6.0 WATER QUALITY

6.1 BACKGROUND AND SETTING

6.1.1 Beneficial Uses

The general Humboldt Bay water quality setting was included in subsection 4.3.3 of Chapter 4, Section II, Volume I, of the Draft Management Plan, which is an element of this Draft EIR. The Draft Plan setting description is adequate for characterizing most water quality concerns for this document, and the description is excerpted below. However, the Humboldt Bay water quality setting also includes some additional water quality-related elements that are germane for this EIR, summarized below.

> The ambient water quality in Humboldt Bay is generally good, being determined largely by the quality of the water that enters the Bay from the nearshore Pacific. Measured water quality parameters vary through an annual cycle, with water in the Bay being generally warmer than the water in the near-shore Pacific. Water quality parameters vary seasonally and geographically; for example, water in northern Arcata Bay may be both fresher and colder in winter, and warmer and saltier in summer, than in Entrance Bay. Water quality parameters in Entrance Bay, which are significantly influenced by water in the near-shore Pacific, vary in concert with near-shore water quality; during periods of coastal upwelling, for example, Entrance Bay's waters are often colder and saltier than at other times.
>
> The essential water quality requirements for Humboldt Bay are established by the Water Quality Control Plan for the North Coast Region (the "Basin Plan;" North Coast Regional Water Quality Control Board 2001).[1] The Basin Plan establishes "objectives" for Humboldt Bay, in order to carry out the basic policy that existing "beneficial uses" be maintained and that existing water quality not be degraded. The Bay's beneficial uses are summarized in (EIR Table 6-1). The Basin Plan includes numerical criteria for a number of pollutants, but the "narrative criteria" described in the Basin Plan as objectives, together with the basic "antidegradation policy" and the required maintenance of beneficial uses, constitute the overarching state mandate for water quality in Humboldt Bay.

EIR Table 6-1. Humboldt Bay's Designated Beneficial Uses.

Beneficial Use	Description
Municipal and Domestic Supply (MUN)[1]	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
Agricultural Supply (AGR)	Crop, orchard, and pasture irrigation, stock watering, support of vegetation for range grazing, and all uses in support of farming and ranching operations.
Industrial Service Supply (IND)	Uses that do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel

[1] Many water quality plans and policies exist in California, including a number that affect Humboldt Bay. See URL: http://www.waterboards.ca.gov/plnspols/index.html. (Site viewed January 2005.)

Beneficial Use	Description
	washing, fire protection, and oil well repressurization.
Freshwater Replenishment (FRSH)[1]	Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).
Navigation (NAV)	Commercial and naval shipping.
Water Contact Recreation (REC-1)	All recreational uses involving actual body contact with water, such as swimming, wading, water-skiing, skin diving, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.
Non-Contact Water Recreation (REC-2)	Recreational uses which involve the presence of water but do not require contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting, and sightseeing and aesthetic enjoyment in conjunction with the above activities.
Ocean Commercial and Sport Fishing (COMM)	The commercial collection of various types of fish and shellfish, including those taken for bait purposes, and sport fishing in oceans, bays, estuaries, and similar non-freshwater areas.
Cold Freshwater Habitat (COLD)	A cold water habitat to sustain aquatic resources associated with a cold water environment.
Wildlife Habitat (WILD)	Water supply and vegetative habitat for the maintenance of wildlife.
Preservation of Rare and Endangered Species (RARE)	Aquatic habitat necessary, at least in part, for the survival of species established as rare and endangered species.
Marine Habitat (MAR)	Provides for the preservation of the marine ecosystem, including the propagation of fish, shellfish, marine mammals, waterfowl, and vegetation such as kelp.
Fish Migration (MIGR)	A migration route and temporary aquatic environment for anadromous and other fish species.
Fish Spawning (SPWN)	A high quality aquatic habitat especially suitable for fish spawning.
Shellfish Harvesting (SHELL)	The collection of shellfish such as clams, oysters, abalone, shrimp, crab, and lobster for either commercial or sport purposes.
Estuarine Habitat (EST)	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
Aquaculture (AQUA)	Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation,

Beneficial Use	Description
	maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
Native American Culture (CUL)[1]	Uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving and jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses.

Notes:

1 These beneficial uses were added for Humboldt Bay based on the Basin Plan edition of March 2005.

> As a general result, most of the ambient water quality parameters that affect biological populations in Humboldt Bay remain favorable throughout the annual cycle. The upwelling that brings colder bottom waters to the surface along the coast is associated with reduced dissolved oxygen concentrations in Bay waters, which may not meet the narrative criteria in the Basin Plan, but this variation is, effectively, a natural phenomenon rather than a Basin Plan violation. ...
>
> In general, the District does not exercise direct regulatory authority over water quality in Humboldt Bay. The District does, however, have the authority to regulate certain uses within the Bay that may be associated with water quality concerns. In these circumstances, the District may require practices or physical measures that have been demonstrated to have beneficial effects on water quality.

