



# **Chapter Seven: Pulling It Together — The Marina Environmental Management Plan**

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# Pulling It Together — The Marina Environmental Management Plan

The best way for implementing Best Management Practices (BMPs) at your marina, boatyard, or yacht club is to develop a specific working plan for your facility: a Marina Environmental Management Plan. To effectively develop such a plan you must understand the potential pollution sources at your marina, the physical characteristics of your site, and the particular needs and interests of your customers and their boats.

In reviewing the activities listed in Chapter 4 that occur at your marina, you probably have a good understanding of potential pollution sources at your facility. If you are still uncertain about pollution sources, feel free to call the Massachusetts Office of Coastal Zone Management (CZM), another marina manager, or a consultant for technical assistance.

You can integrate this information with the marina's short and long-term business goals to develop a basic plan as outlined below. While this may seem like a cumbersome exercise, the creation of a basic plan will help you effectively prioritize improvement projects that will both enhance your business and prevent negative environmental impacts.

This chapter explains the benefits of planning, helps you pull together the checklists from Chapter 4 into a plan, and offers additional planning information.

## 7.1 Benefits of a Marina Environmental Management Plan

The development of a Marina Environmental Management Plan has both direct and indirect benefits. As for direct benefits, a plan will help you make informed decisions about implementing BMPs by anticipating the costs and benefits of each choice. Selecting improvements that will provide for a more efficient and cleaner operation in the future, while identifying and avoiding unnecessary and more costly options, can result in future business savings. Some improvements, such as dripless oil changes or vacuum bilge water removal, can provide new or enhanced sources of revenue to the marina business (as discussed in Chapter 3).

A plan also provides ancillary benefits, such as helping to keep the marina in compliance with existing laws and regulations, and improving its standing with local and state regulators for future permit applications. Therefore, one of the first actions of a plan should be to determine whether or not the marina is currently complying with major environmental laws and, if not, what improvements need to be taken to achieve compliance. If you are unsure whether or not you are in compliance with existing environmental

laws and regulations, refer to Chapter 6. Developing an environmental plan for your marina can head off protracted environmental permit review and the resulting loss of both time and money. Most of all, a plan will provide you with a blueprint for making sound improvements and operations that can attract more customers to your facility.

## 7.2 How to Develop a Plan

Use the checklists in Chapter 4 as the starting point for a Marina Environmental Management Plan. These checklists will help you identify pollution sources at your marina and appropriate BMPs to protect the water quality. However, that is only the first step. You must then use the information that you have collected to prioritize the implementation of improvements based on the site specific needs of your marina.

The seven steps for developing a basic plan are:

1. Identify all existing and potential pollution sources and select possible BMPs.
2. Prioritize BMPs based on legal requirements, need, cost, and ease of implementation.
3. Identify BMPs that you can put into effect immediately by changing the way you conduct business; establish new protocol for implementation.
4. Identify BMPs that require long-term planning.
5. Develop a cost strategy for paying for BMPs.
6. Develop a schedule for implementing BMPs.
7. Finalize your plan.

### Identify Pollution Sources and Select BMPs

Chapter 4 of this document discusses the major marina activities that commonly cause pollution, along with the BMPs that can solve these pollution problems. To identify pollution sources and select BMPs for your marina, use Chapter 4 as your guide and follow these steps:

- Walk around the marina and identify all potential and existing pollutant generating activities present and read the appropriate section in Chapter 4.
- Complete the checklist in Chapter 4 for each activity that occurs at your marina.
- Any checks in the “no” column indicate BMPs you should consider implementing when developing your Marina Environmental Management Plan. Identify from the checklist the BMPs that might work for your marina. Review the page numbers indicated on the checklist to familiarize yourself with the BMP. Note the next steps in the “action” column.



Complete the activities checklist to help you identify problems, select BMPs, and prioritize them for implementation.

### Be Creative!

The BMP lists are just suggestions and are not meant to exclude use of other solutions. If you know of a different way to achieve the same Clean Marina goal, you should add it to your list.

