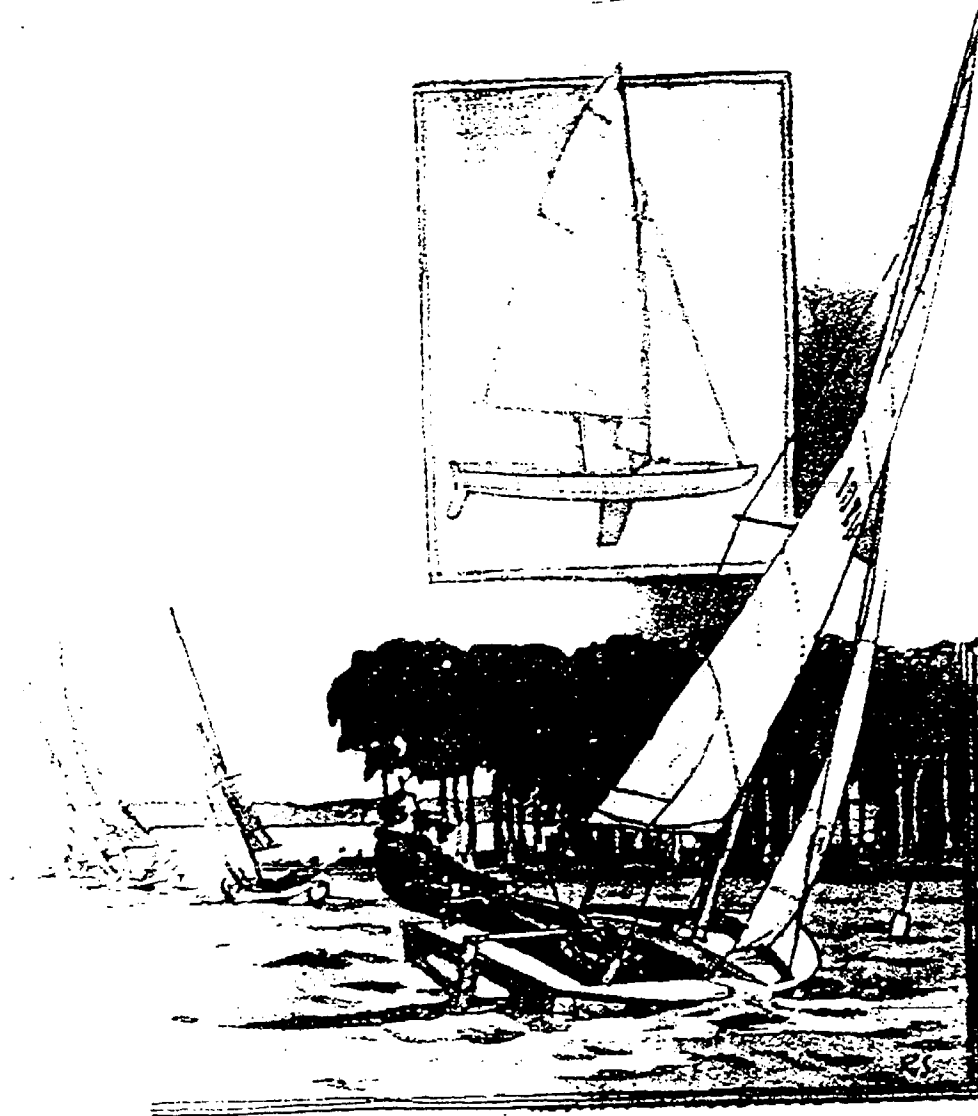


**Final Report of the**  
**MARINA AND RECREATIONAL BOATING**  
**TECHNICAL ADVISORY COMMITTEE**



**Submitted to the State Water Resources Control Board,  
Nonpoint Source Control Program**

**NOVEMBER 1994**



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## INTRODUCTION

California is currently revising its Nonpoint Source (NPS) Pollution Management Plan pursuant to the 1990 Coastal Zone Management Act Reauthorization Amendments. To facilitate the effectiveness of this plan, the State has elected to use an "interested based" approach in the development of the revisions. This approach utilizes technical advisory committees (TACs) composed of people who hold a stake in the program or who have expertise in related areas. A committee for each category of NPS pollution was convened for six months to evaluate and develop methods of implementation for each of the management measures applicable to the NPS category.

This is the final report developed by the Marinas and Recreational Boating TAC. The TAC was composed of federal, state, and local agency personnel, marina owners and operators, service providers, marina and boating community educators, and environmental groups. For each management measure the TAC accepted or modified EPA's management measure as it should be applied to California given California's specifics. For each management measure, the report also addresses applicability, methods of implementation, specific implementors, enforcement mechanisms, triggers of enforcement actions, and the actions that are necessary to begin implementation. Finally, the TAC included a number of findings regarding other issues that relate to NPS pollution affecting marinas and recreational boating.

## SUMMARY OF FINDINGS

### RELATIVE WATER QUALITY IMPACTS OF MARINAS

Marinas are often located near storm drain outfalls, and it is difficult to distinguish some marina water quality impacts from urban runoff impacts. While marinas should make efforts to reduce NPS pollution from their activities, any regulatory program should recognize the "end of the pipe" location of marinas, and their relative contribution to water pollution.

### ECONOMIC IMPACTS ON BOATING INDUSTRY

Development of local NPS programs for marinas and recreational boating should address short term and long term economic impacts. This should be facilitated by early and active participation of boaters and boating industry representatives in program development. A watershed approach to NPS management will also facilitate consideration of economic impacts.

### USING A WATERSHED-BASED APPROACH

Given the sheer size of the State of California, the existing dissimilarities in conditions - beneficial uses, water quality, climate, facility operations - among different regions of the state are inevitable. The TAC recognizes these regional variations and believes that they must be considered in determining the applicability of the MMs to marinas and recreational boating.

The TAC asserts that, while there are basic MMs that should be applied equally throughout the state regardless of the quality of water (some of these are the liquid material MM, sewage facility MM, sewage facility maintenance MM, the fueling station design MM and the petroleum control MM), there are other MMs that which should be applied only where necessity dictates (some of these include the fish waste MM, the shoreline stabilization MM and the habitat assessment MM).

The TAC therefore affirms that the application of the latter category of Marina and Recreational Boating MMs must be based on site specific conditions, taking into consideration the location, status of beneficial uses of the water body, marina operations, water temperature, climatic cycles, and threats to water quality.

In order to determine the necessity of applying site-specific MMs, the TAC recommends a watershed-based approach. The watershed approach considers all sources of pollution to the water body, specifically those that may be impairing beneficial uses. The watershed approach can account for economic realities because of its holistic approach. Because NPS pollution is so pervasive, the TAC also strongly believes that watershed plans must incorporate educational programs which emphasize pollution prevention.

