

Best Management Practices for New Hampshire Marinas



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Introduction

The focus of this guide is to assist marinas to maintain and improve water quality around their facilities. In this guide you will find regulations, best management practices for achieving environmental compliance, pollution prevention tips and suggestions for educating boaters about facility rules and water quality issues. The basic rule of thumb is “NO DISCHARGE” to surface water or ground water without a permit.

Most of the pollutants that enter a lake or pond will *never* leave, due to long retention times and low flushing rates. Adding pollutants to a water body puts strain on the ecosystem, causing it to be out of balance. When the system is out of balance, it results in decreased water quality, and less desirable conditions for recreational activities.

However, if the best management practices in this book are followed, pollution prevention tips are considered and implemented, and boaters are made aware of the problems that exist and how they can prevent them, our water quality goal can be reached!

Best Management Practices

The best management practices presented in this manual are meant to guide the marina owner and operator in achieving environmental compliance and to preserve water quality. These are not meant to be a substitute for existing regulations. An official list of DES-related environmental rules can be found online at http://www.des.nh.gov/rules/desadmin_list.htm. A hardcopy of the regulations can be obtained by calling the Public Information Center at (603) 271-2975.

I. Boat Maintenance

A. Sanding and Painting

Hull and deck maintenance and repair are important services offered by most full service boat yards and marinas. However, even routine services can generate hazardous and/or toxic wastes. For example, paint chips and dust generated during vessel sanding may contain heavy metals such as aluminum, iron, lead, nickel, zinc, cadmium, copper, tin and chromium. These and other heavy metals are known to accumulate in lake and pond sediments. These pollutants have the tendency to increase up the food chain, or biomagnify, which may cause toxicity in humans that consume contaminated organisms.

Antifouling bottom paints are frequently used in coastal areas to protect hulls from barnacles and other organisms that can affect vessel function and performance. These paints are also used on sailboats in larger New Hampshire lakes. Copper-based antifouling paints slowly release a pesticide that can affect non-targeted organisms, and can leach into surface and groundwater if not properly managed.

Tri-butyl 10 is a regulated pesticide sometimes found in antifouling paints. To apply this type of antifouling paint, the user must be a certified pesticide applicator and follow the New Hampshire Department of Agriculture's procedures for registering this pesticide. Contact the N.H. Department of Agriculture at (603) 271-3551 for more information.

Requirements for Sanding and Painting at Marinas

- Work must be conducted on an impervious surface and under a roof.
- Paint chips must be contained and collected to avoid having waste airborne by wind or transported by surface run off.
- Paint wastes (chips, dust and liquid) must be tested for hazardous materials by a laboratory that tests hazardous wastes. In lieu of testing, generator knowledge may be used to determine if the paint wastes are hazardous.
- Hazardous wastes must be disposed of by a hazardous waste hauler.

Best Management Practices for Sanding and Painting Boats

- Conduct hull and deck sanding and painting in clearly marked, designated areas, far from surface water, preferably in a building with proper ventilation, filters and air permits.
- A plastic tarp can be used if cement or asphalt is not practical.
- Do not intentionally air dry left-over solvent-based paints. If the paint is already dry, dispose of it as solid waste if it does not contain hazardous materials.

Additional Prevent Pollution Tips

- Buy and use a dust-less sander. Dust-less sanders collect all chips and dust and eliminate the release of toxic materials and particulates.
- Rent dust-less sanders to do-it-yourself boat owners.
- Avoid dust by using a heated paint stripper to remove unwanted paint.
- Buy and use low-volatile organic compound (VOC) paints.
- Rent and use high pressure low volume (HPLV) paint guns or paint by hand.
- Send the work to a vendor that specializes in painting and sanding.
- Keep paint and paint thinner wastes separate. Thinners can be reclaimed and reused.
- Replace solvent-based paints with water-based paints to eliminate the use of solvents and thinners as cleaners.