## Prioritize BMPs

Once you have completed all the checklists that apply to your marina, review them as a group and prioritize BMPs that you plan to implement. The prioritization of BMPs will depend on several factors. Any BMP that will clearly help the marina achieve compliance with existing federal or state regulations should be considered first. These BMPs are identified on the checklists in Chapter 4 with an asterisk. It is imperative that you focus on these BMPs first. Other factors that you should consider in prioritizing BMPs include:

- Consider how you can incorporate BMPs into any projects that you have already planned.
- Pollution prevention is almost always less costly than pollution cleanup, so consider BMPs that reduce the use of toxic substances, or that contain and limit the area in which they are used.
- BMPs that will help correct the most severe pollution problems at your marina should rise to a high priority, while those BMPs that have a limited chance of success should go to the bottom of the list, or be eliminated.
- Reorder your list of selected BMPs based on other considerations such as cost, availability of equipment, ease of implementation, and benefits to the business.

Hopefully, this guidebook has provided you with adequate information on pollution sources and BMPs. Should you need additional information, however, call one of the marina owners listed in the guidebook or CZM. Because CZM is primarily a planning and technical assistance agency, its staff can help you sort through some of these issues.

To increase the broad effect of environmental improvements, you should also develop a balance between different categories of BMPs. For example, structural changes to your marina can make a great difference in reducing pollution impacts. However, their cost may be very high and the effectiveness may not be as great as another BMP, such as adding an educational component to make sure that boaters know how to reduce their impacts (e.g., signs or fact sheets). Also consider that some Clean Marina practices will bring greater improvements in the long-term and may be considered as a high priority despite initial start-up costs. To effectively make these types of improvements, however, you will need to develop a cost strategy.

## Identify BMPs to Implement Immediately

Upon compiling your list of BMPs for consideration, divide them into two groups: those that can be implemented with little or no direct cost and those that require financial planning to fund and implement. The BMPs that you can reasonably start putting into place right away should be considered first.



These BMPs consist of those actions that require a change in your daily business without any direct capital investment. Most of the activities listed in Chapter 4 include some BMPs of this type. For example, establishing a written procedure for environmentally protective fueling practices is a BMP that can be put into practice right away and have a strong positive impact on the environment. Start by compiling a list of the applicable fueling procedures that are discussed in Section 4.5 and review them with your fueling attendant. Or laminate the list and post it at the fueling station; spend some time with your customers showing them the proper practices. An even simpler example is solid waste. A few immediate changes you can make include moving your dumpster away from the water and reminding your staff to pick up trash daily as part of their regular work. These actions will produce immediate positive results with little cost or time investment.

Other types of BMPs that you may consider first include those practices that do not require any up-front cost, but may require an investment of time. Examples include developing a spill response plan and conducting regular “walk-around” training sessions with your staff to review Clean Marina practices. You may also consider low cost BMPs as well. These might include reviewing the existing information signs at the marina and having new signs made for those messages that are not getting to your customers, such as notice prohibiting bilge water discharge. There are also a number of low cost items that you could purchase if you do not already have them, including a pool skimmer for collecting trash at the dock, and fuel collars to prevent drips when fueling.

Making relatively simple changes in your daily business routine will help you incorporate the Clean Marina Philosophy into your business.

### **Identify BMPs for Future Implementation**

Other BMPs may be part of your long-term plan for facility-wide improvements. These BMPs will require funding as part of your business plan followed by the development of a long-term schedule.

Due to future uncertainty — such as economic fluctuations and technological advances — your selection of BMPs and your corresponding long-term plan will likely change over time. However, this fact does not diminish the importance of developing a long-term strategy today.

Select BMPs for future planning and implementation that fit with your current business and future goals. For example, if you already provide hull maintenance services, consider purchasing more efficient, technologically advanced equipment such as dustless sanders and HVLP spray guns. Alternatively, if you provide few services for your customers, but provide a home port for a lot of boats, you may consider service BMPs that are more generic and are needed by all boaters. Examples might include a bilge water pump system, or facility improvements to decrease stormwater pollution. Once you have selected those BMPs that make sense for you, develop a plan to fund the acquisition and payment of your new equipment.