In reviewing this EIR chapter, readers should bear in mind the admonition that the District lacks direct jurisdiction over water quality. Federal and state laws regulating shipping and water quality effectively constrain the District to a local collaborative role, with little or no effective authority to develop or enact additional regulations covering pollution prevention and/or response. The District may (and does) work within the groups of cooperating federal, state, and local agencies that address pollution prevention or response in Humboldt Bay. The District may also work cooperatively with upland land use jurisdictions (Humboldt County and the cities), and with state and federal agencies that own land in the Humboldt Bay watershed, to address pollution issues in the watershed, but the District lacks the legal authority to mandate actions by those entities to address polluted runoff from these near-bay lands. The District may not require actions by upland land owners directly, unless those landowners are seeking an approval or permit from the District for an action that directly affects Humboldt Bay.

From a regulatory perspective, an additional level of regulatory review and oversight is provided by the California Coastal Act and the related federal Coastal Zone Management Act. Both of these laws, and the associated state and federal regulatory programs, include policy guidance that "polluted runoff" shall not degrade the quality of the coastal environment and adversely affect important Coastal Zone resources and uses. The State of California has developed an integrated regulatory program for nonpoint-source pollution concerns in the Coastal Zone that includes all of the regulatory and trustee agencies exercising jurisdiction there, and that program is

directly applicable to the regulation of water quality in Humboldt Bay.[2] However, the explicit authority for regulating water quality in California, including the water quality in the Coastal Zone, remains with the State Water Resources Control Board and the relevant Regional Boards.[3] The summary presented above and the policy considerations identified in the Draft Management Plan are focused on the District's development of an appropriate water quality management plan for the bay, in conjunction with the North Coast Regional Board and other relevant federal, state, and local agencies. Thus the Draft Plan encapsulates an appropriate District focus on water quality regulation.

It may be noted in passing that environmental relationships related to hydrology *per se* are covered in Chapter 4.0 and sedimentation is addressed in Chapter 5.0.

6.1.2 Polluted Runoff

The water quality setting in subsection 4.3.3 of Chapter 4, Section II, Volume I, of the Draft Plan also addressed the effects of the entrainment of pollutants into runoff into Humboldt Bay.

> More significant water quality concerns arise as a consequence of surface runoff from the lands surrounding the Bay. Surface streams draining developed areas deliver a variety of toxic and nontoxic nonpoint source pollutants to Humboldt Bay (EIR Table 6-2), although the pollutant loadings are generally within limits that are consistent with the Basin Plan. Potential water quality concerns related to individual waste treatment systems in unincorporated parts of the watershed remain an ongoing issue with respect to bacterial pollution in the Bay. Runoff from agricultural lands in the Bay's watershed seasonally delivers elevated bacterial loadings to the Bay, which may exceed the standards in the Basin Plan and also exceed California Department of Health Services standards for waters from which maricultural products are harvested. Maricultural operations are normally suspended until the Bay's water quality returns to levels that comply with the established requirements.

EIR Table 6-2. Sources of Urban Runoff Pollutants (Source: USEPA 1993).

Source	Pollutants of Concern
Erosion	Sediment and attached soil nutrients, organic matter, and other adsorbed pollutants.
Atmospheric Deposition	Hydrocarbons emitted from automobiles, dust, aromatic hydrocarbons, metals, and other chemicals released from industrial and commercial activities.
Construction Materials	Metals from flashing and shingles, gutters and downspouts, galvanized pipes and metal plating, paint,

[2] See URL: http://www.coastal.ca.gov/nps/npsndx.html (viewed January 2006) for an overview of the Coastal Zone water quality program, and follow the embedded link to the "Nonpoint Source Program."

[3] See the summary 2004 report prepared by the SWRCB and the California Office of Administrative Law at URL: http://www.swrcb.ca.gov/nps/docs/oalfinalcopy052604.doc (viewed January 2006).

Source	Pollutants of Concern
	and wood.
Manufactured Products	Heavy metals, halogenated aliphatics, phthalate esters, polycyclic aromatic hydrocarbons, other volatiles, and pesticides and phenols from automobile use, pesticide use, industrial use, and other uses.
Plants and Animals	Plant debris and animal excrement.
Non-Stormwater Connections	Inadvertent or deliberate discharges of sanitary sewage and industrial wastewater to storm drainage systems.
Onsite Disposal Systems	Nutrients and pathogens from failing or improperly maintained or sited systems.

The admonition that the District does not regulate water quality in Humboldt Bay applies even more strongly in this subject area, because the District also does not regulate upland land uses and cannot require actions by local governments controlling upland land uses or by the landowners themselves. Polluted runoff in the coastal zone is a significant concern for state water quality regulators, however, and for the USEPA (see, for example, USEPA 1993). A complete description of the nature and requirements of the programs adopted by these regulatory agencies is beyond the scope of this EIR, but it is relevant that the State Water Resources Control Board requires that local governments having significant populations are required to develop stormwater management plans for addressing polluted runoff.[4]

Even though the District lacks regulatory control over polluted runoff, the effects of nutrient enrichment within the bay on a variety of ecosystem-related topics is a management concern for the District and a subject that must be addressed to some extent in the Draft Plan. Nutrient enrichment, especially enrichment by nitrogen (and to a lesser extent by phosphorus) is a concern for coastal embayments everywhere in the United States (see, e.g., Haworth and others 2000). Managing the Humboldt Bay ecosystem requires attention to these terrestrial inputs (Guerry 2005).