### COORDINATION, CONSISTENCY, AND EQUITY AMONG AGENCIES

Nonpoint source (NPS) programs overlap with numerous other federal, state and local regulatory programs to which marinas and boatyards are subject, for example, National Pollutant Discharge Elimination System (NPDES), hazardous waste under Department of Toxic Substances Control (DTSC) and local governments. There is considerable potential for escalating conflict, costs, and confusion especially considering that many identified



implementors have not been part of this process. If NPS programs are to succeed in controlling pollution by economically achievable means, this concern must be addressed immediately and on a continuing basis. The NPS program should not be in conflict with or duplicative of other water and habitat protection and pollution prevention, reduction, and control programs such as NPDES, and DTSC programs.

The TAC recommends that the state pursue a policy of promoting coordination and consistency among all levels of government with regard to preventing, reducing, and controlling pollution in California watersheds. This should be a component of a watershed management approach that considers environmental, scientific, geographic, social, economic, policy, regulatory, and other factors.

#### DIFFERENCES BETWEEN MARINAS AND BOAT YARDS

The (g) guidance document assumes that boat yard operations are synonymous with marina operations, which describes conditions as they exist on the east coast. However, in California, marinas and boat yards are separate and distinct business entities engaged in completely different functions.

Boat yards (SIC code 3732) are industrial marine facilities which haul boats and marine vessels onto dry land for purposes of repair and maintenance. Boat yards, as distinct from ship yards, usually service pleasure and smaller commercial vessels. The work they perform can include the washing, scraping, sanding, and painting of vessel hulls. Some yards reserve sections of their property for do-it-yourself repairs. These operations are regulated by NPDES Permits issued through the Regional Water Quality Control Boards. Boat yards are industrial operations that generate hazardous wastes: e.g., waste oil, anti-fouling paint waste, VOCs, solvents, and metal contaminated sludge and solid waste. Yards must obtain an EPA waste generator number and comply with hazardous waste management and disposal requirements as specified by DTSC, county environmental health agencies, and/or local fire departments. Regional Air Management Districts regulate certain painting and/or sanding operations.

Marinas (SIC code 4493), on the other hand, are basins with slips available to rent to boaters who keep their vessels in the water. Usually marinas offer services for their tenants, such as secured facilities, utilities, rest rooms and showers, and parking. Some marinas also contain convenience and supply stores and restaurants. Some marinas have fuel docks, pump out facilities, and launch ramps. Very few marinas in California also contain boat yards which are subject to Industrial Stormwater Permits.

#### HAZARDOUS WASTE COLLECTION

Boating activities may generate hazardous wastes, including waste oil, antifreeze, solvents, thinners, paints, resins, and batteries. It is important that municipalities and counties include marinas as a collection point during their regular recruitment of common household hazardous wastes. It is further recommended that individual marinas adopt recycling programs for waste oil and batteries as the two most voluminous hazardous wastes.

### TBT USAGE IN MEXICO

Tributyl tins (TBTs) were restricted for use as antifouling paints in the United States, because of their high toxicity. However, they continue to be utilized in Mexico on a regular basis. Vessels from California may travel across the border to have TBTs applied to their bottoms, and return to California harbors. Consequently, this toxic substance continues to impact California waters. This TAC recommends that the State Water Resources Control Board identify this problem to the Environmental Protection Agency, and request their assistance in developing measures to reduce this transport of toxic materials to California waters from Mexico.

### ENCOURAGING RWQCB STAFF TO PROVIDE INFORMATION

Complying with nonpoint source programs will require boaters, boating facility managers and boat cleaning/repair/refinishing providers to adopt new technologies, structural systems and practices. They will need guidance and education on appropriate means for compliance. They are generally individuals or small businesses with limited resources for compliance programs. They need to know how to develop a cost effective compliance system, where to obtain information on acceptable technologies, structures and practices, how to evaluate new technologies and consultants who may be hired to assist them, etc.. RWQCB staff sometimes conduct water quality surveys and are likely to be a primary contact for nonpoint source programs.

To improve compliance with nonpoint source policies and programs by boaters and boating related businesses, the TAC recommends that RWQCB staff be encouraged to provide information on alternatives, educational materials and referrals to sources of reliable information and assistance to meet water quality standards. Mechanisms could include providing active public outreach, such as meetings, referrals to a boating NPS information clearinghouse and voluntary compliance assistance. Suggestions by RWQCB staff should be accompanied by a statement explaining that use of this advice does not ensure compliance by the user nor imply liability on the part of the state. The TAC recommends that the SWRCB's Office of Chief Counsel review this statement. If the Counsel's opinion determines that current law prohibits providing such information and guidance, the TAC recommends that the SWRCB or other body sponsor legislation to allow for it.

### GOOD AND BAD ACTOR FINDING

The TAC has expressed strong interest in voluntary compliance with NPS management measures and recommended education as a primary implementation vehicle. The successful marine debris education program that followed signing of the MARPOL treaty set a successful precedent for voluntary pollution control by boat and waterfront facility operators. The nonpoint source program provides for an initial voluntary program. The TAC recommends that:

- those who implement and promote voluntary compliance be recognized, commended and encouraged; and
- regulatory emphasis be placed on those determined not to be in compliance nor making any effort to come into compliance.

FUNDING TO IMPLEMENT MARINAS AND RECREATIONAL BOATING NPS PROGRAMS

Marinas and recreational boating are subject to regulation under the nonpoint source program, as are agriculture, forestry, urban areas, etc. Although a TAC was convened in 1994 to address implementation programs for nonpoint source pollution reduction from marinas and recreational boating it was not a priority for funding under California's Request for Section 319 of the Clean Water Act Program Proposals that year. Nonpoint source implementation programs for marinas and recreational boating should be include among the priorities for future 319 and other funding programs. Implementation programs can include demonstrations of BMPs, education and monitoring.

## MANAGEMENT MEASURE IMPLEMENTATION

### Marina Flushing Management

*EPA Management Measure: Site and design marinas such that tides and/or currents will aid in flushing of the site or renew its water regularly.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas.

**Method of Implementation:** Existing regulation currently implements MM however changes could be made to simplify and expedite the permitting process. Existing processes have a great deal of duplication that might be reduced. Current regulation is too rigorous for minor projects. Major projects should be regulated extensively but getting permits for small projects should be easier. Streamline and simplify the permitting process for small projects which do not have a significant impact by utilizing one or more of the following approaches:

- Develop a "blanket permit" for small projects
- Define "significant changes" or "expansion" such that minor upgrades or expansions do not require permits
- Establish a numerical or percentage threshold for "small projects", such as 25% or less expansion in existing navigable basins.

Coordination between implementors needs to be improved.

