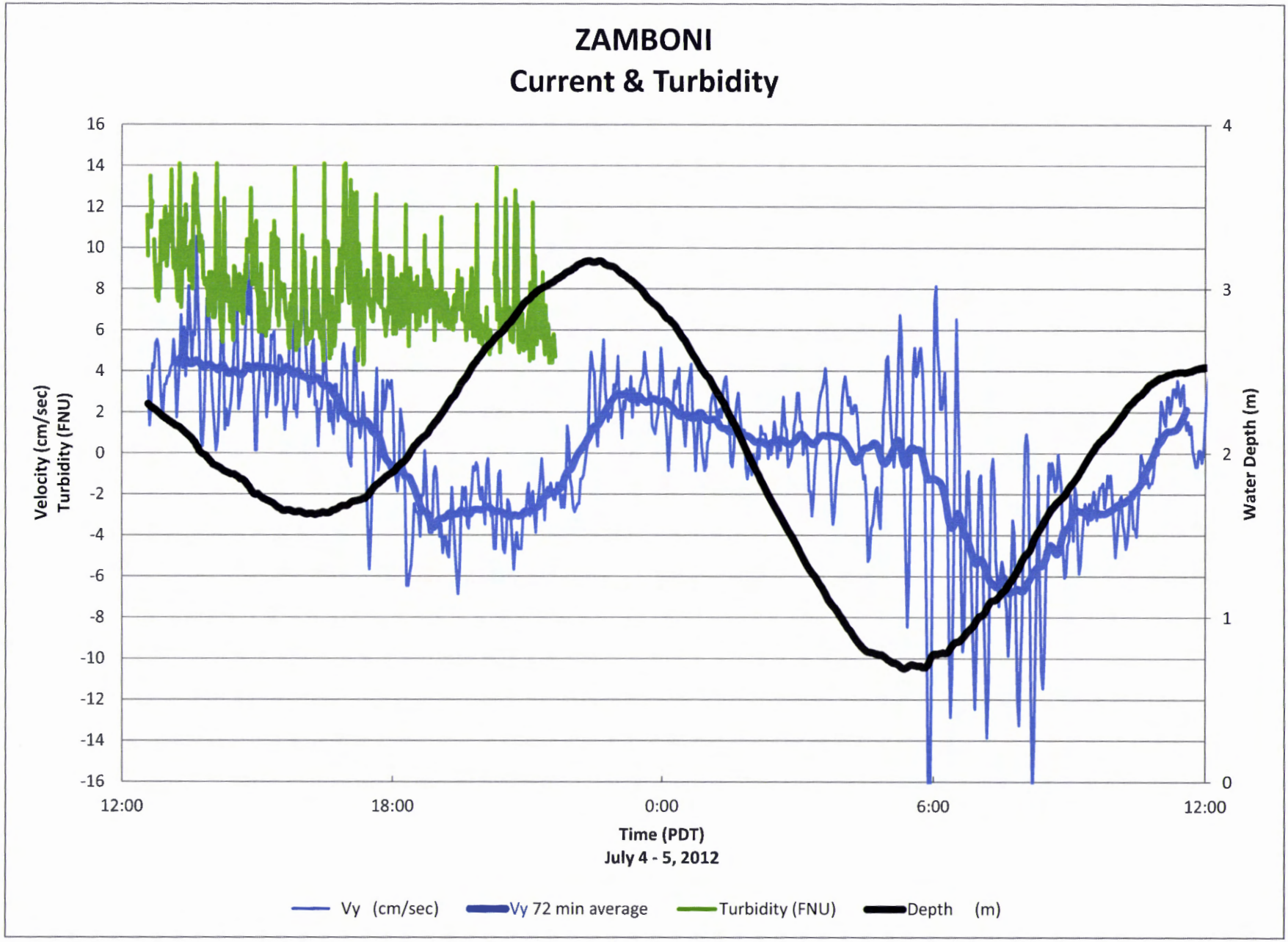
Time (PDT)
July 3 - 4, 2010
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)


ZAMBONI
Current & Turbidity
Velocity (cm/sec)
Turbidity (FNU)
Water Depth (m)
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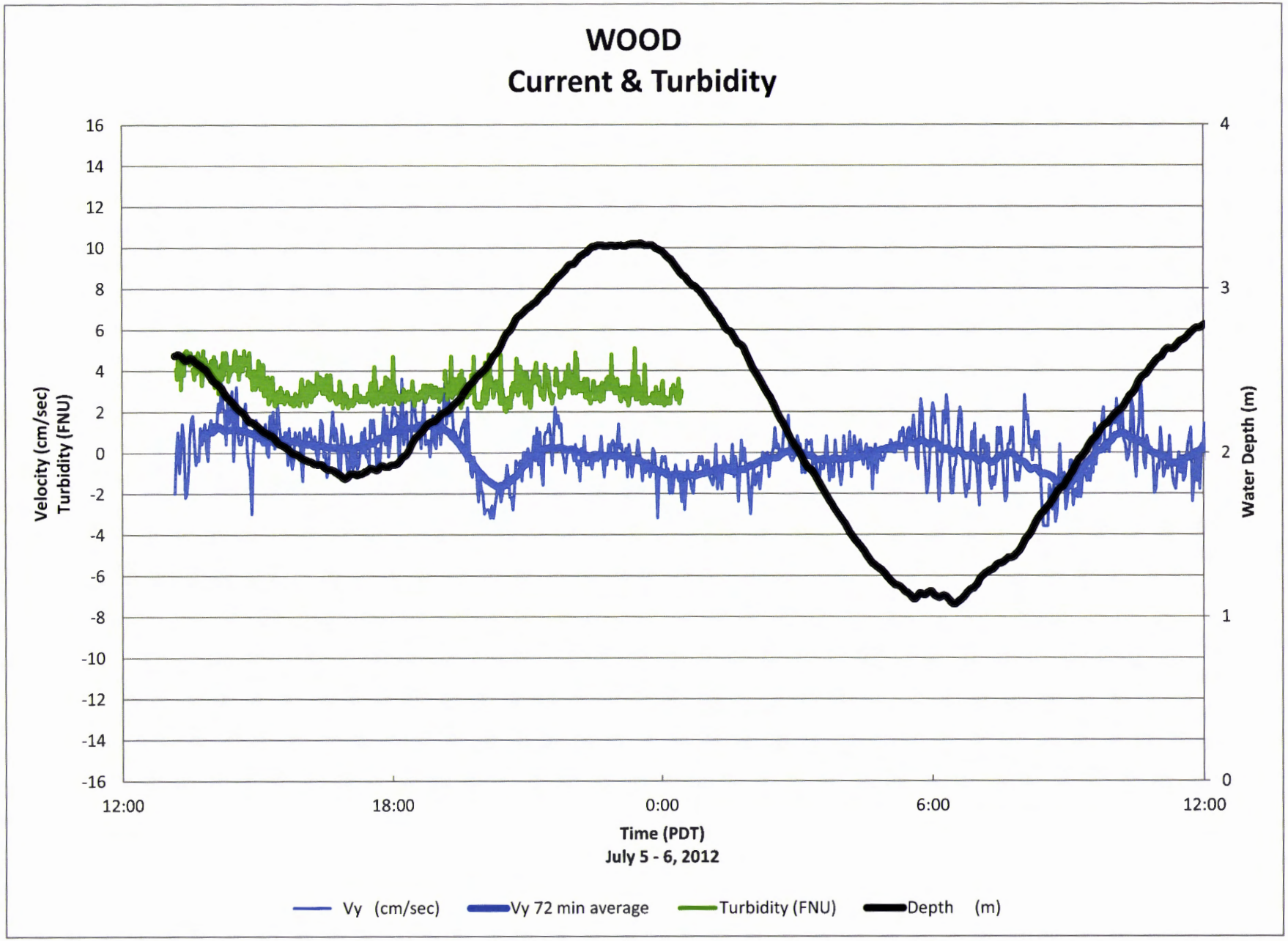
Time (PDT)
July 4 - 5, 2012
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)


WOOD
Current & Turbidity
Velocity (cm/sec)
Turbidity (FNU)
Water Depth (m)
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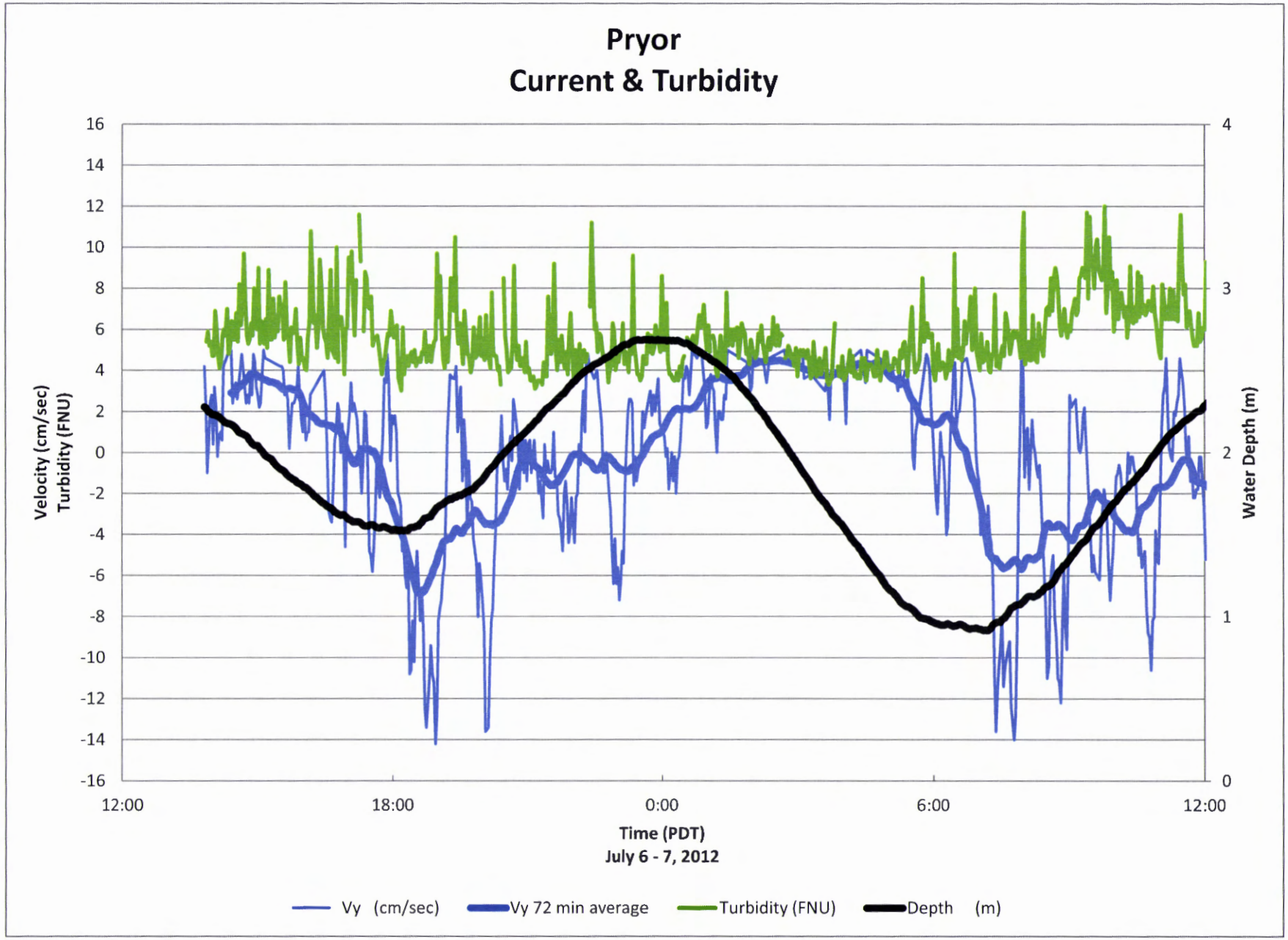
Time (PDT)
July 5 - 6, 2012
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)