“Do-It-Yourself” painting and sanding requirements

Boat owners should only paint and sand in designated areas. Post location signs and instructions about the facilities requirements. Contracts should be clear and concise what can and can not be done at the marina. Verify that boat owners are following contract requirements. The marina is ultimately responsible for activities that take place on the facility property.

How to Dispose of Sanding and Painting Wastes

Prior to disposal, paint chips must be tested for hazardous materials by a laboratory that tests hazardous wastes. If the paint chips do not contain hazardous materials, they may be disposed of as solid waste.

Solvent-based waste paint is generated when paint guns and other equipment are cleaned. The waste is regulated as a hazardous waste if it displays one of the four hazardous characteristics (ignitable, corrosive, reactive, or toxic) or it is a listed waste (solvents are frequently F listed wastes). Paints with these characteristics must be disposed of in accordance with *Hazardous Waste Rules*.

Latex paints can be disposed of as solid waste, but must be dry. Add kitty litter or sand to latex paints to harden.

B. Engine Maintenance and Repair

Routine engine and mechanical system maintenance is necessary for proper function and longevity. Maintenance and repair can be associated with spills of fuel and solvents. Aquatic life and water quality suffer when proper precautions are not followed to prevent accidental spills discharging to surface waters or the ground.

Requirements for Engine Maintenance and Repair at Marinas

- Maintenance activities must be done on impervious surfaces.
- Spill absorbents should always be available in the work area.
- Signage should provide instruction on proper spill containment and prevention.

Storage Requirements for Marina Facilities

- Label containers with their contents. For example “Used oil for recycle,” etc.
- Keep containers closed at all times, except when adding to or removing from the container.
- Have at least two feet of aisle space at the access point.
- Storage containers must be on an impervious surface or have secondary containment and be under cover.
- Document routine inspection of containers for leaks.

Best Management Practices for Engine Maintenance and Repair

- Add an absorbent pad to the bilge before changing the oil filter.
- Place oil filter in a large cup (large enough to fit around oil filters) to reduce the amount of oil that is spilled and transport to an appropriate storage container.
- Perform engine and stern drive unit repair out of water and in designated areas.
- Do not wash engine parts over bare ground or water.
- Do not use gasoline as a cleaning agent.
- Never dispose of used solvents into drains or onto the ground.

Additional Tips to Prevent Pollution

- Avoid unnecessary parts cleaning.
- Use dry pre-cleaning methods, such as wire brushing.
- Only perform oil and filter changes that are necessary, not those that are scheduled.
- Use bilge socks as routine practice in all vessels to reduce hydrocarbon discharge to surface water bodies.
- Use alternative cleaning agents such as citrus-based cleaners, aqueous cleaners or high pressure hot water systems.

How to Dispose of Engine Maintenance and Repair Waste

There are three options for disposing of used oil.

1. Dispose of as hazardous waste through a registered waste hauler.
2. Recycle with a DES registered used oil recycler.
3. Burn for energy. Register the used oil burner with DES.

For more information about used oil visit www.des.nh.gov/hwcs/used_oil.htm

Parts washing solvent wastes are usually made of petroleum distillates, mineral spirits and naphtha. These solvents have low flash points and must be disposed of as hazardous wastes or recycled by a hazardous waste hauler.

Shop wipes or other spill cleanup materials (kitty litter, speedi-dri, etc.), can be disposed of as solid waste, as long as they do not contain gasoline, solvents or are dripping with used oil.

Engine Test Tanks

Many marinas have engine test tanks, which are used while performing engine maintenance or repair. Because these tanks contain water that is used over and over, they are likely to contain benzene, MtBE, and other harmful constituents.

Requirements for Managing Engine Test Tank Water

- Test tank water must be tested to determine if it is hazardous prior to disposal.
- Floor drains around indoor test tanks must be properly sealed.
- Test tank water can not be discharged to the ground.
- Test tank drainpipes should be permanently closed to prevent release to surface water and ground.

Best Management Practices for Engine Test Tanks

- Outdoor test tanks should be covered to prevent rain and other precipitation from entering the tank.
- Indoor test tanks should have a fume hood above the tank for employee health.