Recommendations:

- ▶ Need to improve consistency in local government regulation
  - Develop amendments to General Plan Guidelines dealing with NPS pollution
- ▶ Arrange for coordinating meetings between agencies
- ▶ Assign a project manager for each project at each agency for both the state and federal level
- ▶ Make changes in the Coastal Act (like was done for agricultural projects) to define what marina projects could be exempt from Coastal permit.
- ▶ Re: expansion of marinas
  - Lease sole authority with local county or city agency
  - Role for Dept. of Boating and Waterways to carry this forward
  - Recommendation to Coastal Commission. - to make this change to Coastal regulations (via OAL) rather than amending the Coastal Act
  - Reconfiguring existing marinas - Does it constitute expansion?
  - Overriding considerations for some MMs - e.g. Delta Protection Com.
  - CEQA Process - need to take into consideration the balancing of impacts with improvements in other areas (e.g. public access)
- ▶ Re: dredging needs of harbors
  - need least expensive disposal of spoils as this relates to flushing and siting considerations
  - consider that often pollutant source is not the harbor - this is where NPS pollution ends up
  - Change state law to make small projects that get Negative Declaration exempt from the Coastal Act

- Develop a "blanket" permit
  - Use existing basin as a boundary and any change within it wouldn't be significant
  - Area in existing navigable basin

**Implementor:** Corps Of Engineers, US Environmental Protection Agency, National Marine Fisheries Service, US Fish and Wildlife, Bay Conservation & Development Commission, California Coastal Commission, Regional Water Quality Control Board, California Department of Fish & Game, Air Quality Management District, State Lands Commission, Dept of Boating & Waterways, Cities & Counties.

**Means of Enforcement:** Enforcement is possible through the requirement of permits for all new and expanding marinas.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation possible through the permitting system

*Effectiveness Monitoring:* Water quality, sediment, and/or benthic monitoring for appropriate parameters can monitor the effectiveness of this MM. Baseline monitoring required in the Water Quality Assessment MM can be compared to later monitoring results to identify improvements in water quality.

**Actions Needed for Implementation:** The above recommendations should be implemented to make the existing process more efficient and user-friendly.

**Gaps/Inconsistencies:** This MM may not be appropriate for areas with high siltation rates. The effects of this MM need to be assessed in areas with sedimentation problems

### Water Quality Assessment Management

**EPA Management Measure:** *Assess water quality as part of marina siting and design.*

**MM Adopted:** The TAC added language to the EPA MM as it is written above to clarify its intent. The MM as adopted by the TAC is: Assess water quality as part of marina siting and design *to establish baseline conditions.*

**Applicability:** This MM is intended to be applied by States to new and expanding marinas.  
**TAC Statement:** See Marina Flushing MM for TAC recommendation on how to define and handle "expanding" marinas.

**Method of Implementation:** Adequate water quality assessment is already available through 401 Certification/CEQA and Annual RWQCB Water Quality Assessment. Additional assessments can be requested by RWQCBs as necessary. Where it is available, water quality monitoring information should be provided to marinas for use in performing water quality assessments. If this data is not already public information it should be made public for this purpose. Existing monitoring used to implement this MM should be conducted in accordance with appropriate protocols including QA/QC. The SWRCB should inventory existing monitoring and provide this information to the public.

**Implementor:** The SWRCB/RWQCBs will implement this MM.

**Means of Enforcement:** Enforcement is possible through the Porter-Cologne Act and Clean Water Act 401 Certification Programs.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation is possible through RWQCB procedures for permitting and CEQA.

*Effectiveness Monitoring:* The effectiveness of this MM can be determined by the recommended inventory of water quality assessments. (See Implementation above.)

**Actions Needed for Implementation:** RWQCB incorporate this issue into their permit and CEQA review process. SWRCB inventory existing monitoring programs and assess for appropriate protocols. Make the monitoring information available to the public.

**Gaps/Inconsistencies:** Funding for RWQCB review of CEQA documents is being diminished or eliminated. This funding must be ensured for implementation of this MM.

### Habitat Assessment Management

**EPA Management Measure:** *Site and design marinas to protect against adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, or other important riparian and aquatic habitat areas as designated by local, State, or Federal governments.*

**MM Adopted:** The TAC added language to the EPA MM as it is written above to clarify the types of effects which the MM should address. The MM as adopted by the TAC is: Site and design marinas to protect against *long term, irreversible, and unmitigatable* adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, or other important riparian and aquatic habitat areas as designated by local, State, or Federal governments.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas where site changes may impact on wetlands, shellfish beds, submerged aquatic vegetation (SAV), or other important habitats. The habitats of nonindigenous nuisance species, such as some clogging vegetation or zebra mussels, are not considered important habitats.

**Method of Implementation:** Adequate existing regulation currently implements this MM. See recommendations for changes in existing permitting programs for the Marina Flushing MM above.

**Implementor:** Corps Of Engineers, US Environmental Protection Agency, National Marine Fisheries Service, US Fish and Wildlife, Bay Conservation & Development Commission, California Coastal Commission, Regional Water Quality Control Board, California Department of Fish & Game, Air Quality Management District, State Lands Commission, Dept of Boating & Waterways, Cities & Counties.

**Means of Enforcement:** Enforcement is possible through permit requirements for all new and expanding marinas.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation is possible through the permitting system.

*Effectiveness Monitoring:* Monitoring of mitigation projects, construction monitoring, and post construction monitoring should determine the effectiveness of this MM.

**Actions Needed for Implementation:** The above recommendations should be implemented to make the existing process more efficient and user-friendly.

### Shoreline Stabilization Management

**EPA Management Measure:** *Where shoreline erosion is a nonpoint source pollution problem, shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other shorelines and offshore areas.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas where site changes may result in shoreline erosion.

**Implementation:** Site changes already require permits from a regulatory agency. (The particular agency varies between water bodies.) The TAC recommends that this existing regulatory process be utilized for implementation of this MM. A recommendation for the use of a vegetated revetment, where appropriate, should also be incorporated into the permit review.

**Implementor:** This MM can be implemented by the appropriate permitting agency.

**Method of Enforcement:** Enforcement is possible through the required permitting system.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation is possible through the existing permitting system.

*Effectiveness Monitoring:* The effectiveness can be monitored through water quality monitoring.

**Actions Needed for Implementation:** Instruct permitting agencies to include this in the permitting system if not already included and to promote the use of vegetative revetments where appropriate.



### Storm Water Runoff Management

**EPA Management Measure:** 1. Implement effective runoff control strategies which include the use of pollution prevention activities and the proper design of hull maintenance areas. 2. Reduce the average annual loadings of total suspended solids (TSS) in runoff from hull maintenance areas by 80 percent. For the purposes of this measure, an 80 percent reduction of TSS is to be determined on an average annual basis.

