

Oregon Department of Environmental Quality

Best Management Practices for Oregon Marinas



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**Revised by DEQ Marina Outreach Team
May 2002**

OVERVIEW

The growth of recreational boating in Oregon, indeed the growth of coastal development in general, has heightened the need to protect Oregon's coastal waterways. In the Coastal Zone Management Act (CZMA) of 1972, Congress declared it national policy that state coastal management programs provide for public access to the coasts for recreational purposes. Poorly planned or operated marinas, or common use of poor boating practices, can pose threats to the health of aquatic systems and place at risk this rich natural resource.

This manual recommends pollution prevention and best management practices (BMPs) for Oregon marinas. These BMPs offer ready methods that comply with the regulations while minimizing waste. DEQ hopes to foster the pollution prevention attitude at work in this industry.

These BMPs cover facilities and associated shore-based services that support recreational boats and boats for hire, including the following:

- Any facility with ten or more slips, piers where ten or more boats may tie up, and any facility where a boat for hire is docked
- Boat maintenance or repair yards that are adjacent to the water
- Any Federal, State, or local facility with boat maintenance or repair on or adjacent to water
- Public or commercial boat ramps
- Any residential or planned community marina with ten or more slips
- Any mooring field where ten or more boats are moored

ACKNOWLEDGEMENTS

The National Oceanic and Atmospheric Administration provided financial assistance for preparation of this document through a grant under section 6217 of the Coastal Zone Management Reauthorization Amendments of 1990.

The DEQ Marina Outreach Team appreciates the involvement and support of the Oregon Coastal Management Program of the Oregon Division of Land Conservation and Development (DLCD).

We would also like to thank the Oregon Marine Board, Oregon Department of Fish & Wildlife, the Division of State Lands, Oregon State Fire Marshal, and the Pacific Oil Spill Pollution Elimination Team (POSPET) for their input into this document.

We very much appreciate the time and insight provided by interested marina operators and harbormasters. DEQ supports recreational boating. We share values in protecting Oregon's waterways for a safe and enjoyable tomorrow.

Accessibility Information

This publication is available in alternate format (e.g., large type, braille) by calling DEQ Public Affairs at (503) 229-5317 or toll free within Oregon at 1-800-452-4011. People with hearing impairments can call DEQ's TTY number at (503) 229-6993.

TABLE OF CONTENTS

Overview	i
Introduction to Best Management Practices for Normal Operations and Maintenance	1
BMP 1.0 Education, Training and Notification	2
BMP 2.0 Marina Rules and Regulations	3
BMP 3.0 Vessel Maintenance and Repair: General, and Engine Maintenance and Repair	3
BMP 3.1 Vessel Maintenance and Repair: Cleaning	5
BMP 3.2 Vessel Maintenance and Repair: Scraping and Sand Blasting	6
BMP 3.3 Vessel Maintenance and Repair: Painting	8
BMP 4.0 Vessel Storage	9
BMP 5.0 Fuel Handling	10
BMP 6.0 Storage, Handling and Disposal of Hazardous Materials and Waste	12
BMP 7.0 Solid Waste Handling: Disposal and Recycling	13
BMP 7.1 Solid Waste Handling: Fish Waste Disposal	14
BMP 8.0 Sanitary Waste Handling: Sewage System Operation and Maintenance	14
BMP 8.1 Bilge Water and Ballast Water Management	17
BMP 9.0 Storm Water Runoff Quality Management: Surface Sweeping and Cleaning	17
BMP 9.1 Storm Water Runoff Quality Management: Oil & Sediment Trapping Devices	18
BMP 10.0 Maintenance Dredging	19
BMP 11.0 Maintenance of Physical Structures	20
Appendix A Guidelines for Determining Number of Boat Waste Collection Devices Required at Marinas and Moorages	22
Appendix B Listing of Potentially Hazardous Wastes	25
Appendix C Less Toxic Cleaning Alternatives	28
Appendix D Glossary of Terms	29
Appendix E Applicable Regulations	31
Appendix F Federally Designated No-Discharge Zones Introduction to Best Management Practices	35

INTRODUCTION TO BEST MANAGEMENT PRACTICES

This manual discusses Best Management Practices (BMPs) for minimizing water quality impacts. Operations and maintenance activities at marinas are potential sources of a wide range of pollutants including sediments, heavy metals, antifoulants, hydrocarbons, solvents, anti-freeze, acids and alkalis, surfactants, nutrients, bacteria, floatables and plastics. Some of these pollutants – particularly heavy metals, solvents, and hydrocarbons – may be toxic to aquatic life at low concentrations.

Management Approaches

Marine facilities can prevent or reduce pollutant discharges using Pollution Prevention and Treatment strategies.

Stop Pollution at the Source!

Pollution Prevention (P2) strategies minimize the generation and transport of pollutants by replacing toxic materials and undesirable work practices and identifying means to reduce the chance of spills.

Treatment

Treatment strategies capture and appropriately manage pollutants after they are already generated. Employ these methods to reduce the

toxicity or impacts of the pollutants you have generated.

Pollution prevention efforts are preferred over treatment techniques. Preventing pollution is more effective and far less costly than providing treatment and disposal on the back end.

Specific management practices range from posting appropriate information and employing “good housekeeping” measures, to more intensive or complex pollution control practices. No one approach or method is likely to meet the needs of every marina. Some combination of pollution prevention and treatment techniques will likely be required.

Structural measures may be required to control point and non-point water discharges. The need for structural measures should be considered when planning and designing new marinas or new marina operations. Existing marinas may also need to consider structural retrofitting to address specific discharge problems; grant money to assist with these changes may be available. Design improvements at existing marinas (and good planning for new facilities) will improve site storm water quality.

BMP 1.0 Education, Training and Notification

Description and Purpose

Marina owners and operators, marina employees, contractors, and marina users should all be informed about Best Management Practices (BMPs). BMP 1.0 addresses public and user education, employee and contractor training, and user notification necessary to implement the BMPs.

Stop Pollution at the Source!

- Every marina should inform its employees and independent contractors of specific operational BMPs used at that facility through orientation and training. Required BMP measures for contracted work should be incorporated into contracts and specifications.
- Copies of required BMP measures or specific plans derived from these BMPs, including emergency phone numbers, should be posted in all applicable work areas.
- The public and marina users have an important role in implementing practices to protect the environment and enhance recreational boating. Marina operators, state agencies, and marine trade organizations should coordinate efforts to advise the general public and marina users of the pertinent environmental concerns. Publications by the U.S. Coast Guard, U.S. Environmental Protection Agency (EPA), Oregon State Marine Board, and the Oregon Department of Environmental Quality (DEQ) can be useful boater education tools.
- Employees should receive specialized training for environmentally sensitive activities, such as fuel handling, waste handling, and proper use of toxic materials (including cleaning agents and paints). Only trained personnel should perform these activities.
- Specific BMPs requiring compliance by marina users should be written into user contracts and marina rules (see BMP 2.0

Marina Benefit by Adopting Rules).

- Advisory and warning signs should be posted in appropriate locations. Solid waste disposal facilities, recycling facilities, used oil receptacles, sanitary pump-out stations, and other features of the marina should be clearly marked as to their intended use. If rules and restrictions apply, an appropriate notice should be posted. The notices should be made of durable materials suitable for withstanding the marine environment.
- Storm drain catch basins should be marked or posted to advise marina users not to discharge waste oils or other pollutants into the storm drain system.
- Appendix B of this manual contains a list of materials that may be toxic and are commonly used in marinas. Observe these requirements and, using this list, advise marina users of hazardous materials handling and disposal requirements.
- Alternatives for a variety of toxic applications are outlined in Appendix C. Try these alternative methods and share this information with marina users.

Employee and Contractor Training Regulations

- Personnel working in spill response or cleanup require training in accordance with applicable state and federal regulations (29 Code of Federal Regulations [CFR] 1910.120).
- Employees and contractors who may be exposed to hazardous materials are subject to training and educational requirements under the Occupational Safety and Health Administration (OSHA) Employee Right to Know Program. Also, employees handling used oil and hazardous waste may require training under state and federal hazardous waste regulations (40 Code of Federal Regulations [CFR] Part 262).

BMP 2.0 Marinas Benefit by Adopting Rules

Description and Purpose

By voluntarily implementing BMPs recommended in this manual, marinas can avoid regulatory actions by government. Clarifying user responsibilities will minimize pollutant discharges and help insure that the Best Management Practices adopted by marinas actually get implemented.

Stop Pollution at the Source!

Marina rules should:

- Identify all user responsibilities for each BMP adopted by the marina.
- Designate activities prohibited at the marina.
- Clearly designate areas for restricted activities (e.g., painting and scraping, or waste handling).
- Designate activities restricted to performance by authorized personnel.
- Adopt procedures to address spills. Provide emergency contact phone numbers. A specific contingency plan does not necessarily need to be detailed in a marina's rules, but the existence of the plan and where it can be accessed should be communicated.
- Marina rules should be incorporated into user contracts, where approved methods and means of enforcement should be clearly described. Requiring observation of the rules as a term of tenancy should make them enforceable. Communicate that these rules are important for everyone, and important for the protection of boaters and the marine environment.

BMP 3.0 Vessel Maintenance and Repair: General Repair and Engine Maintenance and Repair

Description and Purpose

This BMP addresses general maintenance activities performed by boat owners and marina personnel, including engine maintenance and repair. Following these BMPs can prevent discharges of contaminants associated with the routine maintenance of vessels. This BMP covers activities that may take place on vessels while in the water, and activities that should be conducted shore-side.

Separate BMPs are provided later in this manual for cleaning, scraping and sandblasting, painting, fuel handling, waste handling, and the storage and handling of hazardous materials.

Management Approaches

In general, marina owners and operators are required to make provisions for the proper disposal of solid and liquid wastes generated

on site. This includes separate management of used oil and other liquid and solid wastes for recycling. Individual boat owners and contractors may also be responsible for certain aspects of waste handling under the marina's rules or contractor requirements. Several "good housekeeping" practices generally apply to marine engine and boat maintenance and repair activities.

Stop Pollution at the Source!

These activities may be conducted on board a vessel while it is in the water:

- Routine engine tune-ups, oil changes, and other minor servicing and repair.
- Routine care and cleaning of rigging and fittings, interior surfaces, and "brightwork," providing these activities do not produce a wastewater.

- Painting/varnishing interior surfaces and brightwork.
- Routine sanitary pump-outs and maintenance of sanitary wastewater facilities.
- Bilge pump repair.
- Removal and replacement of an engine, when all discharges or spills of engine fluids are contained.
- Similar activities where an accidental spill can be contained on deck or within the vessel.