Additional Tips for Pollution Prevention

- Only change engine test tank water when needed.
- Add an absorbent sock to the test tank to keep the water cleaner, longer.

How to Dispose of Engine Test Tank Waste

Wastewater from the engine test tank must be tested for hazardous materials before it can be disposed of. Wastewater should never be discharged to storm drains. If the wastewater is not hazardous, the water

can be discharged to sewer **with permission** from the municipal waste water treatment plant or directed to a holding tank and hauled periodically to the municipal wastewater treatment plant by a septic hauler. For further information on holding tank requirements, please call (603) 271-2858.

Absorbent socks can be disposed of as solid waste most of the time. Read the instructions for proper disposal on the product label for disposal options.

Boat Winterization

Winterization includes a variety of activities that play an important role in boat preservation. Naturally, customers want to do what they can to protect their investment from harsh New Hampshire winters.

Some of these practices, if not performed properly, can have catastrophic effects on aquatic life. For example, it is illegal to discharge anti-freeze, toxic or non-toxic, to surface water. This commonly happens when antifreeze is not drained and collected prior to first launch.

Engine winterization

It is not necessary to winterize engines with antifreeze if it is properly drained. If you must use antifreeze, it is a federal and state requirement that the antifreeze be properly drained and collected prior to the first launch.

There are two main types of engine winterization products: the traditional ethylene glycol and the preferred, less toxic propylene glycol. Although propylene glycol is the preferred product, it still has an impact on water quality and cannot be discharged into surface water or to the ground. If ethylene or propylene glycol is used in engines for winter storage, it must be drained and collected **before** the first spring launch.

Best Management Practices for Boat Winterization

- Absorbent socks should be placed in bilges to prevent any leaking fluids from discharge to surface water during spring launching.
- Promote the use of reusable canvas or recyclable plastic covers for winter storage.
- Recycle shrink-wrap covers.

Suggestions for boater education and awareness

Educate boaters about antifreeze. Strongly discourage them from adding antifreeze to their engines for winter storage. Place new language in boater contracts that states “Antifreeze and propylene glycol will not be used during engine winterization procedures at this marina.” Explain that draining the engines will take longer and will cost a bit more, but that water quality and recreational activities will be enhanced and safer for their families.

How to Dispose of Boat Winterization Wastes

Antifreeze can be discharge to the sewer with prior permission from the local waste water treatment facility or through a septic hauler. Collected antifreeze for reuse or recycled through a universal waste transporter.

C. Boat Washing

Boat washing at marinas has been under direct scrutiny in recent years due to the contaminants commonly contained in wash water. The wastewater from boat cleaning activities should be collected and/or disposed of properly since it might contain toxic materials from detergents or harmful heavy metals contained in paint chips.

Detergents are probably the most common pollutant associated with vessel cleaning activities. The ingredients of many cleaners are extremely toxic and if allowed to enter surface or ground water, readily dissolve into the water and/or sediments contributing to water quality pollution.

It is illegal to discharge any wash water to surface and/or ground water, including storm drains, without the proper permits. This statement refers to *any* water that is used to rinse or otherwise clean a boat, regardless of who is generating the wash water or what part of the boat is being cleaned.

Requirements for Marinas

- Boat washing huts must have a roof and an impermeable floor sloped to a central floor drain. The drain can discharge to:
 - * A DES registered holding tank. Call (603) 271-2858 for permitting information.

- * A sewer line. Permission is required from the local wastewater treatment plant prior to discharge.
- Outdoor wash facilities should be located on a permeable surface such as grass or gravel. A groundwater permit can be obtained from DES by calling (603) 271-2858.
- Outdoor wash facilities can be located on pavement if:
 - * A trench is in place to filter out sediments and other harmful constituents from wash water. Trench filter material, such as sand and gravel, must be periodically replaced.
 - * A water bar is installed to prevent discharge to surface water. These direct the flow of water to an area that will infiltrate. Marinas must obtain a groundwater discharge registration for this option.
- Detergents must be approved by DES prior to discharge to ground. Call (603) 271-2858 for approval to discharge.

