CALIFORNIA COASTAL COMMISSION

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STAFF REPORT: REGULAR CALENDAR

Application No.:	**2-00-005**
Project Applicant:	**County of Marin**
Location:	Waters from the shoreline of the Pacific Ocean to three miles seaward, bounded to the north by the Sonoma County line and to the south by the Golden Gate Bridge, including all estuaries, rivers and bays within Marin County jurisdiction (Exhibit 1).
Project Description:	Prohibition of the use and operation of motorized personal watercraft within the waters described in the project location.
Related Approvals:	County of Marin. Ordinance No. 3302 (passed and adopted on October 26, 1999).
Substantive File Documents:	**Appendix A**

1.0 EXECUTIVE SUMMARY

On October 26, 1999, the Marin County Board of Supervisors passed an ordinance (No. 3302) to prohibit use and operation of motorized personal watercraft ("PWC") within all shoreline waters of Marin County. These waters extend three miles seaward, bounded to the north by the Sonoma County line and to the south by the Golden Gate Bridge, including all estuaries, rivers and bays within Marin County jurisdiction (Exhibits 1 and 2).

The prohibition excludes "any motorized vessel or personal watercraft owned, operated or controlled by the United States, any California State agency or by any local government agency within Marin County engaged in bona fide emergency or rescue operations or other operations conducted solely to protect public health and safety."

The ordinance defines personal watercraft as "a vessel as defined in California Harbors and Navigation Code § 651(s), that is less than 12 feet in length, propelled by machinery, that is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than in the conventional manner of sitting or standing inside the vessel."

The ordinance is based on Marin County's determination that use and operation of PWC is incompatible with competing uses such as sailing, swimming, kayaking, surfing, fishing, hiking, bird watching, windsurfing, and canoeing. The ordinance states that its purpose within all shoreline waters and estuaries of Marin County is to reduce existing conflicts and limit potential conflicts between uses of the shoreline waters and estuaries of Marin County, eliminate adverse impacts to the diverse and unusual species found in the shoreline waters and estuaries of Marin County, promote overall public safety, and decrease hydrocarbon pollution that is disproportionately caused by personal watercraft.

The staff recommends approval of the project as proposed. Although the proposed prohibition of motorized personal watercraft will restrict their use for recreation, the staff finds that on balance, approval of said prohibition will protect and enhance marine resources, air quality, and many other types of recreational activities.

2.0 STAFF RECOMMENDATION

The staff recommends conditional approval of Coastal Development Permit Application No. 2-00-005.

Motion: *I move that the Commission approve Coastal Development Permit Application No. 2-00-005, subject to the conditions specified below.*

Staff Recommendation of Approval

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution

The Coastal Commission hereby **grants** permit No. 2-00-005, subject to the conditions below, for the proposed development on the grounds that (1) the development is in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures other than those specified in this permit that would substantially lessen any significant adverse impact which the activity may have on the environment.

2.1 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. 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.

4. 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.

2.2 Special Conditions

None

3.0 FINDINGS AND DECLARATIONS

3.1 Proposed Ordinance

On October 26, 1999, the Marin County Board of Supervisors passed Ordinance No. 3302, amending Chapter 11.36 of the Marin County code pertaining to the regulation of motorized personal watercraft ("PWC") within all shoreline waters and estuaries of Marin County (Exhibit 2). The proposed ordinance:

(1) defines a "Special Use Area" consistent with the definition in Section 651(v) of the California Harbors and Navigation Code, to mean "all or a portion of a waterway that is set aside for specified uses or activities to the exclusion of other incompatible uses or activities" (§11.36.020(2));

(2) establishes a Special Use Area consisting of "all waters within the territory of the County of Marin accessible from a shoreline, or the farthest extension of the shoreline of Marin County as defined by its landmarks.[1]" The portion of this Special Use Area within the Coastal Commission's retained jurisdiction includes "the shoreline of the Pacific Ocean from the Sonoma County line to the Golden Gate Bridge," extending seaward three miles, including but not limited to "all Estuaries (Estero), rivers and bays within Marin County jurisdiction" (§11.36.040(b)); and

(3) prohibits use and operation of PWC within the defined Special Use Area based on incompatibility with competing uses, such as sailing, swimming, kayaking, surfing, fishing, hiking, bird watching, windsurfing, and canoeing.[2]

The prohibition excludes "any motorized vessel or personal watercraft owned, operated or controlled by the United States, any California State agency or by any local government agency within Marin County engaged in bona fide emergency or rescue operations or other operations conducted solely to protect public health and safety" (§11.36.040(c)).

The ordinance defines personal watercraft as "a vessel as defined in California Harbors and Navigation Code § 651(s), that is less than 12 feet in length, propelled by machinery, that is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than in the conventional manner of sitting or standing inside the vessel."