These activities should be conducted with the vessel out of the water (and within an area designed for that purpose, if likelihood exists that pollutants may be lost to water):



Spill Cleanup Materials

- Repairs requiring the disassembly of the outboard or lower drive units.
- Bilge repairs requiring opening or penetrating the hull.
- Scraping, sandblasting, or painting the hull exterior or drive units.
- Interior or on-deck painting or similar activity involving aerosol application with a risk of over-spray or drip beyond the confines of the vessel.
- Hull exterior cleaning with agents other than non-chlorinated fresh water or natural seawater. Wastewater from such cleaning should be collected and treated, or discharged into a community sewerage system (permission may be required). Discharge of wash water into waters of the state is prohibited.
- Any other activities involving the potential risk of an unconfined discharge of oil, chemical, nutrients, or other contaminants to waters of the state.
- To the extent practicable, minimize the use of soap and detergents in the marina envi-

ronment. (Appendix C lists practical less toxic cleanser alternatives.)

- Drip pans and other protective devices should be used for all transfers of oil, solvents, and paints, and for paint mixing. Materials captured in drip pans should be used or returned to their original container if possible. If contaminated or spent, dispose of the waste as described in under BMP 6.0 Storage, Handling and Disposal of Hazardous Materials and Waste or BMP 7.0 Solid Waste Handling, Disposal and Recycling.
- Vertical lifts and marine railway devices should be maintained in a clean condition. Prior to lowering a lift, debris, oil and hazardous substances should be cleaned from the device.
- Collect, reuse or recycle spent anti-freeze in containers marked “Spent Anti-freeze Only.”
- Recycle used oil. Used oil should be collected in drums clearly labeled “Used Oil Only.”
- Do not discharge used oil, anti-freeze, or other liquid waste (e.g. paints, solvents, detergents, rinsewater) onto the ground. Do not allow these materials to enter storm water drains.
- Do not dispose of liquid waste in dumpsters.
- Provide and clearly mark designated work areas for boat and engine repair and maintenance. Do not allow work to go on outside of designated areas.
- Whenever feasible, work areas such as spray booths, maintenance garages, etc., should be enclosed.
- Engine fluids should not be allowed to discharge to floor drains or other outlets. Blind sumps, sealed and permitted, that capture contaminants for proper treatment and disposal are the only exception.

- Bilges should be inspected and cleaned prior to repairs or work that opens or penetrates the hull. Contaminated water, oil, and foreign materials found in the bilge should be cleaned out using approved absorbent materials. Used absorbents should be disposed of properly according to state and local regulations. Discharge of contaminated bilge water to waters of the state is prohibited.
- Rinse water, wash water, and other drainage from maintenance work areas should be directed to an oil/grit separator to discharge to sanitary sewers or to a holding tank for proper disposal off-site.

Spill Prevention and Management

The following measures are generally appropriate for the containment of accidental spills of oil and hazardous materials:

- Marinas should adopt spill contingency plans for the area around vessels and areas where oil and hazardous materials are used or stored. Spill plans should identify potential spill sources, areas where oil and hazardous materials are used or stored, prevention measures (e.g. security, inspection, contain-

ment, training, and equipment), and spill emergency procedures. The procedures should address health and safety, emergency notification, and spill containment and control measures. A drainage plan should be included as part of the plan. Emergency telephone numbers should be included in the plan and posted at critical locations on site.

- Spill containment and cleanup materials should be clearly marked. Store containers in a visible location, readily accessible to work and storage areas. A good kit may include absorbent pads and booms, empty sand bags, sewer pipe plugs, dry absorbent, square end shovels, a pry bar, curtain boom, drain covers, fire extinguishers, and a copy of the spill contingency plan. Spill response authorities recommend that marinas have on hand absorbent boom long enough to span the mouth of the marina and to completely encircle the largest vessel in moorage. It is important to be able to seal the marina to prevent entrance of major spills and to contain spills that occur at the marina itself.

Applicable Regulations

*Stormwater Pollution Control Planning, 40 CFR 122
Spill Prevention Controls and Countermeasures (SPCC)*

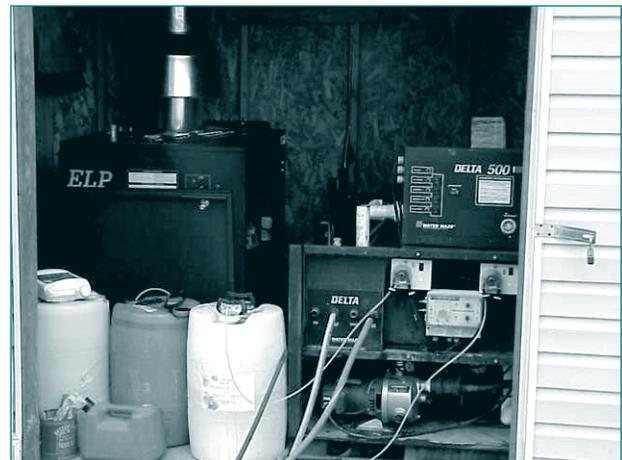
BMP 3.1 Vessel Maintenance and Repair: Cleaning

Description and Purpose

This BMP addresses pollutants associated with cleaning agents (detergents, solvents and degreasing agents, etc.), residues resulting from displacement of coatings from vessel surfaces, and sediments resulting from washing operations. Following these procedures will minimize the risk of discharging cleaning compounds, paint and varnish residues, and contaminated sediments to the environment.

Stop Pollution at the Source!

- Wash boats with low pressure water only. Avoid the use of heavy-duty detergents containing ammonia, sodium hypochlorite,



Water recycling system used for vessel bottom cleaning

chlorinated solvents, petroleum distillates, acids or lye.

- To the extent practicable, minimize the use of soaps and detergents in the marina environment.
- Avoid and discourage the use of solvents and other toxic cleaning agents.
- Use designated work areas for land-side vessel maintenance, including cleaning. Mark these areas clearly. Marina users should not perform in-the-water hull scraping or any abrasive process underwater that removes paint. In-water hull cleaning by divers is not permitted except on fiberglass hulls that do not have sloughing or ablative paints and uncoated aluminum hulled boats.
- Marina users should wash boats above the waterline by hand. Where feasible they should remove the boats from the water and clean them where debris can be captured.
- Do not discharge liquid wastes onto the ground nor allow them to enter storm drains or water bodies. Storm drain catch basins should be marked to warn marina users against illegal dumping.
- Do not dispose of liquid wastes in dumpsters. Immediately clean up any liquid spills or stains around dumpster areas.

- Use tarps and vacuums to collect solid wastes produced by cleaning and repairing boats. No waste should enter the water.

Treatment

- Conduct hydroblast (high pressure washing) operations only in accordance with the following practices:
 1. Capture all hydroblast wastewater by directing it to a holding tank or treatment unit. This prevents paint chips and oil from escaping to the water. The paint chips and sludge from the holding tanks or treatment units is a special waste that can only be disposed of at an approved facility.
 2. Cleaning processes that use chemical additives, such as solvents or degreasers, must be conducted in self-contained systems that prevent any discharge to storm drains.
 3. Discharge this wastewater with permission to the local municipal sanitary sewer system. Pretreatment may be required.
 4. Disposal of this wastewater to an on-site septic system requires a special permit.
 5. The preferred BMP for wastewater from this type of washing operation is recycling. The water can be collected, treated and reused.

BMP 3.2 Vessel Maintenance and Repair: Scraping and Sand Blasting

Description and Purpose

This BMP addresses vessel scraping and sanding. These procedures minimize the chance of releasing paint or varnish residues and contaminated sediments to the environment through direct discharge, through the air, or via storm water.

Following these practices



Vessel Bottom Work.

reduces environmental impact from metals, pesticides and other contaminants associated with paints and paint removal. Particles from sandblasting (paint chips and sand), oil, and sediment are removed from vessel surfaces during scraping and sanding. Sandblasting and paint removal should only be conducted in designated areas that have been labeled as repair areas and designed

to minimize release. Use a booth or well-engineered containment area whenever possible to capture the blast grit when sandblasting.

Stop Pollution at the Source!

- Scraping, sanding and sandblasting should not be conducted in the open where dust, paint chips, and other waste can fall or blow into the water. These activities should be performed in the following locations, in order of preference:
 1. Inside designated structures, with well-designed ventilation and particulate removal systems.
 2. At designated shore-side areas away from open water, with temporary structures or plastic sheeting to minimize the spread of dust and windblown wastes, and to prevent release of contaminants to the ground surface. Paint removal activities should be performed in paved and covered areas, whenever possible.
 3. Use a lighter with tarps. Install sheeting between the vessel and the float or walkway surface to capture dust, paint chips, debris, or other wastes rather than allow them to enter the water. A tight seal to the vessel and adjacent surfaces to prevent “leakage” of particulate outside the work area is essential. Clean the protective covering prior to removal. Remove with care to prevent release of waste accumulated in folds.
- Use vacuum sanders with dust collection units in both exterior and interior repair areas. Use wet/dry vacuums to clean up waste not otherwise captured. Cleanup should be conducted between coating applications or, at a minimum, after each work shift.
- If scraping or blasting outdoors, avoid working on windy days when control of protective sheeting is difficult.
- The bottom edge of tarpaulins and plastic sheeting should be weighted to keep them in place during light breezes.
- Keep workshops and yards free of debris and grit. This will prevent runoff and wind from carrying this waste into the water and protect the site from potential contaminants.
- Where feasible, boat maintenance and storage practices that minimize the need for scraping and sanding should be encouraged.

Waste Management

Spent sandblast grit, scrapings, and debris should be stored under cover in a manner that minimizes contact with process water or storm water. Spent sandblasting grit and scrapings are a waste requiring special management. This waste may be classed as a Special Waste or as a hazardous waste. See also DEQ Best Management Practices for Shipyards (1999 or latest version).

Applicable Regulations

Oregon Administrative Rules (OAR) Chapter 340, Division 101 for Hazardous Waste

Oregon DEQ Air Quality Permitting and Nuisance Regulations

BMP 3.3 Vessel Maintenance and Repair: Painting

Description and Purpose:

This BMP addresses vessel painting at marinas, boatyards, and similar facilities. Observing these practices minimizes the chance of discharging paint, solvents, and associated wastes to the environment.

Stop Pollution at the Source!

