January 24, 2006

Meg Caldwell, Chair
California Coastal Commission
c/o North Coast District Office
710 E Street, Suite 200
Eureka, CA 95501

Re: ***Comments Regarding Applications 1-05-39 and 1-05-40, Humboldt Bay Harbor, Recreation, and Conservation District and the City of Eureka Maintenance Dredging Project***

Dear Chairperson Caldwell,

On behalf of the Humboldt Baykeeper board, staff, and supporting members I submit to you these comments regarding the Applications 1-04-061 and 1-04-062 by the Humboldt Bay Harbor, Recreation, and Conservation District (from here on "District") and the City of Eureka for maintenance dredging at 11 sites in Humboldt Bay and the proposed disposal of the dredge spoils at Samoa Beach in the nearshore environment.

We have numerous concerns about this project. First and foremost, we believe the Coastal Commission should deny this proposed permit due to the incompatible composition of the dredge materials with the beach disposal area, and the lack of information regarding the projects impacts to the nearshore ecological communities. The best available information regarding the dispersal of the plume generated by the proposed disposal method indicates there may be significant impacts on the nearshore environment, publicly harvested clam beds, and the Trinidad Head kelp beds which are designated as an Area of Special Biological Significance (ASBS.) Another primary reason for denying these applications is that the applicants and agencies have provided no analysis to support a claim that chemical concentrations on the beaches and in the surf zone will not be harmful to surfers and others who recreate there, nor have they assessed the risks these chemicals pose to the nearshore benthic communities, and people who harvest and eat local shellfish and surf fish. These arguments are bolstered by the fact that a less environmentally damaging and practicable alternative disposal site exists just three miles offshore from Humboldt Bay.

Additionally, Humboldt Baykeeper believes that the City of Eureka and the Humboldt Bay Harbor District have not fully considered the associated impacts of this project during the process of obtaining the necessary permits to conduct this project.

Although the staff recommendation from the North Coast District Office is to approve these applications, we believe that the concerns outlined below, coupled with precedent from comparable Coastal Commission applications from other areas of the State, show that the dredge wastes generated from Humboldt Bay maintenance dredging should not be disposed of on Samoa Beach.

1. This project Does Not Comply with guidelines on disposal of dredged material.

It is unclear whether dredge disposal for this operation falls under the Clean Water Act's 404(b) guidelines or the Marine Protection Research Sanctuaries Act (MPRSA). According to the California Sediment Management Workgroup, "both the USACE and the EPA define dredge material for beach

replenishment as "fill" when the basic project purpose is beneficial beach nourishment and the project is deemed necessary." We cannot find scientific evidence that shows the necessity for beach nourishment for Samoa Beach or that the dredged material is compatible with the receiving beach, as required under the 404 (b) (1) guidelines. In fact, even the project applicants consider this project a disposal project rather than a beach nourishment project.

Although the 80/20 ratio of coarse to fine sediment bears no statutory authority for disposal in the nearshore, that ratio represents a national consensus regarding the compatibility of the materials for beach nourishment. We understand that individual cases are subject to assessment under this assumption. But given the reported 85% silts and clays and 15% sand ratio that is presented in this project (the complete inverse of the 80/20 guidelines), and considering the presence of toxic chemicals such as PAHs, heavy metals and dioxins (which have not been found on the beach or nearshore environment) there does not appear to be any scientific consensus or evidence that this material is compatible.

Furthermore, "if no real need for nourishment can be demonstrated or if most of the material will not serve the intended purpose, the activity would be considered disposal (and thus regulated under MPRSA)." If this is the case, the USACE is subject to the EPA dumping criteria [MPRSA Section 103] which lays out factors for consideration under permit review, including:

- Need for dumping
- Effect of dumping on human health and welfare, fish, wildlife, shoreline and marine ecosystems
- Persistence and permanence of effects
- Effects of dumping particular volumes and concentrations
- Effect of alternate uses of oceans

Even the permitting agencies have dissenting opinions regarding the composition of the material to be disposed of on Samoa Beach:

- In a letter dated January 12, 2006, Brian Ross of Region IX EPA wrote, *"EPA continues to believe that for this project impacts are more likely to result from the physical placement of inappropriately fine material on the beach and in the nearshore zone. EPA would find all of this material (with the exception of that from Coast Seafoods dock) to be suitable for ocean disposal at HOODS, and in future years we expect the fine material dredged from Eureka area facilities will be disposed there."*
- On August 22, 2005, the Department of Fish and Game weighed in saying, *"The dredge spoils that will be discharged in this project are 85% silt and clay and 15% sand, yet the receiving beach is 95% sand. The Department does not believe that a beach composed of 95% sand is suitable for placement of dredge spoils with 85% fines due to potential adverse effects on benthic habitat, fish, and wildlife."*

2. The Humboldt Bay Dredge Materials Have Higher Fines Content and Are More Toxic Than Materials the Coastal Commission and EPA Previously Determined Unsuitable For Beach Disposal.

In recent years, the California Coastal Commission has approved projects similar in nature, but lower in overall volume, with a lower percentage of fines, and less overall toxicity in both Santa Cruz (Application Number 3-05-065) and Crescent City (Application Number 1-00-006) in the past. In both cases, the Coastal Commission required alternative disposal methods for much of the dredged material, either upland or offshore.

For example, in 2001 the Commission staff addressed the very issues presented here in connection with a proposal from the Crescent City Harbor District to dispose of harbor maintenance dredge

materials. The dredge materials originated from four source areas that were analyzed for grain size and contaminants. The materials from one of the source areas was found to be 89% sand and contained practically no detectable levels of polynuclear aromatic hydrocarbons (PAHs.) The Commission staff stated that "[b]ased upon the results of these analyses, the dredge materials within [this area] were determined by the U.S. Environmental Protection Agency to be suitable for aquatic disposal." The staff continued, however, to state that "[c]onversely, due to their more mixed grain-size composition, elevated contaminant levels, and/or toxicity to marine organisms, the dredge spoils from [the other three areas] would not be suitable for beach and/or ocean disposal and are proposed to be placed instead within the Uplands Deposition Area disposal site."

Upon closer look, the dredge materials from those three Crescent City Harbor areas, required to be disposed of at an upland disposal site, have higher sand content (52%-57%) than any of the areas proposed for dredging in Humboldt Bay (approx. 15%). And, on the whole, the Crescent City dredge materials were considerably less contaminated than the proposed Humboldt Bay dredge areas. In particular, **the Humboldt Bay dredge sites have higher levels of polynuclear aromatic hydrocarbons, and total petroleum hydrocarbons than the materials that were found to be unsuitable for beach disposal**. Attached as Exhibit A is a chart and graphs comparing the composition of the Crescent City and Humboldt Bay dredge materials. Also, for your ease of reference, attached as Exhibit B is the February 23, 2001 Coastal Commission staff report on the Crescent City project, Application 1-00-006 which includes the materials composition and chemical investigations.

3. There has been no analysis conducted of the dispersal of the dredge material in the nearshore environment nor consideration of the impacts on nearshore ecological communities.

There has been no analysis completed on the dispersal of the materials - or the fate and transport of the material's toxic constituents - and the associated impacts from the plume that would be generated from the disposal pipe at Samoa Beach. General claims have been made by the applicants that the wave action at Samoa Beach is sufficient to separate and disperse the 85% silts and clays from the 15% sand and move this material offshore. These claims are not supported by any study or analysis of the dispersal of this material. This is demonstrated in the Staff Report (1-05-039, page 13) put forth by the North Coast District Office of the California Coastal Commission:

- *"The applicant **anticipates** that most of the sub-sand material will disperse as suspended sediment along the Eel River basin shelf area offshore."*
- *"The applicant **expects** that most of the material discharged to the surf zone disposal site would be dispersed offshore as part of the cyclical process of erosion of the winter beach." (Emphasis added)*

In a study published by C.K. Harris, P.A. Traykovski, and W.R. Geyer (*Flood dispersal and deposition by near-bed gravitational sediment flows and oceanographic transport: A numerical modeling study of the Eel River shelf, northern California*, 2005, Journal of Geophysical Research, Vol. 110), Exhibit C, hydrographic surveys conducted during large floods of the Eel River found that sediment delivery from the river plume was confined to the inner shelf (<30 m water depth).