## Develop a Cost Strategy

Once you have selected the BMPs appropriate for your marina, develop cost and benefit estimates for completing the work. The easiest way to start this process is to use general cost ranges such as “high,” “medium,” and “low,” as this will still help you understand the relative costs and benefits among options. Table 7-1 includes more information on BMP costs.

For example, costs associated with structural BMPs will include engineering and permitting costs, plus capital construction, and may be rated as “high.” Costs for an educational brochure will include development, design, printing, and mailing costs, and may be rated as “medium.” Costs for a fact sheet include copying and distribution costs, and may be rated as “low.” Once you have prioritized your list of BMPs and applied the rough cost estimate from Section 7.3, reevaluate your list based on costs and benefits, such as new income. You may want to call manufacturers to obtain more specific costs to help you in your decision-making. If possible, identify those costs that are new, those that are added, and those that are already paid for as part of the cost of other tasks. Identify costs that would be included within work that is already planned.

Decide how you will pay for the BMPs that are at the top of your list and how long it will take you to pay for them. Determine which BMPs can be implemented given existing revenues generated by the marina. Consider the existing and future demand for marina facilities and services and determine if augmented fees can be applied to your existing fee structure. Below are some suggestions based on successful practices implemented at other marinas:

- Where can fees be increased when revenue from the services you are providing is not adequately covering your costs? For example, do your fees adequately cover your costs for disposing of used oil and hazardous waste? If not, apply a new user fee to customers that rely on the marina to dispose of these wastes.
- Determine if implementing a BMP will decrease your costs in the long-run. For example, if your marina operates year-round, would purchasing a waste oil burner save the marina money spent on heating and oil disposal over the long-term?
- Consider establishing a flat environmental fee and an account for a specific improvement. Inform your customers why the fee is needed, what it will pay for, and when the improvement will be completed.

## Develop a Schedule

Develop a schedule for starting the new Clean Marina practices. This will be strongly tied to your cost strategy discussed above.

In general, start with the BMPs that are a high priority and have a relatively low cost. Try to do related BMPs together (e.g., design solid waste disposal areas, and put up appropriate signage to direct boaters to the receptacles). Also link the BMP

implementation schedule to the capital improvement plan. You should always keep in mind that implementing BMPs can be effectively incorporated into any modifications that have planned for non-environmental reasons.

BMPs that are a high priority and can be paid by user fees should be included early in your implementation schedule. Those that are more expensive and need to be paid for through a dedicated fund over time should be planned now (particularly through financing) but considered for implementation in the future.

### **Finalize Your Plan**

Your plan will be substantially complete and can be very useful if you have followed the steps above. You may also consider doing a sketch of your facility that locates existing activity areas, and a second sketch that shows areas for proposed improvements. This will not only be useful for your planning purposes, but is also a specific requirement for a Stormwater Pollution Prevention Plan (see Chapter 6).

Combine all of your checklists together in a binder along with your prioritized list of BMPs, cost strategy, and time schedule. This will constitute a basic Marina Environmental Management Plan that you can refer to over the years as you make improvements to your marina.

Remember that your plan should be flexible so that you can adapt it to unknown factors, such as market fluctuations, changes in customer needs, and new products and BMPs that may become available in the future. Complete your plan by implementing a means for evaluating the success of the marina's efforts. One way to accomplish this is to review your checklists and plan on an annual basis as a self-audit to evaluate your progress. Keep these records to document your efforts.

A Marina Environmental Management Plan will formalize your commitment to the Clean Marina Philosophy and help you decide how this philosophy will best help your business and the marine environment around your facility.

Both the marina industry and state and federal governments believe that Clean Marinas will help sustain the boating industry well into the 21st Century because, today, boaters expect clean water. Making the improvements that you have identified, both simple and complex, can enhance your business and will protect the environment.