- Encourage the use of non-toxic, high bonding, easily cleaned hull coatings. More alternative coatings should be available as coating technology advances.
- Painting and varnishing vessels in water should generally be limited to interior surfaces and to “brightwork,” where paint materials and spills can be contained and prevented from entering the water.
- Do not paint in open areas using aerosols or spray equipment, as overspray can fall or be blown into the water. These activities should be limited to the following locations, in order of preference:
 1. Inside of commercial shipyard facilities that are designed for this activity.
 2. Inside designated structures, with ventilation and filter systems designed for this activity.
 3. At designated shore-side locations, away from open water, with temporary structures or plastic sheeting provided to minimize impacts from over-spray.
- If spray painting outdoors, avoid working on windy days when control of the protective sheeting and spray-applied paint is difficult.
- The bottom edges of tarpaulins and plastic sheeting should be weighted to keep them in place.
- A spray booth should be used whenever possible to capture overspray.
- Drip pans, tarps, and sheeting should be used to contain droppings and spilled material.
- Store and mix paints and solvents in contained areas to prevent releases onto the ground or into the water. Use drip pans or other protective devices for all paint mixing, solvent transfer, or equipment clean-up operations.
- Paint and solvent mixing, brush cleaning and similar activities should not be conducted on open floats or over water. These activities should occur in on-shore work areas. Paint transferred to an outdoor work area for application should be carried in a tightly covered container.
- When painting from open floats or lighters, paints should be kept in cans of one-gallon capacity or less. Paint cans should be placed into drip pans. Use drop cloths or tarps underneath the drip pans.
- All materials captured in drip pans should be used if possible, or properly disposed as described in BMP 6.0 Storage, Handling and Disposal of Hazardous Materials and Waste and BMP 7.0 Solid Waste Handling: Disposal and Recycling.
- In the State of Oregon, the use of anti-fouling TBT (tributyltin) containing paints is prohibited on vessels less than 25 meters in length. Vessels with aluminum hulls, which quickly corrode from cuprous oxide antifoulant coatings, are also allowed to use TBT.
- Store and handle paints, solvents, and related materials as specified under BMP 6.0.
- Do not discharge paints, solvents, or other related materials onto the ground or allow them to enter storm drains.
- Paint contains solvents and may contain metals or pesticides. These toxic substances raise risks to employee health and to the environment. Spray booths must meet local building and fire code requirements and must have adequate ventilation to meet OSHA worker exposure requirements.

- Spill contingency measures identified under BMP 3.0 should be adopted and implemented.

Waste Disposal

- Do not dispose of liquid waste in dumpsters.
- Clean-up materials soaked with solvents must be handled as hazardous waste.
- Cleaning paint guns is also hazardous. Spent solvent must be treated as hazardous waste; never discharge this waste into drains or onto

the ground. Clean paint guns in an enclosed gun cleaner; capture all solvents. Solvents should be recycled either in an onsite distillation unit or by a permitted recycling facility. Evaporation of waste solvent or waste solvent-based paint constitutes illegal disposal of hazardous waste.

Applicable Regulations

40 CFR 261.5 and 262.34

OAR 340, Divisions 101 and 102

BMP 4.0 Vessel Storage

Description and Purpose

This BMP outlines management practices recommended for boat storage areas. Two types of vessel storage are considered here. Traditional storage of boats within the upland area of the



Vessel Storage

marina, sometimes within enclosed structures, is a typical winterizing measure. “Dry rack storage” is where boats are routinely removed from the water when not in use,

cleaned, and placed in racks until the next use. Because vessels are not constantly sitting in water, the accumulation of fouling organisms on the hulls is minimized, reducing the need for washing, scraping, and painting. Dry-rack storage can help reduce hazardous waste generation and generally produces less “non-point” pollution. These practices may also reduce the need for in-water structures.

However, both types of vessel storage may result in pollution, including the use of heavy equipment (oil from fork lifts and cranes) and storage of hazardous materials (anti-freeze, fuel, batteries, and paint-related materials).

Stop Pollution at the Source!

- State-of-the-art dry rack storage facilities are

encouraged because they minimize the need for more intensive forms of hull maintenance.

- Avoid the use of heavy-duty detergents containing ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, acids, or lye.
- Avoid installing floor drains. Close any existing floor drains or connect them to the sanitary sewer, if available, and never to drain fields. Insure that all chemicals used in areas containing floor drains are contained.
- Re-use or recycle antifreeze. Store spent antifreeze in a container clearly marked “Spent Antifreeze Only.”
- Secondary containment should be provided for all liquid waste and hazardous material storage areas.
- Do not perform other vessel maintenance and repair activities in dry storage areas unless the applicable BMPs are fully implemented. Bilges should be inspected and cleaned prior to extended vessel storage. All water, oil, and foreign materials found in the bilge should be cleaned out using approved absorbent materials to remove contamination. Used absorbents should be disposed in accordance with BMPs 6.0 and 7.0. Contaminated bilge water must not be allowed to enter waters of the state. Soaps and emulsifiers should not be used to clean bilges and cannot be discharged to waters of the state.

- To reduce waste from contaminated gasoline in fuel tanks, store boat motors according to manufacturers' guidelines. To winterize, top off the tanks if the boat is stored in water, or empty and purge the tank if stored on land. Topping off tanks in the summer can result in spills due to fuel expansion. Top off in the

summer just when you are taking her out.

- Prior to lowering a vertical lift or marine railway, clean up the device to prevent contamination of the receiving waters from oil or any hazardous substance. Clean up all debris and manage it appropriately.

BMP 5.0 Fuel Handling

Description and Purpose

This BMP addresses operation and maintenance practices for fuel handling. Fuel delivery, storage and dispensing all pose risks for accidental release. These measures should minimize the chances for release. Marina operators are responsible for the prompt containment and clean up of any spill or release of hazardous materials.

Stop Pollution at the Source!

- For fueling operations, the Fire Marshall requires a person familiar with the operation and trained in emergency shutdown in attendance at all times when the system is operating. Remove old fuel nozzle triggers that lock in the "on" position. Fueling facilities and storage areas must be secured when not in use by appropriate shut-down devices and security locks.
- Educate boaters on preventing fuel spills from vent pipes and fuel expansion. Provide boaters with information regarding vent whistles and fuel/air separators. Request that boaters estimate the quantity of fuel it will take to fill their boat, and ask them not to top off their tanks, except when they are taking their boats out or as a winterizing measure to prevent condensation in the fuel system.
- Develop a Spill Contingency Plan for all fuel storage and dispensing areas. This plan must specify the quantities and types of fuels



Fueling Dock

stored and dispensed on-site, prevention measures, and spill emergency procedures – including health and safety, notification, regular equipment inspection, and spill containment and control measures. The marina

operator should maintain a list of hazardous materials on site with associated reportable quantities. A drainage plan should also be included as part of the plan.

- Owners and operators of Underground Storage Tanks (USTs) are required to maintain inventory logs of daily use versus product

level to identify abnormal loss or gain of liquid. Many other requirements apply to USTs; please contact your regional DEQ office about requirements, recommendations, and to assess your compliance status.

- The U.S. Environmental Protection Agency (EPA) requires Spill Prevention, Control and Countermeasure (SPCC) plans for exterior storage of petroleum products and waste in tanks or containers in excess of 660 gallons in any one tank or in excess of 1320 gallons cumulative. SPCC Plans require secondary containment of 110% of the volume of the largest container and written spill prevention and response measures approved as adequate by a professional engineer. These rules apply to aboveground tanks.

- Make sure that absorbent pads and booms are readily available when fueling a boat. Spill containment and control materials should be stored in a clearly marked readily accessible location. The locker or cabinet should contain absorbent pads and booms, empty sand bags, sewer pipe plugs, dry absorbent, square end shovels, pry bar, curtain boom, drain covers, fire extinguishers, and a copy of the spill contingency plan. Fueling docks should have enough boom to boom off a significant release. Booming does a good job of containing spills of petroleum until emergency help can arrive. Containing the spill should dramatically reduce impacts to the environment and risks to the marina and its tenants. Having adequate response materials on hand can substantially reduce the cost of response and cleanup. All containment berms or devices should be inspected weekly for their physical integrity and maintained in good condition. Signs of leakage or spillage should be investigated immediately, and cleaned up and reported in accordance with applicable BMP measures.
- Do not use soap on petroleum spills in the water – it will only disperse the spill below the surface, not remove or treat the contaminants.
- Post emergency phone numbers in a conspicuous location.

Report Spills!

Any spill or release of petroleum that results in a sheen on a waterway must be reported immediately to the Oregon Emergency Response System (OERS) at 1-800-452-0311 (or 1-800-OILS-911) and to the National Response Center at 1-800-424-8802. Reportable Quantity (RQ) levels have been established for many hazardous materials. A release of oil onto the ground surface of 42 gallons or more must be reported to OERS. A spill of any regulated hazardous substance in any quantity to waters of the state must be reported; any release of oil resulting in a sheen on water consti-

tutes a reportable quantity. When in doubt, it is better to report the spill. DEQ will require follow-up on cleanup actions taken on all reportable spills.

Spill Response

Cleanup efforts should commence immediately, taking precedence over normal work. Properly dispose of any spill wastes and used clean-up materials. In the event a spill occurs, the following steps should be performed as quickly as possible:

- Minimize human exposure – evacuate non-responders.
- Stop the spill at the source, if possible.
- Contain the spill. Deploy containment booms to minimize the threat of a release to water or to minimize spread if the spill has reached the water.
- On land, cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw.
- If the spill is of a reportable quantity or impacts water, or if the release violates a permit condition, notify the proper agencies. Notification is required within 24 hours. Regulators are trained to assist you with meeting your responsibility and limiting your potential liability.
- Comply with state and federal regulations to contain and clean up the spill.
- Properly characterize the cleanup waste and dispose of it to a facility authorized to handle that type of waste. (See BMP 7.0 for guidance on hazardous waste management.)

Applicable Regulations

Oregon Spill Rules, OAR Chapter 340 Division 108

UST Compliance Rules, OAR Chapter 340 Division 150 & 40 CFR 280

UST Cleanup Rules, OAR Chapter 340 Division 122

Spill Prevention, Control and Countermeasures (SPCC) Rules, 40 CFR 112

BMP 6.0 Storage, Handling and Disposal of Hazardous Materials and Hazardous Waste

Description and Purpose

This BMP addresses substances that fall within the definition of “hazardous material” or “hazardous waste.” Marina operators are responsible for determining which materials handled at their facilities are subject to regulation as hazardous materials. They must also comply with regulations for handling, storage, transportation, and disposal of waste. This BMP discusses good housekeeping practices for hazardous materials storage to minimize the threat of release.