Pryor
Current & Turbidity
Velocity (cm/sec)
Turbidity (FNU)
Water Depth (m)
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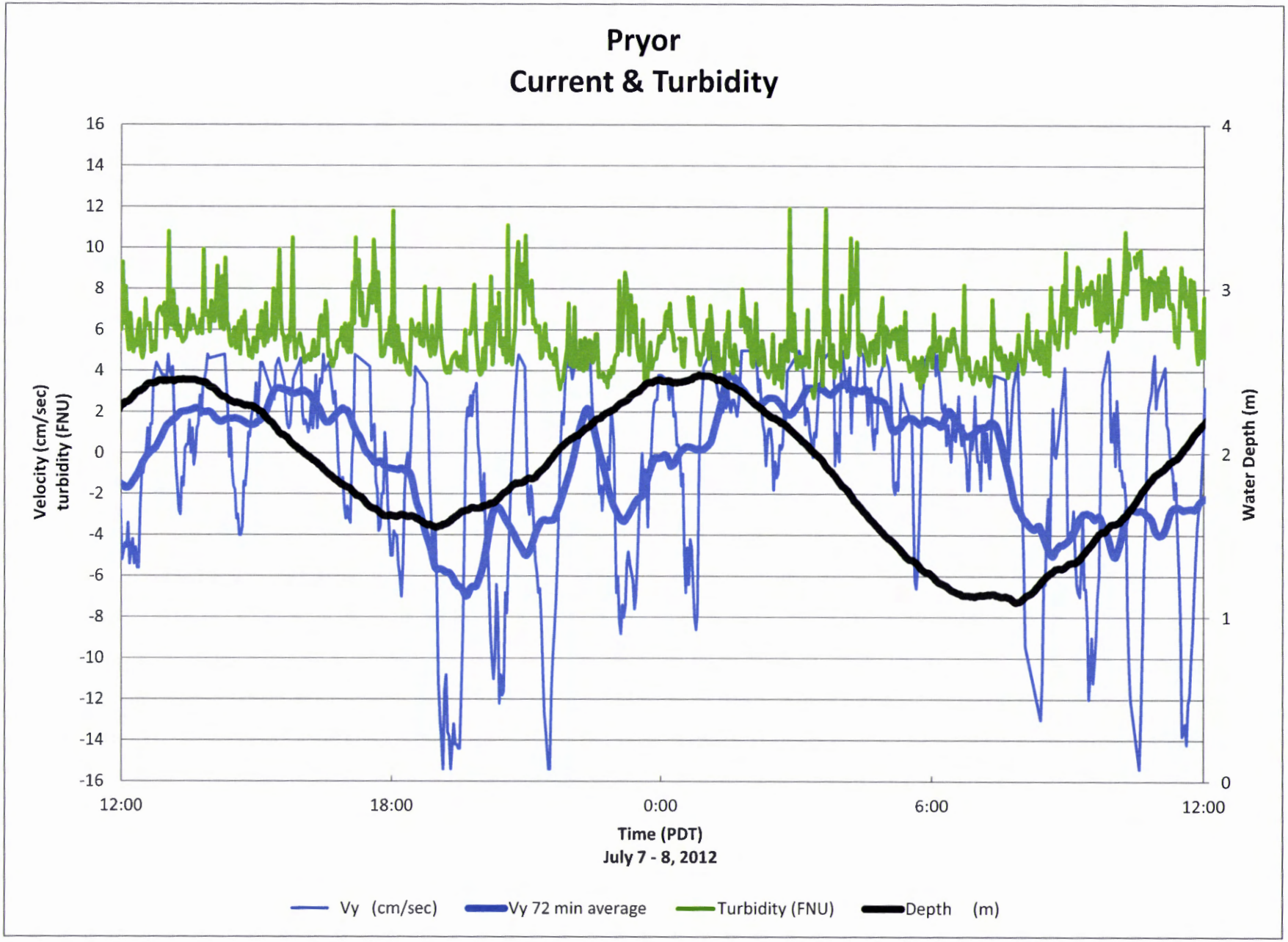
Time (PDT)
July 6 - 7, 2012
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)


Pryor
Current & Turbidity
Velocity (cm/sec)
turbidity (FNU)
Water Depth (m)
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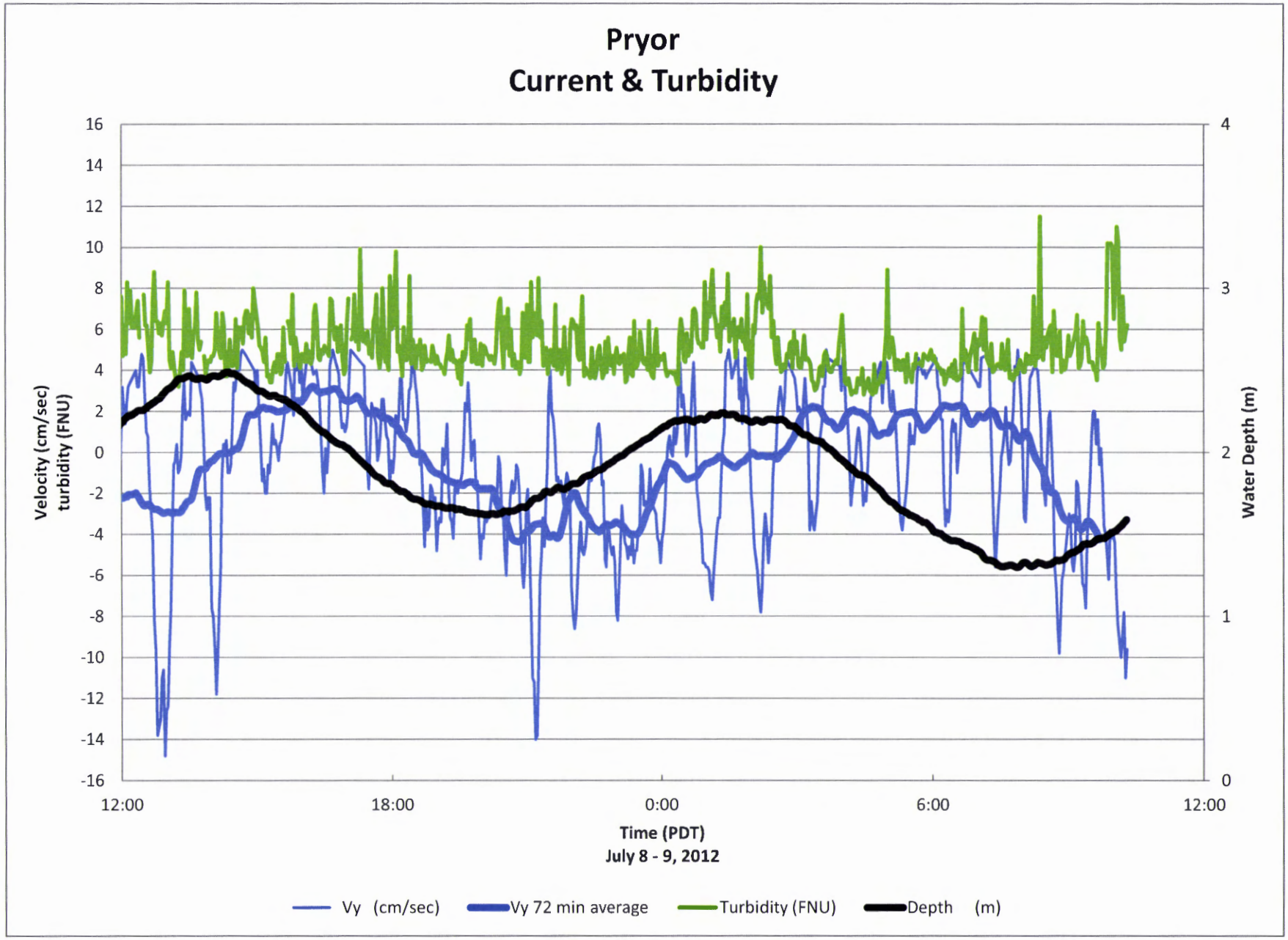
Time (PDT)
July 7 - 8, 2012
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)


Pryor
Current & Turbidity
Velocity (cm/sec)
turbidity (FNU)
Water Depth (m)
16
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-16
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12:00
18:00
0:00
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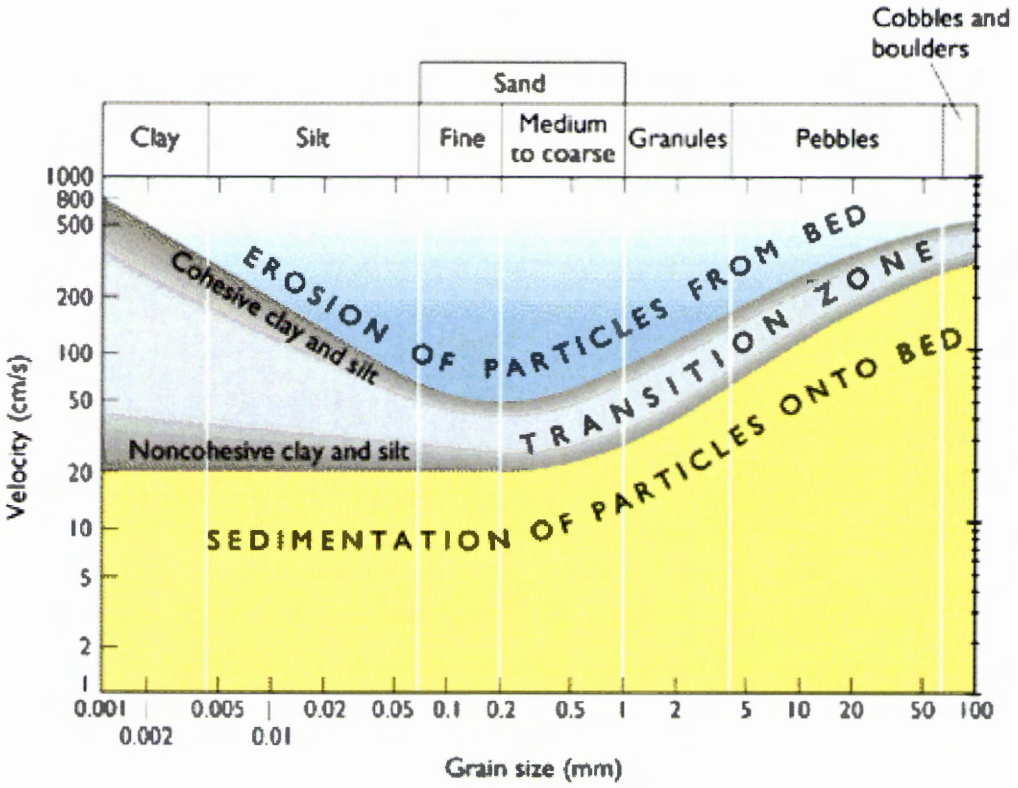
12:00
Time (PDT)
July 8 - 9, 2012
Vy (cm/sec)
Vy 72 min average
Turbidity (FNU)
Depth (m)

Attachment C - Hjulström Diagram



Attachment D – Turbidity Photographs

Photo 1: Turbidity of 9.1 FNU that is not noticeable within instrument when held at arms length.

Photo 2: Turbidity of 14.4 FNU that is not noticeable within instrument when held at arms length.

Photo 3: Turbidity of 36.2 FNU that is not clearly noticeable within instrument when held at arms length.

Photo 4: Turbidity of 77.9 FNU that is just noticeable within instrument when held at arms length.

Photo 5: Turbidity of 339.0 FNU that is clearly noticeable within the instrument.

TETRA TECH

August 3, 2012

Ms. Liliana Román
Coastal Program Analyst
California Coastal Commission
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302

Dear Ms. Román:

RE: CDP 5-12-065 and 5-12-066 in response to the letter to the California Coastal Commission from Greg Buchanan dated July 27, 2012; please find Tetra Tech's professional opinions and response.