PWC, including vessels referred to as Jet Skis, Sea-Doos, Waterbikes, and Wave-Runners, also have the following characteristics:

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[1] "Landmarks" include but are not limited to the farthest extension of piers, beaches, seawalls, jetties, breakwaters and docks.

[2] Marin County's authority to adopt said restriction comes from Section 268 and is consistent with Section 660 of the California Harbors and Navigation Code.

- are capable of operating at speeds up to 60 mph;
- are designed to operate closer to shore than other types of motorized vessels;
- are highly maneuverable; and
- use a two-stroke engine, rather than the four-stroke engine found on conventional recreational boats.

The ordinance is based on Marin County's determination that use and operation of PWC is incompatible with competing uses such as sailing, swimming, kayaking, surfing, fishing, hiking, bird watching, windsurfing, and canoeing. The ordinance states that its purpose within all shoreline waters and estuaries of Marin County is to reduce existing conflicts and limit potential conflicts between uses of the shoreline waters and estuaries of Marin County, eliminate adverse impacts to the diverse and unusual species found in the shoreline waters and estuaries of Marin County, promote overall public safety, and decrease hydrocarbon pollution that is disproportionately caused by personal watercraft.

3.2 Regulation of PWC in Overlapping and Surrounding Areas

Portions of the western, or ocean, shoreline of Marin County are part of the Gulf of the Farallones National Marine Sanctuary ("GFNMS"), the Monterey Bay National Marine Sanctuary ("MBNMS"), the Point Reyes National Seashore ("PRNS"), and the Golden Gate National Recreation Area ("GGNRA"). (See Exhibit 1) Each of these entities has banned, proposed banning, or significantly restricted the use of motorized personal watercraft as follows:

3.2.1 Gulf of the Farallones National Marine Sanctuary

Proposed GFNMS regulations prohibit operation of PWC in the nearshore waters of the Sanctuary, from the mean high-tide line seaward to 1,000 yards (approximately 0.5 nautical mile), including seaward of the Farallon Islands. Restricted areas include Drakes Bay, Tomales Bay, Bolinas Lagoon, Estero Americano, and Estero de San Antonio, except for an access corridor from the launch site at Bodega Harbor leading into Bodega Bay.

3.2.2 Monterey Bay National Marine Sanctuary

MBNMS regulations prohibit the operation of PWC within the Sanctuary except in four areas outside of Marin County jurisdiction (off the harbors of Pillar Point, Santa Cruz, Moss Landing, and Monterey).

3.2.3 Point Reyes National Seashore

PWC are prohibited within the PRNS boundary, from the shore seaward to one-quarter mile, including Tomales Bay *(CFR, Title 36, Chapter 1; adopted July, 1998)*.

3.2.4 Golden Gate National Recreation Area

PWC are prohibited within the GGNRA boundary, from the shore seaward to one-quarter mile; launching or landing PWC within the GGNRA is prohibited *(CFR, Title 36, Chapter 1; adopted November, 1998)*.

The City and County of San Francisco, and the City of Sausalito have also imposed PWC restrictions as follows:

3.2.5 City and County of San Francisco

PWC are prohibited within 1,200 feet of the shoreline; two 200-foot wide access corridors are provided *(via ordinance, October, 1998)*.

3.2.6 City of Sausalito

PWC are restricted to 5.0 mph within 500 feet of the shoreline between the southern City boundary and Spinnaker Point *(via ordinance, April, 1994)*.

3.3 Coastal Commission Review

Coastal Act Section 30106 states in relevant part:

> *"Development" means, on land, in or under water, …change in the density or intensity of use of land…; change in the intensity of use of water, or of access thereto;….*

Implementation of Ordinance No. 3302 would prohibit use and operation of PWC. This prohibition constitutes a change in the intensity of use of water and access thereto, which qualifies as development under Coastal Act Section 30106. Hence, the project is subject to coastal development permit requirements.

Representatives of the PWC content that the Commission is required to consider such factors as the constitutionality of the ordinance and limitations to the County's authority to regulate the use of PWC. However, the Commission's consideration of an application for a coastal development permit is limited to an evaluation of whether the proposed permit conforms with the Chapter 3 policies of the Coastal Act. Furthermore, with respect to the proposed ordinance, Coastal Act Section 30005 states in relevant part:

> *No provision of this division is a limitation on…*
>
> *(a) Except as otherwise limited by state law, on the power of a city or county to adopt and enforce additional regulations, not in conflict with this act, imposing further conditions, restrictions, or limitations with respect to any land or water use or other activity which might adversely affect the resources of the coastal zone.*

In accordance with this policy, the Commission must approve the County's application for a coastal development permit for the proposed ordinance unless it finds that the prohibition of PWC within the Special Use Area conflicts with the policies of the Coastal Act. Questions concerning conformity of the ordinance with provisions of law other than those contained in Chapter 3 of the Coastal Act are not within the scope of the Commission's review of the permit application.