Hazardous Waste Disposal

A listing of potentially hazardous waste streams and disposal recommendations is included in Appendix B. Spent antifreeze, used oil, fluorescent light tubes and batteries should be transported to a recycling facility. Spent solvents, paints, and sandblast residues may be hazardous waste and face additional requirements for proper disposal. Please check with your regional DEQ office about hazardous waste identification and management. DEQ Hazardous Waste Technical Assistance staff are eager to help you understand the regulations and reduce your costs for hazardous materials and hazardous waste disposal.

Stop Pollution at the Source!

- Where feasible, minimize the use and storage of hazardous materials on-site.
- Storage practices for solid chemicals, chemical solutions, paints, oils, solvents, acids, caustic solutions, and waste



Hazardous Waste (poor storage practice)

materials, including used batteries, should prevent releases to the environment and inadvertent public contact. Use practices that prevent overfilling, tipping, or rupture. Observe the following practices:

1. Place any hazardous liquids that are stored outside on durable impervious surfaces, and within berms or impoundments with containment capacity equal to 110 percent volume of the largest tank or container.
 2. Liquids should be stored under cover in closed containers. All tanks and drums should be kept closed.
 3. Store incompatible or reactive materials securely and in separate areas.
- Use storage practices that also conform with fire regulations and local codes.
 - Operate under the BMPs in this manual to prevent release of contaminants and generation of hazardous waste. For example: use drip pans, drop cloths or tarpaulins in painting operations to prevent releases, and work under cover when using hazardous materials or conducting shore side engine repair.
 - Spill plans are required if a facility is a small or large quantity hazardous waste generator. Spill reporting and response procedures are detailed under Spill Response in BMP 6.0.

BMP 7.0 Solid Waste Handling: Disposal and Recycling

Description and Purpose

Properly dispose of solid waste. Marina facilities should encourage recycling. Solid waste recommended for recycling includes glass, metal food containers, aluminum cans, cardboard, storage batteries, newspaper and scrap metal. Contact your local municipality or county regarding recycling opportunities and requirements in your area. In general, burn piles and open burning of marina generated waste is prohibited. Recycle when possible and dispose of other waste properly.

Stop Pollution at the Source!

- Signs should be posted directing patrons to solid waste disposal and recycling areas. Signs should clearly spell out rules and note any prohibited wastes. Disposal of liquid waste in solid waste receptacles is not allowed.
- Provide for collection of recyclables and encourage marina patrons to participate. Furnish separate containers for glass, recyclable plastics, scrap metal, aluminum, wood pallets, papers, cardboard, etc. Post notices to inform users of separation practices.
- Waste disposal and recycling bins, dumpsters, and containers should be clearly marked and conveniently located. Dumpsters should be covered.
- Provide appropriate receptacles for used oil and spent anti-freeze.
- Marina personnel should inspect solid waste collection facilities at least daily. Uncontained waste should be cleaned up

immediately. Any waste receptacles placed on docks or near waters' edge should be secured.

- Require use of tarps and vacuums to contain and collect paint chips, sanding waste, and other debris from boat maintenance areas. Properly characterize these wastes. Dispose of non-hazardous solids in a covered dumpster or other covered solid waste receptacle. Dispose of hazardous waste in accordance with BMP 6.0.
- Keep your marina clean. Do not allow debris to accumulate and blow into the water. Sandblasting debris should be collected frequently. Deck and dock hosing must not cause debris to be washed into drains or directly into receiving waters.
- If possible, reuse or recycle empty drums and containers rather than disposing them. If not recycled, drums should be emptied and flattened according to local landfill specs. Residues from the drum should be collected and managed properly.
- The open burning of waste is prohibited in many areas; contact the local DEQ for further information. Even in areas where residential open burning is allowed, commercial open burning (marinas fall under this classification) is often prohibited. Burning petroleum containing waste, plastics, garbage, and materials that generate black smoke is prohibited.

- Marina operators are responsible for the contents of their dumpsters. Dumpsters can be locked to prevent "midnight dumping."



Proper Storage of Used Oil

BMP 7.1 Solid Waste Handling: Fish Waste Disposal

Description and Purpose

Fish waste disposal can result in water quality problems. Oxygen demanding, nutrient rich fish wastes can foul marine waters. Bottom accumulation of skeletons and debris has caused dead zones in some harbors. DEQ regulates fish processing operations under 0900J Water Quality permits. Besides potential environmental and health impacts, improper disposal of fish waste also causes aesthetic problems such as odors and other nuisances.

Source Reduction

- Fish wastes and shellfish carcasses should not be disposed into marina basins.
- Fish wastes may be deposited in the off-shore ecosystem where they were originally harvested.
- Fish wastes and shellfish carcasses should not be recycled into tidal waters or managed in such a way that they will wash up onto any shoreline, or cause odors or other nuisances.
- Fish cleaning on docks and floats should not be allowed unless fish wastes are collected, contained, and disposed in an approved manner.
- Fish wastes should be reused or recycled in an environmentally sound manner (e.g., use fish



Fish Cleaning Station

as bait). Some fish processing plants will accept fish wastes.

- Marinas should provide designated fish cleaning areas. (Some marinas have covered fish cleaning stations, an added benefit to patrons and the environment.)
- Other beneficial use options should be considered, including protein recovery processors and/or compost feedstock.
- Be advised that DEQ reserves the right to take enforcement action against any marina where release of fish cleaning waste and shellfish waste negatively impacts the environment.

Waste Treatment and Disposal

- Rinse water drainage from fish cleaning areas should be screened and free of solids, then discharged to a sanitary sewer. On-site septic systems would be quickly overwhelmed and should not be used as a disposal option for fish waste.
- Solids are often too rich in content for loading to small sanitary sewer systems. Fish waste solids should be stored in a holding tank designed for that purpose and managed off-site.

Applicable Regulations

Oregon Revised Statute (ORS) 468B.050

DEQ 900J General Permit Conditions for Fish Processors

BMP 8.0 Sanitary Waste Handling: Sewage System Operation and Maintenance

Description and Purpose

Controlling the discharge of sanitary wastes is a critical issue for marinas. Sanitary waste pumpouts are required for new marinas and may be required in existing marinas. Overboard discharge

of domestic sewage and poorly maintained pumpouts and waste handling facilities contribute significantly to water quality degradation. Sewage introduces dangerous pathogens to the water. Gray water from sinks, showers, and other fixtures

may release detergents, soaps, oils, and other contaminants into the water. While moored, discharge of gray water and discharge from any MSD is prohibited in Oregon. While underway, gray water discharges should be minimized and boaters should take care to use environmentally friendly products. DEQ reserves the right to take enforcement action against unpermitted gray water discharges.

Stop Pollution at the Source!

The following sewage disposal regulations and practices should be employed at all Oregon marinas. For additional information refer to Guidelines for Sewage Collection and Disposal for Recreational Boats, Commercial Vessels and Floating Structures, September 3, 1996, Oregon Department of Environmental Quality and Oregon State Marine Board.

Marina Owner Responsibility

Owners and operators of marinas must provide the following for their sewage producing tenants:

- For floating buildings, floating homes, and combos, a continuous connection to a DEQ-approved sewerage system for all sewage generated.
- For liveaboards and houseboats moored and used as dwellings longer than 10 days in 30, a permanent and accessible means of disposal for black water at that marina or moorage, unless otherwise authorized by DEQ.
- New or proposed marinas must provide a dockside sewer connection at each slip for liveaboard tenants. The Department will allow alternative disposal methods for liveaboard tenants at existing marinas, provided that both the marina owner and the tenants take an active role in assuring that the methods will be continuously used. For transient boats, the new marinas must install pumpouts as discussed in Appendix A of this manual.
- Marina operators must arrange for sewage disposal. Marina operators must then specify to tenants how wastewater is to be handled at the marina.
- Marinas and moorages are encouraged to

provide landside or dockside restrooms for boaters, and to provide a means to collect and properly dispose of all black water generated from boats. The number of upland restroom, shower and washing facilities shall be determined according to state or local building code requirements or, in their absence, the owner or operator can use parallel requirements for RV Parks (substitute boats for RV's) found in the State Building Code, RV Park and Campground Rules. Appendix A contains the guidelines for the number of pumpout stations required at a marina, based on the type and quantity of boats moored.

- Marina owners and operators are advised that boat sewage waste is more concentrated than other domestic waste and may require special means for proper disposal. Contact the DEQ or your local sanitary sewer authority for details.
- Discharge of any untreated blackwater from a boat or vessel moored or operating on sole Waters of the State or Federal Navigable Waters is prohibited.
- Keep pumpout stations and restrooms clean and well maintained.

Boater Responsibilities

In Oregon, the discharge of any sewage from marine toilets is prohibited on all freshwater lakes, impoundments, and reservoirs that are not accessible by boat from the ocean (Sole Waters of the State). The use of approved marine sanitation devices is required on navigable waters. Discharge of untreated sewage, including sewage from Type III Marine Sanitation Devices, is only permitted beyond the 3-mile ocean limit. See the table below for specific requirements for sewage collection and disposal.

- Do not discharge waste from any MSD when moored.
- Use dockside toilets and other facilities for showers and laundry. Take your dishes home or use paper plates and disposable utensils.
- Look for environmentally friendly products, biodegradable soaps and cleaners. Do not

dispose of solvents, bleaches, or phosphates as gray water. This is important while boating and prohibited while moored.

Key Definitions

Boathouse - A covered floating structure primarily used for wet or dry storage of a boat.

Boat Waste Collection Device - All types of stationary, portable or mobile equipment that collects and transfers black water from boats. Includes boat pumpout and dump stations.

Combo - A boathouse/floating home combination structure with plumbing fixtures.

Floating Home - A floating structure designed or used as a dwelling, with no means of self propulsion, usually moored in one location.

Houseboat - A self-propelled boat designed for use as a dwelling. Any houseboat moored in one location and used as a dwelling for more than ten of any 30-day period is a “liveaboard.”

Liveaboard - A boat moored in one location and used as a dwelling for more than ten of any 30-day period.

Marine Sanitation Device (MSD) - A U.S. Coast Guard approved type I, II or III device used to treat

or retain in a holding tank all boat toilet fixture waste generated from a boat or vessel.

Moored - Secured or tied-up to a dock, pile, float, buoy, or at anchor.

Operating - Underway; not moored.

Pumpout - A stationary or portable pumping or suction device that removes waste from a boat holding tank and transfers it to an approved municipal, septic, on-site sewage treatment system or land side holding tank for disposal.

Sewage - Black water and/or gray water.