1. The study conducted by Nearshore and Wetlands Surveys, conducted for Mr. Buchanan was conducted during a short period of time at discrete locations. While the staff conducting the study, Mr. Rick Hollar, is a well-qualified oceanographic technician, the methodology and extent of the study will not necessarily reflect the existing hydrodynamics of Huntington Harbour. In addition, this study does not address other possible sources of erosion such as propeller wash, boat wake, stormwater discharge, etc.

2. Erosion caused by propeller wash is a fact regardless of direction or slip orientation. Although it is obvious that propeller wash perpendicular to the bulkhead should be worse than under a parallel orientation, the extent of erosion depends highly on the vessel operator and his berthing practices. A boater berthing a vessel on a parallel-to-wall dock can generate as much thrust and propeller wash than another boater berthing a vessel on a perpendicular-to-wall dock.

3. Maintenance dredging is a fact in Huntington Harbour since its construction in the 1960s. The County of Orange has a maintenance dredging permit for Huntington Harbour and maintenance dredging has been conducted and continues to be conducted throughout the harbor. In fact, another dredging project is scheduled to take place in the near future. This can be confirmed by the County of Orange Department of Beaches and Parks.

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The dredging limits and slopes are delineated taking into consideration the proximity of the bulkheads. The placement of scour protection out to 6 feet from the face of the footing does in fact protects the footing from further erosion and is sufficiently distant from the limits of dredging to cause slope failure, or "migrating down the slope".

4. Tetra Tech, as well as other specialized coastal engineering firms including Moffat and Nichols, and Cash and Associates (now URS), have been studying and applying similar remedial designs in Huntington Harbour for over 15 years. Our firm has inspected over 150 properties and has observed evidence of rock of different sizes in different areas and different depths, suggesting that its placement was uncontrolled or not inspected. Appropriately graded rock is required to prevent its settlement. It is for that fact, that the proposed rock protection is specified with a filter fabric and a well graded rock matrix.

5. As documented in previous occasions, there are several causes of erosion in front of the footing and cutoff wall and beneath the footing. If there is separation between the cutoff wall and the bottom of footing, it is likely that hydraulic conductivity exists behind the cutoff wall. This does not necessarily imply that the piles are exposed. In the cases where a separation has occurred and a void observed, the recommendation has been typically to remove a section of cutoff wall to visually confirm the condition of the pile behind the void. In such instances, a sheetpile is installed and concrete and grout are injected as required.

   The information provided for the two reported instances (Wirtz and/or Nichols) is not sufficient to assess the presence of exposed piles, or assess the effectiveness of the injected grout. The injected grout may have been displacing water and/or unconsolidated sediments beneath one or more contiguous property throughout hydraulically connected areas, but this would be completely speculative since there was no visual inspection. Although there might be localized settlement beneath the wall, unless there is oxygen and light reaching out to the piles, the marine borers do not attack the piles. The presented argument of possible voids without cutoff wall separation, would lead one to believe that all properties through Huntington Harbour may require pressure grouting. Pressure grouting all properties may be have some benefits, however it

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is our professional engineering opinion that this is not founded, justified or documented by visual observation and it is therefore not believe to be a feasible repair option to the homeowners due to unknowns and potentially high costs.

The last sentence of Mr. Buchanan's point no. 5 is speculative in nature and accusative of misrepresentation and lack of professionalism. Tetra Tech has not profited from selling soft-bottom habitat as this was a requirement imposed by the CCC, NMFS, and CDFG to offset loss of soft-bottom, which did not include the placement of rock.

6. Injecting grout beneath the wall and below the mean high tide line constitutes discharge of material within US waters and may require a Section 404 permit from the USACE.

   Injecting grout beneath the wall is an uncontrolled effort which will not prove or demonstrate that piles are exposed or degraded, or that the grout has any beneficial effect. The repair methods proposed herein by the applicants are based on sound engineering inspection, evaluation, and proven conventional measures which can be visually inspected and documented. Again, the last sentence of Mr. Buchanan's point no. 6 is speculative in nature and introduces unfounded uncertainties which evidences his intent to discredit the collective engineering and construction efforts of several reputable specialized coastal engineering firms and marine contractors with over 20 years of experience conducting this work in Huntington Harbour.

7. The applicant does not rely on toe protection for bulkhead stability. The proposed rock blanket is primarily installed for scour protection. However, not placing this rock material in front of the cutoff wall (which is not structurally attached to the footing) will result in displacement and failure as it has been observed and documented throughout Huntington Harbour. This failure will eventually create void and potentially expose the untreated timber piles.

8. Staff report is not contradictory and clearly states that cement slurry will provide a long-term solution against erosion, however placing the toe stone would create a suitable substrate for colonization by marine organisms. Furthermore, suspended sediments transported throughout the harbor will settle over the toe

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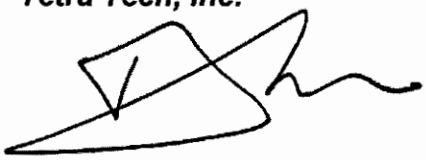
stone improving even further the biodiversity opportunities. This has been observed throughout the areas which have been already improved by slope protection.

Should you have any questions or require any additional information or explanation, please do not hesitate to contact me directly at 626.688.1017.

Best regards,

Tetra Tech, Inc.



Fernando L. Pagés, P.E., Diplomat of Coastal Engineering, COPRI, ASCE
Director of Coastal Engineering

Cc: Sarah McFadden, Tt
Michael Myers, M.D.
Bruce Rieser

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CALIFORNIA COASTAL COMMISSION
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Th10b

Filed:	May 13, 2012
180th Day:	October 20, 2012
Staff:	L. Roman-LB
Staff Report:	July 19, 2012
Hearing Date:	August 9, 2012

STAFF REPORT: REGULAR CALENDAR

Application No.: **5-12-065**

Applicants: **See Table Below**

Project Location: **See Table Below, Huntington Beach, Orange County**

Don Goodwin	16492 Somerset Lane
Richard Mulvania	16612 Nalu Circle
Oren & Carol Langston	16611 Nalu Circle
William & Joyce Ritchie	16631 Bolero Lane
Gilbert & Rory Unatin	16661 Bolero Lane
Samuel Glesy	17011 Bolero Lane
Ing Wong	16891 Bolero Lane
Michael Younessi	4022 Morning Star Drive
Tobin Campbell	4012 Morning Star Drive
Tobin Campbell	4001 Morning Star Drive
Leigh Ross	4021 Morning Star Drive
Theresa Fae Wood	4031 Morning Star Drive
Lois Lacy	4041 Morning Star Drive
Ralph Thorne	4141 Morning Star Drive
Ken & Karen Kawaguchi	4151 Morning Star Drive
Carrie Preston	16572 Ensign Circle
Thomas & Sandra Gallaugher	3781 Ragtime Circle
Elmer & Lincolna Malchow	3741 Nimble Circle
Vera J. Butler	3481 Sagamore Drive

Agent: Tetra Tech, Inc.: Sarah McFadden and Fernando Pages

Project Description: Bulkhead repair by placement of geotextile filter fabric and rock to restore protection to the toe of bulkhead at 19 properties on various sites throughout Huntington Harbor, Huntington Beach (Orange County).

Staff Recommendation: Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

The existing bulkhead systems in Huntington Harbor are reinforced concrete cast in place structures supported on vertical and battered (i.e. angled) timber piles built in the 1960's. Many of these bulkheads are now approaching ages of 40 to 50 years, and thus are in need of repair. The applicants'coastal engineer has stated that the bulkheads in Huntington Harbor were originally designed with toe stone placed seaward of the footing at a slope of 3(h) to 1(v). Due to the size and weight of the formerly present toe stone, the protective stones have either sunk into the bay mud or migrated away from the bulkhead. In absence of the toe stone, the unconsolidated fine silty and sandy sediments adjacent to the bulkheads have subsided due to regular settlement of sediments (from the original creation of the man-made islands); and have easily eroded due to tidal currents, propeller wash from docking of recreational boats on private residential docks adjacent to each site, routine maintenance dredging of the main navigation channel and dock areas, and the activity of burrowing fish (e.g. the specklefin midshipman).

At the subject sites, Tetra Tech proposes repair scenario Case IV – "Rock Slope Protection on Geotextile Only" for bulkhead repair. Rock rip-rap slope protection (a.k.a. toe stone) is proposed at a 2(h) to 1(v) slope, at a maximum of 6' seaward of the existing bulkhead at all 19 subject sites to prevent future erosion that would then require sheet pile and backfill. A layer of geotextile fabric will be placed beneath the proposed toe stone to prevent the toe stone from sinking into the bay mud and will greatly reduce the likelihood of significant turbidity. The proposed new toe protection material, intended to replace the settled material, will be placed on filter fabric to reduce any potential settlement. The applicants' coastal engineer has stated that this type of toe stone will not migrate or accrete to other areas under the observed hydrodynamic conditions within the Harbor. Therefore, the proposed solution is not anticipated to replicate the problems associated with the original pre-Coastal Act protective toe stone. Since the project will replace previous toe stone it is not considered "new" fill of coastal waters.

The proposed project will not impact eelgrass in the vicinity of the project area. To ensure the proposed project is consistent with the marine resource protection policies of the Coastal Act, the Commission imposes a special condition requiring revised plans and final as-built plans minimizing the footprint of the proposed replacement of rock at the toe of the bulkhead while still providing protection of the bulkhead from further erosion. Additionally, the Commission imposes a special condition for the submittal of a bulkhead monitoring plan. These special conditions are necessary to assure that the proposed project is consistent with the marine resource protection policies of the Coastal Act.

Staff recommends that the Commission **APPROVE** the proposed project subject to **SEVEN (7) SPECIAL CONDITIONS**. The **SPECIAL CONDITIONS** require: 1) revised plans; 2) final as-built plans; 3) a requirement that the applicant comply with construction responsibilities and debris removal measures; 4) bulkhead monitoring plan; 5) that approval of the permit does not constitute a waiver of any public rights that may exist at the site; 6) pre- and post- construction eelgrass surveys; and 7) pre-construction caluerpa taxifolia surveys.

The City of Huntington Beach has a certified Local Coastal Program ("LCP"). However, the proposed projects are located seaward of the mean high tide line and thus are within the Coastal

Commission's original permit jurisdiction area. Therefore, pursuant to Section 30519 of the Coastal Act, the standard of review is the Chapter 3 policies of the Coastal Act. The certified LCP may be used for guidance in evaluating the proposed project for consistency with the Chapter 3 policies of the Coastal Act.

TABLE OF CONTENTS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit No. 5-12-065 pursuant to the staff recommendation.*

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves a Coastal Development Permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned, located on public trust tidelands and submerged lands, will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that will substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be

perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. **Submittal of Revised Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and approval two (2) full size sets of a Revised Project Plans. The Revised Plans Plan shall be in substantial conformance with the plans received by South Coast District staff on February 23, 2012, except they shall be modified to further minimize impacts associated with placement of rock toe protection as follows: 1) proposed rock toe protection shall extend no more than 1 foot above the bottom of the existing bulkhead footing and 2) the proposed rock toe protection shall be limited to 3'- 4' from the seaward edge of the bulkhead footing at a 2(h) to 1(v) slope.

   The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this Coastal Development Permit unless the Executive Director determines that no amendment is legally required.

2. **Final As-Built Plans.** Within 6-months after completion of the bulkhead repairs, the applicant shall submit final as-built plans demonstrating the final footprint of the proposed rock toe protection at each of the 19 project sites. Each final as-built plan shall include a narrative explaining the constraints encountered at each location.