3.4 Past Executive Director and Commission Actions Concerning PWC

On August 12, 1992, the Commission concurred with the consistency determination (CD-66-92) made by the National Oceanic and Atmospheric Association ("NOAA") for the designation of the Monterey Bay National Marine Sanctuary ("MBNMS"). This consistency determination includes MBNMS regulations that prohibit the operation of personal water-craft within the Sanctuary except in four areas: off the harbors of Pillar Point, Santa Cruz, Moss Landing, and Monterey. These areas were chosen to avoid injury to kelp beds and sea otters, to minimize conflicts with other recreational users, because they are accessible from launch areas, and because they encompass areas traditionally used by PWC.

On June 3, 1996, the executive director issued a negative determination (ND-53-99) for NOAA's proposal to install buoys to delineate the above described jet ski use areas within the MBNMS, finding that the project did not raise any new coastal zone effects that were substantially different than those originally reviewed by the Commission.

On August 2, 1999, the executive director issued a negative determination (ND-53-99) for NOAA's proposal to prohibit operation of motorized personal watercraft in the nearshore waters of the Gulf of the Farallones National Marine Sanctuary ("GFNMS"). The operation of PWC is prohibited from the mean high-tide line seaward to 1,000 yards (approximately 0.5 nautical mile), including seaward of the Farallon Islands. Restricted areas include Drakes Bay, Tomales Bay, Bolinas Lagoon, Estero Americano, and Estero de San Antonio, except for an access corridor from the launch site at Bodega Harbor leading into Bodega Bay. The purpose of the prohibition is to ensure that GFNMS resources are not adversely affected by PWC (e.g., critical marine bird nesting areas; coastal areas used by marine mammals for breeding, pupping, hauling-out, feeding, and resting during migration), and to help avoid conflicts among various GFNMS uses (e.g., sailing, canoeing, rowing, kayaking, swimming).

On August 12, 1999, the Commission denied the International Jet Sports Boating Association's ("IJSBA") coastal development permit application (6-99-075) to set up and hold the IJSBA Jet Ski World Finals, a temporary event, in Mission Bay Park, San Diego County.

3.5 Coastal Act Issues

Issues involving operation of PWC must be analyzed with respect to Coastal Act policies concerning water quality; marine resources and environmentally sensitive habitat areas; air quality; and public access and recreation.

3.5.1 Water Quality

Coastal Act Section 30231 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.*

PWC use two-stroke internal combustion engines, which run on a mixture of oil and gasoline, to power a jet pump or a propeller. The significant adverse effects of two-stroke engines to water quality and the corresponding impacts to aquatic organisms are well documented in the scientific literature. The two-stroke engine has seen little technological enhancement since the 1940's (Dodd XXXX). Two-cycle engines do not completely burn the fuel delivered to the combustion chamber that receives a mixture of gasoline and oil. The California Air Resources Board ("CARB") states that "[a]ccording to studies cited in the U.S. Environmental Protection Agency ("EPA") gasoline spark-ignition marine engine rulemaking, <u>conventional two-stroke engines discharge 25 to 30 percent of fuel unburned into the water</u>" [emphasis added] (CARB 1998).

Gasoline constituents released into the water from PWC include benzene, a known carcinogen, toluene, xylene, and methyl-tertiary-butyl-ether ("MTBE"). MTBE is a fuel oxygenate added to boost octane and make gasoline burn more efficiently and therefore "cleaner." MTBE is also thought to be a potential human carcinogen (CA Department of Boating and Waterways 1999). MTBE is a synthetic molecule that dissolves in water and therefore seeps into groundwater farther and more easily than other gasoline constituents. MTBE has been detected in many water sources (CA Department of Boating and Waterways 1999; Johnson 1998).

Use and operation of PWC discharge gasoline and oil, including the constituents discussed above, directly into marine waters. Environmental impacts from a two-stroke engine are especially significant because of where and how PWC are used. PWC are capable of traveling in shallow and remote areas, where waterfowl and other wildlife are most prevalent and most sensitive to environmental pollution. Hydrocarbons in gas and oil released from two-stroke motors float on the surface and settle within the estuarine and shallow ecosystems of water bodies, where marine life breeds and is most vulnerable. These areas also support many organisms at the base of the food chain, such as fish eggs, algae, shellfish, and zooplankton.

Experiments conducted in Lake Tahoe in 1997 provided evidence that ambient levels of pollutants discharged by motorized watercraft caused toxicity to both fish and zooplankton (Oris 1998). Laboratory studies indicate that the exhaust from two-stroke outboard engines has a negative impact on fish. Studies have documented the disruption of normal biological functions at a variety of levels, including cellular and sub cellular processes, (DNA adduct levels, enzyme activity) and physiological functions (carbohydrate metabolism, immune system) (Tjarnlund 1995, Balk 1994). Mussels and oysters exposed to a diluted effluent from a two-stroke outboard motor in a running seawater system displayed physiological stress, degeneration of gill tissue, and uptake of paraffin hydrocarbons from the effluent (Clark 1974). Scientists have determined that hydrocarbon pollution can bio-accumulate within the complex food web, posing a serious threat to the marine environment.