The Harris study concludes that ***"resuspension of fine-grained sediment by energetic waves creates a dense layer of suspended sediment within the wave boundary layer,"*** and continues, ***"The thickness of the layer is equal to the wave-boundary layer thickness, and therefore is highest in the shallowest sites, and decreases offshore."*** *(Emphasis added)*

The results of this study are particularly relevant to this project for two reasons. First, the applicants argue that dilution of the material once it is deposited in the ocean will prevent surfers and beachgoers from being exposed to significant levels of contaminants. But the Harris study indicates that the fine-

grained dredge materials will be resuspended and consolidated in the wave zone. Surfers and others in the water are thus likely to contact and ingest significant amounts of the contaminated sediments. According to the International Agency for Research on Cancer (IARC,) the polynuclear aromatic hydrocarbons present in the dredge spoils are highly carcinogenic and may cause skin cancer from dermal contact. Without further study, there is no way to determine at what concentrations the PAHs, dioxins, furans, petroleum hydrocarbons and heavy metals from the dredge materials will be present in the wave zone and on the beach.

Second, the Harris study shows, as many locals are already aware, that the sediment from this project will be transported via a longshore current and deposited in the nearshore zone as far north as Trinidad Head, and possibly beyond. This fact confirms that the analysis conducted by the Harbor District (*Discharge of Harbor Dredge Spoil Materials on Samoa Beach, Humboldt County California, August 1999, SHN Consultants and Dr. Milton Boyd,*) which only analyzed certain impacts to the beach and intertidal areas near the disposal location, is not sufficient in measuring the cumulative impacts of this proposed project. Clam Beach to the north - home to struggling razor clam beds - and the Trinidad Head Kelp Area of Special Biological Significance (ASBS) are both potentially impacted by this project. In fact, the Public Resources Code § 36710 (f) states that point source waste and thermal discharges into ASBS's are prohibited or limited by special conditions, and non-point sources discharging into ASBS's must be controlled to the extent practicable (*Final Report- Discharges into State Water Quality Protection Areas in California,* State Water Resources Control Board, 2003). The Harbor District's study did not look at impacts to the nearshore environment – the area just beyond the waves - where the Harris study shows the fine sediments will eventually settle. The nearshore environment has an important and sensitive benthic community and is where Dungeness crabs converge during their reproductive period. There has been no analysis of the potential impacts to the nearshore environment from increased sediment and toxicity loads in the water column, or the ocean bottom.

Sediment can negatively impact kelp beds by burying new shoots, and can reduce kelp growth rates and reproductive success. According to research conducted in Washington, the bull kelp that forms the Trinidad kelp beds is negatively impacted by sediment loading (LT Carney, 2003. *Restoration techniques for Nereocystis luetkeana (Mertens) Postels Et Ruprecht (Bull Kelp)* Journal of Phycology, Vol. 39). Impacts from sediment can also indirectly impact marine organisms that depend on kelp beds, including fish and seabirds such as marbled murrelets, which are known to congregate in nearshore kelp beds (C.J. Ralph and L. Long, 1995, *Productivity of Marbled Murrelets in California from Observations of Young at Sea*, USDA Forest Service Gen. Tech. Rep. PSW-152.) Since the majority of contaminants are typically associated with the fine fraction, the contaminants that are known to be present in the Humboldt Bay dredge spoils could result in negative impacts to the kelp beds and associated organisms if sediment is deposited in the Trinidad area as predicted by the Harris model.

4. The proposed project has not fully considered alternatives to disposal of dredge spoils.

In 1995, the U.S. Department of Environmental Protection designated the Humboldt Open Ocean Disposal Site ("HOODS") 3 miles from the Harbor entrance jetty. The HOODS site was designed to accept fine-grained silts and clays, as well as course-grained sand, and has the capacity to receive all project sediments determined to be chemically suitable. In fact, in comments submitted by the EPA regarding the 1998 dredging event, the EPA objected to the proposed surf-zone disposal stating that *"there are potential negative impacts associated with the proposed disposal method and location, and the EPA believes that there is a less damaging and practicable disposal alternative available at the Humboldt Open Ocean Disposal Site"*. In addition to the EPA, other state and federal agencies also commented that the HOODS alternative should be used to avoid impacts to habitat at the surf zone.