Best Management Practices for Boat Owner and Marina Boat Washing

- Never perform any boat washing activities on or near boat ramps.
- Never wash boats on the water.
- Never clean engine parts at a boat wash station.
- Designate boat wash areas for employees and customers.
- Collect all gel coat and bottom paint that “slough off” during washing activities for proper disposal.

Tips for Pollution Prevention at Boat Washing

- Use “elbow grease” and water whenever possible. Do this often to keep up with dirt, making it easier to clean with just water.
- Reuse water in boat washing huts.
- Always read and follow the dilution instructions on detergent packaging.
- Use environmentally friendly cleaners only as a last resort.

Suggestions for Boater Awareness

- Watch customers for on-the-water boat washing. Take the opportunity to educate the boat owners about illegal discharges and

how they affect water quality.

- Post signs explaining that customers must wash their boats only at the marina designated wash stations.

D. Vessel Sewage and Grey Water

Sewage contains many forms of bacteria and viruses that can cause illness when waterborne. Because of the health impacts of sewage in our waterways, proper sewage systems must be used by boat owners to prevent illegal and harmful discharges. Sewage is commonly known as “black water.” In New Hampshire, it is illegal to discharge boat sewage, treated or untreated, into inland waters such as ponds, lakes and streams or within three miles of the coast.

Best Management Practices for Vessel Sewage Management at Marinas

- Provide an appropriate pump out station that is accessible to staff and customers.
- Do not allow waste to drain into receiving waters.
- Properly maintain the pump out station system for optimal performance.
- Provide educated staff to assist in boat pump outs.
- Charge an appropriate fee for the service.

Grey water is wastewater generated from vessel showers and sinks. This water may contain detergents and other cleaning agents, food scraps and other materials. Grey water decomposes faster than boat sewage and may contain the same disease-causing organisms found in sewage. Chemicals contained within grey water can be toxic to fish and other organisms, and may contain nutrients for oxygen depleting organisms. In New Hampshire, it is illegal to discharge any grey water into state inland waters. All plumbing on boats should be altered so no overboard discharges can occur.

Marina Best Management Practices to Control Grey Water Discharges in Inland Waters

- Disable grey water systems upon sale of boats bound for New

Hampshire inland waters, to prevent illegal discharges.

- Question boat owners about their existing grey water systems.

Suggestions for Grey Water Boater Awareness

- Educate boat owners about the no discharge policy in New Hampshire's inland waters.
- Include a section in boater contracts that explains that grey water discharge is illegal and punishable by federal law.
- Ultimately, marinas are only responsible for disabling grey water systems in marina owned vessels. However, it is everyone's responsibility to keep the state's water clean for recreational activities and aesthetic pleasure.

Boat Inspection Program

The DES Boat Inspection Program staff inspect for illegal discharges of sewage and grey water on all boats on inland waters of the state. Boat owners can request an inspection although most are conducted without notice. Boats that successfully pass the inspection receive a sticker to place on the boat, but if a vessel is found to be in violation of a state or federal regulation, the boat owner has 48 hours to correct the situation. If the problem is not corrected within 48 hours, the boat owner may receive a fine from DES. For more information about the Boat Inspection Program, visit www.des.nh.gov/factsheets/bb/bb-38.htm.

II. Facility Management

A. Hazardous Waste Management

Most marinas generate oil, gasoline, antifreeze and solvent wastes during routine maintenance. It is important to properly manage the wastes to prevent accidental discharge to ground or surface water.

This section will discuss how to properly store these materials. For information on how to properly dispose of these wastes, please see Section I.

Requirements for Storage of Hazardous Wastes at Marinas

- Waste containers must be labeled. Labels must include name of waste, waste code, and accumulation start date as required by either small or full quantity generator requirements.
- Hazardous waste containers must be closed at all times except when adding or removing waste.
- Waste storage areas must be located on an impermeable surface, under cover and controlled access.
- Hazardous waste storage areas must have secondary containment if not located in a structure or building. Secondary containment must be able to hold at least 110 percent of the volume of the container.
- Storage drums must have at least two feet of aisle space to inspect for leaks.