The Commission finds that based on the substantial scientific evidence discussed above, the operation of PWC in the Special Use Area causes significant adverse impacts to the quality and biological productivity of coastal and marine waters in conflict with Coastal Act Section 30231. Therefore, the Commission finds that the proposed PWC prohibition is consistent with the Coastal Act requirements to maintain the quality and biological productivity of coastal and marine waters.

3.5.2 Marine Resources and Environmentally Sensitive Habitat Areas

Coastal Act Section 30230 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 environmental 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.*

Coastal Act Section 30107.5 states:

> *"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in*

> *an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Coastal Act Section 30240 states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Biological Resources in Special Use Area

The Special Use Area supports both plant and animal life and their habitats that are both rare and especially valuable because of their special nature and role in the marine and coastal ecosystem. These species and their habitats can be easily disturbed and degraded by human activities and developments. Many of the affected species are transitory and are widely distributed throughout the Special Use Area. As such, the Commission may find that the Special Use Area, in part or in whole, is an environmentally sensitive habitat area (ESHA) as defined pursuant to Coastal Act Section 30107.5. In such case, the Commission's consideration of the proposed ordinance must address Coastal Act Section 30240, which limits the uses allowable in ESHAs. However, even if the Commission finds that portions of the Special Use Area do not fit the Coastal Act definition of ESHA, the marine resource protection requirements of Section 30230 are applicable throughout the marine and coastal water areas affected by the County's ordinance. Section 30230 states that special protection shall be given to areas and species of special biological or economic significance. As further discussed below, the Special Use Area is an area of special biological significance and is therefore subject to special protection under Section 30230.

All of the waters subject to the proposed ordinance are located in at least one marine managed area. Waters from Marin County's northern boundary to Rocky Point are located within the GFNMS. Waters from Rocky Point to Marin County's southern boundary are within the MBNMS. Waters between Tomales and Bolinas Points are within the PRNS, and from Tomales Bay to the County's southern boundary are within the GGNRA. These areas have been designated for special protection at the federal level because they contain plant and animal life and their habitats that are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The areas affected by the proposed ordinance provide habitat for at least 23 threatened and endangered species including the Humpback whale, Gray whale, Blue whale, Brown pelican, Salt marsh harvest mouse, California clapper rail, California least tern, Peregrine falcon, and Western snowy plover.

The Marin County certified Local Coastal Program (LCP) states that one of the most significant resources of Tomales Bay is the extensive eelgrass beds that are located primarily in the shallow waters at the northern end of the bay. These eelgrass beds are critical for the survival of the Black brant, a migratory bird that depends on the eelgrass for food, and are important spawning habitat for Pacific herring. The Commission has previously denied a permit application on the basis that the operation of PWC would adversely impact eelgrass. In its denial of Coastal

Development Permit Application 6-99-75 in August 1999, the Commission found that the operation of PWC could disturb eelgrass beds in shallow waters in Mission Bay, San Diego.

In a letter to the Commission's Executive Director, Frances Gulland of the Marine Mammal Center states that:

> *The Coastal waters around Marin County are important feeding and resting areas for a number of marine mammals. Harbor seals, and northern elephant seals breed at Point Reyes, these rookeries contributing significantly to the populations of these pinnipeds in California. Young, recently weaned pups of both species spend their early days learning to feed in the waters around Marin County. Any disturbance at this time can compromise feeding and early development, resulting not only in starvation but increased susceptibility to infectious diseases…*
>
> *In addition to the effects on seals, Jet Skis may also affect migrating gray whales. These marine mammals pass around the coast of Marin from November to April, during their southern and northern migrations. On the way south, the females are heavily pregnant, and any stress could result in premature parturition. In addition, some calves are born off the coast of California before reaching the calving grounds of Mexico, so any disturbance could separate mothers from calves.*

Discussion

Marin County's legislative findings in support of the proposed ordinance state:

> *PWCs are also a physical threat to wildlife because they:*
>
> - *typically travel at high speeds*
> - *can travel at high speeds in shallow water near islands and sensitive habitats*
> - *emit high-pitched whining sounds*
> - *lack low-frequency, long-distance subsurface sound which would allow wildlife enough time to avoid collisions*
> - *change pitch and sound level with every maneuver*
>
> *Numerous studies reveal that "behavior habituation" to inconsistent stimuli, such as constantly changing noise or a highly maneuverable object, often does not occur. Richard Osborne, the curator of Science Services at The Whale Museum on San Juan Island, believes that "it is doubtful that marine birds and mammals would ever be able to habituate to, or adapt to this characteristic of PWCs.*