**MM Adopted:** The TAC rewrote the MM because in California existing hull maintenance areas and new or expanding boatyards are exempt from implementing the CZARA MMs as discharges from these operations are covered under NPDES. In addition, new or expanding boatyards will receive further environmental review during CEQA, Coastal Commission permitting, and local government permitting. The MM as adopted by the TAC is: Implement effective runoff control strategies which include the use of pollution prevention activities.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas, and to existing marinas for at least the hull maintenance areas.

**Method of Implementation:** Because stormwater runoff in marinas is almost entirely generated from marina parking lots, implementation of this MM should focus on controlling parking lot runoff. The marina contribution to parking lot runoff is not a significant problem by itself, therefore retrofitting existing marina parking areas is not required. However, there should be design requirements for new construction (e.g. expansion, upgrade, etc.). The TAC recommends these BMPs as options for stormwater runoff management:

- Education for boaters and facility operators (e.g. stenciling, signage, newsletters, etc.)
- Incorporate runoff control strategies into public marina ordinances or private marina regulation for tenants
- Good housekeeping (e.g. streetsweepers, community service to clean up, inspection/clean up oil leaks)
- Vegetative buffers
- Settlement basins / catch basins
- Retrofit boat maintenance areas with berms which channel runoff to catch basins
- Place adsorbing materials for petrochemicals in drop basins.

**Implementor:** Local government should be the implementor for new and expanding parking lot design requirements through local zoning ordinances.

**Means of Enforcement:** Enforcement is possible through the permitting system.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation can be monitored through the permitting system.

*Effectiveness Monitoring:* Water quality monitoring should demonstrate the effectiveness of the MM however, relative contributions from other sources of runoff should be considered.

**Actions Needed for Implementation:** RWQCBs should step up regulation and enforcement of do-it-yourself hull cleaning areas and boatyards that are currently unregulated.

**Gaps/Inconsistencies:** Some marinas have small hull maintenance areas that are not, but should be, covered under NPDES permits.

### **Fueling Station Design Management**

**EPA Management Measure:** *Design fueling stations to allow for ease in cleanup of spills.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas where fueling stations are to be added or moved. In addition, the TAC agreed that at all existing small craft refueling facilities, certain materials will be required to be readily available.

**Method of Implementation:** For new and expanding marinas, permit conditions can require that containment systems and absorbent materials are maintained on-site for use by emergency response teams. The TAC recommends that the storage of containment and absorbent materials for use by emergency response teams be promoted through grants by the Department of Boating and Waterways. Education should be provided to boaters on fueling station malfunctions. For example, appropriate signage at fuel dock directing them to the appropriate agency and phone number to call in case of malfunction.

**Implementor:** Regional Water Quality Control Boards, California Coastal Commission, State Lands Commission, or local governments managing marinas can include these requirements in their permits or leasing agreements. Outside the Coastal Commission and State Lands Commission jurisdictions, implementation at each marina would be on a case-by-case basis depending on which agency has jurisdiction over the marina in question. (e.g. the Corps of Engineers, US Forest Service)

**Means of Enforcement:** The MM should be enforced through the permitting process.

**Trigger Mechanism:**

*Implementation Monitoring:* Implementation is possible through permit monitoring.

*Effectiveness Monitoring:* Monitoring of sediments should be incorporated into the Regional Monitoring Program, demonstration project, or baseline monitoring.

**Actions Needed for Implementation:**

- ▶ The State Water Resources Control Board should develop an MOU with the Coastal Commission, State Lands Commission, Department of Fish and Game, and other permitting or leasing agencies for the implementation of this MM.
- ▶ Establish an agreement with the Department of Boating and Waterways to provide grant funds for absorbent and containment materials.
- ▶ A recommendation for implementation of educational signage will be developed by the Education Subcommittee.

### Sewage Facility Management

**EPA Management Measure:** *Install pumpout, dump station, and restroom facilities where needed at new and expanding marinas to reduce the release of sewage to surface waters. Design these facilities to allow ease of access and post signage to promote use by the boating public.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to new and expanding marinas in areas where adequate marine sewage collection facilities do not exist. This measure does not address direct discharges from vessels covered under CWA Section 312. The definition of "adequate" should reflect the type of MSD used, and the current availability of pumpout stations in the area.

**Method of Implementation:** For new and expanding marinas, permit conditions can require adequate sewage facilities be installed. Permit conditions can also address location of pump out facilities to allow ease of access. Station docks should be appropriately sized for the size and type of vessel that will be using the dock. Education promoting the use of pumpout facilities should be disseminated using signage.

**Implementor:**

- ▶ New and expanding marinas: Regional Water Quality Control Boards, California Coastal Commission, State Lands Commission, or local government managing marinas can include these requirements in their permits or leasing agreements. Outside the Coastal Commission and State Lands Commission jurisdiction, implementation at each marina would be on a case-by-case basis depending on which agency has jurisdiction over the marina in question.
- ▶ Education implementation will be addressed by the Public Education MM.

**Means of Enforcement:**

- ▶ New and expanding marinas: enforcement is possible through the permitting process.

**Trigger Mechanism:**

*Implementation Monitoring:* At new and expanding marinas, implementation is possible through the permitting system.

*Effectiveness Monitoring:* Effectiveness will be measured by an increase in facility usage, and can be quantified by different kinds of usage measurement devices, such as flow meters. Any water quality sampling done to monitor effectiveness of sewage facilities should consider the contribution of bird wastes to fecal coliform contents of the water.

**Actions Needed for Implementation:**

- ▶ The State Water Resources Control Board should develop an MOU with the Coastal Commission, State Lands Commission, Department of Fish and Game, and other permitting and leasing agencies regarding the implementation of this MM.
- ▶ The signage (i.e. education) implementation will be addressed by the Public Education MM.

### Solid Waste Management

**EPA Management Measure:** *Properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of solid wastes to surface waters.*

**MM Adopted:** The TAC rewrote the MM to clarify that the MM applied to other activities in addition to boat repair. The MM as adopted by the TAC is: Properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats and *operation of marinas* to limit entry of solid wastes to surface waters.

**Applicability:** This MM is intended to be applied by States to new, expanding, and *existing* marinas. The TAC agreed that the applicability of this MM should be expanded to include all marinas.

**Method of Implementation:** Boatyards covered under NPDES will not be covered by this MM. It will apply to maintenance not done in a boatyard. Local governments should provide V.S.Q.G. (very small quantity generator) small businesses and households a waste disposal program that is inexpensive and accessible. There should be a recycling program for waste materials generated by individual boaters.

**Implementor:** Local government.

**Means of Enforcement:** Enforcement is possible through local government ordinances, the Porter-Cologne Act, and Fish and Game Code Section 5650.

**Trigger Mechanism:**

*Implementation Monitoring:* Assess utilization of the voluntary disposal program. If it is not being utilized, the local authority needs to perform site inspections.