The Draft Plan (Policy CAE-4) directs the District to collaborate actively with the local, state, and federal agencies that are charged with managing stormwater runoff in order to minimize the impacts of polluted runoff on Humboldt Bay, and to make appropriate findings regarding the degree of polluted runoff prevention achieved by District projects and by projects that are approved by the District.

6.1.3 Section 303(d) "Impaired" Status for Humboldt Bay

The federal Clean Water Act (CWA), in addition to the requirements summarized in the Draft Plan description, also includes requirements, in Section 303, for water bodies that are "impaired," and which consequently do not meet adopted state and/or federal water quality requirements. Such "impaired" water bodies or segments of water bodies

[4] See URL: http://www.swrcb.ca.gov/stormwtr/index.html for additional information (viewed November 2005).

are subject to the development of "Total Maximum Daily Load" (TMDL) waste allocations pursuant to requirements in the CWA and the Porter-Cologne Act.[5]

Humboldt Bay is included in the U.S. Environmental Protection Agency (USEPA)-approved "303(d) list" of impaired waters in California.[6] The bay is listed as impaired for polychlorinated biphenyls (PCBs), although the source(s) of the PCBs is/are unknown. PCBs are known to be associated with a number of adverse health and environmental effects.[7] Humboldt Bay was added to the list of impaired waters by the USEPA after having not been included in the state's submittal to the USEPA pursuant to the requirements of CWA section 303.[8] The listing was applied to 16,075 acres of the bay; that is, the listing includes essentially the entire bay.

The specific reasoning cited by the USEPA for adding Humboldt Bay to the list incorporated the following text (enclosure[9] to 2003 EPA letter to SWRCB, page 7):

> "Humboldt Bay PCBs (RB 1)
>
> "The North Coast Basin Plan contains a narrative water quality standard that prohibits pollutants at levels toxic to aquatic life or human health (North Coast RWQCB, 1993, pp. 3-4.00). The State used maximum tissue residue levels (MTRLs) as a screening method to evaluate whether pollutant levels in fish exceeded safe levels, and EPA concurs that MTRLs are appropriately used for this purpose. EPA's review of available fish tissue data for Humboldt Bay found that MTRLs for PCBs were exceeded in 4 out of 5 samples. Available data and MTRLs were not divided by individual PCB compound, therefore this analysis focuses on PCBs as a group. We note the State listing methodology suggests that "for measurements that integrate environmental conditions (like measurements of contaminants in fish tissue) at least two samples were usually sufficient (to support an assessment)" (listing report, p. 7). EPA concludes that these data provide a sufficient basis for concluding that the narrative water quality standard for toxicity contained in the North Coast Region Basin Plan is exceeded. (footnote omitted) The State provided an insufficient rationale to support its conclusion that inadequate data were available to support a listing. EPA is establishing a low priority ranking for this listing based on the judgement that there is no direct evidence of beneficial use impacts in the record at this time and additional monitoring and assessment are appropriate to verify this listing before developing a TMDL."

That is, the Bay was listed as impaired on the basis of positive test results for the presence of PCBs in a small number of tests of fish tissue samples collected somewhere in the bay. Neither the SWRCB nor the USEPA identified apparent adverse

---

[5] See URL: http://www.waterboards.ca.gov/tmdl/303d_lists.html for additional information (viewed October 2005).

[6] See the 2003 EPA letter from Regional EPA Administrator Alexis Strauss to the State Water Resources Control Board (SWRCB) at this URL: http://www.waterboards.ca.gov/tmdl/docs/2002reg1303dlist.pdf (viewed October 2005).

[7] See URL: http://www.atsdr.cdc.gov/tfacts17.html for additional information (viewed October 2005). There are numerous other sources of information about PCBs online.

[8] See URL: http://www.waterboards.ca.gov/tmdl/docs/ca02letterfinal703.pdf (viewed October 2005).

[9] See URL: http://www.waterboards.ca.gov/tmdl/docs/epaenclosure2_703.pdf (viewed October 2005).

effects on any of the Beneficial Uses identified for Humboldt Bay, and the "priority" for developing a TMDL for the "impaired" bay was agreed to be "low."

The environmental fate of PCBs is summarized in the cited Centers for Disease Control factsheet thus:

> What happens to polychlorinated biphenyls (PCBs) when they enter the environment?
>
> - PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.
> - PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.
> - PCBs do not readily break down in the environment and thus may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.
> - PCBs are taken up by small organisms and fish in water. They are also taken up by other animals that eat these aquatic animals as food. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.

See the factsheet for additional information.