## 7.3 BMP Costs and Possible Funding Sources

The table shown below lists all of the BMPs presented in Chapter 4 along with a general cost rating and potential funding sources. Cost estimates are for capital cost and do not include labor. Therefore, inspection and training, for example, has been given a low cost when real cost may be more based on time expended for training and salary of employees being trained. Funding source will also vary among marina facilities. Therefore, suggestions or examples have been provided.

The cost rating used in the table is based on the following system:

\$ = \$1-\$100    \$\$ = \$100-\$1,000    \$\$\$ = >\$1,000

BMP	Cost	Possible Funding
<b>HULL MAINTENANCE</b>		
Designated Maintenance Areas	\$\$	Charge for Rental Equipment
Containment	\$\$	Charge for Rental Equipment
Filter Pressure-Wash Water	\$\$	Haul-out Surcharge
Work Indoors	\$\$	Charge for Rental Equipment
Work Away from the Water	\$	No Extra Cost
No In-Water Bottom Cleaning	\$	No Extra Cost
Dustless Vacuum Sanders	\$\$	Charge for New Service
Tarps and Filter Cloth	\$\$	Charge for Rental Equipment
Clean Up Designated Work Areas	\$	No Extra Cost
Designated Maintenance Areas for Painting	\$\$	Charge for Rental Equipment
Prohibit Spray Painting on the Water	\$	No Extra Cost
Clean Up Paints and Supplies	\$	No Extra Cost
Appropriate Use and Storage of Hazardous Materials and Waste	\$\$	Waste Disposal Surcharge
Spray Booths	\$\$	Charge for Rental Equipment
High Volume, Low Pressure (HVLP) Spray Guns	\$\$	Charge for New Service
Traditional Paint Applications	\$	No Extra Cost
Water-Based Paints	\$	No Extra Cost
Inform Do-It-Yourselfers	\$	No Extra Cost
Train Employees	\$	No Extra Cost



## BOAT CLEANING

Designated Maintenance Areas	\$\$	Charge for Rental Equipment
Natural Cleaners	\$	No Extra Cost
Biodegradable Soaps	\$	Sales at Ship Store
Solvent Alternatives	\$	No Extra Cost
Use Solvents Properly	\$	No Extra Cost
Inform Do-It-Yourselfers	\$	No Extra Cost
Train Employees	\$	No Extra Cost

## ENGINE MAINTENANCE

Designated Maintenance Areas	\$\$	Charge for Rental Equipment
Proper Waste Disposal	\$\$	Waste Disposal Surcharge
Clean Work Areas	\$	No Extra Cost
Prohibit Hosing Down of Maintenance Areas	\$	No Extra Cost
Provide Absorbent Pads	\$\$	Sales at Ship Store
Inform Do-It-Yourselfers	\$	No Extra Cost
Oil Spill Control	\$	Surcharge on Maintenance Services
Spill-Proof Oil Changes	\$\$\$	Charge for New Service
Recycle Used Oil	\$	Waste Disposal Surcharge
Pre-Cleaning Methods	\$	No Extra Cost
Use Solvents Properly	\$	No Extra Cost
Bioremediating Systems	\$\$	Surcharge on Maintenance Services
Solvent Alternatives	\$	No Extra Cost
Use Environmentally-Preferable Anti-Freeze	\$	Sales at Ship Store
Fuel Stabilizers	\$	Surcharge on Maintenance Services
Fuel Protection	\$	Surcharge on Maintenance Services
Drain Water from Fuel Systems	\$	Surcharge on Maintenance Services
Use Canvas Covers and Recyclable Shrink-Wrap	\$\$	Charge for New Service
Train Employees	\$	No Extra Cost

## BILGE WATER HANDLING

Suspend Bilge Water Discharges by the Marina	\$	No Extra Cost
Prohibit Discharge of Untreated Bilge Water	\$	No Extra Cost
Make Oil Absorbent Pads Available	\$	Sales at Ship Store
Vacuum Systems for Removing Bilge Water	\$\$	Revenue from New Service
Mandatory Bilge Water Removal	\$	Revenue from New Service
Bilge Oil Filters	\$\$\$	Revenue from New Service
Portable Oil/Water Separator	\$\$	Revenue from New Service
Installing Oil/Water Separators	\$\$	Revenue from New Service
Inform Boaters	\$	No Extra Cost
Train Employees to Watch for Pollution	\$	No Extra Cost