*Effectiveness Monitoring:* Effectiveness can be determined through assessing utilization of the voluntary program.

**Actions Needed for Implementation:** Instruct local waste management agencies to begin new or expand existing waste disposal and recycling programs to include marinas.

### **Fish Waste Management**

**EPA Management Measure:** *Promote sound fish waste management through a combination of fish-cleaning restrictions, public education, and proper disposal of fish waste.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to marinas where fish waste is determined to be a source of water pollution.

**Method of Implementation:** This MM should be implemented where RWQCBs have determined fish waste to be a problem. Use the following BMPs:

- ▶ Educational Solutions:
  - Educating boaters about fish cleaning
  - Benefits of cleaning fish at sea
- ▶ Restrictions / Disposal Options:
  - Gathering for composting
  - Fish cleaning tables with receptacles
  - Grinding and piping into ocean
  - Composting at marina
  - Giving to bait companies
  - Giving to mink farmers for feed
  - Putting in garbage / Hauling to landfills
  - Giving to tallow plants for fish oil use
  - Imposing dumping restrictions
  - Disallowing fish cleaning at marina
- ▶ Remedial Measures for Pre-existing Fish Waste Deposits
  - Retrieval by divers of decomposed fish wastes with on shore bioremediation

**Implementor:** Implementation could be carried out by one of the following peoples: California Department of Fish and Game; Owner-Operator or Harbor District; Regional Water Quality Control Board.

**Means of Enforcement:** Enforcement is possible through the Porter-Cologne Act and, where applicable, local ordinances.

**Trigger Mechanism:**

*Implementation Monitoring:* Periodic water quality inspections by RWQCB and Department of Fish and Game will identify when there is a problem and will require harbor operators to implement BMPs.

*Effectiveness Monitoring:* Effectiveness can be monitoring by harbor owner/operators.

**Actions Needed for Implementation:** The authority is already established under the Porter-Cologne Act.

### Liquid Material Management

**EPA Management Measure:** *Provide and maintain appropriate storage, transfer, containment, and disposal facilities for liquid material, such as oil, harmful solvents, antifreeze, and paints, and encourage recycling of these materials.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to marinas where liquid materials used in the maintenance, repair, or operation of the marina or when the marina sells hazardous liquid materials.

**Method of Implementation:** Implementation of this MM should be through the use of the following BMPs:

- Build curbs, berms, or other barriers around areas used for the storage of liquid material to contain spills. Store materials in areas impervious to the type of material stored,
- Separate containers should be available and clearly labeled for the disposal of waste oil; waste gasoline; used antifreeze; and waste diesel, kerosene, and mineral spirits.
- Direct marina patrons as to the proper disposal of all materials through the use of signs mailings, and other means.
- Reuse-Recycle-Give Away program
- Limit access by individual boaters to liquid waste containers

**Implementor:** Department of Toxic Substances Control - California Code of Regulations, Title 22; Local health / waste management carries out Department of Toxic Substances Control; Uniform Fire Code - fire department.

**Means of Enforcement:** Enforcement is possible through local ordinances and the Uniform Fire Code.

**Trigger Mechanism:**

*Implementation Monitoring:* The local fire department and other local agencies which perform inspections can monitor for implementation. Education implementation will be addressed by the Public Education MM.

*Effectiveness Monitoring:* Interview owner/operator to determine if liquid disposal mechanisms are being used and/or if liquid wastes are being incorrectly disposed of in dumpsters.

**Actions Needed for Implementation:** SWRCB should develop an agreement with the Department of Toxic Substances Control to serve as the implementor for this MM.



### Petroleum Control Management

**EPA Management Measure:** *Reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to boats that have inboard fuel tanks. The applicability of the requirement to reduce the amount of fuel and oil from boat bilges should be applied to all boats, not just those with inboard fuel tanks.

**Method of Implementation:**

For Vents:

- Encourage boat manufacturers to install systems in vent lines to prevent fuel discharges in new boats. Implement through education and possibly through the use of incentives.
- Encourage use of currently available, low-cost technology that decreases discharge of fuel from fuel tank air vents. Implement through education.
- Encourage boaters not to fill their tanks. Implement through education.

For Bilges:

- Encourage boaters to keep their bilges clean through education of boaters. Oil absorbent pads placed in the bilge is the most economical measure. There is a problem with the disposal of these pads as stated in other MMs re: hazardous disposal.
- Develop new, affordable technology for bilge pumping systems.
  - Need grants for construction of new technology.
  - To facilitate development need coordination of regulatory hurdles (e.g. disposal of oil vs. water)
  - Solicit public/private partnerships to help fund development.

**Implementor:**

- Education aspects addressed in the Public Education MM.
- US Coast Guard to promote the use of in line systems and development of new technology.

**Means of Enforcement:** Existing state and federal regulation is sufficient to ensure implementation. (e.g. Oil Spill Prevention and Response Act, Coast Guard, etc.)

**Trigger Mechanism:**

*Implementation Monitoring:* Water quality monitoring done by Regional Boards can be used to identify those areas which continue to suffer from fuel spills. Implementation can also be monitored by tracking the sales of absorbent pads and in line filters. (National Marine Manufacturers Association)

*Effectiveness Monitoring:* The USCG or local Captain of the Port keeps a list of the number and size of spills that occur in a marina. This list can be used to monitor the effectiveness of this MM.

**Actions Needed for Implementation:**

- Establish a formal agreement with Coast Guard (perhaps with EPA agreement for technological aspects)
- Education addressed by the Public Education MM

### Boat Cleaning Management

**EPA Management Measure:** *For boats that are in the water, perform cleaning operations to minimize, to the extent practicable, the release to surface waters of (a) harmful cleaners and solvents and (b) paint from in-water hull cleaning.*

**MM Adopted:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to marinas where boat topsides are cleaned and marinas where hull scrubbing in the water has been shown to result in water or sediment quality problems.

**Method of Implementation:** Implementation of the topside cleaning aspect of this MM shall be through education of boaters as described in the Public Education MM. Implementation for hull cleaning shall be through education of divers who perform underwater hull cleaning. Education shall be conducted and ensured through a two tier certification program. The first tier has been developed to allow for voluntary compliance. Should self-certification fail to educate the majority of the commercial divers statewide the second tier shall be implemented for enforcement of the MM.

#### Tiered Approach

##### *I. Self Certification*

- Divers conduct their own training seminars and issue their own certifications.
- An association would be an appropriate entity to perform the certification.
- Marina operators may provide leadership in organizing divers and certifying their understanding of BMPs.

##### *II. Regional Certification*

- If the self-certification program fails to produce an adequate number of self-certified divers, a required regional certification program would be instated. (See "Trigger Mechanisms" for determining "adequate" numbers of certifications.)
- Develop a statewide program to assess where underwater hull cleaning is a problem and require certification in those areas.