Small Quantity Generator

According to New Hampshire *Hazardous Waste Rules*, a Small Quantity Generator (SQG) is any generator who, in each and every month, generates less than 100 kg (220 lbs.) of total hazardous wastes, 1 kg (2.2 lbs.) of acutely hazardous waste, or 100 kg (220 lbs.) of any materials resulting from a spill of an acutely hazardous waste.

Small Quantity Generator Self-Certification Program Requirements

- Review facility's hazardous waste management procedures.
- Conduct a self-inspection.

- Certify compliance to DES every three years.
- Submit a fee of \$60 per year, payable every three years at the time of certification.

SQGs that are not in compliance must develop a Corrective Action Plan, specifying how they plan to come into compliance within 90 days from the date the declaration is due. Please visit www.des.nh.gov/SQG/ for more information.

Parts Washing

Solvent parts washers operate by continuously re-circulating solvent from the drum to the wash tray. The solvent is usually replaced with fresh solvent when it becomes too dirty to provide adequate cleaning. Used solvents are generally managed as a hazardous waste.

Best Management Practices for Parts Washing

- Pre-clean parts with rag or brush.
- Replace solvent as needed, rather than on a set schedule.
- Switch to alternative cleaner, such as aqueous, citrus-based, or steam cleaning.

Batteries

Battery acid is extremely corrosive and often contains high concentrations of heavy metals, including lead. Spilled battery acid may be transported to surface water via runoff or groundwater transport.

Requirements for Management of Waste Batteries at Marinas

- Store all waste batteries on an acid-resistant surface and under cover.
- Recycle waste batteries.

B. Universal Wastes

Universal wastes are a special group of hazardous wastes that are generated by all segments of the population and, unfortunately, often improperly disposed by the people who generate them. In an effort to make it easier and more cost effective to properly manage these wastes, the *Universal Waste Rule* exempts the wastes from the more burdensome *Hazardous Waste Rules* requirements, as long as they are managed to prevent release to the environment and are properly recycled or disposed of.

DES has declared these items as universal wastes: used antifreeze, spent fluorescent lamps (including HIDs), mercury containing devices (such as thermometers and thermostats), batteries (CD/LI), cathode ray tubes (CRTs), and pesticides (FIFRA listed, unregistered). For more information about properly disposing of Universal Wastes, please visit www.des.nh.gov/nhppp/UW/.

Requirements for Management of Universal Wastes at Marinas

- Contract universal waste vendor for recycling.
- Label waste containers.
- Store containers to prevent breaking.

C. Used Oil

Used motor oil contains additives and metals such as lead, zinc, arsenic and cadmium. The oil may have high concentrations of chromium resulting from wear of metal parts in the engine, and can also be contaminated with fuel, water, antifreeze, and chlorinated solvents.

Recyclable used oil can be qualified as one of two types, on-specification or off-specification, depending on the level of contaminants. The quality of used oil determines the type of burner in which the oil can be burned. Therefore most generators are required to conduct an initial used oil determination for specific contaminants, unless the used oil is comprised solely of automotive oils, including motor, engine, gear and transmission oils. Motor oil from marine vessels is considered part of the category that does not require an initial used oil determination, provided that the oil has not been mixed with other wastes. Additionally, if the oil is transferred directly to a person who burns the used oil, the marina is

considered a used oil marketer and would be subject to specific requirements under the hazardous waste rules including analytical testing of each batch of used oil.

For this reason, DES recommends that marinas ensure delivery of used oil to an authorized used oil marketer who will blend and test the oil prior to distribution.

Although used oil is a listed hazardous waste in New Hampshire, it is subject to less stringent requirements if it is managed as “Used Oil for Recycle” and burned for energy recovery or re-refined. Otherwise, it must be managed as a hazardous waste. “Used Oil for Recycle” is regulated under the *Hazardous Waste Rules*, Env-Wm 807, the *NH Solid Waste Rules*, Env-Wm-2605 and the *Water Division Best Management Practices Rules*, Env-Ws 421.