3. **Construction Responsibilities and Debris Removal.** The applicants shall comply with the following construction related requirements:

   A. No demolition or construction materials, equipment, debris, or waste shall be placed or stored where it may enter sensitive habitat, receiving waters or a storm drain, or be subject to wave, wind, rain or tidal erosion and dispersion;

   B. Any and all debris resulting from demolition or construction activities, and any remaining construction material, shall be removed from the project site within 24 hours of completion of the project;

   C. Demolition or construction debris and sediment shall be removed from work areas each day that demolition or construction occurs to prevent the accumulation of sediment and other debris that may be discharged into coastal waters;

   D. Machinery or construction materials not essential for project improvements will not be allowed at any time in the intertidal zone;

E. In order to control turbidity a geotextile fabric shall be installed in the area where the toe stone will be placed prior to placement of the toe stone;

F. Toe stone shall be placed, not dumped, using means to minimize disturbance to bay sediments and to minimize turbidity;

G. If turbid conditions are generated during construction a silt curtain will be utilized to control turbidity;

H. Floating booms will be used to contain debris discharged into coastal waters and any debris discharged will be removed as soon as possible but no later than the end of each day;

I. Non buoyant debris discharged into coastal waters will be recovered by divers as soon as possible after loss;

J. The applicant shall provide adequate disposal facilities for solid waste, including excess concrete, produced during demolition or construction;

K. Debris shall be disposed of at a legal disposal site or recycled at a recycling facility. If the disposal site is located in the coastal zone, a Coastal Development Permit or an amendment to this permit shall be required before disposal can take place unless the Executive Director determines that no amendment or new permit is legally required;

L. All stock piles and construction materials shall be covered, enclosed on all sides, shall be located as far away as possible from drain inlets and any waterway, and shall not be stored in contact with the soil;

M. Sand from the beach, cobbles, or shoreline rocks shall not be used for construction material;

N. Machinery and equipment shall be maintained and washed in confined areas specifically designed to control runoff. Thinners or solvents shall not be discharged into sanitary or storm sewer systems;

O. The discharge of any hazardous materials into any receiving waters shall be prohibited;

P. Spill prevention and control measures shall be implemented to ensure the proper handling and storage of petroleum products and other construction materials. Measures shall include a designated fueling and vehicle maintenance area with appropriate berms and protection to prevent any spillage of gasoline or related petroleum products or contact with runoff. The area shall be located as far away from the receiving waters and storm drain inlets as possible;

Q. Best Management Practices (BMP's) and Good Housekeeping Practices (GHP's) designed to prevent spillage and/or runoff of demolition or construction-related materials, and to contain sediment or contaminants associated with demolition or construction activity, shall be implemented prior to the on-set of such activity; and

R. All BMP's shall be maintained in a functional condition throughout the duration of construction activity.

4. **Submittal of a Bulkhead Monitoring Plan.** The applicants shall maintain the bulkhead reinforcement in good condition throughout the life of the development. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit a Bulkhead Monitoring Plan to the Executive Director for review and approval. The permittees, and their successors in interest shall be responsible for carrying out all provisions of the approved Monitoring Plan for as long as the bulkhead reinforcement remains in place. The monitoring plan, at a minimum, shall provide for: (a) regular inspections by a licensed engineer. These inspections shall be performed at least every 2 years; (b) inspections shall examine and measure the location of the toe stone to ensure the rock has not migrated or settled; (c) proposed rock toe protection shall extend no more than 1 foot above the bottom of the foot and shall be limited to 3'- 4' from the seaward from the seaward edge of the bulkhead footing at a 2(h) to 1(v) slope.

   Inspection reports shall be prepared and conveyed to the Executive Director within 30 days of the inspection work. These reports shall provide information on and photographs from the date of the inspection, the name and qualifications of the person performing the inspection, and an overall assessment of the continued integrity of the bulkhead reinforcement. If the inspection identifies any areas where the bulkhead reinforcement has been damaged, the report shall identify alternatives to remedy the damage.

   In the event that any sections of the rock have migrated, the applicants shall notify the Commission within 10 days; and in such event, within 30 days of such notification, submit to the Commission a complete application for any coastal development permit amendment, or new permit if legally required, necessary for the repair or replacement of the bulkhead reinforcement.

5. **Public Rights.** The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. The permittee shall not use this permit as evidence of a waiver of any public rights that may exist on the property.

6. **Pre-Construction Eelgrass Survey.** A valid pre-construction eelgrass (*Zostera marina*) survey shall be completed during the period of active growth of eelgrass (typically March through October). The pre-construction survey shall be completed prior to the beginning of construction and shall be valid until the next period of active growth. If any portion of the project commences in a previously undisturbed area after the last valid eelgrass survey expires, a new survey is required prior to commencement of work in that area. The survey shall be prepared in full compliance with the "*Southern California Eelgrass Mitigation*

Policy" Revision 8 (except as modified by this special condition) adopted by the National Marine Fisheries Service and shall be prepared in consultation with the California Department of Fish and Game. The applicant shall submit the eelgrass survey for the review and approval by the Executive Director within five (5) business days of completion of each eelgrass survey and in any event no later than fifteen (15) business days prior to commencement of any development. If the eelgrass survey identifies any eelgrass within the project area, which would be impacted by the proposed project, the development shall require an amendment to this permit from the Coastal Commission or a new Coastal Development Permit to ensure that there will be no adverse impacts to the eelgrass from the proposed project.

Post-Construction Eelgrass Survey. If any eelgrass is identified in the project area by the survey required in this Special Condition, within one month after the conclusion of construction, the applicant shall survey the project site to determine if any eelgrass was adversely impacted. The survey shall be prepared in full compliance with the "*Southern California Eelgrass Mitigation Policy*" Revision 8 (SCEMP) (except as modified by this special condition) adopted by the National Marine Fisheries Service and shall be prepared in consultation with the California Department of Fish and Game. The applicant shall submit the post-construction eelgrass survey for the review and approval by the Executive Director within thirty (30) days after completion of the survey. If any eelgrass has been impacted, the applicant shall replace the impacted eelgrass at a minimum 1.2:1 ratio on-site, or at another location, in accordance with the SCEMP. All impacts to eelgrass habitat shall be mitigated at a minimum ratio of 1.2:1 (mitigation:impact). The exceptions to the required 1.2:1 mitigation ratio found within SCEMP shall not apply. Implementation of mitigation shall require an amendment to this permit or a new Coastal Development Permit unless the Executive Director determines that no amendment or new permit is legally required.

7. **Pre-Construction Caulerpa taxifolia Survey.** Not earlier than 90 days nor later than 30 days prior to commencement or re-commencement of any development authorized under this Coastal Development Permit (the "*project*"), the applicant shall undertake a survey of the project area and a buffer area at least 10 meters beyond the project area to determine the presence of the invasive alga *Caulerpa taxifolia*. The survey shall include a visual examination of the substrate. If any portion of the project commences in a previously undisturbed area after the last valid *Caulerpa taxifolia* survey expires, a new survey is required prior to commencement of work in that area.

   The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Game, and the National Marine Fisheries Service. Within five (5) business days of completion of the survey, the applicant shall submit the survey:

   (1) to the Executive Director for review and approval; and

   (2) to the Surveillance Subcommittee of the Southern California Caulerpa Action Team (SCCAT). The SCCAT Surveillance Subcommittee may be contacted through

William Paznokas, California Department of Fish & Game (858/467-4218) or Robert Hoffman, National Marine Fisheries Service (562/980-4043), or their successors.

If *Caulerpa taxifolia* is found within the project or buffer areas, the applicant shall not proceed with the project until 1) the applicant provides evidence to the Executive Director that all *C. taxifolia* discovered within the project and buffer area has been eliminated in a manner that complies with all applicable governmental approval requirements, including but not limited to those of the California Coastal Act, or 2) the applicant has revised the project to avoid any contact with *C. taxifolia*. No revisions to the project shall occur without a Coastal Commission approved amendment to this Coastal Development Permit unless the Executive Director determines that no amendment is legally required.

IV. FINDINGS AND DECLARATIONS:

A. PROJECT LOCATION AND DESCRIPTION

The proposed development is located at 19 individual sites located within Huntington Harbor in the City of Huntington Beach, Orange County. The subject project sites include 3 properties on Trinidad Island, 1 property on Humboldt Island, 1 property on Gilbert Island, 6 properties on Davenport Island, and 8 properties on Morning Star Drive (Exhibit 1).

These artificial islands were created at the time Huntington Harbor was developed in the 1960s, by filling tide and submerged lands, and are developed primarily with single family residences and are surrounded by cast in place, concrete seawall/bulkheads with toe stone to prevent scour/erosion constructed during the original development of Huntington Harbor. The majority of development in Huntington Harbor is dependant upon these types of bulkheads. The existing bulkhead systems in Huntington Harbor were all constructed at approximately the same time, primarily using similar bulkhead designs. Many of these bulkheads are now approaching ages of 40 to 50 years, and thus are in need of repair. The existing bulkheads are reinforced concrete cast in place structures supported on vertical and battered (i.e. angled) timber piles built in the 1960's. The applicant has stated that the bulkheads in Huntington Harbor were originally designed with toe stone placed seaward of the footing at a slope of 3(h) to 1(v). Due to the size and weight of the formerly present toe stone, the protective stones have either sunk into the bay mud or migrated away from the bulkhead. In absence of the toe stone, the unconsolidated fine silty and sandy sediments adjacent to the bulkheads have subsided due to regular settlement of sediments (from the original creation of the man-made islands); and have easily eroded due to tidal currents, propeller wash from docking of recreational boats on private residential docks adjacent to each site, routine maintenance dredging of the main navigation channel and dock areas, and the activity of burrowing fish (e.g. the specklefin midshipman).

At the subject sites, Tetra Tech proposes Case IV – "Rock Slope Protection on Geotextile Only" for bulkhead repair. Rock rip-rap slope protection (a.k.a. toe stone) is proposed at a 2(h) to 1(v) slope, at a maximum of 6' seaward of the existing bulkhead at all nineteen subject sites to protect the existing bulkhead from continued erosion. A layer of geotextile fabric will be placed beneath the proposed toe stone to prevent the toe stone from sinking into the bay mud and will greatly

reduce the likelihood of significant turbidity. Project Plans are included as Exhibit 2. The proposed toe stone protection consists of 8-inch diameter or less quarry waste with a mixture of particles ranging from sand to stones less than 8 inches in diameter. As previously noted, a layer of coarse material (i.e., toe protection) was found about 2'-3' below the top of footing. The original extent of this layer was not determined by the applicant. The proposed new toe protection material, intended to replace the settled material, will be placed on filter fabric to reduce any potential settlement. The applicants' coastal engineer has stated that this type of toe stone will not migrate or accrete to other areas under the observed hydrodynamic conditions within the Harbor. Therefore, the proposed solution is not anticipated to replicate the problems associated with the original pre-Coastal Act protective toe stone.

The proposed Case IV – "Rock Slope Protection on Geotextile Only" bulkhead repair/enhancement is required to restore the foundation of the existing bulkheads and to provide toe protection to prevent future erosion/scour which in time may expose the bulkhead footing foundation and compromise the bulkhead's structural integrity; thus, protecting the existing bulkhead and the existing residential structures landward of the bulkhead.

If erosion protective measures are not implemented at this stage, additional damage to the bulkhead and the timber piles supporting the bulkhead would result, therefore requiring greater repairs such as sheet pile and backfill or otherwise result in future failure of the bulkhead and damage to the residential structures landward of the bulkhead.

The length of bulkhead involved at each property varies as does the quantity of toe stone to be placed, however, the width of the proposed toe stone is proposed to be at a standard maximum of 6' from the existing bulkhead. Exhibit 3 provides a chart listing specific bulkhead length, estimated rock footprint and estimated volume of rock for each of the 19 subject properties.

Other Agency Review

- The City of Huntington Beach issued an Approval-in-Concept (AIC) for each site and issued Mitigated Negative Declaration No. 08-010(Huntington Harbour Bulkhead Repair Project) on September 3, 2008.