Commission staff has reviewed numerous studies and the opinions of various experts that support the County's findings. These include a study of the disturbance effects of PWC to waterfowl conducted by the Florida Department of Fish and Game, which notes:

> *In addition to a perceived noise factor, operators [of PWC] repeatedly accelerate and decelerate during typically erratic turns and maneuvers, which frequently changes loudness and pitch. This noise factor, in conjunction with the PWC's unusually large horizontal spray compared to other power boats of similar size, has the potential to be especially disturbing to wildlife. PWCs can also travel in shallow, protected areas that are favored by foraging and loafing waterbirds."* (Rodgers 1999)

PWC are designed and marketed as high-speed thrill craft, and operate at speeds in excess of 60 mph. Unlike motorboats, PWC often operate in groups for prolonged periods of time in one location, race, frequently change course and speed, and accelerate towards the shore. PWC have shallow drafts and use jet propulsion via an impeller system, which allows them to be operated in extremely shallow water. The operation of PWC generates noise levels in the range of 75 to 115 decibels (dBA), comparable to city streets. The American Hospital Association recommends the use of hearing protection for persons exposed to sound levels exceeding 85 dBA. Frequent acceleration and deceleration, wake jumping and other maneuvers unique to the operation of PWC result in the constant change in the pitch and intensity of the noise generated. Studies show that this type of noise is particularly disturbing to both humans and wildlife. National Oceanic and Atmospheric Administration Biologist Roger Gentry states:

> *Jetskis are designed to be highly maneuverable and to accelerate quickly, which leads them to be operated with frequent course and speed changes. The unpredictability of these sounds is probably more aversive [to marine mammals] than any single physical feature of the sound, such as its frequency or absolute level.* (Gentry 1996)

In a letter of testimony to the National Oceanic and Atmospheric Administration, Audubon Canyon Ranch Resident Biologist John Kelly states:

> *Unlike other types of watercraft, MPWC often operate in shallow water adjacent to creek deltas, salt marshes, and sand spits, where shorebirds roost during high tide periods. Shorebirds are particularly vulnerable to disturbance at such sites (Burger and Gochfield 1991, Davidson 1993). Other species such as cormorants, American White and Brown Pelicans, Black Brant, and harbor seals also use these habitats. (Kirby et al. 1993) have shown that human disturbance at roost sites can force shorebirds to completely abandon an estuary. With a dwindling availability of undisturbed beaches in our area, the protection of the existing high-tide roosts from additional human disturbances could be crucial to maintaining shorebird populations in the [Gulf of the Farallones National] Marine Sanctuary.* (Kelly 1997)

Kelly's letter concludes that increased disturbance from PWC could lead to abandonment of the area, reduced reproduction, or starvation of waterfowl.

In addition to the references cited by Dr. Kelly, staff has reviewed another study that finds that PWC cause greater disturbance effects to nesting common terns than other types of motorized watercraft (Burger 1998). This study compares the disturbance effects of PWC to that of conventional motor boats. The study reports that the Common Tern colonies with the lowest reproductive success in the study area were those that were exposed to PWC. Burger attributes this finding, in part to differences in the manner that the watercrafts are operated, stating:

> *The speed of boats was not independent of the type of boat… motor boats normally followed maritime law and passed slowly through the appropriate channel (although some left a wake). PWCs did not seem constrained by maritime law… only the PWCs raced, and sit-down PWCs went especially fast.*

Burger goes on to state:

> *…PWCs sometimes ran up on the edge of nesting islands and over nests, and that in most colonies the entire breeding population flew up when a PWC came near the island.*

> *Overall, these observations clearly indicate that the birds responded negatively to the presence of boats, and that they responded significantly more to PWCs than to motor boats.*

In addition to impacts to waterfowl, the operation of PWC adversely affects other marine life. Studies conducted in Baja California, Mexico showed that gray whales are more likely to respond to approaching vessels operating at high speed. Approaching boats caused least disturbance when they travelling at slow, steady speeds (Swartz and Jones 1978). Studies conducted in Bolinas Lagoon report that hauled out harbor seals were disturbed more frequently by water craft that approached within 100 meters and that boats that directly approached seals more frequently caused flight as compared with vessels that passed by (Swift and Morgan 1993; Allen et al. 1984). Research on hauled out sea lions also suggests that approach by boats within 100 to 200 meters elicit the most frequent reactions (Richardson et al. 1995).

Unlike conventional motor boats with propellers, the noise generated by PWC lack a low frequency component, which travel farther in water than the high frequency sounds that PWC produce. Combined with their high speed and unpredictable, erratic course, the lack of low frequency sound is believed to increase the risk of collisions between PWC and marine mammals. Richard Osborne, the Curator of Science Services at The Whale Museum on San Juan Island, Washington, states in report to the San Juan County, Washington, Board of Commissioners:

> *Each year about 2% of dead harbor seals that are investigated by the San Juan County Marine Mammal Stranding Network show clear signs of a boat collision. We are fairly confident that boat collisions are more often a cause in mortality in many instances where postmortem examination does not reveal an obvious cause of death. Furthermore, these deaths are also likely the result of collisions with the small percentage of boats that do travel at high speeds equivalent to PWCs.* (Osborne 1996).