6.1.4 Dioxin and Similar Toxic Materials Associated with Past Land Uses

"Dioxin" is one of a number of chemical compounds that are created as byproducts or contaminants when chemically complex hydrocarbon structures are reacted commercially to add chlorine to one or more of the constituents.[10] That is, dioxin is not a formulated product, but it occurs as a constituent in a variety of commercial-grade products containing chlorine, including herbicides and pesticides, as well as compounds used to inhibit biological activity in other contexts. One of the categories of compounds in which dioxin has been found is wood preservatives that have active ingredients consisting of cyclic ("aromatic") hydrocarbon molecules with multiply substituted chlorine atoms. Such chemicals were used in many wood products manufacturing facilities or mills in the 1950s and 1960s as anti-fungal or preservative agents for wood products. The most widely known of these compounds (or mixtures of chemically similar compounds) was pentachlorophenol (also known as "penta" and PCP). PCP is itself a toxic material that is now banned from use in the United States.[11]

Dioxin-contaminated PCP is known to have been used at several lumber-processing mills in the Humboldt Bay region. In 2002 dioxin was detected in surveys carried out

[10] For additional information about dioxin (more formally designated as "2,3,7,8-tetrachlorodibenzo-p-dioxin" or TCDD), see URL: http://www.epa.gov/safewater/contaminants/dw_contamfs/dioxin.html (viewed November 2005).

[11] See URL: http://www.epa.gov/safewater/contaminants/dw_contamfs/pentachl.html (viewed November 2005).

at the Sierra Pacific Industries mill on the Samoa peninsula adjacent to the Mad River Slough. Detectable contamination was found in the sediments under the mill, as well as in sediments in Mad River Slough. Dioxin was also detected in oyster tissue samples from commercial mariculture beds in Arcata Bay.[12] Recent detection of dioxin in sediment has been confirmed elsewhere in Humboldt Bay, but the extent of the occurrence is uncertain.

Responses to the Notice of Preparation for this programmatic EIR requested that the EIR identify the occurrences of dioxin contamination in the Humboldt Bay region, and to identify as a likely effect of Plan implementation that PCP and related wood preservatives were likely to have been used at additional mill sites in the Humboldt Bay watershed that have not been surveyed for toxic contamination. The NOP responses develop an argument that the suspected extensive use of PCP and other preservatives around the bay has created a sort of elevated background level of contamination by PCP, similar preservatives, dioxin, and dioxin-like chemical compounds. The comments seem to infer that the Draft Management Plan represents a consensus decision among local governments that land uses at these bay-margin upland sites will somehow be determined by the Draft Plan, and consequently that the District should assume responsibility for identifying and regulating the cleanup of the presumed "toxic" sites.

The inference that the Draft Plan can "regulate" upland land uses is based on a misreading of the Draft Plan, and particularly upon a misunderstanding of the nature of the Harbor Revitalization Study, as well as a lack of understanding about land use regulation in the Humboldt Bay region in general (see Chapter 12.0 for additional discussion). The Harbor Revitalization Study was a consultant report prepared jointly for the District, the County of Humboldt, and the City of Eureka that identified ways to increase the functional importance worldwide of Humboldt Bay as a port. The Revitalization Study recommended several strategies that the three local governments might pursue to accomplish the identified goal. It was understood by all three governments that the recommendations in the study were only recommendations, and all three governments clearly acknowledged in "receiving" the study that no policy direction was established in that receipt. Several of the Revitalization Study's recommendations are carried forward into the Draft Plan (policies HLU-3 and HLU-4 are explicitly Revitalization Study recommendations).

The incorporation of the recommended policies from the study into the Draft Plan does not constitute a commitment by the District to specific projects that would occur in upland areas regulated by other agencies. The Plan commits the District to supporting coastal-dependent industrial development in the region, but only to the extent that these uses are established in the adopted land use plans of the County and the cities. The inclusion of the "intent language" in the policies of the Draft Plan *cannot* constitute actual commitments to future projects. Even if specific development projects were available, the policies in the Draft Plan would not waive any of the requirements established by the District for reviewing projects; nor could any of the other agencies that would have to approve the projects waive any requirements. In short, (1) the Draft Plan does not represent a decrease in the standards of review for

[12] See the summary at URL: http://www.waterboards.ca.gov/northcoast/geninfo/sp/062403pdf/061803FactSheet.pdf (viewed November 2005).

proposed coastal developments by the District or any other agencies; and furthermore, (2) the District lacks any authority to act for other agencies, particularly for the agencies that regulate upland land uses. The NOP responses that the District should address the cumulative effects of possible changes in upland land uses as part of the programmatic CEQA review of the Draft Plan are misdirected.

The District's authority for managing tidelands within Humboldt Bay does extend to considerations regarding possible sediment contamination adjacent to the upland sites where toxic contamination may have occurred. An application for District approval of proposed shoreline or tideland use will extend the District's legal authority to review possible environmental consequences of the proposed uses, and this nexus would allow the District to enquire as to the possible contamination of bay shoreline or bottom sediments by dioxin or other toxic materials. Nonetheless, the District has no regulatory authority to mandate a "cleanup" of any contamination found as a result of such District-required evaluations.