Waters of the State - Includes lakes, bays, ponds, and impounding reservoirs within the territorial limits of the State of Oregon, and all other bodies of surface or springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean, underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

Applicable Regulations

40 CFR Part 140

Matrix for Determining Type of Sewage Collection/Disposal

	Recreational Boats, Houseboats	Liveaboards (stationary)	Floating Homes, Boathouses, Combos	Commercial Vessels
Operating in Federal Navigable Waters	MSD Type I, II or III. Type I or II discharge allowed	N/A	N/A	MSD I, II or III. Type I or II discharge allowed
Operating in Sole State Waters	MSD Type III. No overboard discharge allowed.	N/A	N/A	MSD Type III. No overboard discharge allowed.
Moored in State Waters	MSD Type III. No overboard discharge allowed	MSD Type III, upland restrooms, or dockside connection. No overboard discharge allowed.	Dockside sewage connection	MSD Type III or dockside sewage connection. No overboard discharge allowed.

Note: The overboard discharge of sewage from a type III MSD to Federal Navigable Waters or to Waters of the State is **ALWAYS PROHIBITED**. Note **Federal Navigable Waters are within 3 miles of the shore.**

BMP 8.1 Bilge Water and Ballast Water Management

Description and Purpose

Bilge water and ballast water mismanagement can lead to significant environmental problems. Bilge water can easily become contaminated with oil and other waste fluids. Untreated bilge water can leave an oily sheen that poses a threat to the health of aquatic life, and present an eyesore to the boating public. Irresponsible release of ballast water is the leading cause of the spread of invasive species in the marine environment.

Stop Pollution at the Source!

Contaminated bilge water must not be allowed to enter waters of the state. DEQ is partnering with the Oregon Marine Board to educate the boating public on the use of bilge pads designed to soak up oil.

- Require use of bilge pads to help keep bilge water discharge clean. Have bilge pads on hand or for sale to marina patrons, or direct your tenants to a marine supply store in your area stocked with petroleum absorbent pads. These pads float and can be secured with a line to help prevent fouling of bilge pumps.
- Spill or release of any pollutant that results in a petroleum sheen on waters of the state must be reported as a spill. (For further information on spill reporting requirements, see Chapter 5 Fuel Handling. Follow-up on cleanup actions is also required for all reportable spills.)
- Soaps and emulsifiers should not be used to clean bilges as they cannot be discharged to waters of the state. They simply dissolve oil into the water rather than eliminating it. Unless discharge to sanitary sewer is available, bilges should be kept clean by soaking up oil in pads, and by manual means when necessary. Drip pans should be kept under the engine compartment to prevent oil from entering the bilge. During repairs all oil should be contained and removed so that it does not enter the bilge.
- Some pump-out stations may allow bilge water pump out to the sanitary sewer after the oil has been physically removed. Prior approval of the local sanitary sewer authority is required. Large municipal sewer systems often have sophisticated requirements.
- New ballast water standards are in place for vessels entering waters of the state. Prior to discharging ballast water, vessels of 300 gross tons and larger must first make a report to DEQ. This issue is under evaluation; additional statewide standards are expected in 2003. Encourage tenants to think about ballast water discharge; help preserve the health of local marine ecosystems and the waters surrounding your marina!

Applicable Regulations

ORS 783.620-640 and 783.990-992

Senate Bill 895, ballast water passed in the 2001 Oregon Legislature

BMP 9.0 Storm Water Runoff Quality: Surface Sweeping and Cleaning

Description and Purpose

Storm water runoff from marina parking lots and other impervious areas is a significant source of pollution. The pollutants are typical of urban storm water runoff: metals, suspended solids, hydrocarbons, excess nutrients, and

bacteria. Activities at marinas (boat scraping, cleaning, fueling, engine repair, fisheries, etc.) can elevate pollutant concentrations in runoff. Following the practices set forth in this manual will minimize the impacts marina operations have on storm water.

Stop Pollution at the Source!

- All areas of the marina should be cleaned on a regular basis to prevent oil, paint, dust, sanding residues, and other wastes from washing into surface waters, storm drains, ditches, swales, sloughs, and other watercourses.
- All drainage associated with maintenance, sandblasting, and repair activities should be separated from other storm water discharges, and best management practices specific to those activities should be employed to minimize the chance for release.
- Sandblasting debris requires adequate containment and cleanup to prevent grit, paint chips, oils, and other materials removed from boat hulls from entering into any receiving waters or contaminating the ground.
- Sweep or vacuum boatyard areas and collect the debris. Sandblast grit, dust, and other work area debris should not accumulate. Clean up after each job.
- Covered work areas can prevent contamination of storm water run-off, and can reduce

the need for structural controls and may eliminate the need for monitoring.

Treatment and Disposal

Most marinas do not have contaminant removal systems adequate to handle pollutants generated from maintenance activities. Storm water discharges must not contain wastewater discharges or chemical contaminants.

- New and expanding marinas should use separate drainage for work areas and install structural controls adequate to remove pollutants. Many devices rated to remove these contaminants are discussed under BMP 9.1. Depending on the nature of the storm water discharge and on whether boatyard activities take place, some marinas may be required to obtain a DEQ Storm Water Discharge Permit. Storm Water Discharge Permit conditions include monitoring the quality of storm water runoff.
- Dispose waste in accordance with BMP 7.0 Solid Waste Handling or BMP 6.0 Storage, Handling and Disposal of Hazardous Waste.

BMP 9.1 Storm Water Runoff Quality: Maintenance of Oil and Sediment Trapping Devices

Description and Purpose

Marinas can use structural measures to direct storm water runoff from parking lots, roofs, and



Sump.

other facility areas to oil/water separation devices and other sediment trapping facilities. This BMP addresses the maintenance and cleaning of these oil/water separators, catch basins with sumps, and other sediment traps looking to maximize the performance of these devices.

Stop Pollution at the Source!

- Runoff and rinse water from boat maintenance and repair areas should be kept separate from ordinary parking lot and roof drainage runoff. Water from boat washing operations should be directed into a dedicated oil/water separator and sediment trap.
- Water recycling systems have been installed

at many shops and maintenance yards. These systems do double duty: they treat waste water and reduce the demand for fresh water by using wash water over and over. Otherwise, hull wash water and runoff from boat repair areas should be directed to the sanitary sewer with approval, which often requires treatment.

Treatment and Disposal

Fixed facilities commonly used to capture pollutants from storm water runoff and process water include storm water catch-basin bio-bag insert filters, trapped catch basins, oil/water separators, sediment chambers, bio-swales, bag filter systems, and sand filters.

- All sediment traps and oil/water separators in the storm water drainage system should be inspected on a monthly basis and after each storm event. They should be cleaned as necessary to ensure the interception and retention of oils and solids entering the drainage system. Immediately clean any

unit exceeding 50% stored sediment capacity.

- Inspect sediment and grit traps associated with pressure washing after every use to insure that the unit is capturing the solids.
- Remove oily sheen with a skimming device or absorbent pads. This oil may be managed as used oil.

Inspection can be done visually. Clean out can be done manually or by using a vacuum pump. Wastes should be disposed of appropriately. If material collected from traps is predominantly spent sandblasting grit with bottom paint, the material may be hazardous waste, requiring special management. Decanted liquid cannot be released to the storm water system; it should be recycled for reuse, or drain to a sanitary sewer system permitted to accept this waste.

Applicable Regulations

OAR Chapter 340 Division 45

BMP 10.0 Maintenance Dredging

Description and Purpose

Maintenance dredging is another source of pollutants at marinas. Dredging is subject to considerable regulatory control. Dredging temporarily disturbs bottom habitat communities, increases turbidity, and may re-suspend contaminated bottom sediments. Improper disposal of dredge spoils may adversely affect marine environment and human health. This BMP highlights maintenance dredging practices designed to minimize environmental impacts and control contaminants.

Stop Pollution at the Source!

- Dredging during critical migration or spawning periods of important species of finfish, shellfish, and wildlife is prohibited by the Endangered Species Act (ESA) and other laws. The Oregon Fish and Wildlife Department sets periods when in-stream work can occur.

- Dispose dredged materials in a manner consistent with existing Oregon solid and hazardous waste regulations. Also, comply with local, state and federal fill requirements. Do not manage dredge spoils in a wetland or within a flood plain. Store dredge spoils such that rain will not wash sediments back into the water. Testing of the sediments is required prior to any maintenance dredging.

Treatment

- Marinas requiring maintenance dredging more frequently than once every four years should investigate practicable alternatives to increase circulation or reduce sediment accumulation.
- When upland disposal is planned, use appropriate measures to minimize water quality impacts, reduce turbidity from return wa-

ters, and assess any potential impacts to ground water quality. Use technical documents prepared by the Corps of Engineers when designing containment facilities. Provide appropriate setbacks between the toe of the slope and marine waters, wetlands, and intertidal flats. Employ sediment and erosion control techniques that prevent erosion of containment dikes and deposition of sediments into wetlands and waters.

- Conduct appropriate testing of sediments to be dredged in order to evaluate potential impacts from return waters, leachate, and runoff and for selecting an appropriate disposal site and containment design.

- In Oregon, discharge of return water from upland dredge disposal sites requires a National Pollutant Discharge Elimination System (NPDES) permit. Return water should not discharge pollutants in concentrations that exceed water quality standards for the receiving water. If such standards cannot be met, treatment of the return water is required.

Applicable Regulations

Federal Clean Water Act Section 404 (implemented by Army Corps of Engineers)

and Section 401 (implemented by states; in Oregon, DEQ permit required)

BMP 11.0 Maintenance of Fixed Structures

Description and Purpose

This BMP addresses maintenance and repair practices for waterfront and in-water structures, as well as shore-side structures. As materials degrade or leach contaminants, marina structures themselves may introduce pollutants to the marine environment. Maintenance activities can also be a source of pollution. Following BMPs for the selection of suitable repair or replacement materials and thoughtful maintenance practices will help reduce pollution.

This BMP addresses pollutants from the following sources:

- Treated timber used for waterfront and in-water structures
 - Paints, solvents, paint chips, and related materials from scraping, sanding, and painting operations
 - Floatable debris from deteriorating waterfront structures, such as broken and degraded styrofoam floats
- Stop Pollution at the Source!
- Use natural vegetation for shoreline stabilization whenever feasible. Maintain this

cover in good condition by prompt repair and reseeded of washouts and other losses of vegetation.