The following BMPs shall be included among the BMPs taught through both certification programs:

- ▶ Underwater Hull Cleaning
  - develop BMPs for bottom cleaning
  - no scraping, chipping, or sanding underwater
  - use alternative bottom treatments
  - use dry storage where feasible
  - continuous updating of BMPs and products
  - lease provisions regarding underwater cleaning - could include penalty/fines
  - refrain from hull cleaning for a period of 90 days from new application of bottom coatings

- Suspend the in-water hull cleaning of vessels with self-polishing or soft sloughing paint.
- 90 days after new hull paint is applied the hull should be cleaned with a "carpet", sponge, or other soft material; however, as the paint becomes less retardant to growth, it may be necessary to use more effective pads to clean the hull. Stainless steel brushes and pads should only be used on the non-painted areas.
- Rotary brush machine cleaning pads should be limited to use of soft nylon or comparable material.
- Sanding or stripping of hull paint whether by hand or with a mechanical rotary brush system should be eliminated.
- Zincs should be properly disposed of and not left in the water when replaced.
- All vessels should have properly applied paint to minimize the premature deterioration and excessive introduction of anti-fouling paint in the water.
- Upon hauling a boat with paint adhesion problems, the vessel should be repaired so as to minimize further chipping and flaking of paint into the bay.
- All vessels entering San Diego Harbor should be checked for compliance of paint regulations within allowable limits.
- Increase the enforcement of Federal and State laws prohibiting dumping of refuse, oily bilge water, etc.
- Regular maintenance of vessels, or any painted surface (docks, piers, floats) that is exposed to the water should be mandatory to prevent excessive marine growth from forming --- (the more extensive marine growth the more likely flakes of painted surfaces will be removed during the process of cleaning.)
- ▶ Topside Cleaning
  - minimize waste going into water, catch as much as possible
  - create a feedback loop for evaluating BMPs
  - use alternative products or methods that reduce environmental impacts

**Implementor:** A diver association (as yet unformed) or expanded trade association would implement the self certification program. The RWQCB would implement a regional certification program.

**Means of Enforcement:** Enforcement would only come into play during Tier II - Regional Certification. Fines and forfeitures will have to be implemented for those divers who operate without the required certification. The RWQCB and the CCC will have to develop the enforcement mechanisms.

**Trigger Mechanism:**

*Implementation Monitoring:* Track the number of certifications and develop a model to assess how many certifications there should be in a given region. (e.g. number of boats, number of divers, frequency of hull cleaning, number certified.) The output of this model would be the number of cleanings done by noncertified divers. An insufficient number of certifications

in a given region would trigger the implementation of a regionally required certification program.

*Effectiveness Monitoring:* Bottom sediment quality monitoring performed for dredging permits can demonstrate effectiveness

**Actions Needed for Implementation:** Convene a stakeholders group (divers, boaters, facility operators, regulatory agencies, etc.) to develop a method of implementation.

**Gaps/Inconsistencies:** Existing information needs to be made available and further research needs to be conducted to adequately determine the effects of hull cleaning on water column and sediment quality. This information should be used to educate divers and boaters on the importance of using BMPs during underwater hull cleaning.

### Public Education Management

**Management Measure:** *Public education/outreach/training programs should be instituted for boaters, as well as marina owners and operators, to prevent improper disposal of polluting material.*

**MM as Adopted by the TAC:** The TAC rewrote the MM to be more specific and encompassing. The MM as adopted by the TAC is: Public education/outreach/training programs should be instituted for boaters, boating groups, marina owners and operators, waterfront agencies, service providers and other related groups to increase the availability and proper use of disposal equipment and techniques for polluting materials as well as promote the use of alternative and environmentally safe materials and practices.

**Applicability:** This MM is intended to be applied by States to all environmental control authorities in areas where marinas are located.

**Method of Implementation:** Educate boaters, boaters' groups, marina operators and owners, waterfront and tideland agencies, service providers, and other groups through various educational dissemination systems. (See Appendix 1, Final Recommendations from the Education Subcommittee, for more detail on target groups and dissemination vehicles.) Initiate the program using materials reviewed and recommended by a stakeholders committee convened by the University of California Sea Grant Extension Program (UCSGEP). Some TAC members, and SWRCB and California Coastal Commission (CCC) staff will cooperate with the committee to recommend procedures for:

- funding to update existing and develop new educational materials and programs as needed;
- promoting the use of educational materials;
- establishing and funding an educational materials dissemination system, such as a government agency clearinghouse; and
- assessing the effectiveness of educational programs.

**Implementor:** UCSGEP will initiate implementation of this MM. Implementation will be completed and maintained by a procedure to be recommended by the committee convened by the UCSGEP and its cooperators and approved by the SWRCB and the CCC.

**Means of Enforcement:** Not required for this MM.

**Trigger Mechanism:**

**Implementation Monitoring:** The UCSGEP committee will report on initial implementation and cooperate to recommend procedures for continued monitoring to be approved by the SWRCB and the CCC.

*Effectiveness Monitoring:* Implementation will be assessed through procedures to be recommended by the committee convened by the UCSGEP, its cooperators, and a proposed educational clearinghouse and approved by the SWRCB and the CCC.

**Actions Needed for Implementation:**

**PHASE I**

As part of UCSGEP's process, people, agencies, and organizations statewide will be invited to participate through correspondence and attendance with the review and evaluation of existing materials, identification of gaps, and recommendation for production of new educational materials as needed for statewide application. The SWRCB, CCC, and TAC members will cooperate with this committee. Funding for producing and disseminating materials should be included in implementation program priorities. Educational organizations should be encouraged to seek funding for producing and disseminating needed educational materials. SWRCB and CCC should work with the UCSGEP committee to recommend funding and mechanisms for establishing a statewide educational materials clearinghouse, such as California Department Boating and Waterways. UCSGEP will produce some educational materials and make them available for reproduction and statewide dissemination.

**PHASE II**

Research boating-related products and technologies for effectiveness, toxicity, and true cost pricing. Generate a list of products and practices that are proven to be environmentally effective for their intended purposes. Funding for such studies should be included in implementation program priorities. Various research and education groups should be encouraged to seek funding to conduct such studies and disseminate results.

**PHASE III**

Allow for adoption of proven advancements. Establish a process to evaluate BMPs and products that may be challenged. As information is generated from Phase II and III, educational materials should be appropriately modified.

**PHASE IV**

The educational clearinghouse should coordinate with SWRCB, CCC, the boating community, the UCSGEP committee and various environmental, research and educational organizations to identify and communicate research and education priorities to agencies and other funding sources to complete phases I, II, and III. It should seek funds to continue providing educational materials to targeted groups for use in the educational vehicles described above. A mechanism to evaluate the effectiveness of this extended program should also be developed.