It has not been demonstrated by the District or the City of Eureka, in accordance with the Federal Guidelines (40 CFR 230) published pursuant to Section 404 of the Clean Water Act and Section 10 of

the Rivers and Harbors Act, and in accordance with the Ocean Dumping regulations (40 CFR Part 227), that disposal at HOODS is not practicable. As an example, the San Francisco Deep Ocean Disposal Site (SF-DODS) is located 50 miles off shore, making for a 100 mile round-trip for San Francisco dredgers. There is a similar situation for EPA designated site off of southern California. Thus, the approximately 20 mile round-trip to HOODS is quite practicable.

In addition, it has not been demonstrated that beach disposal would have less environmental impact than use of the HOODS alternative. The contention by the District and the City of Eureka that the dredging activity required for disposal at HOODS is impracticable has not be demonstrated, and the driving reason for this decision appears to be solely financial in nature. Clamshell dredging, the method necessary for disposal at HOODS, if done properly, can be as efficient and environmentally sound as the suction-dredge method proposed. Many marinas on the west coast use this method for regular maintenance dredging. Although it may be more expensive and time-consuming, it has not been established by the applicants that this cost or inconvenience renders clamshell dredging not practicable. Under both the 404(b) (1) Guidelines and the Ocean Dumping regulations, the fact that one alternative is more expensive does not mean that it is not practicable.

5. NOAA Fisheries has determined the proposed project will result in "take" of state and federally listed salmonid species.

Since the 1998 dredging event, the coho salmon has been state and federally listed as endangered. In addition, two other species of salmonids have been federally listed as threatened and critical habitat has been designated in the Humboldt Bay region. The following state and federally listed species and designated critical habitat may be present in the proposed project area: Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch),* California Coastal (CC) Chinook salmon *(O. tshawytcha)*, Northern California (NC) steelhead *(O. mykiss)*; and SONCC designated critical habitat. In addition, the Eureka Channel is used as a migration corridor and a feeding area for both spawning adult salmon and out-migrating smolts.

In its recently released biological opinion, NOAA Fisheries has reported that this project will result in incidental take of the coho salmon, which is listed by state and federal agencies as endangered. To date, there is no mitigation in place by NOAA Fisheries to accommodate for this incidental take and, because of this fact, no incidental take permit, as required pursuant to Fish and Game Code Section 2081 (b), has been issued to the applicants. While there has been a request by the applicants for a consistency determination from DFG under Fish and Game Code Section 2080.1, once again, there has yet to be any mitigation measures put into place by the federal agencies that would trigger such a determination.

In addition, the Mitigated Negative Declaration issued as part of compliance with the California Environmental Quality Act (CEQA) does not consider the impacts to salmonids that would result from this project. Therefore, Humboldt Baykeeper feels this document is incomplete, and invalid, and should be resubmitted considering these impacts to salmonids and that an appropriate public comment period be allowed as part of this process. It seems as though it would be very difficult, and premature, for the Coastal Commission to approve this project in its current form lacking this crucial information.

6. Because of Elevated Levels of Dioxin in the Dredge Materials, a Site-Specific Human Health and Ecological Risk Assessment Would be Needed to Further Evaluate the Surf Dump Proposal

At the September 14, 2005 hearing on this matter, the Commission required additional sampling to determine whether dioxins and furans were present in the proposed Humboldt Bay dredge materials. That sampling was completed and dioxins/furans were found in concentrations ranging from 1.78 to 4.57 ppt TEQ. The EPA has since concluded that those levels are comparable to what is found in San Francisco Bay and concluded that they "do not expect there to be a human health or ecological risk" associated with the nearshore disposal. After consultation with a toxicologist with

substantial dioxin experience, we do not believe that such a conclusion can be drawn. (Attached as Exhibit D is a letter and CV for Dr. Peter deFur.)