Based on the evidence discussed above, it is clear that the operation of PWC is harmful to the marine resources including sensitive species and habitat areas found in the Special Use Area. These impacts are of particular concern because the number of PWC in use is growing rapidly. As of December 31, 1998, there were approximately 161,000 PWC registered in California, comprising 18 percent of registered vessels in the State (CA Department of Boating and Waterways June, 1999). Because of a 10-fold growth rate in the last decade, PWC represent the fastest-growing segment of the recreational boating industry.

Coastal Act Sections 30230 and 30240 require that marine resources and environmentally sensitive habitat areas are protected from harmful effects. In light of the overwhelming evidence of the adverse effects of PWC to water quality and aquatic organisms, enactment of the proposed ordinance is necessary to carry out the requirements of Coastal Act Sections 30230 and 30240. Marin County's proposed prohibition of the use and operation of PWC will prevent discharge of oil and gas into the marine waters and environment, thereby:

- maintaining and enhancing marine resources pursuant to Coastal Act Section 30230;
- helping to ensure that uses of the marine environment are 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 pursuant to Coastal Act Section 30230;

- maintaining the biological productivity and the quality of coastal waters, streams, wetlands, and estuaries, pursuant to Coastal Act Section 30231; and
- protecting against disruption of environmentally sensitive habitat areas pursuant to Coastal Act Section 30240.

Coastal Act Section 30240(a) requires not only that the habitat values of ESHAs shall be protected from any significant disruption, but it also limits uses within ESHAs to those that are dependent on the resources of the area. While the use of PWC is dependent on water, it is not dependent on the specific waters of the area subject to the proposed ordinance. Furthermore, 30240(a) only allows resource dependant uses that do not result in significant disruption of the habitat. As discussed above, the use of PWC within the Special Use Area does cause significant disruption of environmentally sensitive habitat areas, and would therefore not be an allowable use under 30240(a) even if it was a use dependant on the resources of these specific waters. Therefore, the proposed ordinance does not conflict with allowance of resource dependant uses contained in Coastal Act Section 30240(a).

As discussed in Section 3.6 below, federal and state regulations have been enacted to reduce emissions and bring about cleaner-burning engines. However, these regulations are not specifically designed to protect estuarine and nearshore environments, marine resources or water quality. The regulations are aimed at decreasing exhaust, particularly hydrocarbons ("HC"), which are primary components of volatile organic compounds ("VOCs"), and oxides of nitrogen ("NOx").

The proposed ban appropriately applies the precautionary principle in protecting and maintaining its sensitive coastal resources and waters. In fact, similar restrictions and bans have been enacted for inland and coastal water bodies worldwide:

- The Tahoe Regional Planning Agency ("TRPA") adopted new regulations banning PWC and carbureted two-stroke engines greater than 10 HP, other than auxiliary sailboat engines, from Lake Tahoe as of June, 1999;
- A ban on non-direct fuel injection engines purchased before January 27, 1999, two-stroke auxiliary sailboat engines, carbureted two-stroke engines of 10 HP or less, and engines that meet only the USEPA 2001 standard will go into effect in October, 2001;
- The East Bay Municipal Utilities District passed an ordinance prohibiting all gas-powered vessel engines on San Pablo Reservoir (Contra Costa County) as of January 1, 2002;
- The Santa Clara Valley Water District banned PWC on Anderson Reservoir and all two-strokes on Calero Reservoir;
- Austria, Germany, and Switzerland passed regulations to keep most two-stroke motors off of Lake Constance in 1991;
- Switzerland banned most two-stroke motors on all Swiss waters in 1993; and
- Venezuela has banned PWC in three national parks with beach frontage.

Conclusion – Marine Resources and Environmentally Sensitive Habitat Areas

Based on the substantial evidence contained in the record for CDP Application 2-00-005, including the expert opinions and scientific literature discussed above, the Commission finds that the operation of PWC in the Special Use Area causes significant adverse impacts to sensitive marine species and environmentally sensitive habitat. The proposed ordinance will ensure that

these adverse impacts will not occur within the Special Use Area. Therefore, the Commission finds that the proposed PWC prohibition is consistent with the Coastal Act requirements to protect marine resources and to prevent significant disruption of environmentally sensitive habitat areas in conformance with Coastal Act Sections 30230 and 30240. In addition, the Commission finds that PWC are not dependent on the resources of the area affected by the proposed ordinance.