Requirements for managing “Used Oil for Recycle”:

- Label containers “Used Oil for Recycle.”
- Recycle used oil with a Used Oil Marketer. Contact 1-888-TAKEOIL.
- Register used oil burner with DES. Contact DES at 603-271-2900.
- Containers closed at all times except when adding or removing oil.
- Store containers on an impermeable surface and under cover.
- Oil filters must be free liquids prior to final disposal. While not required, crushing filters will press approximately 85 percent of remaining oil for recovery.

Visit www.des.nh.gov/hwcs/used_oil.htm for more information and a complete listing of the rule and regulations regarding the proper handling of used oil.

D. Stormwater

Stormwater is created by rain events. Rain becomes polluted when it picks up contaminants such as oil, detergents, heavy metals and grease from pavement or dirt surfaces at marinas and discharges to surface water. These types of pollutants can create mass disturbances in aquatic communities, which can result in algal blooms and unsafe swimming conditions.

Stormwater Requirements for Marinas

- Stormwater must be prevented from discharging into surface water; or
- A stormwater discharge permit must be granted to the facility from the EPA. Contact EPA at (617) 918-1615.

Best Management Practices for Preventing Stormwater Discharge

- Pave only areas that are absolutely necessary.
- Consider alternatives to asphalt for parking lots and vessel storage areas such as dirt, gravel or permeable pavement.
- Install infiltration trenches. Trenches installed at the leading edge of a boat ramp catch pollutants in an oil absorbent barrier or crushed stone before discharge.
- Install water bars. Water bars are essentially speed bumps for water. They divert water away from ramp areas and redirect to an infiltration area.
- Install vegetative buffers between surface waters and upland areas. Grassy or constructed wetlands allow pollutants to first be filtered out of water before discharging to the water body.
- Control sediment from construction sites by installing a siltation fence in combination with hay bales, storm drain filters, sediment traps and earth dikes to prevent sediments from leaving construction areas.
- Protect storm drains with filters or oil-grit separators. Stencil words (such as “Drains to Lake”) on storm drains to alert customers and visitors that storm drains lead directly to water bodies without treatment. Contact the municipal public works department before stenciling any drain.

E. Sumps and Floor Drains

Sumps and floor drains are found at many marinas. Sumps and floor drains are designed to collect wastewater from cleaning and spills. The sumps may collect grit, dirt, grease, oil, soap, water and solvents. These contents are subject to hazardous waste determination (TCLP test) prior to disposal.

Requirements for Floor Drains and Sumps

- Floor drains must be sealed and not used for any purpose unless:
 - o The floor drain is connected to a municipal sanitary sewer in accordance with federal, state and local regulations;
 - o Connected to an alarmed underground holding tank which meets requirements and is registered with DES; or
 - o The drain is connected to an above ground holding tank that meets all applicable federal, state and local requirements.

Or -

- Floor drains must be sealed if one of the above mentioned exclusions is not met. Drains must be sealed under direction of a consultant who is familiar with the proper closure procedures or, if you are certain that no contaminants were ever released into the floor drains you may seal the drain by filling it with concrete.

Best Management Practices for Floor Drains and Sumps at Marinas

- Use drip pans when changing fluids or working on damaged vessels to avoid unnecessary spills.
- Install oil and water separators to remove free-floating oils and grease if floor drains are connected to a municipal sewer or registered holding tank.

F. Aboveground Storage Tanks

Aboveground Storage Tanks (ASTs) at marinas are commonly used to store oil and gasoline. The possibility for leaks from these storage tanks are greatly reduced by following proper procedures as mandated by state and federal authorities.

The rules apply to AST facilities with a single AST system having a capacity greater than 660 gallons, or facilities with two or more ASTs that have a total storage capacity greater than 1,320 gallons.