First, it should be noted that the 2-5 ppt levels in the dredge materials does not reflect the background levels in the Humboldt Bay area. Sediment sampling conducted in the southern reaches of Humboldt Bay (Hookton Slough) shows that in areas where there has been little or no industry, dioxins are practically not present in detectable amounts. The South Bay sampling found dioxin at .0025 ppt. Please see Exhibit E. We also know that dioxin was not present at the beach disposal site. It is not comforting to know that areas of Humboldt Bay are as contaminated with dioxin as much more urbanized bays like San Francisco and industrial ports such as the Port of Stockton.

San Francisco Bay, with dioxin levels in sediments in the 2-5 ppt range, is on the State's 303(d) list as impaired for dioxin contamination. That listing was actually done by EPA, in part because the dioxin in the Bay's sediments has bioaccumulated and biomagnified up the food chain and is found in dangerous levels in the Bay's fish. Dredge spoils from San Francisco Bay are not dumped on Ocean Beach, they are barged 50 miles to an EPA designated offshore disposal site. Dredge spoils from the Port of Stockton, home to the McCormick and Baxter dioxin superfund site, have dioxin levels in the 1-5 ppt range. They are disposed of at a monitored upland disposal site.

Second, the Preliminary Remediation Goals (PRGs) relied on by EPA in its evaluation do not take into consideration all of the exposure pathways and is based on very different assumptions than those required to do a risk assessment for this beach dump proposal. (Such as inhalation of dioxin particles from aerosolized water in the wave zone and ingestion of dioxin in clams, crabs or fish impacted by the sediments.) The EPA guidance documents for use of PRGs are very explicit on this point. PRGs are tools for initial screening-level evaluations of contaminated sites and are not intended to take the place of site-specific risk assessments. In fact, the EPA's PRG User's Guide begins with the following disclaimer:

> **"Preliminary remediation goals (PRGs) focus on common exposure pathways and may not consider all exposure pathways encountered at CERCLA / RCRA sites (Exhibit 1-1). PRGs do not consider impact to groundwater or address ecological concerns. The PRG Table is specifically not intended as a (1) stand-alone decision-making tool, (2) as a substitute for EPA guidance for preparing baseline risk assessments, (3) a rule to determine if a waste is hazardous under RCRA, or (4) set of final cleanup or action levels to be applied at contaminated sites."**

Importantly, the PRG for dioxin is for carcinogenic endpoints only. And, even at that, it was calculated based on outdated carcinogenicity factors. The PRG does not take into consideration the non-cancer effects of dioxin exposure. It is well known that dioxin is much more concerning as a reproductive toxin than as a carcinogen. Dioxin is an endocrine disrupting chemical with particularly devastating effects on mammalian fetuses. Even more important than the dose is the time during gestation that a fetus is exposed.

Finally, there has been no analysis of the ecological effects of the dioxin on the nearshore benthic communities, or the fish and mammal species impacted by the increased dioxin load in the water column and the bioaccumulation and biomagnification that would occur once the dioxin-laden sediments settle in the nearshore environment.

We do agree with the EPA's conclusion:

> "[d]isposal at the Humboldt Open Ocean Disposal Site (HOODS) would even further reduce any potential exposure. The HOODS location was chosen specifically to avoid high value aquatic habitats, fishery areas, or human use areas to the maximum extent

> possible. Furthermore it is a depositional area, so project sediments discharged at HOODS would not disperse as far and would soon be buried by greater volumes of (generally even cleaner) material from ongoing federal channel maintenance dredging, further reducing exposure."

In conclusion, Humboldt Baykeeper is not opposed to the maintenance dredging but firmly believes that the dredge materials should be properly disposed of at the EPA designated HOODS. Disposal at HOODS is a practicable and less environmentally damaging alternative to this proposal.

Thank you for your consideration of this matter. Please feel free to contact me at any time if you have any questions.

Sincerely,

_____/s/_____

Pete Nichols, Director
707.268.0664