3.6 Air Quality

Coastal Act Section 30253 states in relevant part:

> *New development shall:*
>
> …
>
> *(3) Be consistent with the requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.*

In its action adopting the proposed ordinance, the Marin County Board of Supervisors found:

> *The California Air Resources Board (CARB) recently concluded that marine two-stroke engines are one of the largest sources of air pollution in California. According to Mark Carlock of the CAARB, on a typical summer weekend day, such craft generate 777 tons a day of hydrocarbon emissions, an amount exceeding that of all 16 million light-duty passenger cars in the State. The majority of those emissions are by a relatively small number of PWC.*
>
> *Of particular concern, two-stroke motors cause ground-level ozone, which is created by the photochemical reaction of nitrogen and hydrocarbons. Ozone causes smog, in addition to respiratory effects such as coughing, chest pain, asthma, and shortness of breath. It affects people with compromised or developing respiratory systems, such as the elderly and children. Nitrogen itself can also harm human health.*
>
> *Two-stroke engines also emit extremely high levels of carbon monoxide (CO), a poisonous gas that reduces blood oxygen levels, causes headaches, nausea, and dizziness, PWC riders sometimes complain that after following directly behind another PWC, they feel faint and can lose control of their craft. Some marine engines have CO emissions of up to 1078 grams/kW-hr, a level of over 300 times higher than maximum levels for a new automobile.*
>
> *Beyond their human health effects, other negative environmental effects are also associated with ozone and nitrogen. For example, ozone injures plants and materials, and the EPA estimates that excess nitrogen from two-stroke motors may be responsible for up to two billion dollars annually in crop damage in the United States. (40 CFR Parts 89, 09, 91 October 4, 1996.) Nitrogen also contributes to the secondary formation of particulate matter in the form of nitrates, acid deposition, and excessive growth of algae in aquatic systems. Particulate matter has recently been implicated as a human carcinogen, and is created at extremely high levels in jet skis.*

In response to the significant air pollution generated by PWC and other marine two-stroke engines, effective December 3, 1996, the EPA adopted exhaust emission standards for gasoline spark-ignition marine engines (40 CFR Parts 89, 90, and 91, Air Pollution Control; Gasoline

Spark-Ignition Marine Engines; New Non-Road Compression Ignition and Spark Ignition Engines, Exemptions Rule). The goal of this rule is to reduce emissions of hydrocarbons from outboard and PWC engines by 75 percent from baseline levels by 2025 via phased standards.

On December 10, 1998, the CARB enacted even more stringent regulations that will reduce emissions by 50 percent beyond the federal program by 2010. The standards will become effective in three stages: 2001, 2004, and 2008. These regulations were driven in part by concerns over discharge of unburned fuel into lakes, reservoirs, and waterways.[3]

Both regulations will require boat engine manufacturers to develop cleaner-burning engines; emission reduction will come from the use of cleaner technologies, such as two-stroke direct injection, four-stroke, catalyst, or other technologies.

Although the regulations will prompt development of cleaner-burning engines, there are hundreds of thousands of existing carbureted two-stroke engines currently in use, including most of the approximately 161,000 PWC registered in California.

By prohibiting all use of PWC within the Special Use Area, the proposed ordinance is more protective of air quality than the current requirements of the EPA and CARB, and therefore goes beyond the air quality protection requirements of Coastal Act Section 30253(3). Pursuant to Coastal Act Section 30005, the County may adopt and enforce restrictions or limitations with respect to the use of water that are more protective of the resources of the coastal zone than those contained in Chapter 3 of the Coastal Act so long as those restrictions are not in conflict with the Coastal Act. With respect to air quality, the proposed ordinance is more protective of coastal resources than the requirements of Coastal Act Section 30253(3). Therefore, the Commission finds that the proposed ordinance is not in conflict with Coastal Act's air quality protections.

3.7 Recreation

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30240(b) states:

> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

In its consideration of the County's permit application, the Commission must determine whether the proposed ordinance is in conflict with the requirements of Coastal Act Section 30220. In making this determination, the Commission must consider (1) whether the Special Use Area is a coastal area suited for PWC use, and (2) whether PWC use is a recreational activity that cannot readily be provided at inland water areas.

As discussed in section 3.5.2 above, the Special Use Area is an ESHA providing habitat for at least 23 threatened or endangered species. Because of the significant adverse effects that the

[3] "Proposed Regulations for Gasoline Spark-Ignition Marine Engines, Draft Proposal Summary," CARB, Mobile Source Control Division (June 11, 1998).

operation of PWC causes to these species and the habitat they depend upon, the Special Use Area is not a coastal area that is suitable for this type of water-oriented recreation.

PWC can be operated at inland water areas as readily as in coastal waters. For example, PWC may be operated at inland waterways outside of Marin County such as Lake Sonoma and at waterways under the jurisdictions of any of the incorporated cities within the county. In addition, the coastal waters within the city limits of Belvedere, Tiburon, Sausalito, Corte Madera, and San Rafael, and the coastal waters within the boundaries of the China Beach State Park are all available for use by PWC. Therefore, the operation of PWC is not a recreational activity that cannot readily be provided at inland water areas.