- The applicant has submitted proof that the appropriate California State Lands Commission leases were obtained for work proposed within the harbor on property owned by the State of California.

- California Department of Fish & Game (CDFG) and National Marine Fisheries Service (NMFS) consultation is not required as the project does not anticipate impacts to eelgrass habitat.

- The U.S. Army Corps of Engineers (USACOE) has set up a Regional General Permit (RGP 84) for bulkhead repairs in Huntington Harbor using the methods proposed under this CDP application. The final RGP for the project will be issued once the CDP is approved. A copy of the RGP Public Notice has been provided by the applicant.

- Regional Water Quality Control Board (RWQCB) has issued a Section 401 Permit for the proposed project.

B. MARINE ENVIRONMENT, MARINE RESOURCES AND BIOLOGICAL PRODUCTIVITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30235 of the Coastal Act states, in relevant part:

> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.*

Existing Conditions

The Huntington Harbor bulkheads constructed in the 1960's are made of reinforced cast-in-place concrete with untreated timber piles supporting its footing. Some sections of bulkhead have been found to have a cutoff wall typically 15-21 inches deep. The original bulkhead design and as-built conditions indicate fill in front of the bulkhead beginning from the top of footing, seaward at a slope of 3(h) to 1(v) (Exhibit 4). The original bulkhead design also establishes a top of footing elevation of -1.0 ft mllw. Field inspection revealed that an 8- to 12- inch coarse material sub-layer extends seaward of the bulkhead footing at a depth of about 2 feet below the bottom of the footing or cutoff wall. However, slopes have changed throughout the years due to natural and man-induced hydrodynamic effects which have caused erosion.

The sediments at the toe of the bulkhead are primarily unconsolidated fine silty sands which are easily erodible. Some portion of the drop in sediments adjacent to the bulkhead may be

attributed to settlement of the sediments beneath the fill that created the man-made islands in the 1960's. The perpendicular configuration of private boat docks at each of the sites may exacerbate erosion caused by propeller wash from boats which occupy the slips. Another potential cause of erosion may be routine maintenance dredging in the main channel and the dock slips. Tidal currents in Huntington Harbor are not typically high during normal, non-storm conditions. In addition burrowing fish (plainfin midshipman) were observed in the voids that have formed underneath the bulkhead further contributing to the problem of erosion beneath the bulkhead and its footing.

The proposed development is designed to shore-up the existing concrete bulkhead by re-applying toe stone where stone once existed in order to prevent future erosion and deterioration of the bulkhead necessary to protect existing homes at 19 sites located along Huntington Harbor or on man-made islands within the Harbor. At the subject sites the sediments in front of the bulkhead have eroded, however, the footing of the bulkhead foundation has not yet been exposed by erosion and scour. Placement of the rock at the toe of the foundation on top of geotextile will halt erosion and protect from extreme undermining of the bulkhead foundation (voids between the bulkhead footing and the harbor floor) as has occurred at other locations in the Harbor. At those locations more intensive methods of repair are required (i.e., sheetpiles with concrete/grout backfill) which have greater impacts on coastal resources.

Project Alternatives

The applicants' coastal engineer indicates that the proposed project is the least environmentally damaging feasible alternative. Section 30108 of the Coastal Act states that "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. Alternative methods of repair considered were: 1) no project; 2) soft bottom fill only; 3) placement of coarse rock; 4) placement of sheetpile; and 5) cement slurry.

According to the applicant, the no project alternative would not be the least environmentally damaging feasible alternative because without halting the erosion in front of the bulkhead and repairing damaged piles, the bulkhead would loose structural integrity and fail. If the bulkhead were allowed to fail, it would collapse into the harbor. Debris from the collapsed bulkhead would likely fall upon sensitive marine habitat resulting in impacts upon that habitat. In addition, sediment released from behind the collapsed bulkhead would enter the water column causing turbidity and potentially smothering eelgrass beds which exist in the general project vicinity. Furthermore, debris from the collapsed bulkhead would result in the fill of coastal waters, covering soft bottom habitat. The proposed project would have less impact than the no project alternative because impacts upon eelgrass and any permanent impacts upon soft bottom habitat will be controlled and mitigated under the proposed project while such impacts from the no project alternative would be uncontrolled and much more extensive.

The second alternative is to use soft bottom fill to fill in the gap forming at the base of the bulkhead/seawall. Such soft bottom fill could come from dredging projects undertaken in the harbor, similar to the routine dredging projects in Newport Bay which dispose of suitable dredge material in front of the bulkheads in Newport Bay to protect those bulkheads. In Newport Bay, the bulkheads are designed without the type of timber pile foundation used in Huntington Harbor

and which must be protected using toe stone. Unlike in Huntington Harbour, the bulkhead/seawalls in Newport Bay are not reliant upon a protective swath of toe stone. Therefore, the use of soft bottom fill in Newport Bay provides adequate protection to the bulkhead. Meanwhile, the threat of damage to the bulkhead/seawall system in Huntington Harbour due to erosion and undermining is much greater at the project sites than in Newport Bay due to the differences in the design of the bulkhead systems in each harbor. The bulkheads in Huntington Harbour were originally designed with timber piles including a batter pile which provide the foundation for the concrete bulkhead/seawall. A protective swath of toe stone at the base of the bulkhead/seawall was part of the design (See Exhibit 4). The original bulkhead design included placement of protective toe stone to ensure that soil does not erode from around the timber pilings exposing them to marine boring organisms. The applicants' coastal engineer has stated that the soft bottom fill alternative is not a feasible solution in Huntington Harbour because it would replicate the existing condition. Once placed against the footing, erosive forces would rapidly erode the unconsolidated fine silty and sandy sediments in the same fashion that the existing sediment has eroded. In addition, if soft bottom fill were used to protect the subject sites, re-nourishment of the soft bottom fill would need to occur frequently. This frequent re-nourishment would cause frequent disturbance to marine habitat and any eelgrass which may exist in the vicinity of the project site. Whereas, the use of toe stone is anticipated to provide protection for several decades, thus reducing the frequency of disturbance to the site. Therefore, the proposed solution is less environmentally damaging than the second alternative. Furthermore, the placement of only soft bottom fill would not provide the shoring that is necessary to stabilize the existing bulkhead.

The third alternative, placement of coarse rock only, would also have greater environmental impact than the proposed solution. The placement of rock, instead of the proposed mixture of 8-inch diameter or smaller quarry waste, would replicate the problems associated with the previous protective structure. Due to the presence of unconsolidated fine silty bay mud and existing hydrodynamic conditions, coarse rock would tend to sink into the bay mud or migrate from the slope targeted for protection. Accordingly, the coarse rock would need to be replaced over time, with the attendant construction related impacts upon the marine environment. Therefore, the proposed solution is less environmentally damaging than the fourth alternative. Furthermore, the placement of coarse rock only would not provide the shoring that is necessary to stabilize the existing bulkhead.

The fourth alternative, placement of rigid vinyl sheet pile is only a viable alternative for locations where erosion has exposed the footing of the bulkhead and voids have formed behind the bulkhead footing. The purpose of the sheet pile is to serve only as the form to hold the concrete/grouting injected between the sheetpile and bulkhead in place during construction. It does not serve as a structural component of the system although it does distribute bearing loads and provide some additional protection against marine boring organisms. Placement of the sheet pile would replicate the existing condition of highly erodible unconsolidated fine silty sands in front of the bulkhead and would not protect against the chief reasons for erosion (tidal currents, dredging activities in the channel and boat slips, burrowing fish, and significant boat propeller activity).

The fifth alternative, placement of cement slurry for slope protection, would provide a long-term solution against erosion, however, may not be less environmentally damaging than the proposed solution as the use of a cement slurry for slope protection would not provide a suitable substrate for colonization by marine organisms. It is anticipated that the proposed toe stone will provide a suitable substrate for colonization by marine organisms. In addition, over time it is anticipated by the applicant that sediment will settle upon the proposed toe stone. Providing that there is adequate sunlight it is also anticipated by the applicant that conditions may allow colonization of the toe stone by eelgrass. Therefore, the proposed solution is less environmentally damaging than the third alternative. Furthermore, the placement of cement slurry only would not provide the shoring that is necessary to stabilize the existing bulkhead.

At locations in Huntington Harbor where the loss of sediment has occurred yet the bottom of the bulkhead foundation has not yet been exposed and the timber piles not yet been extensively damaged, Tetra Tech proposes a scenario called Case IV – "Rock Slope Protection on Geotextile Only" to protect the bulkhead foundation and halt further erosion. The proposed bulkhead reinforcement is necessary to protect an existing bulkhead and single family residences. The proposed method of repair will not adversely impact shoreline sand supply as the subject project sites are all located within an urban harbor at a location isolated from the nearest open coastal shoreline and longshore littoral sand transport mechanisms. Therefore, the Commission finds that the proposed project is consistent with Section 30235 of the Coastal Act.

Bulkhead Toe Rock Protection

As proposed, the proposed project consisting of re-applying toe rock protection on top of geotextile is proposed at all 19 project sites at a 2(h) to 1(v) slope, at a maximum of 6' seaward of the existing bulkhead to prevent future erosion of sediments at the bulkhead toe.

As previously stated, Tetra Tech has indicated that the original bulkhead design drawings specified backfill material from the top of the footing seaward at a slope of 3(h) to 1(v). Their field inspections revealed that an 8- to 12- inch coarse material sub-layer extends seaward of the bulkhead footing at a depth of about 2 feet below the bottom of the footing or cutoff wall. However, Tetra Tech was not able to locate specific data on the type of material or the original extent of this layer beyond the bulkhead. This material may have settled since construction of the bulkheads in the 1960s beyond the footing due to the unconsolidated nature of the native underlying sediments. The proposed new toe protection material at a 2(h) to 1(v) slope, at a maximum of 6' seaward of the existing bulkhead is intended to replace the settled material and therefore isn't considered "new" fill of open coastal waters.

The toe stone as proposed at a 2(h) to 1(v) slope would cover a smaller footprint than the original design at a slope of 3(h) to 1(v). However, the horizontal (seaward) extent of the material out to a maximum of 6' from the existing bulkhead (to approximately the location of existing residential boat docks in the Harbor) is a "one size fits all" distance when in fact that distance may be shortened based on specific site conditions. Therefore, **Special Condition 1** requires revised project plans indicating that the proposed rock toe protection shall extend no more than 1 foot above the bottom of the bulkhead footing (the concrete bulkhead footing is 1 foot tall) and shall have a horizontal (seaward) extent that is limited to 3'- 4' from the seaward edge of the bulkhead footing at a 2(h) to 1(v) slope.

The proposed project alternative is intended to minimize the impact of the proposed design by minimizing the amount of toe stone placed in front of the bulkhead as compared to the original bulkhead design from the 1960s. Proposing placement of the toe stone at a 2(h) to 1(v) slope in front of the existing bulkhead would cover a smaller footprint than the original design at a slope of 3(h) to 1(v), thereby minimizing impacts upon soft bottom habitat and potential eelgrass habitat in the project vicinity. As conditioned, the proposed method of repair minimizes the footprint of the proposed toe rock. Further minimizing the amount of toe stone necessary to protect the bulkhead from future erosion and scour will result in a greater amount of uncovered soft bay bottom which may contribute to shoreline sand supply thereby mitigating adverse impacts on local shoreline sand supply. Accordingly, as conditioned, the proposed project meets the policies of Coastal Act Section 30235.