## FUELING

Develop an SPCC Plan	\$	No Extra Cost
Document All Formal Training Sessions	\$	No Extra Cost
Spill Containment	\$\$	Surcharge on Fuel
Reduce Wakes	\$	No Extra Cost
PWC Fueling Floats	\$\$\$	Capital Expenditure
Secure the Fuel Station	\$	Surcharge on Fuel
Shut-Off Nozzles	\$\$	Surcharge on Fuel
Nozzle Triggers	\$	Surcharge on Fuel
Alternative Fuel Nozzles	\$	Surcharge on Fuel
Spill Response Training	\$	No Extra Cost
Fuel Delivery Staffing	\$	No Extra Cost
Spill Response Locker	\$	Free Cash
Disposal Procedures	\$	No Extra Cost
Fuel System Inspection	\$	No Extra Cost
Fueling Signs and Supervision	\$	Free Cash
Spill Equipment	\$\$	Free Cash

Fuel Collars and Absorption Pads	\$\$	Surcharge on Fuel
Proper Fueling Procedures	\$	No Extra Cost
Reducing Fuel Overflow	\$	No Extra Cost
Proper Nozzle Placement	\$	No Extra Cost
Use In-Water Sausage Boom During Fueling	\$	Free Cash
Proper Gas Can Placement	\$	No Extra Cost
Install Fuel/Air Separator	\$\$	Charge for New Service

## SPILL RESPONSE

Spill Response Plan	\$	No Extra Cost
Spill Response Station	\$\$	Surcharge on Fuel
Spill Reporting	\$	No Extra Cost
Spill Response Training	\$	No Extra Cost
Proper Spill Clean Up	\$	No Extra Cost
Spill Drills	\$	No Extras Cost
Absorption Booms	\$\$	Surcharge on Fuel
Make Spill Equipment Accessible	\$	No Extra Cost

## BOAT SEWAGE AND WASTEWATER MANAGEMENT

Pumpout Maintenance	\$	Pump-out Fees, State Funding
Pumpout Cleanliness	\$	No Extra Cost
Convenient Service Hours	\$	No Extra Cost
Pumpout Staffing and Training	\$\$\$	Pump-out Fees, State Funding
Low Pump-out Costs	\$	No Extra Cost
Pumpout Signs	\$	State Funding
Holding Tank Additives	\$	Sales at Ship Store
Portable Dump Stations	\$\$	State Funding
Prohibit Sewage Discharge	\$	No Extra Cost
Fill Disinfectant Tanks	\$	No Extra Cost
Shoreside Facilities	\$\$\$	Capital Expenditure
Biodegradable Holding Tank Cleaners	\$	Sales at Ship Store

Discharge Prevention Steps	\$	No Extra Cost
MSD Retrofit Services	\$\$	Charge for New Service
Customer Education	\$	Free Cash
Refrain from Using Dish Soaps On-Board	\$	No Extra Cost
Low Nitrogen Detergents	\$	Sales at Ship Store
Dishwashing Station/Laundry Facilities	\$\$	Charge for New Service
Encourage Use of Marina Facilities	\$	No Extra Cost

## SHORESIDE FACILITIES AND PET WASTE MANAGEMENT

Clean Restrooms	\$\$	Augment Operating Budget
Convenient Restrooms	\$\$\$	Capital Expenditure
Septic System Maintenance	\$\$	Augment Existing Maintenance Budget
Dishwashing / Laundry Facilities	\$\$	Charge for New Service
Dog Walking Area	\$\$	Capital Expenditure
Pet Waste Disposal	\$\$	Docking Surcharge
Pet Regulations	\$	No Extra Cost
Litter Box Use and Disposal	\$	No Extra Cost
Wildlife Feeding Rules	\$	No Extra Cost