6.1.5 Nonindigenous Aquatic Species and Marine Fouling Communities

Exotic organisms may have significant adverse effects on the biological communities in water bodies, and these organisms may be considered to be "pollutants" to the degree that they are a result of human activities. The San Francisco Regional Water Quality Control Board has identified San Francisco Bay as "impaired" because of nonindigenous species, and a Draft TMDL for exotic species was developed for consideration by the SFRWQCB.[13]

The subject of invasive aquatic species is covered in this EIR in Chapter 11, because of the biological concerns that these species bring to Humboldt Bay's management. In addition, invasive aquatic species are regulated by the State and Federal governments largely as agents of adverse changes in aquatic communities rather than as "pollutants." The available approaches to managing exotic aquatic species associated with shipping are focused mostly on ballast water at the present time.

In the future the state and federal agencies that are charged with regulating these concerns will broaden the focus to include the possibility that invasive species may be introduced as "fouling" organisms that live on the exterior surfaces of ship hulls or in recesses in the hulls. The most direct approach to preventing introductions of fouling organisms involves applications of anti-fouling biocidal compounds in paint or in hull coatings. Such compounds typically affect ecosystems in estuaries, and generally they are regulated as possible water pollutants.

The compound that has proven to be most effective in anti-fouling use is tributyltin (TBT). However, as a biocide TBT could also be considered as a "pollutant" in waters into which TBT may leach from hull paints and coatings. At the present time the USEPA does not regulate TBT as a pollutant, but the USEPA has developed guidance criteria for TBT use that may be considered as thresholds for state (or future federal) regulation.[14]

---

[13] See URL: http://www.waterboards.ca.gov/sanfranciscobay/download/Tmdl.pdf (viewed November 2005).

[14] See URL: http://www.epa.gov/waterscience/criteria/tributyltin/ (viewed November 2005).

Within California TBT is considered a regulated compound pursuant to the requirements of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), and the state regulates the use of TBT under Division 6 of Title 3 of the California Code of Regulations, particularly Section 6488.[15] Under existing regulations, TBT may only be applied to: (1) aluminum vessel hulls; (2) vessel hulls 82 feet or more in length; and (3) outboard motors and lower drive units.

Regardless of the specific anti-fouling agents considered, the interrelationships among exotic invasive aquatic species in Humboldt Bay and methodologies used for controlling them rise to the level of a relevant concern in the bay's management, both in the short term and the long term. Given that the state's management of nonindigenous species is still developing, it is possible that the future use of compounds that could be considered in some contexts to be water pollutants may emerge as acceptable practice.

See Chapter 11.0 for additional consideration of exotic species in Humboldt Bay.

6.1.6 Releases of Toxic Materials and Other Pollutants from Ships and Watercraft

As noted above ships' hulls may be a source of water pollutants because of anti-fouling compounds. A more direct concern for water quality and aquatic ecosystem health arises as a consequence of releases from ships, including both fuel and cargoes. An additional source of potential water quality impacts arises from releases from small craft, including both commercial and recreational craft. As noted in the Draft Plan:

> The District is a member of the Humboldt Bay Oil Spill Cooperative, responsible for responding to marine-related releases of petroleum products and related toxic materials into Humboldt Bay. The District does not have direct responsibility for spill prevention or cleanup. The United States Coast Guard maintains the primary responsibility for spill prevention and cleanup in marine waters pursuant to the Oil Pollution Act of 1990. NOAA Fisheries is responsible for responding to potential effects to marine mammals. The Department of Fish and Game's Office of Spill Prevention and Response is responsible for state-level spill responses regarding wildlife and habitat.

The regulation of pollution from international and/or interstate shipping is the subject of international treaties and federal laws. A description of the current international treaty is maintained on the International Maritime Organization website.[16] A large volume of U. S. law is codified in Title 33 of the Code of Federal Regulations.[17] The State of California and local jurisdictions within the state are legally pre-empted from

---

[15] See URL: http://www.cdpr.ca.gov/docs/inhouse/calcode/subchpte.htm (viewed November 2005).

[16] See URL: http://www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258 (viewed November 2005).

[17] See URL: http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200533 (viewed November 2005).

adopting laws that are incompatible with the adopted federal acts. It should be noted that federal laws also are cross-referenced, so that federal anti-pollution laws (e.g., the Clean Water Act) are formulated to be consistent with the shipping regulations.

State laws of many kinds address a variety of pollution concerns that are "intra-state" in character. The most important of these for the purposes of this EIR include the Porter-Cologne Act and the Coastal Act, both of which mandate regulation of intrastate and local shipping and boating activities in ways that protect water quality and Coastal Zone resources.

In carrying out these laws, federal, state and local governments have arrived at cooperative arrangements to address the regulation of shipping that cover shipping activities in Humboldt Bay. Responsible agencies include the U. S. Coast Guard at the federal level and the Office of Oil Spill Prevention and Response (in the Department of Fish and Game) and the State Lands Commission at the level of state government. As the primary responsible agencies for regulating the applications of federal and state law to waterborne traffic, these agencies are also charged with carrying out the federal and state laws that regulate pollution. As noted in the Plan and in the introduction to this chapter, the District works cooperatively with these agencies to accomplish the locally desired water quality objectives in the bay.