Requirements for Marinas having ASTs

- All regulated ASTs in the state must be registered with DES.
- All new regulated ASTs having a capacity greater than 660 gallons must be approved by DES *before* they can be installed.
- All regulated AST facilities shall have the following.
 - o Overfill protection in the form of a gauge and an independent audible and visible high level alarm.
 - o Tanks markings.
 - o A Spill Prevention, Control, and Countermeasure Plan (SPCC).

For more information about the AST program, call (603) 271-6058 or visit www.des.nh.gov/ORCB/astprog.asp.

Spill Prevention, Control, and Countermeasure Plan

An SPCC Plan is a well-thought-out, written document that describes the facility, oil storage, procedures for handling oil, features used to control spillage, and countermeasures that would be employed should a spill occur. Additional guidance can be obtained from the US Environmental Protection Agency at www.epa.gov/oilspill/.

III. Facility Maintenance

Building and Landscape Maintenance

Land management decisions, operating procedures, and structural improvements may all contribute or detract from the quality of the land and water surrounding marinas. Roads and parking areas may convey polluted stormwater directly into adjacent waterways. Dredging may re-suspend toxic compounds and increase the chance for aquatic exotics to take root. Hazardous chemicals may be leached into the water from piers and other structures. Broken or degraded floats may release buoyant debris which birds and fish mistake for food.

The location and installation of shore and in-water structures may lead to accelerated coastal erosion and sedimentation. Because of the ecological, economic, recreational, and aesthetic values wetlands provide, it is important that shoreland development does not diminish these features. Wetlands also form a natural buffer against incoming storms and act as a filter to purify stormwater run off from the land.

Requirements for Marina Building Maintenance and Landscape

- Contact the DES Wetlands Bureau before making any structural changes or dredging near water bodies. To obtain permits call (603) 271-2147 or visit www.des.nh.gov/wetlands/.

Best Management Practices for Marina Building Maintenance and Landscape

- Do not use pressure treated wood for pilings and similar structures that are in or above the water. Pressure treated timbers may contribute to water pollution.
- Avoid exotic timbers harvested from tropical forests.
- Use fixed or floating piers to enhance water circulation.
- Select an open design for new or expanding marinas. Open marina designs have no fabricated or natural barriers to restrict the exchange of ambient water within the area.
- Install wave attenuators to reduce the force of incoming water, if protection is necessary. Wave attenuators do not restrict water exchange nor do they interfere with bottom ecology or aesthetic

view. They are easily removed and do not interfere with fish migration and shoreline processes.

- For structures that are in or above water, use materials that will not leach hazardous chemicals into the water and will not degrade in less than ten years time such as reinforced concrete, coated steel, recycled plastic, or plastic reinforced with fiberglass.
- Purchase floatable foams that have been coated or encapsulated in plastic or wood. As these floats age, degraded foam is contained by the covering.
- Minimize the need for dredging by extending piers and docks into naturally deep waters.

IV. Employee Health and Safety

There is a direct correlation between being in compliance with OSHA regulations and improved worker safety. If workers are safe, they will incur less injury and, chances are, productivity will increase.

Requirements for Employee Health and Safety

- Train employees to properly use equipment and chemicals according to established rules and regulations.
- Keep emergency postings near all phones in case of a spill.
- Keep all material safety data sheets in an accessible and localized area.
- Maintain a minimum of two feet of aisle space in hazardous waste storage areas to allow for routine inspection of at least one side of each waste container.
- Provide eye wash stations and fire extinguishers in all work areas, if applicable.
- Keep spill kits nearby in case of an emergency.

A spill contingency plan should be developed for each area where oil and hazardous materials are used or stored. Such plans should include:

- Specific potential spill sources.
- Oil and hazardous materials used or stored in the area.
- Prevention measures including security, inspection, containment, training equipment and control measures.
- Drainage plan.
- Emergency telephone numbers.

Call the Occupational Safety and Health Consultation Program for more information at (603) 271-4868 or visit www.osha.gov/SLTC/hazardcommunications/index.html.