Because the Special Use Area is not a coastal area suitable for the operation of PWC, and the use of PWC is not a recreational activity that cannot readily be provided at inland water areas, the Commission finds that the proposed ordinance does not conflict with Coastal Act Section 30220.

The Special Use Area includes federally designated marine managed areas that support recreational uses such as sailing, swimming, kayaking, surfing, fishing, hiking, windsurfing, and canoeing. The shoreline areas directly adjacent to the Special Use Area support recreational activities such as bird watching, camping, hiking, and picnicing. The operation of PWC in and adjacent to these areas is subject to review under Coastal Act Section 30240(b) concerning uses adjacent to park and recreation areas.

The noise generated by PWC is highly disturbing to other recreational users of the Special Use Area. PWC also pose a safety hazard to other users and causes birds, fish and other wildlife to flee. For these reasons, PWC are not compatible with the other recreational uses common within the Special Use Area.

In adopting a prohibition of PWC in the GGNRA, NOAA found that:

> *This prohibition is also necessary to avoid conflict with other visitor uses such as fishing, boating, kayaking, and boardsailing. The loud engine pitch and volume of noise are also disturbing to park visitors and intrude upon the opportunity for quiet, peaceful park experience.*

For these reasons the Commission finds that the proposed ordinance is consistent with the requirement of Coastal Act Section 30240(b) that development shall prevent significant degradation of park and recreation areas and be compatible with the continuance of those areas.

Notwithstanding the foregoing, if the Special Use Area were suitable for the operation of PWC, and if this activity could not be readily provided at inland water areas, the proposed ordinance would present a conflict between Section 30220 and the Coastal Act policies protecting marine resource, water quality, environmentally sensitive habitat areas and park and recreation areas. In accordance with Coastal Act Section 30007.5, such policy conflicts must be resolved in the manner that on balance is most protective of significant coastal resources, as follows:

> *The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.*

As previously discussed in this report, the Special Use Area is made up of four different marine managed areas of national significance, supporting an abundance of protected species. Substantial evidence exists to demonstrate that the operation of PWC significantly degrades the habitat value of these important marine resource areas, and is inconsistent with the Coastal Act requirements to protect marine resources, to protect the quality and biological productivity of coastal waters and to protect environmentally sensitive habitat areas and park and recreation areas from significant disruption. Therefore, the Commission finds that where any conflict between policies may exist, conformity with the marine resource, water quality, ESHA and park and recreational policies of Coastal Act Sections 30230, 30231, and 30240, is on balance most protective of significant coastal resources.

3.8 Public Access

Coastal Act Section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30214 states in relevant part:

> *(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:*
>
> …
>
> *(2) The capacity of the site to sustain use and at what level of intensity.*
>
> …
>
> *(b) It is the intent of the Legislature that the public access policies of this article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution. Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Section 4 of Article X of the California Constitution.*

The Personal Watercraft Industry Association (PWIA) maintains that the complete prohibition of PWC use in the Special Use Area violates the provisions of Coastal Act Section 30214 on the basis that:

- the total prohibition goes beyond the authority to regulate the time, place, and manner of public access provided under 30214(a), and
- it is the intent of the legislature that the Commission "consider the need for a steadfast settlement of public access controversies… which stresses cooperation between all individual parties in an effort to reach an amicable dispute resolution." (Kelly, 2000)

The Commission staff disagrees with the policy interpretations on which these contentions of the PWIA are based. Coastal Act Section 30214(a) requires the Commission to regulate the time, place and manner of public access in consideration of the capacity of a site to sustain use and at what level of intensity. Coastal Act Section 30210 states that recreational opportunities shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. The proposed ordinance does not prohibit coastal access but regulates the manner and place of public access consistent with the facts and circumstances concerning the capacity of the site to sustain the type and intensity of use. As discussed in previous sections of this report, the use of PWC in the Special Use Area is in conflict with the need to protect the biological resources of the area and with other public recreational uses. Substantial evidence exists to demonstrate that the Special Use Area cannot support the use of PWC and that PWC use is incompatible with public safety needs and the need to protect natural resource areas from overuse. Therefore, the Commission finds that the proposed ordinance constitutes a reasonable and necessary regulation of the place and manner of public access consistent with Coastal Act Sections 30210 and 30214.

3.9 California Environmental Quality Act

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications 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 that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act policies at this point as if set forth in full. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with Coastal Act requirements to conform to CEQA.

APPENDIX A
Substantive File Documents

Allen et al. 1984. Sarah G. Allen et al., The Effect of Disturbance on Harbor Seal Haul Out Patterns at Bolonas Lagoon, California, 82(3) Fish. Bull. 493, 497-99 (1984).

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