6.2 ISSUES TO BE ADDRESSED AND THRESHOLDS OF SIGNIFICANCE

The issues before the District with respect to water quality arise primarily because of CEQA Environmental Checklist items concerned with water quality: (i) item VIII.a addresses a potential violation of water quality standards of existing water quality-related permits; (ii) item VIII.e addresses possible increases in polluted runoff, and (iii) item VIII.f addresses other possible sources of water quality degradation. All of these items were identified in the Initial Study (see Appendix A) as potential environmental concerns arising from the adoption of the Management Plan.

Comments received in response to the Notice of Preparation indicated that some commenters felt that this EIR should address all future upland uses that could affect water quality (item VIII.a), even though the Initial Study clearly indicated that the District lacked the authority to address this concern.

In addition, the Environmental Checklist noted in the discussion under items VIII.a and VIII.b that shipping could be associated with increased risks of accidental releases. Hence most of the concerns summarized above were identified in the preliminary environmental review.

Comments made to the District in response to the NOP also raised the additional issue that the District (and this EIR) should address assessments of toxic materials in the Humboldt Bay region; while the District has very limited authority to regulate toxic materials, this comment is germane for limited aspects of the activities covered by the Management Plan.

Thresholds of significance for such concerns in a programmatic environmental document crafted for a management plan are not easily drawn. This EIR adopts the "threshold of significance" convention throughout the EIR that the potential

environmental effect of the plan would be significant if the proposed policies in the plan increase the potential for occurrence of a possible environmental effect (impact) beyond the degree that would exist if the policies recommended in the plan were not carried out. The assessment of the effect of the plan for each particular issue requires a judgement regarding the likelihood that the plan will lead to actions that will create or exacerbate adverse conditions that would not occur without the plan. If a reasonable argument is possible that the Plan's policies would exacerbate a possible adverse condition, or create a new adverse condition that does not occur at the present time, then the effect of the Plan is judged to be environmentally significant.

6.3 PROGRAMMATIC ENVIRONMENTAL CONSEQUENCES OF PROPOSED PLAN AND PLAN ALTERNATIVES

6.3.1 "No Project" (Existing Master Plan)

The existing 1975 Master Plan does not provide explicit policy direction for any of the concerns identified in this chapter. Chapter IV of the "Master Plan" includes a single policy recommendation: "Support water quality control programs" (page IV-27). The Master Plan did, however, include a number of comments indicating that good water quality in the bay was important for maintaining the bay's environmental resources, as well as to assure the success of mariculture operations within the bay. In implementing the Master Plan, the District adopted Ordinance No. 7, which includes the following policy guidance in Section 9:

> "(b) The discharge of physical, biological, or chemical pollutants that are detrimental to the natural environment of Humboldt Bay shall be eliminated and prohibited.
>
> "(c) Studies of the Humboldt Bay environment and of existing potential sources of pollution in Humboldt Bay shall be encouraged and promoted."

These policies provide the only explicit direction for District decision-making regarding ambient water quality in Humboldt Bay that resulted from the 1975 Master Plan.

This EIR finds that the Draft Management Plan includes a substantially greater focus on detailed steps and measures for avoiding, reducing, or offsetting potential water quality impacts of bay management than does the 1975 Master Plan. A continued reliance on the 1975 Master Plan and the existing District working relationships with local, state, and federal agencies that address water quality would ultimately result in less water quality protection than would occur under the implementation of the Draft Plan.

6.3.2 Proposed Management Plan

Implementing the Draft Humboldt Bay Management Plan could lead to potential actions that could affect water quality in Humboldt Bay. The policies would produce these effects indirectly, as a consequence of implementing actions or activities that could occur in carrying out some of the policies. The following policies in the Draft Plan appear to have a potential for producing adverse effects on water quality.

<u>Harbor Policies:</u>

- HLU-6: Develop "specific plans" for District-owned parcels

- HSM-2: Develop standards for new and existing Humboldt Bay shoreline protection
- HSM-6: Require the use of non-structural shoreline protection where feasible and appropriate
- HWM-2: Dredging may be authorized to meet Plan purposes
- HWM-3: Re-deposition of dredged materials within Humboldt Bay may be authorized to meet Plan purposes
- HWM-4: Placement of fill within Humboldt Bay may be authorized to meet Plan purposes
- HWM-7: Evaluate channel maintenance alternatives for the community of King Salmon
- HFA-2: Protect appropriately designated shoreside areas for the development, maintenance, or expansion of commercial fish processing and aquaculture facilities or activities
- HFA-4: Identify additional aquaculture opportunities in Humboldt Bay

Recreation Policies:

- RFA-2: Project approvals shall incorporate public access and associated services and amenities where appropriate
- RFA-3: Water-oriented recreation facilities; access for fishing and shellfish harvesting
- RSA-1: Improvement and provision of boat launch sites
- RSA-2: Assistance to, maintenance of, and consideration of marinas
- RSA-3: Considerations for live-aboard boats
- RSA-9: Support for a water trails program for Humboldt Bay

Conservation Policies:

- CAS-5: Fill placement may be used for habitat enhancement purposes
- CEP-1: Impacts to streams, wetlands, estuaries, and coastal waters may be authorized for specific purposes or project types
- CEP-2: Dredging may be approved under specified conditions
- CEP-3: Revetments, breakwaters, and other shoreline structures may be approved under specified conditions

The Draft Management Plan is intended to provide a "self-mitigating" programmatic management program for Humboldt Bay. In general, the goal in such an approach is to assure that policies that could result in adverse effects are accompanied by other policies that moderate or prevent possible adverse effects. For example, while policies CAS-5, CEP-1, CEP-2, and CEP-3 could be associated with activities having adverse effect on water quality, policies CEP-4 through CEP-11 were included in the Draft Management Plan explicitly to assure that no adverse long-term impacts remain as a consequence of Plan implementation. However, as noted throughout this EIR, the Plan's success in avoiding impacts depends entirely on the full implementation of all of the Plan's policies.

6.3.2.1 Designated Beneficial Uses

The policies identified above could affect a number of the beneficial uses identified in Table 6-1 above. The potential for adverse effects appear likely to be mediated primarily through the mobilization of sediment associated with construction or maintenance actions, or through the possible release of toxic materials. These impact modalities appear most likely to affect the following beneficial uses adversely:

- Navigation (NAV) — Commercial and naval shipping.
- Water Contact Recreation (REC-1) — All recreational uses involving actual body contact with water, such as swimming, wading, water-skiing, skin diving, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.
- Wildlife Habitat (WILD) — Water supply and vegetative habitat for the maintenance of wildlife.
- Fish Spawning (SPWN) — The collection of shellfish such as clams, oysters, abalone, shrimp, crab, and lobster for either commercial or sport purposes.
- Shellfish Harvesting (SHELL) — The collection of shellfish such as clams, oysters, abalone, shrimp, crab, and lobster for either commercial or sport purposes.
- Estuarine Habitat (EST) — Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
- Aquaculture (AQUA) — Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

As noted in the introduction to this subsection, the Draft Humboldt Bay Management Plan incorporates a number of policies (particularly in the Conservation section of the Plan) that are focused on avoiding, reducing, or offsetting potential impacts that would be reasonably predictable effects of the other policies in the Plan. This EIR finds that the implementation of the combination of policies in the Draft Plan will mitigate the reasonably predictable effects on beneficial uses during the typical application of the policies, and that additional policies to provide further mitigation are unnecessary in order to comply with CEQA's requirements for adopting the Plan.

6.3.2.2 Stormwater and Polluted Runoff

The majority of the policies identified above are unlikely to result in significant polluted runoff, because the policies do not address upland areas from with pollution would "run off" into the bay. For the majority of the subjects covered by the Plan, Policy CAE-4 will serve as adequate mitigation (i.e., no significant effects are expected,

presuming that the standards in the resulting plan meet state requirements for addressing polluted runoff).

Some policies (e.g., HSM-2) may be associated with implementation projects that do result in minor volumes of polluted runoff. This EIR finds that the water quality management plan identified as resulting from Policy CAE-4 will also include construction-related measures that will reduce these possible effects to less-than-significant levels.

Policy HLU-6 requires site-specific planning for District-owned sites. In implementing this policy, the District can identify potential impacts from polluted runoff categorically. When the water quality management plan required by Policy CAE-4 is developed, descriptions of the appropriate mitigation measures can be enlarged.

This EIR finds that the Draft Plan does not require additional policy elements to address polluted runoff sufficiently to meet the requirements of CEQA for adopting the Plan.

6.3.2.3 "Impaired" Status of Humboldt Bay

The Draft Humboldt Bay Management Plan does not currently address the "impaired" status of the bay. This is a subject that may reasonably be considered a focus of the Draft Plan, and this EIR finds that the Plan should explicitly incorporate the District's participatory role in managing the bay's water quality. An additional policy element should be added to the Draft Plan to address this concern (see Section 6.4 below).

6.3.2.4 Toxic Materials and Past Land Uses

Notwithstanding comments to the District following the release of the NOP regarding the District's CEQA obligations to address toxic contamination at upland land uses near Humboldt Bay, it remains true that the District lacks any authority to address either toxic materials as a subject or land uses in upland areas (except those on District-owned land) as a subject. Therefore this EIR does not identify potential contamination of upland areas as an adverse effect of the Draft Plan (even though the EIR acknowledges that such contamination may exist); the issue of upland contamination is not germane for the Draft Plan.

Possible contamination of bay sediments and aquatic life by dioxin or other toxic materials is a relevant subject for the Draft Plan and this EIR. The District is not charged under existing state of federal law with regulating these concerns, and has no legal authority to do so. However, the association of toxic materials with sediments or tideland locations regulated under the Draft Plan brings the possible issue of toxic materials in bottom sediments under the District's (and the Plan's) aegis. Given the commitment in Policy CAE-4 to collaboratively develop a water quality management plan for Humboldt Bay, this EIR finds that a modification of the policy language in the Draft Plan is appropriate.