- Riprap revetments are generally encouraged over vertical bulkheads, because sloping riprapped embankments provide greater habitat and reduce wave reflections. Permits are required through the Oregon Division of State Lands and ACOE for any of these structures and for any in-stream work.
- Timber which has been pressure treated with a preservative such as chromated copper arsenate (CCA) is generally preferred over creosote treated materials for construction and replacement.
- For use below the water, concrete pilings or other materials (e.g., plastic, recycled materials) with degradation times greater than 10 years are encouraged.
- The use of closed cell foam or alternate flotation methods is preferred over expanded polystyrene or whitebead foam. All polystyrene or whitebead foam placed in the water after January 1, 1992, must be encapsulated with concrete, wood, galvanized steel, plastic or fiberglass in accor-

dance with OAR 250-014-0030. A permit for installation is required from the Oregon State Marine Board.

- Conduct scraping, sanding, and sandblasting of in-water and land-side structures using the same management principles recommended for vessels. (Refer to BMP 3.2.)
- Painting of structures should be conducted using the same management principles recommended for vessels. (Refer to BMP 3.3.)
- Where feasible, floating structures should

be removed to shoreline facilities for scraping, painting, and major repairs.

- Galvanized structures release high levels of zinc. Consider using other materials or coat galvanized areas with epoxy to reduce or eliminate highly concentrated zinc discharges.
- Refer to BMPs for vessel maintenance and repair for spills planning and response related to cleaning, scraping, and painting.

Treatment and Disposal

- Refer to BMPs for handling of hazardous materials and waste materials.

APPENDIX A

Guidelines for Determining Number of Boat Waste Collection Devices Required at Marinas and Moorages

Instructions

Use Step 1 to estimate the number of boats with portable toilets and Type III holding tanks present at your marina. Then use Step 2 with information from Step 1 to determine the number of boat pumpouts or portable toilet dump stations required at your marina.

Step 1

A. If the number and type of boats with Type III MSD holding tanks and portable toilets is known, skip to Step 2. Determine the total number of boats by overall length. Include unoccupied slips by length of slip. Include all slips, annual and seasonal boats, weekly and transient (guest) boats and houseboat units. Count liveaboards separately. Use the boat length categories provided in the following example to keep track of your count.

Example: The following table lists the number of boats in each length category and their type moored at Marina X. These numbers will be used in Step 1B

Table 1: Number of Boats at Marina X

Boat Length Category	# of Annual, Seasonal and Transient Boats	# of Liveboard Boats
Less than 16 ft.	50	0
16 to 26 ft.	100	10
26-40	100	10
Over 40 ft.	20	10

B. To estimate the number of boats with portable toilets and Type III holding tanks in your marina, use the following percentages. An example also follows.

Table 2: % of Portable toilets and Type III Holding Tanks Based Boat Counts

Boat Length Category	Portable Toilets	Type III Holding Tanks
Less than 16 ft.	0%	0%
16 to 26 ft.	25%	0%
26-40	0%	75%
Over 40 ft.	0%	100%

Example: Using the numbers provided from Marina X in Step 1A, one should expect to find around 25 boats with portable toilets for annual, seasonal and transient boats (see the following table). Do these same calculations for estimating the number of annual, seasonal and transient boats with Type III holding tanks, and repeat the calculations for liveaboards.

Table 3: Number of Boats at Marina X with Portable Toilets

Boat Length Category	# Boats x % Portable Toilets ÷ # of Boats w/Portable Toilets					
Less than 16 ft.	50	x	0	÷	100	= 0
16 to 26 ft.	100	x	25	÷	100	= 25
26-40	100	x	10	÷	100	= 0
Over 40 ft.	20	x	10	÷	100	= 0
TOTAL						25

Step 2

To determine the total number of boat waste collection devices [portable toilet dump stations and pumpouts (stationary or portable)] required at your marina, use your boat counts and the tables below.

A. Determine the number of devices needed for annual, seasonal and transient boats.

Note: Adjustments may be made to number of pumpouts required to account for any dockside sewage connections, mobile pumpout service, etc.

If Marina Has # of Boats w/Portable Toilets (Actual count or estimate from Step 1B)	Then: # of Boat Dump Stations Required
Less than 25	None*
25 to 300	1
300 to 600	2
Over 600	3 plus 1 for each 300 Boats

If Marina Has # of Boats w/Type III Holding Tanks (Actual count or estimate from Step 1B)	Then: # of Boat Pumpouts Required
Less than 25	None*
25 to 300	1
300 to 600	2
Over 600	3 plus 1 for each 300 Boats

Only applicable to marinas with small numbers of boats with Type III MSD’s that jointly “share” (within 2 mile radius) a pumpout or dump station open for public use.

Example: From Step 1, Marina X has estimated that they have 25 annual, seasonal and transient boats with portable toilets. According to Table 4, they need at least 1 boat dump station, but they still have to calculate the number of boat pumpouts needed for the annual, seasonal and transient boats, and the number of dump stations and pumpouts needed for the liveaboards.

B. Determine the number of devices needed for liveaboard boats.

Note: Adjustments may be made to number of pumpouts required to account for any dockside Determine the number of devices needed for liveaboard boats sewage connections, mobile pumpout service, restrooms, etc.

If Marina Has # of Boats w/Portable Toilets (Actual count or estimate from Step 1B)	Then: # of Boat Dump Stations Required
1 to 25	None*
25 to 50	1
Over 50	3 plus 1 for each
	25 Boats

If Marina Has # of Boats w/Type III Holding Tanks (Actual count or estimate from Step 1B)	Then: # of Boat Pumpouts Required
1 to 25	None*
25 to 50	1
Over 50	3 plus 1 for each
	25 Boats

C. Add the numbers from Steps 2A and 2B for your total number of waste collection devices required at your marina.

APPENDIX B

Potential Hazardous Waste Streams

WASTE TYPE	Preferred DISPOSAL OPTIONS If multiple options are listed, the first option(*) is the preferred method.
Antifreeze ● Propylene glycol ● Ethylene glycol Contact your waste hauler to confirm that they will accept mixed antifreeze.	Recycle ● Hire a waste hauler to collect and dispose. ● Purchase an on-site recovery unit. Distillation systems are more expensive than filtration systems but are more efficient at renewing used antifreeze.
Waste Oil ● Engine oil ● Transmission fluid ● Hydraulic oil ● Gear oil ● #2 Diesel ● Kerosene Contact your waste hauler to confirm that they will accept mixed oil.	*Recycle with a registered used oil transporter. ● Use waste oil for space heating in approved used oil burner ● Take small quantities to a household hazardous waste/CEG collection events.
Quart Oil Cans	*Drain completely and dispose in regular trash. They cannot be recycled.
Non-terne plated Oil Filters	*Puncture and completely hot drain for at least 24 hours. Recycle the oil and the metal canister. ● If you do not recycle the canister, double-bag it in plastic and place it in you regular trash.
Terne Plated Oil Filters (used in heavy equipment and heavy-duty trucks)	Dispose of as hazardous waste (contains lead).
Stale Gasoline	*Add stabilizer in the winter to prevent gasoline from becoming stale, or add octane booster in the spring to rejuvenate. Use the fuel. ● Mix with fresh fuel and use. ● Transport as non-hazardous waste if picked by a fuel blender to be used as fuel ● Hire a hazardous waste hauler to collect and dispose of it.
Kerosene	Filter and reuse for as long as possible, then recycle.
Mineral Spirits	Filter and reuse. (DO NOT add to used oil to be burned in space heaters) If reuse not possible, then dispose of as hazardous waste

<p>Solvents</p> <ul style="list-style-type: none"> ● Paint and engine cleaners such as acetone and methylene chloride) 	<p>*Reuse as long as possible and then recycle. Consider a distillation unit for recycling solvents</p> <ul style="list-style-type: none"> ● Use less toxic alternatives to avoid disposal issues. ● Dispose of as hazardous waste. <p>(DO NOT add to used oil to be burned in space heaters)</p>
<p>Sludge Recovered from a Hazardous Solvent</p>	<p>Dispose of as hazardous waste.</p>
<p>Sludge Recovered from a Non-hazardous Solvent</p>	<p>Let sludge dry in a well-ventilated area, wrap in newspaper, and dispose of in garbage</p>
<p>Paints and Varnishes</p> <ul style="list-style-type: none"> ● Latex ● Water-based ● Oil-based 	<p>Water Based:</p> <ul style="list-style-type: none"> ● Allow to dry completely. Dispose of in regular trash. <p>Oil/Solvent Based:</p> <ul style="list-style-type: none"> ● Dispose of as hazardous waste <p>Water Based and Oil Based:</p> <ul style="list-style-type: none"> ● Use leftover material for other projects, (i.e., as an undercoat for the next boat). ● Encourage tenants to swap unused material.
<p>Paint Brushes</p>	<p>Allow to dry completely prior to disposal. Treat as hazardous waste if paint contains heavy metals above regulatory levels.</p>
<p>Rags Soaked with Hazardous Substances</p>	<p>Use rag service and do not dispose of rags Keep in covered container until ready for pickup.</p> <ul style="list-style-type: none"> ● Wring rags out over a waste solvent collection container and have laundered by an industrial laundry. ● If rag service is not used, perform hazardous waste determination; dispose of as hazardous waste if appropriate.
<p>Used Oil Absorbent Material</p>	<p>*If oil and diesel is adequately absorbed, discard in trash.</p>
<p>Used Bioremediating Bilge Booms</p>	<p>*Discard in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.</p>
<p>Epoxy and Polyester Resins</p>	<p>*Catalyze and dispose of as solid waste ASLONG AS IT DRIES HARD AND HAS NO FREE LIQUIDS AND FACILITY IS A CONDITIONALLY EXEMOT GENERATOR (CEG) OF HAZARDOUS WASTE.</p>
<p>Glue and Liquid Adhesives</p>	<p>Glue and Liquid Adhesives</p>
<p>Containers</p> <ul style="list-style-type: none"> ● Paint cans ● Buckets ● Spent caulking tubes 	<p>Cans may be put in trash can as long as:</p> <ul style="list-style-type: none"> ● All material that can be removed has been. (For example, in a 55 gallon drum, no more than 1" of residue remains on the bottom or inner liner.) ● Containers that held compressed gas are at atmospheric pressure. ● Containers that held acute hazardous waste have been triple rinsed with the appropriate (as listed on the container) solvent. Properly dispose of the solvent.