Additionally, Tetra Tech has asserted that the riprap will not move for the life of the project. However, it is reasonable to say that it can't be known with certainty that the toe stone will never move. However, this assumption does not consider conditions during storms or future sea level rise or other factors, such as periodic dredging, which may effect the toe stone. Under these conditions it is possible the toe rock may move, potentially affecting other soft bottom habitat areas. The high degree of likelihood that the toe stone will not move provides a basis to approve the project. If it were likely the toe stone would shift, the project may not be found consistent with Coastal Act policies regarding protection of the marine environment. Even though the applicants' engineering consultant asserts that the proposed toe stone will not shift, conditions in the harbor are dynamic and it is feasible that harbor conditions could change. Monitoring every other year, would verify that the rock has indeed not moved and created disturbance of soft bottom habitat elsewhere within the harbor. If disturbance has occurred, action can then be taken, minimizing adverse impacts that may occur if left undetected. Therefore, **Special Condition 4** is imposed requiring a bulkhead monitoring plan. Only as conditioned can the proposed project be found to be consistent with Sections 30230 and 30231 of the Coastal Act.

Therefore, as conditioned, the proposed project is the least environmentally damaging feasible alternative.

Biological Productivity - Eelgrass and Caulerpa taxifolia

Huntington Harbor is hydrologically connected to Anaheim Bay National Wildlife Refuge to the north and Bolsa Chica Ecological Reserve to the south. Coastal Act Section 30230 requires that marine resources be maintained, enhanced, and where feasible, restored and provides special protection to areas and species of special biological or economic significance. Coastal Act Section 30231 further requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health be maintained and, where feasible, restored. The Commission considers Anaheim Bay National Wildlife Refuge and Bolsa Chica Ecological Reserve to be unique and important coastal wetlands and finds that any development proposed within the connected Huntington Harbor must be undertaken in such a manner to avoid impacts that would significantly degrade the biological productivity and quality of these connected coastal waters and wetlands. Furthermore, the waters of Huntington Harbor are used extensively for boating, and to a lesser degree fishing. Thus, it is important that the proposed project protect the health of recreational users of these waters consistent with Section 30231.

Eelgrass (Zostera marina) is an aquatic plant consisting of tough cellulose leaves which grows in dense beds in shallow, subtidal or intertidal unconsolidated sediments. Eelgrass is considered worthy of protection because it functions as important habitat for a variety of fish and other wildlife, according to the Southern California Eelgrass Mitigation Policy (SCEMP) adopted by the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG). For instance, eelgrass beds provide areas for fish egg laying, juvenile fish rearing, and water fowl foraging. Sensitive species, such as the California least tern, a federally listed endangered species, utilize eelgrass beds as foraging grounds.

The most recent eelgrass surveys for the subject sites were conducted in May 2008. Each of the eelgrass surveys were conducted by Tetra Tech, Inc. No eelgrass was found within the proposed area of work (between the bulkhead and private boat docks) at any of the sites. Only one property had an 11 sq. ft. patch of eelgrass in the vicinity (within 8 feet of the bulkhead), however, as proposed, the project will not have any direct impact to that eelgrass patch. The area of potential eelgrass habitat within the surveyed areas is limited shading (caused by the island itself) and shading caused by private residential docks located off the bulkhead at all the project locations. Water clarity and tidal circulation also affect eelgrass growth. Water visibility was observed at between 3 to 10 feet, which is typical for the area. Reduced tidal circulation in the inlets of the islands also decreases the potential for eelgrass growth. Tetra Tech concludes that the areas where eelgrass does not currently occur are unsuitable for eelgrass growth due to these existing environmental factors. As proposed, no eelgrass will be impacted by the development at the subject sites.

However, even though no adverse impacts to eelgrass are anticipated, a significant amount of time has passed since the last eelgrass survey was conducted at the subject sites. Due to the ephemeral nature of eelgrass, the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game recommends that eelgrass surveys be conducted during the active growth phase of eelgrass (typically March through October in southern California). In addition, the resource agencies state that any eelgrass survey performed is only valid until the beginning of the next growing season ("Southern California Eelgrass Mitigation Policy"). Based on this criteria, the eelgrass surveys provided are outdated. Therefore, the Commission imposes **Special Condition 6** which requires that a valid pre-construction eelgrass survey be conducted within the boundaries of the proposed project sites during the period of active growth of eelgrass (typically March through October). The pre-construction survey shall be completed prior to the beginning of construction and shall be valid until the next period of active growth.

The proposed development will occur in areas adjacent to existing eelgrass beds. The proposed toe stone will be placed using a 40 foot by 50 foot barge mounted crane which will retrieve the material for placement from a nearby 40 foot by 60 foot barge upon which the material is staged. Construction activity, including barge anchoring, vessel propeller wash, and propeller contact with the harbor bottom could cause scarring to eelgrass beds. The applicant has stated that the anchors for the barges will be placed to avoid eelgrass. However, construction activity could inadvertently impact eelgrass. Therefore, the Commission finds that a post-construction eelgrass

survey must be submitted to determine whether any eelgrass not expected to be impacted was inadvertently impacted. Therefore, **Special Condition 6** also requires post-construction eelgrass surveys and that any unexpected and inadvertent impacts to eelgrass during construction must be mitigated consistent with the Southern California Eelgrass Mitigation Policy.

In 1999, a non native and invasive aquatic plant species, Caulerpa taxifolia, was discovered in parts of Huntington Harbour (Emergency Coastal Development Permits 5-00-403-G and 5-00-463-G). Caulerpa taxifolia is a type of seaweed which has been identified as a threat to California's coastal marine environment because it has the ability to displace native aquatic plant species and habitats. Information available from the National Marine Fisheries Service indicates that Caulerpa taxifolia can grow in large monotypic stands within which no native aquatic plant species can co-exist. Therefore, native seaweeds, seagrasses, and kelp forests can be displaced by the invasive Caulerpa taxifolia. This displacement of native aquatic plant species can adversely impact marine biodiversity with associated impacts upon fishing, recreational diving, and tourism. Caulerpa taxifolia is known to grow on rock, sand, or mud substrates in both shallow and deep water areas. Since eelgrass grows in shallow sandy areas, Caulerpa taxifolia could displace eelgrass in Huntington Harbour.

If present in the project area, Caulerpa taxifolia could be dispersed through construction of the proposed project. The placement of rock in areas where Caulerpa taxifolia is present, could cause pieces of the plant to break off and settle elsewhere, where it can regenerate. By causing dispersal of Caulerpa taxifolia, the proposed project could have adverse impacts upon marine life, especially sensitive eelgrass habitat. In order to assure that the proposed project does not cause the dispersal of Caulerpa taxifolia, the Commission imposes **Special Condition 7** requiring the applicant, prior to commencement of development, to survey the project area for the presence of Caulerpa taxifolia. If Caulerpa taxifolia is present in the project area, no work may commence and the applicant shall seek an amendment or a new permit to address impacts related to the presence of the Caulerpa taxifolia, unless the Executive Director determines that no amendment or new permit is required.

As conditioned, the Commission finds that the proposed project is consistent with Section 30230 and Section 30231 of the Coastal Act.

Construction Phase Water Quality

The proposed development will occur within and adjacent to coastal waters. The proposed project involves the placement of toe stone consisting of 8-inch diameter or smaller quarry waste in coastal waters. If such materials are not placed in an appropriate manner, unconsolidated bay sediments may be disturbed causing turbidity in the water column. Additionally, construction will require the use of heavy machinery and require the stockpiling of construction materials. The applicant has stated that turbidity will be addressed by first installing the proposed geotextile fabric in the area where the toe stone will be placed and by placing, not dumping, the toe stone at the target location. The applicant has additionally stated that a silt curtain will be used in the event that turbid conditions are generated during construction. Since the proposed methods are required to assure compliance with Section 30231 of the Coastal Act, the Commission imposes **Special Condition 3**.

In order to protect the marine environment from degradation, **Special Condition 3** requires that all construction materials and machinery shall be stored away from the water. In addition, no machinery or construction materials not essential for the project improvements shall be placed in coastal waters. Local sand, cobbles, or shoreline rocks, not presently used in the existing development, shall not be used for backfill or construction material.

Furthermore, the California Regional Water Quality Control Board (RWQCB), Santa Ana Region has issued a 401 Water Quality Standards Certification (ID #302009-37). Therefore, as the conditioned, the Commission finds the proposed development is consistent with Section 30231 of the Coastal Act.

D. PUBLIC ACCESS

Section 30212 of the Coastal Act states in relevant part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(2) adequate access exists nearby, or,*
>
> *(b) For purposes of this section, "new development" does not include:*
>
> *(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.*

The subject sites are located on various locations throughout Huntington Harbor, including locations on Trinidad, Humboldt, Davenport Islands in Huntington Harbour. Much of the Huntington Harbour waterfront is inaccessible to the public. Trinidad Island is publicly accessible via a bridge from the mainland. On-street parking is the major source of public parking. In addition, a small public beach flanks Trinidad Lane at the entrance to Trinidad Island, and public fishing docks are located at the ends of Sundancer Lane and Typhoon Lane on Trinidad Island. A public walkway extends for much of the length of Venture Drive and along Typhoon Lane. A public park runs through the center of Trinidad Island. Humbolt Island is publicly accessible via a bridge from the mainland. On street parking is also publicly available. A small public beach flanks Humbolt Drive at the entrance to Humbolt Island. Davenport Island is publicly accessible via a bridge from the mainland, off of Davenport Drive. On-street parking is the major source of public parking. There is a small public beach area and parking lot on the inland side of Davenport Drive before the bridge into Davenport Island.

The proposed development involves structural reinforcements to an existing bulkhead which would be entirely underwater. There is no beach area which provides lateral public access at any of the subject sites. Further, there is no beach area off-site which provides public access that could be eroded as a result of changes in shoreline processes due to the proposed project. In addition, a **Special Condition 5** is imposed to make it clear that approval of this permit does not constitute a waiver of any public rights that exist or may exist on the property.

Therefore, the Commission finds that no public access dedication is necessary with the proposed development and that the proposed project is consistent with section 30212 of the Coastal Act.

E. LOCAL COASTAL PROGRAM

Coastal Act section 30604(a) states that, prior to certification of a local coastal program ("LCP"), a coastal development permit can only be issued upon a finding that the proposed development is in conformity with Chapter 3 of the Act and that the permitted development will not prejudice the ability of the local government to prepare an LCP that is in conformity with Chapter 3. An LCP for the City of Huntington Beach was effectively certified in March 1985 and subsequently updated. However, the proposed development is occurring within an area of the Commission's original permit jurisdiction, due to the project location seaward of the mean high tide line. Consequently, the standard of review is the Coastal Act and the City's LCP is used only as guidance. As conditioned, the proposed development is consistent with Chapter 3 of the Coastal Act and with the certified LCP for the area.

F. CALIFORNA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 Title 14 of the California Code of Regulations requires Commission approval of a coastal development permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The City of Huntington Beach is the lead agency responsible for CEQA review. As determined by the City, a Mitigated Negative Declaration No. 2008-010 was prepared in compliance with Article 6 of CEQA.