### Maintenance of Sewage Facilities Management

*Management Measure: Ensure that sewage pumpout facilities are maintained in operational condition and encourage their use.*

**MM as Adopted by the TAC:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States to marinas where marine sewage disposal facilities exist or will be added.

**Method of Implementation:**

Require marina operators to provide and budget for regular maintenance of sewage pump out facilities in permit requirements. To aid in implementation, signage with the permitting agency name and phone number should be posted at the facilities to allow inadequate maintenance to be reported. Regional Boards should work with local health services agency to ensure maintenance and operation of pumpout facilities. Provide education to boat owners on the appropriate use of pumpout facilities.

Additional Recommendations

- Federal grants for pumpouts that are provided through the Department of Boating and Waterways should be available to private facilities, not just public agencies.
- US EPA should research new types of pumpout facilities that are effective and easy to use and maintain because existing systems are not adequate to allow unsupervised use by the public without causing problems with the systems.
- Provide examples of effective pumpout operations that are currently being used around the state.
- Encourage the state to pursue a human waste specific indicator test for human pathogens because the testing that exists now is not specific for humans but monitors for all warm-blooded animal wastes.

Examples of Effective Pumpout Systems

1. Santa Cruz Small Craft Harbor
2. Woodley Island, Humboldt Bay
3. Skippers Cove, Lake Engelbright
4. Sheraton East, Harbor Island, San Diego - Uses a portable machine to pump sewage from boats at the dock.
5. Avalon, Santa Catalina Island - Uses dye tablets for its large transient vessel population to expose illegal dumping.

**Implementor:**

- New and expanding marinas: Regional Water Quality Control Boards, California Coastal Commission, State Lands Commission, or local governments managing marinas can include these requirements in their permits or leasing agreements. Outside the Coastal Commission and State Lands Commission jurisdiction, implementation at each marina would be on a case-by-case basis depending on which agency has jurisdiction over the marina in question.



- ▶ Existing marinas: Regional Boards should work with local health services agency to ensure maintenance.

**Means of Enforcement:**

- ▶ Regional Boards have authority under Porter-Cologne to require functioning pumpout facilities as well as under the Harbors and Navigation Code and California Code of Regulations.
- ▶ New and expanding marinas: enforcement is possible through the permitting process. Failure to comply with permit conditions will be reported through citizen monitoring and reporting to the posted agency and phone number.

**Trigger Mechanism:**

*Implementation Monitoring:*

- ▶ Regular water quality monitoring by health department will indirectly demonstrate use.
- ▶ Keep a log of complaints that are registered by people who found pumpout facilities not working.
- ▶ Have the RWQCB work with local health services agency to perform spot inspections.

*Effectiveness Monitoring:*

- ▶ Keep a log of usage at the pumpout facility.

**Actions Needed for Implementation:**

- ▶ Develop agreements between RWQCB and local government.

### **Boat Operation Management Measure**

*Management Measure: Restrict boating activities where necessary to decrease turbidity and physical destruction of shallow-water habitat.*

**MM as Adopted by the TAC:** The TAC adopted EPA's MM as it is written above.

**Applicability:** This MM is intended to be applied by States in non-marina surface waters where evidence indicates that boating activities are impacting shallow-water habitats.

**Method of Implementation:** Many areas which suffer from boat wake erosion already implement this MM through the use of speed controls, jet drive bans, and placement of booms. Encourage local government to identify additional areas which suffer from boat wake erosion. Establish speed limits, jet drive bands and the use of booms as appropriate in these areas.

**Implementor:** This MM will be implemented by the State, federal, or local government which have authority over the boat operation in the particular water body.

**Means of Enforcement:** The agency with authority over boat operation in a given water body should already have the necessary authority to implement this MM.

**Trigger Mechanism & Actions Needed for Implementation:**

The TAC believes that the implementation detailed above is sufficient and that the state should determine the specifics for triggers and actions for implementation.

**APPENDIX 1  
FINAL RECOMMENDATION  
FROM THE EDUCATION SUBCOMMITTEE**

The final recommendation from the Education Subcommittee to the Technical Advisory Committee encompasses all aspects of an educational program for marinas and recreational boating nonpoint source pollution. Specifically, the subcommittee laid out plans for whom to educate, how to disseminate the material, and what materials to be used. It also details an action plan for implementation and possible funding sources for continued implementation.

**Whom to Educate**

While educating everyone from boaters and marina operators to the public and school children would be beneficial in controlling nonpoint source pollution, the Subcommittee recommends the following list of groups be targeted first.

**Primary Target Groups**

- ▶ Boaters / Boating Groups
- ▶ Marina Owners / Operators
- ▶ Waterfront / Tideland agencies
- ▶ Service Providers

The Subcommittee recognizes the problem of contacting the service providers who operate independently and by word of mouth. They generally do not belong to associations or groups that could be used to contact them. Therefore, a mechanism to contact these people needs to be developed.

Identify local service providers:

- ▶ Use marinas' and yacht clubs' "recommended lists" of service providers
- ▶ Yellow pages
- ▶ Trade association lists (No. Calif. Marine Asso., So. Calif. Marine Asso., Calif. Asso. of Harbor Masters and Port Captains, Marina Recreation Asso.)
- ▶ Boater/Angler publications, bill enclosures, etc. "If you are a service provider and want to know more about the NPS program call ... and give your name, address, etc."

**Other Target Groups**

- ▶ Water quality agencies' decision makers and staff
- ▶ Public
  - Waterfront visitors
  - Pier fishers
- ▶ Youth
  - Existing water quality education programs
  - Aquatic recreation programs
- ▶ Fishing groups (angling clubs)
- ▶ Commercial passenger fishing boat operators
- ▶ Waste management companies (education on identifying hazardous wastes in their

- ▶ dumpsters to prevent transport of these wastes to landfills)
- ▶ Entrepreneurs (education on related business opportunities to help promote the waste disposal industry)
- ▶ State and local government (education should include the need to work with boaters and entrepreneurs to get the hazardous waste disposal system going)

### **Educational Media and Delivery Systems**

Educational media can take many forms. However, the Subcommittee recognizes that some forms are more effective and/or cost efficient than others. Furthermore, different target groups will benefit from different forms of educational delivery systems. Therefore, the subcommittee recommends the following delivery systems for each target group.