## SOLID WASTE

Recycling Strategies	\$	No Extra Cost
Used Battery Storage and Disposal	\$\$	Waste Disposal Surcharge
Trash Container Placement	\$	No Extra Cost
Trash Covers	\$	Waste Disposal Surcharge
Dumpster Signs	\$	Free Cash
Locate Dumpster Away from the Water	\$	No Extra Cost
Smoking Signs	\$	Free Cash
Litter Bag Distribution	\$	Free Cash
Trash Clean Up	\$	No Extra Cost
Pool Skimmers	\$	Free Cash
Trash Awareness	\$	Free Cash
Recycle As Much As Possible	\$	Waste Disposal Surcharge

Community Recycling Participation	\$\$	Waste Disposal Surcharge
Mark Recycling Containers	\$	Free Cash
Recycling Signs	\$	Free Cash
Recycle Shrink Wrap	\$	Waste Disposal Surcharge

## HAZARDOUS WASTE MANAGEMENT

Provide Employee Training	\$	No Extra Cost
Coordinate with Town Safety Departments	\$	No Extra Cost
Establish a Facility Hazardous Waste Plan	\$	No Extra Cost
Understand Chemical Type and Hazard Degree	\$	No Extra Cost
Use Signs	\$	Free Cash
Limit Hazardous Liquid Transportation	\$	No Extra Cost
Use of MSDSs	\$	No Extra Cost
Proper Handling of Liquids	\$	No Extra Cost
Proper Hazardous Materials and Waste Storage	\$\$	Waste Disposal Surcharge
Container Labeling	\$	No Extra Cost
Regularly Inspect and Maintain Storage Areas	\$	No Extra Cost
Secure the Hazardous Material Storage Area	\$\$	Waste Disposal Surcharge
Minimize On-Site Hazardous Material Storage	\$	No Extra Cost
Properly Collect Wastes	\$\$	Waste Disposal Surcharge
Maintain a Product Exchange Area	\$	No Extra Cost
Require Recycling in Contracts	\$	No Extra Cost
Drain Fluids	\$	No Extra Cost
Used Oil Burner	\$\$\$	Waste Disposal Surcharge

## FISH WASTE MANAGEMENT

Off-Shore Cleaning and Disposal	\$	No Extra Cost
Fish Cleaning Area and Rules	\$	No Extra Cost
Fish Cleaning Staff	\$\$	Incorporate Into Existing Activities
Covered Containers	\$	No Extra Cost
Fish Cleaning Provisions in Customer Contracts	\$	No Extra Cost
Fish Composting	\$\$	Waste Disposal Surcharge
Fish Cleaning Stations	\$\$	Waste Disposal Surcharge

## STORMWATER MANAGEMENT

Catch Basin Maintenance	\$\$	Capital Expenditure
Street Sweeping	\$\$\$	Include in Existing Maintenance Budget
“Don’t Dump” Stenciling:	\$	No Extra Cost (if work with a local group)
Prohibit Hosing Down of Hard Surfaces for Cleaning	\$	No Extra Cost
Reduce Pavement Area	\$\$	Capital Expenditure
Move Parking Area	\$\$\$	Capital Expenditure
Vegetated Buffers	\$\$	Capital Expenditure
Oil/Grit Separators	\$\$\$	Capital Expenditure
Leaching Basins	\$\$\$	Capital Expenditure
Filters in Catch Basins	\$\$	Capital Expenditures
Sand Filters	\$\$\$	Capital Expenditure
Proprietary Technologies	\$\$\$	Capital Expenditure

## BOAT OPERATIONS

Observe No Wake Zones	\$	No Extra Cost
Promote Safe, Responsible Use of Boats	\$	No Extra Cost
Abide by Personal Watercraft Laws	\$	No Extra Cost
Avoid Boating in Shallow Waters	\$	No Extra Cost
Do Not Speed Near Salt Marsh	\$	No Extra Cost
Sell Four-Cycle Engines	\$	No Extra Cost