The project is located in an existing harbor in an urbanized area. Development already exists on the subject site. The project site does not contain any known sensitive marine resources, therefore the impacts arising from the proposed project will be minimal. In addition, the proposed development has been conditioned to assure the proposed project is consistent with the resource protection policies of the Coastal Act. The conditions also serve to mitigate significant adverse impacts under CEQA. The conditions are: 1) revised plans; 2) final as-built plans; 3) compliance with construction responsibilities and debris removal measures; 4) bulkhead monitoring plan; 5) that approval of the permit does not constitute a waiver of any public rights that may exist at the site; 6) pre- and post-construction eelgrass surveys; and 7) pre-construction caluerpa taxifolia surveys. There are no other feasible alternatives or mitigation measures available which will lessen any significant adverse impact the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, is the least environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A

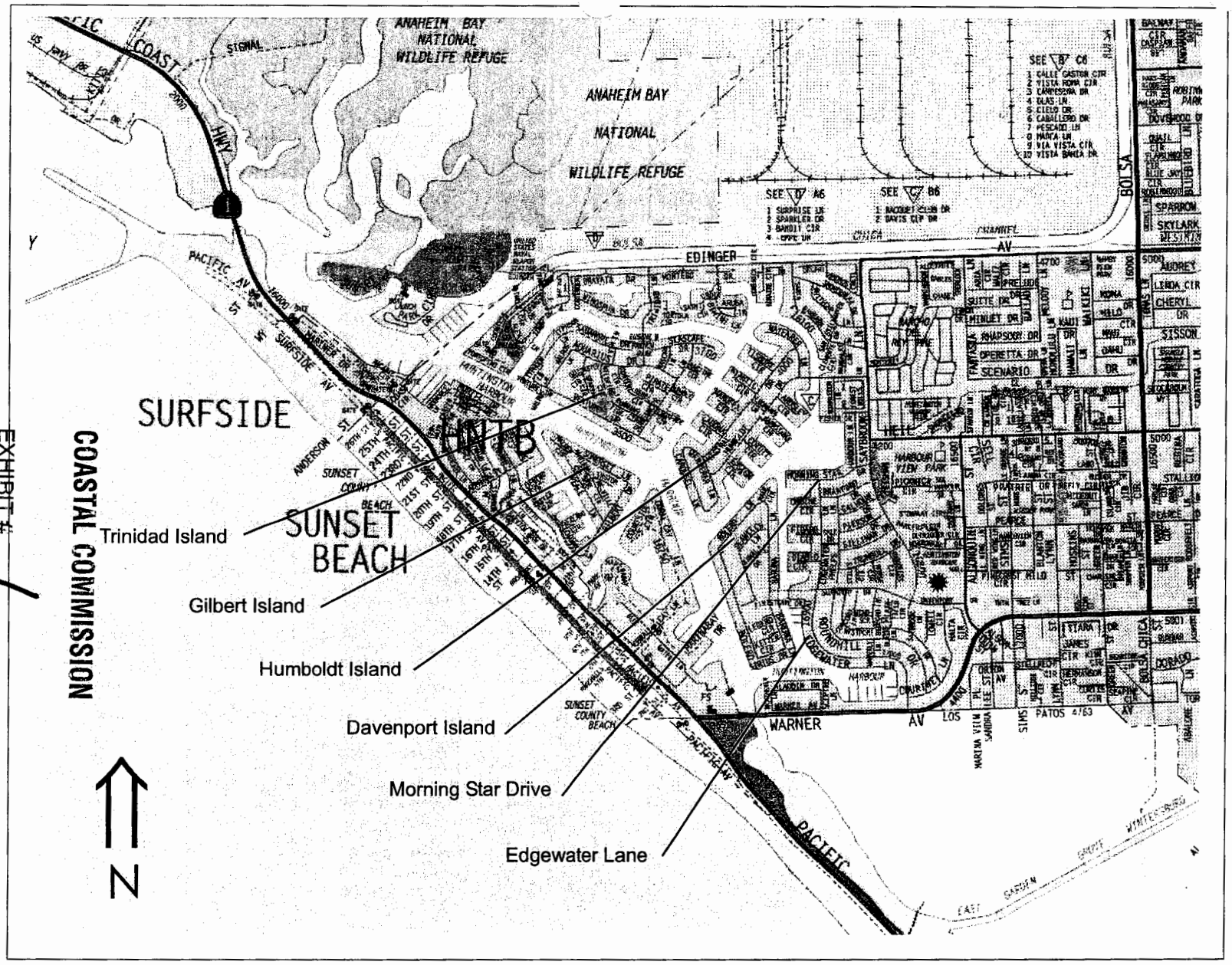
SUNSTANTIVE FILE DOCUMENTS

City of Huntington Beach Mitigated Negative Declaration No. 08-010(Huntington Harbor Bulkhead Repair) dated September 3, 2008

Approval-in-Concept from the City of Huntington Beach dated September 16, 2008

Davenport Bulkhead Repair Group Eelgrass Survey, May 2008, Huntington Harbour, Huntington Beach, California; prepared for Huntington Harbour Homeowners; prepared by Tetra Tech Inc., 401 E. Ocean Blvd. Suite 420, Long Beach CA 90802

US Army Corps of Engineers, Los Angeles District, Regional General Permit No. 84, File No. SPL-2009-00652-FBV



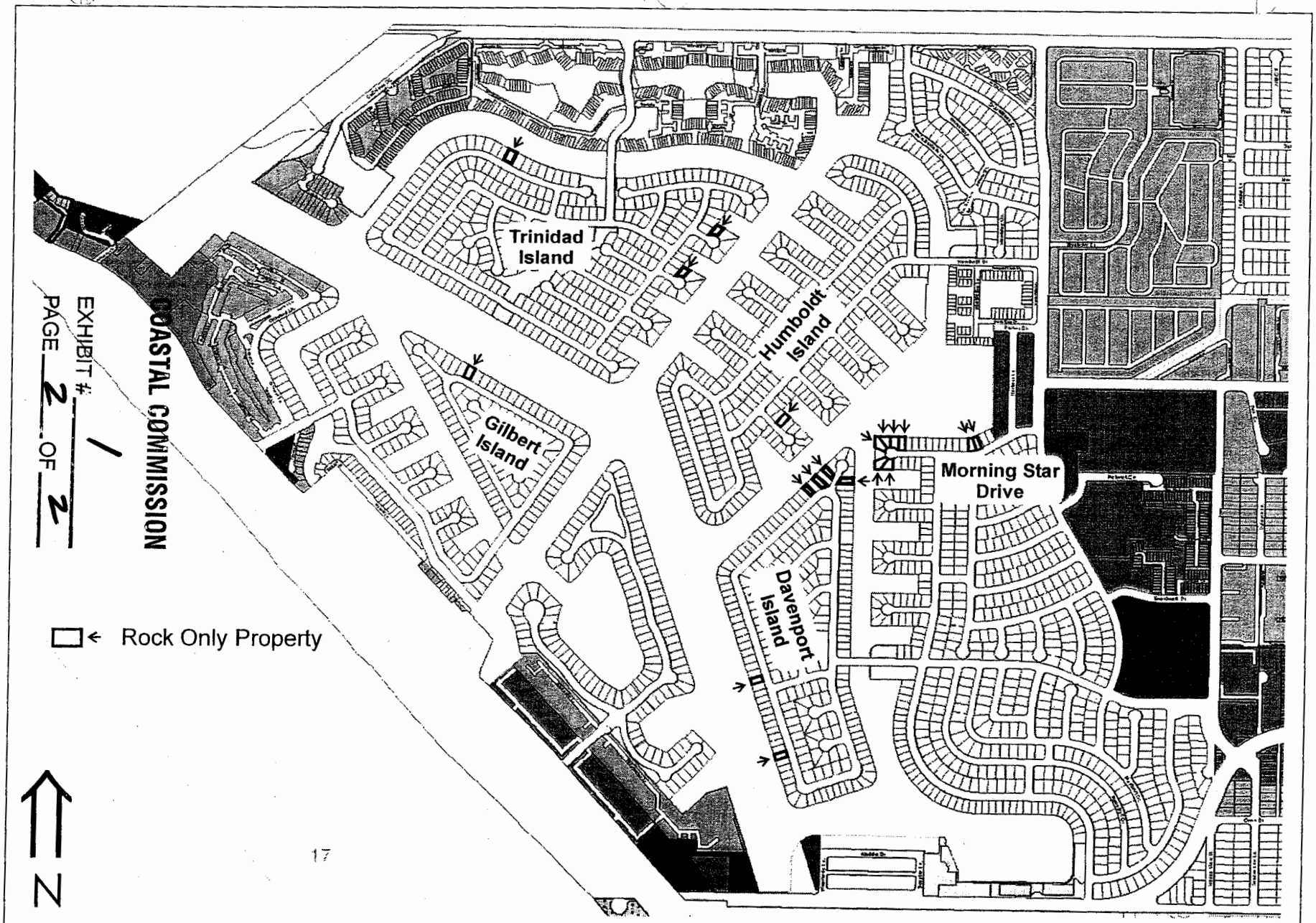
Source: Thomas Bros. Maps

Tetra Tech, Inc.
401 East Ocean Blvd., Suite 420
Long Beach, California 90802
Ph. (562) 495-0495 Fax (562) 495-5029

Vicinity Map
Huntington Harbour Bulkhead Repair Project

May 2009

Figure 1



COASTAL COMMISSION
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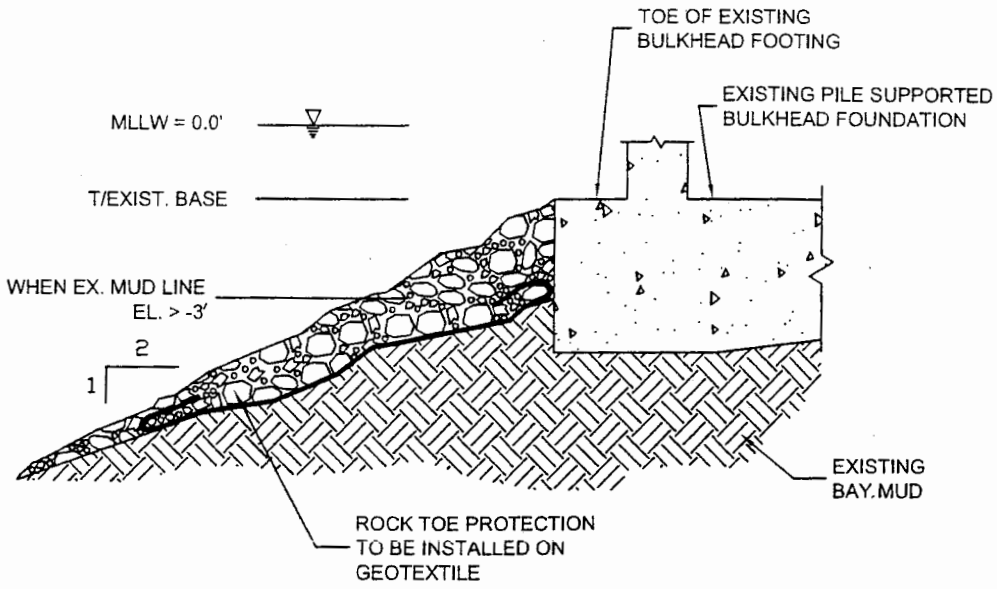
Source: City of Huntington Beach GIS

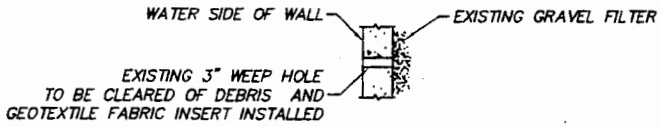
Tetra Tech, Inc.
401 East Ocean Blvd., Suite 420
Long Beach, California 90802
Ph. (562) 495-0495 Fax (562) 495-5029

Property Location Map
Davenport Bulkhead Repair Project
CDP Application for Slope Repair/Rock Only

February 2012
Figure 2



SECTION AT FOOTING TOE: CASE IV (1)
SCALE: 3/8" = 1'-0" (ROCK SLOPE PROTECTION ONLY)



DETAIL 2: WEEP HOLE
SCALE: 1" = 5'-0"