<p>Aerosol cans</p>	<p>Aerosol Cans should punctured in a safety device:</p> <ul style="list-style-type: none"> ● Collect the residue; manage as potentially hazardous waste. ● Punctured empty cans maybe recycled under the scrap metal exemption (if your scrap hauler takes them). <p>Unpunctured cans are considered reactive waste and therefore should be disposed of as hazardous waste.</p>
<p>Residue from Sanding, Scraping, and Blasting</p>	<p>Evaluate this waste and document whether the residue is hazardous (does not contain metals).</p> <p>*Dispose of as solid waste.</p> <p>*If it contains metals, it is a hazardous waste or special waste and must be disposed of properly.</p> <p>If it contains tributyl tin, it is a pesticide and considered an Oregon State hazardous waste</p>
<p>Residue from Pressure Washing</p>	<p>*Dispose of as solid waste.</p>
<p>Lead Batteries (encourage the use of maintenance free batteries)</p>	<p>*Recycle</p> <ul style="list-style-type: none"> ● Store on an impervious surface, under cover. Protect from the rain. ● Check frequently for leakage. <p>Automotive batteries are exempt if recycled. Other batteries should be labeled as universal waste. If not recycled, batteries containing acid and heavy metals are hazardous waste.</p>
<p>Expired Distress Signal Flares</p>	<p>*Encourage boaters to keep on board as extras.</p> <ul style="list-style-type: none"> ● Store in well-marked, fire safe container. Use expired flares to demonstrate to boaters how they are used. Be sure to notify the Coast Guard and fire department ahead of time. ● Encourage boaters to bring flares to a local fire department or household hazardous waste collection program. If disposed of, the flares are hazardous waste.
<p>Scrap Metal</p>	<p>Recycle</p>
<p>Light Bulbs</p> <ul style="list-style-type: none"> ● Fluorescent bulbs ● Mercury vapor lamps ● High-pressure sodium vapor lamps ● Low-pressure sodium vapor lamps ● Metal halide lamps 	<p>*Recycle if you have more than a few.</p> <ul style="list-style-type: none"> ● These are considered universal waste if recycled. ● Label as universal waste and insure that light tubes do not break. <p>If not recycled, waste lamps may be hazardous waste.</p>
<p>Pesticides</p>	<p>*Use as product</p> <p>If disposed at a collection event or at hazardous waste facility, unused pesticides may be a universal waste.</p>
<p>Pesticide Containers</p>	<p>Must be rinsed – use rinsate as makeup for next batch of pesticide if possible or spray it out through sprayer.</p> <p>Unrinsed containers are either hazardous waste or universal waste.</p>

APPENDIX C

Vessel Cleaning: Alternatives to Toxic Products

Product	Alternative
Bleach	Borax
Detergent & Soap	Elbow grease
Scouring Powders	Baking soda. Or rub area with one-half lemon dipped in borax, then rinse
General Cleaner	Baking soda and vinegar. Or lemon juice combined with borax paste
Floor Cleaner	One cup vinegar in 2 gallons of water
Window Cleaner	One cup vinegar + 1 qt. warm water. Rinse and squeegee
Aluminum Cleaner	2 Tbsp. cream of tartar + 1 qt. of hot water
Brass Cleaner	Worcestershire sauce. Or paste made of equal amounts of salt, vinegar and water
Copper Cleaner	Lemon juice and water. Or paste of lemon juice, salt, and flour
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish
Stainless Steel Cleaner	Baking soda or mineral oil for polishing, vinegar to remove spots
Fiberglass Stain Remover	Baking soda paste
Mildew Remover	Paste with equal amounts of lemon juice and salt, or white vinegar and salt
Drain Opener	Disassemble or use plumber' s snake. Or flush with boiling water + one-quarter cup baking soda + one-quarter cup vinegar
Wood Polish	Olive or almond oil (interior walls only)
Hand Cleaner	Baby oil or margarine
Head & Shower	Baking soda; brush thoroughly
Rug/Upholstery Cleaner	Dry corn starch sprinkled on; vacuum

APPENDIX D

Glossary of Terms

Ballast Water - Water placed in the hold of a boat or ship to maintain stability.

Black Water - Water-carried human wastes, including feces, urine and other extraneous substances of bodily origin (including toilet paper).

Board - The Oregon State Marine Board (OSMB).

Boathouse - A covered floating structure primarily used for wet or dry storage of a boat.

Boat Waste Collection Device - All types of stationary, portable or mobile equipment that collects and transfers black water from boats. Includes boat pumpout and dump stations.

Combo - A boathouse/floating home combination structure with plumbing fixtures.

Department - The Oregon Department of Environmental Quality (DEQ).

Dump Station - A device that receives sewage from a portable toilet.

Dwelling - A structure, boat or vessel that has sleeping, cooking, and plumbing fixtures used for human occupancy or is used for residential purposes.

Fugitive Emissions - Dust, fumes, gases, mist, odorous matter, vapors or any combination thereof not easily given to measurement, collection, and treatment by conventional pollution control methods.

Floating Home - A floating structure designed or used as a dwelling, with no means of self propulsion, usually moored in one location.

Gray Water - Any water carried waste other than black water, including kitchen and laundry waste.

Hydroblasting - Use of pressurized water to remove paint or oxidized metal.

Houseboat - A self-propelled boat designed for use as a temporary dwelling. Any houseboat moored in one location and used as a dwelling for more than ten of any 30-day period is classified as a “liveaboard.”

Liveaboard - A boat moored in one location and used as a dwelling for more than ten of any 30-day period.

Marine Sanitation Device (MSD) - A U.S. Coast Guard approved type I, II or III device used to treat or retain in a holding tank all boat toilet fixture waste generated from a boat or vessel.

Moored - Secured or tied-up to a dock, pile, float, buoy, or at anchor.

Operating - Underway; not moored.

Owners - Includes but not limited to individuals, corporations, entities, operators, renters, or other responsible person in control or having control of real or personal property.

Plumbing Fixture - Includes but not limited to toilets, showers, lavatories and laundry fixtures.

Pressure Washing - Use of a water pressure washer to remove dirt or biological growth from a vessel’s hull. Pressure washing includes the practice of hand scrubbing and rinsing with low pressure water from a hose. Pressure washing that removes paint is hydroblasting.

Portable Toilet - Includes all types of portable toilets and hand-carried potties used to collect black water.

Pumpout - A stationary or portable pumping or suction device that removes waste from a boat holding tank and transfers it to an approved municipal, septic, on-site sewage treatment system or land side holding tank for disposal.

Sewage - Black water and/or gray water waste.

Solid Waste - All useless or discarded putrescible and nonputrescible materials, including but not limited to garbage, refuse, rubbish, ashes, paper, and cardboard, sewage sludge, septic tank and cesspool pumpings, or other sludges, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or part thereof, manure, vegetable or animal solid and semisolid materials, dead animals and infectious wastes.

Storm Water - Storm water runoff, snow melt runoff, surface runoff, road wash water related to road cleaning or maintenance, infiltration (other than infiltration contaminated from sanitary sewers or other discharges) and drainage.

Structure - Includes but not limited to boat-houses, combos, and floating homes used as dwellings.

Waters of the State - Includes lakes, bays, ponds, and impounding reservoirs within the territorial limits of the State of Oregon, and all other bodies of surface or springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean, underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

APPENDIX E

Environmental Laws and Regulations

This Section presents information regarding laws and regulations that apply to marinas and boaters. The information presented in this section is not comprehensive. It is meant to provide an overview of some relevant laws, and a synopsis of information about other pertinent environmental permits. In addition to the environmental laws and regulations discussed below, local environmental codes or requirements may be in force. When storing hazardous substances, please check with your local fire department and building department regarding storage and handling requirements.

Federal and State agencies that regulate environmental issues at marinas include:

- Environmental Protection Agency is responsible for ensuring environmental protection federally and delegates certain environmental compliance programs to the state.
- United States Army Corps of Engineers (ACOE) builds structures for flood control, manages hydropower structures, maintains navigation channels, is responsible for dredging oversight, and is concerned with providing protection to wetlands and fish and wildlife habitat.
- United States Coast Guard (USCG) is an arm of the U.S. Department of Transportation that protects the public, the environment, and U.S. economic interests. They are responsible for responding to spills on the water and for enforcing regulations affecting aquatic mammals.
- Oregon Department of Environmental Quality (DEQ) is dedicated to protecting human health and the environment in the State of Oregon. The Department is responsible for administering delegated federal environmental laws and regulations regarding solid waste disposal, water quality, and hazardous waste management discussed in the subsection below entitled federal laws and regulations. In addition, the department administers the laws and regulations unique to Oregon that are discussed in the subsection below entitled Additional State Laws and Regulations.
- The Oregon Marine Board registers boats and provides boating safety education and funding for recreational facilities associated with recreational boating such as launch ramps, sewage pump-out stations, restrooms and parking lots.
- Oregon Department of Fish and Wildlife is responsible for protecting Oregon's fish and wildlife and their habitat.
- Oregon Division of State Police is responsible for enforcing fish and wildlife laws and responding to emergencies including fires and spill response.

Federal Laws and Regulations

Litter Laws on the Water

The Refuse Act of 1899

The Refuse Act of 1899 prohibits throwing, discharging, or depositing any refuse matter of any kind (including trash, garbage, oil and other liquid pollutants) into the waters of the United States.

Annex V of MARPOL (Marine Pollution) 1973, 1978

This international law prohibits dumping plastic refuse and garbage mixed with plastic into any waters, and restricts dumping of other forms of garbage. It is illegal to dump plastic, dunnage, and lining or packing materials that float, or any garbage within 25 miles of an ocean shoreline and in U.S. lakes, rivers, bays, and sounds.

The Federal Water Pollution Control Act

The Federal Water Pollution Control Act prohibits the discharge of oil or hazardous substances into U.S. navigable waters. All vessels greater than 26 feet must display a MARPOL placard outlining the garbage dumping restrictions. All vessels over 40 feet must also have a written waste management plan on board. Note 40 CFR 110.4 prohibits the use of soaps or other harmful dispersing agents to dissipate oil.

Ports and terminals, including recreational marinas, must have adequate and convenient reception facilities for their regular customers. That is, marinas must be capable of receiving garbage from vessels that normally do business with them (including transients).

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States or the waters of the contiguous zone if such discharge causes a film or sheen upon, or discoloration of, the surface of the water. Discharges that cause a sheen on the water must be reported to the Coast Guard and to OERS, boaters may call 1-800-OILS911. Violators are subject to a penalty of \$5,000.

Sewage Laws on the Water

Section 312 of the Clean Water Act

All vessels with an installed toilet must have a certified Marine Sanitation Device (MSD) attached. The direct discharge of sewage from a vessel is not permitted in virtually all inland bodies of water. Most recreational boats equipped with an MSD will have a Type III MSD – which is a holding tank. The holding tank cannot be emptied in waters of the United States. Pump-out to discharge sewage are available at ports and large marinas. Larger vessels have Type I or II MSDs.