#### **Boaters / Boating Groups**

- ▶ Peer pressure/word of mouth
- ▶ Marina, yacht club, harbor newsletter articles
- ▶ Waterfront newspaper articles
- ▶ Pamphlets included in marina or public utility billing statements
- ▶ New tenant information packet to be distributed after signing a lease
- ▶ Boat registration enclosures
- ▶ NPS regulation requirements included in lease agreements
- ▶ Pamphlets / Rack cards, "more information available upon request"

#### **Marina Owners / Operators**

- ▶ Word of mouth
- ▶ Newsletter (trade associations) articles
- ▶ Waterfront newspaper articles
- ▶ Seminars
- ▶ Payroll enclosures (for management)
- ▶ Joint industry/agency meetings to improve communication and understanding
- ▶ NPS requirements in waterfront agency lease agreements

#### **Service Providers**

- ▶ Identify providers and develop a mailing list
- ▶ Joint industry-agency meetings
- ▶ Waterfront newspaper articles
- ▶ Trade association newsletter articles
- ▶ Marina/yacht club management
  - requirements of marinas mailed to service providers - facility managers need NPS program information
  - require that all service providers must check in at office
  - hand out card or pamphlet of requirements

Waterfront / Tideline Agencies

- ▶ Contact agency head or central office to identify what department / staff member(s) will handle boating NPS
- ▶ Invite them to seminars
  - statewide within agencies
  - regionally and locally across different agencies
- ▶ Pamphlets, leaflets
- ▶ Joint industry-agency meetings

Other Forms of Media Delivery Systems

A number of ideas that require more time and/or money to develop are also recommended when and where they are feasible:

- ▶ Training classes
  - Marina, yacht club, harbor district staff
  - Cleaning / Repair service providers
  - Agency staff (e.g. inspectors)
- ▶ Seminars
  - Marina, yacht club, harbor district managers
  - Cleaning / repair service providers
- ▶ Use existing education programs for boaters:
  - USCG Sea Keepers (K-adult) (currently marine debris)
  - USCG Auxiliary - safety
  - USCG Power Squadron - safety
  - School K-College Ecology Clubs
  - Aquatic recreation programs (club, community, campus)
- ▶ Storm drain notices
  - Drain stenciling
  - Parking lot signs - "Drains to Bay"
- ▶ Tidelines calendars - ecology messages
- ▶ Cooperative efforts with water oriented groups
  - Surfrider Foundation
  - Angler's Clubs
- ▶ Events for boaters on nonpoint source
- ▶ Agencies designated "marina contact person" who gets to know managers, whom they can call for questions or to give suggestions
- ▶ Videos - develop educational videos that are available on loan to marina members and are introduced with an event. (e.g. BMP do's and don'ts demonstrated and explained)
- ▶ "How to" Lists - Develop lists of environmentally safe practices (i.e. "10 Ways to Save the World") that can be distributed in newsletters
- ▶ Add pages on Environmental Do's and Don'ts to "The ABC's of California Boating Laws"

### **Materials for Use in Educational Programs**

Due to the fact that many existing educational materials are inadequate or incorrect, existing materials need to be reviewed and further materials need to be developed to address aspects of nonpoint source control education which have not been previously addressed. The University of California's Sea Grant Extension Program has already begun compiling and reviewing existing materials. The Subcommittee recommends that Sea Grant continue this work on behalf of the TAC in order to produce proper materials for use in educational programs. The Subcommittee further recommends that a Review and Development Committee be convened by Sea Grant to help in the review and development process. Leigh Johnson, the Sea Grant Coordinator, has agreed to Sea Grant's role as lead agency in this process. The Subcommittee recommends that the following groups be included in the Review and Development Committee:

- |                             |                                 |
|-----------------------------|---------------------------------|
| ▶ Facility Managers         | ▶ Dept. of Boating and Waterway |
| ▶ Selected RWQCB staff      | ▶ Boaters                       |
| ▶ Product Manufacturers     | ▶ Educators                     |
| ▶ Calif. Coastal Commission | ▶ Service Providers             |
| ▶ Scientists                | ▶ TAC Members                   |
| ▶ Environmental Groups      | ▶ State Water Resources Board   |

### **Action Plan**

#### **PHASE I**

As part of UCSGEP's process, people, agencies, and organizations statewide will be invited to participate through correspondence and attendance with the review and evaluation of existing materials, identification of gaps, and recommendation for production of new educational materials as needed for statewide application. The SWRCB, CCC, and TAC members will cooperate with this committee. Funding for producing and disseminating materials should be included in implementation program priorities. Educational organizations should be encouraged to seek funding for producing and disseminating needed educational materials. SWRCB and CCC should work with the UCSGEP committee to recommend funding and mechanisms for establishing a statewide educational materials clearinghouse, such as California Department of Boating and Waterways. UCSGEP will produce some educational materials and make them available for reproduction and statewide dissemination.

#### **PHASE II**

Research boating-related products and technologies for effectiveness, toxicity, and true cost pricing. Generate a list of products and practices that are proven to be environmentally effective for their intended purposes. Funding for such studies should be included in implementation program priorities. Various research and education groups should be encouraged to seek funding to conduct such studies and disseminate results.

#### **PHASE III**

Allow for adoption of proven advancements. Establish a process to evaluate BMPs and products that may be challenged. As information is generated from Phase II and III, educational materials should be appropriately modified.

**PHASE IV**

The educational clearinghouse should coordinate with SWRCB, CCC, the boating community, the UCSGEP committee and various environmental, research and educational organizations to identify and communicate research and education priorities to agencies and other funding sources to complete phases I, II, and III. It should seek funds to continue providing educational materials to targeted groups for use in the educational vehicles described above. A mechanism to evaluate the effectiveness of this extended program should also be developed.

**Funding**

In order to develop the most effective and accurate educational materials, make them available to the public, and continuously update them, funding will need to be provided. The following is a list of potential funding sources that should be explored by the lead agency determined by the Sea Grant Committee.

**Federal Funding Sources**

- ▶ 319 Grants
- ▶ 205 (j) Clean Water Act funding
- ▶ 104 (b) (3) Clean Water Act funding
- ▶ 605 (a) Clean Water Act
- ▶ US Coast Guard

**State Funding Sources**

- ▶ Calif. Dept. of Boating and Waterways may have \$600,000 for boat sewage pumpout stations
- ▶ A bill written specifically to fund educational programs with the State Water Resources Control Board serving as the lead agency. The funds should have less restrictions than the 319 funding requirements:
  1. Lower matching funds requirement;
  2. Fund programs which fit into a watershed approach but do not require that they be a part of an existing watershed plan to allow for areas which don't already have a plan;
  3. Fund programs which address the educational needs of the Nonpoint Source Program;
  4. All components of the Nonpoint Source Program should be eligible to apply.
- ▶ The Calif. Coastal Conservancy

**Local Funding Sources**

- ▶ Landlords (i.e. port authorities, mitigation projects)
- ▶ Marinas, in conjunction with a state agency, could develop a fund to which all marinas could contribute.
- ▶ Sources that fund household hazardous materials programs

Private funding

- ▶ Boaters' groups (Recreational Boaters of California, etc.)
- ▶ Corporate Sponsors (e.g. Proline, Bayliners)
- ▶ Foundations