COASTAL COMMISSION

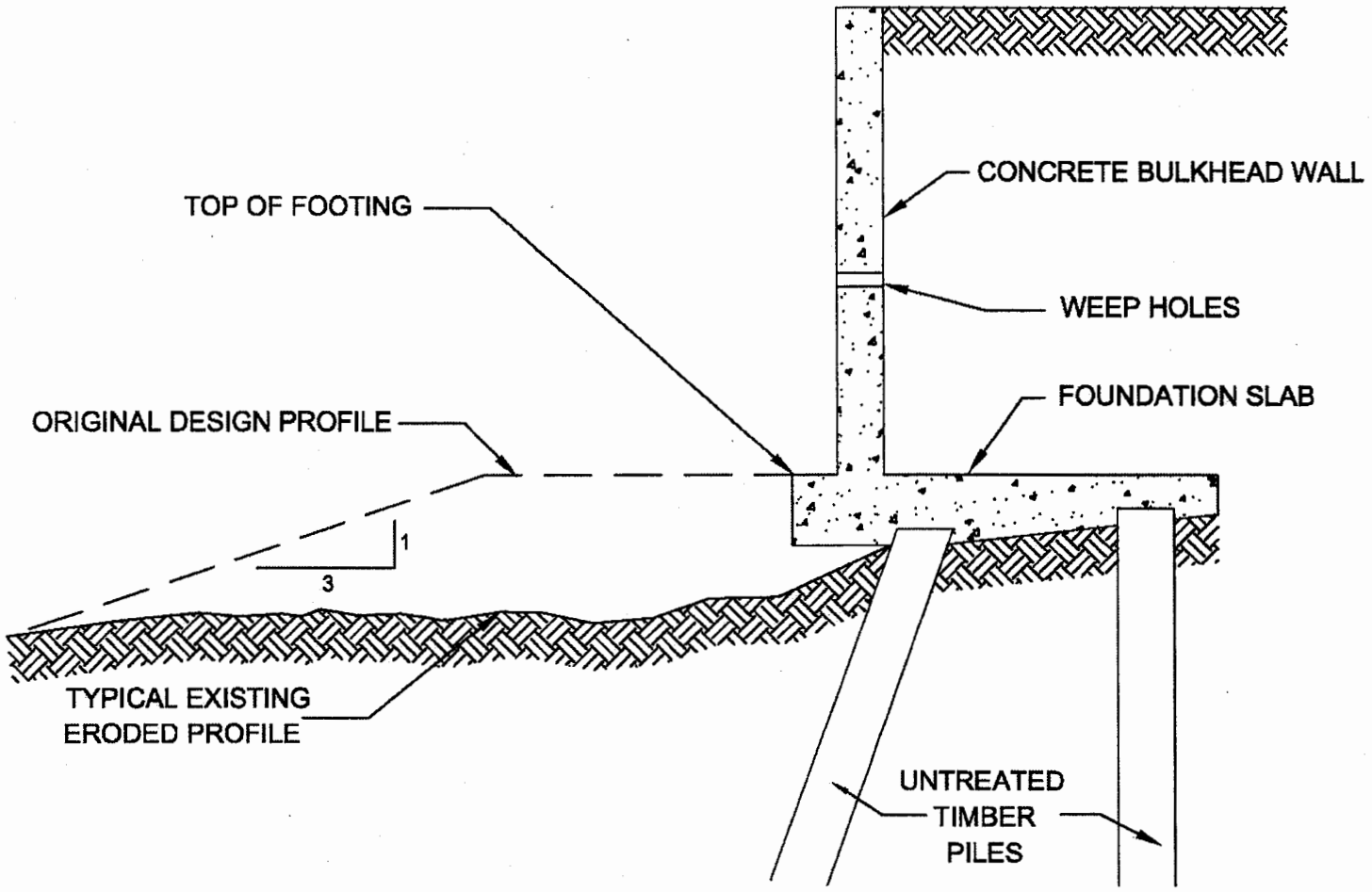
EXHIBIT # 2
PAGE 1 OF 1

PURPOSE: Repair Existing Seawall Datum: MLLW = 0 Tract 4677 Lot 44	REPAIR DETAILS SLOPE REPAIR ONLY	Proposed Repair of Existing Seawall IN: Huntington Harbour
TETRA TECH 401 E. Ocean Blvd. Ste. 420 Long Beach, CA 90802 (562) 495-0495 Fax (562) 495-5029	Don Goodwin 16492 Somerset Lane Huntington Beach, CA 92649	Date: February 2009

Table 1. Summary of Status and Proposed Work for Properties in Coastal Development Permit Application 5-08-273, submitted October 2008.

Name	Address	Tract	Lot	Bulkhead Length (ft)	Extent of Rock (ft)	Estimated Rock Footprint (ft^2)	Estimated Volume of Rock CY	Number of Piles Needing Repair	Proposed Sheet Pile Length (ft)	Impact to Soft Bottom (ft^2)	Eelgrass Area (ft^2)	Caulerpa Present yes/no
Goodwin	16492 Somerset Lane	4677	44	65	6	390	9.0	0	0	0	0	no
Mulvania	16612 Nalu Circle	5050	26	50	6	300	12.1	0	0	0	0	no
Langston	16611 Nalu Circle	5050	31	50	6	300	11.4	0	0	0	0	no
Ritchie	16631 Bolero Lane	5050	33	50	6	300	15.2	0	0	0	0	no
Unatin	16661 Bolero Lane	5050	36	50	6	300	15.2	0	0	0	0	no
Giesy	17011 Bolero Lane	5264	35	50	6	300	4.4	0	0	0	0	no
Wong	16891 Bolero Lane	5264	47	60	6	360	4.9	0	0	0	0	no
Younessi	4022 Morning Star Drive	5360	71	97	6	582	20.8	0	0	0	0	no
Campbell	4012 Morning Star Drive	5360	72	94	6	564	33.2	0	0	0	0	no
Campbell	4001 Morning Star Drive	5360	74	97	6	582	34.3	0	0	0	0	no
Ross	4021 Morning Star Drive	5360	75	87	6	522	29.5	0	0	0	0	no
Wood	4031 Morning Star Drive	5360	76	65	6	390	18.5	0	0	0	0	no
Lacy	4041 Morning Star Drive	5360	77	50.5	6	303	15.0	0	0	0	0	no
Thorne	4141 Morning Star Drive	5360	87	40	6	240	14.3	0	0	0	0	no
Kawaguchi	4151 Morning Star Drive	5360	88	40.12	6	241	12.8	0	0	0	0	no
Preston	16572 Ensign Circle	5481	179	50	6	300	12.4	0	0	0	0	no
Gallaugher	3781 Ragtime Circle	9168	29	75.5	6	453	16.5	0	0	0	0	no
Malchow	3741 Nimble Circle	9168	40	75.5	6	453	15.9	0	0	0	0	no
Butler	3481 Sagamore Drive	9347	77	74.2	6	445	24.0	0	0	0	0	no
	OVERALL TOTAL	19 Properties		1,220.8	6	7,325	319.4	0	0	0	0	0
	OVERALL MEAN			64.3	6	385.5	16.8	0	0	0	0	0

Geotextile filter fabric will be placed along the bulkhead prior to installation of rock. The placement of filter fabric over the sediment before placement of slope protection material will greatly reduce the likelihood of significant turbidity. However, turbidity will be visually monitored as part of the project, and a silt curtain would be installed to contain the suspended sediments if necessary. A slope protection blanket of rock would be placed along the bulkhead using a small barge-mounted crane (40-ft by 50-ft). The slope protection material would be staged on another barge (40-ft by 60-ft) from where it would be picked up and placed at the toe of the seawall to the specified grades. The slope protection blanket would consist of coarse material (over geotextile filter fabric) and be placed seaward of the seawall to provide scouring protection. This coarse material would consist of a standard size distribution referred to as 8-inch minus or "quarry waste", typically used for this type of application. This material contains a broad range of stone sizes ranging from sand-like particles to a maximum diameter of 8 inches to prevent migration or accretion to other areas. The horizontal extent of the coarse material blanket will not exceed 6 feet from the bulkhead. The estimated rock footprint is 7,325 ft^2 (0.17 acre).



COASTAL COMMISSION

EXHIBIT # 4

PAGE 1 OF 2

401 E. Ocean Blvd., Ste. 420
Long Beach, CA 90802
(562) 495-0495, Fax (562) 495-5029

PURPOSE: Repair Existing Seawall

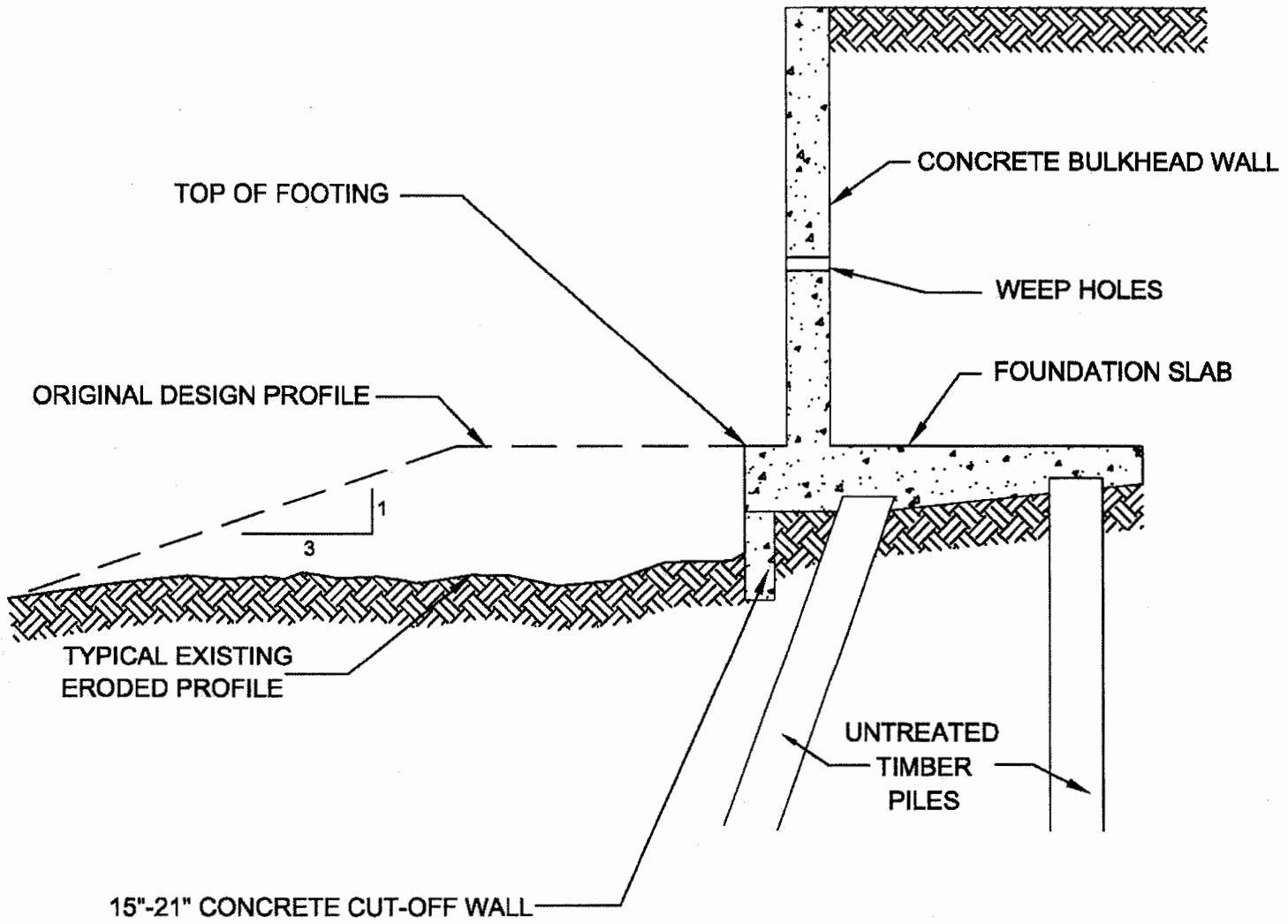
Datum: MLLW = 0

FIGURE 1.
ORIGINAL BULKHEAD DESIGN
NO CUT-OFF WALL

Huntington Harbour
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

Supplemental Info. Report



COASTAL COMMISSION

EXHIBIT # 4

PAGE 2 OF 2

401 E. Ocean Blvd., Ste. 420
Long Beach, CA 90802
(562) 495-0495, Fax (562) 495-5029

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

FIGURE 2.
ORIGINAL BULKHEAD DESIGN
WITH CUT-OFF WALL

Huntington Harbour
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

Supplemental Info. Report