Nonpoint Source Discharge

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) Chapter 5 sets out pollution prevention guidelines for Marinas and

Recreational Boaters. The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) provided the impetus for the BMP Manual and Marina Outreach. The Amendments require that nonpoint source pollution from marinas be contained.

Spill Plans

Under 40 CFR 112, any boating facility with an aboveground petroleum tank exceeding 660 gallons capacity, or aggregate aboveground petroleum storage greater than 1,320 gallons, or total underground storage capacity greater than 42,000 gallons must have a Spill Prevention, Control and Countermeasure (SPCC) Plan. A professional engineer must certify that there is adequate containment, training, and emergency response equipment to prevent spills and releases of oil.

Hazardous Waste Regulations

Resource Conservation and Recovery Act requires businesses that generate waste to determine if their waste is hazardous. This is referred to as making hazardous waste determination. Wastes that are ignitable, corrosive, reactive, toxic, or listed are considered hazardous and face additional restrictions on disposal and management. Additional requirements are in place for facilities that generate greater than 220 pounds of hazardous waste or 2.2 pounds of acutely hazardous waste per month.

Used Oil

Under 40 CFR 279, used oil that is recycled is subject to less stringent regulations than hazardous waste. Containers of used oil must be labeled “used oil.” Spills of used oil must be cleaned up immediately and wastes properly characterized and disposed. Used oil may be hauled off site for recycling by registered used oil transporters.

Habitat Protection

The 1973 Endangered Species Act provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, both through

Federal action and by encouraging the establishment of State programs.

Environmental Permits and Licenses

NPDES Permits

National Pollution Discharge Elimination System (NPDES) permits are required for industrial wastewater discharges to surface waters; and some stormwater discharges to surface waters not otherwise covered by NPDES general permit. An NPDES permit is required for domestic wastewater treatment facilities discharging to surface waters. Contact your local DEQ office for additional information or to apply for a permit.

Stormwater

In 1990, EPA implemented regulations requiring permits for stormwater discharges from certain activities. The stormwater permit program requires that certain marinas classified with Standard Industrial Classification (SIC) system number 4493 be covered by a National Pollution Discharge Elimination System (NPDES) permit. Any marina or boat yard that conducts boat maintenance activities, including washing, comes under this requirement. Under the permit, marina operators must develop a stormwater pollution prevention plan and implement best management practices to ensure that stormwater leaving the marina property will not harm the quality of the surrounding waters. For additional information or to apply for a permit, contact your local DEQ office.

TMDL

The EPA requires state agencies such as the DEQ to calculate pollution load limits, known as Total Maximum Daily Loads (TMDLs), for each pollutant entering a body of water. TMDLs describe the amount of each pollutant a waterway can receive and still not violate water quality standards. TMDLs take into account the pollution from all sources, including marinas.

Section 404

Section 404 of the Clean Water Act requires that any applicant for a permit to conduct any activity which may result in a discharge to waters of Oregon to obtain certification from DEQ that the activity complies with water quality requirements and standards. 404 Permits are issued by the Army Corps of Engineers. In Oregon, projects in which the applicant will dredge, fill, or otherwise alter a waterway will require a permit from the Oregon Division of State Lands.

Additional State Laws and Regulations

Waste and Hazardous Waste

Abrasive Blast Waste Containing Pesticides that are not federally regulated as hazardous waste are considered special waste under OAR 340-101-0040. The abrasive blast waste associated with hull cleaning is subject to this regulation.

Water Quality

ORS 468B.025 Prohibited activities. No person shall: cause pollution of any waters of the state or place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means.

ORS 468B.050 When permit required. Except as provided in ORS 468B.053 or 468B.215, no person shall discharge any wastes into the waters of the state from any industrial or commercial establishment or activity or any disposal system, without first obtaining a permit.

OAR 340-071-0140 requires persons who plan to build an on-site sewage disposal system to obtain a construction-installation permit or a Water Pollution Control Facility Permit before construction. On-site systems must obtain a WPCF permit if the system:

- Has a projected daily sewage flow greater than 2,500 gallons, or
- Handles sewage with a greater strength than residential wastewater, or
- Uses a technology identified by DEQ as warranting regulation.

General Permits

Issues general permits for certain activities such as washwater: 1700A is a washwater NPDES for discharges to surface water and 1700B is for washwater discharges to land.

Sewage Collection

Guidelines for Sewage Collection and Disposal for Recreational Boats, Commercial Vessels and Floating Structures, September 3, 1996, Oregon Department of Environmental Quality and State Marine Board. Discusses type of marine sanitation devices, discharges, and guidelines for determining the number of boat waste collection devices required at marinas and moorages.

Solid Waste

Under OAR 340-093-0040 no person can dispose of or authorize the disposal of solid waste except at a solid waste disposal site permitted or authorized by the Department to receive that waste.

Spills

OAR Chapter 340 Division 109 requires reporting spills of reportable quantities to the Oregon Emergency Response, this includes any spill of oil causing a sheen to water or 42 gallons of oil on land. There are specified spill reporting quantities for oil and hazardous materials that facilities should be aware of. Reporting may be required to both state and federal agencies.

The OERS number is 1-800-452-0311. This rule also requires a person to clean up spills of oil and hazardous material immediately, regardless of the quantity spilled.

ORS 466.652 requires any person owning or having control over oil or hazardous material who has knowledge of a spill or release to immediately notify Oregon Emergency Management as soon as that person knows the spill or release is a reportable quantity.

Air Quality

OAR Chapter 340 Division 264 regulates open burning. This division discusses general prohibitions for burning petroleum products and hazardous materials and discusses restrictions on demolition waste and commercial burning.

OAR 340-208-0200 sets out the rules for fugitive emissions. OAR 340-208-0300 prohibits emissions causing a nuisance or resulting in particulate fall-out on neighboring properties or into state waters.

State and Federal air permitting and reporting requirements are discussed in OAR chapter 340 Division 210 thru 220.

APPENDIX F

Federally Designated No-Discharge Zones

State	Waterbody (CWA Section 312)	Designation Type Register Notice	Federal	Date
California	Mission Bay	(f)(3)	41 FR 34353	8-13-76
California	Oceanside Harbor	(f)(3)	41 FR 34353	8-13-76
California	Dana Point Harbor	(f)(3)	41 FR 34353	8-13-76
California	Channel Islands Harbor	(f)(3)	44 FR 26963	5-8-79
California	Oxnard	(f)(3)	44 FR 26963	5-8-79
California	Avalon Bay Harbor	(f)(3)	44 FR 26963	5-8-79
California	Santa Catalina Island	(f)(3)	44 FR 26963	5-8-79
California	Newport Bays	(f)(3)	41 FR 2274	1-15-76
California	Sunset Bay	(f)(3)	41 FR 2274	1-15-76
California	Pacific Coast Highway Bridge	(f)(3)	41 FR 2274	1-15-76
California	Richardson Bay	(f)(3)	52 FR 33282	9-2-87
California	Huntington Harbor	(f)(3)	41 FR 2274	1-15-76
Cal./Nevada	Lake Tahoe	(f)(3)	42 FR 59105	11-15-76
Florida	Destin Harbor	(f)(3)	53 FR 1678	1-21-88
Florida	City of Key West waters	(f)(3)	64 FR 46390	8-25-99
Massachusetts	WestPort Harbor	(f)(3)	59 FR 45677	9-2-94
Massachusetts	WellFleet	(f)(3)	60 FR 30539	6-9-95
Massachusetts	Waquoit Bay	(f)(3)	59 FR 11271	3-10-94
Massachusetts	Nantucket Harbor	(f)(3)	57 FR 44379	9-25-92
Massachusetts	Wareham Harbor	(f)(3)	57 FR 2553	1-22-92
Massachusetts	Stage Harbor Complex	(f)(3)	62 FR 13885	3-24-97
Massachusetts	Harwich	(f)(3)	63 FR 44255	8-18-98
Massachusetts	Buzzards Bay	(f)(3)	65 FR 46712	7-31-00
Michigan	All	(f)(3)	41 FR 2274	1-15-76
Minnesota	Boundary Waters Canoe Area	(f)(4)A	42 FR 43837	8-31-77
Minnesota	Mississippi River (part)	(f)(3)	42 FR 33362	6-30-77
Minnesota	Minnesota River (part)	(f)(3)	42 FR 33362	6-30-77
Minnesota	St. Croix River	(f)(3) Denial	61 FR 30868 42 FR 37844	6-18-96 7-25-77
Missouri	All (except Miss. River, Missouri River, part of Bull Shoals Lake)	(f)(3)	40 FR 54462	11-24-75
New Hampshire	All (except coastal waters)	(f)(3)	40 FR 36797	8-22-75
New Jersey	Shark River	(f)(3)	63 FR 12094	3-12-98
New Jersey	Manasquan River	(f)(3)	63 FR 12094	3-12-98

New Jersey.	Shrewsbury River	(f)(3)	65 FR 32091	5-22-00
New Jersey.	Navesink River	(f)(3)	64 FR 25504	5-12-99
New Mexico	All	(f)(3)	41 FR 17599	4-27-76
New York	Lake Champlain	(f)(3)	41 FR 24624	6-17-76
New York	Mamaroneck Harbor	(f)(3)	62 FR 223	11-19-97
New York	Lake George	(f)(3)	41 FR 2668	1-19-76
New York	Hudson River (part)	(f)(4)(B)	60 FR 63941	12-13-95
New York	East Hampton (7 water bodies)	(f)(3)	64 FR 7194	2-12-99
New York	Greater Huntington-North Port	(f)(3)	65 FR 37385	6-14-00
Rhode Island	Great Salt Pond, Block Island	(f)(3)	58 FR 31202	6-1-93
Rhode Island	All	(f)(3)	63 FR 42633	8-10-98
South Carolina (North Carolina and Georgia)	Broad Creek, Lake Keowee, Lake Murray, Lake Thurmond, and Lake Wylie	(f)(3)	64 FR 10465	3-4-99
South Carolina (Georgia)	Hartwell Lake	(f)(3)	60 FR 25215	5-11-95
Texas	24 Freshwater bodies	(f)(3)	42 FR 59776	11-21-77
Utah/Arizona	Lake Powell	(f)(3)	65 FR 56577	9-19-00
Vermont	All (including parts of Lake Champlain and Lake Memphremagog)	(f)(3)	40 FR 42240	9-11-75
Virginia	Smith Mountain Lake	(f)(3)	65 FR 61166	10-16-00
Wisconsin	All (except Lake Superior, Mississippi River, part St. Croix River)	(f)(3)	41 FR 11875	3-22-76