6.3.2.5 Nonindigenous Organisms and Antifouling Compounds

While it is possible that nonindigenous organisms may be considered to be a "water pollutant," these organisms are closer in effect to being biological pollutants, and this subject is considered in Chapters 8.0 and 11.0. The use of antifouling compounds in

hull treatments may, however, be a significant water quality concern. As noted in the setting description above, antifouling compounds (the primary compound in use being tributyltin) are regulated by the State of California, and there is "guidance" for the appropriate management of this compound from the USEPA.

The District is pre-empted by existing state regulations from adopting local regulations for TBT or other anti-fouling compounds that are more stringent than those established by the State of California. It appears likely that the District's best option for establishing specific requirements for antifouling compounds in Humboldt Bay would be to include these compounds in the discussions during the development of the water quality management plan required under Policy CAE-4. Additional policy language does not appear to be necessary in order to meet the requirements of CEQA for adopting the Draft Plan.

6.3.2.6 Shipping and Pollutant Releases

The District lacks jurisdiction for regulating the content of cargoes that enter Humboldt Bay, a subject reserved to the federal government. In addition, agencies of the federal and state governments (as noted in the setting description above) have been allocated the responsibility for cleaning up intentional or inadvertent releases of pollutants from vessels in the Bay. The Draft Plan incorporates policy language (Policy HTN-2) directing the District to collaborate with the responsible federal and state agencies.

The Draft Plan also includes policy language (Policy HTM-1) that directs the District to engage in educating members of the public and staff from other agencies about toxic materials and their effects on the aquatic ecosystem in Humboldt Bay.

This EIR finds that these policies address the District's CEQA obligations for adopting the Draft Plan and that additional policy language addressing a District role in toxic cleanups is not required.

6.3.2.7 Future Land Uses

As noted many times in the Plan and in this EIR, the District has no authority to regulate land uses in uplands adjacent to Humboldt Bay (although the District may be able to assert a legally viable "local government sovereignty" argument with respect to upland sites that are owned by the District). Upland land uses are regulated by other government entities, including local agencies (the County of Humboldt and the cities of Eureka and Arcata) and, to some extent, state agencies (e.g., the Coastal Commission, within the Coastal Zone). As a matter of law, future land uses are controlled by the adopted planning documents of these entities, and no proposed upland land use may be developed without approvals from these regulatory agencies. Such possible future land uses include "coastal-dependent" or "water-dependent" industrial uses adjacent to Humboldt Bay.

Notwithstanding comments received in response to the NOP, this EIR is not obliged to speculate about possible future industrial land uses that may occur. Moreover, the EIR is explicitly required by CEQA to avoid guessing about the environmental consequences of actions that can only be regarded as "speculative." The Draft Management Plan does not identify or "pre-authorize" specific uses, land use district

designations, or other specific actions that may or may not occur. Speculating about possible water quality effects that may be associated with such projects is beyond the reach of this EIR.

Future coastal-dependent industrial projects that may be developed to carry out the Revitalization "Plan" can only be considered as "planned" when they appear in the land use plans of the local agencies that actually regulate land use, the County and the City of Eureka. At present, none of the recommendations in the Revitalization Study have been adopted as element in the plans of either agency.

6.4 POLICY CONSIDERATIONS FOR MITIGATING POTENTIALLY SIGNIFICANT PROGRAMMATIC EFFECTS

The policies recommended in the Draft Management Plan largely address the potential environmental consequences of the Plan. However, this EIR finds that a modification in the policy that directs the District to develop cooperative water-quality management plans to include concerns related to sediment contamination by PCBs is appropriate to address the bay's "impaired" status for PCBs. The same modification will expand the District's water quality focus to address possible sediment-contamination concerns because of dioxin or other toxic materials that may have entered the bay because of contamination at upland sites adjacent to the bay.

6.4.1 Water-Quality Maintenance

This EIR recommends that Policy CAE-4 be amended to read as follows (added text underlined):

CAE-4: Work cooperatively to develop and implement a water-quality maintenance plan for Humboldt Bay

Policy: The District shall consult with the North Coast Regional Water Quality Control Board, Humboldt County, the City of Arcata, the City of Eureka, and other appropriate local, state, and federal agencies, to develop and implement a plan improving and maintaining water quality in Humboldt Bay at a level that will support and promote the beneficial uses identified for Humboldt Bay in the North Coast Regional Water Quality Control Board's Water Quality Control Plan for the North Coast Region. The resulting Humboldt Bay Water Quality Management Plan shall consider the potential effects of all management actions carried out by the District, the potential effects of all actions approved by the District, the potential effects of actions carried out or approved by other jurisdictions and parties within the Humboldt Bay watershed, the effects of land use in the watershed on runoff processes affecting Humboldt Bay, and the potential contribution of existing pollutants to water quality maintenance and the achievement of beneficial uses in Humboldt Bay. The District shall adopt findings with respect to the requirements of this plan when approving District operational programs or when approving any application for project approval submitted to the District.

With the incorporation of this additional policy language, this EIR finds that the Draft Plan comports with CEQA's requirements addressing water quality in a planning context. Additional mitigation is not required. (Note: additional text will be added to this measure to address watershed-related hydrological concerns; see Chapter 4.0.)

This page is intentionally blank.